

Proponent's Environmental Assessment for Horizon West Transmission's Ironwood Transmission Line Project

September 22, 2025 (PEA Submittal Date)

Construction of the Ironwood Transmission Line, a new 500 kV transmission line spanning approximately 86 miles from Arizona Public Service Company's North Gila Substation to San Diego Gas & Electric Company's Imperial Valley Substation.

The Ironwood Transmission Line would be located in western Yuma County, Arizona and Imperial County, California.

Application A.25-09-008 to the California Public Utilities Commission

Prepared by Rincon Consultants, Inc.

180 North Ashwood Avenue
Ventura, California 93003

Lindsey Sarquilla, Project Manager
(805) 869-1672
lsarquilla@rinconconsultants.com

Prepared for Horizon West Transmission/NextEra Energy Transmission

One California Street, Suite 1600
San Francisco, California 94111

Ally Little, Project Manager
970-231-9467
Allyson.Little@NextEraEnergy.com

Table of Contents

List of Acronyms and Abbreviations xix
1 Executive Summary 1-1
1.1 Proposed Project Summary 1-1
1.1.1 Purpose and Objectives 1-1
1.1.2 Summary of Activities 1-3
1.2 Land Ownership and Right-of-Way Requirements 1-3
1.3 Areas of Controversy 1-4
1.3.1 Impact Assessment Methodology 1-4
1.3.2 Impact Summary Table 1-5
1.4 Summary of Alternatives 1-11
1.5 Pre-Filing Consultation and Public Outreach Summary 1-17
1.6 Conclusions 1-18
1.7 Remaining Issues 1-18
2 Introduction 2-1
2.1 Project Background 2-1
2.1.1 Purpose 2-2
2.1.2 Project Need 2-3
2.1.3 Project Objectives 2-5
2.1.4 Project Applicant 2-6
2.2 Pre-filing Consultation and Public Outreach 2-6
2.2.1 Pre-filing Consultation 2-6
2.2.2 Records of Consultation and Public Outreach 2-11
2.3 Environmental Review Process 2-13
2.3.1 Environmental Review Process 2-13
2.3.2 California Environmental Quality Act Review 2-13
2.3.3 National Environmental Policy Act Review 2-14
2.3.4 Pre-filing California Environmental Quality Act and National Environmental Policy Act Coordination 2-14
2.4 Document Organization 2-14
3 Proposed Project Description 3-1
3.1 Project Overview 3-1
3.1.1 Summary of the Proposed Project 3-1
3.1.2 Geographical Location of the Proposed Project 3-1
3.1.3 Overview Map 3-3

3.2 Existing and Proposed System 3-3
3.2.1 Existing System 3-3
3.2.2 Proposed Project System 3-5
3.2.3 System Reliability 3-6
3.2.4 Planning Area 3-6
3.3 Project Components 3-6
3.3.1 Preliminary Design and Engineering 3-6
3.3.2 Components and Phases 3-7
3.3.3 Existing Facilities 3-7
3.3.4 Proposed Facilities 3-11
3.3.5 Other Potentially Required Facilities 3-20
3.3.6 Future Expansions and Equipment Lifespans 3-20
3.3.7 Below-Ground Conductor/Cable Installations 3-21
3.3.8 Electric Substations and Switching Stations 3-21
3.3.9 Gas Pipelines 3-21
3.3.10 Gas Storage Facilities – Background and Resource Information 3-21
3.3.11 Gas Storage Facilities – Well-Head Sites 3-21
3.3.12 Gas Storage Facilities – Production and Injection 3-21
3.3.13 Gas Storage Facilities – Electrical Energy 3-21
3.3.14 Telecommunication Lines 3-21
3.4 Land Ownership, Rights-of-Way, and Easements 3-22
3.4.1 Land Ownership 3-22
3.4.2 Existing Rights-of-Way or Easements 3-23
3.4.3 New or Modified Rights-of-Way or Easements 3-23
3.4.4 Temporary Rights-of-Way or Easements 3-24
3.5 Construction 3-25
3.5.1 Construction Access 3-25
3.5.2 Staging Areas 3-29
3.5.3 Construction Work Areas 3-31
3.5.4 Site Preparation 3-35
3.5.5 Transmission Line Construction (Above Ground) 3-39
3.5.6 Transmission Line Construction (Below Ground) 3-45
3.5.7 Substation, Switching Stations, Gas Compressor Stations 3-45
3.5.8 Gas Pipelines 3-45
3.5.9 Gas Storage Facilities 3-45
3.5.10 Public Safety and Traffic Control 3-45
3.5.11 Dust, Erosion, and Runoff Controls 3-47
3.5.12 Water Use and Dewatering 3-50

3.5.13 Hazardous Materials and Management 3-51
3.5.14 Waste Generation and Management 3-53
3.5.15 Fire Prevention and Response 3-55
3.6 Construction Workforce, Equipment Traffic, and Schedule 3-56
3.6.1 Construction Workforce 3-56
3.6.2 Construction Equipment 3-56
3.6.3 Construction Traffic 3-57
3.6.4 Construction Schedule 3-62
3.6.5 Work Schedule 3-64
3.7 Post-Construction 3-65
3.7.1 Configuring and Testing 3-65
3.7.2 Landscaping 3-65
3.7.3 Demobilization and Site Restoration 3-66
3.8 Operation and Maintenance 3-67
3.8.1 Regulations and Standards 3-67
3.8.2 System Controls and Operation Staff 3-68
3.8.3 Inspection Programs 3-68
3.8.4 Maintenance Programs 3-69
3.8.5 Vegetation Management Programs 3-71
3.9 Decommissioning 3-71
3.9.1 Decommissioning 3-71
3.10 Anticipated Permits and Approvals 3-72
3.10.1 Anticipated Permits and Approvals 3-72
3.10.2 Right-of-Way or Easement Applications 3-73
3.11 Applicant Proposed Measures 3-73
3.12 Project Description Graphics, Mapbook, and GIS Requirements 3-87
3.12.1 Graphics 3-87
3.12.2 Mapbook 3-87
3.12.3 GIS Data 3-87
3.12.4 GIS Requirements 3-87
3.12.5 Natural Gas Facilities GIS Data 3-87
4 Description of Alternatives 4-1
4.1 Alternatives Considered 4-2
4.1.1 Alternatives Suggested, Considered, or Studied by the CAISO or by CAISO Stakeholders 4-2
4.1.2 Alternatives Suggested by the Public or Agencies 4-2
4.1.3 Reduced Footprint Alternatives 4-3
4.1.4 Project Phasing Options 4-3

4.1.5 Alternative Facility and Construction Activity Sites 4-3
4.1.6 Renewable Energy, Energy Conservation, Energy Efficiency, Demand Response, Distributed Energy Resources, and Energy Storage Alternatives 4-3
4.1.7 Avoid or Limit the Construction of New Transmission Voltage Facilities 4-3
4.1.8 Other Technological Alternatives 4-3
4.1.9 Route Alternatives and Route Variations 4-4
4.1.10 Alternative Engineering or Technological Approaches 4-12
4.2 No Project Alternative 4-12
4.3 Rejected Alternatives 4-12
5 Environmental Analysis 5-1
Organization of Resource Area Sections 5-1
Environmental Setting 5-2
Regulatory Setting 5-2
Impact Questions 5-2
Impact Analysis 5-2
CPUC Draft Environmental Measures 5-3
Applicant Proposed Measures 5-3
5.1 Aesthetics 5.1-1
5.1.1 Environmental Setting 5.1-1
5.1.2 Regulatory Setting 5.1-30
5.1.3 Impact Questions 5.1-41
5.1.4 Impact Analysis 5.1-41
5.1.5 CPUC Draft Environmental Measures 5.1-87
5.2 Agriculture and Forestry Resources 5.2-1
5.2.1 Environmental Setting 5.2-1
5.2.2 Regulatory Setting 5.2-17
5.2.3 Impact Questions 5.2-22
5.2.4 Impact Analyses 5.2-22
5.3 Air Quality 5.3-1
5.3.1 Environmental Setting 5.3-1
5.3.2 Regulatory Setting 5.3-8
5.3.3 Impact Questions 5.3-12
5.3.4 Impact Analysis 5.3-14
5.3.5 CPUC Draft Environmental Measures 5.3-34
5.4 Biological Resources 5.4-1
5.4.1 Environmental Setting 5.4-1
5.4.2 Regulatory Setting 5.4-42
5.4.3 Habitat Conservation Plans 5.4-58

5.4.4 Impact Questions 5.4-58
5.4.5 Impact Analysis 5.4-59
5.4.6 CPUC Draft Environmental Measures 5.4-94
5.5 Cultural Resources 5.5-1
5.5.1 Environmental Setting 5.5-1
5.5.2 Regulatory Setting 5.5-14
5.5.3 Impact Questions 5.5-21
5.5.4 Impact Analysis 5.5-22
5.5.5 CPUC Draft Environmental Measures 5.5-28
5.6 Energy 5.6-1
5.6.1 Environmental Setting 5.6-1
5.6.2 Regulatory Setting 5.6-3
5.6.3 Impact Questions 5.6-6
5.6.4 Impact Analysis 5.6-7
5.6.5 CPUC Draft Environmental Measures 5.6-15
5.7 Geology, Soils, and Paleontological Resources 5.7-1
5.7.1 Environmental Setting 5.7-1
5.7.2 Regulatory Setting 5.7-28
5.7.3 Impact Questions 5.7-39
5.7.4 Impact Analysis 5.7-39
5.7.5 CPUC Draft Environmental Measures 5.7-49
5.8 Greenhouse Gas Emissions 5.8-1
5.8.1 Environmental Setting 5.8-1
5.8.2 Regulatory Setting 5.8-2
5.8.3 Impact Questions 5.8-7
5.8.4 Impact Analysis 5.8-8
5.8.5 CPUC Draft Environmental Measures 5.8-14
5.9 Hazards, Hazardous Materials, and Public Safety 5.9-1
5.9.1 Environmental Setting 5.9-1
5.9.2 Regulatory Setting 5.9-12
5.9.3 Impact Questions 5.9-22
5.9.4 Impact Analysis 5.9-23
5.9.5 CPUC Draft Environmental Measures 5.9-39
5.10 Hydrology and Water Quality 5.10-1
5.10.1 Environmental Setting 5.10-1
5.10.2 Regulatory Setting 5.10-20
5.10.3 Impact Questions 5.10-32
5.10.4 Impact Analysis 5.10-33

5.10.5 CPUC Draft Environmental Measures 5.10-51
5.11 Land Use and Planning 5.11-1
5.11.1 Environmental Setting 5.11-1
5.11.2 Regulatory Setting 5.11-19
5.11.3 Impact Questions 5.11-24
5.11.4 Impact Analysis 5.11-24
5.11.5 CPUC Draft Environmental Measures 5.11-36
5.12 Mineral Resources 5.12-1
5.12.1 Environmental Setting 5.12-1
5.12.2 Regulatory Setting 5.12-7
5.12.3 Impact Questions 5.12-10
5.12.4 Impact Analysis 5.12-10
5.12.5 CPUC Draft Environmental Measures 5.12-13
5.13 Noise 5.13-1
5.13.1 Environmental Setting 5.13-1
5.13.2 Regulatory Setting 5.13-13
5.13.3 Impact Questions 5.13-18
5.13.4 Impact Analysis 5.13-18
5.13.5 CPUC Draft Environmental Measures 5.13-34
5.14 Population and Housing 5.14-1
5.14.1 Environmental Setting 5.14-1
5.14.2 Regulatory Setting 5.14-6
5.14.3 Impact Questions 5.14-8
5.14.4 Impact Analysis 5.14-8
5.14.5 CPUC Draft Environmental Measures 5.14-12
5.15 Public Services 5.15-1
5.15.1 Environmental Setting 5.15-1
5.15.2 Regulatory Setting 5.15-6
5.15.3 Impact Questions 5.15-10
5.15.4 Impact Analysis 5.15-10
5.15.5 CPUC Draft Environmental Measures 5.15-14
5.15.6 Applicant Proposed Measures 5.15-14
5.16 Recreation 5.16-1
5.16.1 Environmental Setting 5.16-1
5.16.2 Regulatory Setting 5.16-6
5.16.3 Impact Questions 5.16-10
5.16.4 Impact Analysis 5.16-10
5.16.5 CPUC Draft Environmental Measures 5.16-21

5.17 Transportation 5.17-1
5.17.1 Environmental Setting 5.17-1
5.17.2 Regulatory Setting 5.17-13
5.17.3 Impact Questions 5.17-17
5.17.4 Impact Analysis 5.17-17
5.17.5 CPUC Draft Environmental Measures 5.17-31
5.18 Tribal Cultural Resources 5.18-1
5.18.1 Environmental Setting 5.18-1
5.18.2 Regulatory Setting 5.18-9
5.18.3 Impact Questions 5.18-10
5.18.4 Impact Analysis 5.18-10
5.18.5 CPUC Draft Environmental Measures 5.18-15
5.19 Utilities and Service Systems 5.19-1
5.19.1 Environmental Setting 5.19-1
5.19.2 Regulatory Setting 5.19-20
5.19.3 Impact Questions 5.19-27
5.19.4 Impact Analysis 5.19-28
5.19.5 CPUC Draft Environmental Measures 5.19-45
5.20 Wildfire 5.20-1
5.20.1 Environmental Setting 5.20-1
5.20.2 Regulatory Setting 5.20-17
5.20.3 Impact Questions 5.20-25
5.20.4 Impact Analysis 5.20-25
5.20.5 CPUC Draft Environmental Measures 5.20-32
6 Comparison of Alternatives 6-1
6.1 Summary of Impact Findings Presented in the PEA 6-1
6.2 Alternatives Comparison 6-5
6.3 Alternatives Ranking 6-21
6.4 Rationale for Selection of the Proposed Project Route 6-24
7 Cumulative Impacts and Other CEQA Considerations 7-1
7.1 Cumulative Impacts 7-1
7.1.1 List of Cumulative Projects 7-2
7.1.2 Geographic Scope 7-6
7.1.3 Cumulative Impact Analysis 7-6
7.1.4 Cumulative Impact Summary Table 7-20
7.2 Growth-Inducing Impacts 7-21
7.2.1 Growth-Inducing Impacts 7-21
8 List of Preparers 8-1

9 References 9-1
9.1 Chapter 1, Executive Summary 9-1
9.2 Chapter 2, Introduction 9-1
9.3 Chapter 3, Proposed Project Description 9-1
9.4 Chapter 4, Description of Alternatives 9-1
9.5 Chapter 5, Environmental Impact Analysis 9-2
9.5.1 Section 5.1, Aesthetics 9-2
9.5.2 Section 5.2, Agriculture and Forestry Resources 9-3
9.5.3 Section 5.3, Air Quality 9-4
9.5.4 Section 5.4, Biological Resources 9-5
9.5.5 Section 5.5, Cultural Resources 9-8
9.5.6 Section 5.6, Energy 9-11
9.5.7 Section 5.7, Geology, Soils, and Paleontological Resources 9-12
9.5.8 Section 5.8, Greenhouse Gas Emissions 9-15
9.5.9 Section 5.9, Hazards, Hazardous Materials, and Public Safety 9-16
9.5.10 Section 5.10, Hydrology and Water Quality 9-17
9.5.11 Section 5.11, Land Use and Planning 9-22
9.5.12 Section 5.12, Mineral Resources 9-23
9.5.13 Section 5.13, Noise 9-24
9.5.14 Section 5.14, Population and Housing 9-25
9.5.15 Section 5.15, Public Services 9-25
9.5.16 Section 5.16, Recreation 9-26
9.5.17 Section 5.17, Transportation 9-27
9.5.18 Section 5.18, Tribal Cultural Resources 9-28
9.5.19 Section 5.19, Utilities and Service Systems 9-29
9.5.20 Section 5.20, Wildfire 9-33
9.5.21 Section 5.21, Mandatory Findings of Significance 9-35
9.6 Chapter 6, Comparison of Alternatives 9-35
9.7 Chapter 7, Cumulative and Other CEQA 9-35
9.8 Chapter 8, List of Preparers 9-36

Tables

Table 1-1 Summary of Impacts and APMs for the Proposed Project 1-6
Table 1-2 Summary of Alternatives Impacts for Impacts that would be Significant and Unavoidable 1-17
Table 2-1 Public Outreach Meetings 2-11
Table 2-2 Anticipated Environmental Review Schedule 2-13
Table 3-1 Structure Types and Disturbance Dimensions 3-13

Table 3-2	Foundation Type and Dimensions	3-16
Table 3-3	Surface Treatment by Structure	3-20
Table 3-4	Land Ownership Breakdown of Proposed Project	3-23
Table 3-5	Existing Access Roads to be Used by the Project	3-25
Table 3-6	Potential Staging Area Locations	3-29
Table 3-7	Approximate Work Area Disturbance Areas	3-34
Table 3-8	Permanent Disturbance Associated with Structures	3-34
Table 3-9	Detailed Grading Volumes	3-38
Table 3-10	Types, Uses, and Volumes of Hazardous Materials	3-51
Table 3-11	Transmission Construction Equipment and Workforce	3-58
Table 3-12	Anticipated Permits and Approvals	3-72
Table 3-13	Applicant Proposed Measures	3-73
Table 5.1-1	Landscape Character Units	5.1-10
Table 5.1-2	BLM Visual Management Classes and Goals	5.1-31
Table 5.1-3	Vegetation Groups-Impact Model	5.1-43
Table 5.1-4	Landscape Contrast-Impact Model	5.1-44
Table 5.1-5	Structure Contrast-Impact Model	5.1-44
Table 5.1-6	Overall Project Contrast-Impact Model	5.1-46
Table 5.1-7	Guidelines for Initially Determining Significance-High Sensitivity	5.1-47
Table 5.1-8	Guidelines for Initially Determining Significance-Moderate Sensitivity	5.1-48
Table 5.1-9	Landscape Character Compatibility Model	5.1-48
Table 5.1-10	BLM VRM Class Consistency	5.1-49
Table 5.1-11	Proposed Project Impact Summary	5.1-86
Table 5.2-1	Agricultural Use Zoning Crossed by the Proposed Project in Imperial County	5.2-6
Table 5.2-2	Acres of Temporary Important Farmland Disturbances by the Proposed Project in California	5.2-23
Table 5.2-3	Acres of Permanent Important Farmland Disturbances by the Proposed Project in California	5.2-23
Table 5.2-4	Acres of Temporary Important Farmland Disturbances by the Proposed Project in Arizona	5.2-24
Table 5.2-5	Acres of Permanent Important Farmland Disturbances by the Proposed Project in Arizona	5.2-24
Table 5.3-1	Air Quality Standards and Attainment Status	5.3-2
Table 5.3-2	Imperial County Ambient Air Quality – Monitoring Station Measurements	5.3-5
Table 5.3-3	Yuma County Ambient Air Quality – Monitoring Station Measurements	5.3-5
Table 5.3-4	Sensitive Receptors within 1,000 Feet of the Proposed Project	5.3-6
Table 5.3-5	Thresholds of Significance for Construction Activities - ICAPCD	5.3-13

Table 5.3-6 Thresholds of Significance for Operational Activities - ICAPCD 5.3-13
Table 5.3-7 Thresholds of Significance for Construction and Operations Activities-Yuma County 5.3-14
Table 5.3-8 Maximum Daily Regional Construction Emissions for California Project Components 5.3-22
Table 5.3-9 Maximum Daily Local Construction Emissions for California Project Components 5.3-25
Table 5.3-10 Annual Regional Construction Emissions for Arizona Project Components 5.3-27
Table 5.4-1 Acres of Vegetation Communities and Land Cover Types within Study Area – Proposed Alignment 5.4-7
Table 5.4-2 Vegetation Communities and Land Cover Types within Study Area – Ancillary Components 5.4-9
Table 5.4-3 Natural Communities and Land Cover Types Mapped in the Reconnaissance Survey Area 5.4-11
Table 5.4-4 Potentially Jurisdictional Aquatic Resources in the Study Area 5.4-12
Table 5.4-5 Special-Status Plant Species in the Study Area 5.4-15
Table 5.4-6 Special-status Wildlife Species in the Study Area 5.4-21
Table 5.4-7 Critical Habitat Within 5 Miles of the Study Area 5.4-39
Table 5.4-8 Potential Impacts to Sensitive Natural Communities in California 5.4-80
Table 5.4-9 Potential Impacts to Sensitive Natural Communities in Arizona 5.4-82
Table 5.4-10 Jurisdictional Waters Potential Temporary and Permanent Impacts in California 5.4-84
Table 5.4-11 Jurisdictional Waters Potential Temporary and Permanent Impacts in Arizona 5.4-85
Table 5.6-1 Electricity Consumption within IID's Service Territory in 2024 ..... 5.6-1
Table 5.6-2 Electricity Consumption by Imperial County in 2024 ..... 5.6-2
Table 5.6-3 Electricity Consumption within State of Arizona in 2023 ..... 5.6-2
Table 5.6-4 Construction Fuel Consumption from California Project Components 5.6-9
Table 5.6-5 Construction Fuel Consumption from Arizona Project Components 5.6-9
Table 5.6-6 Construction Fuel Consumption from All Project Components 5.6-10
Table 5.7-1 Faults Located within 10 Miles of the Proposed Project 5.7-4
Table 5.7-2 Mapped Soil Units and Soil Properties 5.7-17
Table 5.7-3 Geologic Units of Project Area and Paleontological Sensitivity 5.7-27
Table 5.8-1 Annual GHG Emissions from Proposed Project Components in California 5.8-10
Table 5.8-2 Annual GHG Emissions from the Proposed Project Components in Arizona 5.8-10
Table 5.8-3 Annual GHG Emissions from All Proposed Project Components 5.8-11
Table 5.9-1 Known Release Sites Identified within 1 Mile of the Proposed Project 5.9-2
Table 5.10-1 Beneficial Uses for Surface Waters in the Vicinity of the Proposed Project 5.10-7

Table 5.10-2 Water Quality-Impaired Surface Waters in the Vicinity of the Proposed Project 5.10-8
Table 5.11-1 Definitions of Land Use Designations Crossed By the Proposed Project 5.11-2
Table 5.11-2 Definitions of Zoning Designations Crossed By the Proposed Project 5.11-4
Table 5.11-3 General Plan Land Use Designations Approximate Distance Crossed by the Proposed Project 5.11-11
Table 5.11-4 Zoning Designations Approximate Distance Crossed by the Proposed Project 5.11-11
Table 5.11-5 Federal Land Use Designations Approximate Distance Crossed by the Proposed Project 5.11-11
Table 5.11-6 Relevant Land Use Plans and Policies Consistency Analysis Table 5.11-28
Table 5.12-1 Mining Claims within 0.5 Mile of the Proposed Project 5.12-5
Table 5.12-2 Mineral Resources Sites within 0.5 Mile of the Proposed Project 5.12-6
Table 5.13-1 Short-Term Noise Monitoring Results 5.13-5
Table 5.13-2 Long-Term Noise Monitoring Results (LT1) 5.13-6
Table 5-13-3 Long-Term Noise Monitoring Results (LT2) 5.13-7
Table 5.13-4 Long-Term Noise Monitoring Results (LT3) 5.13-8
Table 5.13-5 Long-Term Noise Monitoring Results (LT4) 5.13-9
Table 5.13-6 FTA Criteria for Vibration Damage Potential 5.13-13
Table 5.13-7 ISEE Criteria for Blasting Air Overpressure Damage 5.13-14
Table 5.13-8 ISEE Criteria for Blasting Vibration Damage 5.13-14
Table 5.13-9 Imperial County Code Noise Limits 5.13-16
Table 5.13-10 City of Calexico Noise Level Limits 5.13-17
Table 5.13-11 City of Calexico Noise Limit Corrections 5.13-18
Table 5.13-12 Typical Construction Equipment Noise Levels 5.13-19
Table 5.13-13 Summary of Construction Activity Noise Contours by Phase 5.13-20
Table 5.13-14 Typical Vibration Levels Produced by Various Construction Equipment 5.13-26
Table 5.13-15 Construction Vibration Levels at Nearest Sensitive Receptor (Project Components in California) 5.13-26
Table 5.13-16 Construction Vibration Levels at Nearest Sensitive Receptor (Project Components in Arizona) 5.13-28
Table 5.13-17 Construction Noise Levels at Nearest Sensitive Receptors by Phase 5.13-31
Table 5.14-1 Historical and Projected Population Data in the Proposed Project Area 5.14-5
Table 5.14-2 Housing Data in the Proposed Project Area 5.14-6
Table 5.16-1 Parks and Recreational Facilities Within 0.5 Mile of the Proposed Project 5.16-1
Table 5.17-1 Existing Roadways 5.17-1
Table 5.17-2 Daily Vehicle Miles Traveled for Jurisdictions in Proposed Project Area 5.17-13
Table 5.17-3 Construction VMT 5.17-30
Table 5.17-4 Operational VMT 5.17-30

Table 5.17-5 Construction and Operational VMT Compared to Existing VMT in the Proposed Project Area 5.17-30
Table 5.19-1 IID Monthly Water Supplies (AFY), 2019 ..... 5.19-16
Table 5.19-2 IID Monthly Water Distribution (AFY), 2019 ..... 5.19-17
Table 5.19-3 City of Yuma – Water Supply Budget (2019) 5.19-19
Table 5.19-4 Landfill Capacities 5.19-20
Table 5.19-5 Estimated Water Needs During Construction 5.19-32
Table 5.20-1 Miles of Proposed Project Alignment within High Fire Risk Areas and Responsibility Areas 5.20-2
Table 5.20-2 Historical Fires Within 3 Miles of Proposed Project Alignment 5.20-7
Table 5.20-3 USDA Fire Effects Information System Vegetation Types on Proposed Project Alignment 5.20-13
Table 5.20-4 Values at Risk Along the Proposed Project Alignment 5.20-16
Table 6-1 Summary of the Proposed Project's Environmental Impacts 6-1
Table 6-2 Comparison of Alternative 1A to the Proposed Project 6-10
Table 6-3 Comparison of Alternative 1C to the Proposed Project 6-11
Table 6-4 Comparison of Alternative 1D to the Proposed Project 6-12
Table 6-5 Comparison of Alternative 1-Alt to the Proposed Project 6-13
Table 6-6 Comparison of Alternative 2A to the Proposed Project 6-14
Table 6-7 Comparison of Alternative 3 to the Proposed Project 6-15
Table 6-8 Comparison of Alternative 3A to the Proposed Project 6-16
Table 6-9 Comparison of Alternative 3B to the Proposed Project 6-17
Table 6-10 Comparison of Alternative 3D to the Proposed Project 6-18
Table 6-11 Alternatives Impact Comparison for Environmental Impacts that would be Significant and Unavoidable 6-22
Table 6-12 Alternatives Impact Comparison for Each Environmental Topic 6-23
Table 7-1 Cumulative Projects within Two Miles of Proposed Project 7-3
Table 7-2 Summary of Cumulative Impacts and APMs for the Proposed Project 7-20

Figures

Figure 1-1 Proposed Project Location 1-2
Figure 2-1 CAISO Depiction of East of Miguel Constraint 2-4
Figure 3-1 Proposed Project Overview Map 3-2
Figure 3-2 Existing and Proposed System Configuration 3-4
Figure 3-3 Typical Transmission Line and ROW 3-8
Figure 3-4a Typical Transmission Structures 3-9
Figure 3-4b Typical Transmission Structures 3-10
Figure 3-5 Typical Pull-and-Tension/Stringing Site Set-Up 3-41
Figure 3-6 Blasting Plan Structures Overview 3-44

Figure 3-7 Typical Cattle Gate, Fencing, and Groundings 3-48
Figure 3-8 Proposed Schedule 3-62
Figure 3-9 Construction Sequencing 3-63
Figure 4-1a Proposed Project Segment Alternatives 4-5
Figure 4-1b Proposed Project Segment Alternatives 4-6
Figure 4-1c Proposed Project Segment Alternatives 4-7
Figure 5.1-1 Aesthetic Resources and Viewpoints 5.1-6
Figure 5.1-2 Aesthetic Resources and Viewpoints 5.1-7
Figure 5.1-3 Aesthetic Resources and Viewpoints 5.1-8
Figure 5.1-4 Landscape Character Units 5.1-15
Figure 5.1-5 Landscape Character Units 5.1-16
Figure 5.1-6 Landscape Character Units 5.1-17
Figure 5.1-7 KOP 1 - S29-Fisher Road 5.1-21
Figure 5.1-8 KOP 2 - W Wahl East 5.1-21
Figure 5.1-9 KOP 3 - El Centro: W McCabe Road 5.1-22
Figure 5.1-10 KOP 4 - Heber: W Black Hills-Wild Horse Drive 5.1-22
Figure 5.1-11 KOP 5 - Heber: E Fawcett Drive and Heber Ave 5.1-23
Figure 5.1-12 KOP 6 - Calexico: Meadows Rd-Paseo Del Ocaso 5.1-23
Figure 5.1-13 KOP 7 - Heber Dunes SVRA 5.1-24
Figure 5.1-14 KOP 8 - SH 98 ..... 5.1-24
Figure 5.1-15 KOP 9 - Dunebuggy Flats 5.1-25
Figure 5.1-16 KOP 10 - Buttercup Campground 5.1-25
Figure 5.1-17 KOP 11 - Interstate 8 ..... 5.1-26
Figure 5.1-18 KOP 12 - Barney Oldfield Rd 5.1-26
Figure 5.1-19 KOP 13 - VRM CLASS II 5.1-27
Figure 5.1-20 KOP 14 - 11th St 5.1-27
Figure 5.1-21 KOP 15 - Betty's Kitchen Watchable Wildlife Area 5.1-28
Figure 5.1-22 KOP 16 - Mittry Lake Recreational Area 5.1-28
Figure 5.1-23 KOP 17 - County Highway S24 (Imperial Dam Road) 5.1-29
Figure 5.1-24 KOP 18 - 7 1/2 Road 5.1-29
Figure 5.1-25 KOP 19 - Yuma Lakes RV Resort 5.1-30
Figure 5.1-26 BLM VRM Classes in Project Study Area 5.1-32
Figure 5.1-27 BLM VRM Classes in Project Study Area 5.1-33
Figure 5.1-28 BLM VRM Classes in Project Study Area 5.1-34
Figure 5.1-29 Simulation Photo Location Map 5.1-64
Figure 5.1-30 KOP 6 - Simulated View with Proposed Project 5.1-65
Figure 5.1-31 KOP 7 - Simulated View with Proposed Project 5.1-66
Figure 5.1-32 KOP 10 - Simulated View with Proposed Project 5.1-67

Figure 5.1-33 KOP 11 - Simulated View with Proposed Project 5.1-68
Figure 5.1-34 KOP 15 - Simulated View with Proposed Project 5.1-69
Figure 5.1-35 KOP 16 - Simulated View with Proposed Project-Post Construction 5.1-70
Figure 5.1-36 KOP 16 - Simulated View with Proposed Project-Post Revegetation 5.1-71
Figure 5.1-37 KOP 18 - Simulated View with Proposed Project 5.1-72
Figure 5.1-38 KOP 19 - Simulated View with Proposed Project 5.1-73
Figure 5.1-39 Project Viewshed-High Sensitivity 5.1-74
Figure 5.1-40 Project Viewshed-High Sensitivity 5.1-75
Figure 5.1-41 Project Viewshed-High Sensitivity 5.1-76
Figure 5.1-42 Project Viewshed-Moderate Sensitivity 5.1-77
Figure 5.1-43 Project Viewshed-Moderate Sensitivity 5.1-78
Figure 5.1-44 Project Viewshed-Moderate Sensitivity 5.1-79
Figure 5.1-45 Project Viewshed-KOPs 5.1-80
Figure 5.1-46 Project Viewshed-KOPs 5.1-81
Figure 5.1-47 Project Viewshed-KOPs 5.1-82
Figure 5.1-48 Final Visual Impacts 5.1-83
Figure 5.1-49 Final Visual Impacts 5.1-84
Figure 5.1-50 Final Visual Impacts 5.1-85
Figure 5.2-1a Farmland within 0.5 Mile of the Proposed Project 5.2-3
Figure 5.2-1b Farmland within 0.5 Mile of the Proposed Project 5.2-4
Figure 5.2-1c Farmland within 0.5 Mile of the Proposed Project 5.2-5
Figure 5.2-2a Agricultural Use Zoning within 0.5 Mile of the Proposed Project 5.2-7
Figure 5.2-2b Agricultural Use Zoning within 0.5 Mile of the Proposed Project 5.2-8
Figure 5.2-2c Agricultural Use Zoning within 0.5 Mile of the Proposed Project 5.2-9
Figure 5.2-3a Active Agriculture within 0.5 Mile of the Proposed Project 5.2-11
Figure 5.2-3b Active Agricultural within 0.5 Mile of the Proposed Project 5.2-12
Figure 5.2-3c Active Agricultural within 0.5 Mile of the Proposed Project 5.2-13
Figure 5.2-4a NLCD Vegetation Types within 0.5 Mile of the Proposed Project 5.2-14
Figure 5.2-4b NLCD Vegetation Types within 0.5 Mile of the Proposed Project 5.2-15
Figure 5.2-4c NLCD Vegetation Types within 0.5 Mile of the Proposed Project 5.2-16
Figure 5.3-1 Sensitive Receptors within 1,000 Feet of the Proposed Project 5.3-7
Figure 5.4-1 Biological Study Area – Segment 3 ..... 5.4-3
Figure 5.4-2 Biological Study Area – Segment 2 ..... 5.4-4
Figure 5.4-3 Biological Study Area – Segment 1 ..... 5.4-5
Figure 5.4-4 Wildlife Corridors in the Project Study Area 5.4-41
Figure 5.7-1 Faults Located in the Proposed Project Area 5.7-5
Figure 5.7-2a Landslide Susceptibility in the Vicinity of the Proposed Project Alignment 5.7-7
Figure 5.7-2b Landslide Susceptibility in the Proposed Project Alignment 5.7-8

Figure 5.7-2c Landslide Susceptibility in the Proposed Project Alignment 5.7-9
Figure 5.7-3a Geologic Units within 1 Mile of the Proposed Project Alignment 5.7-12
Figure 5.7-3b Geologic Units within 1 Mile of the Proposed Project Alignment 5.7-13
Figure 5.7-3c Geologic Units within 1 Mile of the Proposed Project Alignment 5.7-14
Figure 5.7-4a Soil Types within 1 Mile of Proposed Project Alignment 5.7-20
Figure 5.7-4b Soil Types within 1 Mile of Proposed Project Alignment 5.7-21
Figure 5.7-4c Soil Types within 1 Mile of Proposed Project Alignment 5.7-22
Figure 5.9-1 Known Release Sites within 1 Mile of the Proposed Project 5.9-3
Figure 5.9-2 Approximate Location of Hazardous Material Pipelines and Railroads in the Proposed Project Area 5.9-7
Figure 5.9-3 Landfills within 2,000 feet of the Proposed Project 5.9-8
Figure 5.9-4 Airports within 2 Miles of the Proposed Project 5.9-10
Figure 5.10-1a Surface Water Along the Proposed Project Alignment 5.10-3
Figure 5.10-1b Surface Water in the Vicinity of the Proposed Project 5.10-4
Figure 5.10-1c Surface Water in Vicinity of the Proposed Project 5.10-5
Figure 5.10-2 Sole Source Aquifers in the Vicinity of the Proposed Project 5.10-9
Figure 5.10-3 Groundwater Basins in the Vicinity of the Proposed Project 5.10-10
Figure 5.10-4a Groundwater Wells in the Vicinity of the Proposed Project 5.10-12
Figure 5.10-4b Groundwater Wells in the Vicinity of the Proposed Project 5.10-13
Figure 5.10-4c Groundwater Wells in the Vicinity of the Proposed Project 5.10-14
Figure 5.10-5a Flood Hazard Zones in the Vicinity of the Proposed Project 5.10-17
Figure 5.10-5b Flood Hazard Zones in the Vicinity of the Proposed Project 5.10-18
Figure 5.10-5c Flood Hazard Zones in the Vicinity of the Proposed Project 5.10-19
Figure 5.11-1a General Plan Land Use Designations within 0.5 Mile of the Proposed Project 5.11-5
Figure 5.11-1b General Plan Land Use Designations within 0.5 Mile of the Proposed Project 5.11-6
Figure 5.11-1c General Plan Land Use Designations within 0.5 Mile of the Proposed Project 5.11-7
Figure 5.11-2a Zoning Designations within 0.5 Mile of the Proposed Project 5.11-8
Figure 5.11-2b Zoning Designations within 0.5 Mile of the Proposed Project 5.11-9
Figure 5.11-2c Zoning Designations within 0.5 Mile of the Proposed Project 5.11-10
Figure 5.11-3 Utility Corridors and Existing 500 kV Transmission Line in the Vicinity of the Proposed Project 5.11-13
Figure 5.11-4a Land Ownership within 0.5 Mile of the Proposed Project 5.11-14
Figure 5.11-4b Land Ownership within 0.5 Mile of the Proposed Project 5.11-15
Figure 5.11-4c Land Ownership within 0.5 Mile of the Proposed Project 5.11-16
Figure 5.12-1a Mineral Resource Producers, Past Producers, and Prospects within 0.5 Mile of the Proposed Project 5.12-2

Figure 5.12-1b Mineral Resource Producers, Past Producers, and Prospects within 0.5 Mile of the Proposed Project 5.12-3
Figure 5.12-1c Mineral Resource Producers, Past Producers, and Prospects within 0.5 Mile of the Proposed Project 5.12-4
Figure 5.13-1 Noise-Sensitive Receptors Located Within 1,000 Feet of the Proposed Project 5.13-2
Figure 5.13-2 Approximate Noise Monitoring Locations (ST4, ST5, LT3, and LT4) 5.13-10
Figure 5.13-3 Approximate Noise Monitoring Locations (ST3, LT2, and LT3) 5.13-11
Figure 5.13-4 Approximate Noise Monitoring Locations (ST1, ST2, and LT1) 5.13-12
Figure 5.14-1a Cities Near the Proposed Project 5.14-2
Figure 5.14-1b Cities Near the Proposed Project 5.14-3
Figure 5.14-1c Cities Near the Proposed Project 5.14-4
Figure 5.15-1a Public Services Near the Proposed Project 5.15-2
Figure 5.15-1b Public Services Near the Proposed Project 5.15-3
Figure 5.15-1c Public Services Near the Proposed Project 5.15-4
Figure 5.16-1a Parks and Recreational Facilities in the Vicinity of the Proposed Project 5.16-2
Figure 5.16-1b Parks and Recreational Facilities in the Vicinity of the Proposed Project 5.16-3
Figure 5.16-1c Parks and Recreational Facilities in the Vicinity of the Proposed Project 5.16-4
Figure 5.17-1a Roadways Adjacent to or Crossed by the Proposed Project 5.17-4
Figure 5.17-1b Roadways Adjacent to or Crossed by the Proposed Project 5.17-5
Figure 5.17-1c Roadways Adjacent to or Crossed by the Proposed Project 5.17-6
Figure 5.17-2a Bicycle Facilities in the Proposed Project Area 5.17-7
Figure 5.17-2b Bicycle Facilities in the Proposed Project Area 5.17-8
Figure 5.17-2c Bicycle Facilities in the Proposed Project Area 5.17-9
Figure 5.17-3a Transit Routes and Transit Stops in the Proposed Project Area 5.17-10
Figure 5.17-3b Transit Routes and Transit Stops in the Proposed Project Area 5.17-11
Figure 5.17-3c Transit Routes and Transit Stops in the Proposed Project Area 5.17-12
Figure 5.19-1 Power Service and Facilities in the Proposed Project Area 5.19-2
Figure 5.19-2 Water Supply Providers in the Proposed Project Area 5.19-5
Figure 5.19-3 Natural Gas Pipelines in the Proposed Project Area 5.19-10
Figure 5.19-4 Wastewater Treatment Facilities in the Proposed Project Area 5.19-13
Figure 5.20-1a High Fire Risk Areas in the Wildfire Study Area (Western Extent) 5.20-3
Figure 5.20-1b High Fire Risk Areas in the Wildfire Study Area (Eastern Extent) 5.20-4
Figure 5.20-2a Wildland Urban Interface in the Wildfire Study Area (Western Extent) 5.20-5
Figure 5.20-2b Wildland Urban Interface in the Wildfire Study Area (Eastern Extent) 5.20-6
Figure 5.20-3a Historical Fire Perimeters in the Wildfire Study Area (Western Extent) 5.20-8
Figure 5.20-3b Historical Fire Perimeters in the Wildfire Study Area (Eastern Extent) 5.20-9
Figure 5.20-4a Scott and Burgan Fire Behavior Fuel Modeling (Western Extent) 5.20-11

Figure 5.20-4b Scott and Burgan Fire Behavior Fuel Modeling (Eastern Extent) 5.20-12
Figure 5.20-5a USDA FEIS Vegetation Types (Eastern Extent) 5.20-14
Figure 5.20-5b USDA FEIS Vegetation Types (Western Extent) 5.20-15
Figure 7-1 Cumulative Projects 7-5

Appendices

Appendix A Detailed Maps and Design Drawings
Appendix B Emissions Calculations
Appendix C Biological Resources
Appendix D Cultural Resources Study
Appendix E Native American Heritage Commission Sacred Lands File Search Contact List
Appendix F Environmental Data Resources Report
Appendix G Public Outreach Materials
Appendix H Wildfire Mitigation Plans
Appendix I Supporting Noise Information
Appendix J Visual Resources Technical Report
Appendix K Routing Study
Appendix L Weather Data
Appendix M Blasting Plan

This page intentionally left blank.

List of Acronyms and Abbreviations

Abbreviation	Term/Phrase/Name
µg/m³	Micrograms per cubic meter
3D	Three-dimensional
AAC	Arizona Administrative Code
AADT	Annual Average Daily Traffic Volume
AAM	Annual Arithmetic Mean
AB	Assembly Bill
ACC	Arizona Corporation Commission
ACEC	Areas of Critical Environmental Concern
ACM	asbestos-containing material
ADEQ	Arizona Department of Environmental Quality
ADL	aerially deposited lead
ADOSH	Arizona Division of Occupational Safety and Health
ADOT	Arizona Department of Transportation
ADWR	Arizona Department of Water Resources
AFY	Acre-feet per year
AGR	Agricultural Supply
AHWT	American Society of Civil Engineers
ALUCP	Airport Land Use Compatibility Plan
ANSI	American National Standards Institute
APCD	Air Pollution Control District
APLIC	Avian Power Line Interaction Committee
APM	Applicant Proposed Measure
APNP	Arizona Protected Native Plant
APS	Arizona Power Service Company
APS	Arizona Power Service Company
AQUA	Aquaculture
ASTLD	Arizona State Trust Land Department
AZ	Arizona

Abbreviation	Term/Phrase/Name
AZGS	Arizona Geological Survey
AZOGCC	Arizona Oil and Gas Conservation Commission
AZPDES	Arizona Pollutant Discharge Elimination System
Basin Plan	Water Quality Control Plan
BCC	Birds of Conservation Concern
BCPA	Boulder Canyon Project Act
BIA	United States Bureau of Indian Affairs
BLM	U.S. Bureau of Land Management
BLM S	Bureau of Land Management Sensitive Species
BMP	Best Management Practices
BRTR	Biological Resources Technical Report
C2H3Cl	Vinyl chloride
CA	California
CAA	Clean Air Act
CAAQS	California Air Quality Standards
CAISO	California Independent System Operator
CAL FIRE	California Department of Forestry and Fire Protection
Cal OES	California Governor's Office of Emergency Services
Cal/EMA	California Emergency Management Agency
Cal/EPA	California Environmental Protection Agency
Cal/OSHA	California Division of Occupational Safety and Health
CalEEMod	California Emissions Estimator Model
CalGEM	Geologic Energy Management Division
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CASQA	California Stormwater Quality Association
CBC	California Building Code
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDCA	California Desert Conservation Area

Abbreviation	Term/Phrase/Name
CDFW	California Department of Fish and Wildlife
CDOGGR	California Department of Conservation, Office of Geologic and Geothermal Resources
CEC	Certificate of Environmental Compatibility
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CGC	California Government Code
CGS	California Geologic Survey
CH_4	Methane
CHMIRS	California Hazardous Material Incident Reporting System
CMA	Conservation and Management Actions
CMC	City of Calexico Municipal Code
CMP	Coordinated Management Plan
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	Carbon Monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
COA	Conservation Opportunity Area
COLD	Cold Freshwater Habitat
CPCN	Certificate of Public Convenience and Necessity
CPUC	California Public Utilities Commission
CRPR	California Rare Plant Rank
CSA	County Service Area
CSLC	California State Lands Commission
CTC	California Transportation Commission
CTR	California Toxics Rule

Abbreviation	Term/Phrase/Name
CWA	Clean Water Act
CWC	California Water Commission
D.	CPUC issued Decision
dB	Decibel
dBA	A-weighted decibel
DDD	Dichlorodiphenyldichloroethane
DDE	Dichlorodiphenyldichloroethylene
DDT	Dichlorodiphenyltrichloroethane
DEMA	Arizona Department of Emergency Management and Military Affairs
DFA	Development Focus Area
DOC	California Department of Conservation
DoD	United States Department of Defense
DOI	Department of the Interior
DOT	Department of Transportation
DPM	Diesel particulate matter
DPR	California Department of Parks and Recreation
DPW	Department of Public Works
DRECP	Desert Renewable Energy Conservation Plan
DTSC	Department of Toxic Substances Control
DWR	California Department of Water Resources
E. coli	Escherichia coli
EAP	Energy Action Plan
EDP	Equitable Distribution Plan
EDR	Environmental Data Resources
EIR	Environmental Impact Report
EM	Arizona Division of Emergency Management
EPNG	El Paso Natural Gas Company
EPRI	Electric Power Research Institute
ESA	Federal Endangered Species Act
FAA	Federal Air Administration
FE	Federally Endangered

Abbreviation	Term/Phrase/Name
FEMA	Federal Emergency Management Agency
FHSZ	fire hazard severity zone
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FLPMA	Federal Land Policy and Management Act
FMMP	Farmland Mapping and Monitoring Program
FP	Fully Protected
FR	Federal Register
FRA	Federal Responsibility Area
FRSH	Freshwater Replenishment
FT	Federally Threatened
FTA	Federal Transit Administration
G.O.	General Order
g/cm3	grams per cubic centimeter
Gateway	Gateway of Americas
GHG	Greenhouse gases
GIS	Geographic Information System
GO	General Order
GPL	General Public Lands
GSA	Groundwater Sustainability Agencies
GSP	Groundwater Sustainability Plan
GWP	Global warming potential
GWR	Groundwater recharge
H2S	Hydrogen sulfide
HCB	Hexachlorobenzene
HCP	Habitat Conservation Plan
HFTD	High Fire Threat District
HHW	Household Hazardous Waste
HMP	Hazard Mitigation Plan
HMRR	Hazard Management and Resource Restoration
hp	Horsepower

Abbreviation	Term/Phrase/Name
HRP	Habitat Restoration Plan
HSC	Health and Safety Code
HUC	Hydrologic Unit Code
HWT	Horizon West Transmission
Hz	Hertz
I	intermittent uses
I-	Interstate
I-8	Interstate 8
IBC	International Building Code
ICAPCD	Imperial County Air Pollution Control District
ICMC	Imperial County Municipal Code
IID	Imperial Irrigation District
in/sec	Inches per second
IND	Industrial Service Supply
IPaC	Information for Planning and Consultation
IPCC	Intergovernmental Panel on Climate Change
IPMP	Invasive Plant Management Plan
IRWMP	Integrated Regional Water Management Plan
ISD	Imperial Sand Dunes
ITP	Incidental Take Permit
K-Factor	Soil-Erodibility Factor
KGRA	Known Geothermal Resource Areas
km	Kilometer
KNM	Kw'tsan National Monument
KOP	Key Observation Point
kV	Kilovolt
kWh	Kilowatt-hours
LBP	lead based paint
LCI	Governor's Office of Land Use and Climate Innovation
LCU	Landscape Character Unit
Ldn	Day-Night Average Sound Level

Abbreviation	Term/Phrase/Name
LEA	Local Enforcement Agency
Leq	Equivalent continuous sound level
LLC	Limited Liability Corporation
Lmax	Highest time-weighted sound level measured
Lmin	Lowest time-weighted sound level measured
LMP	land management plan
Ln	Sound level exceeded for “n” percent of the measurement period
LRA	Local Responsibility Area
LT	Long-term noise measurement location
LTS	Less than Significant
LTSWM	Less than Significant with Mitigation
LTVA	Long Term Visitor Area
LUPA	Land Use Plan Amendment
MBTA	Migratory Bird Treaty Act
MDAQMD	Mojave Desert Air Quality Management District
mg/L	Milligrams per liter
mg/m^3	Milligrams per cubic meter
mm	millimeter
mm/yr	millimeters per year
MOA	Military operations area
MRDS	Mineral Resource Data System
MRZ	Mineral Resource Zone
MS4	Municipal Separate Storm Sewer System
MT	Metric tons
n.d.	No date
N/A	Not Applicable
N_2O	Nitrous oxides
NAAQS	National Ambient Air Quality Standards
NCCP	Natural Community Conservation Plan
NCCPA	California Natural Community Conservation Planning Act
NECO CMP	Northern and Eastern Colorado Desert Coordinated Management Plan

Abbreviation	Term/Phrase/Name
NECPA	National Energy Conservation Policy Act
NEHRP	National Earthquake Hazards Reduction Program
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutant
NFIP	National Flood Insurance Program
NHD	National Hydrography Dataset
NI	No Impact
NIST	National Institute of Standards and Technology
NLCD	National Land Cover Database
NMFS	National Marine Fisheries Service
NOx	Nitrogen Oxides
NPDES	National Pollutant Discharge Elimination System
NPMS	National Pipeline Mapping System
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
NSF	National Science Foundation
NWI	National Wetlands Inventory
NWL	Natural and working lands
NWPS	National Wilderness Preservation System
O&M	Operation and Maintenance
O_3	Ozone
OEHHA	Office of Environmental Health Hazard Assessment
OHS	Office of Homeland Security
OHV	Off-highway vehicle
OHWM	Ordinary High-Water Mark
OPR	Office of Planning and Research
OS/RR	Open Space, Recreation, and Resources
OSHA	Occupational Safety and Health Administration
P	potential uses
Pb	Lead
PCAP	Priority Climate Action Plan

Abbreviation	Term/Phrase/Name
PCB	Polychlorinated biphenyls
PEA	Proponent's Environmental Assessment
PFYC	Potential Fossil Yield Classification
PIM	Permanent Instruction Memorandum
PM10	Particulate Matter ≤ 10 microns
PM2.5	Particulate Matter ≤ 2.5 microns
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
POW	Hydropower Generation
PPM	Parts per million
PPV	Peak particle velocity
PRC	Public Resources Code
Proposed Project	Ironwood Transmission Line Project
PRPA	Paleontological Resources Preservation Act
PSWL	Protected Surface Waters List
R.	CPUC initiated Rulemaking
RA	Rural Area
RAMP	Resource Area Management Plan
RARE	Preservation of Rare, Threatened of Endangered Species
RCRA	Resource Conservation and Recovery Act
REC I	Water Contact Recreation
REC II	Non-Contact Water Recreation
RMP	Resource Management Plan
ROD	Record of Decision
ROG	Reactive Organic Compounds
ROW	Right-of-Way
RQVs	resources, qualities, values, settings, and primary use or uses
RUSLE	Revised Universal Soil Loss Equation
RWQCB	Regional Water Quality Control Board
SAA	Streambed Alteration Agreement
SARA	Superfund Amendments and Reauthorization Act
SB	Senate Bill

Abbreviation	Term/Phrase/Name
SCE	Southern California Edison
SCE	State Candidate Endangered
SCH	State Clearinghouse
SDC	Seismic Design Category
SDWA	Safe Drinking Water Act
SE	State Endangered
SED	Safety and Enforcement Division
SEI	Structural Engineering Institute
SF_6	Sulfur hexafluoride
SGCN	Species of Greatest Conservation Need
SGMA	Sustainable Groundwater Management Act
SH	State Highway
SHMP	State Hazard Mitigation Plan
SI	Significant Impacts
SMARA	Surface Mining and Reclamation Act
SMGB	State Mining and Geology Board
SO_2	Sulfur dioxide
SoCalGas	Southern California Gas Company
SPCC	Spill Prevention Control and Countermeasures
SR	State Route
SRA	State Responsibility Area
SRMA	Special Recreation Management Areas
SSAB	Salton Sea Air Basin
SSC	Species of Special Concern
ST	State Threatened
ST	Short-term noise measurement location
SVP	Society of Vertebrate Paleontology
SVRA	State Vehicular Recreation Area
SWMP	Stormwater Management Program
SWPL	Southwest Powerlink
SWPP	Surface Water Protection Program

Abbreviation	Term/Phrase/Name
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
SYCL	South Yuma County Landfill
T/Ac/Yr	Tons per acre per year
TAC	Toxic air contaminant
TDS	Total Dissolved Solids
TIP	Transportation Improvement Program
TMDL	Total Maximum Daily Load
TPZ	Timberland Production Zone
U.S.	United States
UBC	Uniform Building Code
Unified Program	Unified Hazardous Waste and Hazardous Materials Management Regulatory Program
USACE	U.S. Army Corps of Engineers
USBR	U.S. Bureau of Reclamation
USC	United States Code
USDA	U.S. Department of Agriculture
USDOT	U.S. Department of Transportation
USEIA	U.S. Energy Information Administration
USEPA	U.S. Environmental Protection Agency
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UWMP	Urban Water Management Plans
UXO	Unexploded Ordnance
VMT	Vehicle Miles Traveled
VRP	Visibility reducing particles
VRTR	Visual Resources Technical Report
WAPA	Western Area Power Administration
WARM	Warm Freshwater Habitat
WBD	Watershed Boundary Dataset

Abbreviation	Term/Phrase/Name
WBWG	Western Bat Working Group
WDR	waste discharge requirement
WEAP	Worker's Environmental Awareness Training Program
WHMBP	Hazardous Materials Management Plan
WILD	Wildlife Habitat
Wilderness Act	Wilderness Act of 1964
Williamson Act	California Land Conservation Act of 1965
WL	Watch List
WMP	Wildfire Mitigation Plan
WOTUS	Waters of the United States
WPCF	Water Pollution Control Facility
WSCP	Water Shortage Contingency Plans
WWTP	Wastewater Treatment Plant
YCWUA	Yuma County Water Users Association
YCZO	Yuma County Zoning Ordinance
YMPO	Yuma Metropolitan Planning Organization
YRMP	Yuma Resource Management Plan
ZEV	Zero-Emission Vehicle

1 Executive Summary

This Chapter provides an Executive Summary for Horizon West Transmission, LLC's (HWT) (U 222-E) proposed Ironwood Transmission Line Project (Proposed Project) Proponent's Environmental Assessment (PEA).

The PEA has been prepared to satisfy the California Public Utilities Commission's (CPUC) PEA Guidelines. The PEA analyzed both the Proposed Project alignment and all proposed route alternatives considered by HWT. The analysis presented in Chapter 5 includes the environmental section, regulatory setting, impact questions, impact analyses, and Applicant Proposed Measures (APM).

1.1 Proposed Project Summary

The Proposed Project is an approximately 86-mile-long 500 kilovolt (kV) transmission line from Arizona Public Service Company's (APS) North Gila Substation to San Diego Gas & Electric Company's (SDG&E) Imperial Valley Substation. The Proposed Project is shown on Figure 1-1.

The Proposed Project is intended to mitigate resource deliverability constraints as identified in the California Independent System Operator's (CAISO) 2022-2023 Transmission Plan. The Proposed Project is planned to be operational by 2030 and would include a new 500 kV transmission line, including:

- A combination of approximately 307 single-circuit guyed and self-supporting steel tubular and lattice 500 kV structures
- Approximately 86 linear miles of conductor
- Approximately 86 miles of overhead ground wire (OHGW)

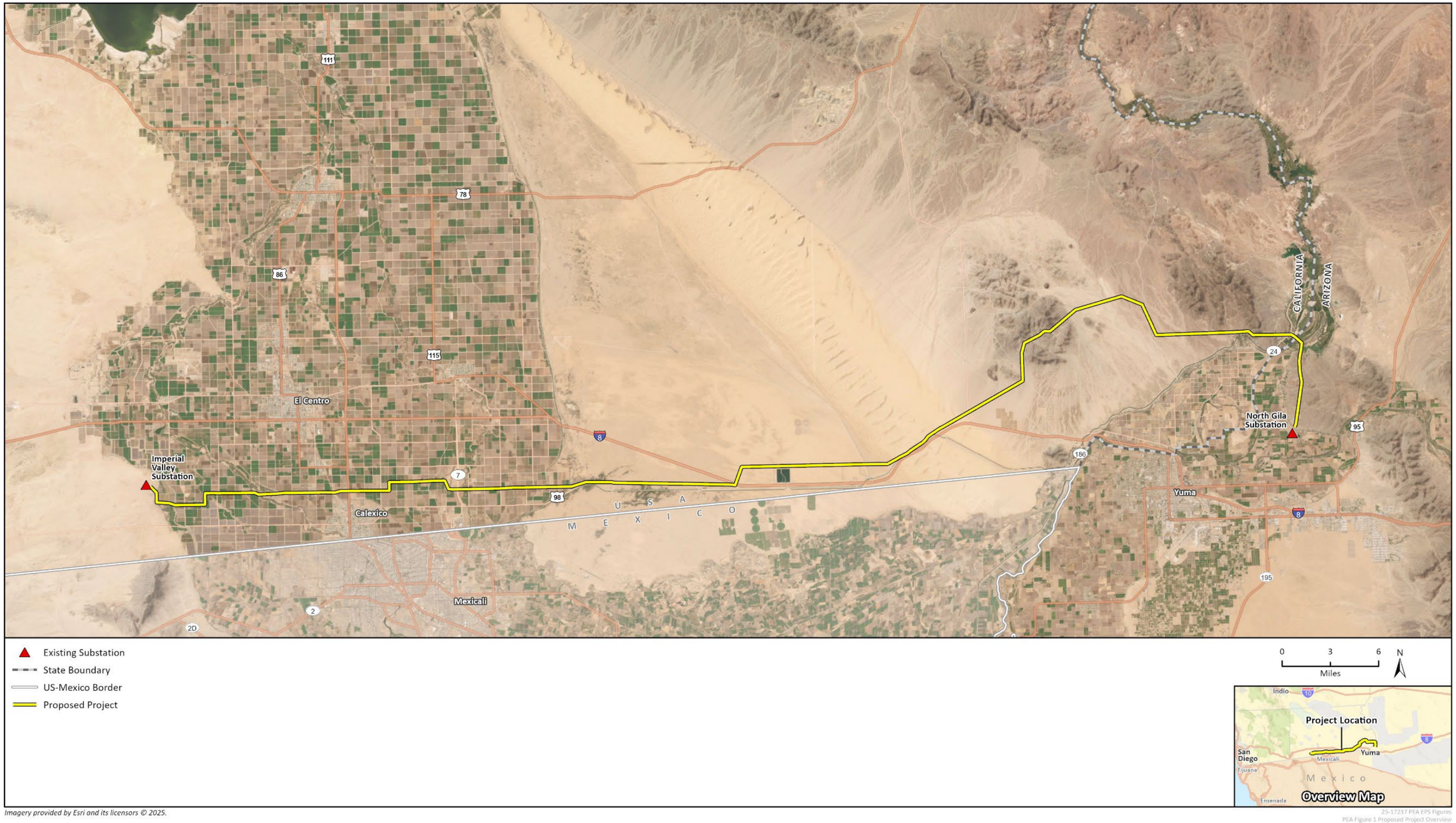
The Proposed Project does not include system changes or upgrades within the existing North Gila Substation, which is owned by APS, nor within the existing Imperial Valley Substation, which is owned by SDG&E.

1.1.1 Purpose and Objectives

The Proposed Project is needed to mitigate resource deliverability constraints as identified in the CAISO 2022-2023 Transmission Plan (CAISO 2023). The project was included as part of a portfolio of projects that the CAISO identified could meet the major identified constraints across the Southern California Edison Company (SCE) Metro, SCE Eastern, and SDG&E areas.

Following a comprehensive and detailed routing analysis that was informed by and incorporated potential environmental, stakeholder, and engineering concerns as well as the functional specifications required by the CAISO, the Proposed Project was selected because it best meets all the following project objectives while minimizing, to the greatest extent practicable, potential impacts to environmental resources and potentially affected communities. The Proposed project objectives include:

Figure 1-1 Proposed Project Location



Imagery provided by Esri and its licensors © 2025.

25-17237 PEA EPS Figures
PEA Figure 1 Proposed Project Overview

- Meet the CAISO's policy-driven need for the project to support mitigation of the East of Miguel deliverability constraint, which the CAISO found presently results in zero deliverability for resources in the CPUC's base portfolio (3,080 megawatt) and sensitivity portfolio (10,398 megawatt) (CAISO 2022-2023 Transmission Plan) by connecting the existing North Gila and Imperial Valley substations with a new 500 kV circuit.
- As part of the Southern Area Reinforcement, support the cost-effective, common upgrade mitigation of identified transmission constraints on the Devers-Red Bluff 500 kV, East of Miguel, Bay Boulevard-Silvergate, Encina-San Luis Rey, Sycamore area, San Luis Rey-San Onofre, and Silvergate-Old Town lines by connecting the existing North Gila and Imperial Valley substations with a new 500 kV circuit.
- Meet the CAISO's functional specifications for the project as set forth in Appendix I of the 2022-2023 Transmission Plan.
- Achieve commercial operation by December 2030 in order to provide critical deliverability access to generation resources in California, Arizona, and New Mexico.
- Design, construct, and operate the project to minimize potential wildfire and other hazards, with public safety and well-being as a top priority, consistent with HWT's approved Wildfire Mitigation Plan.
- Meet the project's need in a safe, cost-effective manner consistent with HWT's Approved Project Sponsor Agreement to minimize cost impacts to customers.
- Minimize disturbance to local communities by siting the project adjacent to existing utilities, avoiding residential areas as much as possible.
- Avoid, minimize, or mitigate potential impacts to sensitive environmental resources and areas.
- Design, construct, and operate the project in conformance with HWT's standards, the National Electric Safety Code, and other applicable federal and state codes and regulations.

1.1.2 Summary of Activities

The Proposed Project involves construction and operation of a new approximately 86-mile overhead 500 kV single-circuit transmission line to connect the APS North Gila Substation to the SDG&E Imperial Valley Substation. This Project would achieve the project objectives defined above, provide reliability, meet the states' energy policies, and reduce costs to consumers. The Proposed Project is planned to be operational by 2030.

The Proposed Project would include both a construction and operation phase. Project construction would occur in a single continuous construction phase lasting approximately 19 months.

1.2 Land Ownership and Right-of-Way Requirements

The Proposed Project is located in western Yuma County, Arizona and Imperial County, California, crossing predominantly unincorporated lands as well as federal, state, municipal, and private land. These lands include unincorporated areas of Imperial and Yuma counties, the city of Calexico, California, and public lands under the jurisdiction or management of the United States (U.S.) Bureau of Land Management (BLM), U.S. Bureau of Reclamation (USBR), and the California Department of Parks and Recreation. At this time, HWT does not possess sufficient right-of-way (ROW) or easements along the length of the Proposed Project where new facilities are being installed. HWT would require a new 250-foot ROW for the Proposed Project. New permanent easements on private lands would be obtained by HWT through negotiations with landowners. New permanent or

modified ROWs may be obtained from the relevant public agency through that agency's designated process. Franchise rights would also be relied upon where applicable. All easement acquisitions would be finalized following CPUC approval.

1.3 Areas of Controversy

Following HWT's informal tribal outreach efforts, as described in Section 4.21 of Appendix K, three individual tribes expressed the following concerns about the location of the Proposed Project. First, the Fort Yuma Quechan Tribe shared concerns about the proposed routes sited north of the Fort Yuma Quechan Reservation, emphasizing that the area north of the Reservation is their ancestral land that holds cultural and spiritual significance. Second, the Cocopah Indian Tribe's Cultural Resources Manager requested that the transmission line be routed along or south of State Route 98 and noted that the Cargo Muchacho Mountains are a culturally sensitive area. Lastly, the Colorado River Indian Tribes indicated that the area near the Colorado River is culturally sensitive.

HWT hosted seven open houses with 88 people attending in total. Questions and comments received during the public open house meetings focused on location preference, landowner compensation, funding, and future notifications. At an open house event held in the City of Calexico, community members inquired about transmission line safety during natural disasters and about the potential for electromagnetic fields. Community members also expressed concerns about the transmission line coming close to or crossing their properties.

Public outreach is further summarized in Section 2.2, Pre-filing Consultation and Public Outreach in Chapter 2, Introduction.

1.3.1 Impact Assessment Methodology

The analysis of environmental impacts is based upon the environmental setting applicable to each resource/issue and the manner in which the construction, operation, and maintenance of the Proposed Project or alternatives would affect the environmental setting and related resource conditions. In accordance with California Environmental Quality Act (CEQA) requirements and guidelines, the impact assessment methodology also considers the following three topics: (1) the regulatory setting and evaluation of whether the Proposed Project or alternatives would be consistent with adopted federal, state, and local regulations and guidelines; (2) growth-inducing impacts; and (3) cumulative impacts. Regulatory compliance issues are discussed in each resource/issue area section. This Preliminary PEA is organized according to the following major issue area categories:

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology, Soils, and Paleontological Resources
- Greenhouse Gas Emissions
- Hazards, Hazardous Materials, and Public Safety
- Hydrology and Water Quality

- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation
- Tribal Cultural Resources
- Utilities and Service Systems
- Wildfire

To provide for a comprehensive and systematic evaluation of potential environmental consequences to the resource/issue areas, the environmental impact assessments for the Proposed Project and alternatives are based upon a classification system with the following definitions:

- SU: Significant and Unavoidable Impact - adverse impacts may occur that would be significant even after applicant proposed measures (APMs) have been applied to minimize their severity. A "significant impact" applies where the environmental impact exceeds the significance threshold, or information was lacking to make a finding of less than significant.
- LTSWM: Less than Significant Impact with Mitigation - significant adverse impacts may occur; however, with proper APMs, the impacts can be reduced to less than significant.
- LTS: Less than Significant Impact - some impacts may result from the Proposed Project; however, they are judged to be less than significant. Impacts are frequently considered less than significant when the changes are minor relative to the size of the available resource base or would not change an existing resource. A "less-than-significant impact" applies where the environmental impact does not exceed the significance threshold.
- NI: No Impact - there would be no impact to the identified resource as a result of the Proposed Project.
- ND: No Determination - no determination can be made regarding the Proposed Project's impact to the resource at this time. An impact determination will be made pending additional information or analysis.

1.3.2 Impact Summary Table

A summary of impacts, applicable APMs, and applicable CPUC Draft Environmental Measures[1] are outlined in Table 1-1.

[1] The full text of APMs can be found in Table 3-13 of Chapter 3, Project Description and the full text of the CPUC Draft Environmental Measures applicable to the Proposed Project can be found in Chapter 5.2.

Table 1-1 Summary of Impacts and APMs for the Proposed Project

Impact	Impact Class	Applicant Proposed Measures and CPUC Draft Environmental Measures	Residual Impact
Aesthetics			
Would the project have a substantial adverse effect on a scenic vista?	LTS	None required	LTS
Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	NI	None required	NI
Would the project, in nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage points) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	SU	APMs AES-1, AES-2, AES-3, AES-4, and AES-5	SU
Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	LTS	None required	LTS
Agriculture and Forestry Resources			
Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use?	LTS	None required	LTS
Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?	NI	None required	NI
Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	NI	None required	NI
Would the project result in the loss of forest land or conversion of forest land to non-forest use?	NI	None required	NI
Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	NI	None required	NI
Air Quality			
Would the project conflict with implementation of the applicable air quality plan?	LTS	None required	LTS
Would the project result in cumulative considerable net increase of criteria pollutants?	LTS	None required	LTS
Would the project expose sensitive receptors to substantial pollutant concentrations?	LTS	None required	LTS
Would the project result in other emissions affecting a substantial number of people?	LTS	None required	LTS

Impact	Impact Class	Applicant Proposed Measures and CPUC Draft Environmental Measures	Residual Impact
Biological Resources			
Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status in local or regional plans, policies, or regulations, or by the CDFW or USFWS?	LTSWM	APMs BIO-1, BIO-2, BIO-3, BIO-4, BIO-5, BIO-6, BIO-7,BIO-8, BIO-9, and BIO-12	LTS
Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS?	LTSWM	APMs BIO-1, BIO-2, BIO-6, BIO-7, BIO-8, BIO-9, and BIO-10	LTS
Would the project have a substantial adverse effect on state or federally protected wetlands and waters, as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, and coastal) through direct removal, filling, hydrological interruption, or other means?	LTSWM	APM BIO-10	LTS
Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridor, or impede the use of native wildlife nursery sites?	LTS	None required	LTS
Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	LTSWM	APMs BIO-1, BIO-2, BIO-3, BIO-4, BIO-5, BIO-6, BIO-7, BIO-8, BIO-9, and BIO-10	LTS
Would the project conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan?	NI	None required	NI
Would the project create a substantial collision or electrocution risk for birds or bats?	LTS	None required	LTS
Cultural Resources			
Would the project cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	ND	ND	ND
Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	ND	APM CUL-1	ND
Would the project disturb any human remains, including those interred outside of dedicated cemeteries?	LTSWM	APM WEA-1, APM CUL-2	LTS
Energy			
Would the project result in wasteful, inefficient, or unnecessary energy consumption?	LTS	None required	LTS
Would the project conflict or obstruct a state or local plan for renewable energy or energy efficiency?	NI	None required	NI
Would the project serve a nonrenewable energy resource?	NI	None required	NI
Geology and Soils			
Would the project result in strong seismic ground shaking, seismic related ground failure, liquefaction, and landslides?	LTSWM	APM GEO-1	LTS
Would the project result in substantial soil erosion or loss of topsoil?	LTS	None required	LTS
Would the project result in on or off site landslides, lateral spreading, subsidence, liquefaction, or collapse?	LTSWM	APM GEO-1	LTS
Would the project be located on expansive soil?	LTSWM	APM GEO-1	LTS

Impact	Impact Class	Applicant Proposed Measures and CPUC Draft Environmental Measures	Residual Impact
Would the project be located on soils incapable of supporting septic tanks or alternative wastewater disposal systems?	NI	None required	NI
Would the project directly or indirectly destroy a unique paleontological resources or geological feature?	LTSWM	APMs PAL-1, PAL-2, PAL-3, and PAL-4	LTS
Greenhouse Gas Emissions			
Would the project generate greenhouse gas emissions that may have a significant impact on the environment?	LTS	None required	LTS
Would the project conflict with an applicable plan, policy, or regulation adopted for the purposes of reducing greenhouse gas emissions?	NI	None required	NI
Hazards and Hazardous Materials			
Would the project create a significant hazard to the public or the environment through routine transport, use, or disposal of hazardous materials?	LTSWM	APM HAZ-1	LTS
Would the project create a significant hazard through reasonably foreseeable upset and accident conditions?	LTSWM	APM HAZ-1	LTS
Would the project emit hazardous emissions or handle hazardous materials, substances, or waste within one quarter mile of an existing or proposed school?	NI	None required	NI
Would the project be located on a site which is included on a list f hazardous material sites pursuant to Government Code Section 65962.5?	NI	None required	NI
Would the project result in a safety hazard for people residing or working within the project area within two miles of a public airport or public use airport?	LTS	None required	LTS
Would the project impair implementation or physically interfere with an adopted emergency response plan or emergency evacuation plan?	LTSWM	APM TRA-1	LTS
Would the project expose people or structures to a significant risk of loss, injury, or death involving wildland fires?	LTSWM	APM HAZ-2	LTS
Would the project create a significant hazard to air traffic from the installation of new power lines and structures?	LTSWM	APM HAZ-3	LTS
Would the project create a significant hazard to the public or environment through the transport of heavy materials using helicopters?	LTS	None required	LTS
Would the project expose people to a significant risk or injury or death involving unexploded ordinance?	NI	None required	NI
Would the project expose workers or the public to excessive shock hazards?	LTS	None required	LTS
Hydrology and Water Quality			
Would the project violate any water quality standards?	LTSWM	APMs HAZ-1, WTR-1, WEA-1	LTS
Would the project substantially decrease groundwater supplies?	LTS	None required.	LTS
Would the project substantially alter the existing drainage pattern?	LTS	None required	LTS
Would the project release pollutants due to project inundation?	LTSWM	APMs HAZ-1, WTR-1	LTS
Would the project conflict with a water quality control plan or sustainable groundwater management plan?	LTS	None required	LTS

Impact	Impact Class	Applicant Proposed Measures and CPUC Draft Environmental Measures	Residual Impact
Land Use and Planning			
Would the project physically divide an established community?	LTSWM	APM TRA-1	LTS
Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	LTS	None required	LTS
Mineral Resources			
Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	NI	None required	NI
Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	NI	None Required	NI
Noise			
Would the project result in generation of a substantial temporary or permanent increase in ambient noise in excess of existing standards?	LTSWM	APMs NOI-1, NOI-2	LTS
Would the project generate excessive ground borne vibration or ground borne noise levels?	LTS	None required	LTS
Within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	NI	None required	NI
Population and Housing			
Would the project directly or indirectly induce substantial unplanned population growth?	NI	None required	NI
Would the project displace substantial numbers of existing people or housing?	NI	None required	NI
Public Services			
Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities?	NI	None required	NI
Recreation			
Would the project increase the use of existing neighborhood and regional parks?	LTS	None required	LTS
Would the project include recreational facilities or require the construction or expansion of recreational facilities?	NI	None required	NI
Would the project reduce or prevent access to a designated recreation facility or area?	LTSWM	APM REC-1	LTS
Would the project substantially change the character of a recreational area by reducing the scenic, biological, cultural, geologic, or other important characteristics that contribute to the value of recreational facilities or areas?	SU	APMs CUL-1, CUL-2, AES-1, AES-2, AES-3, AES-4, and AES-5	SU
Would the project damage recreational trails or facilities?	LTS	None required	LTS
Transportation			
Would the project conflict with a program, plan, ordinance, or policy addressing the circulation system?	LTS	None required	LTS

Impact	Impact Class	Applicant Proposed Measures and CPUC Draft Environmental Measures	Residual Impact
Would the project conflict with CEQA Guidelines section 15064.3 subdivision (b)?	LTS	None required	LTS
Would the project substantially increase hazards due to geometric deisgn features or incompatible uses?	LTSWM	APM TRA-1	LTS
Would the project result in inadequate emergency access?	LTSWM	APM TRA-1	LTS
Would the project create hazardous conditions for people walking, biking, or driving?	LTSWM	APM TRA-1	LTS
Would the project interfere with walking or bicycling accessibility?	LTS	None required	LTS
Would the project substantially delay public transit?	LTS	None required	LTS
Tribal Cultural Resources			
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?	ND	ND	ND
Would the project cause a substantial adverse change in the significance of the tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1?	ND	ND	ND
Utilities and Service Systems			
Would the project require new or expanded utility facilities?	LTS	None required	LTS
Would the project have sufficient water supplies	LTS	None required	LTS
Would the project result in inadequate wastewater treatment capacity?	LTS	None required	LTS
Would the project generate solid waste in excess of state or local standards or the capacity of local infrastructure?	LTS	None required	LTS
Would the project comply with solid waste reduction statutes and regulations?	LTS	None required	LTS
Would the project increase the rate of corrosion of adjacent utility lines?	LTS	None required	LTS
Wildfire			
Would the project substantially impair and adopted emergency response plan or emergency evacuation plan?	LTSWM	APM TRA-1	LTS
Due to slope, prevailing winds, and other factors, would the project exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	LTSWM	CPUC Draft Environmental Measure WF-1	LTS

Impact	Impact Class	Applicant Proposed Measures and CPUC Draft Environmental Measures	Residual Impact
Would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	LTSWM	CPUC Draft Environmental Measure WF-1 and APM WF-1	LTS
Would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	LTS	None required	LTS

Notes:

SU = Significant and Unavoidable Impact
LTS = Less than Significant Impact
LTSWM = Less than Significant Impact with Mitigation
ND = No Determination
NI = No Impact

1.4 Summary of Alternatives

Alternatives to the Proposed Project are identified in accordance with CEQA Guidelines. CEQA Guidelines Section 15126.6(a) state:

> An EIR [Environmental Impact Report] shall describe a reasonable range of alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.

CEQA Guidelines Section 15364 defines “feasible” as:

> …capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.

HWT conducted an extensive routing process to identify, evaluate, and select alternatives to the Proposed Project. This process included the identification of a 670-square mile Project Study Area. Following identification of the Project Study Area, the routing study process included

1. Collecting land use and environmental resource data from applicable agencies and other relevant sources;
2. Using the data to identify opportunities for and constraints to routing the Proposed Project’s facilities;
3. identifying a network of transmission line route alternative segments;
4. screening and comparing route alternatives;
5. identifying preliminary alternative routes;
6. hosting several public open houses in communities near the potential route in California and Arizona;
7. consulting with landowners potentially affected by preliminary route alternatives
8. engineering and constructability reviews;
9. comparing and finalizing alternative routes to move forward and include in state and federal licensing and environmental review documents

During the routing study process, more than 400 miles of route alternatives were identified and analyzed.

The Proposed Project is split into three segments. HWT has identified nine segment alternatives within the three segments of the Proposed Project alignment. These are briefly summarized below and described in greater detail in Chapter 4, Description of Alternatives, Sections 4.1 and 4.2, respectively. They are also included in Figures 4-1a, 4-1b, and 4-1c in Chapter 4. HWT also identified and analyzed a number of other alternatives to the Proposed Project; these alternatives, and the criteria and rationale behind why each was rejected from further analysis, are presented in Section 4.3 of Chapter 4, Description of Alternatives. Section 6.3 of Chapter 6, Comparison of Alternatives, includes a summary of the environmental impacts of all alternatives and Section 6.4 includes a more detailed description of the rationale for why the Proposed Project was chosen. Generally, although various route alternatives were considered during the development of the Proposed Project, the Proposed Project was ultimately selected because no other project alternatives reduced or eliminated potentially significant impacts of the Proposed Project and the Proposed Project is the most feasible from an engineering standpoint, avoids existing residential land uses, avoids Tribal reservation land, maximizes the use of existing ROWs and designated utility corridors, and has low impacts to commercial business and agricultural landowners.

Segment 1 Alternatives

Segment 1 alternatives (Alternative 1A, 1C, 1D, and 1-Alt) connect the North Gila Substation to the eastern edge of Segment 2 near the southern end of Coachella Canal Road.

Alternative 1A

Alternative 1A spans 45.70 miles and begins at the North Gila Substation, traversing north across Bureau of Reclamation and Bureau of Land Management (BLM) land. The route avoids Mittry Lake by paralleling the lake through Yuma Proving Ground, before turning west to cross the canals and dams north of Mittry Lake. Alternative 1A then crosses BLM land within the West-Wide Energy Corridor and designated utility corridors, avoiding the Fort Yuma Quechan Reservation to the south. Alternative 1A then cuts north at Picacho Road, avoiding a parcel of state land, before turning southeast to then parallel an existing 500 kV transmission line (Southwest Powerlink [SWPL]), which it follows to the end of Segment 1.

Alternative 1A would satisfy the Proposed Project's objectives by connecting the North Gila Substation to the Segment 2 route. This alternative, when combined with Segment 2 and 3 routes, would meet the CAISO's functional specifications as set forth in Appendix I of the 2022-2023 Transmission Plan, support mitigation of the East of Miguel deliverability constraint as part of the Southern Area Reinforcement and would be in commercial operation by December 2030. Further, this alternative would be designed, constructed, and operated in conformance with HWT's standards, the National Electric Safety Code, and other applicable federal and state codes and regulations to minimize potential wildfire and other hazards, with public safety and well-being as a top priority, in a safe, cost-effective manner that minimizes disturbance to local communities by siting the project adjacent to existing utilities, avoiding residential areas as much as possible, and avoiding, minimizing, or mitigating potential impacts to sensitive environmental resources and areas.

Alternative 1C

Alternative 1C spans 35.13 miles and follows the same path as the Proposed Project until the Picacho Road area. Instead of cutting to the north like Alternative 1A and the Proposed Project, Alternative 1C continues due west across mountainous terrain, adjacent to the northern border of the Fort Yuma Quechan Reservation parallel to the existing SWPL transmission line, before rejoining the same alignment as Alternatives 1A and the Proposed Project within the designated utility corridor.

Alternative 1C would satisfy the Proposed Project's objectives by connecting the North Gila Substation to the Segment 2 route. This alternative, when combined with Segment 2 and 3 routes, would meet the CAISO's functional specifications as set forth in Appendix I of the 2022-2023 Transmission Plan, support mitigation of the East of Miguel deliverability constraint as part of the Southern Area Reinforcement and would be in commercial operation by December 2030. Further, Alternative 1C would be designed, constructed, and operated in conformance with HWT's standards, the National Electric Safety Code, and other applicable federal and state codes and regulations to minimize potential wildfire and other hazards, with public safety and well-being as a top priority, in a safe, cost-effective manner that minimizes disturbance to local communities by siting the alignment adjacent to existing utilities, avoiding residential areas as much as possible, and avoiding, minimizing, or mitigating potential impacts to sensitive environmental resources and areas.

Alternative 1D

Alternative 1D spans 36.14 miles and follows the same path as Alternative 1C until the area of Barney Oldfield Road. Instead of crossing the mountainous terrain linearly, Alternative 1D cuts to the northwest for 1.5 miles before cutting back to the southwest for 1.3 miles before rejoining the same alignment as Alternatives 1A and the Proposed Project.

Alternative 1D would satisfy the Proposed Project's objectives by connecting the North Gila Substation to the Segment 2 route. This alternative, when combined with Segment 2 and 3 routes, would meet the CAISO's functional specifications as set forth in Appendix I of the 2022-2023 Transmission Plan, support mitigation of the East of Miguel deliverability constraint as part of the Southern Area Reinforcement and would be in commercial operation by December 2030. Further, this alternative would be designed, constructed, and operated in conformance with HWT's standards, the National Electric Safety Code, and other applicable federal and state codes and regulations to minimize potential wildfire and other hazards, with public safety and well-being as a top priority, in a safe, cost-effective manner that minimizes disturbance to local communities by siting the alignment adjacent to existing utilities, avoiding residential areas as much as possible, and avoiding, minimizing, or mitigating potential impacts to sensitive environmental resources and areas.

Alternative 1-Alt

Alternative 1-Alt is not a complete end-to-end Segment 1 route alternative, but instead provides a 2.6-mile micro-route alternative through Algodones Dunes. In contrast to Alternatives 1A, 1C, and 1D and the Proposed Project, which cross the Algodones Dunes to the north of the All American Canal, Alternative 1-Alt would cross the All American Canal and parallel the southside of the canal for approximately 1.8 miles before crossing the canal again and rejoining the same alignment as Alternatives 1A, 1C, and 1D, and the Proposed Project.

Alternative 1-Alt would satisfy the Proposed Project's objectives by connecting the North Gila Substation to the Segment 2 route, when combined with other Segment 1 routes. This alternative, when combined with Segment 1, 2 and 3 routes, would meet the CAISO's functional specifications as set forth in Appendix I of the 2022-2023 Transmission Plan, support mitigation of the East of Miguel deliverability constraint as part of the Southern Area Reinforcement and would be in commercial operation by December 2030. Further, this alternative would be designed, constructed, and operated in conformance with HWT's standards, the National Electric Safety Code, and other applicable federal and state codes and regulations to minimize potential wildfire and other hazards, with public safety and well-being as a top priority, in a safe, cost-effective manner that minimizes disturbance to local communities by siting the alignment adjacent to existing utilities, avoiding residential areas as much as possible, and avoiding, minimizing, or mitigating potential impacts to sensitive environmental resources and areas.

Segment 2 Alternatives

Alternative 2A

Alternative 2A spans 20.80 miles and begins at the same point as the Proposed Project but continues to the southwest for 1.7 miles instead of cutting due west. After Alternative 2A crosses I-8, it cuts west for 2.6 miles, then cuts south to cross the canals, before turning due west again, parallel to the existing SWPL transmission line, for 16 miles to link with the starting point of Alternatives 3, 3B, and 3D, and the Proposed Project.

Alternative 2A would satisfy the Proposed Project's objectives by connecting the Segment 1 route to the Segment 3 route. This alternative, when combined with Segment 1 and 3 routes, would meet the CAISO's functional specifications as set forth in Appendix I of the 2022-2023 Transmission Plan, support mitigation of the East of Miguel deliverability constraint as part of the Southern Area Reinforcement and would be in commercial operation by December 2030. Further, this alternative would be designed, constructed, and operated in conformance with HWT's standards, the National Electric Safety Code, and other applicable federal and state codes and regulations to minimize potential wildfire and other hazards, with public safety and well-being as a top priority, in a safe, cost-effective manner that minimizes disturbance to local communities by siting the alignment adjacent to existing utilities, avoiding residential areas as much as possible, and avoiding, minimizing, or mitigating potential impacts to sensitive environmental resources and areas.

Segment 3 Alternatives

Alternative 3

Alternative 3 spans 26.85 miles and begins at the terminus of the Proposed Project and Alternative 2A and runs parallel to the existing SWPL transmission line for nearly its entire length. It traverses due west for 7.7 miles parallel to Kumberg Road. After crossing State Route 7 and Heber Dunes Road, Alternative 3 cuts to the northwest for 0.55 mile. It then cuts back due west for 11.5 miles. Alternative 3 then parallels Forrester Road for 0.33 mile, then due west for 0.75 mile, then southwest for 0.6 mile until it crosses Lyons Road. It then parallels Lyons Road for 5.7 miles until it reaches the Imperial Valley Substation.

Alternative 3 would satisfy the Proposed Project's objectives by connecting the Segment 2 route to the Imperial Valley Substation. This alternative, when combined with Segment 1 and 2 routes, would meet the CAISO's functional specifications as set forth in Appendix I of the 2022-2023

Transmission Plan, support mitigation of the East of Miguel deliverability constraint as part of the Southern Area Reinforcement and would be in commercial operation by December 2030. Further, this alternative would be designed, constructed, and operated in conformance with HWT's standards, the National Electric Safety Code, and other applicable federal and state codes and regulations to minimize potential wildfire and other hazards, with public safety and well-being as a top priority, in a safe, cost-effective manner that minimizes disturbance to local communities by siting the alignment adjacent to existing utilities, avoiding residential areas as much as possible, and avoiding, minimizing, or mitigating potential impacts to sensitive environmental resources and areas.

Alternative 3A

Alternative 3A spans 29.66 miles and begins at the southern end of Desert Road, 0.86 miles east of the terminus of the Proposed Project and Alternative 2A, which it parallels to the northwest for 2.86 miles. After crossing Hunt Road, Alternative 3A traverses farmland due west for 22.8 miles. It then cuts to the southwest for 0.87 mile before cutting back due west for 2.81 miles until it terminates at the Imperial Valley Substation. This alternative does not parallel an existing transmission line.

Alternative 3A would satisfy the Proposed Project's objectives by connecting the Segment 2 route to the Imperial Valley Substation. This alternative, when combined with Segment 1 and 2 routes, would meet the CAISO's functional specifications as set forth in Appendix I of the 2022-2023 Transmission Plan, support mitigation of the East of Miguel deliverability constraint as part of the Southern Area Reinforcement and would be in commercial operation by December 2030. Further, this alternative would be designed, constructed, and operated in conformance with HWT's standards, the National Electric Safety Code, and other applicable federal and state codes and regulations to minimize potential wildfire and other hazards, with public safety and well-being as a top priority, in a safe, cost-effective manner that avoids residential areas as much as possible, and avoiding, minimizing, or mitigating potential impacts to sensitive environmental resources and areas. This segment alternative avoids the Heber Dunes SVRA.

Alternative 3B

Alternative 3B spans 26.96 miles and begins at the point where the Proposed Project and Alternative 2A end. Alternative 3B then parallels State Route 98 for 1.0 mile before cutting due west for 9.6 miles. It then cuts diagonally to the northwest before paralleling East Jasper Road, Willoughby Road and Preston Road for 11.7 miles. After another 3.8 miles of traversing farmland to the west, Alternative 3B terminates at the Imperial Valley Substation. This alternative does not run parallel an existing transmission line.

Alternative 3B would satisfy the Proposed Project's objectives by connecting the Segment 2 route to the Imperial Valley Substation. Alternative 3A would satisfy the Proposed Project's objectives by connecting the Segment 2 route to the Imperial Valley Substation. This alternative, when combined with Segment 1 and 2 routes, would meet the CAISO's functional specifications as set forth in Appendix I of the 2022-2023 Transmission Plan, support mitigation of the East of Miguel deliverability constraint as part of the Southern Area Reinforcement and would be in commercial operation by December 2030. Further, this alternative would be designed, constructed, and operated in conformance with HWT's standards, the National Electric Safety Code, and other applicable federal and state codes and regulations to minimize potential wildfire and other hazards, with public safety and well-being as a top priority, in a safe, cost-effective manner that avoids

residential areas as much as possible, and avoiding, minimizing, or mitigating potential impacts to sensitive environmental resources and areas.

Alternative 3D

Alternative 3D spans 28.67 miles and follows the same alignment as Alternative 3C, and runs parallel to the existing SWPL transmission line, except where it cuts south 0.50 miles west of State Route 111 and on for 15.7 miles before terminating at the Imperial Valley Substation.

Alternative 3D would satisfy the Proposed Project's objectives by connecting the Segment 2 route to the Imperial Valley Substation. This alternative, when combined with Segment 1 and 2 routes, would meet the CAISO's functional specifications as set forth in Appendix I of the 2022-2023 Transmission Plan, support mitigation of the East of Miguel deliverability constraint as part of the Southern Area Reinforcement and would be in commercial operation by December 2030. Further, this alternative would be designed, constructed, and operated in conformance with HWT's standards, the National Electric Safety Code, and other applicable federal and state codes and regulations to minimize potential wildfire and other hazards, with public safety and well-being as a top priority, in a safe, cost-effective manner that minimizes disturbance to local communities by siting the alignment adjacent to existing utilities, avoiding residential areas as much as possible, and avoiding, minimizing, or mitigating potential impacts to sensitive environmental resources and areas.

No Project Alternative

Under the No Project Alternative, CAISO would fail to meet functional specifications for the project as set forth in Appendix I of the 2022-2023 Transmission Plan. Specifically, there would not be infrastructural support in mitigation of the East of Miguel deliverability constraint as part of the Southern Area Reinforcement in commercial operation by December 2030. The electricity grid in Southern California would become increasingly unreliable and rates for energy users would likely increase. Therefore, the No Project Alternative would fail to meet any of the Proposed Project's objectives.

Summary of Alternatives Comparison

As described in Section 6.3 of Chapter 6, Comparison of Alternatives, the alternatives to the Proposed Project would result in the following impacts to aesthetics and recreation compared to the Proposed Project:

Table 1-2 Summary of Alternatives Impacts for Impacts that would be Significant and Unavoidable

Alternative	Alternative Impact Conclusion	Impacts Compared to the Proposed Project
Aesthetics		
Alternative 1A	Significant and Unavoidable	Reduced
Alternative 1C	Significant and Unavoidable	Equal to
Alternative 1D	Significant and Unavoidable	Equal to
Alternative 1-Alt	Significant and Unavoidable	Equal to
Alternative 2A	Significant and Unavoidable	Equal to
Alternative 3	Significant and Unavoidable	Increased
Alternative 3A	Significant and Unavoidable	Increased
Alternative 3B	Significant and Unavoidable	Equal to
Alternative 3D	Significant and Unavoidable	Equal to
Recreation[1]		
Alternative 1A	Significant and Unavoidable	Equal to
Alternative 1C	Significant and Unavoidable	Equal to
Alternative 1D	Significant and Unavoidable	Equal to
Alternative 1-Alt	Significant and Unavoidable	Increased
Alternative 2A	Significant and Unavoidable	Reduced

[1] Segment 3 of the Proposed Project would have less than significant recreational impacts. Therefore, Segment 3 alternatives were not analyzed as part of the alternatives comparison for recreation.

In addition to the alternatives impact comparison made above and shown on Table 1-2, Table 6-12 in Chapter 6 contains a comparison of the impacts of each alternative for each environmental topic. None of the alternatives would fully reduce or eliminate the significant and unavoidable impacts of the Proposed Project. While the No Project Alternative would reduce all environmental impacts, and therefore ranks higher in environmental performance than the Proposed Project, it would not fulfill any of the project objectives. Because the No Project alternative would not involve construction of any project, the Proposed Project is considered the environmentally superior alternative as it is the highest-ranking alternative that involves construction of a project and would fulfill project objectives.

1.5 Pre-Filing Consultation and Public Outreach Summary

As summarized in Section 2.2 of Chapter 2, Introduction, HWT has conducted regular pre-filing consultation with public agencies with potential jurisdiction over portions of the Proposed Project alignment (BLM, USBR, U.S. Army Corps of Engineers, CPUC, Arizona Corporation Commission, California Department of Parks and Recreation, Imperial County, and the City of Calexico in California, and Yuma County in Arizona), public agencies with potential jurisdiction over resources that may occur in the Proposed Project area (California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, and Arizona Game and Fish Department), and additional interested public agencies (San Diego County and the Heber Public Utilities District).

Additionally, HWT has conducted meetings with the Fort Yuma Quechan Tribe and initiated voluntary informal tribal outreach to area tribes. This included the electronic transmission of project information packets to the following tribes in June 2025: Ak-Chin Indian Community, Barona Group of Capitan Grande Band of Mission Indians, Campo Band of Diegueno Mission Indians, Chemehuevi Indian Tribe, Cocopah Indian Tribe, Colorado River Indian Tribes, Fort McDowell Yavapai Nation, Fort Mojave Indian Tribe, Fort Yuma Quechan Tribe, Ewiiaapaayp Band of Kumeyaay Indians, Gila River Indian Community, Hopi Tribe, Iipay Nation of Santa Ysabel, Inaja-Cosmit Band of Indians, Jamul Indian Village, La Posta Band of Diegueno Mission Indians, Manzanita Band of Kumeyaay Nation, Mesa Grande Band of Diegueno Mission Indians, Mescalero Apache Tribe, Pascua Yaqui Tribe, Pueblo of Zuni, San Pasqual Band of Diegueno Mission Indians, Salt River Pima-Maricopa Indian Community, Sycuan Band of the Kumeyaay Nation, Tohono O'odham Nation, Torres-Martinez Desert Cahuilla Indians, Twenty-Nine Palms Band of Mission Indians, and Viejas Band of Kumeyaay Indians. A project information packet was also mailed to Kwaaymil Laguna Band of Indians.

As of July 2025, HWT held virtual project meetings with the Cocopah Indian Tribe, Colorado River Indian Tribes, Chemehuevi Indian Tribe, and the Viejas Band of Kumeyaay Indians, as well as an in-person meeting with the La Posta Band of Diegueno Mission Indians.

HWT has also conducted public outreach with landowners by mailing all recorded landowners within 2 miles of the Proposed Project's initial study area an introductory postcard regarding the Proposed Project that identified upcoming opportunities for public input on the Proposed Project. HWT hosted six public meetings to provide landowners and other stakeholders, including developers of large housing or commercial projects, the opportunity to discuss the Proposed Project with HWT representatives one-on-one. A summary of Open Houses conducted to date is provided in Section 2.2.1.8, Public Discussion, of Chapter 2, Introduction. Additionally, HWT has coordinated with APS, SDG&E, and Imperial Irrigation District (IID) regarding project details and collaborative efforts.

1.6 Conclusions

The primary conclusions resulting from the impact analyses in Chapter 5 and Chapter 6 of this document are:

- The Proposed Project, as described in Chapter 3, would meet the objectives identified for the Proposed Project.
- Alternatives 1A, 1C, 1D, 1-Alt, 2A, 3, 3A, 3B, and 3D would meet most of the objectives identified for the Proposed Project.
- The Proposed Project would result in two potentially significant impacts related to aesthetics and recreation that cannot be mitigated to a less than significant level.
- Alternatives 1A, 1C, 1D, 1-Alt, 2A, 3, 3A, 3B, and 3D, as analyzed in Chapter 6, do not eliminate the significant and unavoidable impacts of the Proposed Project.

1.7 Remaining Issues

There are no known unresolved environmental, engineering, or real property related issues.

2 Introduction

Horizon West Transmission, LLC (HWT), a California electric public utility (U 222-E) that owns and operates transmission assets in the California Independent System Operator Corporation's (CAISO) balancing authority area, is proposing to construct, own, operate, and maintain the Ironwood Transmission Line Project (Proposed Project). The Proposed Project was identified, determined to be needed to meet policy objectives, and approved in the CAISO's approved 2022-2023 Transmission Plan.[1] As required by the California Public Utilities Commission's (CPUC) Proponent's Environmental Assessment (PEA) Guidelines (*Guidelines for Energy Project Applications Requiring California Environmental Quality Act (CEQA) Compliance: Pre-filing and Proponent's Environmental Assessments*, dated November 2019) and the CEQA statute (Pub. Resources Code § 21000 *et seq.*) and its implementing Guidelines (14 Cal. Code Regs. § 15000 *et seq.*) this chapter describes the objectives, purpose, and need for the Proposed Project. Additional information regarding the Proposed Project's purpose and need is provided in HWT's application for a Certificate of Public Convenience and Necessity (CPCN) for the Proposed Project that is filed with the CPUC in accordance with CPUC General Order (G.O.) 131-E. Additionally, this chapter discusses pre-filing consultation and public outreach conducted for the Proposed Project and also describes the environmental review process for the Proposed Project and organization of this PEA.

2.1 Project Background

The Proposed Project is an approximately 86 mile-long 500 kilovolt (kV) transmission line from Arizona Public Service Company's (APS) North Gila Substation to San Diego Gas & Electric Company's (SDG&E) Imperial Valley Substation. The Proposed Project is located in western Yuma County, Arizona and Imperial County, California, crossing predominantly unincorporated lands as well as federal, state, municipal, and private land. These lands include unincorporated areas of Imperial and Yuma counties, the city of Calexico, California, and public lands under the jurisdiction or management of the U.S. Bureau of Land Management (BLM), U.S. Bureau of Reclamation (USBR), and the California Department of Parks and Recreation.

The Proposed Project is intended to mitigate resource deliverability constraints as identified in the CAISO's 2022-2023 Transmission Plan. The CAISO approved the Proposed Project as necessary to help mitigate the East of Miguel deliverability constraint, which the CAISO found presently results in zero deliverability for resources in the CPUC's base portfolio (3,080 megawatt [MW]) (CAISO 2023a).

The Proposed Project would include construction and operation of the overhead transmission line, up to the point of change of ownership (POCO) within approximately 100 feet of the connecting utilities' substation property lines. At each substation, the owning utility would install the 500 kV transmission line from the respective POCO and line shunt reactors to a new 500 kV bus within the substation to enable interconnection of the Proposed Project.

[1] In various CAISO materials, the Ironwood Project is referred to as the North Gila-Imperial Valley #2 500 kV Transmission Line Project.

2.1.1 Purpose

The CAISO manages the flow of electricity across high-voltage, long-distance power lines, operates a competitive wholesale energy market that promotes lower costs, and oversees transmission planning to maximize efficiency and reliability and to identify and build transmission capacity needed to meet California's greenhouse gas (GHG) reduction requirements and goals. Transmission planning at the CAISO actively engages stakeholder and public inputs and uses the best engineering analysis possible to determine short-term and long-term infrastructure needs. As part of its Transmission Planning Process (TPP), the CAISO develops an annual transmission plan that serves as the formal roadmap for infrastructure requirements for the CAISO balancing authority (CAISO 2024).

As stated in the CAISO's approved 2022-2023 Transmission Plan, "[t]he overarching public policy objective for the California ISO's Policy-Driven Need Assessment is the state's mandate for meeting GHG reduction targets while maintaining reliability. For purposes of the transmission planning process, this high-level objective is comprised of two sub-objectives: first, to support Resource Adequacy (RA) deliverability status for the energy storage resources identified in the portfolio as requiring that status, and second, to support the economic delivery of energy during all hours of the year" (CAISO 2023a, page 59). The CAISO relies on the CPUC for its lead role in developing portfolios of generation resources for the 10-year planning horizon. The CPUC issued Decision 22-02-00447 on February 15, 2022 to transmit to the CAISO a portfolio based on the 38-million metric ton (MMT) GHG target by 2030 and the 2020 Integrated Energy Policy Report demand forecast utilizing the high electric vehicle assumptions. The portfolio includes a 2032 GHG target of 35 MMT, consistent with the 10-year timeline of the portfolio. This portfolio is used as the reliability and policy-driven base portfolio in the CAISO 2022-2023 TPP, as further described below.

As part of the annual TPP, the CAISO performs a Policy-Driven Need Assessment, which assesses the overarching objective of meeting the state's GHG reduction targets through reliable, economic delivery of energy during all hours of the year. This assessment is performed to identify the transmission projects that are needed to facilitate build-out of the resource portfolios approved by the CPUC. For the 2022-2023 Transmission Plan, the CAISO assessed the CPUC-approved base portfolio, as referenced above, that included a GHG target of 38 MMT by 2030 as well as a 30 MMT High Electrification sensitivity case (CPUC 2022). As part of the CPUC's base case resource mapping, the CPUC identified a need for over 40 gigawatts of new resources by 2032, with almost 70 gigawatts needed to meet the High Electrification sensitivity case.

Using these resource portfolios, the CAISO conducted an open and stakeholder-inclusive planning process to assess constraints and conduct detailed assessments resulting in more than 60 alternatives considered in addition to the 45 recommended projects set forth in the 2022-2023 Transmission Plan. Under the Federal Energy Regulatory Commission Order No. 1000 interregional coordination process, the CAISO is required to examine potential interregional projects submitted by stakeholders into the CAISO's process and the processes of the CAISO's neighboring planning entities in the western interconnection—WestConnect and Northern Grid. Of the seven potential projects submitted in the CAISO's 2023 interregional transmission project submission window, only the Proposed Project met the requirements of an interregional transmission project and received further detailed review by both WestConnect and the CAISO.

As described in the CAISO's 2022-2023 Transmission Plan, deliverability of portfolio resources east of the existing SDG&E Miguel Substation is limited by thermal overloading of existing lines and transformers (referred to as the "East of Miguel Constraint"). In order to fully mitigate the overloads, transmission upgrades are required. The Proposed Project was selected by the CAISO as a

preferred transmission upgrade to mitigate these deliverability constraints (CAISO 2023b; CAISO 2023c). Additionally, as a key component of the broader Southern Area Reinforcement, a set of transmission projects in Southern California designed to address grid constraints and improve reliability, the Proposed Project supports cost-effective mitigation of these delivery constraints through common upgrades that benefit multiple regions. Taken as a portfolio of projects, the Southern Area Reinforcement mitigates constraints in Southern California Edison Company (SCE) Metro Area, the SCE Eastern Area, and the SDG&E Area that together impact deliverability of resources across most parts of southern California.

Figure 2-1 shows the approximate electrical boundary of projects that contribute to the East of Miguel Constraint from the CAISO 2024 Transmission Plan Deliverability Allocation Report.

2.1.2 Project Need

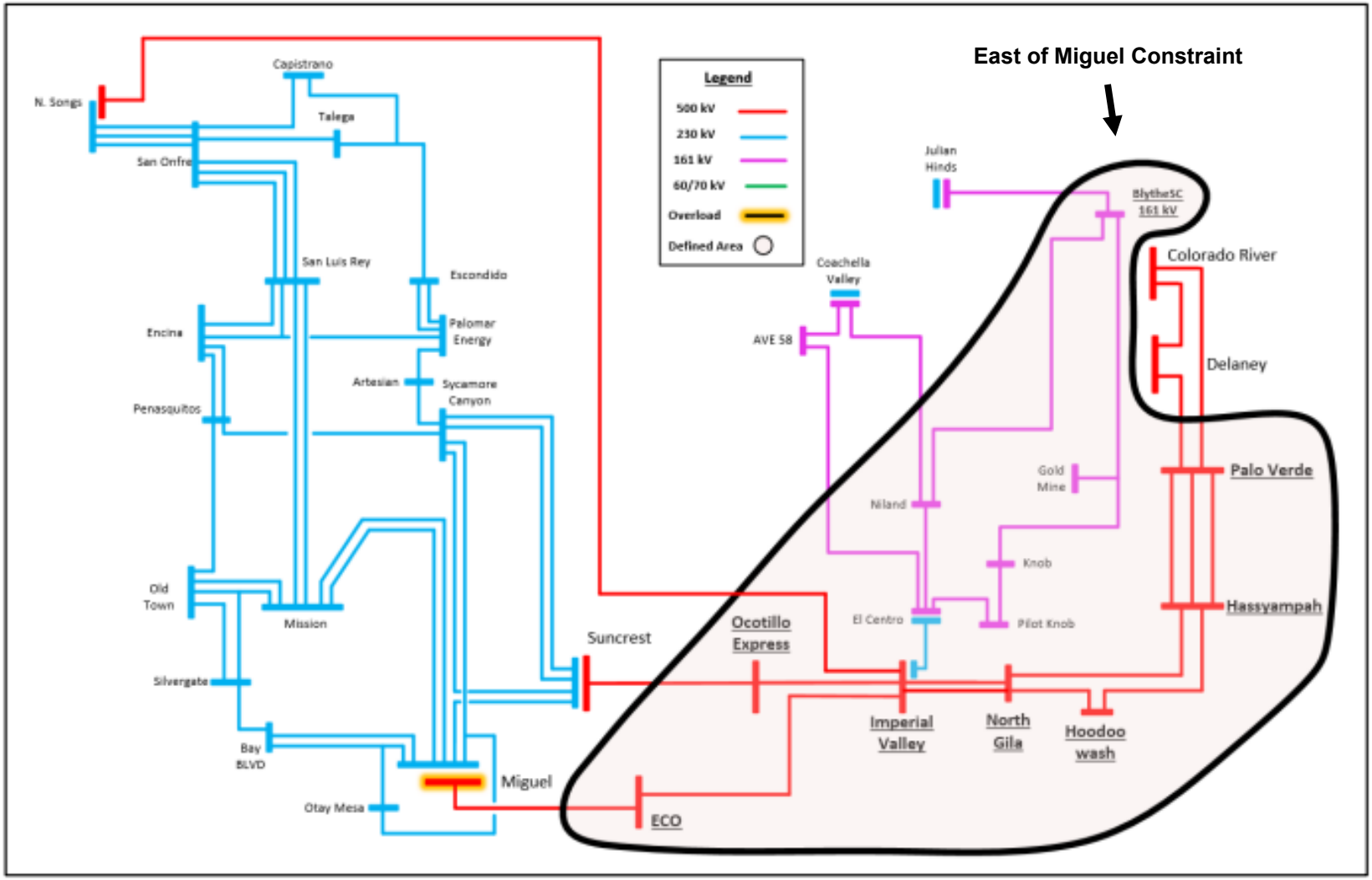
The Proposed Project is needed to mitigate resource deliverability constraints identified in the CAISO 2022-2023 Transmission Plan (CAISO 2023a). The Proposed Project was included as part of a portfolio of projects that the CAISO identified as needed to meet the major identified constraints across the SCE Metro, SCE Eastern, and SDG&E areas (CAISO 2023b). The CAISO assessed six alternative portfolios of projects as a means of cost effective, common upgrades, and the Proposed Project was included as a necessary component in each one of the assessed alternatives due to its role in addressing the East of Miguel Constraint.

The CAISO 2022-2023 Transmission Plan identified the East of Miguel Constraint as resulting in over 3,000 MW of undeliverable resources in the base case and over 10,000 MW of undeliverable resources in the sensitivity case (CAISO 2023a; Table 3.5-30 “SDG&E Interconnection Area On-Peak Deliverability Constraints in Base and Sensitivity Portfolio”). The East of Miguel Constraint includes transmission system limitations from thermal overloads under contingency cases in a variety of facilities. In the base portfolio case, overloads were identified on the Suncrest-Sycamore 230 kV #1 and #2 lines and the Miguel Substation 500/230 kV Bank 80 and Bank 81. Under the sensitivity case, overloads were also identified on the ECO-Miguel 500 kV line as well as additional contingency triggers for overloads on the Suncrest-Sycamore 230 kV #1 and #2 lines and the Miguel Substation 500/230 kV Bank 80 and Bank 81. The Proposed Project supports mitigation of the East of Miguel Constraint by connecting the existing North Gila and Imperial Valley substations with a new 500 kV circuit.

In addition, the Proposed Project would supplement the existing 500 kV transmission line (Southwest Powerlink)[2] between the North Gila and Imperial Valley substations, greatly increasing transfer capability. This additional line would enhance system reliability by providing redundancy; in the event of a loss of one North Gila-Imperial Valley circuit, power transfers between key load centers, such as downtown San Diego, Imperial County, and Orange County, can be maintained. As part of a larger infrastructure initiative, the Proposed Project would deliver widespread benefits to many users across Southern California, supporting energy reliability.

[2] Southwest Powerlink is also referred to as NGIV #1.

Figure 2-1 CAISO Depiction of East of Miguel Constraint



Source: CAISO 2025, label added

While the CAISO cannot specifically approve non-transmission alternatives to identified projects, it nevertheless places a great deal of emphasis on assessing non-transmission solutions including conventional generation, demand response, energy efficiency, and energy storage. The CAISO considered both Remedial Action Schemes and the relocation of generic portfolio battery storage assets and found them to be inadequate to mitigate the identified constraints. The comments on CAISO's TPP and the consideration of non-wire alternatives provided in the Stakeholder Comments on the 2017-2018 Draft Transmission Plan and Stakeholder Comments on the 2017-2018 TPP Stakeholder Meeting discuss the following benefits of non-wire alternatives: cost savings (more cost-effective than building new infrastructure); reliability (improving grid reliability); environmental benefits; and flexibility (quickly implemented solutions as opposed to traditional transmission upgrades).

Following approval of the 2022-2023 Transmission Plan, and in accordance with Federal Energy Regulatory Commission Order No. 1000 and the CAISO's open access transmission tariff, the CAISO engaged in a competitive solicitation process for proposals to finance, construct, own, operate, and maintain the Proposed Project. The CAISO specified an in-service date for the Proposed Project of June 1, 2032, during the competitive solicitation process. In April 2024, HWT was selected by the CAISO from five proposals as the approved project sponsor for the Proposed Project. As part of the competitive selection process, HWT committed to a guaranteed in-service date of no later than December 31, 2030. To ensure that this guaranteed deadline is satisfied, and because the Proposed Project is needed to resolve existing deliverability constraints and provide critical deliverability access to generation resources in California, Arizona, and New Mexico, HWT plans to achieve commercial operation by December 2030.

2.1.3 Project Objectives

Following a comprehensive and detailed routing analysis that was informed by and incorporated potential environmental, stakeholder, and engineering concerns as well as the functional specifications required by the CAISO, the Proposed Project was selected because it best meets all the following project objectives while minimizing, to the greatest extent practicable, potential impacts to environmental resources and potentially affected communities. The Proposed Project objectives include:

- Meet the CAISO's policy-driven need for the project to support mitigation of the East of Miguel deliverability constraint,[3] which the CAISO found presently results in zero deliverability for resources in the CPUC's base portfolio (3,080 MW) and sensitivity portfolio (10,398 MW) (CAISO 2022-2023 Transmission Plan) by connecting the existing North Gila and Imperial Valley substations with a new 500 kV circuit.
- As part of the Southern Area Reinforcement,[4] support the cost-effective, common upgrade mitigation of identified transmission constraints on the Devers-Red Bluff 500 kV, East of Miguel, Bay Boulevard-Silvergate, Encina-San Luis Rey, Sycamore area, San Luis Rey-San Onofre, and Silvergate-Old Town lines by connecting the existing North Gila and Imperial Valley substations with a new 500 kV circuit.
- Meet the CAISO's functional specifications for the project as set forth in Appendix I of the 2022-2023 Transmission Plan.

[3] As described in CAISO's 2022-2023 Transmission Plan, deliverability of portfolio resources east of the existing SDG&E Miguel Substation is limited by thermal overloading of existing lines and transformers (referred to as the "East of Miguel Constraint").
[4] The Southern Area Reinforcement is a set of transmission projects in Southern California that are designed to address grid constraints and improve reliability and were identified in CAISO's 2022-2023 Transmission Plan.

- Achieve commercial operation by December 2030 in order to provide critical deliverability access to generation resources in California, Arizona, and New Mexico.
- Design, construct, and operate the project to minimize potential wildfire and other hazards, with public safety and well-being as a top priority, consistent with HWT's approved Wildfire Mitigation Plan.
- Meet the project's need in a safe, cost-effective manner consistent with HWT's Approved Project Sponsor Agreement to minimize cost impacts to customers.
- Minimize disturbance to local communities by siting the project adjacent to existing utilities, avoiding residential areas as much as possible.
- Avoid, minimize, or mitigate potential impacts to sensitive environmental resources and areas.
- Design, construct, and operate the project in conformance with HWT's standards, the National Electric Safety Code, and other applicable federal and state codes and regulations.

2.1.4 Project Applicant

HWT is a Delaware limited liability company formed in 2014 and is an indirect, wholly owned subsidiary of NextEra Energy Transmission, LLC, which is an indirect, wholly owned subsidiary of NextEra Energy Capital Holdings, Inc., an indirect, wholly owned subsidiary of NextEra Energy, Inc. (NextEra Energy). HWT is an electric public utility in California (U 222-E) based in San Francisco and regulated by the CPUC. HWT is also qualified as a Participating Transmission Owner with the CAISO.

The Proposed Project would be operated and monitored by HWT's affiliate, Lone Star Transmission, LLC (Lone Star Transmission), from its 24-hour control center in Austin, Texas. Primary maintenance and supplemental emergency response activities would be conducted by HWT's local maintenance and technical staff and, as necessary, staff of other NextEra Energy affiliates and established contractors for specialized maintenance or emergency response. Functional control of the Proposed Project would be transferred to the CAISO, which would monitor the Proposed Project from the CAISO's control center in Folsom, California.

HWT will assemble and oversee a team of trusted and experienced environmental, engineering, and construction affiliate employees and qualified third-party contractors to implement, evaluate, and monitor compliance with the Proposed Project's Applicant Proposed Measures (APM) and any additional mitigation measures required by regulatory agencies with jurisdiction over the Proposed Project. HWT utilizes a robust environmental compliance management program to document, implement, monitor, enforce, and evaluate the effectiveness of APMs and mitigation measures during each Proposed Project phase, as applicable. All third parties engaged by HWT to conduct work on the Proposed Project would be contractually bound to fully implement all APMs and mitigation measures to ensure these protections are effective in minimizing potential environmental impacts.

2.2 Pre-filing Consultation and Public Outreach

2.2.1 Pre-filing Consultation

Following the project award by the CAISO in April 2024, HWT initiated regular pre-filing consultation beginning July 29, 2024. Agency coordination activities included informing those groups likely to be involved in the Proposed Project's evaluation and approval processes of HWT's development activities and anticipated timelines, as well as soliciting input regarding specific concerns, areas of

interest, or information needs anticipated by these groups. Details regarding HWT's pre-filing consultation and engagement are provided in the following sections. The Ironwood Transmission Line Project Routing Study, provided in Appendix K, includes a further summary of public outreach and engagement activities, as well as a discussion of preliminary concerns, alternatives suggested, and significant outcomes of consultation and public engagement.

2.2.1.1 California Independent System Operator Corporation

In accordance with the requirements and milestones of the Approved Project Sponsor Agreement (APSA), HWT has communicated regularly with the CAISO since project award including submitting quarterly construction status reports as scheduled in the APSA.

2.2.1.2 Potentially Jurisdictional Agencies

Public agencies with potential jurisdiction over portions of the Proposed Project area include the BLM, USBR, United States Army Corps of Engineers, CPUC, Arizona Corporation Commission, California Department of Parks and Recreation, California Department of Transportation, Imperial County, and the City of Calexico in California, and Yuma County in Arizona. Public agencies with potential jurisdiction over resources that may occur in the Proposed Project area include the California Department of Fish and Wildlife, United States Fish and Wildlife Service, and Arizona Game and Fish Department. Additional interested public agencies include San Diego County, the Heber Public Utilities District, and the City of Yuma. HWT's pre-filing consultation and engagement with these jurisdictional agencies and other agencies is detailed below. No additional pre-filing consultation, beyond that summarized below, is planned at this time.

Bureau of Land Management

HWT has communicated with and met with BLM approximately monthly since August 2024. HWT first reached out to BLM's Desert District Office to discuss permitting strategy and was directed to work with the El Centro Field Office because the El Centro Field Office would take the lead for the National Environmental Policy Act (NEPA) review of the Proposed Project. In initial meetings, HWT introduced the Proposed Project, described HWT and the CAISO competitive bid process, and shared maps of federal lands that could potentially be crossed by the Proposed Project route. However, despite initial consultation with the El Centro Field Office, recent staffing changes and reallocation of resources may shift the lead office back to the Desert District Office. HWT has also introduced the Proposed Project to the Yuma Field Office in Arizona. HWT provided an SF-299 and Plan of Development (POD) to all impacted BLM offices. The BLM Desert District is creating a Project Charter to assign staff from various offices to the Proposed Project to create one interdisciplinary team with specialists from several BLM offices. Monthly meetings will continue and will likely increase in frequency as the Project Charter is finalized and permitting moves along.

Bureau of Reclamation

HWT has communicated with and met with BOR staff in the Project area to review routing options on June 17 and 18, 2025, and has continued to meet with BOR to solicit input on the Proposed Project and alternatives.

Imperial County

HWT has met periodically with Imperial County Supervisors and County Staff from November 2024 through June 2025 to introduce the Proposed Project and to solicit input regarding preliminary concerns and route alternatives for the Proposed Project.

Yuma County

HWT has communicated with Yuma County Supervisors and Staff during three meetings conducted between November 21, 2024, and April 9, 2025. At these meetings, HWT introduced the Proposed Project, discussed routing options, and solicited County feedback.

City of Calexico

Between January and March of 2025, HWT met with the Planning Director, Mayor Pro Term, and City Manager of the City of Calexico. The project team provided an overview of HWT and the Proposed Project. City officials asked about the scale of the Proposed Project and planned capacity and interconnections.

City of Yuma

HWT met with the Mayor and City Administrators of the City of Yuma on February 21, 2025, and again with City of Yuma Interim City Administrator and Deputy City Administrator on April 10, 2025. HWT provided an overview of the Proposed Project and officials provided feedback on routing options, including concerns over routing through Yuma due to zoning constraints. City representatives expressed that the Proposed Project would be important to supporting the City's goals for future growth.

San Diego County

On December 19, 2024, HWT met with San Diego County Staff to introduce the Proposed Project, the CAISO transmission planning process, and HWT's relation to SDG&E. County staff provided feedback and context on local community priorities.

Heber Public Utilities District

On January 30, 2025, HWT met with the Heber Public Utilities District. HWT shared its commitment to engaging the public well before required input periods to ensure the needs of Imperial Valley are met. Information regarding upcoming open houses was shared to be distributed.

2.2.1.3 Native American Tribes Affiliated with the Project Area

HWT held a total of eight meetings with the Fort Yuma Quechan Tribe between June 15, 2023 and April 8, 2025. Attendees over the course of these meetings included the Fort Yuma Quechan Tribe's President, Vice President, Tribal Council members, Cultural Committee members, and Economic Development Director. In initial meetings, HWT introduced the Proposed Project and received tribal input on proposed routing. In later meetings, HWT acknowledged the award of the Proposed Project, introduced the project team, discussed potential routing options north and south of the Fort Yuma Quechan Reservation, and heard tribal concerns regarding the negative impact that the development of a transmission line would have on the culturally sensitive areas north of the Reservation. The Ironwood Transmission Line Project Routing Study is provided in Appendix K and

includes a summary of meetings with the Fort Yuma Quechan Tribe, a discussion of preliminary concerns, alternatives suggested, and significant outcomes of engagement.

HWT also initiated voluntary, informal tribal outreach to area tribes. HWT electronically sent project information packets to the following tribes in June 2025: Ak-Chin Indian Community, Barona Group of Capitan Grande Band of Mission Indians, Campo Band of Diegueno Mission Indians, Chemehuevi Indian Tribe, Cocopah Indian Tribe, Colorado River Indian Tribes, Fort McDowell Yavapai Nation, Fort Mojave Indian Tribe, Fort Yuma Quechan Tribe, Ewiiaapaayp Band of Kumeyaay Indians, Gila River Indian Community, Hopi Tribe, Iipay Nation of Santa Ysabel, Inaja-Cosmit Band of Indians, Jamul Indian Village, La Posta Band of Diegueno Mission Indians, Manzanita Band of Kumeyaay Nation, Mesa Grande Band of Diegueno Mission Indians, Mescalero Apache Tribe, Pascua Yaqui Tribe, Pueblo of Zuni, San Pasqual Band of Diegueno Mission Indians, Salt River Pima-Maricopa Indian Community, Sycuan Band of the Kumeyaay Nation, Tohono O'odham Nation, Torres-Martinez Desert Cahuilla Indians, Twenty-Nine Palms Band of Mission Indians, and Viejas Band of Kumeyaay Indians. A project information packet was also mailed to Kwaaymil Laguna Band of Indians. As of July 2025, HWT held virtual project meetings with the Cocopah Indian Tribe, Colorado River Indian Tribes, Chemehuevi Indian Tribe, and the Viejas Band of Kumeyaay Indians, as well as an in-person meeting with the La Posta Band of Diegueno Mission Indians.

2.2.1.4 Private Landowners and Homeowner Associations

HWT initiated its public outreach process with landowners by mailing all recorded landowners within 2 miles of the Proposed Project's initial study area an introductory postcard regarding the Proposed Project that identified upcoming opportunities for public input on the Proposed Project. HWT hosted six public meetings to provide landowners and other stakeholders the opportunity to discuss the Proposed Project with HWT representatives one-on-one. A summary of Open Houses conducted to date is provided below in Section 2.2.1.8, Public Discussion, as well as in the Ironwood Transmission Line Project Routing Study (Appendix K).

2.2.1.5 Developers of Large Housing or Commercial Projects

Outreach efforts to developers of large housing or commercial projects near the Proposed Project area included the open houses described below under Section 2.2.1.8, Public Discussion, which were open to all members of the public. HWT has not specifically communicated with large housing or commercial project developers to date. However, HWT is not aware of any large housing or commercial projects that could coincide or conflict with Proposed Project activities.

2.2.1.6 Other Utility Owners and Operators

HWT has coordinated with APS, SDG&E, and Imperial Irrigation District (IID) regarding project details and collaborative efforts.

HWT sent initial notification to SDG&E in May 2024 regarding interconnection into their Imperial Valley Substation. Collaboration has been ongoing in support of the various milestones and requirements in the SDG&E Interconnection Process.

HWT submitted an interconnection request to APS in July 2024 regarding interconnection into their North Gila Substation. Collaboration has been ongoing in support of the various milestones and requirements in the APS Interconnection Process.

In February 2025, HWT contacted IID as the local electric and water utility provider to identify locations where possible conflicts with existing electric and water infrastructure may occur as well as areas of opportunity where siting of the Proposed Project could minimize potential conflicts or be beneficial to IID's ongoing operations. HWT has continued to coordinate regularly with IID as the Proposed Project design has progressed.

2.2.1.7 Federal, State, and Local Fire Management Agencies

HWT has not yet communicated with federal, state, or local fire management agencies regarding the Proposed Project. The Proposed Project would not be located within any High or Very High Fire Hazard Severity Zones in Federal, State, or Local Responsibility Areas or within locations mapped by the CPUC as Tier 2 or Tier 3 High Fire Threat Districts.

2.2.1.8 Public Discussion

In February 2025, HWT held three open houses in the communities of Imperial, Heber, and Calexico to share information with the public regarding HWT's routing principles, initial design considerations, and the CPUC process as well as collect public input regarding transmission line routing and design; environmental, community, economic opportunities and concerns; and other input attendees wished to share with HWT. Following these open houses, HWT used the collected information to inform preliminary routing and design and prepared a set of route alternatives.

In April and May of 2025, HWT conducted three additional open houses to share with attendees the results of the February open houses and display maps illustrating the resulting set of route alternatives. These included the Agricultural Open House, hosted at the AgWest Farm Credit Agricultural Center on April 30th with 11 attendees; the Heber Open House, hosted at the Heber Community Center on April 30th with 8 people attending; and the Calexico Open House, hosted at the Calexico Women's Improvement Club on May 1st with 8 attendees. At each of these events, HWT solicited and collected public input on the potential route alternatives and any additional input attendees wished to share with HWT. Following these open houses, HWT used the collected information to further refine the route alternatives and select a proposed route to be evaluated herein as the Proposed Project.

A final open house was held in Arizona in September 2025 to further inform the route and in support of obtaining a Certificate of Environmental Compatibility from the Arizona Corporation Commission.

In addition to the seven open houses described above, HWT representatives have met and will continue to meet with interested and potentially affected landowners individually or in small groups when landowners request these meetings. The Ironwood Transmission Line Project Routing Study, provided in Appendix K, includes a further description of public outreach and engagement activities, as well as a discussion of preliminary concerns, alternatives suggested, and significant outcomes of consultation and public engagement.

2.2.1.9 Significant Outcomes

Input from the preliminary Routing Study and open houses helped to identify several potential routes. In total, HWT hosted seven open houses with 88 people attending. Questions and comments received during the public open house meetings focused on location preference, landowner compensation, funding, and future notifications. HWT considered the comments in completing the Routing Study (Appendix K). Once preliminary route alternatives were identified and evaluated,

HWT continued to seek input from landowners and other stakeholders in the Project Study Area (e.g., Fort Yuma Quechan Tribe, local officials, business interests, recreational groups, and communities in the vicinity of the Proposed Project) before selecting the Preferred Route. Additional information detailing the route selection process is available in Appendix K.

A common sentiment among agricultural groups and farmers of Imperial Valley was the desire to preserve aerial applicator routes in adherence to Federal Aviation Administration guidelines. Additionally, fiber optic cables are commonly utilized in agricultural operations in North Gila Valley and generally throughout the Yuma area, and agricultural users expressed concern that the Proposed Project may interfere with this existing infrastructure. The public also expressed concerns regarding food standards of grocery distributors related to crops grown below transmission lines. Members of the public also expressed concern regarding tribal cultural resources and potential impacts of the Proposed Project.

2.2.1.10 Coinciding or Conflicting Developments

HWT is not aware of any developments that could coincide or conflict with Proposed Project activities (i.e., developments within or immediately adjacent to the existing or proposed infrastructure). The Proposed Project route location considered and avoided existing residential and other development as well as anticipated future development areas where such land uses were expected to occur as provided by County officials during HWT's public outreach meetings.

2.2.2 Records of Consultation and Public Outreach

HWT is currently executing a detailed stakeholder outreach and engagement process to solicit and collect input from local communities, Yuma County and Imperial County officials, community groups, and other interested stakeholders regarding the Proposed Project's design and routing as well as potential impacts and measures to avoid or minimize those impacts. Details regarding HWT's pre-filing consultation and engagement are provided in the sections above. The Ironwood Transmission Line Project Routing Study, provided in Appendix K, includes a further summary of public outreach and engagement activities, as well as a discussion of preliminary concerns, alternatives suggested, and significant outcomes of consultation and public engagement.

All community and public outreach meetings with CAISO and regular submittals as required by the APSA completed during HWT's public outreach process are presented below in Table 2-1.

Table 2-1 Public Outreach Meetings

Meeting	Date(s)
Fort Yuma Quechan Tribe	15-Jun-23
Fort Yuma Quechan Tribe	18-Apr-24
Fort Yuma Quechan Tribe	11-Jun-24
Imperial County Supervisors and Staff	13-Nov-24
Imperial County Staff	14-Nov-24
Virtual meeting with Yuma County Staff	21-Nov-24
Fort Yuma Quechan Tribe	22-Nov-24
Yuma County Supervisor and Staff	4-Dec-24
Fort Yuma Quechan Tribe	9-Dec-24
Imperial County Supervisors-elect	19-Dec-24

Meeting	Date(s)
Imperial County Supervisor	19-Dec-24
San Diego County Staff	19-Dec-24
Fort Yuma Quechan Tribe	23-Dec-24
Imperial Valley Vegetable Growers Association, Coalition for Agriculture Labor and Business and Imperial County Farm Bureau	7-Jan-25
Heber Public Utilities District	20-Jan-25
City of Calexico Planning Director	29-Jan-25
Imperial Valley Economic Development Corporation	29-Jan-25
Imperial County Agriculture Commissioner's Office	30-Jan-25
Imperial Valley Economic Development Corporation Annual Dinner	6-Feb-25
President of the Yuma Valley Rod and Gun Club	17-Feb-25
Imperial Open House	18-Feb-25
Heber Open House	19-Feb-25
Calexico Open House	20-Feb-25
Retired editor of the Imperial Valley Press	20-Feb-25
Mayor and City Administrators of the City of Yuma	21-Feb-25
Fort Yuma Quechan Tribe	21-Feb-25
Yuma Area Farmers and Community Leaders	25-Feb-25
American Sand Association	25-Mar-25
City of Calexico Mayor Pro Term City Manager	26-Mar-25
A. Farmers Service Corp.	26-Mar-25
Brooks of Harrison Family Farms	26-Mar-25
City of Calexico Mayor Pro Term and City Manager	26-Mar-25
Fort Yuma Quechan Tribe	8-Apr-25
Chairman of the Imperial County Board of Supervisors	9-Apr-25
Greater Yuma Economic Development Corporation	9-Apr-25
Yuma County Board of Supervisors	9-Apr-25
Imperial Valley Economic Development Corporation	10-Apr-25
Imperial County Board of Supervisors, District 2	10-Apr-25
Yuma County Board of Supervisors	10-Apr-25
City of Yuma Interim City Administrator and Deputy City Administrator	10-Apr-25
Imperial Open House	30-Apr-25
Heber Open House	30-Apr-25
Calexico Open House	1-May-25
Imperial County Board of Supervisors, District 4	21-May-25
Yuma Irrigation District	16-May-25
Chavez Ranch	21-May-25
Imperial Valley Economic Development Corporation Energy Summit	11-Jun-25
Imperial Valley Assistant Agricultural Commissioner	17-Jun-25
Heber Dunes State Recreational Vehicle Area	18-Jun-25

Meeting	Date(s)
Heber Public Schools Superintendent	18-Jun-25
A Farmer Service Corp	18-Jun-25
Imperial Valley Regional Chamber of Commerce	19-Jun-25
Imperial County Board of Supervisors, District 3	20-Jun-25
COLAB	20-Jun-25
Fort Yuma Quechan Tribe	9-Sep-25
Yuma Open House	10-Sep-25

2.3 Environmental Review Process

2.3.1 Environmental Review Process

The Proposed Project will be subject to environmental review under CEQA and NEPA. The state and federal environmental review process is anticipated to extend from 2025 until 2028. Table 2-2 provides an anticipated environmental review schedule with milestones.

Table 2-2 Anticipated Environmental Review Schedule

Milestone	Date(s)
PEA Submitted to CPUC	September 2025
Draft EIR Available for Public Review	November 2026
Draft EIS Available for Public Review	March 2027
Final EIR Published	August 2027
Final EIS Published	January 2028

2.3.2 California Environmental Quality Act Review

2.3.2.1 CPUC as CEQA Lead Agency

Pursuant to the CPUC's G.O. 131-E, the Proposed Project requires a CPCN from CPUC. Issuance of a CPCN is a project that requires environmental review in compliance with CEQA. Therefore, the CPUC will be the Lead Agency under CEQA for the Proposed Project because it has the greatest responsibility for supervising or approving the project as a whole (14 Cal Code Regs. § 15051(b)).

2.3.2.2 Other State and Federal Agencies that May Have Discretionary Permitting Authority

The BLM, USBR, U.S. Army Corps of Engineers, United States Fish and Wildlife Service, California Department of Parks and Recreation, California Department of Fish and Wildlife, Arizona Corporation Commission, Arizona Department of Environmental Quality, Arizona Game and Fish Department, the Colorado River Basin Regional Water Quality Control Board (Region 7 Colorado River Basin), and the California Department of Transportation will have discretionary permitting authority over aspects of the Proposed Project.

2.3.2.3 Federal, State, and Local Agencies that May Have Ministerial Permitting Authority

The California Department of Transportation, City of Calexico, Imperial County, California and Yuma County, Arizona may have ministerial permitting authority over aspects of the Proposed Project in their respective jurisdictions to the extent not preempted by the CPUC's authority under GO 131-E.

2.3.2.4 Results of Preliminary Outreach with Agencies and the Public

Section 2.2.1.9, Significant Outcomes, describes the importance of preserving aerial applicator routes in adherence to Federal Aviation Administration guidelines as well as not interfering with fiber optic cables utilized in agricultural operations. HWT is not aware of any unexpected issues that would affect the CEQA process as a result of the outreach described above in Section 2.2.1, Pre-filing Consultation and Public Outreach. Future outreach with Federal, state, and local agencies is anticipated to occur on an ongoing basis through survey access requests and applications for applicable permits.

2.3.3 National Environmental Policy Act Review

Those portions of the Proposed Project located on federal lands and those elements that may result in impacts to federally-listed threatened or endangered species will be subject to review under NEPA. One of the federal agencies issuing discretionary approvals will take the lead coordination role should approval by more than one federal agency be required for NEPA purposes. It is anticipated that BLM will be the NEPA lead agency.

2.3.4 Pre-filing California Environmental Quality Act and National Environmental Policy Act Coordination

Pre-filing coordination with CEQA and NEPA review agencies is described in Section 2.2. The coordination to date has identified that separate CEQA and NEPA processes will be engaged for the Proposed Project.

2.4 Document Organization

This Proposed Project Proponent's Environmental Assessment (PEA) contains the following Chapters, as set forth in the CPUC's *Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments*. This PEA has been prepared to satisfy the CPUC's PEA Guidelines to the extent possible. This PEA focuses on the route proposed by HWT, herein referred to as the "Proposed Project".

Chapter 1, Executive Summary

This chapter includes a summary of the Proposed Project, a discussion of the land ownership and right-of-way (ROW) requirements, a presentation of the areas of controversy identified to date, a summary of potential impacts, a summary of the pre-filing consultation and public outreach performed to date, a summary of the major PEA conclusions, and a listing of major issues that remain to be resolved.

Chapter 2, Introduction

This chapter includes a presentation of the purpose and need for, and objectives of, the Proposed Project, identifies the Applicant, details the pre-filing consultation and public outreach activities conducted to date, outlines the environmental review process, and establishes the organization of the PEA document.

Chapter 3, Proposed Project Description

This chapter includes an overview of the Project Study Area; a description of the existing and proposed system; a presentation of the components of the Proposed Project; information related to land ownership, ROWs, and easements; a description of the construction methodologies to be employed; preliminary data regarding the construction workforce, equipment, traffic, and schedule; information on post-construction activities; a discussion of operation and maintenance-related work; decommissioning-related information; a listing of anticipated permits and approvals; and a table presenting APMs.

Chapter 4, Description of Alternatives

This chapter identifies and describes Alternatives to the Proposed Project, including a discussion of a No Project Alternative, and identifies Alternatives identified and considered but rejected.

Chapter 5, Environmental Analysis

This chapter includes the environmental section, regulatory setting, impact questions for each resource area, and impact analyses and APMs. The resource areas addressed include each environmental factor (resource area) identified in the most recent version of the CEQA Guidelines Appendix G checklist and any additional relevant resource areas and impact questions that are defined in the CPUC's PEA Guidelines.

Chapter 6, Comparison of Alternatives

This chapter compares each Alternative described in Chapter 4 against the Proposed Project in terms of each Alternative's ability to avoid or reduce a potentially significant impact. This chapter also provides a detailed table that summarizes the potential impacts of the Proposed Project and ranks the alternatives in order of environmental superiority.

Chapter 7, Cumulative Impacts and Other CEQA Considerations

This chapter provides a detailed table listing past, present, and reasonably foreseeable future projects within and surrounding the Proposed Project (within an approximately 2-mile buffer). This includes a cumulative impact analysis and provides an evaluation of potential growth-inducing impacts.

Chapter 8, List of Preparers

This chapter lists the major authors and preparers of this PEA.

Chapter 9, References

This chapter includes a list of references cited in this PEA.

Required PEA Appendices and Supporting Materials

This PEA includes the Required PEA Appendices and Supporting Materials listed in the CPUC's *Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments*, dated November 2019, Revision 1.0 that are applicable and necessary to support the environmental impact analyses contained in Chapters 5 and 6. These Appendices are presented in the same order as presented in the CPUC's Guidelines.

3 Proposed Project Description

This chapter provides a detailed description of Horizon West Transmission, LLC's (HWT) Ironwood Transmission Line Project (Proposed Project).

3.1 Project Overview

3.1.1 Summary of the Proposed Project

The Proposed Project is an approximately 86-mile 500 kilovolt (kV) transmission line from Arizona Public Service Company's (APS) North Gila Substation to San Diego Gas & Electric Company's (SDG&E) Imperial Valley Substation. The Proposed Project is intended to mitigate resource deliverability constraints as identified in the California Independent System Operator Corporation's (CAISO) 2022-2023 Transmission Plan[1]. An overview map of the Proposed Project is presented in Figure 3-1 below. The Proposed Project is planned to be operational by the end of 2030 and would include the following major components:

3.1.1.1 Transmission

The new 500 kV transmission line will include:

- A combination of approximately 307 single-circuit guyed and self-supporting steel tubular and lattice 500 kV structures
- Approximately 86 linear miles of conductor
- Approximately 86 miles of overhead ground wire (OHGW), including optical ground wire (OPGW)

3.1.1.2 APS North Gila Substation

The Proposed Project does not include system changes or upgrades within the existing North Gila Substation, which is owned by APS.

3.1.1.3 SDG&E Imperial Valley Substation

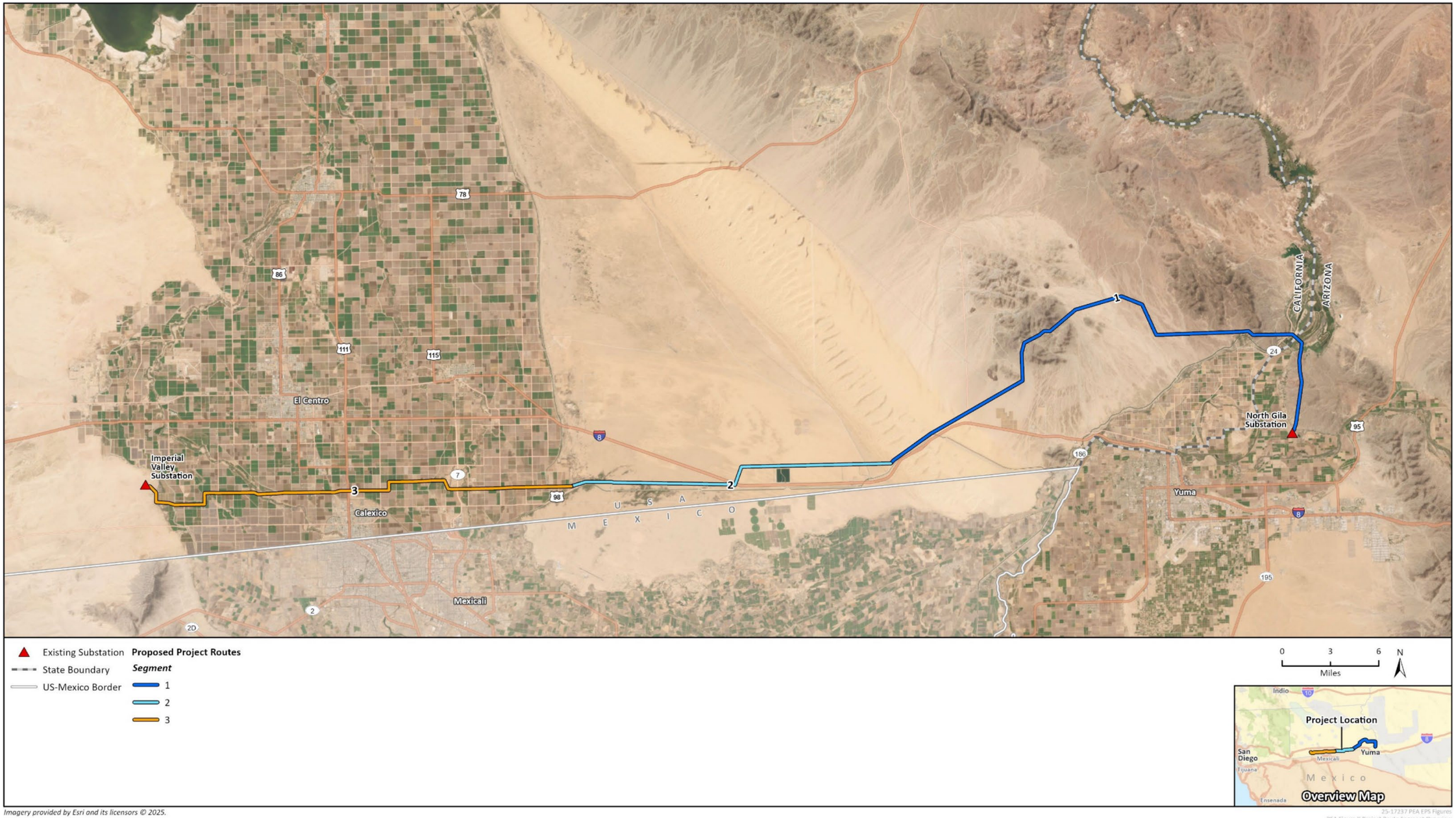
The Proposed Project does not include system changes or upgrades within the existing Imperial Valley Substation, which is owned by SDG&E.

3.1.2 Geographical Location of the Proposed Project

The Proposed Project is located in western Yuma County, Arizona and Imperial County, California, crossing predominantly unincorporated lands as well as federal, state, municipal, and private land. These lands include unincorporated areas of Imperial and Yuma counties, the city of Calexico, California, and public lands under the jurisdiction or management of the U.S. Bureau of Land Management (BLM), U.S. Bureau of Reclamation (USBR), and the California Department of Parks and Recreation.

[1] In various CAISO materials, the Ironwood Project is referred to as the North Gila-Imperial Valley #2 500 kV Transmission Line Project.

Figure 3-1 Proposed Project Overview Map



Imagery provided by Esri and its licensors © 2025.

25-17237 PEA EPS Figures
PEA Figure X Project Route Segment Overview

3.1.3 Overview Map

An overview map of the Proposed Project is presented in Figure 3-1.

3.2 Existing and Proposed System

3.2.1 Existing System

3.2.1.1 Existing Utility System

The Proposed Project would include construction and operation of the overhead transmission line, up to the point of change of ownership (POCO) at each connecting substation. The specific location of the POCO structures at North Gila and Imperial Valley substations will be determined during final engineering, and this PEA analyzes two potential areas for the POCO to be sited around each substation. At each substation, the applicable utility (APS or SDG&E) would install the 500 kV transmission line from the respective POCO and line shunt reactors to a new 500 kV bus within the substation to enable interconnection of the Proposed Project. The Proposed Project would be the second 500 kV line between North Gila and Imperial Valley substations; the existing transmission line is commonly referred to as the Southwest Powerlink (SWPL; also known as NGIV #1). The Proposed Project would not modify the existing utility system but would increase the overall reliability of the regional utility system.

3.2.1.2 Proposed Project and the Existing Local and Regional Systems

The Proposed Project would connect the North Gila Substation in Arizona and Imperial Valley Substation in California. While the Proposed Project would not physically modify the existing utility system, it would increase the overall reliability of the regional utility system.

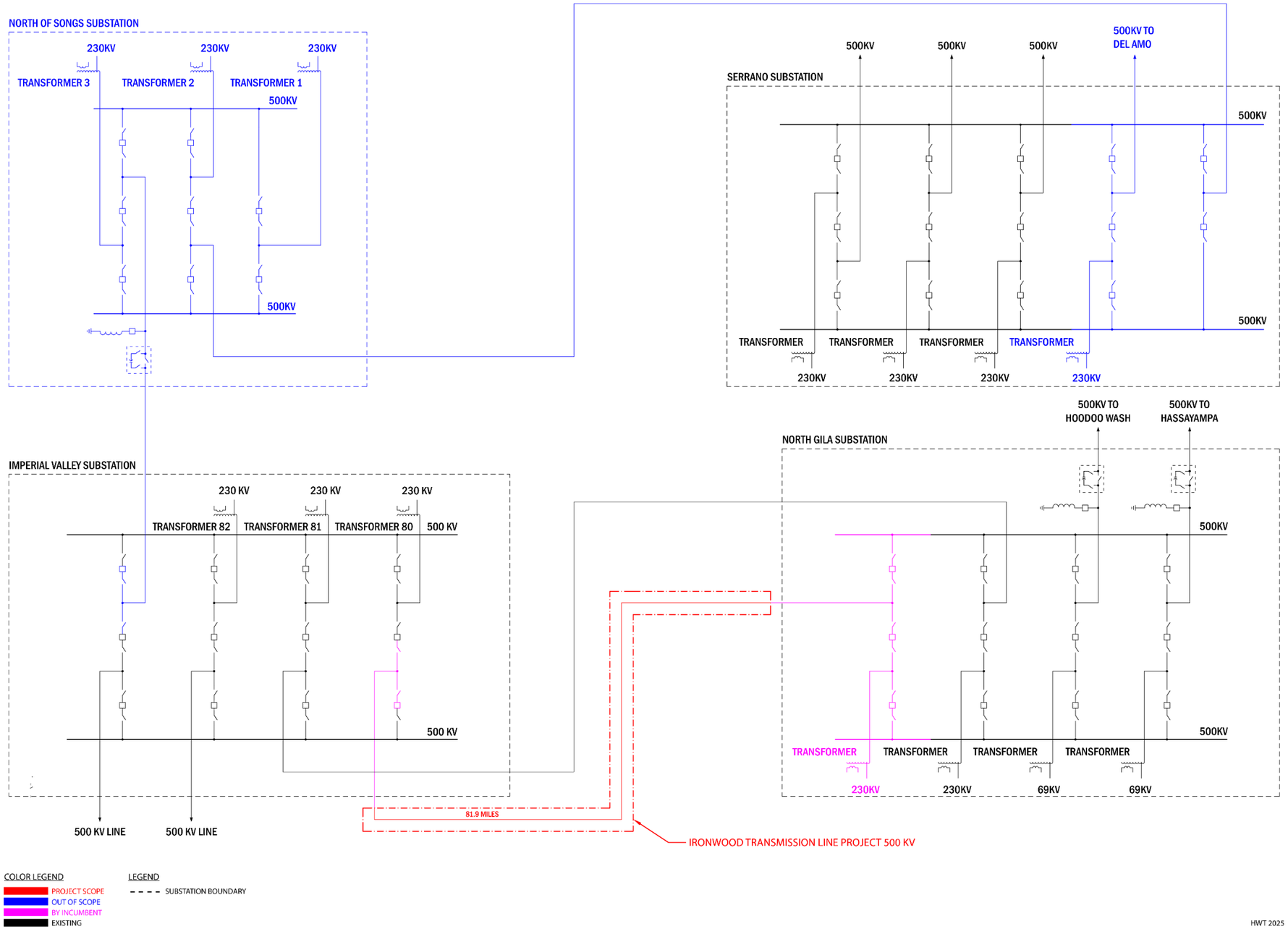
The Proposed Project would reinforce system reliability in Southern California while benefitting customers directly in San Diego County and Imperial County. The Proposed Project along with other transmission projects included in CAISO's 2022-2023 Transmission Planning Process (Imperial Valley-North of SONGS, North of SONGS-Serrano, and Serrano-Delamo-Mesa transmission line projects) would help alleviate constraints and allow deliverability of resources to San Diego and the Los Angeles Basin (Orange County, Los Angeles County) directly or indirectly through relief of other established pathways. On the eastern side of the Proposed Project route, the Proposed Project would benefit the North Gila (Yuma, Arizona) area by enhancing grid reliability.

The Proposed Project is intended to mitigate resource deliverability constraints as identified in the CAISO's 2022-2023 Transmission Plan. The CAISO approved the Proposed Project as necessary to help mitigate the East of Miguel deliverability constraint, which the CAISO found presently results in zero deliverability for resources in the CPUC's base portfolio (3,080 megawatt [MW]) (CAISO 2022-2023 Transmission Plan at 96). Ultimately, the Proposed Project would help support state goals, contributing to reduced carbon emissions and relieving strained transmission corridors.

3.2.1.3 Schematic Diagram of the Existing System Features

Figure 3-2 provides a schematic diagram of the existing utility system.

Figure 3-2 Existing and Proposed System Configuration



3.2.1.4 Detailed Maps and Associated GIS Data for Existing Facilities that would be Modified

The Proposed Project would not modify existing facilities; therefore, maps and geographic information system (GIS) data for existing facilities are not provided in this Proponent's Environmental Assessment (PEA).

3.2.2 Proposed Project System

3.2.2.1 Proposed Project by Component

A description of the Proposed Project by component is provided in Section 3.3. The Proposed Project would include installation of a new single circuit 500 kV transmission line that would tie into existing substations in Yuma County, Arizona (North Gila Substation) and Imperial County, California (Imperial Valley Substation). No upgrades or expansions to existing structures or facilities are included as part of the Proposed Project, and there are no other interrelated activities that are part of the Proposed Project.

3.2.2.2 System Features

System features that would be added as part of the Proposed Project are described in Section 3.3. The Proposed Project would not include the modification, removal, or disconnection of existing system features.

3.2.2.3 Expected Capacities of the Proposed Facilities

The Proposed Project would facilitate the increase of the capacity of the substations and, therefore, the existing utility system. The Proposed Project would have a Summer Normal capacity of 3933 mega-volt amperes (MVA), a 4 hour Summer Emergency capacity of 4547 MVA, and a 15 minute Summer Emergency capacity of 4884 MVA.

3.2.2.4 Initial and Full Buildout of the Proposed Facilities

The initial and final buildout would be an approximately 86-mile, single circuit 500 kV transmission line tying into the existing North Gila and Imperial Valley substations. No new substations are proposed. The Proposed Project would be serviced by the existing facilities.

3.2.2.5 System Tie or Loop for Reliability

The Proposed Project would establish a second connection between the North Gila and Imperial Valley substations, enhancing system reliability by creating redundancy in the network. This additional connection would help mitigate potential outages and improve operational flexibility.

3.2.2.6 Users and Area Served by the Proposed Utility System

The Proposed Project would directly serve Imperial County. The Proposed Project is part of CAISO's 2022-2023 Transmission Planning Process, which also includes transmission projects serving Imperial Valley - North of Songs, North of Songs - Serrano, Serrano - Del Amo – Mesa transmission lines. All of these projects would serve the Los Angeles Basin and reduce system stress in San Diego.

3.2.2.7 Schematic Diagram of the Proposed System Features

Figure 3-2 provides a schematic diagram of the Proposed Project system features.

3.2.2.8 Detailed Maps and Associated GIS Data for Proposed Facilities

Maps and GIS data for a preliminary design are provided in Appendix A. GIS data is provided under separate electronic cover.

3.2.3 System Reliability

The Proposed Project would be a second 500 kV transmission line between the North Gila and Imperial Valley substations, greatly increasing transfer capability compared with the capability of the existing SWPL. This additional line would enhance system reliability by providing redundancy; in the event of a loss of one North Gila-Imperial Valley circuit, power transfers between key load centers, such as downtown San Diego, Imperial County, and Orange County, can be maintained. As part of a larger infrastructure initiative, the Proposed Project would deliver widespread benefits to many users across Southern California, supporting energy reliability.

3.2.4 Planning Area

The Proposed Project would directly serve the SDG&E system around Imperial County. The Proposed Project is part of a larger infrastructure initiative, referred to as the Southern Area Reinforcement, which includes Imperial Valley - North of Songs (Orange County), North of Songs - Serrano, Serrano - Del Amo – Mesa transmission lines. The Proposed Project was selected by CAISO as a preferred transmission upgrade to mitigate existing thermal overloading deliverability constraints in the region (specifically the East of Miguel Constraint).

The Proposed Project would function as a key component of the broader Southern Area Reinforcement, a set of transmission projects in Southern California designed to address grid constraints and improve reliability. The Proposed Project supports cost-effective mitigation of these delivery constraints through common upgrades that benefit multiple regions. Taken as a portfolio of projects, the Southern Area Reinforcement mitigates constraints in Southern California Edison Company (SCE) Metro Area, the SCE Eastern Area, and the SDG&E Area that together impact deliverability of resources across most parts of southern California.

3.3 Project Components

This section addresses the components of the Proposed Project.

3.3.1 Preliminary Design and Engineering

3.3.1.1 Preliminary Design and Engineering

Preliminary design and engineering information available at this time for facilities included in the Proposed Project are presented in subsequent sections. The transmission line alignment is presented in Appendix A. The typical dimensions and the limits of areas that would be needed to construct the proposed transmission structures are described in subsequent sections.

3.3.1.2 Preliminary Design Drawings

Figure 3-3 and Figure 3-4 provide preliminary design drawings for typical right-of-way (ROW) and transmission structures that would be included as part of the Proposed Project. This Proposed Project Description is based on planning level assumptions. Actual work scope would be determined following completion of final engineering, further identification of field conditions, and compliance with applicable environmental and permitting requirements.

3.3.1.3 Proposed Project Maps

Appendix A contains detailed Proposed Project maps that display preliminary facility locations and boundaries known at this time with attributes and spatial geometry that corresponds to information in this chapter. GIS data is provided under separate electronic cover.

3.3.2 Components and Phases

3.3.2.1 Components

The Proposed Project consists of a single major component:

- One new Ironwood 500 kV Transmission Line from the existing North Gila Substation to Imperial Valley Substation (approximately 86 miles), inclusive of transmission structures, conductors, insulators and associated hardware, and OHGW, including OPGW.

3.3.2.2 Phases

There are two phases associated with the Proposed Project: The construction phase and the operation and maintenance (O&M) phase. Components of the Proposed Project would be installed during a single construction phase (i.e., continuous duration). The preliminary construction schedule is described in Section 3.6.4, Construction Schedule. The Proposed Project is planned to be operational by the end of 2030. This PEA addresses the potential environmental impacts associated with the construction and O&M phases of the Proposed Project.

3.3.2.3 Segments

The Proposed Project is split into three segments: Segment 1, Segment 2, and Segment 3. Segment 1 is approximately 37 miles and includes the proposed alignment from North Gila Substation north through the mountainous and variable terrain of the Laguna and Cargo Muchacho Mountains; Segment 2 is approximately 20 miles and includes the proposed alignment between the Cargo Muchacho Mountains west within the desert, Imperial Valley sand dunes and East Mesa; and Segment 3 is approximately 28 miles and includes the proposed alignment from the East Mesa desert area through Imperial Valley agricultural lands west to the Imperial Valley Substation.

3.3.2.4 Overview Map

An overview map of the Proposed Project is provided in Figure 3-1. Appendix A contains detailed maps of the Proposed Project. GIS data is provided under separate electronic cover.

3.3.3 Existing Facilities

The Proposed Project would not modify or remove existing facilities; therefore, no additional information regarding existing facilities is provided in this PEA.

Figure 3-3 Typical Transmission Line and ROW

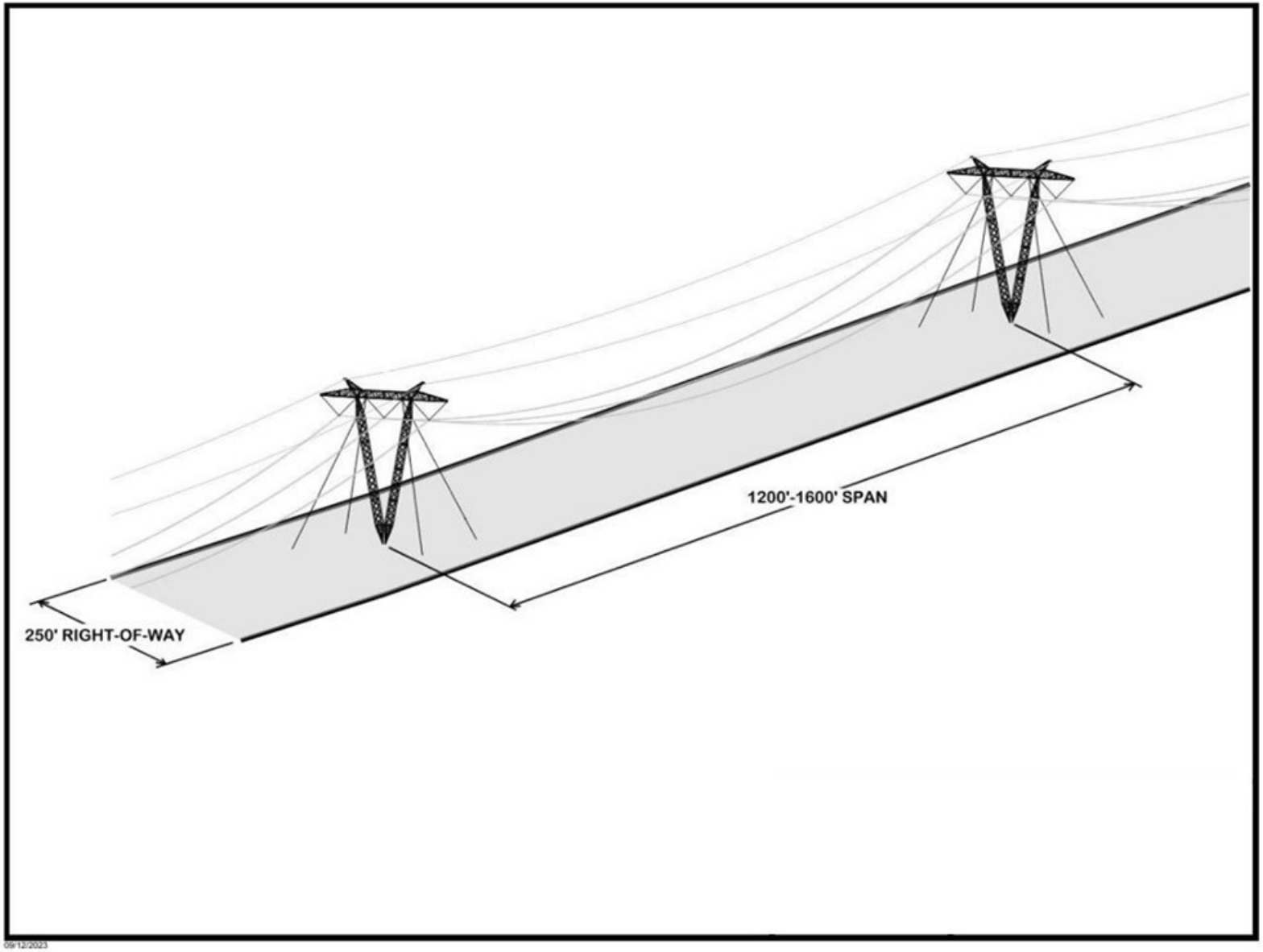


Figure 3-4a Typical Transmission Structures

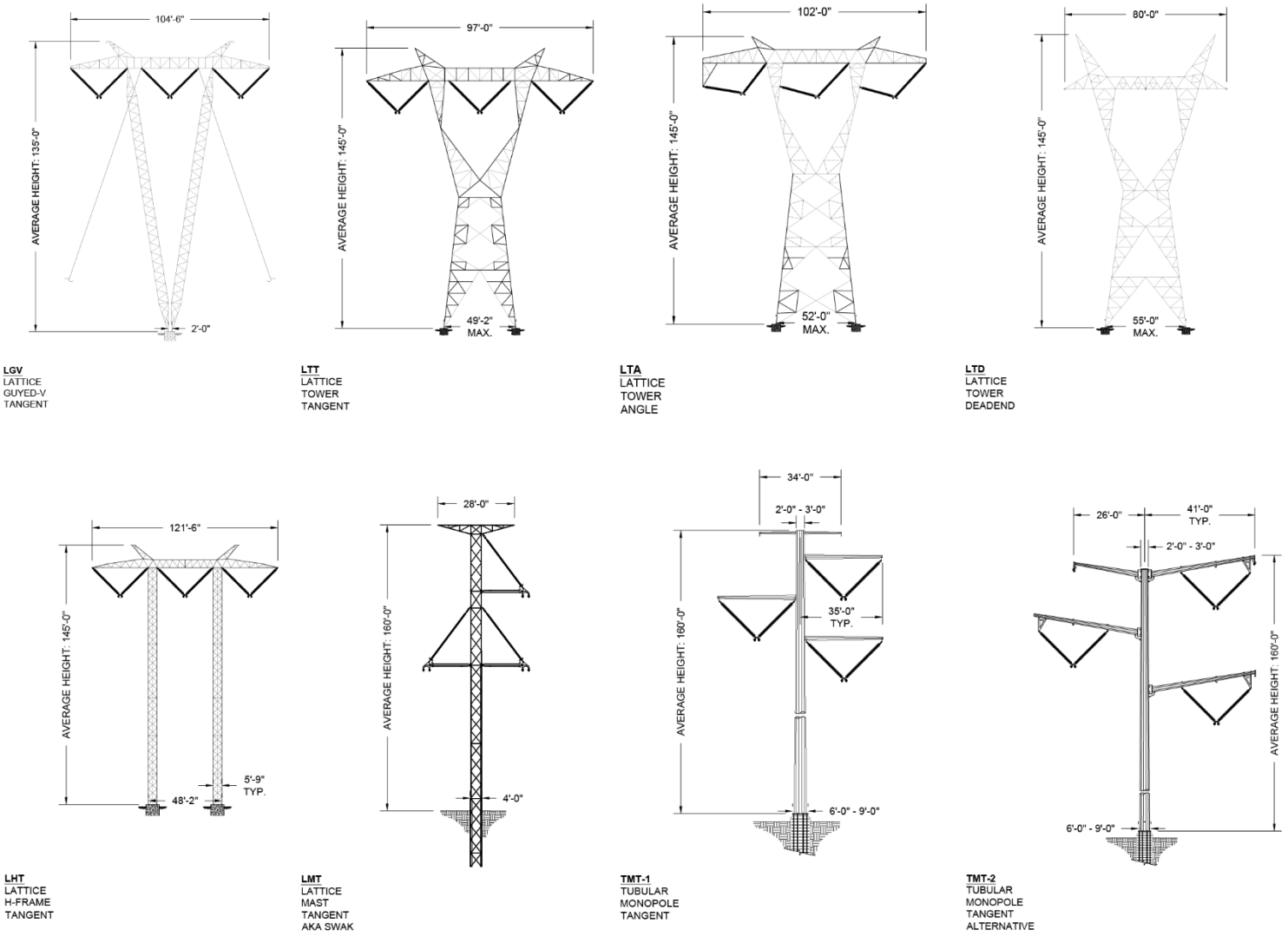
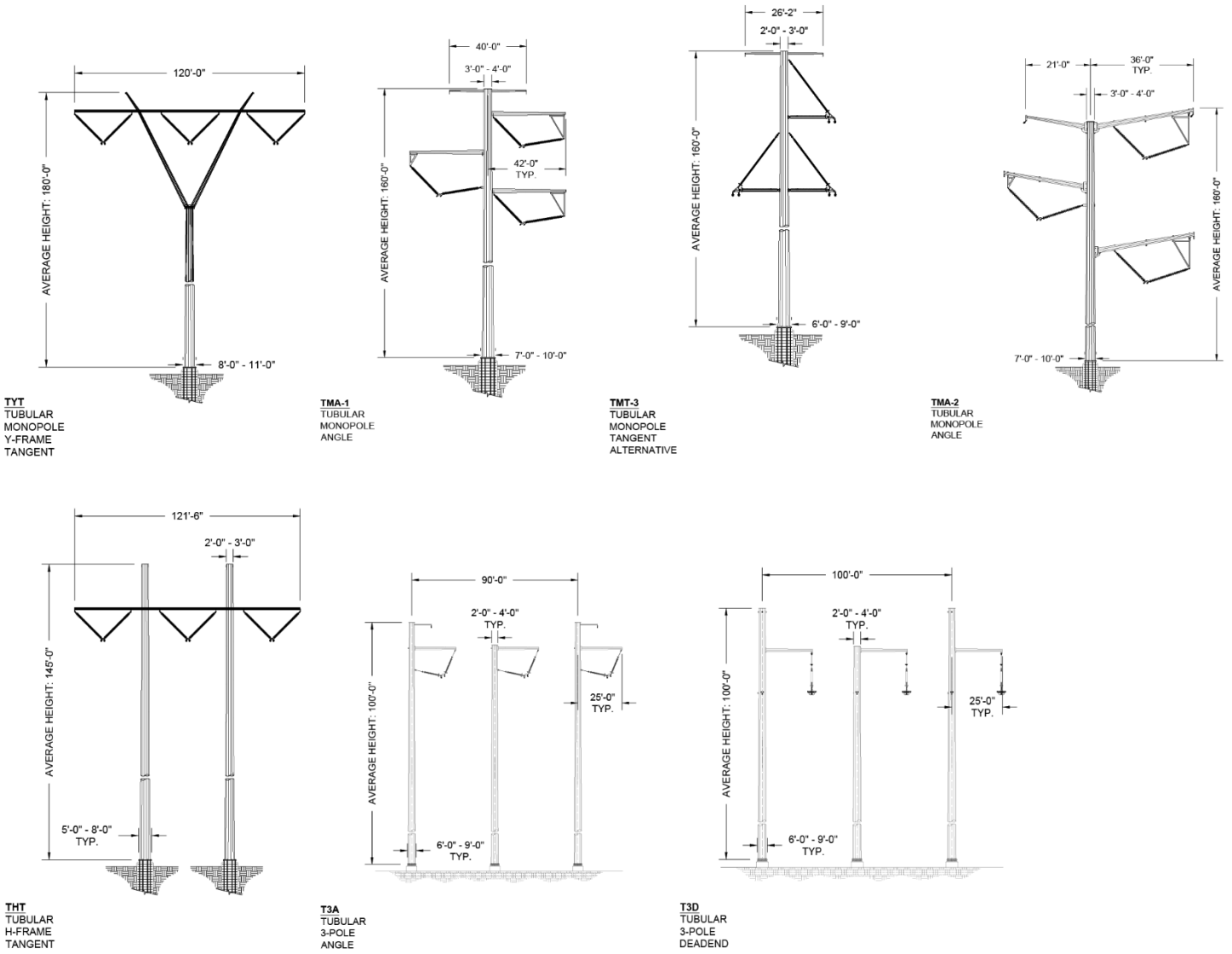


Figure 3-4b Typical Transmission Structures



3.3.4 Proposed Facilities

3.3.4.1 Facilities to be Installed or Modified

As part of the Proposed Project, new transmission towers, poles, foundations, conductors, insulators and associated hardware, and OHGW, including OPGW, would be installed. The locations of these facilities are provided in Appendix A. No existing facilities would be modified, and no substations, switching stations, gas storage facilities, gas pipelines, or service buildings would be installed as part of the Proposed Project.

Transmission Structures Description

New transmission structures would be installed for the Proposed Project. Typical 500 kV structure types, as described below and illustrated in Figure 3-4, could be used for the Proposed Project, including the structure types listed below. Preliminary estimates of structure quantities that may be installed for the Proposed Project are listed where known:

- Guyed Structures
  - Lattice Guyed "V" (LGV) – approximately 65
- Self-Supporting Structures
  - Lattice Tower Tangent (LTT) – approximately 86
  - Lattice Tower Angle (LTA) – approximately 10
  - Lattice Tower Dead-End (LTD) – approximately 37
  - Lattice H-Frame Tangent (LHT)
  - Lattice Mast Tangent (LMT)
  - Tubular Monopole Tangent (TMT) – approximately 87
  - Tubular Monopole Y-Frame Tangent (TYT)
  - Tubular Monopole Angle (TMA) – approximately 9
  - Tubular H-Frame Tangent (THT)
  - Tubular 3-Pole Angle (T3A)
  - Tubular 3-Pole Dead-End (T3D) – approximately 13

Additional structure types may be identified during future engineering and design but are anticipated to be similar in size and appearance to the structures described herein. The locations for each structure type would be determined during final design, and selected based on site-specific conditions (i.e., topography, terrain, constrained ROW, etc.) or to mitigate impacts resulting from the Proposed Project. Proposed structures vary in height, with none anticipated to exceed 200 feet, in order to remain below the threshold at which the structure may affect navigable airspace based on Federal Aviation Administration (FAA) regulations. Structure components are described in Figure 3-1 and typical configurations and dimensions of each structure are depicted in Figure 3-4.

Construction activities associated with transmission structures are described in Sections 3.5.5 and 3.5.6.

Conductor/Cable Description

As part of the Proposed Project, new non-specular 715.5 thousand circular mil (kcmil) 30/19 Redwing Aluminum Conductor Steel Supported (ACSS) with three conductors per phase (triple bundle) would be installed for the 86-mile alignment, for a total of nine conductors between the three phases.

The minimum conductor height above ground for the transmission line would be 30 to 40 feet, at the maximum operating temperature, based on NESC, General Order (G.O.) 95, and HWT's design standards. The exact height above ground for conductor would be determined by the height of each structure, which would be governed by topography and safety requirements for conductor clearance.

Based on Avian Power Line Interaction Committee recommendations (Edison Electric Institute and Avian Power Line Interaction Committee 2006), adequate 3 conductor phase spacing (60 inches or greater for avian protection) would be implemented.

To protect conductors from lightning strikes, two overhead wires would be installed on the top of the structures. Electrical current from lightning strikes would be transferred through the overhead wires and structures into the ground. Each overhead shielding position would include OHGW and at least one of the OHGW would be OPGW. The OHGW would be a 7#8 Alumoweld with a diameter of 0.385 inches. The OPGW would be a 48 or 96 fiber with a diameter of 0.53 inches and would facilitate data transfer required for system control and monitoring between the transmission facilities along the fiber path.

3.3.4.2 Description of Proposed Facilities by Component

The locations of all facilities are provided in Appendix A.

Transmission

The following facilities would be installed in the new 500 kV transmission line:

- A combination of approximately 307 single-circuit guyed and self-supporting steel tubular and lattice structures.
- Structures would typically span 1,200 to 1,600 feet (3 to 4 structures per mile), though this distance may be as little as 400 feet or as much as 1,800 feet due to varied topography and site conditions, with a typical ROW of 250 feet.
- Approximately 86 linear miles of conductor as described in Section 3.3.4.1.
- Approximately 86 miles of OHGW, one in each overhead shielding position. At least one of the OHGW would be OPGW as described in Section 3.3.4.1.

Additional information regarding the structures that would be installed as a part of the Proposed Project are provided in Table 3-1.

Table 3-1 Structure Types and Disturbance Dimensions

		Temporary Disturbance			Permanent Disturbance		
Structure Type	Structure Description	Length (feet)	Width (feet)	Area (acre)	Foundation Diameter (feet)	Foundation Quantity per Structure	Estimated Area per Structure (feet²)
LGV	Lattice Guyed "V"	250	250	1.4	7	1*	41.7
LTT	Lattice Tower Tangent	250	250	1.4	3-5	4	28.2-78.5
LTA	Lattice Tower Angle	250	250	1.4	4-6	4	50.2-113
LTD	Lattice Tower Dead-End	250	250	1.4	4-6	4	50.2-113
LHT	Lattice H-Frame Tangent	250	250	1.4	8	2	100.5-0
LMT	Lattice Mast Tangent	250	250	1.4	6-8	1	28.2-50.2
TMT	Tubular Monopole Tangent	250	250	1.4	7-10	1	38.4-78.5
TYT	Tubular Monopole Y-Frame Tangent	250	250	1.4	9-12	1	63.6-113
TMA	Tubular Monopole Angle	250	250	1.4	8-11	1	50.2-95
THT	Tubular H-Frame Tangent	250	250	1.4	6-9	2	56.5-127.2
T3A	Tubular 3-Pole Angle	250	250	1.4	7-10	3	115.4-235.6
T3D	Tubular 3-Pole Dead-End	250	250	1.4	7-10	3	115.4-235.6

Notes: *(4) Guy Anchors in addition to center pedestal

3.3.4.3 Above-Ground and Below-Ground Facilities

The Proposed Project would include installation of above-ground facilities only; no below-ground facilities are proposed. However, the 500 kV transmission structures have both above-ground and below-ground portions; structures would be installed on concrete foundations. The size range of foundations associated with the 500 kV structures is presented in Table 3-1. No structures are anticipated to exceed 200 feet, in order to remain below the threshold at which the structure may affect navigable airspace based on FAA regulations. The typical structure height would range between 105 and 155 feet with an average height of 135 feet. Permanent structure foundation diameter and embedment depth is dependent on soil properties and structure loading and would be determined during detailed design. Typical foundation depths range up to approximately 45 feet. Geotechnical field exploration will be required to determine a maximum foundation depth.

3.3.4.4 Different Facilities

Guys could be used to support LGV structures installed along the Proposed Project route as needed. Guying consists of a guy wire (down guy) that is fastened to a structure and attached to a buried anchor. The single-circuit, guyed, V-shaped lattice structure of the LGV would be galvanized steel. The typical structure height would range between 105 and 155 feet with an average height of 135 feet. The average span between structures would be approximately 1,400 feet. The LGV would be used where the transmission line proceeds in a straight line and traverses mostly flat terrain. Due to the simplicity of the design and assembly, the LGV is cost efficient and results in less ground disturbance during construction than other structure design options. Specific locations of proposed guyed structures are available in the staking data provided in Appendix A.

3.3.4.5 Civil Engineering Requirements

A general overview of civil engineering requirements is provided below. Additional design detail and locational information is available in Appendix A.

Access Roads

Five types of access would be used for this Proposed Project:

- **Type 1: Existing Roads, No Improvement** - Typically consists of state, county, agricultural, or private paved or dirt roads. These roads are well established and require no construction to further develop. They may require light maintenance, within previously disturbed areas, including but not limited to repair of culverts, cattle guards, fences, ingress/egress, or other existing road elements or repair of rutting or wash boarding with minor blading.
- **Type 2: Existing Road, Needs Improvements** - Typically a double track road that requires widening, blading, regrading, and possibly crushed rock for soft spots or water crossings. A Type 2 road would be left in place for future maintenance on the transmission line. No reclamation is required.
- **Type 3: New Roads** - New construction and pioneering. Requires grading and cut and fill on slopes to build the road. A Type 3 road would be left in place for future maintenance on the transmission line. No reclamation is required. Road locations would be coordinated with the landowner.
- **Type 4: Temporary Roads** - Temporary roads are typically new roads that would be constructed and are required to be reclaimed and rehabilitated at the end of the Proposed Project. During reclamation the road would be removed and restored to its original contour and reseeded and mulched as required. This could be applied in sensitive areas to discourage public access.
- **Type 5: Overland/Drive and Crush Access** - This could be applied to wetland areas that require matting or other sensitive areas where regular roads are not feasible. No restoration would be necessary, and matting would be removed. This can only be applied to areas that are already flat and safe to travel on with no improvements. “Drive and Crush” would be used in limited situations. This road is typically used for temporary access and could require cutting of vegetation or mulching post-construction. This would only be applied to non-O&M roads. Access to the ROW would be via existing roads and trails to the extent practicable. HWT expects that these existing roads and trails would be used in their present condition without improvements (Type 1), unless improvements are required or are deemed to be in the best interest of the Proposed Project and for future use. Where access via existing private roads and trails is needed, HWT would coordinate with landowners as needed. In areas where improvements are required, roads and trails would be graded to provide a smooth travel surface (Type 2). Where existing roads and trails can be used to access the ROW, only spur roads to each structure site are expected to be required. Access on the ROW, other than in specific areas, would require a road graded at varying widths depending on terrain and turning radii, with up to a 2-foot berm on either side. New roads would typically go directly from structure to structure, except on hillsides, ridgebacks, rock outcrop areas, wash crossings, treed areas, or in areas where sensitive environmental resources can be avoided. In such cases, the road would follow suitable topography from structure to structure and would be built in areas that generally cause the least amount of overall disturbance and reduce safety concerns.

New roads that must be graded for access in steep terrain (side-hill roads) would require exceeding a 24-foot width of disturbance, due to cut and fill conditions.

Foundations

The type of foundation at each structure location would be selected based on the type of terrain encountered, the subsurface soil conditions (e.g., bedrock, soft soils, high water table), ease of access to structure locations, type of structure, and other considerations. The main goals of selecting the appropriate foundation system are to minimize the quantity of materials required and create minimal surface impact while meeting terrain requirements. The following discussion provides typical descriptions of foundation types that may be used for the Project. See Table 3-2 for primary and secondary foundation types organized by structure type with typical sizes for each.

Pedestal foundations involve the construction of a supporting platform or base, typically made from concrete, steel, or stone, at the base of the structure. The pedestal foundation is intended to distribute the weight of the structure evenly and are typically used to support tall poles or columns.

Drilled pier footings involve excavating relatively deep cylindrical shafts into the ground, positioning anchor bolts for monopoles or stub angle for lattice structure, positioning reinforcing steel (rebar cage) and pouring high strength concrete to complete the foundation. Drilled piers are ideal for structure locations that are easy to access for concrete trucks due to the large concrete volume requirement and typically provide excellent moment resistance while minimizing ground line disturbance.

Micropile foundations typically consist of 4 to 8 smaller cylindrical piles that connect to a steel pile cap/baseplate. It requires minimal excavation, as the micropiles are drilled directly into the soil or rock and bonded with grout, creating a strong anchor system. This design is ideal for areas with challenging soil conditions, tight access, or where reducing ground disturbance and environmental impact is critical.

Direct embedment foundations are deep cylindrical excavations in which the structure base is embedded, and the annular space remaining is backfilled with either native soil, crushed stone or concrete. This foundation type is commonly used for monopole or lattice mast foundations on single pole/mast and H-Frame tangent applications. It has a relatively low cost, short construction time requirement and is ideal for areas in which access is limited.

Table 3-2 Foundation Type and Dimensions

Str. Type	Primary Foundation Type	Alternate Foundation Type	Primary		Alternate	
			Foundation Diameter (ft)	Foundation Depth (ft)	Foundation Diameter (ft)	Foundation Depth (ft)
LGV	Pedestal	Drilled Pier	7	4	4-8	20-30
LTT	Drilled Pier	Micropile	3-5	20-40	6	15-20
LTA	Drilled Pier	Micropile	4-6	25-45	6	15-20
LTD	Drilled Pier	Micropile	4-6	25-45	6	15-20
LHT	Drilled Pier	Micropile	8	25-40	6-8	15-20
LMT	Direct Embed	-	6-8	25-45	-	-
TMT	Drilled Pier	-	7-10	30-45	-	-
TYT	Drilled Pier	-	9-12	35-50	-	-
TMA	Drilled Pier	-	8-11	30-45	-	-
THT	Drilled Pier	Micropile	6-9	25-40	6	15-20
T3A	Drilled Pier	-	7-10	25-40	-	-
T3D	Drilled Pier	-	7-10	25-40	-	-

Pads

Construction of a transmission structure pad where terrain is steeper than 5 precent slope may require a permanent O&M structure. The dimensions of O&M structure pads would vary depending on location and terrain but would generally occupy an area of approximately 40 feet by 70 feet and be located adjacent to each applicable structure within the laydown/work area used for structure assembly. O&M structure pads may be cleared of vegetation and/or graded as necessary to provide a level surface for equipment operation and may require permanent grading in order to accommodate slopes and daylights. The locations of proposed permanent O&M structure pads are shown in the mapbook included as Appendix A and included in the GIS data provided under separate electronic cover. As needed, additional temporary crane pads or permanent O&M structure pads may be determined during final engineering and upon the selection of the appropriate construction methods to be used by HWT or its Contractor.

Spill Containment

The Proposed Project would not include the installation of engineered spill containment structures.

3.3.4.6 Permanent and Temporary Facilities

Temporary facilities would be installed at construction staging areas, such as construction office trailers, security features, temporary power facilities, and lighting, and are discussed in Section 3.5.2. These facilities would be removed after construction is complete.

3.3.4.7 Names, Types, and Materials of Proposed Facilities

Lattice Guyed "V"

The single-circuit, guyed, V-shaped lattice structure would be galvanized steel with an average structure height of approximately 135 feet. This structure would be used where the transmission

line proceeds in a straight line and traverses mostly flat terrain. Due to the simplicity of the design and assembly, the LGV is cost efficient and results in less ground disturbance during construction than other structure design options.

Lattice Tower Tangent

The single-circuit, self-supporting, lattice tangent tower would be galvanized steel with an average structure height of approximately 145 feet. This structure would be used where the transmission line proceeds in a straight line and primarily where side slopes and/or rocky terrain is present. The four-legged tower allows utilization of variable leg lengths for stability on sloped terrain.

Lattice Tower Angle and Lattice Tower Dead-End

The single-circuit, self-supporting, lattice angle and dead-end towers would be galvanized steel with an average structure height of approximately 145 feet. These structures would be used where the transmission line turns and primarily where side slopes and/or rocky terrain is present. The four-legged tower allows utilization of variable leg lengths for stability on sloped terrain.

Lattice H-Frame Tangent

The single-circuit, self-supporting, lattice H-frame (two-legged) tangent would be galvanized steel with an average structure height of approximately 145 feet. This structure would be used as an alternative to the four-legged LTT where the transmission line proceeds in a straight line and primarily where side slopes and/or rocky terrain is present. The two-legged H-Frame allows utilization of variable leg lengths for stability on sloped terrain and has a smaller groundline footprint than the LTT.

Lattice Mast Tangent

The single-circuit, self-supporting, vertical mast lattice tangent structure would be galvanized steel with an average structure height of approximately 140 feet. This structure would be used where the transmission line proceeds in a straight line and traverses mostly flat terrain in which there may be constrained ROW or a need to minimize total ground footprint (e.g., agricultural fields). Due to the simplicity of the design, direct embedded foundation and easily interchangeable components, the LMT is a cost-efficient option that results in less ground disturbance during construction than other structure design options.

Tubular Monopole Tangent

The single-circuit, self-supporting, tubular steel monopole tangent would be either galvanized or weathering steel, in a primary or alternative arm configuration, with an average structure height of approximately 160 feet. This structure would be used where the transmission line proceeds in a straight line and traverses mostly flat terrain in which there may be constrained ROW or a need to minimize total ground footprint (e.g., agricultural fields).

Tubular Monopole Y-Frame Tangent

The single-circuit, self-supporting, tubular steel monopole Y-frame tangent would be either galvanized or weathering steel with an average structure height of approximately 180 feet. This structure would be used where the transmission line proceeds in a straight line and crosses over a

large body of water such as a river and also within an area in which there may be constrained ROW or a need to minimize total ground footprint (e.g., agricultural fields).

Tubular Monopole Angle

The single-circuit, self-supporting, tubular steel monopole running angle structure would be either galvanized or weathering steel, in a primary or alternative arm configuration, with an average structure height of approximately 160 feet. This structure would be used where the transmission line turns and traverses mostly flat terrain in which there may be constrained ROW or a need to minimize total ground footprint (e.g., agricultural fields).

Tubular H-Frame Tangent

The single-circuit, self-supporting, tubular steel H-Frame (two-legged) would be either galvanized or weathering steel with an average structure height of approximately 145 feet. This structure would be used as an alternative to the four-legged LTT where the transmission line proceeds in a straight line and primarily where side slopes and/or rocky terrain is present. This structure is similar to the LHT but utilizes tubular steel monopoles. The two-legged H-Frame allows utilization of variable leg lengths for stability on sloped terrain and has a smaller groundline footprint than the LTT.

Tubular 3-Pole Angle and Tubular 3-Pole Dead-End

The single-circuit, self-supporting, tubular steel 3-pole running angle and dead-end structures would be either galvanized or weathering steel with an average structure height of approximately 100 feet. These structures would be used where the transmission line turns and traverses mostly flat terrain in which there may be constrained ROW or a need to minimize total ground footprint (e.g., agricultural fields). These structures may also be used at locations where the Proposed Project line crosses underneath an existing transmission line or other major crossings.

Conductors

Conductor selection is expected to be 715.5 thousand circular mils 30/19 Redwing ACSS with three conductors per phase (triple bundle), for a total of nine conductors between the three phases. Vibration dampers may be installed on the conductor where required, and as specified in the final design. Vibration dampers for conductors are typically stockbridge type and are applied near the wire supports at the structure.

Insulators and Associated Hardware

Insulators, which are made of an extremely low conducting material such as porcelain, glass, or polymer, are used to suspend the conductors from each structure. Insulators inhibit the flow of electrical current from the conductor to the ground, the structure, or another conductor. Insulator material would be selected based on electrical properties and maintenance practices, according to final Proposed Project engineering.

Overhead Ground Wire

To protect conductors from lightning strikes, two overhead wires would be installed on the top of the structures. Each of the overhead positions may be either an OHGW or an optical ground wire (OPGW). The OHGW would be a 7#8 Alumoweld with a diameter of 0.385 inches. The OPGW would be a 48 or 96 fiber with a diameter of 0.53 inches and would facilitate data transfer required for

system control and monitoring between the transmission facilities along the fiber path. Vibration dampers may be installed where required, and as specified in the final design. Vibration dampers for OHGW may be spiral or stockbridge type and are typically applied near the wire supports at the structure.

Grounding

Ground rods would be installed next to the structure foundations to prevent lightning strikes from damaging the overhead conductors. Lattice towers would have a minimum of four ground rods installed per structure, and steel-pole structures would have a minimum of one ground rod installed per structure.

Other Electrical Hardware

In addition to the conductors, insulators, and overhead shield wires, other hardware would be installed on the tower as part of the insulator assembly to support the conductors and shield wires. This hardware would include fasteners, clamps, shackles, links, plates, and various other hardware composed mostly of galvanized steel and aluminum. To the extent possible, electrical hardware would be specified as "corona-free," in order to reduce the effects of audible noise and electrical stress caused by corona in high-voltage applications.

Other Non-Electrical Hardware

Other hardware not associated with the transmission of electricity may be installed as part of the Proposed Project. This hardware may include aerial marker spheres or aircraft warning lighting, as required for the conductors or structures per FAA regulations. Structure proximity to airports and structure height are the determinants of whether FAA regulations would apply, based on an assessment of wire/tower strike risk. Other hardware may include bird flight diverters which come in various shapes and sizes but are typically installed on overhead ground wire spans to make wires more visible to birds in flight. Additionally, bird perch deterrents may be installed on structures to discourage landing and/or nesting on structures. Other structure hardware may also be installed, such as aerial structure number and warning signs, which are typically bolted to specific parts of structures.

The names, materials, types, and dimensions of structures that would be installed as part of the Proposed Project are identified in Table 3-1 and Table 3-2.

3.3.4.8 Diagrams of the Proposed Structures

Diagrams of the proposed structures are presented in Figure 3-4. The typical dimensions of such structures are presented in Table 3-1.

3.3.4.9 Surface Colors, Textures, Light Reflectivity, and Lighting

The Project structure finish would vary depending on the type and location of installation. Lattice steel structures would be galvanized and dulled to reduce light reflectivity. Tubular steel pole structures would be either galvanized and dulled, galvanized and painted or weathering steel. Proposed structure finishes are listed in Table 3-3. In addition, temporary facilities would be installed at laydown yards, such as office trailers, storage containers, and dumpsters, which would have painted or dulled finishes; these facilities would be removed after construction is complete.

Table 3-3 Surface Treatment by Structure

Structure Type	Galvanized	Dulled	Painted	Weathering Steel
Lattice Guyed "V"	X	X		
Lattice Tower Tangent	X	X		
Lattice Tower Angle	X	X		
Lattice Tower Dead-End	X	X		
Tubular Monopole Tangent	X	X	X	X
Tubular Monopole Angle	X	X	X	X
Tubular 3-Pole Dead-End	X	X	X	X

HWT does not anticipate any new structure lighting would be installed as part of the Proposed Project, except as described in Section 3.3.5.1 below.

3.3.5 Other Potentially Required Facilities

3.3.5.1 Other Actions or Facilities that may be Required

Other Types of Infrastructure

The Proposed Project would not include relocation of other types of infrastructure, such as third-party infrastructure including telecommunication, telephone lines, or other cables.

Aviation Lighting and/or Marking

Aviation lighting and/or marking may be required for some structures that would be constructed as part of the Proposed Project. Upon completion of final design, HWT would file with the FAA for official study and determination of lighting and/or marking requirements if required. Although currently no structures are anticipated to exceed 200 feet, some areas of the line, such as near airports, helicopter pads, highways, and water crossings, may require lighting or marking.

Additional Civil Engineering Requirements to Address Site Conditions or Slope Stabilization

The need for slope stabilization, including retaining walls, is addressed in Sections 3.5.1.1, 3.5.1.2, 3.5.2.2, 3.5.3.1, and 3.5.4.5. Local ministerial permits would also be obtained, if required.

3.3.5.2 Location of Each Facility

The locations of unconnected utilities and other types of infrastructure are displayed in Section 5.19, Utilities and Service Systems, on Figures 5.19-1, 5.19-2 and 5.19-3.

3.3.6 Future Expansions and Equipment Lifespans

3.3.6.1 Current and Reasonably Foreseeable Plans for Expansion

There are no current or reasonably foreseeable plans for expansion or future phases of development associated with the Proposed Project.

3.3.6.2 Expected Usable Life

HWT anticipates a 60- to 80-year life for the Proposed Project.

3.3.6.3 Reasonably Foreseeable Consequences

There are no reasonably foreseeable consequences of the Proposed Project.

3.3.7 Below-Ground Conductor/Cable Installations

The Proposed Project does not include below-ground conductor/cable installations.

3.3.8 Electric Substations and Switching Stations

No electric substations or switching stations would be installed as part of the Proposed Project.

3.3.8.1 Operation and Maintenance Facilities, Telecommunications Equipment, or SCADA Equipment

No O&M facilities, telecommunications equipment, or SCADA equipment would be installed as part of the Proposed Project. Proposed telecommunication lines are described under Section 3.3.14.

3.3.9 Gas Pipelines

No gas pipelines are included in the Proposed Project.

3.3.10 Gas Storage Facilities – Background and Resource Information

No gas storage facilities are included in the Proposed Project.

3.3.11 Gas Storage Facilities – Well-Head Sites

No gas storage facilities are included in the Proposed Project.

3.3.12 Gas Storage Facilities – Production and Injection

No gas storage facilities are included in the Proposed Project.

3.3.13 Gas Storage Facilities – Electrical Energy

No gas storage facilities are included in the Proposed Project.

3.3.14 Telecommunication Lines

3.3.14.1 Type of Cable and Linear Length

Overhead shield wires would utilize two positions on the previously described structures along the entire Proposed Project alignment (approximately 86 miles). Wire selection for one position is expected to be 7#8 Alumoweld, while the other position would utilize a fiber optic cable (OPGW). Both wires serve as lightning protection for the conductors. The OPGW also provides a telecommunications path for fault detection, remote monitoring, and protection and control of equipment along the transmission line.

The installation location and characteristics of the cable to be installed above-ground is addressed in Section 3.3.4.1.

3.3.14.2 Antenna and Node Facilities

No antenna or node facilities are included in the Proposed Project.

3.3.14.3 Below-Ground Telecommunication Lines

No below-ground telecommunication lines are included in the Proposed Project.

3.3.14.4 Above-Ground Telecommunication Lines

The OPGW is a versatile piece of equipment that incorporates optical fibers within a protective outer layer. These optical fibers facilitate high-speed data transmission along the line, offering a robust telecommunications pathway. This capability is crucial for several operational aspects. First, the communication path enables real-time fault detection, allowing operators to identify and address issues promptly, minimizing downtime and potential damage. Second, remote monitoring helps in overseeing the status and performance of the transmission line from afar, optimizing maintenance schedules and resource allocation. Lastly, the OPGW is instrumental in the protection and control of equipment, allowing automated responses to changing conditions within the electrical system, thereby enhancing the overall efficiency and reliability of power delivery.

By integrating OPGW into overhead shield wires, HWT can leverage advanced communication capabilities, making the transmission line not only a conduit for electricity but also a sophisticated network for critical data flow.

Type of Poles

No structures would be installed exclusively to support new telecommunication lines.

Existing Poles

No existing structures would be used to exclusively support new telecommunication lines.

Additional Infrastructure

All infrastructure associated with the Proposed Project is listed in Section 3.3. No additional infrastructure is proposed.

3.4 Land Ownership, Rights-of-Way, and Easements

3.4.1 Land Ownership

The Proposed Project crosses predominantly unincorporated lands as well as federal, state, municipal, and private land. These lands include unincorporated areas of Imperial and Yuma counties, the city of Calexico, California, and public lands under the jurisdiction or management of the BLM, USBR, and the California Department of Parks and Recreation. Table 3-4 lists the mileage breakdown by land jurisdiction for the Proposed Project. The Proposed Project would not be located on properties owned by HWT, nor does the Proposed Project include acquisition of new land in fee by HWT.

Table 3-4 Land Ownership Breakdown of Proposed Project

State	Total Approximate Mileage	Jurisdiction				
		Federal Lands				
		BLM	USBR	State Lands	Municipal Lands	Private Lands
Arizona	6.0	2.3	3.7	0.0	0.0	0.03
California	80.3	45.3	5.4	0.6	0.4	29.9
Total	**86.3**	**47.6**	**9.1**	**0.6**	**0.4**	**29.9**

3.4.2 Existing Rights-of-Way or Easements

3.4.2.1 Existing Rights-of-Way or Easements: Identification and Description

There are no existing HWT ROW or easements along the route of the Proposed Project. As such, acquisition of all new ROW would be required for the 86.3-mile length of the Project.

3.4.2.2 Existing Rights-of-Way or Easements: Replacement, Modification, or Relocation of Proposed Project Facilities

HWT would acquire a new 250-foot ROW for the Proposed Project. To the extent possible, HWT proposes to use existing access roads and trails associated with the SWPL transmission line, nearby pipelines, highways, and county roads. The Proposed Project would install a new transmission line. No existing infrastructure would be replaced, modified, or relocated by the Proposed Project.

3.4.3 New or Modified Rights-of-Way or Easements

3.4.3.1 New Permanent or Modified Rights-of-Way or Easements

HWT is requesting a permanent ROW of 250 feet for O&M of the Proposed Project. Where permanent access roads or other Proposed Project features, needed for O&M, are located outside of the 250-foot permanent ROW, the permanent ROW would be modified based on final engineering. HWT would acquire the necessary land rights along the length of the Proposed Project where new facilities are being installed. As described above, there are no existing HWT ROW or easements along the route of the Proposed Project. As such, acquisition of all new ROW would be required for the 86.3-mile length of the Project.

3.4.3.2 Acquisition of New Permanent or Modified Rights-of-Way or Easements

HWT would acquire land rights to support the Proposed Project, as required. The land rights to be acquired would be a combination of new permanent easement rights on private property, and franchise, permits, grants, or licenses on public lands along with modified/upgraded ROWs. Permanent easement rights would be acquired by HWT through negotiations with private landowners. New permanent or modified ROWs or easements may also be acquired from the applicable public agency through that agency's designated process. The total number of land rights to be acquired would be finalized following the CPUC's approval of the Proposed Project route and during final engineering. Pursuant to Cal. Pub. Util. Code section 612, as a public utility HWT has the

power of eminent domain to acquire any necessary land rights for construction, operation and maintenance of the Proposed Project within California.

3.4.3.3 Properties/Parcels That May Require Acquisition

HWT does not expect to acquire any additional fee properties or parcels for the Proposed Project. Site plans showing new ROWs and easements are provided in Appendix A. GIS data is provided under a separate electronic cover.

3.4.3.4 New ROWs or Easements: Development Restrictions

HWT would acquire and obtain the necessary land rights and/or ROW that would allow HWT to safely construct, operate, maintain, upgrade, relocate, and access its facilities. No structures associated with the Proposed Project are anticipated to exceed 200 feet, in compliance with FAA regulations. Given the remote nature of the Project vicinity, no development restrictions, such as building clearance, setbacks, or height restrictions, are anticipated to be applicable to the project. Applicable regulations are further discussed in Chapter 5, within the Regulatory Setting of each respective resource section.

3.4.3.5 Relocation or Demolition of Commercial or Residential Property or Structures

One residential structure, a doublewide manufactured home near 32°43'0.39"N, 115°24'37.59"W, would be relocated in coordination with the landowner to a different location within the landowner's currently disturbed property. No commercial properties would be relocated and no commercial or residential properties or structures would require demolition as part of the Proposed Project.

3.4.4 Temporary Rights-of-Way or Easements

3.4.4.1 Temporary ROWs or Easements: Required for Access

Based on final engineering and construction requirements, Temporary Entry Permits (TEPs) and/or Temporary Construction Easements (TCEs) may be required from private landowners to provide access for any approved project component.

3.4.4.2 Temporary ROWs or Easements: Construction Area Locations

Based on final engineering and construction requirements, TEPs and/or TCEs may be required from private landowners to provide sufficient equipment and material storage, staging and work areas, and landing zones for any approved project component. Temporary construction areas would be located within the transmission line ROW where feasible. Locations and dimensions of proposed construction and staging areas are listed in Table 3-6 below. Maps depicting staging areas, as well as temporary and permanent ROWs and easements, are provided in Appendix A. GIS data is provided under a separate electronic cover.

3.4.4.3 Temporary ROWs or Easements: Acquisition

Temporary land rights (TCEs or TEPs) may be required from private landowners. The total number of temporary land rights to be acquired from private landowners would be determined during final engineering. Temporary land rights on federal lands (if identified during final engineering as

necessary) would be acquired from applicable federal agencies. Pursuant to Cal. Pub. Util. Code section 612, as a public utility HWT has the power of eminent domain to acquire any necessary land rights for construction, operation and maintenance of the Proposed Project within California.

3.5 Construction

The following subsections describe the construction activities associated with the Proposed Project.

3.5.1 Construction Access

The five types of access that would be used for the Project are detailed in Section 3.3.4.5.

3.5.1.1 Existing Access Roads

Existing Access Roads: Lengths, Widths, and Ownership

Access to the ROW would be via existing roads and trails, to the extent practicable. Where feasible, existing roads and trails would be used in coordination with landowners in their present condition without improvements (Type 1). Preliminary engineering design has not identified any existing access routes that are presently suitable for use during construction of the Proposed Project without first requiring improvements. Locations of any potential existing access roads to be utilized without improvements will be determined during final engineering and coordinated with each landowner.

For a majority of existing access roads, improvements are required to support Project activities or are deemed to be in the best interest of the Proposed Project and for future use. In areas where improvements are required, roads and trails would be graded to provide a smooth travel surface (Type 2). Where existing roads and trails can be used to access the ROW, either in present condition or following improvements, only spur roads to each structure site would be required.

Details regarding existing access roads that would be used by the Proposed Project (Type 2 only) are provided in Table 3-5 below. Existing access roads that would be improved (Type 2) are further summarized with other access road improvements and work areas in Table 3-7 in Section 3.5.3.2.

Table 3-5 Existing Access Roads to be Used by the Project

Proposed Project Feature	Approximate Area of Existing Permanent Disturbance (acre)
Existing Access Roads Type 2 - Needs Improvement	613.3

Existing Access Roads: Modifications and Rehabilitation

Rehabilitation, road widening, and/or upgrades to existing access roads may be required to facilitate construction access and to support O&M activities. These roads would be cleared of vegetation; blade-graded to remove potholes, ruts, and other surface irregularities; and re-compacted to provide a smooth and dense riding surface capable of supporting heavy construction equipment. As part of this rehabilitation, vegetation within the existing road prism may be trimmed and/or removed to prevent vegetation from intruding into the roadway. In some locations, road base (crushed rock), temporary plating, or matting may be placed within the existing road prism to compensate for soft soils. Plating or matting would be removed at the end of construction. Existing unpaved roads may also require additional upgrades such as protection (e.g., soil cover, steel plates) for existing underground utilities. This activity may be repeated as required during the course of the

Proposed Project. Existing access road improvements are expected to account for approximately 613.3 acres of total permanent disturbance area, as shown above in Table 3-5.

Existing Access Roads: Incidental Damage

No incidental road damage is anticipated to be caused by the Proposed Project activities. HWT and construction contractor crews would utilize paved and unpaved public roads to access existing dirt roads; work would also be performed from these paved and unpaved public roads. If ministerial permits are necessary for the movement of HWT or overweight vehicles along public roadways or to perform work from public roadways, HWT would comply with applicable conditions of the permit(s), including conditions related to the repair of incidental road damage. Prior to construction, the contractor would take photos and videos of existing roadways, where applicable, to document preconstruction conditions. During construction, the contractor would use various methods, such as adhering to speed and weight limits and staying within access road boundaries, to minimize road damage from construction traffic. If damage occurs due to construction activities, then the roadway would be restored to preconstruction conditions following county or local procedures.

Detailed Maps and Associated GIS Data for Existing Access

Existing access roads are shown in Appendix A; GIS data is provided under separate electronic cover.

3.5.1.2 New Access Roads

New Access Roads

The location of new access roads (Type 3) is shown in Appendix A.

Lengths, Widths, and Development Methods for new Access Roads

Access on the ROW may require a road graded at varying widths depending on terrain and turning radii, with up to a 2-foot berm on either side. New roads would typically go directly from structure to structure, except on hillsides, ridgebacks, rock outcrop areas, wash crossings, treed areas, or in areas where sensitive environmental resources can be avoided. In such cases, the road would follow suitable topography from structure to structure and be built in areas that generally cause the least amount of overall disturbance and reduce safety concerns.

New roads that must be graded for access in steep terrain (side-hill roads) would require exceeding a 24-foot width of disturbance, due to cut and fill conditions. Lengths and locations of proposed new access roads based on preliminary design are provided in Appendix A.

New Access Roads: Gates

No temporary or permanent gates are proposed as part of the Proposed Project at this time.

New Temporary Access Roads: Restoration

The location of temporary roads (Type 4) are shown in Appendix A.

Detailed Maps and Associated GIS Data for New Access Roads

The locations of new access roads are shown in Appendix A and provided in the GIS data under a separate electronic cover.

3.5.1.3 Overland Access Routes

Overland Access Routes

Where existing spur or access roads to a construction work area are not present, and where surface conditions are amenable, that location may be accessed overland (Type 5 access). Where overland travel is feasible, vegetation would be trimmed while leaving the root structure intact, or vehicles would drive overland over the extant vegetation. In some locations, temporary matting may be placed on the surface to facilitate access to a work location. No blading, grading, or gravel placement would occur on overland access routes. Preliminary engineering design has not identified any overland access routes for construction of the Proposed Project. Locations of any potential overland access roads will be determined during final engineering and coordinated with each landowner.

Overland Access Routes: Lengths and Widths

Preliminary engineering design has not identified any overland access routes for construction of the Proposed Project. Locations of any potential overland access roads will be determined during final engineering and coordinated with each landowner.

Detailed Maps and Associated GIS Data for Overland Access Routes

Preliminary engineering design has not identified any overland access routes for construction of the Proposed Project; therefore, none are identified in Appendix A or the GIS data.

3.5.1.4 Watercourse Crossings

Temporary/Permanent Watercourse Crossings

On BLM, county, city, and HWT access roads, perennial, intermittent, and ephemeral watercourses are generally crossed at-grade or are culverted. Larger watercourses are generally crossed by improved roads, and man-made watercourses (e.g., canals) are bridged or culverted. Where access or spur roads cross a watercourse, temporary plating or matting may be laid over the watercourse pursuant to required permits to support the movement of heavy construction equipment. Some watercourse crossings for the Proposed Project could require permanent improvements. The locations of water crossings are provided in Appendix A.

Bridge or Culvert Replacement or Installation

The Proposed Project ROW is generally accessible. At this time, there are no known bridge or culvert replacements that would be required for construction access. Potential improvements to infrastructure within county, IID, or USBR jurisdiction may be made subject to and at the discretion of the jurisdictional agency.

Location, Design, and Construction Methods

Potential water crossing designs include, but are not limited to: pipe culverts, earthen crossings with gabion walls, concrete crossings with gabion walls, concrete crossings with rip-rap, and McCarthy drains. Temporary stormwater diversions may be necessary during the construction of any of the above improvements.

Construction of potential water crossing would involve excavation and installation of required infrastructure to form a crossing. Temporary crossings would then be removed and cleaned up. Finally, any affected land area would be reclaimed and restored. As mentioned above, temporary stormwater diversions may be necessary during construction of any improvements. The location, design and construction methods for watercourse crossings will be coordinated with each landowner.

3.5.1.5 Helicopter Access

Helicopter Access: Types and Quantities

Light and heavy-duty helicopters may be used to support construction activities. Helicopter use supporting construction may include areas where access is limited (e.g., no suitable access road, limited construction area to facilitate on-site structure assembly, and/or there are environmental constraints to accessing the Proposed Project with standard construction vehicles and equipment).

Light helicopter (MD530F and Bell 407) activities may include transportation of construction workers, delivery of equipment and materials to construction work areas, hardware installation, wire pulling, marker ball installation (if applicable), and conductor and cable stringing operations. During construction, two light helicopters may be used for approximately six hours per day for eleven months during conductor and wire installation activities.

Heavy-duty helicopter (Sikorsky UH-60A Blackhawk and Boeing CH-47D Chinook) activities may include delivery of equipment and materials to structure sites, and installation of structures. During construction, one heavy-duty helicopter may be used for approximately eight hours per day for 15 days during structure installation activities.

Helicopter Access: Takeoff and Landing Areas

Helicopter takeoff and landing areas typically include helicopter landing zones and staging areas, temporary work areas, structures, and public and private airports or airstrips. HWT anticipates using the staging areas listed in Table 3-6 as helicopter staging areas for the Proposed Project. Helicopter operation crews, as well as fueling and maintenance trucks, may be based in the staging areas or at public or private airports or airstrips in the vicinity of the Proposed Project (see Appendix A for all staging areas which may serve as helicopter landing zone locations). Helicopters would most likely be based out of Calexico International Airport, located between the substations. In addition to staging areas, helicopters may land on existing or proposed access roads, pull-and-tension (PT) sites, structure pads, temporary work areas, or within the HWT ROW as needed.

Helicopter Access: Refueling Procedures and Locations

Helicopter refueling would generally occur off-site at local airports and at the staging areas listed in Table 3-6; in some instances, refueling could occur at locations along the Proposed Project alignment that are not identified as staging areas, such as helicopter landing zones that may be sited within access roads and/or the HWT ROW. Fueling near the Proposed Project would be done by a mobile fuel truck. Non-fueling areas, where fueling would be prohibited, would be identified on Project maps and marked in the field with signage. All helicopter refueling would be conducted in accordance with the National Fire Protection Association 407 standard and appropriate rapid refueling procedures. All pilots, mechanics, aviation linemen, and fuel truck drivers would be trained on rapid refueling procedures. Best management practices (BMPs) WM-4, Spill Prevention and Control, and NS-9, Vehicle and Equipment Fueling, would be implemented during refueling at all

locations where commercial refueling services are not available. These BMPs are described in Section 3.5.13.

Helicopter Access: Flight Paths, Payloads, and Hours and Durations of Operation

Flight paths would be determined immediately prior to construction by the helicopter contractor and would generally follow the direction of the transmission line. Flight paths would be filed with the appropriate authorities as required. Helicopter payloads would vary according to the construction activity and would consist of employees, material, and tooling, where applicable. Helicopters would typically work the same hours and duration as construction, which would generally follow a 12-hour, 5- to 6-day workweek, occurring between 7 a.m. and 7 p.m., Monday through Saturday. Additional hours and/or weekends may be necessary to make up schedule deficiencies or to complete critical construction activities.

Helicopter Access: Safety Procedures or Requirements

As necessary, HWT or its construction contractor would develop a Helicopter Plan and would coordinate development of a Congested Area Plan pursuant to 14 Code of Federal Regulations Part 133.33(d) with the FAA Flight Standards District Offices in San Diego and Scottsdale, which have jurisdiction over the Proposed Project area.

3.5.2 Staging Areas

3.5.2.1 Staging Area Locations

Staging Area Locations

HWT anticipates using a portion or the entirety of one or more of the possible locations listed in Table 3-6 for construction staging. Maps depicting staging areas are provided in Appendix A and GIS data is provided under a separate electronic cover.

Staging Area Size

The approximate size of each of the identified staging areas is provided in Table 3-6 below.

Table 3-6 Potential Staging Area Locations

Staging Area Name	Location	Condition	Approx. Area (acres)
1	Yuha Cutoff	Undisturbed	78.0
2	Gila Valley	Disturbed	49.5
3	Interstate 8	Undisturbed	590.6
4	City of Calexico	Disturbed	75.3
5	City of Calexico	Undisturbed	144.5
6	Interstate 8	Undisturbed	109.5
7	City of Calexico	Disturbed	142.8
8	Interstate 8	Disturbed	42.8
9; Jasper Yard	East Jasper Road	Disturbed	2.1

3.5.2.2 Staging Area Preparation

Site Preparation

Preparation of the staging areas would include temporary perimeter fencing and, depending on existing ground conditions at the site, grubbing (i.e., vegetation removal) and/or minor grading may be required to provide a flat and dense surface for the application of gravel or crushed rock. Topsoil would be stripped from the staging area and placed in a designated pile within the staging area, and clearly labeled keeping the pile segregated from all other activities. Topsoil would be preserved for reuse during restoration, protecting the stockpiles with perimeter control BMPs. Stockpiles would be located away from drainage paths and kept clear of the work area. To preserve topsoil that would be inactive for an extended period of time, the pile would be contoured, compacted, and crusted with water. No slope stabilization or extensive grading activities would be performed at any staging area because the identified staging areas are generally level. Land that may be disturbed at the staging area would be returned to preconstruction conditions following the completion of construction for the Proposed Project, unless otherwise agreed to by the property owner.

Staging Area Uses

Staging areas would be used for various purposes. Show-up yards would be used for vehicle parking where crews gather prior to traveling to the ROW. Material yards would be used for material receiving, material storage, kitting and transportation of material to the ROW. A main laydown yard would be used for office trailers, refueling center, material storage, and as a show-up location.

Most materials associated with the construction efforts are expected to be delivered by truck to designated staging areas, while some materials may be delivered directly to the temporary construction areas described in Section 3.5.3.1.

The staging areas may also have construction trailers for supervisory and clerical personnel. Normal maintenance and refueling of construction equipment would also be conducted at these staging areas. All refueling—which may include helicopters—and storage of fuels would be in accordance with the site-specific Stormwater Pollution Prevention Plan (SWPPP), and all applicable laws and regulations. The staging areas may contain storage of hazardous materials. These are described in Section 3.5.13.

Staging Area Security

If necessary, the staging areas may be secured through installation of temporary perimeter chain link fencing. In some instances, existing fencing may be present at the staging area location; in these instances, temporary perimeter fencing would not be installed. Other security methods that may be employed at staging areas could include security cameras, privacy screening, and security personnel.

Staging Area Power

The need for temporary power would be determined based on the type of equipment/facilities being used at the staging areas. If existing utility facilities are available, a temporary service may be used to power one or more of the staging areas. If it is determined that temporary power is not needed or available at the staging areas full-time, a portable generator may be used intermittently for electrical power at one or more of the staging areas.

Staging Area Temporary Lighting

Staging areas may be lit for security or for staging area operations; this temporary lighting would be directed internally and on-site. If temporary lighting is needed at staging areas, light plants would be used, as necessary. Light plants are typically powered by generators sized 30-45 kilovolt-amperes. The sources of illumination on the light plants would be shielded, resulting in light being directed downward and inward (toward the staging area). To the extent feasible, light plants would be positioned so that illumination is directed away from the nearest residence(s).

Staging Area Grading Activities and/or Slope Stabilization

No slope stabilization or extensive grading activities would be performed at any staging area; the identified staging areas are relatively level, and thus grading activities would be minimal and focused on leveling the surface. Because generally level areas have been selected for staging areas, no slope stabilization at the staging areas would be anticipated.

3.5.3 Construction Work Areas

3.5.3.1 Construction Work Areas and Activities

Construction of the Proposed Project would be performed in the construction work areas described in the sections below.

Helicopter Landing Zones and Touchdown Areas

As described above, HWT anticipates using the staging areas listed in Table 3-6 as helicopter staging areas for the Proposed Project. Staging areas to be used as helicopter landing zones and touchdown areas are also shown in Appendix A. In addition to staging areas, helicopters may land on existing or proposed access roads, pull-and-tension (PT) sites, structure pads, temporary work areas, or within the HWT ROW as needed. The activities that may be performed at any given helicopter landing zone (including touchdown areas) may include:

- Dropping-off or picking-up construction crew members
- Dropping-off or picking-up air-portable construction equipment
- Assembly of pole sections (installation of cross-arms, hardware, etc. on a section of pole)
- Lifting of pole sections by helicopter
- Deposition of removed structure sections
- Dropping-off or picking-up conductor sock line
- Dropping-off or picking-up conductor pull rope
- Dropping-off or picking up conductor
- Loading and unloading poles, structure sections, and other material to and from trucks
- Fueling of helicopters

Vehicle and Equipment Parking, Passing, or Turnaround Areas

Vehicles and construction equipment would be parked during the day and overnight at staging areas and may be parked during the day (and potentially overnight) at PT/stringing sites and other construction work areas along the Proposed Project alignment. During work on a structure, vehicles and construction equipment would be parked during construction hours at structure work areas and

guard structures, and on adjacent access or spur roads. Vehicles and construction equipment would be parked at helicopter landing zones and on adjacent access or spur roads during helicopter operations from a particular helicopter landing zone. Turnouts (10 feet x 100 feet) would be added to access roads approximately every 1000 feet, for passing other vehicles or equipment. Structure areas and PT sites would be utilized for turn around areas. Larger truck and trailer turnouts would be added near inlets to the Proposed Project.

Railroad, Bridge, or Watercourse Crossings

As required, temporary work areas would be added adjacent to railroad crossings, watercourse crossings, and/or road/bridge crossings for the use of temporary guard structures to protect the infrastructure. Guard structures are mainly used during wire stringing activities. When track equipment is required to cross railroads and bridges, matting would be used to ensure no damage occurs to the railroad and/or bridge. The contractor would also follow applicable permit requirements provided by the owner of the railroad and/or bridge owner.

Temporary Work Areas for Facility Installation, Modification, or Removal

Temporary work areas (also and interchangeably referred to as construction work areas or structure work pads) serve as temporary working areas for crews and where Proposed Project related equipment and/or materials are placed at or near each structure location. Temporary work areas would be 250 feet by 250 feet. The activities that may be performed at any given temporary work area may include, but are not limited to, the following:

- Vegetation removal or trimming
- Surface grading, leveling, and/or compaction
- Install structure foundations
- Install structures
- Install conductor and cable on new structure
- Splice conductor
- Benching

Excavations and Associated Equipment Work Areas

Excavations would occur for the installation of foundations and guy anchors, during civil road, pad, snub, and PT site building activities. Dig alerts would be called in prior to any excavation occurring.

Temporary Guard Structures

Guard structures are temporary facilities that would typically be installed at transportation, flood control, and utility crossings prior to conductor or cable installation activities. These structures are designed to stop the movement of a conductor or cable should it momentarily drop below a conventional stringing height.

Several styles of guard structures would be used to prevent stringing and sagging operations from contacting existing energized utilities and to protect public and private property. These guard structures would include but are not limited to: H-frame wood pole structures, crane boom mounted rollers, and mid-span crane suspended dollies. The guard structures are designed to reduce the potential of damage to any highway, or public property. All major crossings of concern would have safety watch personnel with radio communication while work is being performed.

Guard structures would be used at all crossings. Clearances from energized lines would meet proper Minimum Approach Distance requirements. Guard structures would remain in position until all clipping is completed on adjacent structures. Depending on the crossing type, a crew would install one or more structures and protective covering on distribution lines. The guard structure may be either conventional wood poles set into the ground with a cross arm located below the phase to be pulled in or equipment such as a digger truck or crane with a "bat wing" apparatus that would prevent the wire from contacting roads and/or distribution conductors.

Pull-and-Tension/Stringing Sites

PT (Pull-and-Tension)/stringing sites are those locations where the equipment necessary for installation of conductor and cable would be set-up and operated. The PT/stringing sites associated with the Proposed Project would be temporary.

"Wire pull" is the term used to describe the length of any given continuous wire installation process between two selected points along the line. Wire pulls are selected based on a variety of factors, including availability of dead-end structures, conductor size, geometry of the line as affected by points of inflection, terrain, and suitability of stringing and splicing equipment set-up locations. In general, PT sites would be located approximately every 12,500 feet to 20,000 feet with an additional midspan sleeving site located roughly in the middle of the wire pull. Generally, PT/stringing sites would be in direct line with the direction of the overhead conductors and established at a distance equal to approximately three times the height of the adjacent structure. PT/stringing sites would require an approximately 250-foot by 600-foot work area.

Each conductor or cable installation operation consists of a puller set-up positioned in a PT/stringing site located at one end of a wire pull, and a tensioner set-up with wire reel stand truck positioned in a PT/stringing site at the other end of a wire pull. PT/stringing sites may also be utilized for splicing and field snubbing of the conductors. Field snubs (i.e., anchoring and dead-end hardware) would be temporarily installed to sag conductor wire to the correct tension at locations where stringing equipment cannot be positioned in back of a dead-end structure and its location is in the middle of a span.

Splice Sites, Conductor, and Overhead Ground Wire Removal

The Proposed Project does not include the removal of splice sites, conductor or OHGW.

Jack and Bore Pits, Drilling Areas, and Pull-back Areas for Horizontal Directional Drills

The Proposed Project does not include the installation of any infrastructure underground that would require the use of jack and bore drilling or horizontal directional drilling.

Retaining Walls

The Proposed Project does not include the installation of any retaining walls.

3.5.3.2 Work Area Disturbance

Dimensions of Each Work Area

The dimensions of each work area described above, including the maximum area that would be disturbed during construction, is shown in Table 3-7.

Temporary and Permanent Disturbance at each Work Area

Table 3-7 provides the temporary and permanent disturbance at each work area (in acres), for each project component (in acres), and for the Proposed Project as a whole (in acres).

Table 3-7 Approximate Work Area Disturbance Areas

Work Area Type	Approximate Number	Approximate Preferred Size[a]	Type	Approximate Disturbance, Temporary (acres)	Approximate Disturbance, Permanent (acres)
Construction Work Pad	307	250 feet by 250 feet	Temporary	359.2	0
Laydown Yard	9	1 to 590 acres	Temporary	1,233.5	0
Helicopter Fly Yard	7	15 to 20 acres	Temporary	187.7	0
Access Road - Type 2 Existing Road - Needs Improvement[b]	N/A	24-foot width	Permanent	0	261.4
Access Road - Type 3 New Road - Flat	N/A	24-foot width	Permanent	0	436.9
Access Road - Type 3 New Road - Moderate	N/A	24-foot width	Permanent	0	9.3
Access Road - Type 3 New Road - Steep	N/A	24-foot width	Permanent	0	15.8
Access Road - Type 4 Temporary Road	N/A	24-foot width	Temporary	25.7	0
Clearing	48	Approximately <1 to 5 acres	Temporary	35.5	0
Guard Structure Pad	49	250 feet wide, length varies by location	Temporary	43.9	0
OPGW	4	250 feet wide, 500-900 feet long	Temporary	13.3	0
Pulling Pad	96	Varies by location	Temporary	618.8	0
Substation Fence	2	Varies by location	Temporary	79.8	0
Total Disturbance Area	**N/A**	**N/A**		**2,597.4**	**723.3**

N/A = Not Applicable

[a] The dimensions listed above are preferred for construction efficiency; actual dimensions will vary depending on project constraints.

[b] Type 2 Existing Road - Needs Improvement: this disturbance area excludes the existing road footprint (which is 20 feet in width)

Table 3-8 presents the approximate permanent disturbance associated with each structure type, and approximate maximum permanent disturbance area (in acres).

Table 3-8 Permanent Disturbance Associated with Structures

Structure Type	Count	Disturbance Area (acres)
Lattice Guyed "V" (acres)	65	0.07
Self-supporting Lattice (acres)	133	0.67
Self-supporting Tubular (acres)	96	0.27
Self-supporting Tubular 3-Pole Angle (acres)	13	0.11
Total	**307**	**1.12**

3.5.3.3 Temporary Power

Temporary electrical power and/or generators may be required at Proposed Project staging areas and would be determined based on the type of equipment/facilities being used at the staging areas. Temporary power at staging areas is described in greater detail in Section 3.5.2.2.

3.5.4 Site Preparation

3.5.4.1 Surveying and Staking

Land surveys would be performed to identify topographical features, parcel lines, ground elevations, and relevant above-ground obstructions such as existing power lines, billboards, fencing, and irrigation pivots, along the Proposed Project alignment. Collection of such data can be performed via traditional ground survey techniques or the use of Light Detection and Ranging (LiDAR), a technique that measures distance to an object by emitting timed pulses of light and measuring the time between emission and reception of the reflected pulses.

Survey data would be used to locate and stake pertinent design features such as structure and anchor locations, edges of the ROW, and environmentally sensitive areas.

Surveyors would use control points provided in a Power Line Systems – Computer Aided Design and Draft model to establish control for surveying project points. Surveyors would then use their equipment to locate and stake the design features.

3.5.4.2 Utilities

Underground Utility Identification Process

Subsurface Utility Engineering (SUE) work is required to confirm the location of existing underground utilities and determine any potential conflict with the installation of transmission facilities (poles, pilings, anchors) along the proposed route. This work is done in accordance with ASCE/UESI/CI 38-22 - Standard Guideline for Investigating and Documenting Existing Utilities.

There are 4 levels of investigation which can be undertaken:

a) Quality Level D (QL-D) Records Research: Conduct appropriate investigations and collect applicable records along the corridor.
b) Quality Level C (QL-C) Collection: Obtain accurate horizontal position of visible utility surface features associated with underground utility systems located within the project limits.
c) Quality Level B (QL-B) Utility Designating: Using information collected during QL-D and QL-C, utility designations are performed along the project corridor at prescribed sites. Utility designating can be performed using several types of geophysical prospecting equipment, including ground penetrating radar. Detection methods may include direct connect, coupling, passive, inductive, ground penetrating radar, and vacuum excavation/air lance.
d) Quality Level A (QL-A) Utility Locating: At locations where QL-B results indicate a potential conflict with proposed foundation/structure installations, a test hole or excavation may be performed to visually confirm location, depth, direction, size, type and material of the utility.

Relocating Existing Utilities

Existing underground utilities are not expected to be relocated as part of the Proposed Project. If relocation is necessary, the utility owner would be contacted to perform line-drops or relocation.

Installing Temporary Power

As described in Section 3.5.2.2, temporary power or other utility lines may be installed at one or more staging area(s) as part of the Proposed Project. The process for installing temporary power would be determined by a utility service provider based on the staging area's utility service needs, but would generally include the installation of a temporary meter on a temporary structure, the temporary installation of one or more wood structures (to be installed in the same manner as guard structures), and the installation of temporary electrical cable from the meter to the load source(s) at the staging area(s). In areas where no electric power is available, generators may be used.

3.5.4.3 Vegetation Clearing

Vegetation Clearing: Types Required

Vegetation and trees would be trimmed or removed as needed at or adjacent to construction work areas to facilitate the safe construction of the Proposed Project and to reduce fire hazards associated with construction activities. Only the minimum amount of vegetation necessary for the safe construction and operation of structures and facilities would be removed. Where feasible, construction work areas have been preferentially selected to minimize the trimming or removal of vegetation and/or trees. During road construction activities, vegetation would be trimmed and/or removed within the access or spur road prism, as necessary, and rehabilitated as required after construction.

Vegetation Clearing, Temporary and Permanent Disturbance

The area of each vegetation community found along the Proposed Project alignment corridor is provided in Section 5.4, Biological Resources. The data in this table distinguishes between previously developed areas (i.e., paved, graveled, or otherwise urbanized) and naturally vegetated areas. Known areas of temporary and permanent disturbance of each vegetation community associated with the Proposed Project are presented in Section 5.4, Biological Resources.

Vegetation Clearing: Description and Types of Equipment

Vegetation removal would consist of "brushing" (i.e., shrubs and other low-lying vegetation would be trimmed and/or removed within the construction work area). Vegetation removal would generally be accomplished using mulchers. In tougher terrain where equipment cannot access the ROW, hand clearing methods would be used to remove vegetation.

3.5.4.4 Tree Trimming and Removal

Tree Removal and Trimming: General Order 95-D

No tree trimming pursuant to G.O. 95-D would be performed as part of the construction of the Proposed Project; such tree trimming (as necessary) is currently performed along sections of the Proposed Project alignment where transmission and distribution lines currently exist as part of existing utility owner's O&M activities. Any tree removal performed as part of the Proposed Project

would be conducted solely to facilitate the safe construction of the Proposed Project or to reduce the fire hazards associated with construction activities.

Tree Removal and Trimming: Types, Locations, Numbers, and Sizes

Trees or portions of trees that encroach upon the access and spur road prism or on an access road may be removed to facilitate the safe movement of construction equipment. Similarly, trees or portions of trees within or adjacent to staging areas and temporary work areas may be trimmed and/or removed; staging areas have been preferentially selected to minimize the trimming or removal of trees. The types, specific locations, approximate numbers, and size of trees that may need to be removed or trimmed substantially have not been determined at this time; additional information is available in Section 5.4, Biological Resources.

Tree Removal and Trimming: Potentially Protected Trees

Potentially protected trees located along the Proposed Project alignment are identified in Section 5.4 Biological Resources and potential impacts to protected trees from tree removal or trimming is detailed therein.

Tree Removal and Trimming: Types of Equipment

Tree removal or trimming, if necessary, would be accomplished utilizing such equipment as a dump truck, pick-up truck, chipper, stump grinder, and a bucket truck, among others. Hand tools used during tree removal would include chain saws and/or hand saws.

3.5.4.5 Work Area Stabilization

The Proposed Project is not expected to need work area stabilization but in case the design requires it, work areas would be stabilized utilizing BMPs described in the SWPPPs developed and implemented for the Proposed Project; typical BMPs that may be used for work area stabilization are presented in Section3.5.11.

Generally level areas were selected for staging areas; therefore, no slope stabilization issues are anticipated where terrain is flatter than 5 percent slope. The staging area would be compacted to at least 90 percent relative density and would be capable of supporting heavy vehicles. Rock could be placed on the surface of staging areas, where appropriate, to stabilize the soils. The type of structure to be used would be based on specific site conditions.

The new transmission structure locations and laydown/work areas would first be graded and/or cleared of vegetation as required to provide a reasonably level and vegetation-free surface for structure installation. Sites would be graded such that water would run toward the direction of the natural drainage. In addition, drainage would be designed to prevent ponding and erosive water flows that could cause damage to the structure foundations. The graded area would be compacted to at least 90 percent relative density and would be capable of supporting heavy vehicular traffic.

Erection of the structures may also require establishment of a permanent O&M structure pad where terrain is steeper than 5 percent slope. The dimensions of O&M structure pads would vary depending on location and terrain, but would generally occupy an area of approximately 40 feet by 70 feet and be located adjacent to each applicable structure within the laydown/work area used for structure assembly. The O&M structure pad may be cleared of vegetation and/or graded as necessary to provide a level surface for equipment operation. O&M structure pads may require permanent grading in order to accommodate slopes and daylights. The locations of proposed

permanent O&M structure pads are provided in Appendix A. As needed, additional temporary crane pads or permanent O&M structure pads may be determined during final engineering for the Proposed Project and upon the selection of the appropriate construction methods to be used by HWT or its Contractor.

Benching of temporary work areas and PT/stringing sites may be required to provide access for foundation construction, assembly, structure erection, and wire stringing activities during line construction. Benching is a technique in which an earth moving vehicle excavates a terraced access to structure locations in extremely steep and rugged terrain. Benching may also be used on an as-needed basis in areas to help ensure the safety of personnel during construction activities. HWT does not foresee the need for benching as part of the Proposed Project; however, the physical environment in which the Proposed Project would be constructed is dynamic, and thus this description of benching is included should the need for benching arise during construction.

3.5.4.6 Grading

Yards, access roads, structure work areas, PT sites, and other temporary work areas, unless otherwise categorized as overland access, would require grading and/or grubbing (i.e., vegetation removal) as needed to provide a reasonably level and vegetation-free surface. Temporary work areas would be graded such that water would be expected to run toward the direction of the natural drainage. In addition, drainage would be designed to prevent ponding and erosive water flows that could cause damage to new structure foundations or structures. The graded area would be compacted to at least 90 percent relative density and would be capable of supporting heavy vehicles.

Earth Moving or Substantial Grading Activities Description

Earth movement, grading, and clearing and grubbing is anticipated across all temporary and permanent disturbance areas along the proposed transmission line, including temporary work areas, existing access road widening, and blading of proposed new access roads. Additionally, more substantial grading activities may be required for construction of new access roads and at permanent O&M structure pads. Estimated grading volumes are provided in Table 3-9 below.

Estimated Volumes of Grading

Table 3-9 summarizes the estimated grading volumes associated with the Proposed Project based on current design and engineering. Excess cut material is anticipated to be balanced within the Proposed Project site; organic material removed during clearing and grubbing activities may be hauled off-site as needed.

Table 3-9 Detailed Grading Volumes

Proposed Project Activity	Estimated Cut (cubic yards)	Estimated Fill (cubic yards)	Estimated Import/Export (cubic yards)
Civil Crew (Road Work, Foundations, Ducts)	55,000	35,000	20,000

3.5.5 Transmission Line Construction (Above Ground)

3.5.5.1 Structures

Process and Equipment for Removing Poles, Towers, and Associated Foundations

No poles, towers, or foundations are proposed to be removed in the Proposed Project.

Process and Equipment for Installing or Otherwise Modifying Structures

Cranes would be used to install structures. Crane pads would be graded at the structure locations. Depending on the weight of the tower, 160-ton to 250-ton cranes would be utilized to assemble and erect the towers.

Certain proposed structures may require helicopter transport to their foundation location during construction due to existing terrain. In this case, a helicopter would pick them up from the fly yards, lift them to the structure location and place them on the foundation. To accommodate helicopter construction, lattice towers would be used in the design. Additionally, splice plates would be added to the lattice tower design to accommodate picking the towers in sections small enough for the helicopter to lift.

Foundation Installation

A drill with augers would be used to drill appropriate diameter and depth for foundation installation. Offsets and leveling tools would ensure the drilled shaft remains correctly aligned. A clean-out plate or bucket would remove loose material from the bottom of the excavation. Spoils would be spun off to the side and then spread in upland areas, where topsoil has been stripped, on the structure pad, PT sites, or incorporated into the permanent O&M access roads using a skid steer and a loader.

Foundation crews would set forms using transits and batter boards to establish the correct location and orientation. A laser level would set forms to the drawing elevations. An all-wheel-drive 12,000-pound forklift and a 28-ton crane truck would set rebar cages and bolts. Reinforced rebar would be set and suspended to the correct elevation, with spacer wheels maintaining clearance from the shaft walls.

Concrete would be ordered in sufficient quantities to complete the pier, batched from various locations along the project route with a maximum of 180 minutes between trucks. All drilled shafts would be filled with concrete the same day they are drilled and would be covered or barricaded for safety. Concrete placement would use a tremie pipe or elephant trunk to prevent segregation and avoid striking the side walls or rebar. The top 6 feet of concrete would be consolidated with a vibrator during placement.

Concrete would be placed slightly higher than the established grade height and allowed to rest for 15 minutes, after which it would be removed to the desired elevation and finished with appropriate tooling. A chamfer edge would be cut in, and a light broom finish would be applied to the top of the pier. All bolt threads would be protected and cleaned before the concrete adheres.

Should groundwater be encountered during excavation or drilling for foundations, it would be discharged to the surface in accordance with state dewatering regulations or pumped into a tank and disposed of at an off-site disposal facility in accordance with applicable laws.

Delivery and Assembly

Materials would be staged in the laydown yard in kits according to the planned construction sequence, aiding in material management and preventing loss or damage. These kits would be issued and placed at field locations before specific construction activities begin. Hardware and materials would be loaded onto flatbed trucks or specialized trailers designed for heavy loads. Drivers would follow designated routes to minimize disruption and avoid damaging structures and hardware. Approximately five haul trips per day would transport structure-related materials to the project alignment during structure installation. Structures would be assembled on-site in sections, with insulators and hardware installed per design specifications. Cranes would carefully position the structures, ensuring correct alignment.

Pole Topping

The Proposed Project does not include pole topping as it does not include modification of any existing distribution or telecommunication lines.

3.5.5.2 Above-Ground and Underground Conductor/Cable

Wire Stringing Process

Wire stringing activities would be conducted in accordance with HWT common practices and similar to process methods detailed in the Institute of Electrical and Electronics Engineer Standard 524-2003, Guide to the Installation of Overhead Transmission Line Conductors. To ensure the safety of workers and the public, safety devices such as traveling grounds, guard structures, radio-equipped public safety roving vehicles and linemen would be in place prior to the initiation of wire stringing activities. Advanced planning is required to determine circuit outages, pulling times, and safety protocols to ensure that the safe installation of wire is accomplished. Wire stringing includes all activities associated with the installation of the primary conductors onto transmission line structures. These activities include the installation of conductor, OHGW and OPGW, insulators, stringing sheaves (rollers or travelers), vibration dampeners, weights, suspension, and dead-end hardware assemblies for the entire length of the route.

The following five steps describe typical wire stringing activities:

- Step 1 – Planning: A wire stringing plan would be developed to determine the sequence of wire pulls and the set-up locations (PT sites) for the wire pull/tensioning/splicing equipment.
- Step 2 – Sock Line Threading: Typically, a helicopter would be used to fly a lightweight sock line from structure to structure. The sock line would be threaded through the wire rollers in order to engage a camlock device that would secure the pulling sock in the roller. This threading process would continue between all structures through the roller of a particular set of spans selected for a conductor pull. In areas where a helicopter is unable to install sock line, a bucket truck is typically used to install a lightweight sock line from structure to structure. The sock line would be threaded through the wire rollers in order to engage a camlock device that would secure the pulling sock in the roller. This threading process would continue between all structures through the rollers of a particular set of spans selected for a conductor pull.
- Step 3 – Pulling: The sock line would be used to pull the conductor pulling rope and/or cable. The pulling rope or cable would be attached to the conductor using a special swivel joint to prevent damage to the wire and to allow the wire to rotate freely to prevent complications from twisting as the conductor unwinds off the reel. A piece of hardware known as a running board

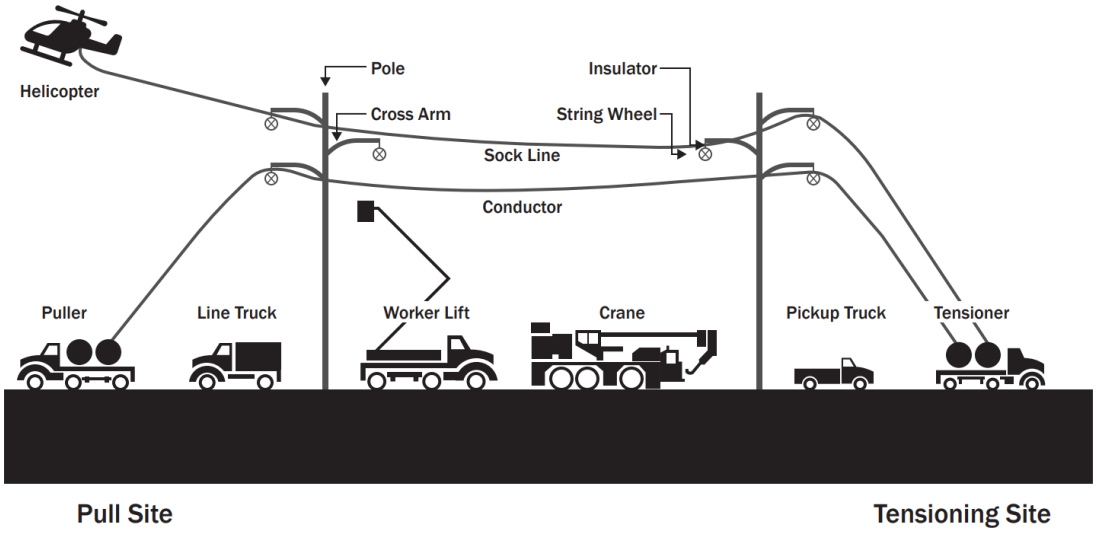
would be installed to feed the conductor into the wire roller. This device keeps the conductor from wrapping during installation. The new conductor would be installed by utilizing conductor tensioning equipment at the conductor end of the pull.

- Step 4 – Splicing, Sagging, and Dead-Ending: Once the conductor is pulled in, if necessary, all mid-span splicing would be performed. Once the splicing has been completed, the conductor would be sagged to proper tension and dead-ended to structures, when applicable.
- Step 5 – Clipping-In: After the conductor is dead-ended or secured at the snubs, the conductors would be secured to all tangent structures; a process called clipping in. Once this is complete, spacers would be attached between the conductors of each phase to keep uniform separation between each conductor.

Conductor and Cable Installation: Activity Locations

Conductor and cable stringing and installation activities would occur at every PT/stringing site, and at every newly-installed structure within the new transmission line alignment, as shown in Appendix A. Figure 3-5 provides a diagram of a typical PT/stringing site.

Figure 3-5 Typical Pull-and-Tension/Stringing Site Set-Up



Conductor Installation: Splicing

Conductor

Conductor would be spliced using compression or implosive splices applied per manufacturer's instructions and specifications.

OPGW Installation

OPGW splicing includes the splicing of the inner optic fibers within the OPGW. The splice between two lengths of OPGW is contained within a splice box mounted on a transmission structure.

Overhead Ground Wire

OHGW would be spliced using compression splices applied per manufacturer's instructions and specifications.

Conductor and Optical Ground Wire Installation: Pull-and-Tension/Stringing Site Locations

The average distance between PT/stringing sites along the Proposed Project alignment is 12,500 feet to 20,000 feet. The dimensions of each PT site/stringing site would be approximately 250 feet by 600 feet. A midspan-sleeving site would be located in the middle of the wire pull. PT/stringing sites may be located at existing dead-end structures, in this case PT sites would be needed on both sides of the dead-end structure and adjacent to the structure site. Generally, PT/stringing sites would be in direct line with the direction of the overhead conductors being installed and established at a distance equal to approximately three times the height of the adjacent structure. The equipment that would be required at PT/stringing sites includes a puller set-up positioned in a PT/stringing site located at one end of a wire pull, and a tensioner set-up with wire reel stand truck positioned in a PT/stringing site at the other end of a wire pull. The PT/stringing sites used for conductor installation would also be used for OPGW installation. When stringing equipment cannot be positioned in back of a dead-end structure and its location is in the middle of a span, Field snubs (i.e., anchoring and dead-end hardware) would be temporarily installed to sag conductor wire to the correct tension at locations.

Conductor and Optical Ground Wire Installation: Underground Installation

No underground installation of a conductor or OPGW would be installed underground as part of the Proposed Project.

Conductor and Optical Ground Wire Installation: Safety Precautions

Where conductor or OPGW are to be installed across a public roadway or a railroad, HWT would install guard structures on either side of the roadway or railroad or would make alternate arrangements as described in Section 3.5.5.4. Guard structures would be installed at all electrical structures and roads where required.

3.5.5.3 Telecommunications

OPGW would be installed along the new approximately 86-mile transmission line. Overhead OPGW installed on new structures would be installed simultaneously with conductor as described above.

3.5.5.4 Guard Structures

Guard structures are temporary facilities that would typically be installed at transportation, flood control, and utility crossings prior to conductor and cable installation activities. Guard structures would be installed at electrical structures and roads where required. These structures are designed to stop the movement of a conductor or cable should it momentarily drop below a conventional stringing height.

There are several different types of guard structures ranging from wood-pole structures to truck mounted "Bull-Horns" to protect energized facilities during construction. Depending on the crossing type, a guard structure crew would install one or more structures and protective covering on the distribution lines. The guard structure may be either conventional wood poles set into the ground

with a cross arm located below the shield wire to be pulled in, equipment such as a digger truck or crane with a “Bat Wing” apparatus or a roller tip, that would prevent the wire from making contact with roads and/or distribution conductors.

Installation of truck mounted structures would involve drive and crush methods. For any wood-pole type structure, installation would utilize a truck with an auger to excavate a hole ranging from 7 to 15 feet deep. The pole would then be lifted into the hole by a crane and the hole would be backfilled with native material. During the guard structure removal process, a line truck would be used to loosen the soil surrounding each pole and then lift the pole out of place. Soils originally removed during structure installation would then be utilized to refill the excavation left by structure removal.

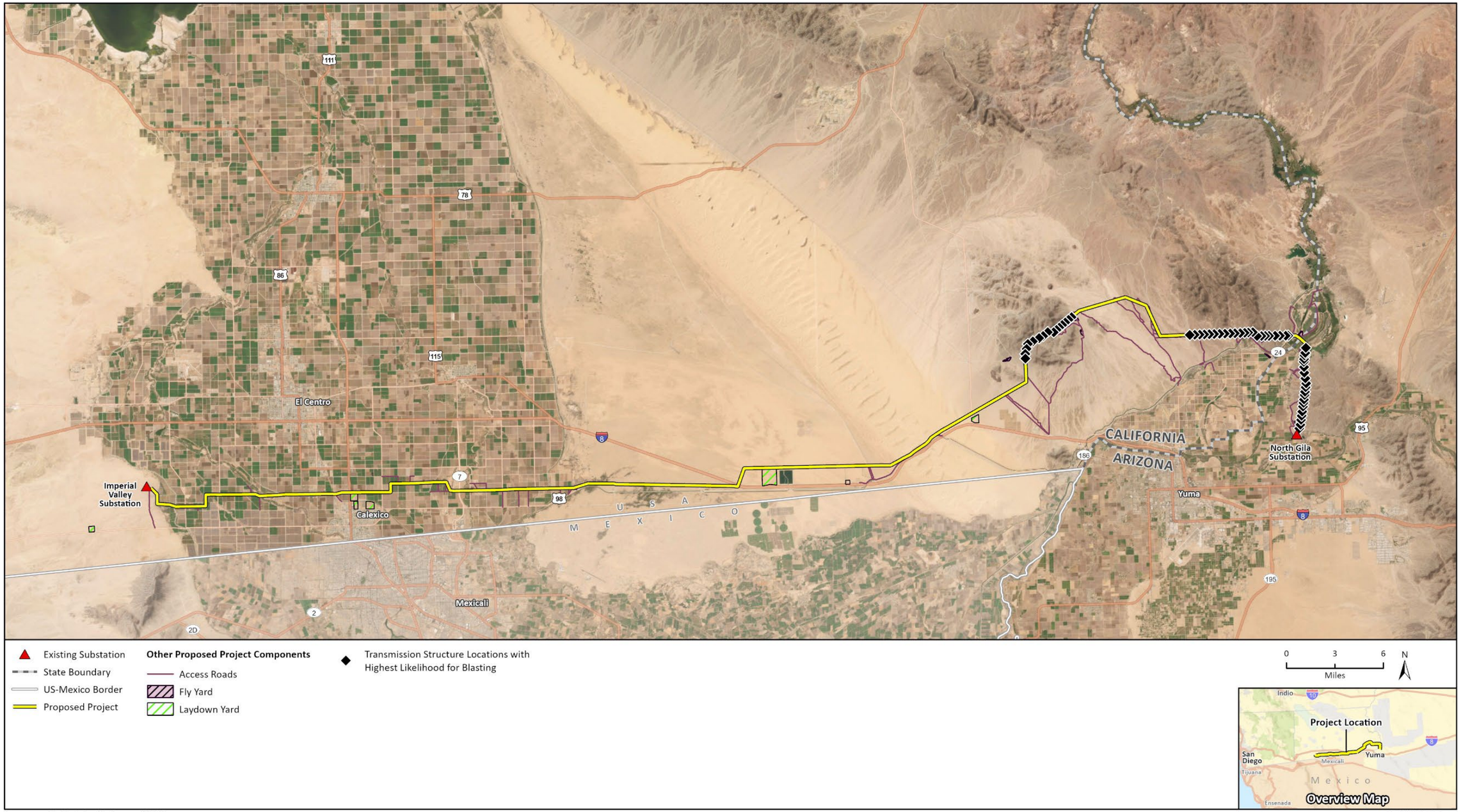
3.5.5.5 Blasting

Drill and blast methods would be used to fracture rock to promote excavation for the construction of building construction pads sites. Blasting operations would be conducted for construction pad sites, access roads, and other work areas where traditional methods of excavation are ineffective. An overview of proposed blasting locations is provided in Figure 3-6. A Project-specific draft Blasting Plan, detailing proposed blasting locations and blasting considerations is included in Appendix M. The final Blasting Plan would be completed after geotechnical analysis and final engineering design.

It is estimated that approximately 91 holes would be excavated per site, with one blasting cap detonator per hole. Ammonium nitrate–fuel oil (ANFO) or another commercial emulsion would likely be used as the blasting agent. Noise levels would be high close to the blasting sights (approximately 130 decibels) and would dissipate as distance increases. The nearest sensitive receptor to proposed blasting activities is located approximately 2,800 feet away from the edge of the structure pad where blasting would occur. The qualified blasting contractor would implement all required safety protocols to establish the appropriate work area and buffer zones prior to blasting activities. While the information described above is approximate, exact types and amounts of blasting agent to be used at each location, estimated impact radii, and noise estimates would be provided closer to the scheduled date of construction phase commencement. More detail regarding location and type of blasting is outlined in Appendix M.

A qualified subcontractor would be responsible for maintaining proper state and federal permits and licenses to conduct blasting operations and for maintaining compliance with federal, state, and local law pertaining to storage, transportation, and use of explosives to conduct blasting operations.

Figure 3-6 Blasting Plan Structures Overview



Imagery provided by Esri and its licensors © 2025.

25-17237 PEA EPS Figures
Fig X Blasting Plan Structures OVERVIEW

3.5.6 Transmission Line Construction (Below Ground)

No transmission infrastructure would be installed below ground as part of the Proposed Project.

3.5.7 Substation, Switching Stations, Gas Compressor Stations

No substation, switching stations or gas compressor stations would be removed, installed, or modified by the Proposed Project.

3.5.8 Gas Pipelines

No gas pipelines are included as part of the Proposed Project.

3.5.9 Gas Storage Facilities

No gas storage facilities are included as part of the Proposed Project.

3.5.10 Public Safety and Traffic Control

3.5.10.1 Public Safety

Public Safety Considerations

Construction of the Proposed Project is expected to pose few public safety considerations. The Proposed Project involves only routine construction activities; much of the Proposed Project alignment traverses lands that are remote and rural, and the population density along the Proposed Project alignment is very low and generally non-urbanized. -Public safety considerations during construction could include: ramifications from spills of fuels or hazardous materials; work being performed along public roadways; movement of additional construction equipment along public roadways; use of helicopters; and direct effects from deenergized conductor being dropped on persons or property during wire stringing activities. A number of measures would be implemented during construction of the Proposed Project to address these public safety considerations; these are described throughout Chapter 5, and include, for example:

- Development and implementation of one or more SWPPPs to ensure, in part, that fuels and hazardous materials are used and handled according to applicable regulations, and to ensure efficient and effective response to spills.
- Development and implementation, if necessary, of a Spill Prevention, Control, and Countermeasures (SPCC) Plan to ensure that fuels are stored appropriately and to ensure efficient and effective response to spills.
- Development and implementation of a Hazardous Materials Management Plan to ensure that materials are managed according to applicable regulations.
- Development and implementation of a Traffic Control/Management Plan, as may be required under a ministerial permit, to mitigate public safety impacts from construction along public roadways and to ameliorate potential impacts from the movement of construction equipment along public roadways.
- Development and implementation of a Helicopter Use and Safety Plan and, if required, a Congested Area Plan to address use of helicopters in areas where the public are present.

- Installation of guard structures or use of specially equipped trucks during wire stringing activities where public roadways are crossed by the Proposed Project alignment. Guard structures would be installed at all electrical structures and roads where required.

Procedures for Managing Work Sites in Urban Areas

No portion of the Proposed Project is located in an urban area.

Public Access Restrictions

To ensure public safety during construction of the Proposed Project, the public would be restricted from entering or transiting construction work areas and staging areas and would also be excluded from those areas of the alignment where overhead cable installation activities are underway. Public access restrictions would be maintained during the duration of construction activities at a given location.

3.5.10.2 Traffic Control

Traffic control measures described below are further discussed in Section 5.17, Transportation.

Traffic Control Procedures

Construction activities on the project would necessitate different levels of traffic control measures across rural streets, county roads, state highways, and interstates. Before any specific actions are taken, coordination with local municipalities, county highway departments, the California Department of Transportation, and the Arizona Department of Transportation is essential to discuss the Proposed Project's needs and approach. Based on the traffic control requirements, a three-tiered strategy would be implemented to manage traffic controls safely and effectively. These tiers are outlined below, from the least to the most intensive level of effort:

- Level 1 Traffic Controls: Local and county roads with very low amounts of traffic and, when minimal or no stoppage of traffic is anticipated, would require the set up of “utility work ahead” warning signs and “flagger ahead” signs. The utilization of qualified flaggers would establish a safety zone while crews are working on or near the roadways.
- Level 2 Traffic Controls: Roadways where a moderate flow of traffic exists or where brief stoppages of traffic are anticipated would require development of a generic traffic control plan that covers these routine situations with proper sign packages, and qualified flaggers.
- Level 3 Traffic Controls: Usually requires a specific state Department of Transportation permit, is the highest level of traffic controls and requires working directly with the regional Department of Transportation office and a Traffic Controls Engineer to develop a formal traffic control package including lighted sign boards, possible police escorts and multiple flaggers.

Location, Process, and Timing for Closing Sidewalks, Lanes, Roads, Trails, Paths, or Driveways

The locations, process, and timing for the closing of sidewalks, lanes, roads, trails, paths, or driveways to manage public access is discussed in Section 5.17, Transportation. Overhead cable installation activities could require temporary closures of roads, lanes of roads and associated sidewalks or pedestrian paths. If necessary, HWT would prepare appropriate traffic control plans and obtain encroachment permits from the local jurisdictions and Caltrans, as appropriate, for lane

or roadway closures. Closures of private driveways, if needed, would be coordinated with the individual landowners.

The Proposed Project alignment may cross recreational paths and trails; the locations of these paths and trails is presented in Section 5.16, Recreation. HWT would coordinate with the relevant jurisdiction regarding path and trail closures, if necessary.

Temporary Detour Routes

No temporary detour routes or locations have been identified for the Proposed Project at this time. The Proposed Project does not anticipate closing any public access roads.

Traffic Control Plan

A Traffic Control Plan for the Proposed Project would be developed in support of ministerial encroachment permit applications, if any such permits are required and if such a Plan is required by the permitting jurisdiction. If required, a project-specific Traffic Control Plan would be provided closer to the start of construction, consistent with Applicant Proposed Measure (APM) TRA-1 detailed below in Section 3.11.

3.5.10.3 Security

Depending on the security needs, staging areas could be fenced, illuminated, or use security cameras. Security personnel could also be used to patrol the staging areas periodically or may be stationed at staging areas.

3.5.10.4 Livestock

Livestock fencing and guards may be necessary where the Proposed Project alignment crosses areas with livestock. Landowners will provide specific requirements upon agreement with HWT. Lightweight utility tube gate will likely be used where required. An exhibit showing a typical cattle gate, fencing, and groundings is included as Figure 3-7, below.

3.5.11 Dust, Erosion, and Runoff Controls

The BMPs[2] provided in this section are those anticipated to be used for the Proposed Project based on anticipated conditions.

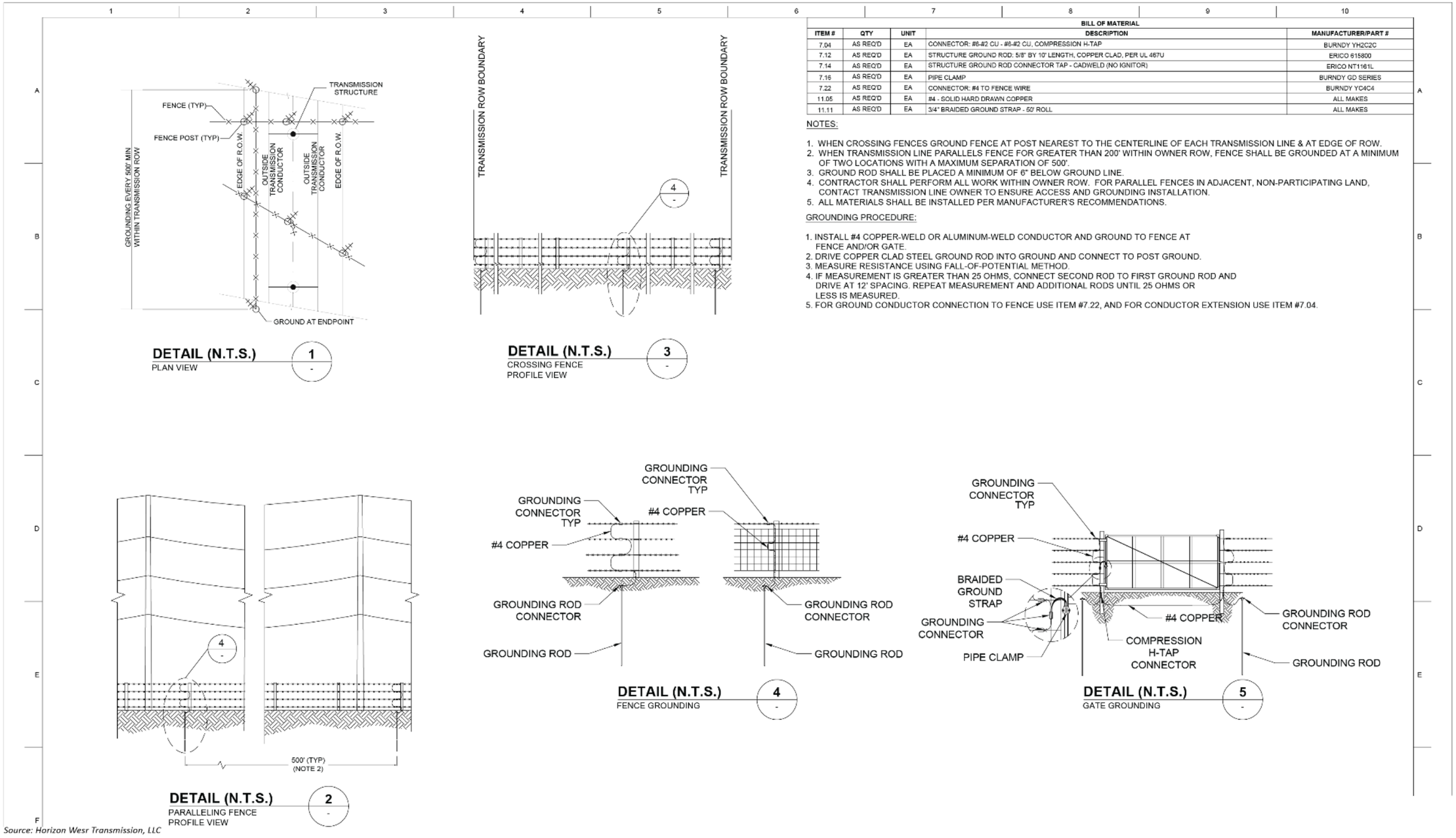
3.5.11.1 Dust

During construction, migration of fugitive dust from the construction sites would be limited by control measures set forth by the Imperial County Air Pollution Control District and Arizona Department of Environmental Quality (ADEQ). Such measures include, but are not limited to, the following BMP that may be implemented to manage fugitive dust:

- BMP-WE-1, Wind Erosion Control. The construction team would apply water or other chemical dust suppressants as necessary to prevent or alleviate dust nuisance generated by construction activities. Covering small stockpiles or areas is an alternative to applying water or other dust palliatives.

[2] BMPs included are based on California Stormwater Quality Association's 2019 California Stormwater Best Management Practices Handbook.

Figure 3-7 Typical Cattle Gate, Fencing, and Groundings



Source: Horizon Wesr Transmission, LLC

3.5.11.2 Erosion

In addition to BMP-WE-1 described in Section 3.5.11.1 above, the following BMPs may be implemented to manage erosion:

- BMP-EC-1, Scheduling. The construction team shall reduce the discharge of pollutants to storm drain facilities caused by construction activities by scheduling activities in a manner that would limit exposure of disturbed soils to wind, rain, non-storm water run-off, and storm water run-on and run-off.
- BMP-EC-2, Preservation of Existing Vegetation. The construction team will protect and preserve existing vegetation in work areas as long as practicable before disturbing them. The construction team shall also preserve and protect existing vegetation adjacent to work areas. This protection and preservation of such vegetation will serve to control erosion and filter out sediment.
- BMP-EC-3, Hydraulic Mulch. The construction team will implement this BMP, if necessary, to disturbed soil areas requiring temporary protection until permanent stabilization is established, and disturbed areas that will be re-disturbed following an extended period of inactivity.
- BMP-EC-4, Hydroseed. The construction team will implement this BMP, if necessary, to disturbed soil areas requiring temporary protection until permanent stabilization is established, and disturbed areas that will be re-disturbed following an extended period of inactivity.
- BMP-EC-5, Soil Binders. The construction team will implement this BMP, if necessary, to disturbed soil areas requiring short term temporary protection. Because soil binders can often be incorporated into the work, they are a good alternative to mulches in areas where grading activities will soon resume. Soil binders are also suitable for use on stockpiles. Non-toxic soil binders, equivalent or better in efficiencies than the California Air Resources Board-approved soil binders, shall be applied per the manufacturer recommendations to active unpaved roadways, unpaved staging areas, and unpaved parking area(s) throughout construction to reduce fugitive dust emissions. Soil binders will be non-toxic and MSDS will be present at site.
- BMP-EC-6, Straw Mulch. The construction team will implement this BMP, if necessary, to disturbed soil areas requiring temporary protection until permanent stabilization is established, and disturbed areas that will be re-disturbed following an extended period of inactivity. Straw mulch will be certified weed free.
- BMP-EC-7, Geotextiles and Mats. The construction team will implement one or more of these measures to stabilize disturbed soil areas (stockpiles, slopes, embankments, conveyances, etc.) and protect these soils from erosion by rain, wind or storm water run-on and run-off where applicable to reduce soil erosion from wind and rain. Plastic micro-filament matting will not be used, only natural fiber mats to prevent trapping of birds and reptiles.
- BMP-EC-8, Wood Mulching. The construction team will implement this BMP, if necessary, to disturbed soil areas requiring temporary protection until permanent stabilization is established, and disturbed areas that will be re-disturbed following an extended period of inactivity. Wood mulch shall be untreated.
- BMP-EC-15, Soil Preparation-Roughening. The construction team will implement this BMP to assess and prepare surface soils for other BMP installations. This can include soil testing (for seed base, soil characteristics, or nutrients), as well as roughening surface soils by mechanical methods (including sheepsfoot rolling, track walking, scarifying, stair stepping, and imprinting) to prepare soil for additional BMPs, or to break up sheet flow. Soil preparation can also involve

tilling topsoil to prepare a seed bed and/or incorporation of soil amendments, to enhance vegetative establishment.

- BMP-EC-16, Non-Vegetated Stabilization. The construction team will utilize non-vegetative stabilization methods for temporary or permanent stabilization of areas prone to erosion; this would be used only where vegetative options are not feasible.

3.5.11.3 Runoff

The following BMPs may be implemented to manage storm water runoff and sediment:

- BMP-SE-4, Check Dams. The construction team will implement this BMP to reduce scour and channel erosion by reducing flow velocity and increasing residence time within the channel, allowing sediment to settle
- BMP-SE-5, Fiber Rolls. The construction team will implement this BMP to eliminate the erosion of slopes. The rolls are widely used to prevent sediment from running off site.
- BMP-SE-6, Gravel Bag Berm. The construction team will implement this BMP to eliminate erosion of slopes. This BMP is particularly useful with steep slopes and a high potential for runoff.
- BMP-SE-7, Street Sweeping. The construction team will implement this BMP when soils and miscellaneous debris are tracked from the construction site to areas outside the site. This measure prevents sediments from reaching the drop inlets and stormwater system, and prevents unsafe driving conditions.
- BMP-SE-10, Storm Drain Inlet Protection. The construction team will implement this BMP if any runoff from the construction site is expected to drain directly into a drop inlet. The protection will prevent debris and soils from clogging drop inlets and storm drain systems.
- BMP-TC-1, Stabilized Construction Entrance and Exit. The construction team will implement this BMP to remove all construction site soil and miscellaneous debris prior to leaving the site. The BMP will depend on the soil, site, and type of surface outside the staging area.
- BMP-TC-2, Stabilized Construction Roadway. A stabilized construction roadway is a temporary access road. It is designed for the control of dust and erosion created by vehicular tracking.
- BMP-WM-3, Stockpile Management. The construction team will implement this BMP whenever there are stockpiles of asphalt, concrete, wood, or soil. This includes temporary stockpiles and stockpiles existing for periods longer than one working day.

3.5.12 Water Use and Dewatering

3.5.12.1 Water Use

Construction of the Proposed Project is estimated to require approximately 30 to 50 million gallons of water; this water would be consumed over the construction duration. Water would be used for dust control, ground compaction, foundation construction, and restoration activities.

HWT expects to utilize local irrigation water sources including wells, canals or sources of water runoff as available for the Proposed Project. If recycled or reclaimed water is not available in sufficient quantities to supply the entirety of the Proposed Project's water demand, HWT would purchase water from commercial purveyors to supplement the volumes of recycled or reclaimed water available. Equipment anticipated for the management of water includes elevated tanks, pumps, wells heads, and water tankers for hauling.

3.5.12.2 Dewatering

During installation of structures, shallow groundwater may be encountered. In these instances, excavations would be dewatered using one or more pumps and the water would be either discharged on-site to the surface (if so permitted) or would be stored in Baker tanks or similar equipment prior to disposal off-site; Baker tanks or similar equipment would be emplaced on the temporary work area established for new structure installation. Dewatering water may also be used for dust control (if so permitted).

3.5.13 Hazardous Materials and Management

3.5.13.1 Hazardous Materials

Types, Uses, and Volumes

Construction of the Proposed Project may require the limited use of hazardous materials, such as fuels (see Table 3-10). Hazardous materials would be stored, handled, and used in accordance with applicable regulations. Safety Data Sheets would be made available at the construction site for all crew workers. The volumes of these materials that would be used during construction have not been determined at this time. However, based on the anticipated volume of hazardous liquid materials, such as fuel, that would be stored and dispensed at one or more staging areas, an SPCC Plan may be required (in accordance with 40 Code of Federal Regulations Parts 112.1-112.7).

Table 3-10 Types, Uses, and Volumes of Hazardous Materials

Hazardous Material Type	Use	Volume
Diesel Fuel Fueling Tank	Fueling vehicles and equipment	10,000-20,000 gallons
Jet A Fuel Truck	Fueling helicopter	300-500 gallons
Oily Debris	Hydraulic leak material and clean-up from vehicles and equipment	100 gallons

Herbicides or Pesticides

No herbicides or pesticides are planned to be used during construction.

Pre-Existing Hazardous Waste

As further discussed in Section 5.9, Hazards, Hazardous Materials, and Public Safety, no known release sites were reported within the Proposed Project alignment. Three release sites are located within 500 feet of the Proposed Project alignment, and ten known release sites were identified within 1 mile of the Proposed Project alignment.

Personnel involved in removal and disposal of hazardous waste, as necessary, shall be properly trained and certified as required by Federal, State, and local regulations. Additionally, hazardous waste shall be hauled by registered hazardous waste hazardous waste transporters to approved transportation, storage, and disposal facilities. All manifests would be retained for a minimum of three years.

Personnel shall be trained in the identification of potential pre-existing hazardous soil. These conditions include changes in odor, color, and sheen of soil during excavation or grading. Should pre-existing hazardous waste be encountered during construction, crews shall immediately stop

work within this area and reach out to their environmental representative. All potentially hazardous soil shall be segregated, and a waste characterization shall be performed. Should the soil test clean, work in the area may continue. If it has been determined that the soil is not clean, the soil would either be disposed of at an approved hazardous waste facility or spread on-site with the landowner's approval.

3.5.13.2 Hazardous Materials Management

BMPs: Transporting, Storing, and Handling

The following BMPs would be followed for transporting, storing, and handling hazardous materials:

- BMP-NS-9, Vehicle and Equipment Fueling. The construction team will implement this BMP when fueling of equipment occurs on site. The equipment should be monitored before and after fueling. This will prevent any fuel from reaching the construction site soils and possible groundwater. Diapers, pans, or tarps will be used under fueling areas. Spill kits will be on-site at fueling locations. Fueling areas will be located at least 100 feet from drainages.
- BMP-WM-01, Material Delivery and Storage. The construction team will implement this BMP to prevent, reduce, or eliminate the discharge of pollutants from material delivery and storage to the stormwater system or watercourses by minimizing the storage of hazardous materials on-site, storing materials in watertight containers and/or a completely enclosed designated area, installing secondary containment, conducting regular inspections, and training employees and subcontractors.
- BMP-WM-02, Material Use. The construction team will implement this BMP to prevent or reduce the discharge of pollutants to the storm drain system or watercourses from material use by using alternative products, minimizing hazardous material use on-site, and training employees and subcontractors.
- BMP-WM-04, Spill Prevention and Control. The construction team will implement this BMP to prevent or reduce the discharge of pollutants to drainage systems or watercourses from leaks and spills by reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training employees.

BMPs: Incidental Leak or Spill

The following BMPs would be followed in the event of an incidental leak or spill of hazardous materials:

- BMP-WM-04, Spill Prevention and Control. The construction team will implement this BMP to prevent or reduce the discharge of pollutants to drainage systems or watercourses from leaks and spills by reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training employees.
- BMP-WM-06, Hazardous Waste Management. The construction team will implement this BMP to prevent or reduce the discharge of pollutants to stormwater from hazardous waste through proper material use, waste disposal, and training of employees and subcontractors.
- BMP-WM-07, Contaminated Soil Management. The construction team will implement this BMP to prevent or reduce the discharge of pollutants to stormwater from contaminated soil and highly acidic or alkaline soils by conducting pre-construction surveys, inspecting excavations regularly, and remediating contaminated soil promptly.

Hazardous Substance Control and Emergency Response Plan/Hazardous Waste and Spill Prevention Plan

As detailed in APM HAZ-1 (see Table 3-13, Applicant Proposed Measures), HWT would prepare and implement a Waste and Hazardous Materials Business Plan (WHMBP) for use during Proposed Project construction. The WHMBP would outline proper hazardous materials handling, use, storage and disposal requirements, as well as hazardous waste management procedures. This plan would be developed to ensure that all hazardous materials and wastes would be handled and disposed of according to applicable rules and regulations and would be submitted to the relevant emergency management agencies prior to construction. The WHMBP will be provided closer to the time of construction consistent with APM HAZ-1.

3.5.14 Waste Generation and Management

3.5.14.1 Solid Waste

Solid Waste Streams

Construction of the Proposed Project may result in generation of various solid wastes including metals, wood pallets, cardboards/papers (e.g., from material packaging), worker-generated solid waste (e.g., food and food packaging), and organic waste (e.g., removed vegetation).

Solid Waste Management

Solid waste generated during construction of the Proposed Project would be collected at the point of creation, transported to a staging area, and then temporarily stored at a staging area prior to salvage, recycling, and/or disposal. Solid waste would be sorted, and recyclable and non-recyclable materials would be stored separately at the staging areas. No treatment of solid wastes would occur at any Proposed Project construction work area or staging area. Solid waste would be transported off-site using HWT-approved transporters and disposed of at one or more HWT-approved disposal facilities or at an industrial-scale recycling facility. Organic waste would be removed from the Proposed Project alignment and disposed off-site. Soils generated from Proposed Project activities would be balanced on-site along the Proposed Project alignment. Contaminated soil, if encountered, would be disposed of as described in Section 3.5.14.3. It is estimated that two haul trucks per week would be needed to transport both inorganic and organic solid waste from the Proposed Project alignment.

Estimated Volume of Solid Waste

A primary source of waste associated with the Proposed Project is anticipated to be foundation spoils created in placing structures along the Proposed Project route. Based on the current design, it is expected that approximately 4,560 cubic yards of solid waste would be generated throughout the course of construction. Solid waste would be disposed of as described in Section 3.5.14.3.

Solid Waste Recycling Potential

Considering the Proposed Project would be a new build and would not involve removing or altering existing infrastructure, recycling potential is expected to be relatively low. Still, there would be opportunities to recycle materials such as concrete waste and washout, wood cribbing, and office supplies. It is expected that approximately 15 percent of solid waste generated during project construction, or about 684 cubic yards, would be recycled.

Solid Waste Disposal and Recycling Facilities

The final disposition site of recyclable materials has not been determined at this time, as the selection of such site may depend upon market conditions at the time of construction. In California, the Imperial County Public Works Department operates nine landfills in the California portion of the Proposed Project area, which are managed by the Imperial County Solid Waste Local Enforcement Agency. The nearest landfills to the Proposed Project area in Imperial County are the Allied Imperial Landfill in Imperial and the Calexico Solid Waste Site in Calexico. In Arizona, the Waste Management Division under the Yuma County Department of Public Works oversees the operation and regulation of landfills. The nearest landfill to the Proposed Project area in Arizona is South Yuma County landfill in Yuma, owned and operated by CR&R Incorporated.

3.5.14.2 Liquid Waste

Liquid Waste Streams

Sanitary waste is the only liquid waste expected to be generated during construction of the Proposed Project. No other liquid wastes (e.g., drilling muds, contaminated waters) are expected to be generated by the Proposed Project.

Liquid Waste Management

Portable toilets would be provided for on-site use by construction workers; sanitary waste would be collected, contained, and stored in these portable toilets prior to disposal by a licensed sanitation contractor. Sanitary waste would be treated at a wastewater treatment plant off site. It is estimated that one truck per week would be needed to transport liquid waste from the Proposed Project alignment.

Liquid Waste Volume

The volume of liquid waste that is expected to be generated across the Proposed Project alignment is expected to be commensurate with the number of workers on site during construction. HWT anticipates between approximately 6 to 154 construction personnel working on the Proposed Project on any particular day, including construction workers as well as clerical, safety, and management personnel. Project construction would involve the disposal of up to 1,600 gallons of liquids per week, or approximately 83,200 gallons (0.08 million gallons) per year.

Liquid Waste Disposal Facilities

Sanitary waste would be the only type of wastewater generated during Project construction. Sanitary waste would be collected and contained in portable toilet facilities prior to disposal by a licensed sanitation contractor, which would dispose of sanitary waste at an off-site wastewater treatment facility.

3.5.14.3 Hazardous Waste

Potentially Hazardous Waste Streams and Management

Only de minimis volumes of hazardous waste are anticipated to be generated during construction of the Proposed Project. These hazardous wastes would generally include empty fuel, lubricant, or cleaning solvent containers and materials contaminated with fuels, lubricants, or cleaning solvents

(e.g., rags, drip pans). A low potential exists for contaminated soil or groundwater to be encountered during excavation or other ground-disturbing activities. Hazardous waste would be stored, handled, and used in accordance with applicable regulations. Safety Data Sheets would be made available at the construction site for all crew members.

Volumes of Hazardous Waste

Only de minimis volumes of hazardous waste are anticipated to be generated during construction of the Proposed Project.

Locations of Appropriate Disposal Facilities

The final disposition location of hazardous waste would be determined by the construction contractor immediately prior to or during construction to an HWT-approved facility. Any hazardous waste generated during construction would need to be transported to an appropriate facility by a registered transporter in compliance with the WHMBP, which HWT would prepare and implement as detailed in APM HAZ-1.

3.5.15 Fire Prevention and Response

3.5.15.1 Fire Prevention and Response Procedures

HWT would implement standard fire prevention protocols during construction activities and comply with applicable laws and regulations and the provisions of HWT's approved Wildfire Mitigation Plan. Construction areas would be grubbed/trimmed of vegetation and graded before the staging of equipment, and in such areas where overland travel may occur, dry vegetation would also be trimmed; such activities would minimize the potential for vehicles or equipment to start a fire. Furthermore, HWT would prepare a specific Fire Management Plan for the Proposed Project that all personnel working on the Proposed Project would be required to adopt and implement. The Fire Management Plan is intended to ensure compliance with applicable laws, regulations, and HWT's Wildfire Mitigation Plan, and outlines responsibilities for management, fire patrol, supervisors, and all personnel working on the Proposed Project.

As part of the Fire Management Plan, HWT would monitor the National Weather Service for issuance of a Red Flag Warning (RFW), which indicates that conditions are ideal for wildland fire combustion and rapid spread. HWT's wildfire mitigation plan includes an annual wildfire simulation to be conducted in the spring/early summer ahead of increased frequency of RFW days in late summer and fall. In addition to monthly inspections, current HWT protocol includes conducting facility inspections ahead of extreme fire weather periods when the National Weather Service issues Red Flag Warnings for the area of a facility. All non-critical construction and maintenance activities cease during RFW conditions and affected areas are more closely monitored remotely by HWT's 24/7 Operations Center. As detailed in APM WF-1, the Applicant would prepare a Wildfire Mitigation Plan, which implements wildfire mitigation strategies and design based on site-specific fire ecology, fire history, climate, topography, and community, including requirements and guidelines related to equipment maintenance and repair, inspections and monitoring systems, vegetation management, situational awareness, weather forecasting, an Emergency Preparedness Plan, external emergency planning and mutual aid, drills and simulations, community outreach, public power safety shutoff, and general best practices for Project construction, operations, and maintenance. A copy of HWT's approved Wildfire Mitigation Plan for the Suncrest Project is

provided in Appendix H as an example of a similar Wildfire Mitigation Plan to what would be developed under APM WF-1.

3.5.15.2 Fire Breaks

No new permanent fire breaks (i.e., areas cleared of vegetation) are expected to be developed as part of the Proposed Project. Areas around new structures would be kept clear of vegetation per the applicable standards in CPUC G.O.128 and HWT's Wildfire Mitigation Plan, to be developed under APM WF-1.

Additionally, no areas are expected to be cleared of vegetation solely for the purposes of creating a temporary fire break. In areas where hot work (e.g., welding) would be performed, or where equipment would be staged and operated where hot surfaces (e.g., exhaust systems) could come in contact with extant vegetation, such vegetation would be cleared or trimmed. This vegetation clearing or trimming would be contained within the construction work area identified for that given location.

3.6 Construction Workforce, Equipment Traffic, and Schedule

3.6.1 Construction Workforce

3.6.1.1 Number of Construction Crew members

Based on the workforce estimates provided in Table 3-11, HWT anticipates between approximately 6 to 154 (or an average of 80) construction personnel working on the Proposed Project on any particular day, including construction workers as well as clerical, safety, and management personnel.

3.6.1.2 Crew Deployment

The estimated deployment and number of crew members would vary depending on factors such as material availability, resource availability, and construction scheduling. In general, construction efforts would occur in accordance with accepted construction industry standards. Construction would be performed by contractors that would be retained and ultimately overseen by HWT. Contractor construction personnel would be managed by HWT construction management personnel and based out of the contractor's existing staging area or temporary staging areas set up for the Proposed Project.

3.6.1.3 Activities to be Undertaken

The different types of activities to be undertaken during construction, the number of crew members for each activity, and number and types of equipment expected to be used for each activity are presented in Table 3-11.

3.6.2 Construction Equipment

A tabular list of the types of equipment expected to be used during construction of the Proposed Project, including the horsepower of each type of equipment, is presented in Table 3-11.

3.6.3 Construction Traffic

3.6.3.1 Transportation of Crews and Equipment

Construction equipment would be transported to and from construction work areas along the Proposed Project alignment by being driven (in the case of self-propelled vehicles), towed (in the case of equipment that is not self-propelled) along public roadways and along the existing network of access roads, or helicoptered in (in the case of challenging terrain). Construction crews would be transported to and from construction work areas along the Proposed Project alignment in construction vehicles (i.e., pick-up trucks or other self-propelled vehicles) or by helicopter. Along the Proposed Project alignment, construction equipment would often be left at work areas overnight and on off-days (e.g., holidays) rather than being driven to and from construction work areas each day, which would minimize the number of trips required for this equipment.

3.6.3.2 Vehicle Types, Numbers, and Hours of Operation

Information on the vehicle type, number of vehicles, and estimated hours of operation per day, week, and month for each construction activity are presented in Table 3-11.

3.6.3.3 Vehicle Miles Traveled

The estimated number of vehicle trips and vehicle miles traveled for each construction activity is presented in Section 5.17, Transportation.

Table 3-11 Transmission Construction Equipment and Workforce

Primary Equipment Description	Estimated Equipment Horsepower (HP)	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Approximate Start Date	Approximate End Date
Staging Areas				**6**			**3/11/2029**	**7/05/2029**
1-Ton Truck, 4x4	335	Diesel	4			8		
R/T Forklift	96	Diesel	4			8		
Generator	45	Diesel	1			8		
Water Truck	350	Diesel	1			8		
Civil Crew (Road Work, Foundations, Ducts)				**34**				
Flat Land Crew (2 crews total)							**4/01/2029**	**6/01/2030**
PICKUP 3/4 TON	300	Gas	3			8		
GRADER 150 AWD	200	Diesel	2			8		
DOZER D6	200	Diesel	2			8		
Water Truck	350	Diesel	2			8		
ROLLER	150	Diesel	2			8		
Regular Crew (1 crew total)							**04/01/2029**	**6/01/2030**
PICKUP 3/4 TON	300	Gas	2			8		
EXCAVATOR>100,000 LBS	450	Diesel	1			8		
DOZER D6	200	Diesel	1			8		
Water Truck	350	Diesel	1			8		
ROLLER	150	Diesel	1			8		
Foundation Crew (3 crews total)							**5/01/2029**	**4/01/2030**
IMT Drill	500	Diesel	3			8		
LoDril	400	Diesel	3			8		
Backhoe	150	Diesel	6			8		
PICKUP 3/4 TON	300	Gas	12			8		
CRANE 40T	425	Diesel	6			8		
Semi	500	Diesel	2			8		
16' Deckover Trailer	N/A	N/A	3			8		
Material Handler	400	Diesel	3			8		
SKID STEER & FORKS	100	Diesel	3			8		

Primary Equipment Description	Estimated Equipment Horsepower (HP)	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Approximate Start Date	Approximate End Date
Civil Crew (Road Maintenance, BMPs, Gates) (1 total crew)				**10**			**3/11/2029**	**11/01/2030**
PICKUP 3/4 TON	400	Diesel	2			8		
Water Truck	350	Diesel	3			8		
GRADER 150 AWD	200	Diesel	1			8		
SKID STEER & FORKS	100	Diesel	1			8		
25' Gooseneck Trailer	N/A	N/A	1			8		
Mechanic Truck	335	Diesel	1			8		
Structure Installation				**60**			**6/01/2029**	**05/01/2030**
Lattice - Guyed V Framing (4 total crews)								
PICKUP 3/4 TON	335	Diesel	4			8		
PICKUP 1 TON DIESEL	300	Gas	4			8		
16' Deckover Trailer	N/A	N/A	4			8		
FORKLIFT 12K	100	Diesel	4			8		
Lattice - Guyed V Setting (4 total crews)								
PICKUP 3/4 TON	300	Gas	4			8		
PICKUP WINCH TRUCK	335	Diesel	8			8		
16' Deckover Trailer	N/A	N/A	4			8		
CRANE 275 TON	500	Diesel	4			8		
EXCAVATOR>60,000 LBS	175	Diesel	4			8		
FORKLIFT 12K	100	Diesel	4			8		
Monopole and Lattice - 4-Legged (3 total crews)								
PICKUP 3/4 TON	300	Gas	9			8		
PICKUP 1 TON DIESEL	300	Gas	3			8		
16' Deckover Trailer	N/A	N/A	3			8		
FORKLIFT 12K	100	Diesel	6			8		
CRANE 160 TON RT	500	Diesel	6			8		
Spotting (3 total crews)								
Semi	500	Diesel	3			8		

Primary Equipment Description	Estimated Equipment Horsepower (HP)	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Approximate Start Date	Approximate End Date
PICKUP 1 TON DIESEL	335	Diesel	1			8		
FORKLIFT 12K	100	Diesel	1			8		
FLATBED TRAILER - 48'	N/A	N/A	3			8		
25' Gooseneck Trailer	N/A	N/A	1			8		
DECKOVER TRAILER 16'	N/A	N/A	1			8		
CRANE 100 TON RT	270	Diesel	1			8		
PICKUP 3/4 TON	400	Diesel	1			8		
Conductor and Wires Installation (2 total crews)				**80**			**11/01/2029**	**10/01/2030**
SEMI - ON ROAD	500	Diesel	6			8		
SEMI - ON ROAD	500	Diesel	8			8		
SEMI - ON/OFF ROAD 6X6	300	Diesel	4			8		
PICKUP 1 TON DIESEL	335	Diesel	4			8		
PICKUP 3/4 TON DIESEL	300	Gas	32			8		
DECKOVER TRAILER - 18'	N/A	N/A	10			8		
25' Gooseneck Trailer	N/A	N/A	2			8		
DOZER D8 TRIPLE BUNDEL SAG	350	Diesel	4			8		
DOZER D6 SINGLE TOW WINCH	200	Diesel	2			8		
HARDLINE PULLER	500 Chassis 500 puller	Diesel	4			8		
TRIPLE DRUM PULLER 3/8	175	Diesel	6			8		
TENSIONER - 52"	N/A	N/A	4			8		
TENSIONER 72" BNDL TRK MNTD	300 chassis 75 tensioner	Diesel	2			8		
POLE TRAILER	N/A	N/A	2			8		
FLATBED TRAILER - 48'	N/A	N/A	4			8		
WIRE TRAILER - 3 PLACE TRANS	N/A	N/A	12			8		
PICKUP WINCH TRUCK	335	Diesel	20			8		
FORKLIFT 12K	100	Diesel	4			8		

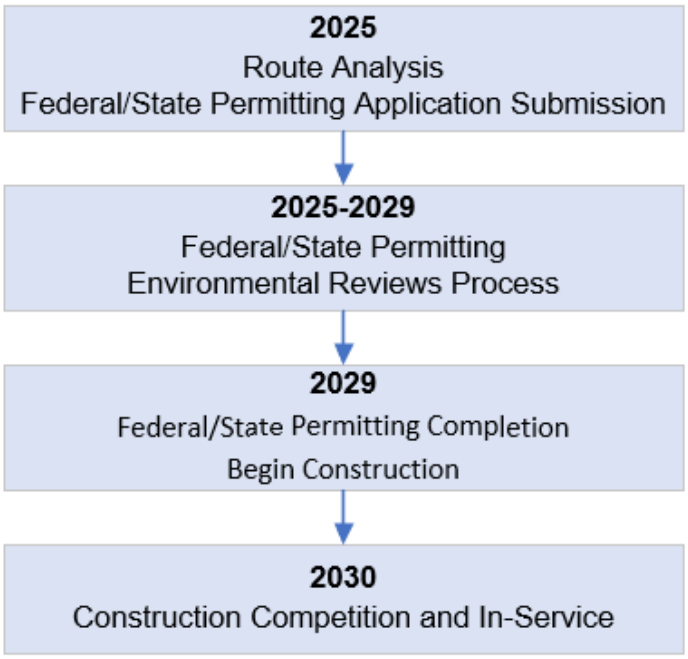
Primary Equipment Description	Estimated Equipment Horsepower (HP)	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Approximate Start Date	Approximate End Date
7 TON ARMY BUNK TRUCK	400	Diesel	4			8		
BUCKET TRUCK 90'-100' AWD	300	Diesel	2			8		
CRANE 40T	425	Diesel	11			8		
SKID STEER & FORKS	100	Diesel	2			8		
Mechanic Truck	335	Diesel	2			8		
Civil Crew (Clean Up) (1 total crew)				**10**			**3/01/2030**	**11/01/2030**
PICKUP 3/4 TON	300	Gas	2			8		
EXCAVATOR>100,000 LBS	450	Diesel	1			8		
DOZER D6	200	Diesel	1			8		

3.6.4 Construction Schedule

HWT anticipates that construction of the Proposed Project would take approximately 19 months. Construction would commence following the CPUC's issuance of a CPCN and notice to proceed, and receipt of any necessary state and federal approvals, final engineering, procurement activities, easement acquisitions, and receipt of any other necessary permits. The proposed construction start date (e.g., month and year) for each construction activity is presented in Table 3-11.

3.6.4.1 Proposed Schedule

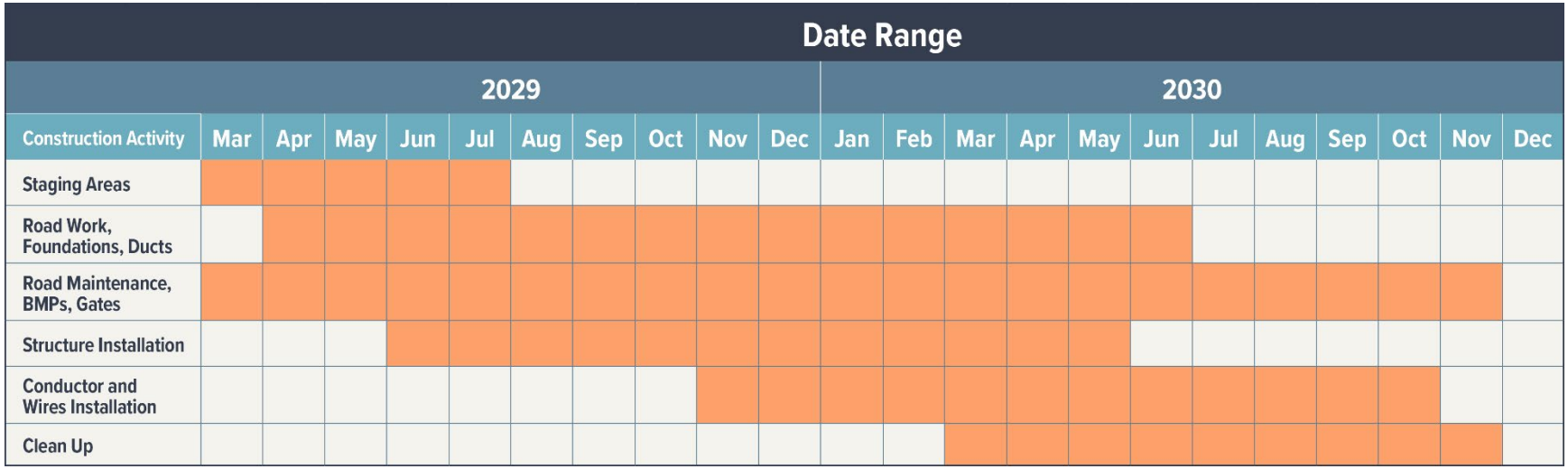
Figure 3-8 Proposed Schedule



3.6.4.2 Construction Sequencing

The potential sequencing of construction activities is dependent on final engineering and design. However, it is anticipated that some activities may be performed concurrently; for instance, PT/stringing sites may be established at the same time as guard structures are being installed, and the restoration of disturbed areas may occur at the same time as staging area demobilization and restoration is occurring. Construction sequencing is illustrated below in Figure 3-9.

Figure 3-9 Construction Sequencing



3.6.4.3 Total Duration of Construction Activities

The approximate duration of each construction activity is presented in Table 3-11.

3.6.4.4 Seasonal Considerations

Seasonal considerations may affect the ability of HWT or its contractors to perform construction activities along the Proposed Project alignment. These considerations include variable winter weather which could force halts to construction during rain events; construction halts during nesting bird season; and species-specific disturbance restrictions. While some of these considerations cannot be predicted at this time, HWT has taken seasonal considerations into account to the extent that future actions outside of HWT's control can be addressed in advance.

3.6.5 Work Schedule

3.6.5.1 Anticipated Work Schedule

To the extent feasible, construction activities would generally occur between 6:00 am and 7:00 pm, Monday through Saturday or during the hours established in local ordinances. The anticipated work schedule may also vary in winter months when construction activities are generally concluded prior to sunset. However, at limited times some construction along the Proposed Project alignment may be required or completed outside these hours.

3.6.5.2 Construction Durations

The total duration of construction activities at a given type of work area would vary; however, approximate durations are presented below.

Helicopter Landing Zones and Touchdown Areas

Helicopter landing zones established in staging areas would be utilized during the period when that staging area is necessary to support construction in the area.

Helicopter landing zones would be located at Wire Setup Sites. Helicopter landing zones would be used for duration of wire pulling activities, expected to be approximately 11 months.

Temporary Work Areas Duration

For all activities at a temporary work area, the work area would be established, including vegetation clearing/trimming as necessary; this activity would generally be performed in approximately one day. The specific construction activities at any given temporary work area would vary depending on the activity to be performed, as described below.

Structure Installation

Installing the structure foundation would generally be performed over approximately two or three consecutive days. The concrete foundation would then be allowed to set for seven days before testing to confirm the foundation meets all necessary specifications. Testing is completed every seven days until the appropriate test result is achieved to commence erection. Installation of the structure on the foundation is expected to require several consecutive days of work at any given location.

Conductor Installation

Conductor installation would generally occur over a period of three non-consecutive days. On one day of work at a given temporary work area, crews would string a pulling rope or cable through sheaves installed on new structures and install new insulators and other fittings. On the second day, the new conductor and cable would be pulled through the sheaves. On the third day, crews would sag and clip-in the new conductors and OPGW. Note that the approximately three days of work at a given temporary work area would not be performed consecutively; these three days of work would occur over an approximate 14-day period.

Temporary Guard Structures Duration

Construction activities at any temporary guard structure location are expected to occur on two non-consecutive days. On one day of work at the temporary work area, crews would install the temporary guard structure at a given location. This guard structure would then remain in place until conductoring/cabling activities in that area are completed. Then, on the second day of work, crews would remove the temporary guard structure at the given location.

Pull-and-Tension/Stringing Sites

The construction duration at a PT/stringing site located at the end of a portion of transmission line would be approximately ten days. The construction duration at a PT/stringing site not located at the end of a portion of transmission line would be approximately 20 days; this accounts for the durations to complete wire pulls on both sides of the PT/stringing site. These durations do not include any site preparation work (e.g., clearing vegetation, preparing the surface) that may be needed; such site preparation work is estimated to require two days per PT/stringing site.

Staging Area Activity Duration

Work at a given staging area would occur during the period when that staging area is necessary to support construction in the area. The duration of use for a given staging area could run from six to 19 months, depending upon final construction sequencing.

3.7 Post-Construction

3.7.1 Configuring and Testing

End-to-end testing would be completed on fiber and until all OPGW splice losses meet Proposed Project specifications. For conductors, phasing verification will be performed before energization.

3.7.2 Landscaping

The Proposed Project would include recontouring to match existing conditions, and reseeding with native seed mixes. For sloped sites, an O&M pad would also be left in place for long-term maintenance.

3.7.3 Demobilization and Site Restoration

3.7.3.1 Demobilization

Where intensive surface preparation occurred, demobilization activities would consist of cleaning up the construction site and yards, removing equipment and machinery, restoring the site to original condition, and completing final inspections and compliance reporting. For construction work areas, where no stationary equipment or materials would be located and where no intensive surface preparation occurred, mobile equipment would be removed from the construction work area, all construction-related materials (e.g., packaging, trash) would be removed, and construction-related temporary BMPs would be removed if they are not necessary for planned restoration work. The construction work area would then be subject to restoration and final stabilization as described below.

At staging areas, all stationary equipment (e.g., office trailers, generators) and remaining construction-related material would be removed, as would all mobile equipment not needed for demobilization of the staging area. The staging area would then be returned to its pre-construction condition or be subject to restoration as described below.

3.7.3.2 Site Restoration

HWT would clean up all areas that would be temporarily disturbed by construction of the Proposed Project (which may include temporary access roads, staging areas, construction work areas, PT/stringing sites, and splicing sites) to as close to pre-construction conditions as feasible, following the completion of construction of the Proposed Project.

If restoration and/or revegetation occurs within sensitive habitats, a habitat restoration and/or revegetation plan(s) would be developed by HWT with the appropriate resource agencies and implemented after construction is complete. Additional information pertaining to the habitat restoration and/or revegetation plan(s), where applicable, is provided in Section 5.4, Biological Resources.

Restoring Natural Drainage Patterns

Natural drainages, if impacted during construction of the Proposed Project, would be returned to pre-Proposed Project contours upon completion of the work. Recontouring would restore the pre-existing hydrological function to the system. Further, HWT would obtain all necessary permits and authorizations, including those from the United States Army Corps of Engineers, the Regional Water Quality Control Board (RWQCB), and California Department of Fish and Wildfire prior to construction in drainages, if necessary. HWT would comply with all conditions of approval identified in permits and authorizations. Restoration of natural drainage patterns outside of drainages would be accomplished by restoring, in-place, temporarily disturbed areas to pre-Proposed Project contours.

Recontouring Disturbed Soil

Temporarily disturbed areas would be restored and rehabilitated in-place to their approximate pre-Proposed Project contours.

Removing Construction Debris

Construction debris would be removed from construction work areas and staging areas throughout the duration of the Proposed Project. Construction debris would be removed in light-duty vehicles (e.g., pick-up trucks) and heavy-duty vehicles (e.g., in dump trucks, on flatbed trailers).

Vegetation

Construction work areas and staging areas would be stabilized following construction; such stabilization could include seeding disturbed areas. If construction of the Proposed Project would disturb sensitive habitats, restoration and/or revegetation would be performed in those areas after construction is complete consistent with habitat restoration and/or revegetation plan(s) developed by HWT with the appropriate resource agencies. Additional information pertaining to the habitat restoration and/or revegetation plan(s), where applicable, is provided in Section 5.4, Biological Resources.

Permanent and Semi-Permanent Erosion Control measures

Permanent erosion control measures would be installed as required and surrounding areas would be restored to their approximate pre-construction condition to the extent feasible. Appropriate erosion control best management practices (e.g., silt fencing, straw wattles, secondary containment, avoiding fueling in close proximity to waters) would be utilized to ensure that direct and indirect impacts to water quality are avoided or minimized to the maximum extent feasible, as presented in Section3.5.1.1.

Restoration of All Disturbed Areas and Temporary Access Roads

Restoration activities would include restoring the land to its original condition including any temporary access roads. It would also include reseeding activities to restore vegetation and taking measures to prevent soil erosion. Any infrastructure damaged during construction such as roads would be repaved or repaired.

Road Repaving and Striping

No road repaving or striping is anticipated as part of the Proposed Project, but would be performed if unanticipated damage occurs during construction.

3.8 Operation and Maintenance

3.8.1 Regulations and Standards

The transmission lines included as part of the Proposed Project would be maintained in a manner consistent with CPUC G.O. 95 and G.O. 128 as applicable, along with federal, state, and local regulations. These G.O.s contain the ruling standards for the operation and maintenance of transmission lines in California.

3.8.2 System Controls and Operation Staff

3.8.2.1 Systems and Methods

Project facilities managed by HWT would be monitored remotely 24/7 by the System Operations team at Lone Star Transmission, an HWT affiliate, in compliance with Federal Energy Regulatory Commission regulations. The physical condition of facilities would be periodically inspected by field operations staff.

HWT would conduct a wide variety of repair and maintenance activities in response to emergency situations such as damage resulting from high winds, storms, fires, and other natural disasters, and accidents. Such repairs could include replacement of downed structures or lines, or re-stringing conductors. Emergency repairs could be needed at any time. Typically, two personnel would respond to an emergency and would not require the use of special equipment or helicopters.

Ongoing O&M activities are necessary to ensure reliable service, as well as the safety of the utility worker and the general public, as mandated by the CPUC.

3.8.2.2 New Full-Time Staff

HWT anticipates a small incremental increase in staffing to support the Proposed Project. The estimated full-time equivalent is 1 to 2 subject matter experts (SMEs) to be in the area to support repair and maintenance activities. Additional staffing needs are minimal because HWT plans to integrate the Proposed Project into its existing O&M program currently executed by HWT and its affiliated SMEs, and supported by external specialized contractors.

3.8.3 Inspection Programs

3.8.3.1 Existing and Proposed Inspection Programs

Existing Substations

No substation inspections are expected to be required as part of the Proposed Project.

Transmission and Telecommunication Lines

HWT plans to perform visual inspections of its transmission line components annually, or more frequently if warranted. For the purposes of providing worst case environmental analyses in this PEA, it is assumed that HWT would conduct ground inspections monthly with two inspectors. This includes following severe weather events or other anomalies as appropriate. The inspection tasks for each component category are addressed in HWT's substation and transmission line maintenance practices approved and audited by the CAISO. The final inspection plan for the Proposed Project would be reviewed and revised as necessary, based on the Proposed Project's final design, and approved before the energization of Proposed Project facilities.

3.8.3.2 Enhanced Inspections

The Proposed Project alignment is not located in a High Fire Threat District. As explained in Section 3.5.15.1, however, HWT added an annual wildfire simulation to its wildfire mitigation procedures to be conducted in the spring/early summer ahead of increased frequency of RFW days in late summer and fall. In addition to monthly inspections, current HWT protocol includes conducting facility inspections ahead of extreme fire weather periods when the National Weather Service issues Red

Flag Warnings for the area of a facility. All non-critical construction and maintenance activities cease during RFW conditions and affected areas are more closely monitored remotely by HWT's 24/7 Operations Center.

3.8.3.3 Inspection Processes

G.O. 165 inspections are performed via ground and/or aerial observation. HWT may use a light-duty helicopter to conduct transmission line aerial inspections once a year, for up to four hours in a day. No new access would be required for future inspections beyond access proposed for construction of the Proposed Project; ground-based inspections would be conducted using the existing and proposed network of access and spur roads. HWT anticipates up to one month of access road maintenance activities per year using the same construction equipment fleet and workforce as described in Table 3-11 associated with civil crew (road maintenance, BMPs, gates) activity.

3.8.4 Maintenance Programs

3.8.4.1 Existing and Proposed Maintenance Programs

Existing Substations

Substation maintenance would not be required as part of the Proposed Project.

Transmission Lines

Maintenance of transmission line components would be based on findings uncovered during inspections. The maintenance methods and frequencies would adhere to HWT's transmission line maintenance practices approved by the CAISO. The final inspection plan for the Proposed Project would be reviewed and revised as necessary, based on the Proposed Project's final design, and approved before the energization of Project facilities. The ROW, access roads, crossings and vegetation clearances would be maintained based on vegetation species, growth patterns, environmental sensitivity, and local agency and authorities' requirements, as conditions require along the transmission line alignment. HWT anticipates up to one month of access road maintenance activities per year using the same construction equipment fleet and workforce as described in Table 3-11 for the Civil Crew (Road Maintenance, BMPs, Gates) activity.

The transmission lines would be maintained in a manner consistent with CPUC G.O. 95 and G.O. 128 as applicable. Normal operation of the lines would be monitored and controlled remotely by HWT's affiliate Lone Star Transmission through its 24-hour-a-day, 7-day-per week control center, and manually in the field as required. Maintenance would occur as needed and could include activities such as repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, replacing structures, tree trimming, brush and weed control, and access road maintenance. Most regular O&M activities of overhead facilities would be performed from existing access roads with no surface disturbance. Some PT/stringing site locations could be in previously undisturbed areas and at times, conductors could be passed through existing vegetation on route to their destination.

Insulators could require periodic washing with water to prevent the buildup of contaminants (e.g., dust, salts, droppings, smog, condensation) and reduce the possibility of electrical arcing. Frequency of insulator washing is region specific and based on local conditions and build-up of contaminants. Replacement of insulators, hardware, and other components is performed as needed to maintain circuit reliability. Though attempts would be made to utilize previously disturbed areas to the

greatest extent possible, structure locations and/or staging areas may be in previously undisturbed areas and would result in ground and/or vegetation disturbance.

Maintenance of conductors could include re-stringing to repair damages. Some pulling site locations could be in previously undisturbed areas and at times, conductors could be passed through existing vegetation on route to their destination. In some cases, structures do not have existing access roads and are accessed on foot, by helicopter, or by creating temporary access areas. O&M related helicopter activities could include transportation of transmission line workers, delivery of equipment and materials to structure sites, structure placement, hardware installation, and conductor or OPGW stringing operations. Helicopter landing areas may be located in places where access by road is infeasible. In addition, helicopters may land within HWT ROWs, which could include landing on access or spur roads.

3.8.4.2 Scheduled Maintenance or Facility Replacement

With the exception of the maintenance discussed above in Section 3.8.4.1, there is no scheduled maintenance associated with the transmission lines included as part of the Proposed Project. Replacement of equipment to be installed as part of the Proposed Project at the end of its useful life would be performed generally as described in this section.

3.8.4.3 Parts and Materials Requiring Regular Maintenance

With the exception of the regular maintenance discussed above in Section 3.8.4.1, there is no regular maintenance associated with the transmission lines included as part of the Proposed Project. Regular maintenance of parts or materials installed as part of the Proposed Project would be performed generally as described in this section or performed on an as-needed basis.

3.8.4.4 Access Road Maintenance

Routine access road maintenance would be conducted on an annual and/or as-needed basis and in accordance with landowner agreements. Road maintenance includes maintaining a vegetation-free corridor (to facilitate access and for fire prevention) and blading to smooth over washouts, eroded areas, and washboard surfaces as needed. Access road maintenance could include brushing (i.e., trimming or removal of vegetation) approximately 2 to 5 feet beyond berms or the road edge when necessary to keep vegetation from intruding into the roadway. Road maintenance would also include cleaning ditches, moving, and establishing berms, clearing, and making functional drain inlets to culverts, culvert repair, clearing and establishing water bars, and cleaning and repairing over-side drains. Access road maintenance includes the repair, replacement, and installation of storm water diversion devices on an as-needed basis.

3.8.4.5 Maintenance for Surface or Color Treatment

New transmission structures to be installed under the Proposed Project may have surface or color treatments, pending agreements with landowners and agencies. If structures are painted, a maintenance schedule will be developed prior to construction.

3.8.4.6 Cathodic Protection Maintenance

Corrosion and necessary design of alternating current (AC) mitigation systems for facilities adjacent to a transmission line are influenced by various parameters, including proximity to the transmission line, current on the transmission line, soil resistivity, and length of parallelism. In addition,

parameters of the adjacent facility are also influential such as for pipelines, pipeline material and diameter and coating quality. At this time, these parameters are not known, and no new cathodic protection system are currently anticipated to be installed as part of the Proposed Project. Therefore, no maintenance of cathodic protection systems is anticipated to be performed.

3.8.4.7 Landscape Maintenance

Landscaping requiring ongoing maintenance is not currently anticipated.

3.8.5 Vegetation Management Programs

3.8.5.1 Vegetation Management Programs

Regular tree pruning must be performed to be in compliance with existing state and federal laws, rules, and regulations and is crucial for maintaining reliable service, especially during severe weather or disasters. Tree pruning standards for distances from overhead lines have been set by the CPUC (G.O. 95, Rule 35), Public Resources Code Section 4293, CCR Title 14, Article 4, and other government and regulatory agencies. In addition, as required by APM WF-1, the Wildfire Mitigation Plan to be developed for the Proposed Project would include vegetation management and inspection standards that would be required during O&M. HWT's standard approach to tree pruning during O&M is to remove at least the minimum required by law plus one year's growth (species dependent).

HWT maintains vegetation-free access roads, helipads, and clearances around electrical lines. Further, clearance of brush and weeds around structures as may be required by applicable regulations on ROWs is necessary for fire protection. A 10-foot radial clearance around non-exempt structures (as defined by CCR Title 14, Article 4) is maintained in accordance with California Public Resources Code Section 4292.

3.8.5.2 Enhanced Vegetation Management

The Proposed Project alignment is not located in a High Fire Threat Area. Therefore, enhanced vegetation management is not expected to be conducted for this Proposed Project. HWT would comply with applicable portions of its approved Wildfire Mitigation Plan during construction and operation of the Proposed Project.

3.9 Decommissioning

3.9.1 Decommissioning

HWT anticipates a 60 to 80 year life for the Proposed Project. At the time of any decommissioning, HWT would develop a decommissioning, abandonment, and reclamation plan. This plan would include which facilities and access routes would be removed and/or reclaimed and how this would occur. The plan would consist of all activities required to dispose of or store all hazardous and toxic materials and chemicals associated with the Project. This plan would discuss all then-applicable laws, ordinances, regulations, and standards associated with these materials' safe storage or disposal. The Plan would also include a description of procedures for notification of regulatory agencies.

Materials appropriate for reuse or recycling would be hauled away from the site and sold. Hazardous materials inappropriate for reuse or recycling would be disposed of at appropriate

facilities. During these operations, it is anticipated that fugitive dust abatement measures comparable to those applied during Project construction would be implemented.

Because it is not possible to predict the conditions and management objectives that would exist at the time of decommissioning, decommissioning details would be developed and provided to the CPUC as required when the time for permanent closure is established, and more information is available.

3.10 Anticipated Permits and Approvals

3.10.1 Anticipated Permits and Approvals

The necessary federal, state, and regional discretionary permits that may be required for the Proposed Project are listed in Table 3-12. Permits from local agencies and certain other state agencies would not be required because CPUC has preemptive jurisdiction over the siting, construction, maintenance, and operation of transmission facilities owned by CPUC-regulated public utilities in California.

Table 3-12 Anticipated Permits and Approvals

Agency	Permit
Federal	
BLM/USBR (co-lead or cooperating agency)	National Environmental Policy Act (NEPA)/Record of Decision (ROD)
U.S. Army Corps of Engineers	404 Permit
BLM and USBR	ROW Grants/Easements
BLM and USBR	Temporary Use Permits
U.S. Bureau of Indian Affairs	ROW Grants/Easements
U.S. Fish and Wildlife Service	Section 7 ESA/Biological Opinion
U.S. Army Corps of Engineers	Nationwide Permit (NWP) 57 Pre-Construction Notification (PCN)
Local Tribes	Consultation
State/Regional	
California	
CPUC	Certificate of Public Convenience and Necessity (CPCN), including environmental review as required under the California Environmental Quality Act
California Department of Fish and Wildlife	Lake and Streambed Alteration Agreement (LSAA)
RWQCB	401 Permit
RWQCB	NPDES (CWA Section 402 Construction Stormwater General Permit)/ SWPPP
California Department of Fish and Wildlife	Incidental Take Permit (ITP) (Section 2081)
Caltrans	Encroachment Permit
RWQCB	Water Quality Certification
California State Lands Commission	California State Lands Commission Lease
CPUC/BLM	Notice to Proceed
CA State Historic Preservation Office	Consultation

Agency	Permit
Arizona	
ACC	Certificate of Environmental Compatibility
ADEQ	Water Quality Certification
ADEQ	Construction General Permit Authorization to Discharge
Arizona State Land Department	Arizona State Land Department Lease
Arizona Department of Fish and Game	ITP
Arizona State Historic Preservation Office	Consultation
Local	
Various (Yuma County, City of Calexico, City of Yuma)	Various Ministerial Permits to the extent not preempted by CPUC G.O. 131-E

Notes: The permits listed in this table are based on preliminary planning and are subject to change.

3.10.2 Right-of-Way or Easement Applications

Application for new permanent ROW Grants over federal and state lands would be submitted following submittal of the CPCN to the CPUC.

HWT will apply for and obtain temporary use permits (TUPs) over Federal lands for construction work areas located outside its existing ROW grants as required; such TUPs would be applied for and obtained prior to construction. For pre-construction work, HWT would secure Right-of-Entry Permits from BLM and USBR. Following route selection, HWT would acquire new ROW Grants from BLM, USBR, and private landowners as needed. HWT filed Standard Form 299 applications for obtaining ROW with BLM and UBSR in March of 2025 to initiate this process.

3.11 Applicant Proposed Measures

HWT has carefully considered each CPUC Draft Environmental Measure identified in Chapter 5 of the PEA Checklist and indicated which CPUC Draft Environmental Measures would be applied, where applicable. The APMs are listed in Table 3-13. The basis for selecting a particular APM and how the APM would reduce the impacts of the Proposed Project is described in Chapter 5. HWT will implement the APMs listed in Table 3-13 during construction of the Proposed Project.

Table 3-13 Applicant Proposed Measures

APM Number	Description
AES-1	Vegetation removal would be minimized to the greatest extent feasible to allow for the safe construction and operation of the facilities and to minimize potentially significant visual impacts resulting from land scars.
AES-2	Night lighting during construction activities, if necessary, would be the minimum brightness to ensure safety and security for nighttime activities. Where safe to do so, night lighting used for construction or operations and maintenance activities would be shielded and pointed downward to eliminate off-site light.
AES-3	Non-specular conductors would be used to reduce visual impacts.
AES-4	“Dulled” galvanized steel or self-weathering finish structures would be used to reduce visual impacts.

APM Number	Description
AES-5	Match Spans - Standard tower design would be modified to correspond with spacing of existing transmission line structures where feasible, and within limits of standard tower design. The typical span would be modified to correspond with existing structures, but not necessarily at every location. This would reduce visual contrast and/or potential operational conflicts.
BIO-1	**Worker's Environmental Awareness Training Program (WEAP).** All workers on the Proposed Project site shall be required to attend a Worker's Environmental Awareness Training Program (WEAP). Training shall inform all construction personnel of the resource protection and avoidance measures as well as procedures to be followed upon the discovery of environmental resources. The WEAP training shall include, at a minimum, the following topics so crews will understand their obligations: ▪ ESA boundaries ▪ Housekeeping (Trash and equipment cleaning) ▪ Safety ▪ Work stoppage ▪ Communication Protocol ▪ Consequences of non-compliance
BIO-2	**Pre-construction Biological Clearance Surveys and Monitoring.** Pre-construction clearance surveys shall be performed by a qualified biologist (i.e., a biologist with the requisite education and experience to address specific resources), to avoid or minimize impacts on special-status plants and wildlife species, habitat, nesting birds and other sensitive biological resources in areas with the potential for resources to be present. Sensitive resources identified during the clearance survey shall be either: ▪ flagged for avoidance; ▪ moved to outside impact areas; ▪ avoided by implementing procedures to avoid impacts to individuals while impacting habitat (e.g., burrows, dens, etc.); ▪ or documented based on permit authorizations. Specific details on the pre-construction survey requirements may be found within measures for each individual species. The construction area shall be flagged and staked, and vegetation to be avoided within the construction area shall be flagged to minimize impacts, where feasible. Where special-status species (e.g., reptiles, birds, mammals, and bat roosts) or unique resources (defined by regulations and local conservation plans) are known to occur and there is a potential for significant impacts, qualified biologists shall monitor construction activities to ensure that impacts to special-status species, sensitive vegetation types, wildlife habitat, and unique resources are avoided and minimized.
BIO-3	**Nesting Bird Management Plan.** HWT shall prepare a Nesting Bird Management Plan (NBMP) in coordination with the CPUC, Bureau of Land Management (BLM), CDFW, and USFWS. The NBMP shall describe methods to minimize potential Proposed Project effects to nesting birds and avoid any potential for unauthorized take. Proposed Project-related disturbance including construction and pre-construction activities shall not proceed within buffer distances of active nests as specified by a qualified biologist until approval of the NBMP by the CPUC and BLM in consultation with the CDFW and USFWS. **NBMP Content.** The NBMP shall include: (1) definitions of default nest avoidance buffers for each species or group of species, depending on characteristics and conservation status for each species; (2) a notification procedure for buffer distance reductions should they become necessary; (3) a rigorous monitoring protocol, including qualifications of monitors, monitoring schedule, and field methods, to ensure that any Proposed Project-related effects to nesting birds shall be minimized; and (4) a protocol for documenting and reporting any inadvertent contact or effects to birds or nests. The paragraphs below describe the NBMP requirements in further detail. Background. The NBMP shall include the following: 1. A summary of applicable state and federal laws and regulations, including definition of what constitutes a nest or active nest under state and federal law. 2. A procedure for amendment of the NBMP, should there be changes in applicable state or federal regulations.

APM Number	Description

3. A list of bird species potentially nesting on or near the ROW or other work areas, indicating approximate nesting seasons, nesting habitat, typical nest locations (e.g., ground, vegetation, structures, etc.), tolerance to disturbance (if known) and any conservation status for each species. This section shall also note any species that do not require avoidance measures (e.g., rock pigeons).
4. A list of the types of Proposed Project construction activities that may occur during nesting season, with a short description of the noise and physical disturbance resulting from each activity.
5. Clearing of any vegetation, site preparation in open or barren areas, or other Proposed Project-related activities that may adversely affect breeding birds shall be scheduled outside the nesting season, as feasible.

Pre-construction Nest Surveys. Pre-construction nest surveys shall be conducted prior to any construction activities scheduled during the breeding period. For the Proposed Project, the breeding period shall be defined as January 1 through August 31. The NBMP shall describe the proposed field methods, survey timing, and qualifications of field biologists. Field biologist qualifications shall be subject to review by the CPUC and BLM. The avian biologists conducting the surveys shall be experienced bird surveyors and familiar with standard nest-locating techniques such as those described in Martin and Guepel (1993). Nest surveys shall focus on visual searches for nest locations and observations of bird activities and movement to detect nesting activity (e.g., carrying nest materials or food, territorial displays, courtship behavior). Surveys shall be conducted in accordance with the following guidelines.

1. Surveys shall cover all potential nesting habitat within the ROW or other work areas within 500 feet of these areas for raptors and 300 feet for non-raptors.
2. Pre-construction surveys shall be conducted for each work area, no longer than 10 days prior to the start of construction activity. On the first day of construction at any given site, a qualified Avian Biologist shall perform a pre-construction "sweep" to identify any bird nests or other resources that may have appeared since the 10-day survey.
3. HWT shall provide the CPUC and BLM a report describing the findings of the pre-construction nest surveys, including the time, date, and duration of the survey; identity of the surveyor(s); a list of species observed; and electronic data identifying nest locations and the boundaries of buffer zones. The electronic data set will be updated following each preconstruction nest survey throughout the nesting season. The format and contents of this report shall be described in the draft NBMP and will be subject to review and approval by the CPUC and BLM.

Nest Buffers and Acceptable Activities. The NBMP shall specify measures to delineate buffers on the work site, to consist of clearly visible marking and signage. Buffer locations shall be communicated to the construction contractor and shall remain in effect until formally discontinued (when each nest is no longer active). In addition, the NBMP shall specify measures to ensure the buffers are observed, including a direct communication and decision protocol to stop work within buffer areas. In some cases, active nests may be found while work is underway. Therefore, the NBMP shall include a protocol for stopping ongoing work within the buffer area, securing the work site, and removing personnel and equipment from the buffer.

The NBMP shall describe proposed measures to avoid take or adverse effects to nests, such as buffer distances from active nests. These measures shall be based on the specific nature of the bird species and conservation status, and other pertinent factors. The NBMP shall identify bird species (or groups of species) that are relatively tolerant or intolerant of human activities and specify smaller or larger buffer distances as appropriate for each species. If no information is available to specify a buffer distance for a species, then the NBMP shall specify 300 feet as a standard buffer distance, and 500 feet for raptors and special-status species. Nest management for listed threatened or endangered species shall be prescribed in a USFWS Biological Opinion, CDFW Incidental Take Permit, or both. All applicable avoidance measures, including buffer distances, must be continued until nest monitoring (below) confirms that the nestlings have fledged and dispersed, or the nest is no longer active. For each special-status species potentially nesting within or near Proposed Project work areas, the NBMP shall specify applicable buffers and any additional nest protection measures, specialty monitoring, or restrictions on work activities, if needed.

The NBMP shall identify acceptable work activities within nest buffers (e.g., pedestrian access for inspection or BMP repair) including conditions and restrictions, and any monitoring required. The NBMP shall include pictorial representation showing buffer distances for ground buffers, vertical helicopter buffers, and horizontal helicopter buffers for nests near the ground and nests in towers.

APM Number	Description
	Nest Buffer Modification or Reduction. At times, HWT or its contractor may propose buffer distances different from those approved in the NBMP. Buffer adjustments shall be reviewed and recommended by a qualified avian biologist, who has been approved by the CPUC and BLM in consultation with the CDFW and USFWS. The NBMP shall provide a procedure and timing requirements for notifying the CPUC, BLM, CDFW, and USFWS of any planned adjustments to nest buffers. Separate and distinct procedures shall be provided for special-status birds. The NBMP shall list the information to be included in buffer reduction notifications in a standardized format. **Nest Deterrents.** The NBMP shall describe any proposed measures or deterrents to prevent or reduce bird nesting activity on Proposed Project equipment or facilities, such as buoys, visual or auditory hazing devices, bird repellents, securing of materials, and netting of materials, vehicles, and equipment. It shall also include timing for installation of nest deterrents and field confirmation to prevent effects to any active nest; guidance for the contractor to install, maintain, and remove nest deterrents according to product specifications; and periodic monitoring of nest deterrents to ensure proper installation and functioning and prevent injury or entrapment of birds or other animals. In the event that an active nest is located on Proposed Project facilities, materials or equipment, HWT shall avoid disturbance or use of the facilities, materials or equipment (e.g., by red-tag) until the nest is no longer active. **Communication.** The NBMP shall specify the responsibilities of construction monitors regarding nests and nest issues and specify a direct communication protocol to ensure that nest information and potential adverse impacts to nesting birds can be promptly communicated from nest monitors to construction monitors, so that any needed actions can be taken immediately. The NBMP shall specify a procedure to be implemented following accidental disturbance of nests, including wildlife rehabilitation options. It also will describe any proposed measures, and applicable circumstances, to prevent take of precocial young of ground-nesting birds such as killdeer or quail. For example, chick fences may be used to prevent them from entering work areas and access roads. Finally, the NBMP shall specify a procedure for removal of inactive nests, including verification that the nest is inactive and a notification/approval and approval process prior to removal. **Monitoring.** HWT shall be responsible for monitoring the implementation, conformance, and efficacy of the avoidance measures (above). The NBMP shall include specific monitoring measures to track any active bird nest within or adjacent to Proposed Project work areas, bird nesting activity, Proposed Project-related disturbance, and outcome of each nest. For nests with reduced buffers, HWT shall monitor each nest until nestlings have fledged and dispersed or until the nest becomes inactive. Nests with default buffers do not require further monitoring once construction work is completed in the area. New nests discovered after work completion in an area shall not require monitoring. In addition, monitoring shall include pre-construction surveys, daily sweeps of work areas and equipment, and any special monitoring requirements for particular activities (tree trimming, vegetation removal, etc.) or particular species (noise monitoring, etc.). Nest monitoring shall continue throughout the breeding season during each year of the Proposed Project's construction activities. **Reporting.** Throughout the construction phase of the Proposed Project, nest locations, Proposed Project activities in the vicinity of nests (including helicopter traces), and any adjustments to buffer areas shall be updated and available to CPUC monitors on a daily basis. All buffer reduction notifications and prompt notifications of nest-related non-compliance and corrective actions shall be made via email to CPUC monitors. In addition, the NBMP shall specify the format and content of nest data to be provided in regular monitoring and compliance reports. At the end of each year's nest season, HWT shall submit an annual NBMP report to the CPUC, BLM, CDFW, and USFWS.
BIO-4	**Burrowing Owl** **Pre-construction survey.** A pre-construction, focused burrowing owl survey shall be conducted no more than 30 days prior to initial start of construction within habitat to determine if any occupied burrows are present. If occupied burrows are found, adequate buffers shall be established around burrows. Adequate buffers shall be determined by a Project Avian Biologist based upon field conditions and resource agency guidelines for wintering burrows and breeding season burrows. **Conduct Surveys and Avoidance for Burrowing Owl.** Burrowing owl surveys shall be conducted in accordance with the most current CDFW guidelines (CDFG, 2012; or updated guidelines as they become available). HWT shall take measures to avoid impacts to any active burrowing owl burrow within or adjacent to a work area. The default buffer for a burrowing owl burrow is 656 feet for ground construction, and 656

APM Number	Description
	feet horizontal and 200 feet vertical for helicopter construction. Binocular surveys may be substituted for protocol field surveys on private lands adjacent to the Proposed Project site only when HWT has made reasonable attempts to obtain permission to enter the property for survey work but was unable to obtain such permission. If active burrowing owl burrows are located within Proposed Project work areas that cannot be avoided, HWT shall work with CDFW to acquire an Incidental Take Permit (ITP).
BIO-5	**Desert Tortoise** **Pre-construction Surveys/Construction Monitoring.** Prior to initial ground-disturbing activities, a biological monitor under the supervision of a USFWS- or CDFW-approved biologist—with experience monitoring and handling desert tortoise—shall conduct a pre-activity survey in all work areas within potential desert tortoise habitat, plus an approximately 100-foot buffer. All desert tortoise burrows within the pre-activity survey area (including desert tortoise pallets) shall be prominently flagged at that time so that they may be avoided during work activities. An approved biologist shall be onsite to monitor vegetation removal and grading and provide regular inspections of all other construction activities within desert tortoise habitat. The approved biologist shall have the authority to halt all non-emergency actions (as soon as safely possible) that may result in harm to the desert tortoise and shall assist in the overall implementation of APMs for desert tortoise. In the event a desert tortoise is encountered in the work area, all work shall cease, and the approved biologist shall be contacted. Work will not commence until the animal has voluntarily moved to a safe distance away from the work area. If it does not move on its own within 15 minutes, an authorized biologist may remove and relocate the animal to a safe location if authorized under existing permit conditions. No tortoise shall be handled except under authorization from the USFWS and CDFW. Encounters with desert tortoise shall be documented and provided to the appropriate wildlife resource agencies. In the event a dead or injured desert tortoise is observed, the approved biologist will be responsible for notifying HWT's Herpetologist and reporting the incident to the wildlife resource agencies. **Avoid and Minimize Impacts**. All Proposed Project activities located within areas identified as desert tortoise habitat shall implement the following avoidance and minimization measures: 1. **Under Vehicle Checks.** Desert tortoises commonly seek shade during the hottest times of the day. Employees working within the geographic range of this species will be required to check under their equipment or vehicles before they are moved. If desert tortoises are encountered, the vehicle shall not be moved until the tortoise has voluntarily moved away from the equipment or vehicle. 2. **Disposal of Trash.** Trash and food items shall be contained in closed containers and removed daily to reduce attractiveness to opportunistic predators, such as common ravens (*Corvus corax*), coyotes (*Canis latrans*), and feral dogs (*Canis lupus familiaris*). 3. **Pets Prohibited.** Employees shall not bring pets or other animals to the Proposed Project area, unless the animal is ADA compliant. 4. **Vehicle Travel.** During construction-related activities, motor vehicles shall be limited to maintained roads, designated routes, and areas identified as being permanently or temporarily affected by construction within the Proposed Project footprint. Motor vehicle speeds shall not exceed 15 miles per hour on Proposed Project-specific construction routes and temporary work areas within habitat for desert tortoise. 5. **Trapped Animal Prevention.** All auger holes, trenches, pits, or other steep-sided excavations that may pose a hazard to desert tortoise shall be either constructed with escape ramps (earthen or wooden) or securely covered when unattended to prevent entrapping animals. At the start and end of each workday, and just before backfilling, all excavations shall be inspected for trapped animals. If found, trapped animals shall be removed by the qualified biologist and relocated to outside the Proposed Project footprint, as required in all applicable permits or habitat conservation plans. **Coordinate with Agencies and Mitigation.** HWT shall obtain take coverage and consult with the USFWS, CDFW, and/or land management agencies. In addition to obtaining the necessary permits and authorizations, which may include conducting protocol surveys as required by the agencies, the Proposed Project shall mitigate for temporary and permanent impacts. Mitigation ratios shall be determined based on the results of protocol surveys/habitat assessment, incorporating quality of habitat, population density, and land classification (i.e. BLM Areas of Critical Environmental Concern) into final mitigation ratios.

APM Number	Description
BIO-6	**Develop and Implement Habitat Restoration Plan (HRP)** HWT shall develop and implement a Habitat Restoration Plan (HRP). Temporary impacts to regulated species' habitats, plant species, and vegetation communities shall be restored. Regulated species and vegetation communities include all species designated as threatened, endangered or rare, sensitive, or of concern by resource or land agencies. Species and vegetation communities that require restoration shall be determined by the resource agencies through the permitting process. HWT shall consult with appropriate agencies during development of the HRP and implement the HRP in conjunction with applicable permit conditions and mitigation measures. The HRP shall be submitted to the CPUC and BLM for review and approval prior to the start of construction. Invasive plant management shall be performed in conjunction with the HRP per the Invasive Plant Management Plan (BIO-7). **Habitat Restoration Plan.** For all restoration sites, the HRP shall include: 1. Restoration goals and objectives based on vegetation type and jurisdictional status of each site. 2. Quantitative restoration success criteria. 3. Implementation details as applicable. Details may include topsoil stockpiling and handling, postconstruction site preparation, soil decompaction and recontouring, planting and seeding palettes to include only native, locally sourced materials with confirmed ability to produce from suppliers, fall or other suitable season-season planting or seeding dates. 4. Maintenance details, which may include weeding, irrigation, or hand-watering schedule and equipment, and erosion control. 5. Monitoring and Reporting, specifying monitoring schedule and data collection methods throughout establishment of vegetation with key indicators of successful or unsuccessful progress, and quantitative criteria values to objectively determine success or failure at the conclusion of the monitoring period. 6. Adaptive management procedures such as reseeding, re-planting, drainage repairs, adjustments to irrigation schedule, and repair or remediation of sites to meet success criteria on schedule. For species and vegetation communities with permit requirements including wetlands and riparian habitats, the goal of the HRP shall be to restore plant species, habitat values, or vegetation communities. For restoration sites, the goals, objectives, and success criteria specified in the HRP shall include native species cover and species richness compatible with the specific vegetation and habitat type. If an unforeseen catastrophic event (e.g., flood, fire, or other event beyond HWT control) damages a restoration site within the monitoring period, HWT shall assess adjacent areas to adjust maintenance activities and success standards in coordination with the agencies. In all areas, seed and/or potted nursery stock of locally native species shall be used. The list of plants observed during botanical surveys of the Proposed Project area shall be used as a guide to site-specific plant selection, additional appropriate species may be included. Monitoring of the restoration sites shall continue annually until HRP success criteria are achieved. HWT shall be responsible for implementing adaptive management as needed. For all restoration areas, HWT shall provide annual reports to the CPUC and BLM to verify the total vegetation acreage subject to restoration, areas that have been completed, and areas still outstanding. The annual reports shall also include a summary of the restoration and adaptive management activities for the previous year, success criteria progress and completion, and any adjustments to planned activities, for the upcoming year.

APM Number	Description
BIO-7	**Develop and Implement Invasive Plant Management Plan.** HWT shall prepare and implement an Invasive Plant Management Plan (IPMP). This plan shall include measures designed to avoid the introduction and spread of new nonnative invasive plant species (invasive plants) and minimize the spread of existing invasive plants resulting from Proposed Project activities. The IPMP must meet the BLM's requirements for NEPA disclosure and analysis if herbicide use is proposed for the Proposed Project. The IPMP shall be submitted to the CPUC and BLM for review and approval prior to the start of construction. For the purpose of the IPMP, invasive plants shall include plants that (1) are invasive and rated high or moderate for negative ecological impact in the California Invasive Plant Inventory Database (Cal-IPC 2025), or (2) aid and promote the spread of wildfires such as *Bromus tectorum* (cheatgrass), *Brassica tournefortii* (Sahara mustard), and Bromus *madritensis* spp*. rubens* (red brome)) or (3) are identified by the BLM as special concern. The IPMP shall be implemented throughout Proposed Project pre-construction, construction, and restoration phases. **Invasive Plant Management Plan.** The IPMP shall include the information defined in the following sections: 1. **Assessment.** An assessment of the Proposed Project's potential to cause spread or the introduction of invasive plants into new areas, or to introduce new invasive plants into the ROW. This section shall list known and potential invasive plants occurring on the ROW and in the Proposed Project region and identify threat rankings and potential for Proposed Project-related occurrence or spread for each species. This section shall identify control goals (e.g., eradication, suppression, or containment) for invasive plants of concern with potential to occur on the ROW. 2. **Pre-construction Invasive Plant Inventory.** HWT shall inventory all invasive plants of concern in areas (both within and outside the ROW) subject to Proposed Project-related vegetation removal/disturbance, "drive and crush," and ground-disturbing activity. The invasive plants inventory area shall also include vehicle and equipment access routes within the ROW and all Proposed Project staging and storage yards. Invasive plants of concern shall be mapped by area of occurrence and percent cover. The map shall be updated with new occurrences at least once a year. 3. **Pre-construction Invasive Plants Treatment.** Invasive plant infestations identified in the pre-construction invasive plants inventory shall be evaluated to identify potential for Proposed Project-related spread and potential benefits (if any) of pre-construction treatment. Pre-construction treatment shall consider the specific invasive plants, potential seed banks, or other issues. The IPMP shall identify any infestations to be controlled or eradicated prior to Proposed Project construction. Control and follow-up monitoring of pre-construction invasive plants treatment sites shall follow methods identified in appropriate sections of the IPMP. 4. **Prevention.** The IPMP shall specify methods to minimize potential transport of new invasive plant seeds onto the ROW, or from one section of the ROW to another. The ROW may be divided into "weed zones," based on invasive plants of concern in the ROW. The IPMP shall specify inspection procedures for construction equipment entering the Proposed Project area. Vehicles and equipment may be inspected and cleaned at entry points to specified sections of the ROW, and before leaving work sites where invasive plants of concern must be contained locally. Off road construction equipment shall be inspected to ensure it is free of any dirt or mud that could contain invasive plant seeds, roots, or rhizomes, and the tracks, outriggers, tires, and undercarriage shall be carefully washed, with special attention being paid to axles, frame, cross members, motor mounts, underneath steps, running boards, and front bumper/brush guard assemblies. Other construction vehicles (e.g., pick-up trucks) that shall be frequently entering and exiting the site shall be inspected and washed on an as-needed basis. Tools such as chainsaws, hand clippers, pruners, etc., shall be cleaned of dirt and mud before entering Proposed Project work areas. All vehicles shall be washed off-site when possible. If off-site washing is infeasible, on-site cleaning stations (including air washing) shall be set up at specified locations to clean equipment before it enters the work area. Wash stations shall be located away from native habitat or special-status species occurrences. Wastewater from cleaning stations shall not be allowed to run off the cleaning station site. When vehicles and equipment are washed, a daily log must be kept stating the location, date and time, types of equipment, methods used, and personnel present. The log shall contain the signature of the responsible crewmember. Written or electronic logs shall be available to the BLM and CPUC monitors on request.

APM Number	Description
	Erosion control materials (e.g., straw bales) must be certified free of invasive plant seed ("weed-free") before they are brought onto the site. The IPMP must prohibit on-site storage or disposal of mulch or green waste that may contain invasive plant material. Mulch or green waste shall be removed from the site in a covered vehicle to prevent seed dispersal and transported to a licensed landfill or composting facility. The IPMP shall specify guidelines for any soil, gravel, mulch, or fill material to be imported into the Proposed Project area, transported from site to site within the Proposed Project area, or transported from the Proposed Project area to an off-site location, to prevent the introduction or spread of invasive plants to or from the Proposed Project area. 5. **Monitoring.** The IPMP shall specify methods to survey for invasive plants of concern during pre-construction, construction, and restoration phases; and shall specify qualifications of specialists responsible for invasive plant monitoring and identification. It must include a monitoring schedule to ensure timely detection and immediate control of new invasive plant infestations to prevent further spread. Surveying and monitoring for invasive plant infestations shall occur at least two times per year, to coincide with the early detection period for early season and late season invasive plants. The monitoring section shall also describe methods for post-eradication monitoring to evaluate success of control efforts and any need for follow-up control. 6. **Control.** The IPMP must specify manual and chemical invasive plant control methods to be employed. The IPMP shall include only invasive plant control measures with a demonstrated record of success for target invasive plants, based on the best available information. The plan shall describe proposed methods for promptly scheduling and implementing control activity when any Proposed Project-related invasive plant infestation is located (e.g., located on a Proposed Project disturbance site), to ensure effective and timely invasive plant control. Invasive plant infestations must be controlled or eradicated as soon as possible upon discovery, and before they go to seed, or when appropriate with the goal to prevent further spread. All proposed invasive plant control methods must minimize disturbance to native vegetation, limit ingress and egress to defined routes, and avoid damage to any environmentally sensitive areas (ESAs) identified within or adjacent to the ROW. New infestations by invasive plants of concern shall be treated at a minimum of once annually until eradication, suppression, or containment goals are met. Invasive plant occurrences can be considered eradicated when no new seedlings or resprouts are observed for three consecutive years, or a single season where new seedlings or resprouts are observed in reference populations but not at the control site. Invasive plant control efforts may cease when eradication is complete. Manual control shall specify well-timed removal of invasive plants or their seed heads with hand tools; seed heads and plants must be disposed of in accordance with guidelines from the Imperial County and Yuma County Agricultural Commissioners if such guidelines are available. The chemical control section must include specific and detailed plans for any herbicide use. It must indicate where herbicides will be used, which herbicides shall be used, and specify techniques to be used to avoid drift or residual toxicity to native vegetation or special-status plants, consistent with BLM's Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States (BLM, 2007) and National Invasive Species Management Plan (NISC, 2008). All herbicide applications shall follow U.S. Environmental Protection Agency label instructions and shall be in accordance with federal, state, and local laws and regulations. Only state and BLM-approved herbicides may be used. Herbicide treatment shall be implemented by a Licensed Qualified Applicator. Herbicides shall be applied in accordance with product labels and applicator licenses. Herbicides shall not be applied during or within 24 hours of high confidence predicted rain. Only water-safe herbicides shall be used in riparian areas or within channels (engineered or not) where they could run off into downstream areas. Herbicides shall not be applied in high wind conditions. 7. **Reporting schedule and contents.** The IPMP shall specify the reporting schedule and contents of each report.

APM Number	Description
BIO-8	**Special-status Herbaceous Plants** HWT shall avoid, minimize or mitigate impacts to any state or federally listed or California Rare Plant Rank (CRPR) 1 or 2 herbaceous plants that may be located on the Proposed Project disturbance areas or surrounding buffer areas. **Pre-construction survey.** Pre-construction clearance surveys in areas where special-status plant species potentially occur shall be performed by a qualified biologist (i.e., a biologist with the requisite education and experience to address specific resources), which may be chosen from a previously approved CPUC approved biologist, to avoid or minimize impacts on special-status plants. Disturbance free buffers for special-status herbaceous species shall be 25-ft from the individual and/or occurrence boundary. These buffers shall be established from the previously conducted focused surveys and preconstruction survey results. If a smaller buffer is required, HWT shall develop and implement site-specific monitoring plan to minimize direct impacts to the species. The plan shall be submitted to the CPUC for review and approval. In the event of a discovery of previously undescribed species, the boundary of the occurrence (defined by CNDDB as all individuals within a ¼ mile of each other) shall be flagged, avoided, and monitored as discussed above and the CPUC, CDFW, and/or USFWS shall be notified. **Focused Survey.** For construction areas where special-status plant species potentially occur and focused surveys have not occurred, focused surveys shall take place prior to construction. Focused surveys shall be conducted consistent with methodology described in *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (CDFW 2018). **Restoration and Mitigation.** HWT shall implement the following activities; other conflicting permit conditions shall supersede the activities below. 1. **Coordinate with Agencies.** Agencies shall approve any impacts to special-status plants. Impacts in excess of 10 percent of any occurrence, or other percentage required by agency regulations on lands under their jurisdiction, shall be restored or mitigated. 2. **Habitat Restoration and Revegetation.** A Habitat Restoration Plan (HRP) shall address topsoil, plant or propagules salvage, and restoration. A Habitat Mitigation and Management Plan (HMMP) shall address mitigation. Approval of the HRP by appropriate agencies is required before impacts to special-status plant occurrences are allowed. A draft HMMP shall be submitted to the appropriate agencies prior to impacts to special-status plants. For more information see APM BIO-6. 3. **Salvage.** If required by agency regulations on lands under their jurisdiction, HWT shall consult with a qualified restoration ecologist or horticulturist regarding the feasibility and likely success of salvage efforts for each species. If salvage is feasible, based on prior success with similar species, HWT shall include salvage methods in the HRP. For special-status plants, the goal shall be to preserve existing populations or establish new populations. The HRP shall include at minimum: (a) species and locations of plants identified for salvage; (b) criteria for determining whether a species is appropriate for salvage; (c) the appropriate season for salvage; (d) equipment and methods for collection, transport, and re-planting plants or propagules, to retain intact soil conditions and maximize success; (e) details regarding storage of plants or propagules for each species; (f) location of the proposed recipient site, and detailed site preparation and plant introduction techniques, as applicable; (g) a description of the irrigation, and other maintenance activities, as applicable; (h) success criteria, including specific timeframe for survivorship of each species; and (i) a detailed monitoring program, commensurate with the HRP goals. Invasive plant control for special-status plants shall be addressed in the Invasive Plant Management Plan (IPMP, APM BIO-7). 4. **Off-site compensation.** Where restoration is not feasible, HWT shall provide compensation lands consisting of habitat occupied by the impacted CRPR 1 or 2 ranked plant occurrences at a 1:1 ratio of acreage for any occupied habitat affected by the Proposed Project. Occupied habitat shall be calculated on the Proposed Project site and on the compensation lands as including each special-status plant occurrence. If compensation is selected as a means of mitigating special-status plant impacts, it may be accomplished by purchasing credit in an established mitigation bank, acquiring conservation easements, or direct purchase and preservation of compensation lands. Compensation for these impacts may be “nested” or “layered” with compensation for habitat loss. **Agency Coordination.** Annual construction monitoring reports shall be submitted to the CPUC and BLM. Reports shall include, but not be limited to, number of plants impacted, details of plants or propagules salvaged, stored, and transplanted (salvage and transplanting locations, species, number, size, condition,

APM Number	Description
	etc.); adaptive management efforts implemented (date, location, type of treatment, results, etc.); and evaluation of success of transplantation. After construction, salvage status shall be described in the HRP annual report. In the event of an unexpected discovery of a new species or previously undocumented occurrence, the same steps shall be used as discussed above. In addition, when there is an unexpected discovery of a new species, the CPUC and CDFW and/or BLM shall be notified.
BIO-9	**Special-status Perennial Plants and Other Species** HWT shall avoid, minimize or mitigate impacts and other special-status perennial plants. **Pre-construction survey.** Pre-construction surveys shall be conducted by a qualified specialist to identify any saguaro or other special-status perennial plants in the Proposed Project area. Where saguaro are known to occur, all work shall occur outside an appropriate buffer to avoid individual saguaro cactus, seeds, and seedbank as agreed to by CDFW. Where other special-status perennial species are known to occur, all work shall occur outside an appropriate buffer to avoid individual plants or groupings as agreed to by CDFW. If impacts that would result in take cannot be avoided, HWT shall obtain a Section 2081(b) ITP from CDFW if the species is CESA listed or a candidate for listing, and shall implement additional measures pursuant to the ITP. Buffer reductions may occur with the implementation of appropriate ITP measures. A qualified botanist/arborist monitor, with the authority to halt work, shall be present whenever work occurs within reduced buffers for special-status perennial species as required by CDFW. **Compensatory Restoration.** If an ITP for saguaro and/or other special-status perennial plant species is obtained, then compensation for impacts shall be addressed through the permit conditions.
BIO-10	**Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats.** The Proposed Project shall avoid and/or minimize impacts to all state jurisdictional waters, wetlands, and riparian habitat that occur within the Proposed Project area where feasible. All grading, fill, staging of equipment, infrastructure construction or removal, and all other construction activities shall be designed, sited, and conducted outside of state and federally jurisdictional waters, wetlands, and riparian habitat. The implementation of appropriate Best Management Practices (BMPs) (e.g., silt fencing, straw wattles, secondary containment, avoiding fueling within 100 feet of jurisdictional waters, etc.) shall be utilized to ensure that indirect impacts to jurisdictional waters, wetlands, and riparian areas are avoided or minimized. BMPs are also necessary to reduce the risk of an unintended release of sediment or other material into jurisdictional waters. New and upgraded roadways shall use at-grade type stream crossings unless installation or repair of culverts is required. Stockpiled and bermed sediment shall be redistributed or removed from the site so as not to alter flows. New poles shall be sited outside stream channels. If permanent impacts to waters, wetlands, and riparian habitats are unavoidable, they shall be mitigated at a minimum of a 1:1 ratio, or at a ratio determined by the applicable Resource Agencies (i.e., U.S. Army Corps of Engineers, the State Water Resources Control Board/Regional Water Quality Control Boards, and California Department of Fish and Wildlife). Temporary impacts to jurisdictional waters shall be returned to pre-existing contours upon completion of the work.
BIO-11	**Avoid Impacts to Desert Bighorn Sheep.** **Determination of Desert Bighorn Sheep Habitat**: CDFW shall determine desert bighorn sheep habitat within the Project area based on data gathered by CDFW Wildlife Biologists. HWT, in conjunction with a Designated Biologist(s), shall coordinate with CDFW to obtain information on desert bighorn sheep habitat, including lambing habitat and water sources, within the Project area in advance of Project activities, and HWT shall implement appropriate avoidance and minimization measures to avoid impacts to desert bighorn sheep in these areas. Avoidance and minimization measures should be in place prior to the start of construction and any ground-disturbing activities. **Limited Operating Period**: If feasible, activities within occupied desert bighorn sheep habitat shall be avoided during the peak lambing period (December 1 through June 30, or earlier, if data are available to demonstrate to the satisfaction of CDFW that six weeks have elapsed from the last date of lambing). Furthermore, no sudden, loud noises (e.g., from heavy machinery, pile driving, or blasting) shall occur within 1 km of lambing habitat, and no low-elevation helicopter flights shall occur within 1 km of lambing habitat.

APM Number	Description
	Construction Noise: Sound pressure levels shall not exceed 85 dB measured at 50 ft from the noise. Sudden, loud noises (e.g., heavy machinery, blasting, pile driving, low-elevation helicopter flights) that may startle bighorn sheep shall be avoided within 1 km of desert bighorn sheep habitat. **Pre-construction Surveys and Ongoing Monitoring:** When work is being implemented in or within 1- km of desert bighorn sheep habitat, a Designated Biologist(s) shall assess presence of bighorn sheep in the vicinity of work areas and helicopter flight paths. The Designated Biologist shall coordinate directly with CDFW Wildlife Biologists for guidance with specific questions as situations arise. If ewes or lambs are present within 1 km of the work area, work shall be suspended in that area. The 1-km buffer may be reduced in coordination with CDFW if it is determined that bighorn sheep are not at risk. Factors such as distance of the activities from the sheep, nature of construction activities, duration of activities, topography, work area located in trees or other natural features that attenuate the sound, etc. should be taken into consideration. The Designated Biologist shall be present at the work site(s) to monitor for bighorn sheep during all activities in bighorn sheep habitat. The Designated Biologist shall work with project personnel to cease or defer activities when bighorn sheep are close enough to be disturbed by the activities. **Helicopter Use:** Helicopter flight paths and landings shall be delineated prior to implementation in coordination with the CDFW Wildlife Biologist to ensure protection of desert bighorn sheep habitat by incorporating appropriate species-specific vertical and horizontal buffers and Limited Operating Periods. **Reporting of Mortality or Injury:** HWT shall immediately report any bighorn sheep mortalities, whatever the cause, to CDFW as soon as possible after the observation. The bighorn sheep carcass shall be covered and left in place until the CDFW biologist can examine it and determine the proper disposal method. **Disease Prevention:** A boot disinfection station shall be set up at the staging area. If workers have any potential contact with grounds occupied by sheep or goats (for example, at home, visiting a farm, attending a County fair, going to a petting zoo, etc.), they shall disinfect their boots before going to the work site. Workers shall also ensure that their vehicles/equipment are washed at either a project wash station or a commercial wash if there is a chance that the tires or interior may be contaminated. Alternatively, personnel can be required to change their footwear so that contaminated footwear is not used in work vehicles or on the Project site. **Water Sources:** In the event that bighorn sheep abandon the use of one or more water sources as a result of disturbance associated with the Project, HWT shall create additional water sources after consulting with appropriate agency personnel (CDFW and USFWS) to select location(s) and provide assistance in establishing additional water sources(s).
BIO-12	**Habitat Compensation Plan.** **Habitat Compensation Plan:** HWT shall prepare a Habitat Compensation Plan for CDFW review and approval prior to implementation. The Habitat Compensation Plan shall include compensatory mitigation for CESA-listed and other special-status species expected to be impacted by Project activities. **Compensatory Mitigation for Desert Tortoise and Burrowing Owl:** Offsite compensatory mitigation shall occur at no less than a 5:1 ratio for impacts to critical desert tortoise habitat and no less than a 3:1 ratio for impacts to non-critical suitable desert tortoise habitat. Offsite compensatory mitigation shall occur at no less than a 3:1 ratio for impacts to Burrowing Owl. Compensatory mitigation for these CESA- listed species shall be fulfilled through (1) the purchase of CDFW-approved mitigation bank credits or (2) acquisition and transfer of fee title of lands, protection in perpetuity through recordation of a conservation easement with a legally appropriate entity acting as grantee, land management in perpetuity, and funding of management activities through the calculation and deposit of an endowment fund. Compensatory mitigation shall be fulfilled prior to start of Project activities unless a security is provided to ensure funding for CDFW to complete these activities. **Desert Kit Fox and American Badger:** If desert kit fox or American badger are proposed to be relocated from an active burrow or an active burrow shall be impacted, HWT shall have a Qualified Biologist prepare and implement an exclusion plan to be performed outside of breeding/pupping season and after juvenile dispersal. HWT shall implement compensatory mitigation such that the habitat acreage and number of dens (desert kit fox and American badger) and individuals impacted (American badger) are replaced at no less than a 2:1 ratio.

APM Number	Description
	Flat-tailed Horned Lizard and Colorado Desert fringe-toed lizard: If impacts to Flat-tailed Horned Lizard or Colorado Desert fringe-toed lizard and their habitats are expected, HWT shall provide compensatory mitigation such that the habitat acreage and lizards impacted are replaced at no less than a 2:1 ratio, in advance of impacts. **Burrowing Owl:** If impacts are expected to occur to an occupied burrow, HWT shall obtain an Incidental Take Permit (ITP) under CA Fish and Game Code 2081 to authorize the take and provide compensatory mitigation. Mitigation shall be implemented consistent with the requirements within the ITP. **Bats:** If impacts are expected to occur to bat roosting habitat, HWT shall provide compensatory mitigation sufficient to replace the total area of roosting habitat at no less than a 2:1 ratio, in advance of impacts. **Sensitive Vegetation Communities:** HWT shall compensate for anticipated impacts to Fremont cottonwood forest and woodland, hardstem and California Bulrush marshes, iodine bush scrub, mesquite thickets, Mojave-Sonoaran desert dunes, American bulrush marsh (common three-square marsh), arrow weed thickets, blue palo verde – ironwood woodland, bush seepweed scrub, and California joint fir – longleaf joint fir scrub through onsite restoration (BIO- 6) and land acquisition and/or preservation at a minimum ratio of 2:1.
CUL-1	Prior to construction, HWT would conduct a survey to identify historic resources within the resource study corridor for the Proposed Project. The survey area would include the Area of Potential Effects, the area in which potential direct and indirect effects to historic resources may occur. The Area of Potential Effects would be developed in coordination with the appropriate agencies. The methods and results of the surveys would be compiled into a Class III Inventory Report subject to review by the appropriate agencies. To the extent feasible, the Proposed Project would be designed to avoid resources eligible for the National Register of Historic Places and California Register of Historic Resources, in cooperation with the appropriate agencies using micro-siting techniques.
CUL-2	Management of cultural/historical resources would follow applicable federal and state standards and guidelines. HWT would prepare and implement a Post-Review Discovery Management Plan addressing the post-review discovery of cultural resources during construction. The Proposed Project Archaeologist or their representative would be responsible for responding to unanticipated discoveries, implementing appropriate buffers and/or stopping work, and communicating with the appropriate agencies in accordance with the plan. Human remains would be treated in accordance with applicable federal and state laws.
GEO-1	Prior to construction, HWT would retain a licensed geotechnical or civil engineer to prepare a Geotechnical Report for the Proposed Project alignment to identify potential geologic hazards and provide recommendations on the following: ▪ Site preparation ▪ Soil bearing capacity ▪ Structural foundations ▪ Grading practices ▪ Landslides ▪ Liquefaction ▪ Seismic ground shaking ▪ Expansive/unstable soils ▪ Soil erosion HWT would implement all recommendations outlined in the Geotechnical Report during construction.
HAZ-1	HWT would prepare and implement a Waste and Hazardous Materials Business Plan (WHMBP) for use during Proposed Project construction. The WHMBP would outline proper hazardous materials handling, use, storage and disposal requirements, as well as hazardous waste management procedures. This plan would be developed to ensure that all hazardous materials and wastes would be handled and disposed of according to applicable rules and regulations and would be submitted to the relevant emergency management agencies prior to construction.

APM Number	Description
HAZ-2	HWT would prepare a Fire Prevention and Emergency Response Plan to ensure the health and safety or Proposed Project personnel, agency staff, and the public during construction and operations. The plan would describe the purpose of the plan; applicable jurisdictions for each element; roles and responsibilities; training methods; fire prevention equipment and methods; equipment and methods for fighting incipient-stage fires; Emergency Response Plan; communication plan; evacuation routes and nearest hospitals; and reporting.
HAZ-3	Prior to construction, HWT would consult with the FAA regarding helicopter flight plans that will take place during construction. This consultation would include, but not be limited to: ▪ Providing locations of helicopter construction staging and work areas; ▪ Establishing designated flight corridors between staging and work areas; ▪ Means to ensure external load operations avoid occupied structures and roadways; ▪ Locations of traffic control where external load operations will cross public roadways; ▪ Locations where Congested Area Plans may be required for filing with the FAA; and ▪ Identifying any flight restrictions recommended/required by the FAA. The results of this coordination will be provided to the CPUC.
NOI-1	To the extent feasible, HWT would limit construction activities to the daytime, weekday, and weekend hours established by the relevant local jurisdictions. If additional work hours are required, HWT would coordinate with the local jurisdictions. Construction equipment and vehicle idling would be minimized when not in use. Stationary noise sources, such as generators and pumps, would be shielded when near sensitive receptors. Construction traffic, including helicopter use, would be routed to avoid sensitive receptors to the extent which is safe and feasible.
NOI-2	Installation of Mufflers on All Construction Equipment. The following noise control measures would be implemented to reduce construction noise impacts upon sensitive receptors located within California to the extent feasible: ▪ All construction equipment, stationary and mobile, shall be equipped with properly operating and maintained mufflers, air-inlet silencers where appropriate, and any other shrouds, shields, or other noise-reducing features that meet or exceed original factory specifications. ▪ Construction equipment shall be equipped with shrouds and noise-control features that are supplied as standard accessories from the original equipment manufacturer. ▪ Routine field inspection of mufflers to ensure proper function shall be performed by the construction manager.
PAL-1	Prior to construction, HWT would conduct an analysis identifying the paleontological sensitivity, including the potential for sensitive paleontological resources (i.e., fossils) to occur in the resource study corridor for the Proposed Project. A Paleontological Resources Management Plan would be prepared. When excavation occurs during construction and operations and maintenance in areas of high sensitivity, a qualified paleontological monitor would conduct monitoring for paleontological resources. The paleontological monitor would be responsible for safely inspecting the sidewalls of excavations and/or spoil piles. Management of paleontological resources would follow all applicable federal and state standards and guidelines.
PAL-2	HWT would prepare and implement an Unanticipated Discoveries Management Plan addressing the unanticipated discovery of paleontological resources during construction. The paleontological monitor would be responsible for responding to unanticipated discoveries, implementing appropriate buffers and/or stopping work, and communicating with the appropriate agencies in accordance with the plan. The paleontological monitor would be responsible for understanding all relevant mitigation measures and permit conditions, making recommendations to construction personnel regarding compliance with such measures, and for reporting non-compliances and cooperating with construction contractors, project management, and the applicable agencies to implement corrective actions.
REC-1	HWT would coordinate closures of recreational facilities, trails, or access roads to recreational facilities with the facility owners/managers if closures are required during construction.

APM Number	Description
TRA-1	Prior to construction, HWT would cooperate with the relevant siting authorities (e.g., Bureau of Land Management), regulatory agencies (e.g., Federal Aviation Administration, Department of Defense, etc.), and local governments to implement appropriate traffic control measures during construction. These traffic control measures would also include requirements set by the encroachment permits granted by the California Department of Transportation and the Arizona Department of Transportation for the Proposed Project. The intent of the traffic control measures would be to ensure the safety of the Proposed Project personnel and the general public. Measures may include notifications to the public on the locations and timing of construction activities, traffic management such as signage and lane closures on public roads, the use of traffic cones and traffic personnel to further direct traffic, limitations on helicopter use in certain areas or at certain times, and daily work hours consistent with local ordinances. Traffic control measures would be implemented through the creation of a transportation plan that would be drafted and reviewed by the relevant siting authorities mentioned above prior to project construction.
TCR-1	HWT would prepare and implement a Tribal Participation Plan that outlines the involvement of Native American Tribes in the surveys for cultural resources. This plan would include points of contact, any rotation schedule for participating tribes, communication protocols, roles and responsibilities of all parties, reporting requirements, and how HWT would continue to engage and coordinate with Native American Tribes throughout the Proposed Project. This Tribal Participation Plan would be submitted to the BLM for review and approval.
TCR-2	HWT would prepare and implement a Tribal Participation Plan that outlines the involvement of Native American Tribes in the monitoring of ground-disturbing activities occurring during construction. This plan would include points of contact, any rotation schedule for participating tribes, communication protocols, roles and responsibilities of all parties, reporting requirements, and how HWT would continue to engage and coordinate with Native American Tribes throughout the Proposed Project. This Tribal Participation Plan would be submitted to the BLM for review and approval.
WF-1	HWT would prepare and implement a Project-specific Wildfire Mitigation Plan (WMP) throughout construction, operation, and maintenance. A draft copy of the WMP would be provided to the CPUC and state and local fire agencies at least 90 days before the start of any construction activities in areas designated as Very High or High Fire Hazard Severity Zones in California or *High*, *Very High*, or *Extreme* fire threat in Arizona. Plan reviewers would also include federal, state, or local agencies with jurisdiction over areas where the project is located. The final Plan shall be approved by the CPUC at least 30 days prior to the initiation of construction activities. The Plan would be fully implemented throughout the construction, operation, and maintenance period and include the following at a minimum: ▪ The purpose and applicability of the Plan ▪ Responsibilities and duties ▪ Overview of service territory to include: ▫ Description of electrical infrastructure ▫ Environmental setting (e.g. fire history, topography) ▫ Community values at risk ▪ Vegetation management and inspections ▪ Monitoring and detection systems ▪ Procedures for fire reporting, response, and prevention that include: ▫ Identification of daily site-specific risk conditions ▫ The tools and equipment needed on vehicles and to be on hand at sites ▫ Reiteration of fire prevention and safety considerations during tailboard meetings ▫ Daily monitoring of the red-flag warning system with appropriate restrictions on types and levels of permissible activity ▪ Coordination procedures with federal and local fire officials ▪ Crew training, including fire safety practices and restrictions as well as preparedness drills ▪ Method(s) for verifying that all Plan protocols and requirements are being followed A project Fire Marshal or similar qualified position would be established to enforce all provisions of the Wildfire Mitigation Plan as well as perform other duties related to fire detection, prevention, and suppression for the project. Project construction, operations, and maintenance activities would be monitored to ensure implementation and effectiveness of the WMP.

APM Number	Description
WTR-1	Prior to construction, HWT would conduct a jurisdictional (i.e., aquatic resources) delineation to identify state and federally jurisdictional waters, wetlands, and riparian habitats that occur within the vicinity of the Proposed Project. Through the design phase, HWT would avoid and minimize impacts to such resources to the maximum extent feasible. Where impacts are unavoidable, HWT would obtain the necessary regulatory permits and comply with the conditions. Appropriate erosion control best management practices (e.g., silt fencing, straw wattles, secondary containment, avoiding fueling in close proximity to waters) would be utilized to ensure that indirect and indirect impacts water quality are avoided or minimized to the maximum extent feasible.
WEA-1	All workers on the Proposed Project site would be required to attend a Worker's Environmental Awareness Program (WEAP) training. The training would inform all construction personnel of the resource protection and avoidance measures as well as procedures to be followed upon the discovery of environmental resources. The WEAP training would include, at a minimum, the following topics so crews would understand their obligations: 1) roles and responsibilities of Proposed Project personnel, including the stop work authority of biological, cultural, paleontological, and tribal monitors; 2) avoidance area boundaries; 3) good housekeeping practices; 4) Proposed Project mitigation measures and permit conditions; 5) communication protocol; 6) legal protections for sensitive resources and for noncompliance; and 7) notification and reporting requirements.

3.12 Project Description Graphics, Mapbook, and GIS Requirements

3.12.1 Graphics

Diagrams as detailed in the CPUC Guidelines are found in Chapter 3, Chapter 5, and Appendix A.

3.12.2 Mapbook

The Proposed Project mapbook in Appendix A includes all information identified in the CPUC Guidelines requirements for mapbooks.

3.12.3 GIS Data

GIS data is provided under separate electronic cover.

3.12.4 GIS Requirements

Information regarding each pole that would be installed or removed is included in the GIS data provided under separate electronic cover.

3.12.5 Natural Gas Facilities GIS Data

No natural gas facilities are included as part of the Proposed Project.

This page intentionally left blank.

4 Description of Alternatives

This Chapter identifies alternatives to the Ironwood Transmission Line Project (Proposed Project). Section 15126 of the California Environmental Quality Act (CEQA) Guidelines states that "an EIR shall describe a range of reasonable alternatives to the project or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project and evaluate the comparative merits of the alternatives."

Public Utilities Code section 1001.1, adopted on October 7, 2023 by Assembly Bill 1373, states that in a Certificate of Public Convenience and Necessity (CPCN) proceeding for a proposed transmission project, the California Public Utilities Commission (CPUC) shall establish a rebuttable presumption of need for the proposed transmission project if the California Independent System Operator (CAISO) governing board has made a finding that project is necessary, and all of the following conditions are satisfied:

(a) The CAISO governing board has made explicit findings regarding the need for the proposed transmission project and has determined that the proposed project is the most cost-effective transmission solution.
(b) The CAISO is a party to the CPUC proceeding.
(c) The CAISO governing board-approved need evaluation is submitted to the CPUC within sufficient time to be included in the scope of the CPCN proceeding.
(d) There has been no substantial change to the scope, estimated cost, or timeline of the proposed transmission project as approved by the CAISO governing board.

On January 30, 2025, the CPUC adopted General Order (GO) 131-E, which amends and supersedes GO 131-D, and establishes the rebuttable presumption in favor of a CAISO board-approved finding of need for a transmission project if the above-listed conditions are met (GO 131-E, VII.C.2.c.). Furthermore, GO 131-E clarifies that the range of reasonable alternatives to the proposed project that must be evaluated may be limited to alternative routes or locations for construction of the CAISO transmission-plan approved project, and the "no action" alternative (GO 131-E, VII.C.2.c.).

The Proposed Project has met or will meet all of the conditions set forth in Public Utilities Code section 1001.1, because (a) the CAISO governing board made explicit findings regarding the need for the Proposed Project in the CAISO 2022-2023 Transmission Planning Process; (b) the CAISO will be a party to the CPCN proceeding; (c) the CAISO governing board-approved need evaluation will be submitted to the CPUC with the Filing Proponent's Environmental Assessment (PEA), with sufficient time to be included in the scope of the CPCN proceeding; and (d) there have been no substantial changes to the Proposed Project compared to the project approved by the CAISO governing board.

As such, the Proposed Project has met all conditions necessary for the CPUC to establish a rebuttable presumption of need for the Proposed Project, and the range of alternatives that must be evaluated in the Filing PEA are limited to alternative routes and the "no action" alternative.

As described in Chapter 2, Introduction, the Proposed Project is being proposed to meet the following objectives:

- Meet the CAISO's policy-driven need for the project to support mitigation of the East of Miguel deliverability constraint[1], which the CAISO found presently results in zero deliverability for resources in the CPUC's base portfolio (3,080 MW) and sensitivity portfolio (10,398 MW) (CAISO 2022-2023 Transmission Plan) by connecting the existing North Gila and Imperial Valley substations with a new 500 kV circuit.
- As part of the Southern Area Reinforcement[2], support the cost-effective, common upgrade mitigation of identified transmission constraints on the Devers-Red Bluff 500 kV, East of Miguel, Bay Boulevard-Silvergate, Encina-San Luis Rey, Sycamore area, San Luis Rey-San Onofre, and Silvergate-Old Town lines by connecting the existing North Gila and Imperial Valley substations with a new 500 kV circuit.
- Meet the CAISO's functional specifications for the project as set forth in Appendix I of the 2022-2023 Transmission Plan.
- Achieve commercial operation by December 2030 in order to provide critical deliverability access to generation resources in California, Arizona, and New Mexico.
- Design, construct, and operate the project to minimize potential wildfire and other hazards, with public safety and well-being as a top priority, consistent with HWT's approved Wildfire Mitigation Plan.
- Meet the project's need in a safe, cost-effective manner consistent with HWT's Approved Project Sponsor Agreement to minimize cost impacts to customers.
- Minimize disturbance to local communities by siting the project adjacent to existing utilities, avoiding residential areas as much as possible.
- Avoid, minimize, or mitigate potential impacts to sensitive environmental resources and areas.
- Design, construct, and operate the project in conformance with HWT's standards, the National Electric Safety Code, and other applicable federal and state codes and regulations.

These objectives were used to develop and evaluate alternatives to the Proposed Project.

4.1 Alternatives Considered

4.1.1 Alternatives Suggested, Considered, or Studied by the CAISO or by CAISO Stakeholders

The CAISO considered six transmission development alternatives for the Southern Area Reinforcement in the 2022-2023 Transmission Plan (CAISO 2023); however, all six alternatives included a 500 kV alternating current (AC) transmission line between North Gila and Imperial Valley substations, similar to the Proposed Project.

4.1.2 Alternatives Suggested by the Public or Agencies

All project alternatives were suggested or influenced by the public or agencies. Please see Section 4.1.9 for a discussion of these alternatives.

[1] As described in CAISO's 2022-2023 Transmission Plan, deliverability of portfolio resources east of the existing SDG&E Miguel Substation is limited by thermal overloading of existing lines and transformers (referred to as the "East of Miguel Constraint").
[2] The Southern Area Reinforcement is a set of transmission projects in Southern California that are designed to address grid constraints and improve reliability and were identified in CAISO's 2022-2023 Transmission Plan.

4.1.3 Reduced Footprint Alternatives

Alternatives 1C, 3, and 3B described in Section 4.1.9, Route Alternatives and Route Variations, include shorter alignments than the Proposed Project alignments in Segment 1 and Segment 3. These alternatives would be expected to have reduced footprints in comparison to the Proposed Project, given they would require fewer permanent structures and associated work areas. Please see Section 4.1.9 for a discussion of these alternatives.

4.1.4 Project Phasing Options

As described in Chapter 3, Proposed Project Description, there are no current or reasonably foreseeable plans for expansion or future phases of development of the Proposed Project; therefore, no additional project phasing options were considered. In addition, no significant environmental impacts were identified that could be ameliorated through the temporal phasing of the Proposed Project.

4.1.5 Alternative Facility and Construction Activity Sites

Alternative facilities (i.e. alternatives to a 500 kV transmission line) were considered and rejected by CAISO in the 2022-2023 Transmission Planning Process. A discussion of alternatives that include alternative facilities is not required because, as discussed above, the Proposed Project meets the requirements to establish a rebuttable presumption that the proposed transmission line is necessary. Route alternatives described in Section 4.1.9, Route Alternatives and Route Variations, would include alternative construction activity sites. These alternatives would be expected to have alternative construction activity sites in comparison to the Proposed Project, given they would be located along different route alignments. Please see Section 4.1.9 for a discussion of these alternatives.

4.1.6 Renewable Energy, Energy Conservation, Energy Efficiency, Demand Response, Distributed Energy Resources, and Energy Storage Alternatives

A discussion of alternatives that include Renewable Energy, Energy Conservation, Energy Efficiency, Demand Response, Distributed Energy Resources, or Energy Storage is not required because, as discussed above, the Proposed Project meets the requirements to establish a rebuttable presumption that the proposed transmission line is necessary.

4.1.7 Avoid or Limit the Construction of New Transmission Voltage Facilities

A discussion of alternatives that include avoiding or limiting construction of new transmission voltage facilities is not required because, as discussed above, the Proposed Project meets the requirements to establish a rebuttable presumption that the proposed transmission line is necessary.

4.1.8 Other Technological Alternatives

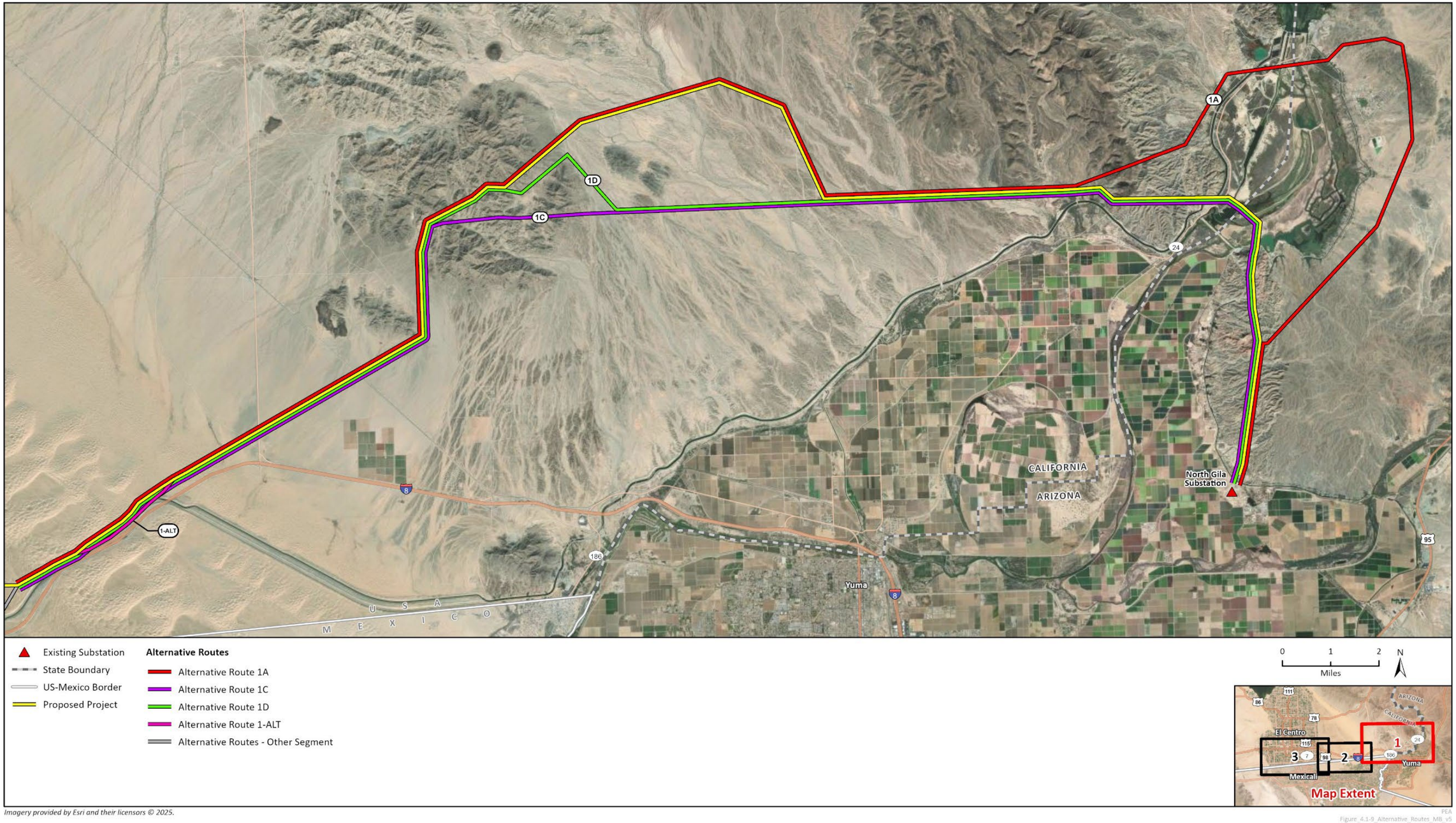
A discussion of other technological alternatives is not required because, as discussed above, the Proposed Project meets the requirements to establish a rebuttable presumption that the proposed transmission line is necessary.

4.1.9 Route Alternatives and Route Variations

As detailed in the Ironwood Transmission Line Project Routing Study included in Appendix K, HWT completed a comprehensive and detailed routing analysis that was informed by and incorporated potential environmental, stakeholder, and engineering concerns as well as the functional specifications required by the CAISO, and selected the Proposed Project because it best meets all the project objectives while minimizing, to the greatest extent practicable, potential impacts to environmental resources and potentially affected communities. The following route alternatives and route variations summarized below were developed during that routing analysis and are further detailed in the Routing Study included in Appendix K.

HWT has divided the Proposed Project into three segments and identified eight segment alternatives within the Proposed Project. A description of each segment alternative and its ability to satisfy the Proposed Project's objectives are provided in the subsections that follow. These segment alternatives are displayed in Figure 4-1a. Segment 1, Figure 4-1a, is the easternmost portion of the Study Area. Segment 1 alternatives connect the North Gila Substation to the eastern edge of Segment 2 near the southern end of Coachella Canal Road. Segment 2, Figure 4-1b, begins where the western portion of Segment 1 terminates and ends at the southern end of Desert Road in East Mesa. Segment 3, Figure 4-1c, begins where the western portion of Segment 2 terminates and ends at the Imperial Valley Substation.

Figure 4-1a Proposed Project Segment Alternatives



Imagery provided by Esri and their licensors © 2025.

PEA
Figure_4.1-9_Alternative_Routes_MB_v5

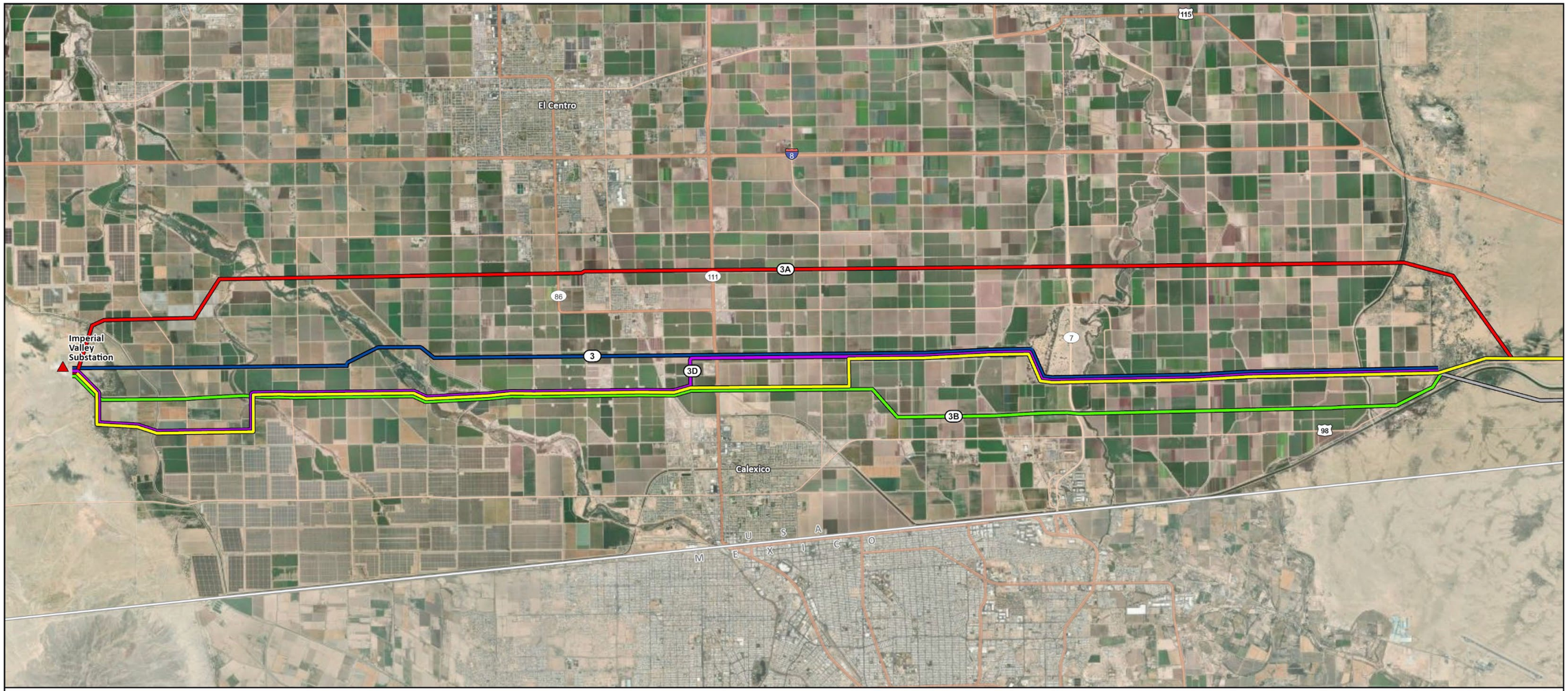
Figure 4-1b Proposed Project Segment Alternatives



Imagery provided by Esri and their licensors © 2025.

PEA
Figure_4.1-9_Alternative_Routes_MB_v5

Figure 4-1c Proposed Project Segment Alternatives



Imagery provided by Esri and their licensors © 2025.

PEA
Figure_4.1-9_Alternative_Routes_MB_v5

4.1.9.1 Segment 1

Alternative 1A

Alternative 1A spans 45.70 miles and begins at the North Gila Substation, traversing north across Bureau of Reclamation and Bureau of Land Management (BLM) land. The route avoids Mittry Lake by paralleling the lake through Yuma Proving Ground, before turning west to cross the canals and dams north of Mittry Lake. Alternative 1A then crosses BLM land within the West-Wide Energy Corridor and designated utility corridors, avoiding the Fort Yuma Quechan Reservation to the south. Alternative 1A then cuts north at Picacho Road, avoiding a parcel of state land, before turning southeast to then parallel an existing 500 kV transmission line (Southwest Powerlink [SWPL]), which it follows to the end of Segment 1.

Alternative 1A would satisfy the Proposed Project's objectives by connecting the North Gila Substation to the Segment 2 route. This alternative, when combined with Segment 2 and 3 routes, would meet the CAISO's functional specifications as set forth in Appendix I of the 2022-2023 Transmission Plan, support mitigation of the East of Miguel deliverability constraint as part of the Southern Area Reinforcement and would be in commercial operation by December 2030. Further, this alternative would be designed, constructed, and operated in conformance with HWT's standards, the National Electric Safety Code, and other applicable federal and state codes and regulations to minimize potential wildfire and other hazards, with public safety and well-being as a top priority, in a safe, cost-effective manner that minimizes disturbance to local communities by siting the alignment adjacent to existing utilities, avoiding residential areas as much as possible, and avoiding, minimizing, or mitigating potential impacts to sensitive environmental resources and areas.

Alternative 1C

Alternative 1C spans 35.13 miles and follows the same path as the Proposed Project until the Picacho Road area. Instead of cutting to the north like Alternative 1A and the Proposed Project, Alternative 1C continues due west across mountainous terrain, adjacent to the northern border of the Fort Yuma Quechan Reservation parallel to the existing SWPL transmission line, before rejoining the same alignment as Alternatives 1A and the Proposed Project within the designated utility corridor.

Alternative 1C would satisfy the Proposed Project's objectives by connecting the North Gila Substation to the Segment 2 route. This alternative, when combined with Segment 2 and 3 routes, would meet the CAISO's functional specifications as set forth in Appendix I of the 2022-2023 Transmission Plan, support mitigation of the East of Miguel deliverability constraint as part of the Southern Area Reinforcement and would be in commercial operation by December 2030. Further, this alternative would be designed, constructed, and operated in conformance with HWT's standards, the National Electric Safety Code, and other applicable federal and state codes and regulations to minimize potential wildfire and other hazards, with public safety and well-being as a top priority, in a safe, cost-effective manner that minimizes disturbance to local communities by siting the alignment adjacent to existing utilities, avoiding residential areas as much as possible, and avoiding, minimizing, or mitigating potential impacts to sensitive environmental resources and areas.

Alternative 1D

Alternative 1D spans 36.14 miles and follows the same path as Alternative 1C until the area of Barney Oldfield Road. Instead of crossing the mountainous terrain linearly, Alternative 1D cuts to the northwest for 1.5 miles before cutting back to the southwest for 1.3 miles before rejoining the same alignment as Alternatives 1A and the Proposed Project.

Alternative 1D would satisfy the Proposed Project's objectives by connecting the North Gila Substation to the Segment 2 route. This alternative, when combined with Segment 2 and 3 routes, would meet the CAISO's functional specifications as set forth in Appendix I of the 2022-2023 Transmission Plan, support mitigation of the East of Miguel deliverability constraint as part of the Southern Area Reinforcement and would be in commercial operation by December 2030. Further, this alternative would be designed, constructed, and operated in conformance with HWT's standards, the National Electric Safety Code, and other applicable federal and state codes and regulations to minimize potential wildfire and other hazards, with public safety and well-being as a top priority, in a safe, cost-effective manner that minimizes disturbance to local communities by siting the alignment adjacent to existing utilities, avoiding residential areas as much as possible, and avoiding, minimizing, or mitigating potential impacts to sensitive environmental resources and areas.

Alternative 1-Alt

Alternative 1-Alt is not a complete end-to-end Segment 1 route alternative, but instead provides a 2.6-mile micro-route alternative through Algodones Dunes. In contrast to Alternatives 1A, 1C, and 1D and the Proposed Project, which cross the Algodones Dunes to the north of the All American Canal, Alternative 1-Alt would cross the All American Canal and parallel the southside of the canal for approximately 1.8 miles before crossing the canal again and rejoining the same alignment as Alternatives 1A, 1C, and 1D, and the Proposed Project.

Alternative 1-Alt would satisfy the Proposed Project's objectives by connecting the North Gila Substation to the Segment 2 route, when combined with other Segment 1 routes. This alternative, when combined with Segment 1, 2 and 3 routes, would meet the CAISO's functional specifications as set forth in Appendix I of the 2022-2023 Transmission Plan, support mitigation of the East of Miguel deliverability constraint as part of the Southern Area Reinforcement and would be in commercial operation by December 2030. Further, this alternative would be designed, constructed, and operated in conformance with HWT's standards, the National Electric Safety Code, and other applicable federal and state codes and regulations to minimize potential wildfire and other hazards, with public safety and well-being as a top priority, in a safe, cost-effective manner that minimizes disturbance to local communities by siting the alignment adjacent to existing utilities, avoiding residential areas as much as possible, and avoiding, minimizing, or mitigating potential impacts to sensitive environmental resources and areas.

4.1.9.2 Segment 2

Alternative 2A

Alternative 2A spans 20.80 miles and begins at the same point as the Proposed Project but continues to the southwest for 1.7 miles instead of cutting due west. After Alternative 2A crosses I-8, it cuts west for 2.6 miles, then cuts south to cross the canals, before turning due west again, parallel to the existing SWPL transmission line, for 16 miles to link with the starting point of Alternatives 3, 3B, and 3D, and the Proposed Project.

Alternative 2A would satisfy the Proposed Project's objectives by connecting the Segment 1 route to the Segment 3 route. This alternative, when combined with Segment 1 and 3 routes, would meet the CAISO's functional specifications as set forth in Appendix I of the 2022-2023 Transmission Plan, support mitigation of the East of Miguel deliverability constraint as part of the Southern Area Reinforcement and would be in commercial operation by December 2030. Further, this alternative would be designed, constructed, and operated in conformance with HWT's standards, the National Electric Safety Code, and other applicable federal and state codes and regulations to minimize potential wildfire and other hazards, with public safety and well-being as a top priority, in a safe, cost-effective manner that minimizes disturbance to local communities by siting the alignment adjacent to existing utilities, avoiding residential areas as much as possible, and avoiding, minimizing, or mitigating potential impacts to sensitive environmental resources and areas.

4.1.9.3 Segment 3

Alternative 3

Alternative 3 spans 26.85 miles and begins at the terminus of the Proposed Project and Alternative 2A and runs parallel to the existing SWPL transmission line for nearly its entire length. It traverses due west for 7.7 miles parallel to Kumberg Road. After crossing State Route 7 and Heber Dunes Road, Alternative 3 cuts to the northwest for 0.55 mile. It then cuts back due west for 11.5 miles. Alternative 3 then parallels Forrester Road for 0.33 mile, then due west for 0.75 mile, then southwest for 0.6 mile until it crosses Lyons Road. It then parallels Lyons Road for 5.7 miles until it reaches the Imperial Valley Substation.

Alternative 3 would satisfy the Proposed Project's objectives by connecting the Segment 2 route to the Imperial Valley Substation. This alternative, when combined with Segment 1 and 2 routes, would meet the CAISO's functional specifications as set forth in Appendix I of the 2022-2023 Transmission Plan, support mitigation of the East of Miguel deliverability constraint as part of the Southern Area Reinforcement and would be in commercial operation by December 2030. Further, this alternative would be designed, constructed, and operated in conformance with HWT's standards, the National Electric Safety Code, and other applicable federal and state codes and regulations to minimize potential wildfire and other hazards, with public safety and well-being as a top priority, in a safe, cost-effective manner that minimizes disturbance to local communities by siting the alignment adjacent to existing utilities, avoiding residential areas as much as possible, and avoiding, minimizing, or mitigating potential impacts to sensitive environmental resources and areas.

Alternative 3A

Alternative 3A spans 29.66 miles and begins at the southern end of Desert Road, 0.86 miles east of the terminus of the Proposed Project and Alternative 2A, which it parallels to the northwest for 2.86 miles. After crossing Hunt Road, Alternative 3A traverses farmland due west for 22.8 miles. It then cuts to the southwest for 0.87 mile before cutting back due west for 2.81 miles until it terminates at the Imperial Valley Substation. This alternative does not parallel an existing transmission line.

Alternative 3A would satisfy the Proposed Project's objectives by connecting the Segment 2 route to the Imperial Valley Substation. This alternative, when combined with Segment 1 and 2 routes, would meet the CAISO's functional specifications as set forth in Appendix I of the 2022-2023 Transmission Plan, support mitigation of the East of Miguel deliverability constraint as part of the Southern Area Reinforcement and would be in commercial operation by December 2030. Further,

this alternative would be designed, constructed, and operated in conformance with HWT's standards, the National Electric Safety Code, and other applicable federal and state codes and regulations to minimize potential wildfire and other hazards, with public safety and well-being as a top priority, in a safe, cost-effective manner that avoids residential areas as much as possible, and avoiding, minimizing, or mitigating potential impacts to sensitive environmental resources and areas. This segment alternative avoids the Heber Dunes SVRA.

Alternative 3B

Alternative 3B spans 26.96 miles and begins at the point where the Proposed Project and Alternative 2A end. Alternative 3B then parallels State Route 98 for 1.0 mile before cutting due west for 9.6 miles. It then cuts diagonally to the northwest before paralleling East Jasper Road, Willoughby Road and Preston Road for 11.7 miles. After another 3.8 miles of traversing farmland to the west, Alternative 3B terminates at the Imperial Valley Substation. This alternative does not run parallel an existing transmission line.

Alternative 3B would satisfy the Proposed Project's objectives by connecting the Segment 2 route to the Imperial Valley Substation. Alternative 3A would satisfy the Proposed Project's objectives by connecting the Segment 2 route to the Imperial Valley Substation. This alternative, when combined with Segment 1 and 2 routes, would meet the CAISO's functional specifications as set forth in Appendix I of the 2022-2023 Transmission Plan, support mitigation of the East of Miguel deliverability constraint as part of the Southern Area Reinforcement and would be in commercial operation by December 2030. Further, this alternative would be designed, constructed, and operated in conformance with HWT's standards, the National Electric Safety Code, and other applicable federal and state codes and regulations to minimize potential wildfire and other hazards, with public safety and well-being as a top priority, in a safe, cost-effective manner that avoids residential areas as much as possible, and avoiding, minimizing, or mitigating potential impacts to sensitive environmental resources and areas.

Alternative 3D

Alternative 3D spans 28.67 miles and follows the same alignment as Alternative 3C, and runs parallel to the existing SWPL transmission line, except where it cuts south 0.50 miles west of State Route 111 and on for 15.7 miles before terminating at the Imperial Valley Substation.

Alternative 3D would satisfy the Proposed Project's objectives by connecting the Segment 2 route to the Imperial Valley Substation. This alternative, when combined with Segment 1 and 2 routes, would meet the CAISO's functional specifications as set forth in Appendix I of the 2022-2023 Transmission Plan, support mitigation of the East of Miguel deliverability constraint as part of the Southern Area Reinforcement and would be in commercial operation by December 2030. Further, this alternative would be designed, constructed, and operated in conformance with HWT's standards, the National Electric Safety Code, and other applicable federal and state codes and regulations to minimize potential wildfire and other hazards, with public safety and well-being as a top priority, in a safe, cost-effective manner that minimizes disturbance to local communities by siting the alignment adjacent to existing utilities, avoiding residential areas as much as possible, and avoiding, minimizing, or mitigating potential impacts to sensitive environmental resources and areas.

4.1.10 Alternative Engineering or Technological Approaches

A discussion of alternative engineering or technological approaches is not required because, as discussed above, the Proposed Project meets the requirements to establish a rebuttable presumption that the proposed transmission line is necessary.

4.2 No Project Alternative

CEQA requires an evaluation of the No Project Alternative so that decision makers can compare the impacts of approving the Proposed Project with the impacts of not approving the Proposed Project (CEQA Guidelines, section 15126.6[e]). Under the No Project Alternative, CAISO would fail to meet functional specifications for the project as set forth in Appendix I of the 2022-2023 Transmission Plan. Specifically, there would not be infrastructural support in mitigation of the East of Miguel deliverability constraint as part of the Southern Area Reinforcement in commercial operation by December 2030. The electricity grid in Southern California would become increasingly unreliable and rates for energy users would likely increase. Therefore, the No Project Alternative would fail to meet any of the Proposed Project's objectives.

4.3 Rejected Alternatives

As detailed in the Ironwood Transmission Line Project Routing Study included in Appendix K, HWT conducted a comprehensive and detailed routing analysis to select the Proposed Project and considered many route alternatives and route variations, of which eight are described in Section 4.1.9 and included as alternatives considered in this PEA.

HWT also evaluated potential route options south of the Fort Yuma Quechan Reservation, collectively known as the southern Yuma area route alternatives, at the request of the Fort Yuma Quechan Tribe. An in-depth analysis of any potential routing opportunities existing south from North Gila Substation to the parking lot in the southwest corner of the Fort Yuma Quechan Reservation was conducted and is summarized in the Routing Study (Appendix K). Publicly available federal, state, county, and city spatial data was reviewed to inform route options, and environmental and regulatory constraints were considered. The Routing Study determined that a southern route is not feasible due to the following factors and constraints, and therefore these alternatives were rejected from further analysis in this PEA: (1) Any route located south of Yuma International Airport would require over 15 additional miles of transmission line and exceed the CAISO's functional specification for the project's electrical requirements; (2) Any route crossing residential land uses would require the use of eminent domain and HWT does not have the power of eminent domain in Arizona; (3) City of Yuma ordinances prohibit high voltage transmission lines in all but one land use that would be crossed by any route, and the City of Yuma cannot grant a variance or conditional use permit (CUP) as HWT is not a public utility in Arizona; (4) No overhead high voltage lines can be placed within minimum distances of airport approaches and the US-Mexico border per federal regulations. Additionally, the City of Yuma has expressed opposition to a route through the city. Lastly, potential route options in the southern Yuma area would likely not eliminate the significant and unavoidable impact related to aesthetics because the route would be placed within the vicinity of residential areas and likely could cause additional impacts to residences such as impacts related to air quality or noise.

The southern Yuma area route alternatives would fail to meet the Proposed Project's objective of meeting the CAISO's functional specifications. Moreover, given these route alternatives are infeasible due to requiring eminent domain and City of Yuma variances or permits that HWT is not eligible for, they would also fail to meet the Project's objectives of meeting the CAISO's policy-driven need for the project to support mitigation of the East of Miguel deliverability constraint; mitigating transmission constraints on the Devers-Red Bluff 500 kV, East of Miguel, Bay Boulevard-Silvergate, Encina-San Luis Rey, Sycamore area, San Luis Rey-San Onofre, and Silvergate-Old Town lines; and providing critical deliverability access to generation resources in California, Arizona, and New Mexico. While these route alternatives would satisfy two Proposed Project's objectives (being designed, constructed and operated to minimize potential wildfire and other hazards, and in conformance with HWT's standards and applicable regulations), these alternatives would also fail to meet the objective of minimizing disturbance to local communities by siting the alignment adjacent to existing utilities, avoiding residential areas as much as possible. For these reasons, southern Yuma area route alternatives were dismissed from further consideration.

This page intentionally left blank.

5 Environmental Analysis

This Chapter examines the potential environmental impacts of the Ironwood Transmission Line Project (Proposed Project). The organization of Chapter 5 is described below, along with a brief description of the major components included for each resource area.

Organization of Resource Area Sections

Environmental analysis of the Proposed Project by resource area is provided in Sections 5.1 through 5.20 of Chapter 5 of this Proponent's Environmental Assessment (PEA). These sections present the environmental and regulatory setting, impact questions, and proposed methodology, impact analysis, applicable California Public Utilities Commission (CPUC) Draft Environmental Measures, and Applicant Proposed Measures (APM). Tables and figures are included within the text of each section. The sections are organized as follows:

- Section 5.1, Aesthetics
- Section 5.2, Agriculture and Forestry Resources
- Section 5.3, Air Quality
- Section 5.4, Biological Resources
- Section 5.5, Cultural Resources
- Section 5.6, Energy
- Section 5.7, Geology, Soils, and Paleontological Resources
- Section 5.8, Greenhouse Gas Emissions
- Section 5.9, Hazards, Hazardous Materials, and Public Safety
- Section 5.10, Hydrology and Water Quality
- Section 5.11, Land Use and Planning
- Section 5.12, Mineral Resources
- Section 5.13, Noise
- Section 5.14, Population and Housing
- Section 5.15, Public Services
- Section 5.16, Recreation
- Section 5.17, Transportation
- Section 5.18, Tribal Cultural Resources
- Section 5.19, Utilities and Service Systems
- Section 5.20, Wildfire

Mandatory findings of significance are presented in Section 5.21. Chapter 6 presents a comparison of the Proposed Project alternatives. Chapter 7 presents a discussion of cumulative impacts and other CEQA considerations, including growth-inducing impacts. Chapter 8 presents the PEA preparers and contributors. Finally, references for each environmental resource evaluated are presented in Chapter 9, References.

Environmental Setting

The analysis of each resource category begins with an examination of the existing physical setting (baseline conditions as determined pursuant to California Environmental Quality Act (CEQA) Guidelines Section 15125(a)) that may be impacted by the Proposed Project.

Regulatory Setting

The regulatory setting provides a discussion of federal, state, and local regulations, plans, policies, and/or laws that are directly relevant to the environmental resource area being analyzed.

Impact Questions

This section identifies the criteria used to determine when physical changes to the environment created as a result of the Proposed Project would be considered significant. The significance criteria serve as a benchmark for determining if a project would result in a significant adverse environmental impact when evaluated against the baseline. According to the CEQA Guidelines Section 15382, a significant effect on the environment means "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area" affected by the Proposed Project. The significance determination under each impact analysis is made by comparing the construction and operation impacts of the Proposed Project with the conditions in the environmental setting and comparing the difference to the significance criteria.

Impact Analysis

This section identifies the methodology used to analyze potential environmental impacts for each resource area. Some evaluations may be quantitative, while others are qualitative.

This section also includes the analysis of potential impacts associated with each resource area. The impacts will be compared to the significance criteria to determine the level of significance.

The impact sections focus on those impacts that are considered potentially significant per the requirements of CEQA. An impact is considered significant if it leads to a substantial, or potentially substantial, adverse change in the environment. Impacts from the Proposed Project may fall within one of the following categories:

- **No Impact (NI)**: There would be no impact to the identified resource as a result of the Proposed Project.
- **Less than Significant (LTS)**: Some impacts may result from the Proposed Project; however, they are judged to be less than significant. Impacts are frequently considered less than significant when the changes are minor relative to the size of the available resource base or would not change an existing resource. A "less-than-significant impact" applies where the environmental impact does not exceed the significance threshold.
- **Less than Significant with Mitigation (LTSWM)**: Significant adverse impacts may occur; however, with proper APMs, the impacts can be reduced to less than significant.
- **Significant Impacts (SI)** (also referred to as **Significant and Unavoidable**): Adverse impacts may occur that would be significant even after APMs have been applied to minimize their severity. A "significant impact" applies where the environmental impact exceeds the significance threshold, or information was lacking to make a finding of less than significant.

CPUC Draft Environmental Measures

Attachment 4 of the CPUC's *Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and PEAs* provides Draft Environmental Measures for consideration during PEA development. The Draft Environmental Measures are considered for each resource area analyzed in Chapter 5 of this PEA.

Applicant Proposed Measures

For the purposes of CEQA, APMs are treated as mitigation measures that could minimize potentially significant or significant impacts that may result from the Proposed Project. CEQA Guidelines Section 15126.4(a)(3) states that mitigation measures are not required for effects that are not found to be significant. Therefore, where an impact is found to be less than significant, APMs are not required to be proposed. Where there is the potential for the Proposed Project to result in a significant impact, APMs have been identified. Compliance with laws, regulations, ordinances, and standards designed to reduce impacts to less-than-significant levels are not considered mitigation measures under CEQA. CEQA Guidelines Section 15370 defines mitigation to include:

- Avoiding the impact altogether by not taking a certain action or parts of an action
- Minimizing impacts by limiting the degree or magnitude of the action and its implementation
- Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action
- Compensating for the impact by replacing or providing substitute resources or environments

A complete list of APMs is provided in Table 3-12 in Chapter 3, Project Description.

This page intentionally left blank.

5.1 Aesthetics

This section describes the character and quality of visual resources within the vicinity of the North Gila to Imperial Valley Transmission Project (Proposed Project) as well as the potential impacts to aesthetics that could result from the construction, operation, and maintenance of the Proposed Project.

Aesthetics refers to visual resources and the quality of what can be seen or overall visual perception of the environment. Visual impacts are analyzed through an examination of views and/or viewsheds. The geographic area is defined by the horizon line, topography, and other natural features that define visual extents and provide context. Viewshed impacts are typically characterized by the change of existing scenic vistas or other major views in the area of the site that are available to the general public. Sensitive viewers are individuals or groups who are particularly affected by changes to the aesthetics of the surrounding area. Viewshed analysis is based upon relative visibility with regard to viewing location and relative size, scale, and dominance of proposed development.

Data sources for this analysis involved a review of the following:

- Proposed Project maps and drawings provided by Proponent (Horizon West Transmission, LLC)
- Aerial and ground-level photographs of the Project Study Area
- Online data sources (BLM 2024; Caltrans 2024; Arizona Department of Transportation [AZDOT] 2024)
- Federal and local agency planning documents (BLM 1980 and 2010; Imperial County 1993; Yuma County 2023)
- USGS topographic maps
- Google Earth

5.1.1 Environmental Setting

The Proposed Project is located in Imperial County, California (CA) and Yuma County, Arizona (AZ) on federal, state, municipal, and private land. These lands include unincorporated areas of Imperial and Yuma counties, the cities of Calexico, CA and Yuma, AZ, tribal lands including the Fort Yuma Indian Reservation and Cocopah Indian Reservation, and public lands under the jurisdiction or management of the United States Bureau of Land Management (BLM), United States Bureau of Reclamation (Reclamation), United States Bureau of Indian Affairs (BIA), United States Department of Defense (DoD), California State Lands Commission (CSLC), California Department of Parks and Recreation (DPR), and the Arizona State Trust Land Department. The Proposed Project includes mostly undeveloped open areas with some developed areas in unincorporated Imperial County, CA and the City of Yuma, AZ.

5.1.1.1 Landscape Setting

The Proposed Project landscape setting is located within California's Imperial Valley and southwestern Arizona within the Sonoran Basin and Range ecoregion (USEPA 2024). The landscape is generally characterized by flat desert bounded by high-relief mountains and foothills provided as backdrop or set within the viewshed. The topography of the Proposed Project area ranges from relatively flat to slightly sloping valleys to steeply sloping, rugged mountain ranges. Elevations in the

valley bottoms range from slightly below sea level to over 2,000 feet at some mountain peaks in the background viewshed (Stud Mountain, Quartz Peak). More typically, surrounding mountain peaks are in the 500- to 1,500-foot (above mean sea level) elevation range. The desert landscape provides a dramatic contrast against the backdrop of the surrounding mountain ranges. Ecoregions in the Project Study Area include Western Sonoran Basins (western uplands), Imperial Valley, Central Sonoran/Colorado Desert Mountains, Sand Hills/Dunes, Central Sonoran/Colorado Desert Basin uplands, and Lower Colorado River Valley riparian landscape. Vegetation consists of Sonoran Desert communities which contain large areas of paloverde-cactus shrub and giant saguaro cactus. Microphyll woodland trees and shrubs, such as ironwood, blue paloverde, smoketree, and desert willow generally are unique to this desert, occupying desert washes with occasional moisture flow. Water features in the Proposed Project area consist of irrigation ditches, the Central Arizona Project Canal, and the Colorado River, with the Salton Sea occupying the extreme northern portion of the regional landscape.

5.1.1.2 Project Visibility and Viewshed

The Project viewshed is defined as the general area from which the Proposed Project would be visible. For purposes of describing a project's visual setting and assessing potential visual impacts, the viewshed can be divided into distance zones of foreground, middleground, and background views. The foreground is defined as the distance between the viewer and 0.25 to 0.5 mile. Landscape details are most noticeable, objects generally appear most prominent, and changes in the viewshed are easily noticed when seen in the foreground. In the middleground distance zone, 0.5 to 3.0 miles from the viewer, landscape textural details diminish and changes in this zone are noticeable but less prominent than in the foreground. The background distance zone extends beyond 3.0 miles from the viewer and changes in this zone are less noticeable and would likely have a minimal visual impact.

In the analysis of the Proposed Project, emphasis is placed on the potential effects on foreground viewshed conditions, although consideration is also given to the potential effects on the more distant views. The Proposed Project area is visible from nearby public locations such as along nearby roads and highways, as well as from more distant locations. Existing visual conditions are described in the following sections.

5.1.1.3 Scenic Resources

Scenic resources are defined as landscape patterns and features that are considered visually or aesthetically pleasing and therefore contribute positively to the definition of a distinct community or region. Natural and built features that comprise landscape patterns are visual resources that can be viewed by the general public, thus contributing to the public's experience and appreciation of the environment. Scenic resources may include trees or important vegetation; landform elements (e.g., hills, ridgelines, or rock outcroppings); water features (e.g., rivers, bays, or reservoirs); parks, recreation and special management areas; and landmarks, important buildings, or historic structures.

Scenic resources identified in the Project Study Area are discussed in the subsections that follow.

Special Management Areas, Parks, and Open Spaces

Open spaces and recreational opportunities in the Project Study Area are managed by federal, state, and local agencies and are typically associated with developed areas as local or neighborhood parks or with desert recreational, scenic viewing, recreational camping, wildlife viewing, off-highway

vehicle (OHV) use and other activities. The recreational and open spaces provide scenic views toward surrounding mountains, expansive desert landscapes, and the Colorado River corridor. Views are typically open and expansive, but some landscape settings have more limited viewsheds where topographical, vegetation, and built features exist.

Many of the recreational opportunities in this area are concentrated where the Colorado River has been impounded, giving way to wetlands and surface water activities. Areas located within the Colorado River corridor generally have denser vegetation that is often in stark contrast to the surrounding areas that feature sparse vegetation and feature a color palette dominated by muted, earthy tones.

Other recreation areas are concentrated around the region's unique geological features, specifically the sand dunes that were deposited in the area from the ancient Lake Cahuilla. These areas typically cater to offroad vehicles and camping where there are partially obscured views of sand dunes that are dominant in the middleground and background. Existing transmission infrastructure is within the viewshed from some of these areas where the dark transmission structures contrast with the lighter "Rositas fine sand" that make up the dunes. This is particularly evident at sites like the Buttercup Campground (BLM, Imperial Sand Dunes). Visually sensitive Special Management Areas, parks, and open spaces are shown on Figure 5.1-1, Figure 5.1-2, and Figure 5.1-3.

Scenic Vistas

Scenic vistas are typically expansive views from elevated areas or vantage points. They may or may not be an officially designated scenic overlook or other area providing a stationary view of the landscape. The Proposed Project is located in a rural portion of Imperial County and is not located within an area containing a scenic vista designated by the state or the county's General Plan (Imperial County 1993).

The Yuma County 2030 Comprehensive Plan defines open space as any publicly owned and publicly accessible space or area characterized by great natural scenic beauty or whose existing openness, natural condition or present state of use, if retained, would maintain or enhance the conservation of natural or scenic resources (Yuma County 2023). Within the Proposed Project area, Mittry Lake Wildlife Area, Fortuna Pond Coordinated Management Area, Redondo Pond Recreation Area, Muggins Mountains, and riparian areas along the Colorado and Gila rivers are recognized in the plan as open space areas most valued by county residents.

State and County Scenic Highways

There are no California or Arizona State Designated Scenic Highways in the Project Study Area (Caltrans 2024; AZDOT 2024).

5.1.1.4 Viewers and Viewer Sensitivity

The primary potentially affected viewer groups in the vicinity of the Proposed Project are motorists and recreational facility users, along with residents located within viewing distance of the Proposed Project. The following subsections describe these viewer groups and their sensitivity.

Motorists

Motorists constitute the most substantial viewer group and include both local and regional travelers who are familiar with the visual setting, as well as those using the roads on a less regular basis. Interstate 8 (I-8) is the main east-west travel route that connects Yuma and southern Arizona with

the Imperial Valley and southern California. This route also provides access to a majority of the recreation opportunities in the area like Imperial Dunes OHV Area, Dune Buggy Flats, Holtville Hot Springs, and other desert recreational areas. State Highway (SH) 98 parallels I-8 throughout most of the Proposed Project area and provides access to additional recreational sites.

SH 111, SH 86, and SH 115 are the important north-south corridors in the region, connecting Calexico, Heber, and El Centro with Brawley to the north.

Viewer sensitivity for motorists ranges from low when views are at highway speed and brief, to moderately high when views are for a longer duration or a lower speed.

Recreationists

Recreationists use parks and trails in the Proposed Project area. Recreationists' views range from relatively brief to longer in duration. The sensitivity of this viewer group is considered moderate to high due to the potential for views of extended duration.

a. Federal

Visually sensitive recreationists located on federally managed lands are shown on Figure 5.1-1 through Figure 5.1-3 and include:

- Yuha Basin Area of Critical Environmental Concern (ACEC) (BLM; includes scenic relevant and important values)
- Lake Cahuilla ACEC (BLM; includes scenic/culturally relevant and important values)
- East Mesa (BLM; includes scenic/culturally relevant and important values)
- Pilot Knob ACEC (BLM; includes scenic/culturally relevant and important values)
- Picacho ACEC (BLM; includes scenic relevant and important values)
- Plank Road ACEC/Plank Road Historic Marker (BLM; includes scenic/historically relevant and important values)
- Little Picacho Wilderness (BLM)
- Mittry Lake Wildlife Area (Reclamation / AGFD)
- Mittry Lake Day Use Area/ Mittry Lake Overnight Camping Area (Reclamation) and Mittry Lake Boat Ramp/Camp (Reclamation)
- Betty's Kitchen Watchable Wildlife Area (Reclamation)
- Imperial Sand Dunes OHV Designated Area (BLM)
- Ogilbly Camp Area (BLM)
- Hot Springs Long Term Visitor Area (LTVA) (BLM)
- Tamarisk LTVA (BLM)
- Dunes Vista/Dune Buggy Flats Campground (BLM)
- Kennedy's Day Use Site (BLM)
- Midway Campground (BLM)
- Grays Well Camping (BLM)
- Senator Wash Reservoir Campsites/Day Use/Boat Ramp (BLM)
- Buttercup Campground (BLM)
- Kw'tsan National Monument (Proposed; BLM)

- Butterfield Overland National Historic Trail (NHT; National Park Service [NPS])
- Camp Pilot Knob Historical Marker (BLM)
- Juan Bautista de Anza NHT (NPS)

b. State

Visually sensitive recreationists located on state-managed lands are shown on Figure 5.1-1 through Figure 5.1-3 and include:

- Heber Dunes State Vehicular Recreation Area (SVRA) (California State Parks)

c. County and Local

Visually sensitive recreationists located on locally managed lands are shown Figure 5.1-1 through Figure 5.1-3 and include:

- Adrian C. Cordova Park (City of Calexico)
- Las Casitas Park (City of Calexico)
- Bucklin Park (El Centro)
- Desert Garden Park (El Centro)
- Estancia Park (Heber)
- Edward “Jiggs” Johnson Park (Heber)
- Margarito "Tito" Huerta Jr. Park (Heber)
- Legacy Park (El Centro)
- John F. Kennedy Park (Calexico)

d. Private/Other

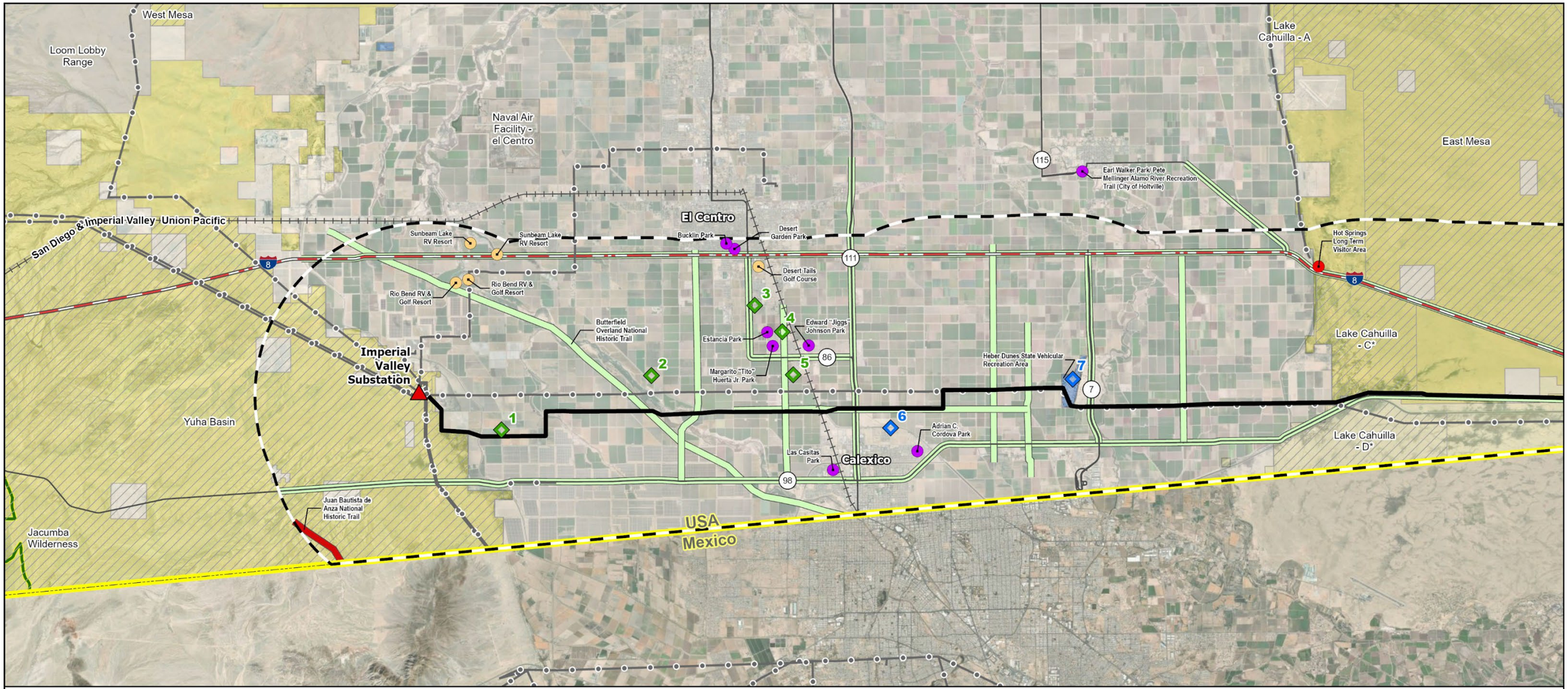
Visually sensitive recreationists located on private land are shown on Figure 5.1-1 through Figure 5.1-3 and include:

- Rio Bend RV and Golf Resort (New River south of I-8 Drew Road interchange)
- Sunbeam Lake RV Resort
- Desert Tails Golf Course (El Centro)
- Museum of History in Granite (I-8 Sidewinder Road interchange)
- Cocopah Bend RV and Golf Resort (Winterhaven)
- Quechan Casino Resort

Residents

Residences near the Proposed Project are mostly limited to single family homes concentrated around the suburbs of population centers like El Centro, Heber and Calexico. Outside of this main group there are dispersed residential farmhouses in more agricultural areas throughout the Proposed Project area. Depending on the proximity to the Proposed Project, residential viewers tend to have high viewer exposure and awareness; therefore, the sensitivity of this viewer group is considered high.

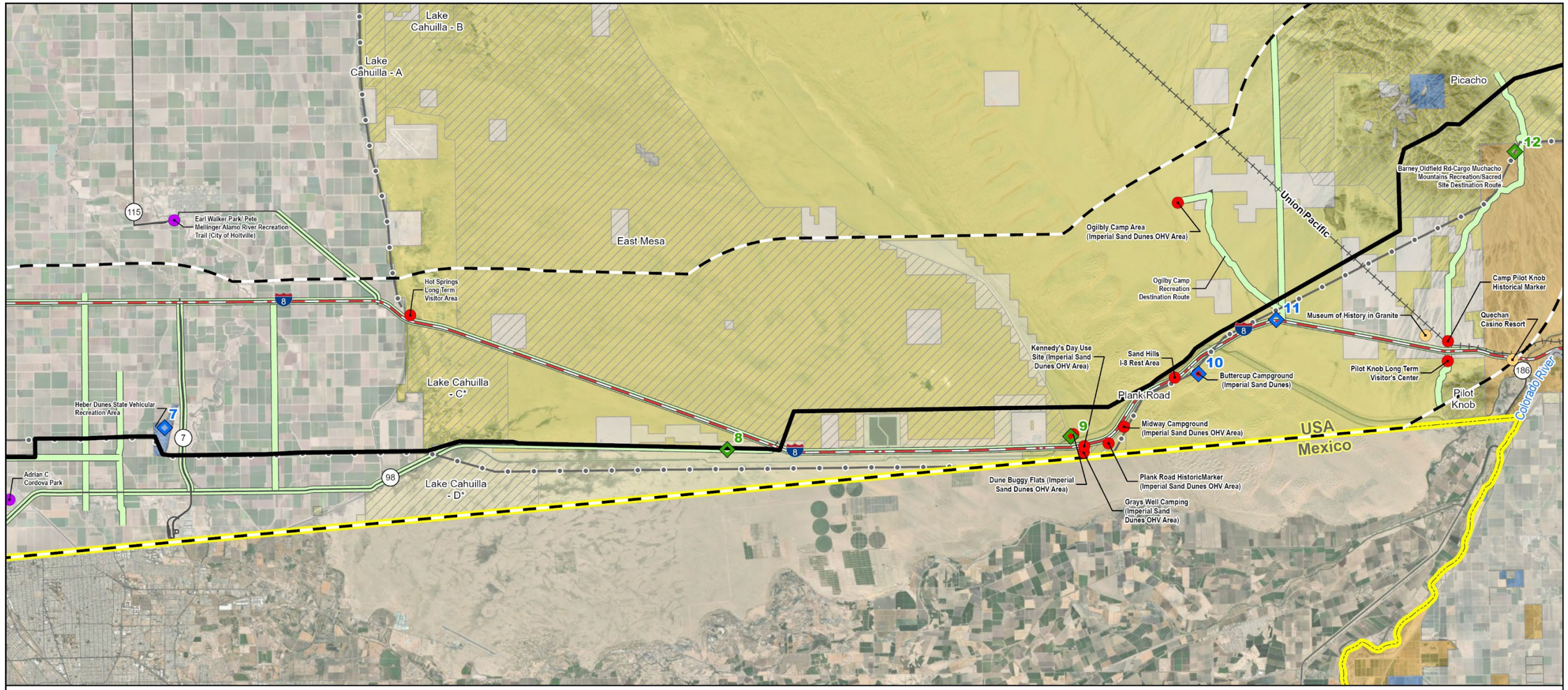
Figure 5.1-1 Aesthetic Resources and Viewpoints



Imagery provided by Esri and their licensors © 2025.

Proponent's Environmental Assessment
v2_3-AESTHETIC RESOURCES AND VIEWPOINTS_PEA

Figure 5.1-2 Aesthetic Resources and Viewpoints



Project Features
- Study Area
- Existing Substation
- Proposed Project

Transportation Features
- Interstate Highway
- U.S. Route
- State Highway
- Railroad

Reference Features
- State Boundary
- US-Mexico Border
- Colorado River
- Existing Transmission Line (115 kV+)

Key Observation Points
- Photo Simulation
- No Photo Simulation

Sensitive Viewers

Point Features
- Federal
- State
- Local
- Private

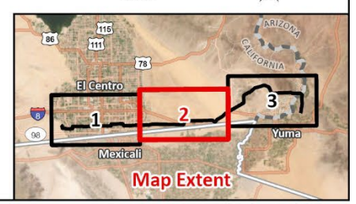
Linear Features
- Federal
- Variable

Jurisdiction
- Bureau of Indian Affairs (BIA)
- Bureau of Land Management (BLM)
- Department of Defense (DOD)
- Bureau of Reclamation (Reclamation)
- State Lands
- Private/Undetermined

Area of Critical Environmental Concern (ACEC)

0 1 2 3 Miles

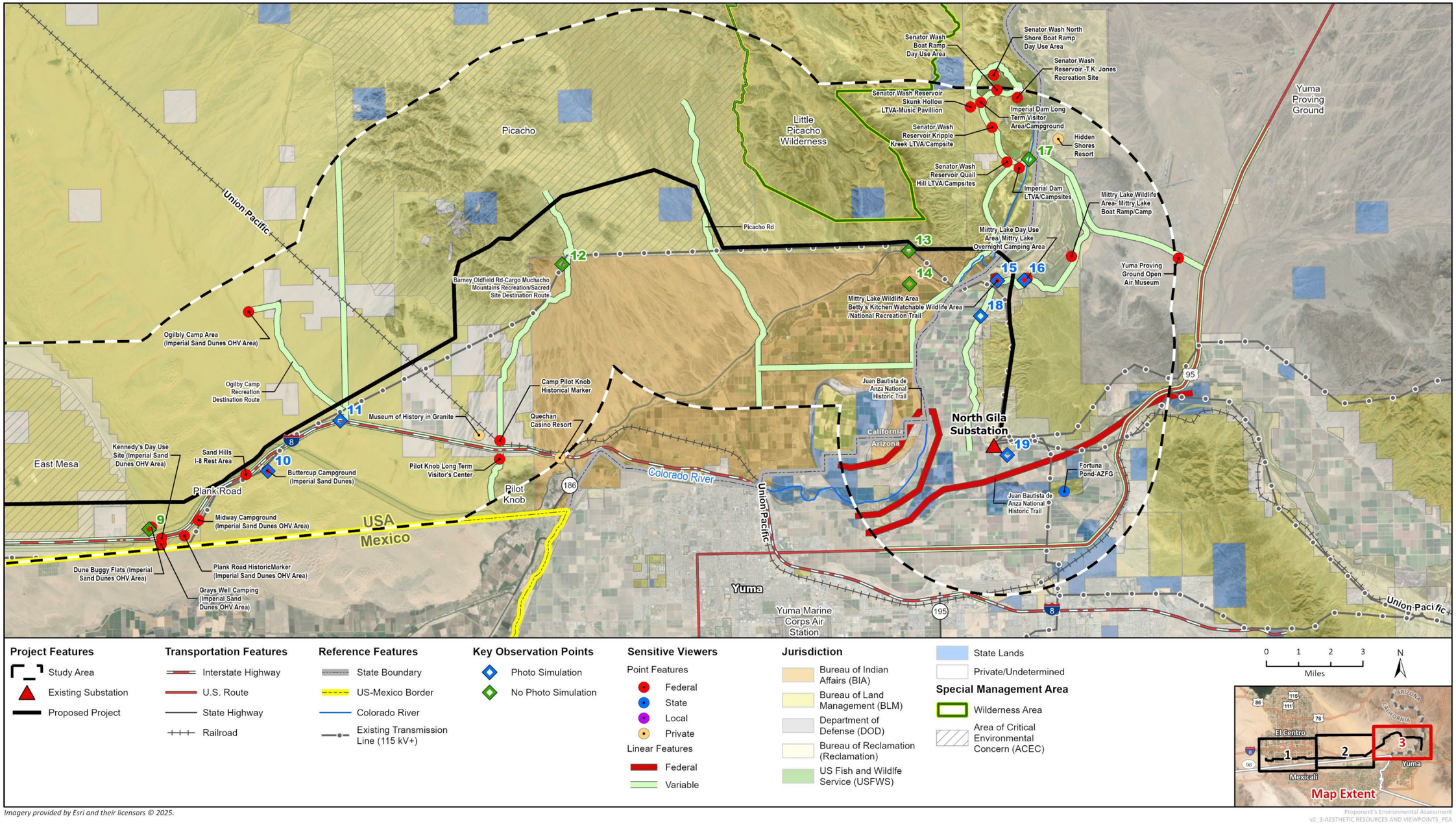
N



Imagery provided by Esri and their licensors © 2025.

Proponent's Environmental Assessment
v2_3-AESTHETIC RESOURCES AND VIEWPOINTS_PEA

Figure 5.1-3 Aesthetic Resources and Viewpoints



Imagery provided by Esri and their licensors © 2025.

Proponent's Environmental Assessment
v2_3-AESTHETIC RESOURCES AND VIEWPOINTS_PEA

5.1.1.5 Light and Glare

Glint and glare refer to the reflection of the sun by a reflective surface. Glint is a momentary direct reflection of light while glare is an indirect reflection of light that can be larger and of longer duration. Transmission structures do not generate light and are treated to prevent glint or glare from these structures or any of their components. Sources of potential glint and glare in the Proposed Project area include multiple existing transmission lines constructed of galvanized steel, solar facilities, and similar infrastructure.

Other potential light sources in the vicinity of the Proposed Project include aircraft safety lighting in communication structures and transmission lines, lighting associated with vehicular traffic and street lighting, and general developed area lighting.

5.1.1.6 Visual Setting and Representative Views

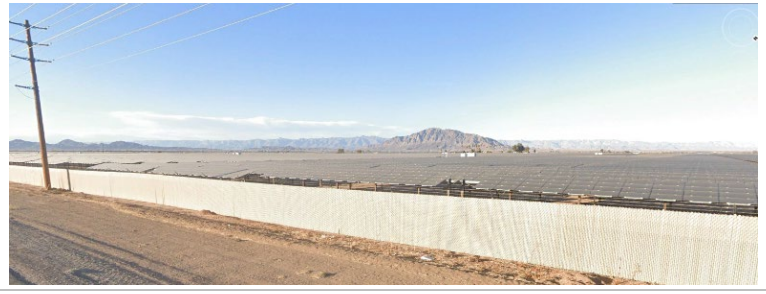
The Proposed Project area is nearly completely encompassed by the Lake Cahuilla Ecoregion of California and the Salton Trough, containing both Imperial and Mexicali Valleys. This region features some of the tallest sand dunes in the country in addition to large areas dominated by agriculture south of the Salton Sea and along the Colorado River. Dominant vegetation in this region consists of creosote bush and other salt-tolerant species like tamarisk, mesquite, and arrow weed. Agriculture is the dominant land use through an expansive network of canals that irrigate roughly 500,000 acres of farmland in Imperial County. Representative views consist mainly of irrigated agricultural fields and expansive creosote bush desert landscapes, with the dominant mountain range being the Chocolate Mountains.

Landscape Character Types

Using topographic maps, aerial photography, and site reconnaissance, areas of similar visual character were identified for the Proposed Project. Landscape Character Types, herein referred to as Landscape Character Units (LCUs), were used as a basis for assessing scenic quality and visual integrity. LCUs are landscapes where similar natural and cultural patterns occur. In developed areas, LCUs do not correlate with broader physiographic patterns as well as in more natural, undeveloped landscapes. LCUs in developed areas are more dependent on settlement patterns, socio-economic factors, local planning and zoning, architectural styles, and numerous other culturally influenced factors. A total of 13 LCUs as shown on Figure 5.1-4 through Figure 5.1-6 were identified for the Proposed Project. Table 5.1-1 provides a description and representative photos of each LCU.

Table 5.1-1 Landscape Character Units

NAME	DESCRIPTION	REPRESENTATIVE PHOTO
LCU #2 Colorado River Riparian/ Floodplain	Meandering river bound by level floodplains; water flow is consistent and maintained by upstream dams. This consistent flow has allowed for a riparian corridor to be dominated by tall woody vegetation and lower growing riparian species. This stark difference in vegetation from the surrounding desert provides significant contrast, color, line, and movement to the landscape. Although the river is meandering, much of the river within the study corridor has been channelized and controlled, separating a significant portion of the river from its historical floodplain.	
LCU #3 Residential	Consists of mostly single-family homes separated from more commercial or mixed uses.	
LCU #3 Residential	Consists of mostly single-family homes separated from more commercial or mixed uses.	

NAME	DESCRIPTION	REPRESENTATIVE PHOTO
LCU #4 Urban/ Suburban	Consists of a mix of residential and commercial buildings usually in higher density than residential areas.	
LCU #5 Utility Solar	Utility scale solar arrays providing large amounts of electricity to the local power grid. The concentration of solar panels in the same area creates an industrial, homogenous setting.	
LCU #6 Industrial	Consists of warehouses or other production facilities conducive to industrial uses.	

NAME	DESCRIPTION	REPRESENTATIVE PHOTO
LCU #7 Desert Foothills	Consists of plant communities dominated by low shrubs and grasses scattered among gradually rising topography. Much of this topography may have been carved from seasonal rains resulting in defined drainages.	
LCU #8 Sonoran Desert	Consists of low shrubs like creosote bush and white bursage, consistent with plant communities within the Lower Sonoran Desert ecoregion. Low open spans of this sparse vegetation are bordered by distant mountain ranges that are partially obscured by sand and dust.	
LCU #9 Cargo Muchacho Mountains	Consists of rugged, low, dark brown peaks in direct contrast to the neighboring light sands of the Algodones Dunes and the surrounding Sonoran Desert.	

NAME	DESCRIPTION	REPRESENTATIVE PHOTO
LCU #10 Cargo Muchacho Foothills	Consists of sparsely vegetated slopes often cut through by seasonal drainages. The Cargo Muchacho mountains dominate the foreground in one direction while expansive stretches of the Sonoran Desert	
LCU #11 Riparian/ Floodplain	Similar to riparian areas found on the neighboring Colorado River. However, the channelization and more active management of these smaller waterways has eliminated the presence of taller woody vegetation, giving way to low growing shrubs and grasses.	

NAME	DESCRIPTION	REPRESENTATIVE PHOTO
LCU #12 Algodones Dunes	Large fields of sand dunes formed from sands exposed from the ancient Lake Cahuilla. The dunes are now a popular destination for off-road vehicle owners, especially during winter holiday weekends.	
Arizona		
LCU #13 Mittry Lake/ Wetlands	Consists of large amounts of impounded water as a result of the Laguna Dam downstream. This impounded water has resulted in shorelines featuring wetland vegetation like cattails and bullrush. The tall woody vegetation occludes most of the midground views of the surrounding mountain ranges.	

Figure 5.1-4 Landscape Character Units

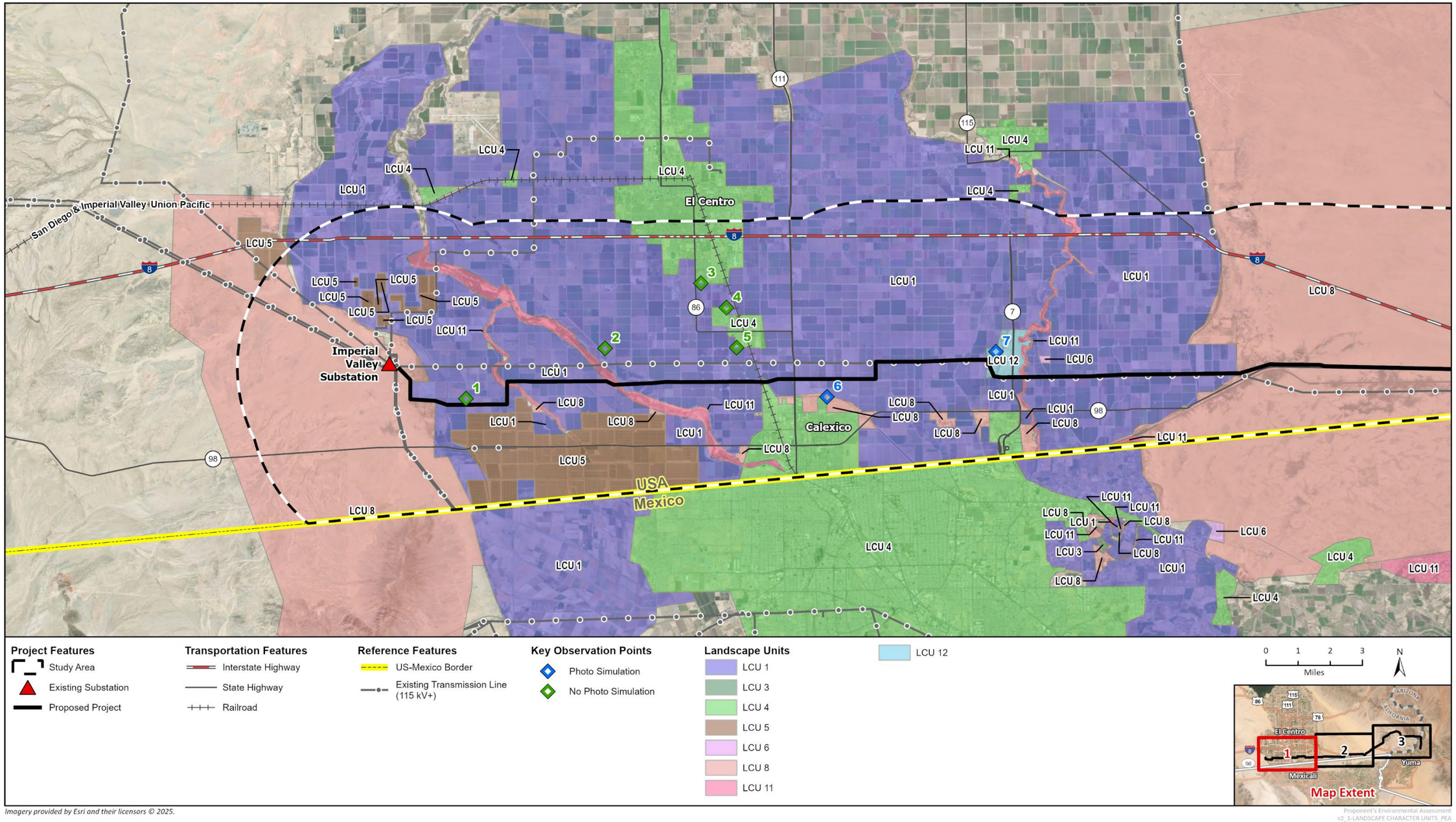
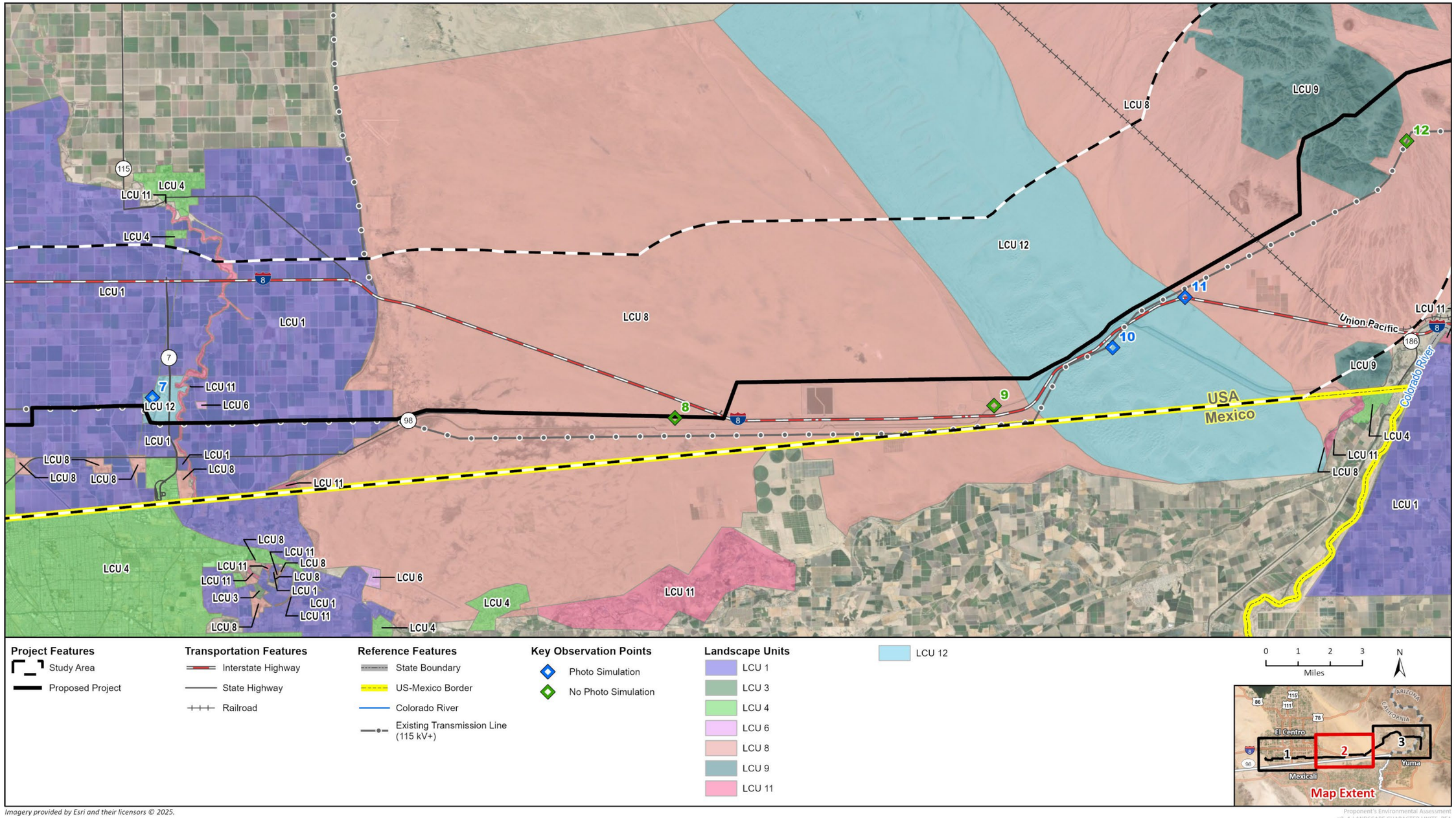


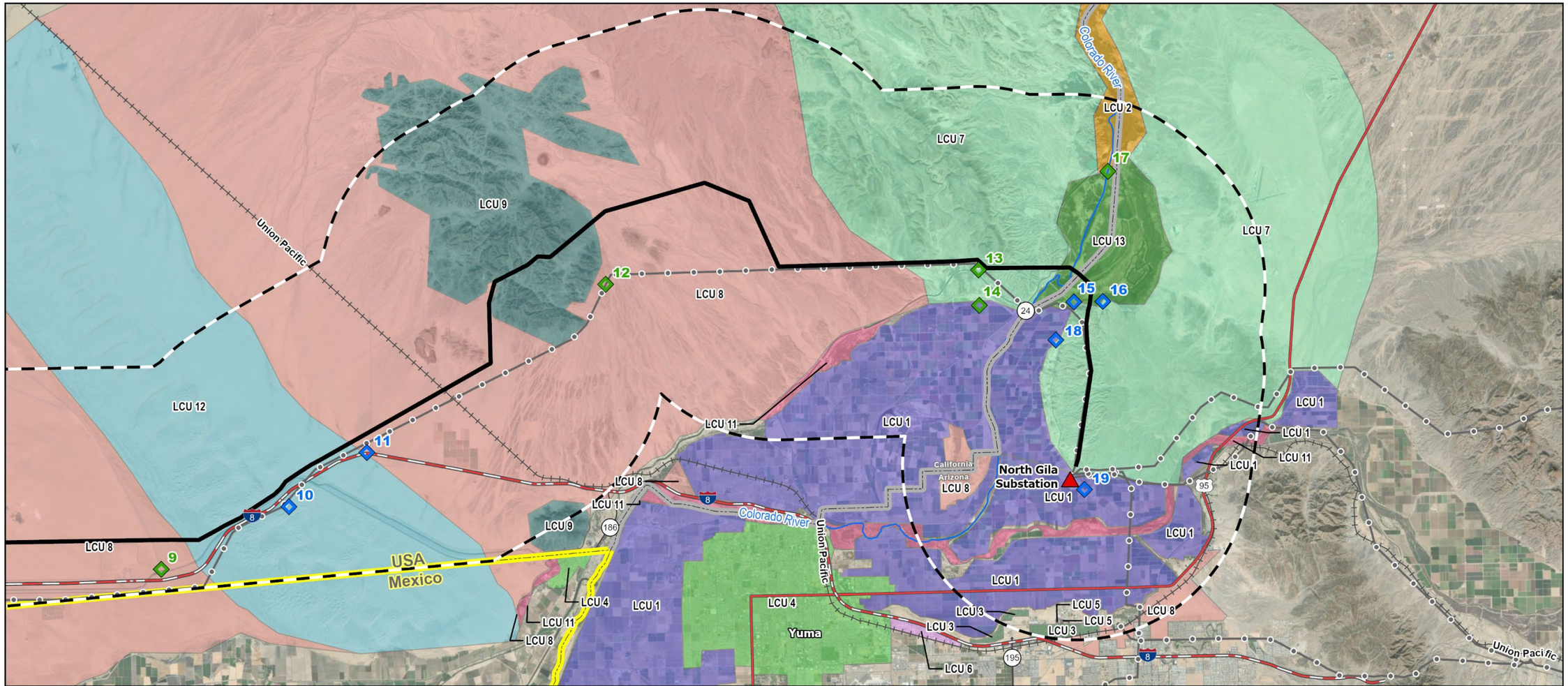
Figure 5.1-5 Landscape Character Units



Imagery provided by Esri and their licensors © 2025.

Proponent's Environmental Assessment
v2_1-LANDSCAPE CHARACTER UNITS_PEA

Figure 5.1-6 Landscape Character Units



Imagery provided by Esri and their licensors © 2025.

Proponent's Environmental Assessment
v2_1-LANDSCAPE CHARACTER UNITS_PEA

Key Observation Points

Representative viewpoints, or Key Observation Points (KOPs), were identified for the Proposed Project and reviewed and approved by the California Public Utilities Commission (CPUC) (see Figure 5.1-4 through Figure 5.1-6 for KOP locations and Figure 5.1-7 through Figure 5.1-25 for existing condition photos). These KOPs represent significant scenic and aesthetic resources, typically locations considered to hold local or regional cultural sensitivity, recreational or scenic value, or areas of intensive use such as transportation corridors, parks and recreation areas, or residential neighborhoods/districts. KOPs for the Proposed Project were chosen based on several factors to ensure they represent the most critical viewpoints for assessing visual impacts. These factors help ensure that the visual impact assessments are accurate and reflect the perspectives of those most likely to be affected by changes in the landscape, and include:

- Angle of Observation
- Number of Viewers
- Duration of View
- Sensitivity of Viewers

KOP 1 S29-Fisher Road

This high sensitivity KOP is located at the southern edge of a residential development and is representative of potentially high sensitivity viewers within an Agricultural LCU.

KOP 2 W Wahl Road East

This high sensitivity KOP is located east of Eucalyptus Canal and is representative of views from local agricultural roads within an Agricultural LCU. Irrigated agricultural cropland make up most of the surrounding area. Typical road corridor users would likely be those associated with local traffic travelling to and from Heber.

KOP 3 El Centro: W McCabe Road

This high sensitivity KOP is located east of SH 86 on the edge of a residential development and is representative of potentially high sensitivity viewers within an Agricultural LCU. The neighboring land uses in this area are mainly agricultural in nature and feature local distribution lines. This roadway serves as an important connection to SH 86 but would likely be used mainly by local traffic.

KOP 4 Heber: W Black Hills-Wild Horse Drive

This high sensitivity KOP is located on the north side of Heber on the edge of a residential development and is dominated by rural agricultural development urban residential development LCUs. The neighboring land uses in this area are mainly agricultural in nature and feature local distribution lines and transmission lines.

KOP 5 Heber: E Fawcett Dr and Heber Avenue

This high sensitivity KOP is located south side of Heber and is dominated by rural agricultural development urban residential development LCUs. The neighboring land uses in this area are mainly agricultural in nature, and the existing transmission line infrastructure is present within the viewshed.

KOP 6 Calexico: Meadows Road-Paseo Del Ocaso

This high sensitivity KOP lies on the edge of residential development on the northern edge of Calexico, CA within an Agricultural LCU. The development borders agricultural land to the south. Homes are typically single-story ranch style houses with limited landscaping outside of some scattered mature trees and shrubs. Bordering the development to the east and west is vacant land comprised of some small shrubs and grass but is mostly exposed soil.

KOP 7 Heber Dunes State Vehicular Recreation Area

KOP 7 is a high sensitivity KOP adjacent to the main staging area within the Heber Dunes State Vehicular Recreation Area, which is a popular recreation area off SH 7. Mature trees and shrubs form buffers to the east and west directing views toward the dunes and large shrubs to the south. This KOP is representative of a Sand Hills/Dunes LCU.

KOP 8 Interstate 8

This moderate sensitivity KOP is located east of the SH 98 interchange and represents views of the Desert Basin Uplands LCU. I-8 is the main throughfare connecting Yuma to eastern California and is a major access point for the region's recreational areas. A diverse array of both transmission and distribution lines are visible from the KOP and extend from the foreground to the background of the view.

KOP 8 SH 98

This moderate sensitivity KOP is located approximately 1.4 miles west of the SH 98 I-8 interchange and represents views of the Sonoran Desert LCU from a highly used travel corridor. Multiple transmission lines and a communication tower are visible from the KOP and extend from the foreground to the background of the view.

KOP 9 Dunebuggy Flats

This moderate sensitivity KOP is located along Evan Hewes Highway near Dune Buggy Flats and represents views of the Desert Basin Uplands LCU. Evan Hewes Highway is a sparsely travelled dirt road off I-8. However, this site is the main access point for Dune Buggy Flats. The KOP offers expansive views of the surrounding desert from the recreational area.

KOP 10 Buttercup Campground

This high sensitivity KOP represents views from camping and OHV recreational areas with views of the Algodones Dunes LCU. The KOP offers expansive views of the surrounding desert from the recreational area.

KOP 11 Interstate 8

This moderate sensitivity KOP at the rest area along I-8 represents views from the highest use volume travel corridor. Viewers are associated typically with non-local transient motorists but may include motorists travelling as tourists or recreationists which increases their visual sensitivity.

KOP 12 Barney Oldfield Road

This high sensitivity KOP represents views from Barney Oldfield Rd and is located north of Ft. Yuma-Quechan Reservation within a Desert Mountains LCU. Views in this area are dominated by isolated

peaks of the Cargo Muchacho mountains to the west in the immediate foreground. Scattered vegetation around the KOP is mostly sagebrush and smaller grasses. Existing transmission lines are visible to the south in the background.

KOP 13 BLM Class VRM II Area

This moderate sensitivity KOP represents views from within BLM lands in a low use area that provides offroad public lands access and use within a Class II VRM landscape.

KOP 14 11th Street

This high sensitivity KOP is located adjacent to two residences within an agricultural area of the Fort Yuma/Quechan Tribal area. Outside of 11th Street, the roads in this area are mostly dirt and unpaved but have several distribution lines running parallel to them. The only tall vegetation exists as residential landscaping surrounding the two farmhouses. The landscape setting is Agricultural LCU in the foreground and Desert Mountains in the background.

KOP 15 Betty's Kitchen Watchable Wildlife Area

This high sensitivity KOP is located southeast of the Laguna Dam Yuma Project along the Colorado River (Riparian Corridor LCU). Views from the site are partially obscured by dense vegetation resulting from the elevated water table. Existing infrastructure has been designed to replicate the textures and color palate of the surrounding vegetation and geology to minimize visual contrast.

KOP 16 Mittry Lake Recreation Area

This high sensitivity KOP is located northeast of the Mittry Lake Wildlife Area and is set within a Desert Shrub Wetlands LCU. Views to the northwest are dominated by Mittry Lake in the immediate foreground with the mountain ranges of Little Picacho Wilderness Area in the background. To the south, views are expansive with dominant vegetation being low shrubs and grasses. There is a designated camping area within the Mittry Lake Recreation Area.

KOP 17 S24/Laguna Dam Road

This high sensitivity KOP is located on the east side of Lake Mittry Wildlife Area at the edge of the United States Army Yuma Proving Ground Lake and is set within a Desert Mountains LCU. Most traffic along this route would be travelling to and from the base. Low shrublands to the east and west give way to more distant views of mature trees and distribution lines associated with the base to the east.

KOP 18 7 1/2 Road

This high sensitivity KOP is located along a local access road to Mittry Lake and represents residential views of the Proposed Project in the area. Views are dominated by generally open, partially obstructed views of desert foothills LCUs influenced by mixed used development.

KOP 19 Yuma Lakes RV Resort

This high sensitivity KOP is located near the North Gila Substation on the south end of a small pond and represents residential and recreational views of the Project. The existing condition is dominated by open, unobstructed views of Desert Foothills LCU influenced by multiple transmission line corridors that contribute to the visual character of the site and surroundings.

Figure 5.1-7 KOP 1 - S29-Fisher Road



Figure 5.1-8 KOP 2 - W Wahl East



Figure 5.1-9 KOP 3 - El Centro: W McCabe Road



Figure 5.1-10 KOP 4 - Heber: W Black Hills-Wild Horse Drive



Figure 5.1-11 KOP 5 - Heber: E Fawcett Drive and Heber Ave



Figure 5.1-12 KOP 6 - Calexico: Meadows Rd-Paseo Del Ocaso



Figure 5.1-13 KOP 7 - Heber Dunes SVRA



Figure 5.1-14 KOP 8 - SH 98



Figure 5.1-15 KOP 9 - Dunebuggy Flats



Figure 5.1-16 KOP 10 - Buttercup Campground



Figure 5.1-17 KOP 11 - Interstate 8



Figure 5.1-18 KOP 12 - Barney Oldfield Rd



Figure 5.1-19 KOP 13 - VRM CLASS II



Figure 5.1-20 KOP 14 - 11th St



Figure 5.1-21 KOP 15 - Betty's Kitchen Watchable Wildlife Area



Figure 5.1-22 KOP 16 - Mittry Lake Recreational Area



Figure 5.1-23 KOP 17 - County Highway S24 (Imperial Dam Road)



Figure 5.1-24 KOP 18 - 7 1/2 Road



Figure 5.1-25 KOP 19 - Yuma Lakes RV Resort



5.1.2 Regulatory Setting

Federal, state, and local regulations were reviewed for applicability to the Proposed Project.

5.1.2.1 Federal

Federal Land Policy and Management Act of 1976

The Federal Land Policy and Management Act of 1976 (FLPMA) (43 United States Code 1701) and the United States Department of the Interior's BLM Land Use Planning Handbook (BLM 2005) both emphasize the importance of protecting the quality of scenic resources on public lands. FLPMA sections relevant to the Proposed Project are:

- Section 102(a): "The public lands [shall] be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archaeological values."
- Section 103(c): Identifies "scenic values" as resources for public management.
- Section 201(a): "The Secretary shall prepare and maintain on a continuing basis and inventory of all public lands and their resources and other values (including...scenic values)."
- Section 505(a): "Each right-of-way shall contain terms and conditions which will...minimize damage to the scenic and esthetic values."

FLPMA's legal mandate to protect the quality of scenic resources on public lands is carried out by BLM and detailed in BLM's Visual Resource Management (VRM) system, described below.

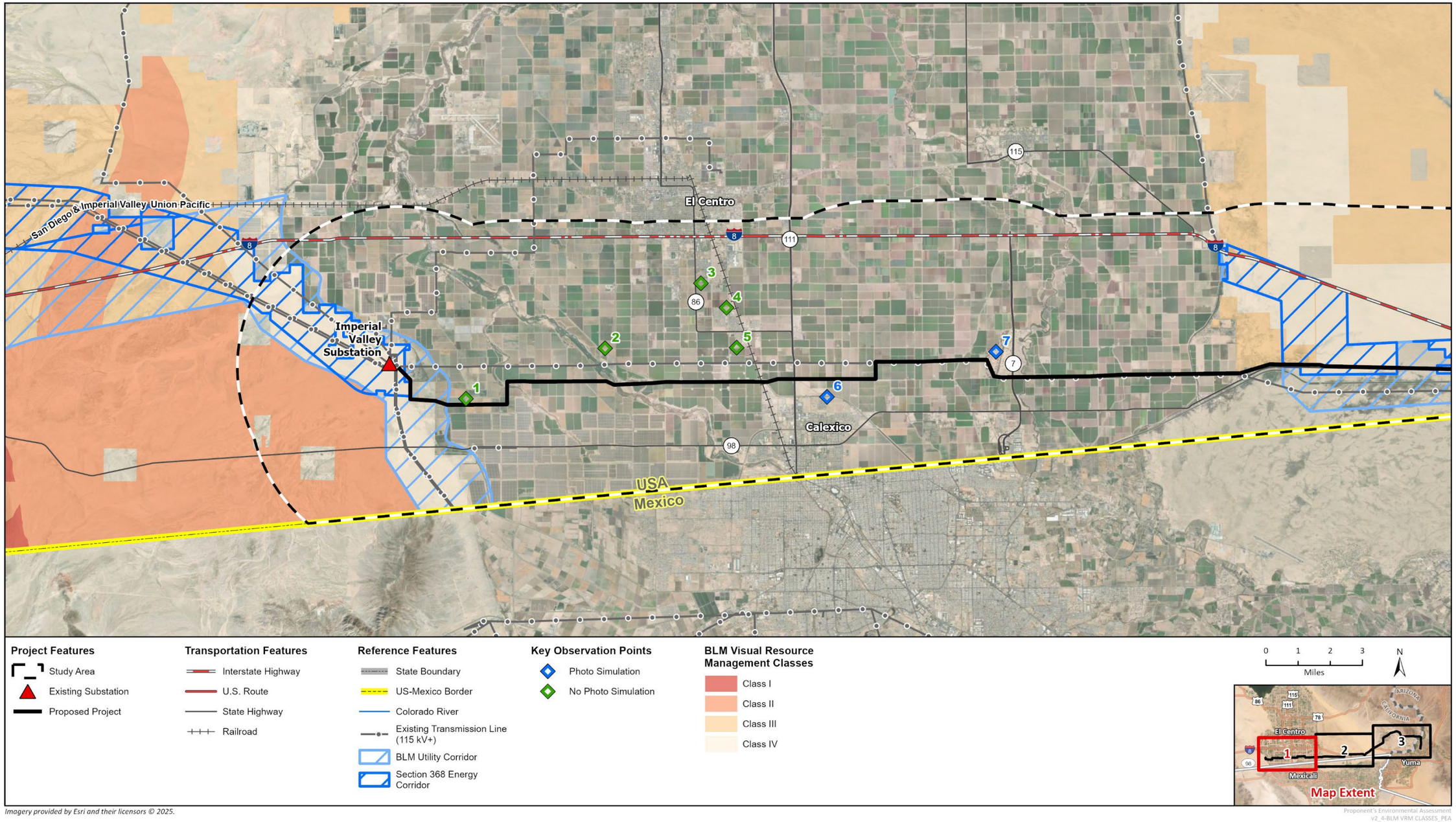
BLM Visual Resource Management System

The BLM has developed the VRM system for visual resource inventory, management, and impact assessment. VRM class objectives are designated to establish the desired future condition of the visual resource. Class designations are derived from an analysis of scenic quality (rated by landform, vegetation, water, color, influence of adjacent scenery, scarcity, and cultural modification), a determination of viewer sensitivity levels (sensitivity of people to changes in the landscape), and distance zones. Allowable uses and management actions must be planned in accordance with these desired future conditions. The VRM classes set objectives for lands in each class and describe the limits of allowable visual change in the landscape character with which proposed management activities must comply and are detailed in applicable Resource Management Plans. Management Classes describe the different degrees of modification allowed to the basic elements of the landscape (form, line, color, texture). Management classes and their corresponding goals are defined in Table 5.1-2 and are shown in Figure 5.1-26 through Figure 5.1-28.

Table 5.1-2 BLM Visual Management Classes and Goals

VRM Class	Objective	Allowed Level of Change	Example within Project Study Area
I	The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.	Low and must not attract attention (No Contrast)	Little Picacho Wilderness
II	The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be very low. Management activities may be seen but should not attract attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.	May be seen but should not attract the attention of the casual observer (Weak Contrast)	Patton Valley / Glamis Dunes
III	The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.	May attract attention but shall not dominate the view of the casual observer (Moderate Contrast)	Colorado River / West of Glamis Dunes
IV	The objective of this class is to provide for management activities that require major modifications of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repetition of the basic elements.	May dominate the view and be major source of focus but should be minimized (Strong Contrast)	Winterhaven / Yuma

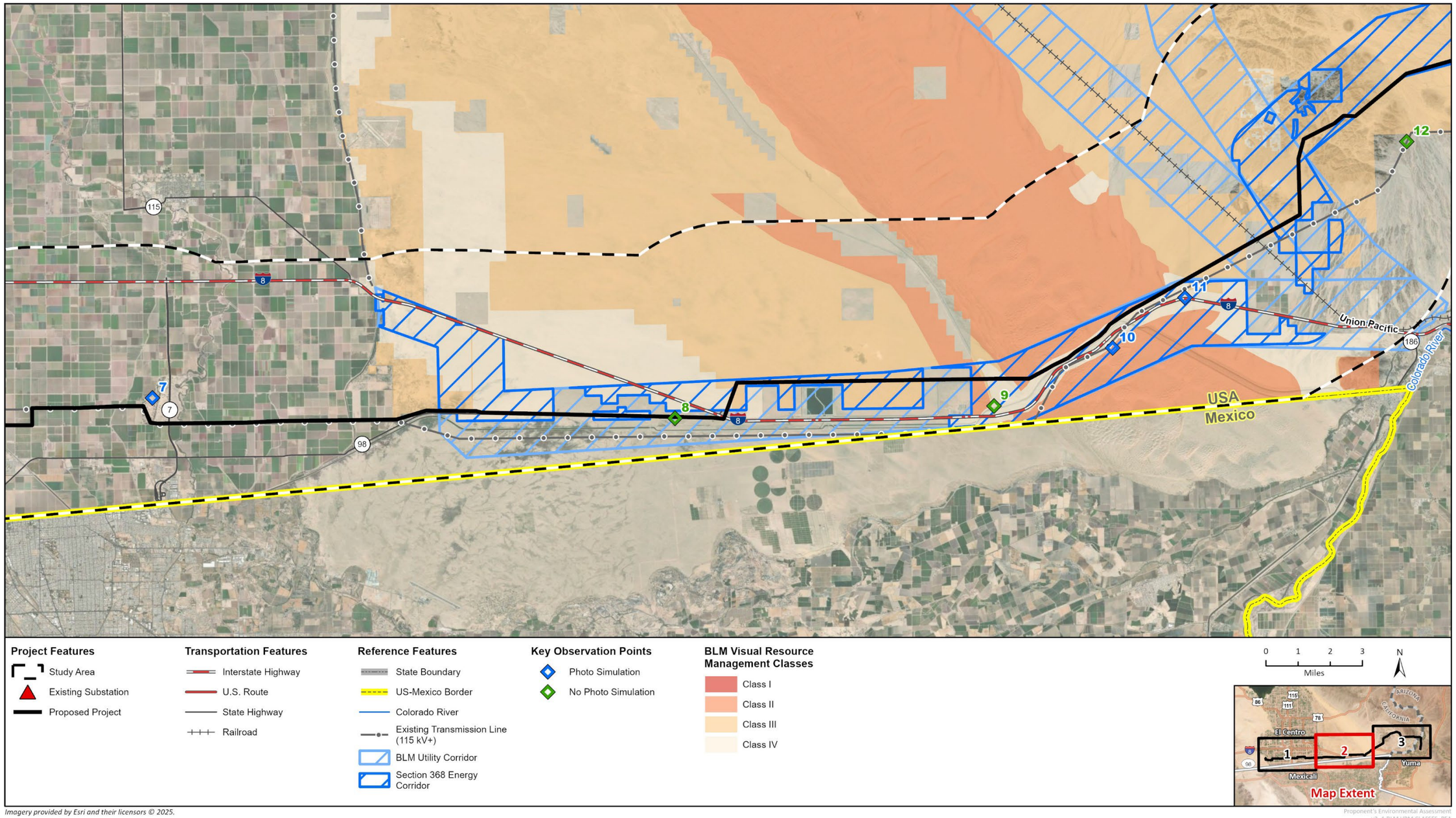
Figure 5.1-26 BLM VRM Classes in Project Study Area



Imagery provided by Esri and their licensors © 2025.

Proponent's Environmental Assessment
v2_4-BLM VRM CLASSES_PEA

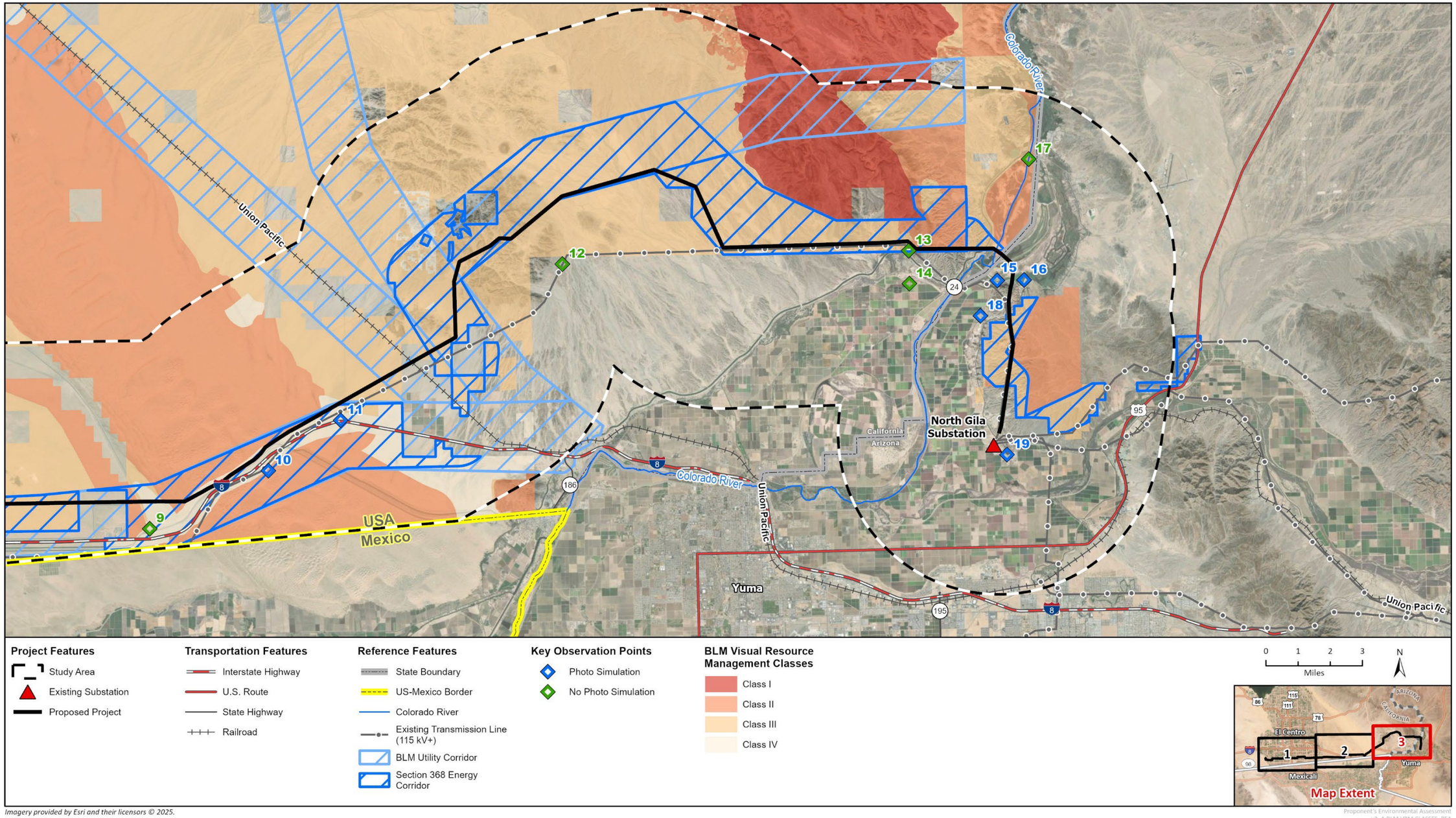
Figure 5.1-27 BLM VRM Classes in Project Study Area



Imagery provided by Esri and their licensors © 2025.

Proponent's Environmental Assessment
V2_4-BLM VRM CLASSES_PEA

Figure 5.1-28 BLM VRM Classes in Project Study Area



Imagery provided by Esri and their licensors © 2025.

Proponent's Environmental Assessment
V2_4-BLM VRM CLASSES_PEA

As detailed in Section 5.11, Land Use, the Proposed Project area includes lands managed by the BLM, Reclamation, Department of Defense, States of California and Arizona, Imperial County, Yuma County SVRA, Yuma, Heber, and private parties. The entirety of the Proposed Project in California is located within the BLM-managed California Desert Conservation Area (CDCA) and is covered by the California Desert Conservation Area Plan, Desert Renewable Energy Conservation Plan (DRECP), Imperial Sand Dunes Recreation Area Management Plan (Imperial Sand Dunes Recreation Area Management Plan [RAMP]), and Northern and Eastern Colorado Desert Coordinated Management Plan (NECO CMP). A small portion of the Proposed Project within Arizona is managed under the Yuma Field Office Resource Management Plan (RMP). Portions of the Proposed Project within the CDCA and DRECP also include private and municipal lands. A significant portion of the Proposed Project area is managed by the BLM.

The following subsections include potential requirements associated with aesthetic, scenic and visual resource-related goals, objectives, stipulations, and management actions identified in BLM RMPs or land management plans (LMP).

California Desert Conservation Area, Land Management Plan

Management goals for visual resources in the Proposed Project area are established by the CDCA Plan's Recreation Element. The BLM will take the following actions to effectively manage for natural character alteration activities:

1. The appropriate levels of management, protection, and rehabilitation on all public lands in the CDCA will be identified, commensurate with VRM objectives in the multiple-use class guidelines.
2. Proposed activities will be evaluated to determine the extent of change created in any given landscape and to specify appropriate design or mitigation measures using the BLM's contrast rating process.

Desert Renewable Energy Conservation Plan, Land Use Plan Amendment

The DRECP Land Use Plan Amendment (LUPA) identifies a comprehensive suite of required Conservation and Management Actions (CMAs) to avoid, minimize, and/or mitigate adverse impacts on visual resources. Potentially relevant CMAs associated with visual, scenic and aesthetic resources in the LUPA, California Desert National Conservation Lands, General Public Lands, and Development Focus Areas (DFA) were identified and include:

LUPA-WIDE CMAS

LUPA-VRM-3: Ensure that transmission facilities are designed and located to meet the VRM Class objectives for the area in which they are located. New transmission lines routed through designated corridors where they do not meet VRM Class Objectives will require RMP amendments to establish a conforming VRM Objective. All reasonable effort must be made to reduce visual contrast of these facilities in order to meet the VRM Class before pursuing RMP amendments. This includes changes in routing, using lattice towers (vs. monopole), color treating facilities using an approved color from the BLM Environmental Color Chart CC-001 (dated June 2008, as updated on April 2014, or the most recent version) (vs. galvanized) on towers and support facilities, and employing other Best Management Practices (BMP) to reduce contrast. Such efforts will be retained even if an RMP amendment is determined to be needed. Visual Resource BMPs that reduce adverse visual contrast will be applied in VRM Class conforming situations. For a reference of BMPs for reducing visual impacts see the "Best Management Practices for Reducing Visual Impacts of Renewable Energy

Facilities on BLM-Administered Lands" or the most recent version of the document or BMPs for VRM, as determined by BLM.

California Desert National Conservation Lands CMAs

NLCS-NSHT-15: Mitigation Requirements – If there is overlap between a National Scenic or Historic Trail, National Trail Management Corridor on BLM land, or trail under study for possible designation and a DFA, BLM Manual 6280 must be followed. Efforts will be made to avoid conflicting activities and approved activities will be subject to mitigation for adverse impacts to the resources, qualities, values, settings, and primary use or uses (RQVs), including, but not limited to, the following: avoidance, the cost of trail relocation, on-site mitigation and off-site mitigation. Compensation can include acquisition or restoration of corridor RQVs, features and landscapes will be at a minimum of 2:1, and must result in a net benefit to the overall trail corridor. Proposed development of high potential route segments must not substantially interfere with the nature and purposes of the National Scenic or Historic Trail.

General Public Lands CMAs

GPL-VRM-1: Development in General Public Lands (GPL) is required to incorporate visual design standards and include the best available, most recent BMPs, as determined by BLM (e.g. solar, wind, West Wide Energy Corridor, and geothermal programmatic EISs, the BMPs for Reducing Visual Impacts of Renewable Energy Facilities on BLM-Administered Lands, and other programmatic BMP documents).

GPL-VRM-2: Required Visual Resource BMPs. All development will abide by the BMPs addressed in the most recent version of the document "Reducing Visual Impacts of Renewable Energy Facilities on BLM-Administered Lands" or its replacement, including, but not limited to the following:

Transmission:

- Color-treat monopoles Shadow Gray per the BLM Environmental Color Chart CC001 unless a more effective color choice is selected by the local Field Office VRM specialist.
- Lattice towers and conductors will have non-specular qualities.
- Lattice towers will be located a minimum of 0.75 miles away from KOPs such as roads, scenic overlooks, trails, campgrounds, navigable rivers and other areas people tend to congregate and located against a landscape backdrop when topography allows.
- Night Sky – BMPs to minimize impacts to night sky including light shielding will be employed.

GPL-VRM-3: Regional mitigation is required for visual impacts in GPLs. Mitigation will be based on the VRI class and the underlying visual values (scenic quality, sensitivity, and distance zone) for the development area as it stands at the time the Record of Decision (ROD) is signed for the DRECP. Compensation may involve reclamation of visual impacts that are present within other areas designated as BLM VRM Class I or II lands (so that they are no longer visible in the long term), mitigation on BLM lands inventoried as having equal to or greater visual resource values, or amending RMP for lands located within VRM Class III or IV to a higher level of protection (VRM Class I or II) for areas that are visually intact with no cultural modifications and have visual resource inventoried values that are equal to or greater in value and place a protective Visual ACEC delineation around the compensatory mitigated area. The following mitigation ratios will be applied:

- VRI Class II 2:1 ratio
- VRI Class III 1:1 ratio
- VRI Class IV no mitigation required

Additional mitigation will be required where projects affect viewsheds of specially designated areas (e.g., National Scenic and Historic Trails).

Development Focus Areas CMAs

DFA-VRM-2: Regional mitigation for visual impacts is required in DFAs. Mitigation will be based on the VRI class and the underlying visual values (scenic quality, sensitivity, and distance zone) for the activity area as it stands at the time the ROD is signed for the DRECP LUPA. Compensatory mitigation may take the form of reclamation of other BLM lands to maintain (neutral) or enhance (beneficial) visual values on VRI Class II and III lands. Other considerations may include acquisition of conservation easements to protect and sustain visual quality within the viewshed of BLM lands. The following mitigation ratios will be applied in DFAs:

- VRI Class II 1:1 ratio
- VRI Class III ½ (0.5):1 ratio
- VRI Class IV, no mitigation required

Additional mitigation will be required where activities affect viewsheds of specially designated areas (e.g., National Scenic and Historic Trails).

Another critically important element of the BMPs is the requirement for development and implementation of a Visual Resource Impact Monitoring and Mitigation Compliance Plan. This plan is a detailed, project-specific document that will be prepared and submitted for approval at the onset of the project planning process, prior to individual project approval, to serve as a guide to siting and design.

Northern and Eastern Colorado Desert Coordinated Management Plan

The NECO CMP does not include specific regulations or standards pertaining to visual resources. Appendix E of the NECO CMP identifies peripheral provisions for the rehabilitation and restoration of disturbed areas that would potentially affect scenic quality.

Imperial Sand Dunes Recreation Area Management Plan

The El Centro Field Office designated VRM classes for the Imperial Sand Dunes RAMP. In addition to the requirement for VRM compliance with established VRM Classes, relevant management actions identified in the RAMP include:

VRM-02 Incorporate design considerations to minimize potential impacts to public lands' visual values into all surface-disturbing activities, regardless of size. Proponents will be encouraged to meet with the BLM personnel to discuss and provide input during the initial planning and design phase to minimize costly redesign and mitigation at a later time.

VRM-04 Use visual resource design techniques and BMPs to mitigate the potential for short- and long-term visual impacts from other uses and activities until demonstrated to meet the VRM class objectives.

Yuma Resource Management Plan

The Yuma RMP identifies Desired Future Conditions, Management Actions and Administrative Actions typically associated with the establishment of VRM Classes. Other potentially relevant conditions and actions include:

VR-007: Maintain viewsheds of important cultural resources whose settings contribute significantly to their scientific, public, traditional, or conservation values (Desired Future Condition).

VR-012: Within lands being managed to maintain wilderness characteristics, decrease the visual effect of existing facilities on naturalness or scenic resources during reconstruction, replacement, or major maintenance (Management Action).

VR-014: All rights-of-way (ROWs) meet VRM objectives and mitigation measures stipulated in the authorization (Management Action).

AA-241: Incorporate design considerations to minimize potential impacts to public lands' visual values into all BLM-authorized surface disturbing activities, regardless of size. Emphasis will be on BLM providing input during the initial planning and design phase to minimize costly redesign and mitigation at a later time (Administrative Action).

AA-242: Analyze all surface-disturbing projects that require BLM authorization according to the Visual Resource Contrast Rating guidelines and procedures as required by BLM Manual 8431-1. Assess the degree of visual contrast to the landscape's form, line, color, and texture from implementing these projects (Administrative Action).

AA-243: Evaluate proposed surface-disturbing projects from KOPs for the following factors: distance (between Project and KOPs), angle of observation, length of time the Proposed Project will be in view, relative size or scale, season of use, light conditions, recovery time, spatial relationships, atmospheric conditions, and motion (Administrative Action).

AA-244: Use visual resource design techniques and BMPs (summarized in the RMP) to mitigate the potential for short- and long-term visual impacts from other uses and activities (Administrative Action).

AA-245: Encourage visual resource simulations to be incorporated into the Contrast Rating Analysis for major BLM-authorized ground-disturbing activities, as recommended by BLM Manual 8431-1. Simulations will accurately convey to the public the anticipated impacts to visual scenery of the Project Area from the identified KOPs. Simulations would also serve as a point of reference to ensure that the project proponents reclaim and restore disturbed public lands as agreed to in the authorizing document (Administrative Action).

AA-246: Since the overall VRM goal is to minimize impacts to the scenic values of the public lands, mitigation measures are typically developed during Project-specific National Environmental Policy Act (NEPA) analysis. During and after Project implementation, these measures will be monitored by the BLM for their effectiveness at reducing impacts to scenic values (Administrative Action).

Best Management Practices for Reducing Visual Impact of Renewable Energy Facilities on BLM-Administered Lands

In the *BMPs for Reducing Visual Impact of Renewable Energy Facilities on BLM-Administered Lands* (BLM 2013), the BLM presents 122 BMP recommendations and guidance to avoid or reduce potential visual impacts associated with the siting, design, construction, operation, and decommissioning of utility-scale renewable energy generation facilities, including wind, solar, and

geothermal facilities as well as ancillary components, such as electric transmission structures and access. Selection of structure types and selection of appropriate materials and surface treatments are among the pertinent BMPs outlined in this document to minimize potential visual effects and contrast associated with transmission facilities.

Other Federal Agencies

Reclamation and BIA also manage lands within the vicinity of the Proposed Project. Both of these agencies are required under NEPA to evaluate scenic resources and visual impacts of federal actions affecting lands they administer. Neither of these agencies have specific regulations, guidance documents, or procedures on how to conduct visual and aesthetic resource impact analysis for NEPA compliance.

5.1.2.2 State

California Department of Transportation: Scenic Highway Program

The State Scenic Highway Program—a provision of Sections 260 through 263 of the Streets and Highways Code—was established by the Legislature in 1963 to preserve and enhance the natural beauty of California through special conservation treatment. The State Scenic Highway System includes both designated scenic highways and "eligible" scenic highways. The status of a State Scenic Highway changes from "eligible" to "officially designated" when the local jurisdiction adopts a scenic corridor protection program, applies to Caltrans for scenic highway approval, and receives the designation from Caltrans. A city or county may propose adding routes with outstanding scenic elements to the list of eligible highways. However, state legislation is required. No California-designated state scenic highways are located in the vicinity of the Proposed Project alignment.

Arizona Department of Transportation: Scenic Highway Program

The Arizona Scenic Highways Program was established under Arizona Revised Statutes 41-512 through ARS 41-518 in 1982. These laws created the framework for the state's Parkways, Historic and Scenic Roads Program, which is administered by the Arizona Department of Transportation (AZDOT 2024). No Arizona-designated state scenic highways are located in the vicinity of the Proposed Project alignment.

5.1.2.3 Local

The CPUC has sole and exclusive state jurisdiction over the siting and design of the Proposed Project in California. Pursuant to CPUC General Order 131-E, Section XI.B:

"Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the Commission's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters."

Consequently, local agencies do not have jurisdiction over the Proposed Project, but public utilities must consult with local agencies and consider their regulations.

Arizona Corporation Commission's Arizona Power Plant and Transmission Line Siting Committee has state jurisdiction over the Proposed Project. This committee may approve or deny a Certificate of Environmental Compatibility application and impose reasonable conditions. However, pursuant to Arizona Revised Statutes Section 40-360.06(D):

"Any certificate granted by the committee shall be conditioned on compliance by the applicant with all applicable ordinances, master plans and regulations of the state, a county or an incorporated city or town, except that the committee may grant a certificate notwithstanding any such ordinance, master plan or regulation, exclusive of franchises, if the committee finds as a fact that compliance with such ordinance, master plan or regulation is unreasonably restrictive and compliance therewith is not feasible in view of technology available."

As this PEA is being prepared for the CPUC, the following discussion of local land use regulations in California and Arizona is provided for informational purposes only.

Imperial County General Plan

Within the Imperial County General Plan (Imperial County 1993), preservation of scenic highways and the visual resources within highway corridors is stated as one of the county's main priorities. The Circulation and Scenic Highways Element of the general plan states the goal for scenic highways is to "make every effort to develop a circulation system that highlights and preserves the environmental and scenic amenities of the area". One of these objectives is to design new facilities and infrastructure to merge with the surrounding environment. Outside of designated scenic highways the county states, "Objective 1.16 Design transportation corridors to be co-located/joint use (within the ROW) with transmission, water and other infrastructure corridors to the extent possible."

The Imperial County General Plan includes policies which aim to protect and conserve scenic resources and open spaces within Imperial County. The Conservation and Open Space Element and the Land Use Element provide goals and objectives for protecting and maintaining the aesthetic character of the County. The following policies are related to aesthetics and glare:

Conservation and Open Space Element-Goal 7: The aesthetic character of the region shall be protected and enhanced to provide a pleasing environment for residential, commercial, recreational, and tourist activity.

Land Use Element - Objective 3.4: Protect/improve the aesthetics of Imperial County and its communities.

Circulation and Scenic Highways Element - Policy 9 (b): The County shall emphasize protection of scenic highway resources in all County actions affecting land use.

Yuma County 2030 Comprehensive Plan

The Yuma County 2030 Comprehensive Plan Open Space Policies and Priorities detail preservation of scenic and aesthetic resources, including the following relevant to the Proposed Project:

OSPP.2: Yuma County will work to preserve mountainous areas such as the Gila, Mohawk, Laguna and Muggins Mountains and riparian areas along the Colorado and Gila Rivers as the open space areas most valued by Yuma County residents.

Imperial County Code

Light glare zoning regulations established under Imperial County Code apply to building signage and billboard lighting.

Yuma County Zoning Ordinance

Yuma County has specific regulations regarding light and glare that are outlined in the Yuma County Zoning Ordinance, Article 18 - Outdoor Lighting Regulations. Outdoor lighting must be shielded and directed downward to minimize glare and light trespass onto adjacent properties. The intensity of outdoor lighting is regulated to ensure it does not exceed specified levels that could cause discomfort or hazards.

5.1.3 Impact Questions

5.1.3.1 Aesthetics Impact Questions

The significant criteria for assessing the impacts to aesthetics come from the California Environmental Quality Act (CEQA) Environmental Checklist. For aesthetics, the CEQA Checklist asks, would the project:

- Have a substantial adverse effect on a scenic vista?
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?
- In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings (public views are those that are experienced from publicly accessible vantage points)? If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

5.1.3.2 Additional CEQA Impact Questions

There are no CPUC-identified additional CEQA impact questions.

5.1.4 Impact Analysis

5.1.4.1 Aesthetics Methodology

Photography and Visual Simulation Methodology

Photography was collected for use in the aesthetics assessment and to create photo simulations using a digital single-lens reflex camera with a 50-millimeter (mm) lens to accurately represent the human eye. Photos were taken at normal eye-height (approximately five feet) and typically cover an approximately 180-degree field-of-view (approximately 40 degrees per photo); a subset of these 180-degree photo set for each KOP, typically covering two or three photos that are stitched together, were used for each photo simulation. From each photo point, which corresponds with an associated KOP, the following conditions were noted:

- GPS coordinates (latitude/longitude)
- Camera – Full frame Canon 5D Mark III or IV digital camera.
- Date, Time of Day (Hour/Minutes) – Determines color of sunlight, shadow location, and irradiance levels.
- Atmospheric conditions – haze and light diffusion have an impact on contrast at distance.
- Lens length used.

After the photography collection, representative photography from each KOP was compiled into a photo KMZ for CPUC review of photography and locations. Upon approval of the photo simulation location, an existing conditions three-dimensional (3D) model of the viewed area including terrain and structures was developed. The existing conditions models are used in the 3D photo registration process.

Once the 3D existing conditions model has been developed using the best available contour elevation data, LiDAR data and GPS data is imported into the 3D model and checked for spatial accuracy. All photos carried forward for photo simulation development are registered into a 3D modeling program. Virtual Cameras are aligned with the field camera using GPS, compass heading, and horizontal angle information. Accuracy is further refined by importing and aligning the existing 3D model information into the 3D Program and ensuring it aligns exactly with the photographic background. Atmospheric data is then imported into the 3D Software to develop a sun and atmospheric system that matches the photography.

All information is imported into the 3D existing conditions model and checked for accuracy. 3D materials (i.e., surface model, Corten steel, galvanized or wood for transmission lines), and associated specular reflectance information are applied to the proposed 3D information. After all information has been properly aligned, atmospherics checked, and materials applied, the 3D information is “rendered” over the top of the 2D photography. The result is a new 3D image with an alpha channel allowing existing and proposed information to be separated into different layers.

Adobe Photoshop is used in the last step of the imaging process. Foreground screening elements such as trees, structures, etc. are extracted and placed on separate layers. Proposed transmission line information is placed on separate layers, and background information is placed on its own layers. Separation of layers is an important step, as it allows for fine-tune adjustments to color, grain, and depth of field, atmospheric conditions, and contrast. Once all elements have been correctly adjusted and masking elements corrected, all layers are merged into one single photo simulation. An existing and proposed layouts board, showing both images side by side in a PDF form, is developed. These board layouts are incorporated into the visual analysis.

Impact Analysis Methodology

For consistency in analysis across jurisdictions, the aesthetic impact approach closely follows the procedures identified in the BLM’s VRM system as detailed in the Inventory Manual H8410-1, Management Manual 8400, and Contrast Rating Manual 8431-1 with modifications appropriate to the Proposed Project. Lands not under the jurisdiction of the BLM were evaluated in the context of CEQA Aesthetics significance thresholds using Contrast Rating Manual 8431-1 criteria. On BLM land, the methodology focuses on conformance with VRM classes utilizing Contrast Rating Manual 8431-1. The use of a single baseline methodology allows a consistent and equal level of analysis across all jurisdictions.

Visual impacts were determined from each KOP and sensitive viewpoint by combining visual sensitivity with Proposed Project contrast and distance, and were correlated with CEQA significance thresholds. Contrasts are based on differences between existing and proposed form, line, color and texture of landform, vegetation and structural elements of the landscape as noted on the KOP inventory form, and impacts are determined based on how those differences affect scenic resources and visual character. Also, an evaluation of consistency with the existing city and county land use plans was conducted. Potential applicant proposed measures (APMs) were identified to minimize impacts on aesthetic resources from sensitive areas. Visibility is dependent on the height and structure types of the typical transmission line with respect to the surrounding landscape. Distance

zones were used to assess Proposed Project impacts on viewers and to quantify high-moderate-low impact miles on viewers. Degrees of change/contrast ranges from strong to moderate to weak (or some transitional contrast), as defined below:

- Strong – contrast attracts attention and strongly dominates the landscape
- Moderate – contrast attracts attention but is co-dominant in the landscape
- Weak – contrast can be seen but is subordinate in the landscape

For initial impacts on viewers, impacts were based on Proposed Project visibility and location within a specified distance zone (e.g. high sensitivity viewer and Project in middleground with strong contrasts) and viewing condition variables. Visibility was determined through primary observation (KOP field reconnaissance). To aid in determining CEQA impact significance, visual sensitivity and Proposed Project contrast were used (see Table 5.1-1 through Table 5.1-9). Proposed Project contrast is based on the BLM Contrast Rating methodology (BLM 1986a).

An impact model as described below was used to determine initial impacts. Impacts were evaluated on compatibility with developed LCUs, sensitive viewers, and agency management objectives based on Project contrast, visibility and distance, viewing variables, and the implementation of APMs (see Section 5.1.5).

This method evaluates anticipated vegetation, landform (landscape) and structure contrast levels based on land cover data and vegetation visual characteristics, slope, clearing and grading requirements, the presence of existing infrastructure, anticipated access road construction requirements, and Proposed Project design and engineering characteristics. These contrasts are compared against visibility and distance (zones) using Project-level distance zones, viewing location sensitivity levels, inherent scenic quality, and agency visual management classes.

Landscape contrast was determined by combining vegetation groups based on LandFire Existing Vegetation Cover (United States Department of Agriculture 2025) data with Project slope as determined along the assumed centerlines. Table 5.1-3 summarizes the vegetation groupings based on a hierarchy of expected visual contrast where vegetation clearing would produce changes in the landscape. For example, removal of Group 1 vegetation or cover (e.g., grassland dominated, developed) would be expected to cause moderate to weak vegetation contrasts due to the low growing, uniform, fine textured visual attributes associated with the cover group that would likely cause weaker levels of contrast when disturbed. Conversely, strong-to-moderate vegetation contrasts would be expected where visually complex, course-textured, dominant-overstory vegetation removal necessary as a result of Project construction would likely contrast with adjacent intact areas after construction. When combined with the potential grading necessary in steeper slope areas, Landscape Contrasts (Table 5.1-4) can be predicted.

Table 5.1-3 Vegetation Groups-Impact Model

Group	Vegetation/Cover Type[1]
1	Agriculture
2	Barren; sand dune; developed; water
3	Shrub (e.g., Desert Scrub; Desert Wash)
4	Overstory Woodland/Forest

[1] Based on LandFire Existing Vegetation Cover (United States Department of Agriculture 2025)

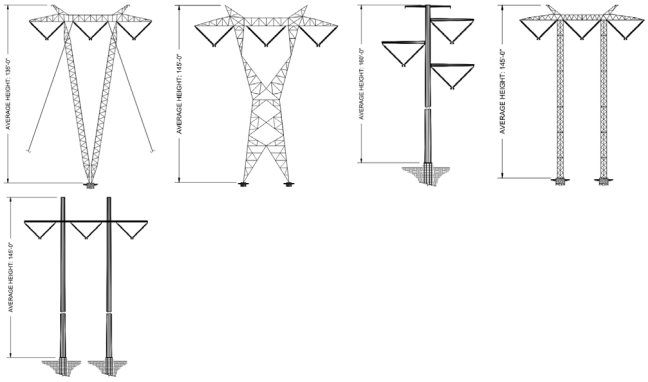
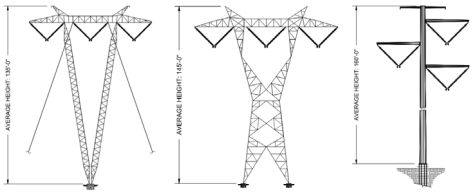
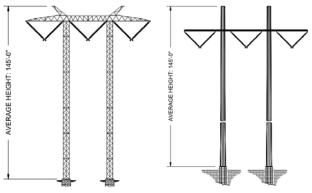
Table 5.1-4 Landscape Contrast-Impact Model

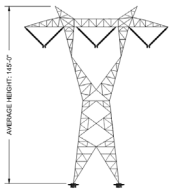
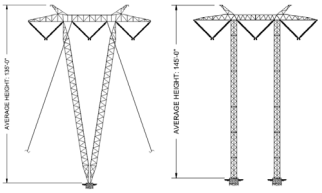
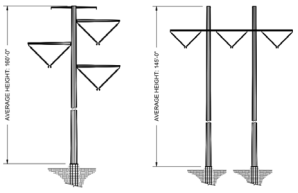
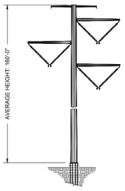
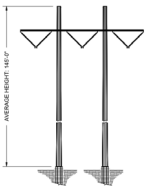
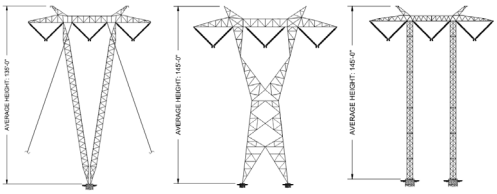
Vegetation Group	Slope			
	0 to 9.99%	10% to 19.99%	20% to 34.99%	35%+
1-Agriculture	*W*	*W*	*W*	*W*
2-Barren; sand dune; developed; water	*W*	*W*	*WM*	*WM*
3-Shrub (e.g., Desert Scrub; Desert Wash)	*M*	*M*	*MS*	*S*
4-Overstory Woodland/Forest	*S*	*S*	*S*	*S*

S= strong; MS=moderate-strong; M=moderate; WM=weak moderate; W=weak

Structure contrast is determined as shown in Table 5.1-5 and is assigned along the centerline. Strong structure contrasts are expected wherever 500-kV guyed-V lattice or other proposed structures are introduced in a landscape that has no similar feature. Conversely, the introduction of a 500-kV guyed-V lattice or other proposed structure that parallels a similar existing transmission line or feature would cause weaker contrasts than those described above. The Landscape Contrasts are combined with Structure Contrasts to determine Overall Project contrasts (Table 5.1-6).

Table 5.1-5 Structure Contrast-Impact Model

Existing Corridor (Parallelled Within 1,200 feet [typ. Span])	Proposed Structure	Structure Contrast
A No existing transmission		S
B Existing 161 kV (H-Frame) 		S
		M

Existing Corridor (Paralleled Within 1,200 feet [typ. Span])	Proposed Structure	Structure Contrast
C Existing 500 kV (Lattice) 		W
		WM
		MS
D Existing 500 kV (Monopole) 		W
		M
		MS

S=Strong; MS=Moderate-Strong; M=Moderate; WM=Weak-Moderate; W=Weak

Table 5.1-6 Overall Project Contrast-Impact Model

	Landscape Contrast				
Structure Contrast	**Weak**	**Weak-Moderate**	**Moderate**	**Moderate-Strong**	**Strong**
Weak	*W*	*WM*	*M*	*MS*	*S*
Weak-Moderate	*WM*	*WM*	*M*	*MS*	*S*
Moderate	*M*	*M*	*M*	*MS*	*S*
Moderate-Strong	*MS*	*MS*	*MS*	*MS*	*S*
Strong	*S*	*S*	*S*	*S*	*S*

[1] Potentially reduced to Less than significant with mitigation.
[2] Not likely to be reduced to less than significant with mitigation.

Consistent with Manual H-8410-1 (BLM 1986b), landscapes are subdivided into three distance zones based on relative visibility from KOPs. The three distance zones are foreground-middleground (0 to 5.0 miles), background (5.0 to 15 miles), and seldom seen (greater than 15 miles) distance zone utilized by the BLM are used to establish VRI and VRM Classes for managed lands.

Project-specific distance zones were developed to quantify visibility specifically associated with the Proposed Project (i.e., 500-kV transmission lines and associated access roads). Project-level distance zones were developed based on existing, similarly scaled facilities in comparable landscapes and a review of agency-approved (BLM) visual resource assessments relating to 500-kV facilities.

For the Proposed Project, the following distance zone were established:

- 0 to 1,000 feet: Immediate Foreground (IFG)
- 1,000 feet to 0.5 mile: Foreground (FG)
- 0.5 miles to 2.0 miles: Middleground (MG)
- Beyond 2.0 miles: Background (BG)

When combined with sensitivity level (high and moderate) and visibility based on Project-specific distance zone or LCU, Project contrast determined initial impacts along the modified route centerline. Table 5.1-7 shows the initial impact level of the transmission line for high-concern viewers and Table 5.1-8 shows the initial impact level for moderate-concern viewers. Table 5.1-9 provides the anticipated initial impact levels on LCUs relative to Project contrast level. For example, moderate-strong Project contrast seen in the foreground would yield a moderate-high impact for high sensitivity viewers, but the same contrasts viewed at the same distance for moderate concern viewers would yield a slightly lower moderate initial impact.

Potential impacts (low, moderate, or high) were recorded into a data table in 0.1-mile increments along the length of the Proposed Project alignment (see Figure 5.1-48 through Figure 5.1-50). The assigned impact levels were determined by evaluation of the results for scenic values, residential, and sensitive viewpoints. Other variables or impact modifiers, such as viewer orientation, Project location in relation to the viewer, and nature of development context, were also evaluated to obtain the overall impact levels. Where appropriate, impact modifiers and APMs were recognized and also incorporated to reflect final impact levels; impact modifiers and APMs were not assumed to be effective in the immediate foreground from moderate and high sensitivity viewers. Modifiers that were considered to reduce impact levels (from H to MH, MH to M, M to ML, and ML to L) under the following conditions include: views that are fully or partially obscured by buildings and/or structures; views that are oriented away from the Project; use levels or view expectations that are

consistently very low; the development context (commercial, industrial, infrastructure, etc.) is compatible with the Project and not degrading.

Impact levels are defined as high, moderate, or low. Significant impacts related to visual resources would be the result of high impacts from the Proposed Project that cannot be mitigated effectively. For this analysis, impacts also may be categorized as an intermediate value between high/moderate, and moderate/low (e.g., moderate-high, moderate-low) depending on sensitivity, visibility, and Project contrast. Impact levels are defined as follows:

High Impact/Potentially Significant Impact – High impacts would occur as a result of strong Project contrasts being viewed in the immediate foreground or foreground of high and moderate sensitivity viewers, and strong contrasts seen in the middleground of high sensitivity viewers. High impacts would also occur as a result of strong-moderate Project contrasts being seen in the immediate foreground or foreground of high sensitivity viewers, and in the immediate foreground of moderate sensitivity viewers. High impacts would also result from moderate contrasts being seen in the middleground by high sensitivity viewers

Moderate Impact/Adverse but Less Than Significant – Moderate impacts would also occur as a result of strong contrasts being seen in the background of high sensitivity viewers, or in the middleground or background of moderate sensitivity viewers.

Low Impact/Not Significant – Low impacts would result from weak contrasts being viewed in the foreground of high sensitivity viewers, or in the immediate foreground of moderate sensitivity viewers.

Table 5.1-7 Guidelines for Initially Determining Significance-High Sensitivity

	Project Contrast				
Project Distance Zone	**Weak**	**Weak-Moderate**	**Moderate**	**Moderate-Strong**	**Strong**
Immediate Foreground (IFG) 0 to 999 feet	Low-Moderate Impact/Not Significant	Moderate Impact/Adverse but Less than Significant	Moderate-High Impact/Potentially Significant	High Impact/Significant[1]	High Impact/Significant[2]
Foreground (FG) (1,000 feet to 0.499 mile)	Low Impact/Not Significant	Low-Moderate Impact/Not Significant	Moderate Impact/Adverse but Less than Significant	Moderate-High Impact/Potentially Significant	High Impact/Significant[1]
Middleground (MG) (0.5 miles to 1.99 miles)	Low Impact/Not Significant	Low Impact/Not Significant	Low-Moderate Impact/Not Significant	Moderate Impact/Adverse but Less than Significant	Moderate-High Impact/Potentially Significant
Background (BG) (beyond 2.0 miles)	Low Impact/Not Significant	Low Impact/Not Significant	Low Impact/Not Significant	Low-Moderate Impact/Not Significant	Moderate Impact/Adverse but Less than Significant

[1] Potentially reduced to less than significant with mitigation.

[2] Not likely to be reduced to less than significant with mitigation.

Table 5.1-8 Guidelines for Initially Determining Significance-Moderate Sensitivity

Project Distance Zone	Project Contrast				
	Weak	Weak-Moderate	Moderate	Moderate-Strong	Strong
Immediate Foreground (IFG) 0 to 999 feet	Low Impact/Not Significant	Low-Moderate Impact/Not Significant	Moderate Impact/Adverse but less than Significant	Moderate-High Impact/Potentially Significant	High Impact/Significant[1]
Foreground (FG) (1,000 feet to 0.499 mile)	Low Impact/Not Significant	Low Impact/Not Significant	Low-Moderate Impact/Not Significant	Moderate Impact/Adverse but less than Significant	Moderate-High Impact/Potentially Significant
Middleground (MG) (0.5 miles to 1.99 miles)	Low Impact/Not Significant	Low Impact/Not Significant	Low Impact/Not Significant	Low-Moderate Impact/Not Significant	Moderate Impact/Adverse but less than Significant
Background (BG) (beyond 2.0 miles)	Low Impact/Not Significant	Low Impact/Not Significant	Low Impact/Not Significant	Low Impact/Not Significant	Low-Moderate Impact/Not Significant

[1] Potentially reduced to Less than significant with mitigation.

[2] Not likely to be reduced to less than significant with mitigation.

Table 5.1-9 Landscape Character Compatibility Model

LCU	Project Contrast				
	Weak	Weak-Moderate	Moderate	Moderate-Strong	Strong
Rural Residential/Agricultural; Residential;	Low Impact/ Compatible	Moderate Impact/ Compatibility	Moderately-High Impact/ Moderately-Low Compatibility	High Impact/ Low Compatibility	High Impact/ Low Compatibility
Mixed Urban/Suburban Development	Low Impact/ Compatible	Low Impact/ Compatible	Moderately Low Impact/ Moderately-High Compatibility	Moderate Impact/ Compatibility	Moderate Impact/ Compatibility
Utility Solar/Industrial	Low Impact/ Compatible	Low Impact/ Compatible	Low Impact/ Compatible	Low Impact/ Compatible	Moderately Low Impact/ Moderately-High Compatibility
Riparian/Desert/ Mountains/ Foothills/Dunes	Moderate Impact/ Compatibility	Moderately Low Impact/ Moderately-High Compatibility	Moderate Impact/ Compatibility	Moderately-High Impact/ Moderately-Low Compatibility	High Impact/ Low Compatibility

BLM VRM classifications and associated objectives define the levels of acceptable visual change (contrast) allowed on BLM-administered land as previously discussed. Compliance with VRM classifications was determined by a contrast analysis from viewing locations and KOPs. For example, a strong Project contrast would be compliant in a VRM Class IV objective area, because "the level of

change to the characteristic landscape can be high," or management activities may contrast strongly with the existing character of the landscape. Similarly, in a Class III objective VRM area, "change to the characteristic landscape should be moderate." Therefore, moderate Project contrast seen from the foreground resulting from management activities of the Project would be compliant. Class II VRM objectives allow for weak Project contrast, or a "low level of change" in the landscape; strong or moderate contrasts seen in the middleground, foreground, or immediate foreground may not be consistent with the VRM Class II objective.

Each local plan goal, objective, and/or standard was compared with anticipated Project contrast and LCU compatibility to determine potential consistency with the stated goal, objective, and/or standard.

Table 5.1-10 BLM VRM Class Consistency

	Project Contrast				
VRM CLASS	Weak	Weak-Moderate	Moderate	Moderate-Strong	Strong
II	Yes	Yes	No	No	No
III	Yes	Yes	Yes	No	No
IV	Yes	Yes	Yes	Yes	Yes

Impact Types

The types of impact that could occur as a result of the construction and operation of the Proposed Project are described below.

Impact VIS-1 (Construction): *Construction activities would result in visual contrasts due to the presence of equipment, vehicles, materials, workforce, fugitive dust, and generation of waste and trash.*

Construction of the Proposed Project would cause temporary visual effects due to the presence of equipment, vehicles, materials, and workforce. These effects would occur throughout the Proposed Project area. Construction would involve the use of cranes, heavy construction equipment, temporary storage and office facilities, and temporary laydown/staging areas. Structure contrasts would be variable and dependent on the scale and finishes of the equipment. The presence of these activities and equipment would cause structure contrasts and would affect sensitive viewers from travel corridors, recreation areas, and residential areas. The duration of these specific construction activities that require the presence of equipment, such as work area and access road preparation, structure erection and conductor stringing would take place over several days in any specific structure location. Temporary laydown/storage area contrasts would occur over a longer duration depending on the number and size of each site to service construction activities, and the presence of office buildings and facilities resulting in structure contrast could potentially occur over the temporary construction duration.

Impact VIS-2 (Construction): *Construction could result in visual contrast associated with fugitive dust, waste, and trash.*

Grading activities for the construction of specific sites, access roads, and spur roads have the potential to generate dust clouds, creating visual contrast that can degrade the visual quality of in the viewshed of the construction area. Also, during construction, there is the potential for trash and food-related waste to be discarded inappropriately at construction sites and then be transported by

wind and/or animals across the landscape, resulting in additional visual contrast and degradation of landscape quality and character.

Impact VIS-3 (Construction): *Construction activities could require nighttime lighting which could cause undesirable night light effects.*

Construction activities could take place at night, which could result in temporary adverse night lighting visual effects because a significant portion of the Proposed Project crosses area where there is limited or no artificial light sources. Lighting impacts could occur at greater distances than Project contrasts due to atmospheric diffusion and existing relative dark-sky condition of much of the Proposed Project area. Temporary lighting may also be necessary during emergency or maintenance activities. No permanent lighting for operation is anticipated for the Proposed Project.

Impact VIS-4 (Operation): *The presence of transmission structures would result in the industrialization of the landscape or change existing character.*

Along significant portions of the Proposed Project, the landscape is undeveloped or has limited developed features within the viewshed. Rural agricultural areas dominated by cropland, farming operations, and isolated rural residences, intact sand dunes, mountain ranges and foothills, open water, wetland and riparian areas, and desert shrubland where there are no significant built features, utility generation and transmission development, or other industrial facilities are most susceptible to industrialization brought on by the presence of transmission line infrastructure.

Impact VIS-5 (Operation): *Project components would result in visual contrasts due to vegetation removal that would result in vegetation change and scarring of the landscape*

Areas of vegetation removal would remain visible from various vantage points for an extended period after the conclusion of construction activities because revegetation of areas in arid and semi-arid environments where the Proposed Project would be located can be difficult and generally of limited success.

Impact VIS-6 (Operation): *Project components would result in visual contrasts due to grading and earthwork activities that would result in landform change and scarring of the landscape*

Areas of ground surface disturbance as a result of road building, work area grading, and other earthwork activities would result in exposed underlying soils that would produce potentially strong color, line, and texture contrasts. Due to the extended length of construction and the slow pace of revegetation in the Proposed Project area, this impact and the visual contrast created could appear prominent from some viewing locations for many years, and cause moderate to high levels of visual impact, which could result in significant visual effects.

Impact VIS-7 (Operation): *Project features could result in the installation of reflective surfaces or additional light sources, which could cause undesirable glare effects.*

There is potential for daytime (or nighttime) reflection from the Project's structures that could cause visual glare. Lattice steel and tubular steel structures when untreated are highly reflective and would produce structure contrasts and glare due to the reflection of sunlight off the finished surface causing the structure to be more visually intrusive at shorter distances and making the structure more visible at greater distances.

Impact VIS-8 (Operation): *The presence of Project components would conflict with agency visual management objectives.*

Project contrasts as seen from sensitive viewpoint and KOPs in some cases would conflict with Class III and Class II VRM as established by the BLM. Typically, moderate to strong contrasts created by VIS-4, VIS-5, VIS-6 and VIS-7 as seen in the immediate foreground and foreground would not comply with VRM Class II areas and strong contrasts created by VIS-4, VIS-5, VIS-6 and VIS-7 as seen in the immediate foreground and foreground would not comply with VRM Class III. Portions of these non-compliant areas coincide with federally designated utility corridors (WWEC) that may be reduced to a non-significant level depending on the process the BLM uses to change the VRM designation. Higher impacts would result if the BLM amends the applicable RMP, and lower impacts would result should the BLM implement a plan maintenance action to allow for the operation of the Project.

Portions of the Proposed Project would also potentially conflict with Imperial County General Plan Conservation and Open Space Element-Goal 7, which seeks to preserve, protect and enhance the aesthetic character of the regional environment for residential, commercial, recreational, and tourist activity. These areas typically coincide with rural agricultural and undeveloped desert character areas that are not substantially influenced by the presence of existing utility or other visual deviations that detract from the overall visual quality of the setting.

5.1.4.2 Aesthetics Impact Analysis

5.1.4.2.1 Would the project have a substantial adverse effect on a scenic vista?

Construction

Project Components in California

Less than Significant Impact. A scenic vista is generally considered a specific viewpoint or viewing location (often an elevated overlook) that provides expansive views of a highly valued landscape for the benefit of the general public. Scenic vistas are typically officially designated by public agencies and are often a noted in a designated area by signage or in LMPs, and accessible to the public for the specific purposes of scenic landscape viewing. Although there are expansive views of the surrounding landscape of scenic areas throughout the Proposed Project area, there are no officially designated or community recognized scenic vista viewpoints identified in the associated land use plans applicable to the Proposed Project. Some scenic vistas exist throughout the Proposed Project area due to unimpeded views of the moderately-high scenic value landscapes where no existing transmission facilities affect those views. However, temporary construction related activities would not cause strong visual contrasts, and therefore, construction activity and the results of impacts VIS-1, VIS-2, and VIS-3 associated with the Proposed Project would not substantially affect the number of unimpeded views throughout the Proposed Project area, and impacts on scenic vistas during construction would be less than significant.

Project Components in Arizona

Less than Significant Impact. Impacts of the Proposed Project in Arizona are identical to those described for California.

Overall Project

Less than Significant Impact. Impacts of the overall Project are identical to those described for California.

Operation

Project Components in California

Less than Significant Impact. As previously discussed, there are some expansive views of the surrounding landscape of scenic areas within the Proposed Project area, but there are no officially designated or community recognized scenic vistas or viewpoints identified in the associated land use plans.

However, unimpeded scenic vistas exist in limited locations within the Proposed Project area where views of the surrounding mountains and dunes occur and where existing transmission does not dominate the viewshed. Views of the surrounding mountains and dune landscapes would remain unimpeded or would not substantially change where existing transmission is already within the viewshed and where VIS-4, VIS-5, VIS-6, and/or VIS-7 impacts would occur and would not prevent public views of areas that are unofficially valued for their scenic quality. While there are locations throughout the Project vicinity where the new infrastructure associated with the Proposed Project would affect a given view in some isolated locations, the new infrastructure would not impede expansive public views of a highly valued landscape due to the transient nature of those public views (e.g., along travel corridors) or limited viewpoint locations. Routine O&M activities associated with the Proposed Project would not prevent public views of areas that are unofficially valued for their scenic quality. Therefore, impacts to scenic vistas during operation would be less than significant.

Project Components in Arizona

Less than Significant Impact.

Impacts of the Proposed Project in Arizona are identical to those described for California.

Overall Project

Less than Significant Impact. Impacts of the overall Project are identical to those described for California.

5.1.4.2.2 Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Construction

Project Components in California

No Impact. No state scenic highways are located within the vicinity of the Proposed Project in California. Therefore, there would be no impacts from the Proposed Project under this criterion.

Project Components in Arizona

No Impact. No state scenic highways are located within the vicinity of the Proposed Project in Arizona. Therefore, there would be no impacts from the Proposed Project under this criterion.

Overall Project

No Impact. No state scenic highways are located within the vicinity of the Proposed Project. Therefore, there would be no impacts from the Proposed Project under this criterion.

Operation

Project Components in California

No Impact. No state scenic highways are located within the vicinity of the Proposed Project in California. Therefore, there would be no impacts from the Proposed Project under this criterion.

Project Components in Arizona

No Impact. No state scenic highways are located within the vicinity of the Proposed Project in Arizona. Therefore, there would be no impacts from the Proposed Project under this criterion.

Overall Project

No Impact. No state scenic highways are located within the vicinity of the Proposed Project. Therefore, there would be no impacts from the Proposed Project under this criterion.

5.1.4.2.3 Would the project, in nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage points) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Construction

Project Components in California

Less than Significant Impact. Construction impacts would occur as described above (impacts VIS-1, VIS-2 and VIS-3). Staging area preparation would include the installation of temporary perimeter fencing that would be removed once construction is complete. Construction-related visual impacts resulting from the temporary presence of equipment, materials, and work crews along the Project alignment, staging and work areas, and stringing sites would not substantially degrade the existing visual character of the landscape because these would be located in areas that are previously disturbed or developed. Construction activity would be noticeable from local, dispersed residents (KOP 1, KOP 2, KOP 5, KOP 6), surrounding rural communities such as Heber and Calexico (KOP 5, KOP 6), motorists (KOP 8, KOP 11), and recreation site users (KOP 7, KOP 8, KOP 9). While overall construction activities would be visible for a period of many months, individual activities would be considerably shorter in duration at any one location. Because construction impacts are temporary, impacts will be less than significant.

Project Components in Arizona

Less than Significant Impact. Construction impacts would occur as described above (impacts VIS-1, VIS-2 and VIS-3). Staging area preparation would include the installation of temporary perimeter fencing that would be removed once construction is complete. Construction-related visual impacts

resulting from the temporary presence of equipment, materials, and work crews along the Project alignment, staging and work areas, and stringing sites would not substantially degrade the existing visual character of the landscape because these would be located in areas that are previously disturbed or developed. Construction activity would be noticeable from local, dispersed residents (KOP 18, KOP 19), motorists, and recreation site users (KOP 15, KOP 16). While overall construction activities would be visible for a period of many months, individual activities would be considerably shorter in duration at any one location. Because construction impacts are temporary, impacts will be less than significant.

Overall Project

Less than Significant Impact. Construction impacts would occur as described above (impacts VIS-1, VIS-2 and VIS-3). Staging area preparation would include the installation of temporary perimeter fencing that would be removed once construction is complete. Construction-related visual impacts resulting from the temporary presence of equipment, materials, and work crews along the Project alignment, staging and work areas, and stringing sites would not substantially degrade the existing visual character of the landscape because these would be located in areas that are previously disturbed or developed. Construction activity would be noticeable from local, dispersed residents, motorists, and recreation site users. While overall construction activities would be visible for a period of many months, individual activities would be considerably shorter in duration at any one location. Because construction impacts are temporary, impacts will be less than significant.

Operation

Project Components in California

Significant and Unavoidable Impact. The Proposed Project crosses VRM Class II and Class III areas where immediate foreground and foreground views of moderate to strong contrasts would occur and the Project would be non-compliant with the designations. A total of 1.8 miles of the Proposed Project crossing VRM Class II designation and 14.6 miles crossing VRM Class III would not be compliant with the designated VRM; this equals approximately 32% of the total BLM land crossed by the Proposed Project. The majority of those areas are located within designated (WWEC-Section 368) utility corridor 115-238. The implementation of APM AES-3 (use non-specular conductors) and AES-4 (used dulled galvanized steel or self-weathering finish structures) would reduce the impact of the Project, but VRM Class II and III objectives would not be met, and significant unavoidable impacts would occur.

Approximately 11.5 miles of the Proposed Project also crosses VRM Class IV in the vicinity of Imperial Substation within the Yuha Basin ACEC, in the Imperial Sand Dunes area along I-8, and east of Imperial Valley. In these areas, overall contrasts would range from weak to strong and the Proposed Project would be in compliance with VRM Class IV. Along a short section of the Proposed Project (approximately 0.2 miles), strong contrasts would occur in immediate foreground or foreground of high or moderate sensitivity viewers within VRM Class III landscapes west of the Imperial Sand Dunes, and the Project would not be compliant with the designation.

Impacts VIS-4, VIS-5, VIS-6 and VIS-7, as described above, would occur primarily from the I-8 and SH 98 travel corridors and recreation sites that would substantially degrade the existing visual character or quality of public views of the site and its surroundings where strong structure and overall Project contrasts would be seen in the immediate foreground and foreground.

Figure 5.1-39 through Figure 5.1-47 show the viewsheds of sensitive viewers and KOPs as they relate to the Proposed Project. Table 5.1-11 summarizes impacts of the Proposed Project.

Views from recreational sites in and around the Imperial Sand Dunes (see KOP 9 and KOP 10) would generally be from the foreground and middleground. Typically, the Proposed Project is somewhat offset from but parallels Southwest Power Link (SWPL) within the viewshed and weak structure contrasts would occur (see Figure 5.1-32). However, where the Project is located near the SWPL corridor, but is separated by I-8, and views are oriented north of I-8 toward the sand dune landscape, the existing visual character or quality of public views of the site and its surroundings could be altered under some conditions. The implementation of APM AES-1 (minimize vegetation removal), as well as APM AES-3 (use non-specular conductors), APM AES-4 (use dulled galvanized steel or self-weathering finish structures), and APM AES-5 (match structure locations to correspond with existing structures where feasible), would reduce impacts from some portions of the line, but strong Project contrasts as seen in the immediate foreground would result in significant unavoidable impacts.

Foreground views of the Proposed Project from Tamarisk LTVA would occur where strong structure contrasts would occur, but much of this site is screened by surrounding vegetation resulting in limited impacts. The implementation of APM AES-1, as well as APM AES-3 and APM AES-4, would reduce impacts from some portions of the line, but strong Project contrasts as seen in the immediate foreground would result in significant unavoidable impacts.

As described above, visual impacts VIS-5 and VIS-7 would occur from travel corridors (KOP 2, KOP 5, KOP 6) that would substantially degrade the existing visual character or quality of public views of the site and its surroundings because along portion of the Proposed Project, strong structure and overall Project contrasts would be seen in the immediate foreground and foreground along some portions. Although residential viewers are not considered publicly accessible, strong contrasts as seen in the immediate foreground and foreground from these viewpoints would cause adverse, but not significant impacts.

Views from Heber Dunes SVRA would be from the immediate foreground and foreground, where the Proposed Project parallels SWPL and weak structure contrasts would occur (see Figure 5.1-31). However, some overstory tree clearing would occur that would result in strong landscape contrasts as seen from limited areas within the park. Resulting strong overall Project contrasts could occur from locations within Heber Dunes SVRA, but some viewpoints within the park would have limited visibility of structure and vegetation contrasts due to distance and/or vegetation screening. The implementation of APMs AES-1, AES-3, AES-4, and AES-5 would reduce impacts from most viewing locations within the park. KOP 7 represents views that are typical from within the park where structure contrasts would be weak due to the presence of SWPL and impacts would be less than significant.

Moderate and high sensitivity travel corridors where public views of existing visual character or quality of the site and its surroundings occur would be crossed by or paralleled by the Proposed Project on the western portion in areas with no agricultural or limited other development and would be seen in the foreground and immediate foreground. These corridors include: I-8, SH 98, Ogilby Camp Recreation Destination Route, Ogilby Road, Barney Oldfield Road-Cargo Muchacho Mountains Recreation/Sacred Site Destination Route, Picacho Road, and Levee Road/S24 and cross in LCUs that generally have low compatibility with transmission facilities. However, with the exception of Levee Road/S24, these crossings and parallel viewing conditions would occur where the SWPL project is also seen within the viewshed resulting in weak structure contrasts. In these locations, adverse but less than significant impacts would occur due to the presence of the SWPL

that already results degradation of site visual character or quality and making the Proposed Project compatible in these LCUs. The implementation of APMs AES-1, AES-3, AES-4, and AES-5 would help to reduce impacts at these travel corridor crossings.

Moderate sensitivity travel corridors where public views of existing visual character or quality of the site and its surroundings occur would also be crossed by Proposed Project and seen in the foreground and immediate foreground throughout the Imperial Valley. These corridors include: Anderholt Road, Barbara Worth Road, Dogwood Road, Ferrel Road, SH 7/Orchard Road, Barbara Worth Road, SH 111 and E. Jasper Road, and cross or parallel in LCUs that that generally have low compatibility with transmission facilities. Some of these crossings would occur where the SWPL project is also seen within the viewshed resulting in weak structure contrasts. In these locations, adverse but less than significant impacts would occur due to the presence of the SWPL that already results degradation of site visual character or quality and making the Proposed Project compatible in these LCUs. Significant and unavoidable impacts would occur where the Project deviates from the SWPL corridor and would result in the degradation of site visual character or quality and making the Proposed Project compatible in these LCUs. The implementation of APMs AES-1, AES-3, AES-4, and AES-5 would help to reduce impacts from these travel corridors.

Project Components in Arizona

Significant and Unavoidable Impact. The Proposed Project crosses VRM Class II areas where immediate foreground and foreground views of strong contrasts would occur and the Project would be non-compliant with the designation. The implementation of APM AES-3 (use non-specular conductors) and APM AES-4 (use dulled galvanized steel or self-weathering finish structures) would reduce the impact of the Project, but VRM Class II objectives would not be met, and significant unavoidable impacts would occur.

Views from recreational sites in and around the Mittry Lake would generally be from the middleground and background, and under some conditions, partially or fully screened by topography and/or vegetation. The implementation of APM-AES-01, as well as mitigation measures VIS-01, VIS-02, and VIS-03, would reduce impacts from some portions of the line. However, from KOPs 15 and 16, and elsewhere in and around the Mittry Lake Wildlife Area, significant and unavoidable impacts would occur as a result of strong contrasts being seen in the immediate foreground and foreground from high sensitivity viewpoints (see Figure 5.1-34 through and Figure 5.1-36).

Views from residential areas located Laguna Dam Road-7 1/2 Road would view the Proposed Project in the middleground where it parallels the existing SWPL transmission line. The implementation of APM AES-1 (minimize vegetation removal), as well as APM AES-3 (use non-specular conductors), APM AES-4 (use dulled galvanized steel or self-weathering finish structures) and APM AES-5 (match structure locations to correspond with existing structures where feasible) would reduce impacts to a less than significant level from residences.

Laguna Dam Road, a moderate sensitivity travel corridors where public views of existing visual character or quality of the site and its surroundings occur, would be crossed by the Proposed Project and seen in the foreground and immediate foreground for a short distance. This area is located in an LCUs that has low compatibility with transmission facilities, and strong contrasts would occur because the Project deviates from the existing SWPL transmission line in this location. The implementation of APMsAES-1, AES-3, and AES-4 would reduce impacts to a less than significant level except in the immediate foreground areas crossing Laguna Dam Road.

Overall Project

Significant Unavoidable Impacts. The Proposed Project crosses VRM Class II and Class III areas where immediate foreground and foreground views of moderate to strong contrasts would occur and the Project would be non-compliant with the designations. The implementation of APMs AES-3 and AES-4 would reduce the impact of the Project, but VRM Class II objectives would not be met, and significant unavoidable impacts would occur.

Impacts VIS-4, VIS-5, VIS-6 and VIS-7, as described above, would occur primarily from travel corridors and recreation sites that would substantially degrade the existing visual character or quality of public views of the site and its surroundings where strong structure and overall Project contrasts would be seen in the immediate foreground and foreground.

Views from recreational sites in and around the Imperial Sand Dunes and Mittry Lake area would generally be from the immediate foreground to middleground. Typically, the Proposed Project is somewhat offset, but parallels SWPL within the viewshed and weak structure contrasts would occur. However, views occur where the Project is located near the SWPL corridor, but is separated by I-8, and viewed are oriented north of I-8 toward the sand dune landscape, the existing visual character or quality of public views of the site and its surroundings could be altered under some conditions. Views from recreational sites in and around the Mittry Lake would generally be from the middleground and background, and under some conditions, partially or fully screened by topography and/or vegetation. However, from KOPs 15 and 16, and elsewhere in and around the Mittry Lake Wildlife Area, significant and unavoidable impacts would occur as a result of strong contrasts being seen in the immediate foreground and foreground from high sensitivity viewpoints. The implementation of APMs AES-1, AES-3, AES-4, and AES-5 would reduce impacts from some portions of the line, but strong Project contrasts as seen in the immediate foreground would result in significant unavoidable impacts.

Moderate and high sensitivity travel corridors where public views of existing visual character or quality of the site and its surroundings occur would be crossed by or paralleled by the Proposed Project and seen in the foreground and immediate foreground, and cross in LCUs that generally have low compatibility with transmission facilities. Adverse, but less than significant impacts would occur in some locations due to the presence of the SWPL that already results in degradation of site visual character or quality and making the Proposed Project compatible in these LCUs. The implementation of APMs AES-1, AES-3, AES-4, and AES-5 would help to reduce impacts at these travel corridor crossings.

5.1.4.2.4 Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Construction

Project Components in California

Less than Significant Impact. Rural residential development occurs in the agricultural areas of the Levee Road/S24 within the Fort Yuma tribal lands and throughout the Imperial Valley. Existing sources of light and glare are generally limited in the eastern portion of the Proposed Project but also occur from I-8 and SH 98 travel corridors, a communication tower, existing utility development (transmission and distribution lines, solar generation sites), and the urbanized areas of Heber, El Centro and Calexico. Construction of the Proposed Project would generally occur during daytime hours. However, at limited times some construction activities, such as de-energizing and re-

energizing existing lines along the Proposed Project, may occur at night while electrical demand is low and would require lighting for safety resulting in impact VIS-5. Any required lighting during construction would be limited to individual work areas and would be temporary in nature. Staging yards may be lit for security; however, with the implementation of APM AES-2, lighting would be directed on-site and away from potentially sensitive receptors. If temporary lighting is needed along the Project alignment or at staging areas, portable light standards would be placed along the perimeter of the work area or staging area, as necessary. The light standards would be shielded, resulting in light being directed downward and inward (toward the work or staging area). With implementation of shielded, downward and Project-facing lighting, temporary impacts of nighttime light and glare on neighboring properties during construction would be less than significant.

Project Components in Arizona

Less than Significant Impact. Rural residential development occurs in the agricultural areas of Laguna Dam Road-7 1/2 Road, within the Fort Yuma tribal lands, and in and around the Yuma Proving Grounds area. Existing sources of light and glare are greatest in the Yuma Proving Grounds area. Construction of the Proposed Project would generally occur during daytime hours. However, at limited times some construction activities, such as de-energizing and re-energizing existing lines along the Proposed Project, may occur at night while electrical demand is low and would require lighting for safety resulting in impact VIS-5. Any required lighting during construction would be limited to individual work areas and would be temporary in nature. Staging yards may be lit for security; however, with the implementation of APM AES-2, lighting would be directed on-site and away from potentially sensitive receptors. If temporary lighting is needed along the Project alignment or at staging areas, portable light standards would be placed along the perimeter of the work area or staging area, as necessary. The light standards would be shielded, resulting in light being directed downward and inward (toward the work or staging area). With implementation of shielded, downward and Project-facing lighting, temporary impacts of nighttime light and glare on neighboring properties during construction would be less than significant.

Overall Project

Less than Significant Impact. Existing sources of light and glare are greatest in the Yuma Proving Grounds area, along the I-8 and SH 98 travel corridors, a communication tower, existing communication and utility development sites (transmission and distribution lines, solar generation sites), and the urbanized areas of Heber, El Centro and Calexico. Construction of the Proposed Project would generally occur during daytime hours. However, at limited times some construction activities, such as de-energizing and re-energizing existing lines along the Proposed Project, may occur at night while electrical demand is low and would require lighting for safety resulting in impact VIS-5. Any required lighting during construction would be limited to individual work areas and would be temporary in nature. Staging yards may be lit for security; however, with the implementation of APM AES-2, lighting would be directed on-site and away from potentially sensitive receptors. If temporary lighting is needed along the Project alignment or at staging areas, portable light standards would be placed along the perimeter of the work area or staging area, as necessary. The light standards would be shielded, resulting in light being directed downward and inward (toward the work or staging area). With implementation of shielded, downward and Project-facing lighting, temporary impacts of nighttime light and glare on neighboring properties during construction would be less than significant.

Operation

Project Components in California

Less than Significant Impact with Mitigation. As previously stated, existing sources of light and glare are greatest in the Yuma Proving Grounds area, along the I-8 and SH 98 travel corridors, a communication tower, existing communication and utility development sites (transmission and distribution lines, solar generation sites), and the urbanized areas of Heber, El Centro and Calexico. It is not anticipated that any new structure lighting would be required as part of the Proposed Project because Project structures are not anticipated to be in excess of 200-feet in height and the Project alignment is not within 20,000 feet of a public-use or military airport. Upon completion of final design, HWT would file with the FAA for official determination of lighting and/or marking requirements. Operation and maintenance activities associated with the Proposed Project would potentially include repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, repairing or replacing poles and towers, tree trimming, brush and weed control, and access road maintenance. O&M would also include routine inspections and emergency repair throughout ROWs, which would require the use of vehicles and equipment. O&M activities are not anticipated to occur outside of daylight hours. In the event that O&M activities are required outside of daylight hours, vehicular headlights may be required, and portable light standards similar to those utilized during construction may be used. However, vehicular headlights are an existing source of light in the vicinity, and any additional lighting associated with nighttime O&M activities would be temporary, infrequent, shielded, and directed downward.

Impact VIS-7 could occur as a result of the introduction of reflective galvanized steel structures if left untreated. Lattice steel and tubular steel structures when untreated are highly reflective and would produce structure contrasts and glare due to the reflection of sunlight off the finished surface, causing the structure to be more visually intrusive at shorter distances and making the structure more visible at greater distances. The implementation of APM AES-2 (minimize night lighting during construction or maintenance) and APM AES-4 (use dulled galvanized steel or self-weathering finish structures) would help to reduce the potential for day or nighttime light or glare that would affect general views in the Proposed Project area, and resulting impacts would be less than significant.

Project Components in Arizona

Less than Significant Impact with Mitigation. As previously stated, rural residential development occurs in the agricultural areas of Laguna Dam Road-7 1/2 Road, within the Fort Yuma tribal lands, and in and around the Yuma Proving Grounds area. Existing sources of light and glare are greatest in the Yuma Proving Grounds area. It is not anticipated that any new structure lighting would be required as part of the Proposed Project because Project structures are not anticipated to be in excess of 200-feet in height and the Project alignment is not within 20,000 feet of a public-use or military airport; the Laguna Army Airfield (Yuma Proving Grounds) is over five miles northeast from the Proposed Project alignment. Upon completion of final design, HWT would file with the FAA for official determination of lighting and/or marking requirements. Operation and maintenance activities associated with the Proposed Project would potentially include repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, repairing or replacing poles and towers, tree trimming, brush and weed control, and access road maintenance. O&M would also include routine inspections and emergency repair throughout ROWs, which would require the use of vehicles and equipment. O&M activities are not anticipated to occur outside of daylight hours. In the event that O&M activities are required outside of daylight hours, vehicular headlights may be required, and portable light standards similar to those utilized during

construction may be used. However, vehicular headlights are an existing source of light in the vicinity, and any additional lighting associated with nighttime O&M activities would be temporary, infrequent, shielded, and directed downward.

Impact VIS-7 could occur as a result of the introduction of reflective galvanized steel structures if left untreated. Lattice steel and tubular steel structures when untreated are highly reflective and would produce structure contrasts and glare due to the reflection of sunlight off the finished surface causing the structure to be more visually intrusive at shorter distances and making the structure more visible at greater distances. The implementation of APM AES-2 (minimize night lighting during construction or maintenance) and APM AES-4 (use dulled galvanized steel or self-weathering finish structures)would help to reduce the potential for day or nighttime light or glare that would affect general views in the Proposed Project area, and resulting impacts would be less than significant.

Overall Project

Less than Significant Impact with Mitigation. As previously stated, existing sources of light and glare are greatest in the Yuma Proving Grounds area, along the I-8 and SH 98 travel corridors, a communication tower, existing communication and utility development sites (transmission and distribution lines, solar generation sites), rural residential development in the agricultural areas of Laguna Dam Road-7 1/2 Road, within the Fort Yuma tribal lands, in and around the Yuma Proving Grounds area, in the urbanized areas of Heber, El Centro and Calexico.

Impact VIS-7 could occur as a result of the introduction of reflective galvanized steel structures if left untreated. Lattice steel and tubular steel structures when untreated are highly reflective and would produce structure contrasts and glare due to the reflection of sunlight off the finished surface causing the structure to be more visually intrusive at shorter distances and making the structure more visible at greater distances. The implementation of APMs AES-2 and AES-4 would help to reduce the potential for day or nighttime light or glare that would affect general views in the Proposed Project area, and resulting impacts would be less than significant.

5.1.4.3 Analysis From Selected Viewpoints

KOP 1. Significant and Unavoidable Impact. The existing condition for KOP 1 is dominated by generally open, unobstructed views of rural agricultural development (LCU 1), with riparian landscapes (LCU 11) subordinate within the viewshed. From this high sensitivity KOP, the Proposed Project would be less than 1,000 feet to south and would be seen in the foreground. The Proposed Project would dominate the viewshed and cause strong structure contrasts. The implementation of APMs AES-3 and AES-4 would reduce impacts, but they would remain significant and unavoidable.

KOP 2. Less than Significant Impact. The existing condition for KOP 2 is dominated by generally open, unobstructed views of rural agricultural development (LCU 1) with riparian landscapes (LCU 11) subordinate within the viewshed. Views of nearby mountains and foothills also influence the scenic character of the area. From this high sensitivity KOP, the Proposed Project is over one mile to the south and would be seen in the middleground where the Project alignment deviates from the existing SWPL transmission line. Because the existing SWPL transmission line is within the viewshed, the Proposed Project would be less dominant in the viewshed and would not further alter the rural agricultural character of the site.

KOP 3. Less than Significant Impact. The existing condition for KOP 3 is dominated by generally open, unobstructed views of rural agricultural development (LCU 1). Distribution lines are seen in the immediate foreground that contribute to the visual character of the site and surroundings. Views of nearby mountains and foothills also influence the scenic character of the area. From this

high sensitivity KOP, the Proposed Project is over three miles to the south and would be seen in the background. The Proposed Project would be seen within the context of the existing SWPL transmission line and not noticeable to casual viewers. Therefore, its presence would cause weak overall contrasts, and the rural agricultural character of the site would be minimally affected.

KOP 4. No Impact. The existing condition for KOP 4 is dominated by rural agricultural development (LCU 1) and urban residential development (LCU 4). From this high sensitivity KOP, the Proposed Project is a minimum of 1.7 miles to the south and is completely screened by existing residential structures. Therefore, the existing rural agricultural character of the site would not be affected.

KOP 5. Less than Significant Impact. The existing condition for KOP 5 is dominated by generally open, unobstructed views of rural agricultural development (LCU 1) and urban residential development (LCU 4). Distribution lines seen in the immediate foreground and the existing SWPL transmission line seen in the foreground contribute to the visual character of the site and surroundings but the operation of the Proposed Project would cause impact VIS-4. From this high sensitivity KOP, the Proposed Project is over one mile to the south and would be seen in the middleground. The Project would be noticeable, but would be subdominant in the landscape, and the rural agricultural and urban residential character of the site would be minimally affected.

KOP 6. Less than Significant Impact with Mitigation. The existing condition for KOP 6 is dominated by generally open, unobstructed views of rural agricultural development (LCU 1) and suburban residential development (LCU 4). From this high sensitivity KOP, the Proposed Project is a minimum of 0.6 mile to the north and would be seen in the middleground. The existing SWPL transmission line seen in the foreground contributes to the visual character of the site and surroundings, but the operation of the Proposed Project would cause impact VIS-7. Weak structure contrasts would occur due to the Proposed Project being codominant and collocated with the existing SWPL transmission line, and the implementation of APMsAES-1 and AES-3, AES-4, and AES-5 would reduce the overall impacts of the Proposed Project to a less than significant level (see Figure 5.1-30). Therefore, the rural agricultural and suburban character of the site would be minimally affected.

KOP 7. Less than Significant Impact with Mitigation. The existing condition for KOP 7 is dominated by views of Algodones Dunes (LCU 12) that are partially screened by vegetation and topography. From this high sensitivity KOP, the Proposed Project is less than 0.4 miles to the south and would be seen in the foreground causing impact VIS-4. The Project would be prominent in the viewshed but collocated with the existing SWPL transmission line. Therefore, its presence would cause weak structure overall contrasts, and the dunes character of the site would be moderately affected from this location (see Figure 5.1-31). The implementation of APM AES-1, AES-3, AES-4, and AES-5 would reduce impacts resulting in less than significant impacts from this KOP.

KOP 8. Less than Significant Impact with Mitigation. The existing condition for KOP 8 is dominated by generally open, unobstructed views of desert landscape (LCU 8), and the Proposed Project would cross land with a VRM Class III designation in the middleground. From this moderate sensitivity KOP, the Proposed Project is within approximately 200 feet to the north, paralleling SH 98, and would be seen in the immediate foreground within the context of the existing multiple transmission lines that contribute to the visual character of the site and surroundings. Strong structure contrasts would occur due to the Project being dominant in the viewshed to the north. However, the existing transmission line corridor would be seen within the viewshed, and with implementation of APMs AES-1, AES-3, and AES-4, the existing character would be moderately affected, and the Project would be compliant with the Class III VRM designation.

KOP 9. Less than Significant Impact. The existing condition for KOP 9 is primarily of a dune landscape strongly influenced by recreational, irrigation and utility facility development (LCU 12). The Proposed Project would cross land with a BLM VRM Class IV designation as seen from this KOP. From this high sensitivity KOP, the Proposed Project is over 0.75 miles to the northeast and would be seen in the middleground. Weak structure contrasts would occur due to the Proposed Project being subdominant to the existing transmission line located in the foreground from this KOP. Therefore, the character of the site would be minimally affected, and the Project would be in compliance with the VRM Class IV designation.

KOP 10. Less than Significant Impact with Mitigation. The existing condition of KOP 10 is primarily of a dune landscape strongly influenced by recreational and utility facility development (LCU 12). From this high sensitivity KOP, the Proposed Project is approximately 0.5 miles to the north and northwest and would be seen in the foreground/middleground transition distance zone. The Project would cross land with a BLM VRM Class IV designation as seen from this KOP. The existing SWPL transmission line as seen in the foreground contributes to the visual character of the site and surroundings. Weak structure contrasts would occur due to the Project being subdominant to the existing SWPL transmission line (see Figure 5.1-32). With the implementation of APMs AES-1, AES-3, and AES-4, the character of the site would be minimally affected, and the Project would be in conformance with VRM Class IV objectives from this viewpoint.

KOP 11. Less than Significant Impact. The existing condition for KOP 11 is primarily of a dune landscape strongly influenced by transportation and utility facility development (LCU 12). From this moderate sensitivity KOP, the Proposed Project is approximately 0.5 miles to the north and northwest and would be seen in the foreground/middleground transition distance zone. The Project would cross land with a BLM VRM Class IV designation in the immediate foreground and foreground, and Class III in the middleground as seen from this KOP. The existing SWPL transmission line is seen in the foreground and middleground and contributes to the visual character of the site and surroundings. Weak structure contrasts would occur due to the Project being codominant to the existing SWPL transmission line (see Figure 5.1-33). Therefore, the character of the site would be minimally affected, and the Project would be in compliance with the VRM Class IV objectives.

KOP 12. Less than Significant Impact. The existing condition for KOP 12 is dominated by views of desert and desert mountain landscapes (LCU 8) partially obstructed by the existing SWPL transmission line. From this high sensitivity KOP, the Proposed Project is over 1.6 miles to the north, would be partially screened by the Cargo Muchacho Mountains, and would be seen in the background. The existing SWPL transmission line as seen in the immediate foreground contributes to the visual character of the site and surroundings. Weak structure contrasts would occur due to the Proposed Project being subdominant to the existing SWPL transmission line. Therefore, the character of the site would be minimally affected, and the Project would be in compliance with the Class III designation.

KOP 13. Significant and Unavoidable Impact. The existing condition for KOP 13 is dominated by views of desert and desert mountain landscapes (LCU 8) partially obstructed by the existing SWPL transmission line. From this high sensitivity KOP, the Proposed Project is less than 0.2 miles to the north and would be seen in the immediate foreground and in the skyline. Although the existing SWPL transmission line as seen in the foreground contributes to the visual character of the site and surroundings, the Project would cross VRM Class II areas where foreground views of moderate to strong contrasts would occur and the Project would be non-compliant with the VRM designation. This area is located within designated (WWEC-Section 368) utility corridor 115-238. The implementation of APMs AES-3, AES-4, and AES-5 would reduce the impact of the Project, but VRM Class II objectives would not be met, and a significant and unavoidable impact would occur.

KOP 14. Less than Significant Impact with Mitigation. The existing condition for KOP 14 is dominated by generally open, unobstructed views of rural agricultural development and desert foothills (LCU 7 and LCU 1). From this high sensitivity KOP, the Proposed Project is 1.5 miles to the north and would be seen in the middleground. The existing SWPL transmission line as seen in the middleground contributes to the visual character of the site and surroundings. The Project would cross VRM Class II and Class III areas within the viewshed, and weak structure contrasts would occur due to the Project being codominant to the existing SWPL transmission line. With the implementation of APMs AES-1, AES-3, AES-4, and AES-5 the character of the site would be minimally affected, and the Project would be in conformance with VRM Class II and Class III objectives, and the rural agricultural and foothills character of the site would be minimally affected.

KOP 15. Significant and Unavoidable Impact. The existing condition for KOP 15 is dominated by foreground views of foothills and Mittry Lake wetlands/open water (LCU 13). From this high sensitivity KOP, the Proposed Project is less than 0.5 miles to the northeast and would be seen in the foreground. Strong structure contrasts would occur due to the introduction of the Project that would dominate the viewshed (see Figure 5.1-34). The implementation of APMs AES-1, AES-3, and AES-4would reduce impacts, but they would remain significant and unavoidable.

KOP 16. Significant and Unavoidable Impact. The existing condition for KOP 16 is dominated by foreground views of foothills and Mittry Lake wetlands/open water (LCU 13). From this high sensitivity KOP, the Proposed Project is less than 0.4 miles to the northeast and would be seen in the foreground. Strong structure contrasts would occur due to the introduction of the Project that would dominate the viewshed. Weak landform and color contrasts would occur due to the construction of access roads requiring cut and fill that would expose underlying soils (see Figure 5.1-35 and Figure 5.1-36). The implementation of APMs AES-1, AES-3, and AES-4 would reduce impacts, but they would remain significant and unavoidable.

KOP 17. No Impact. The existing condition for KOP 17 is dominated by generally open, unobstructed views of riparian and wetland landscapes (LCU 11, LCU 1). From this high sensitivity KOP, the Proposed Project is 3.0 miles to the south and would not be seen.

KOP 18. Less than Significant Impact with Mitigation. The existing condition for KOP 18 is dominated by generally open, partially obstructed views of desert foothills (LCU 7). From this high sensitivity KOP, the Proposed Project is 0.9 miles to the east and would be seen in the middleground and partially skylined. The existing SWPL transmission line as seen in the middleground contributes to the visual character of the site and surroundings. The Project would cross VRM Class II areas within the viewshed, and weak structure contrasts would occur due to the Project being codominant to the existing SWPL transmission line (see Figure 5.1-37). With the implementation of APMs AES-1, AES-3, AES-4, and AES-5 the character of the site would be minimally affected, and the Project would be in conformance with VRM Class II objectives, and the rural agricultural and foothills character of the site would be minimally affected.

KOP 19. Less than Significant Impact. The existing condition for KOP 19 is dominated by open, unobstructed views of desert foothills (LCU 7 and LCU 1) influenced by multiple transmission line corridors. From this high sensitivity KOP, the Proposed Project is over 0.7 miles to the north and would be seen in the middleground (see Figure 5.1-38). The existing transmission line, with the existing SWPL seen in the middleground and an existing 500-kV transmission line in the foreground, contributes to the visual character of the site and surroundings. Weak structure contrasts would occur due to the Project being subdominant to the existing transmission line corridor in the foreground. Therefore, the character of the site would be minimally affected.

Figure 5.1-29 Simulation Photo Location Map

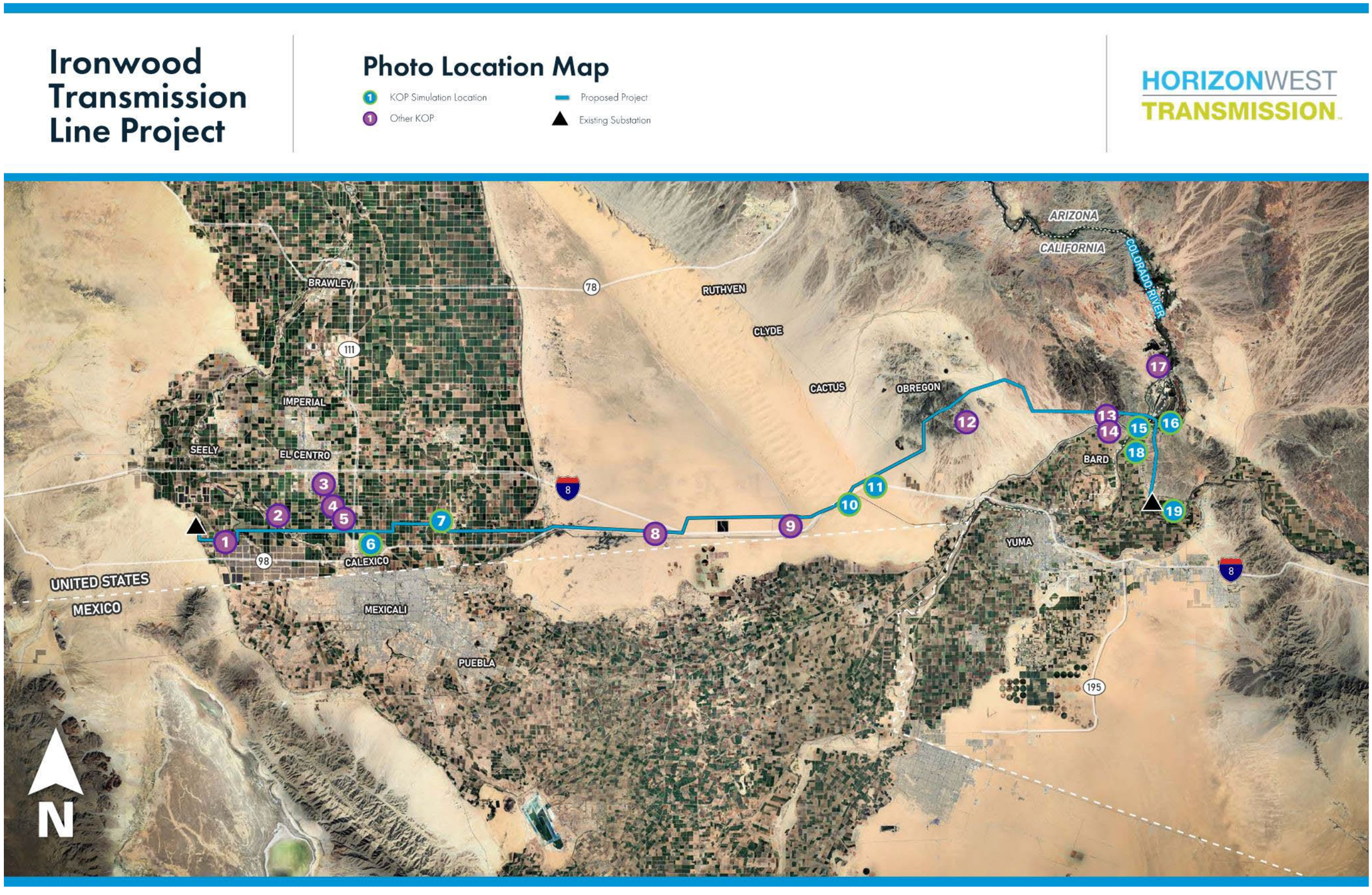


Figure 5.1-30 KOP 6 - Simulated View with Proposed Project

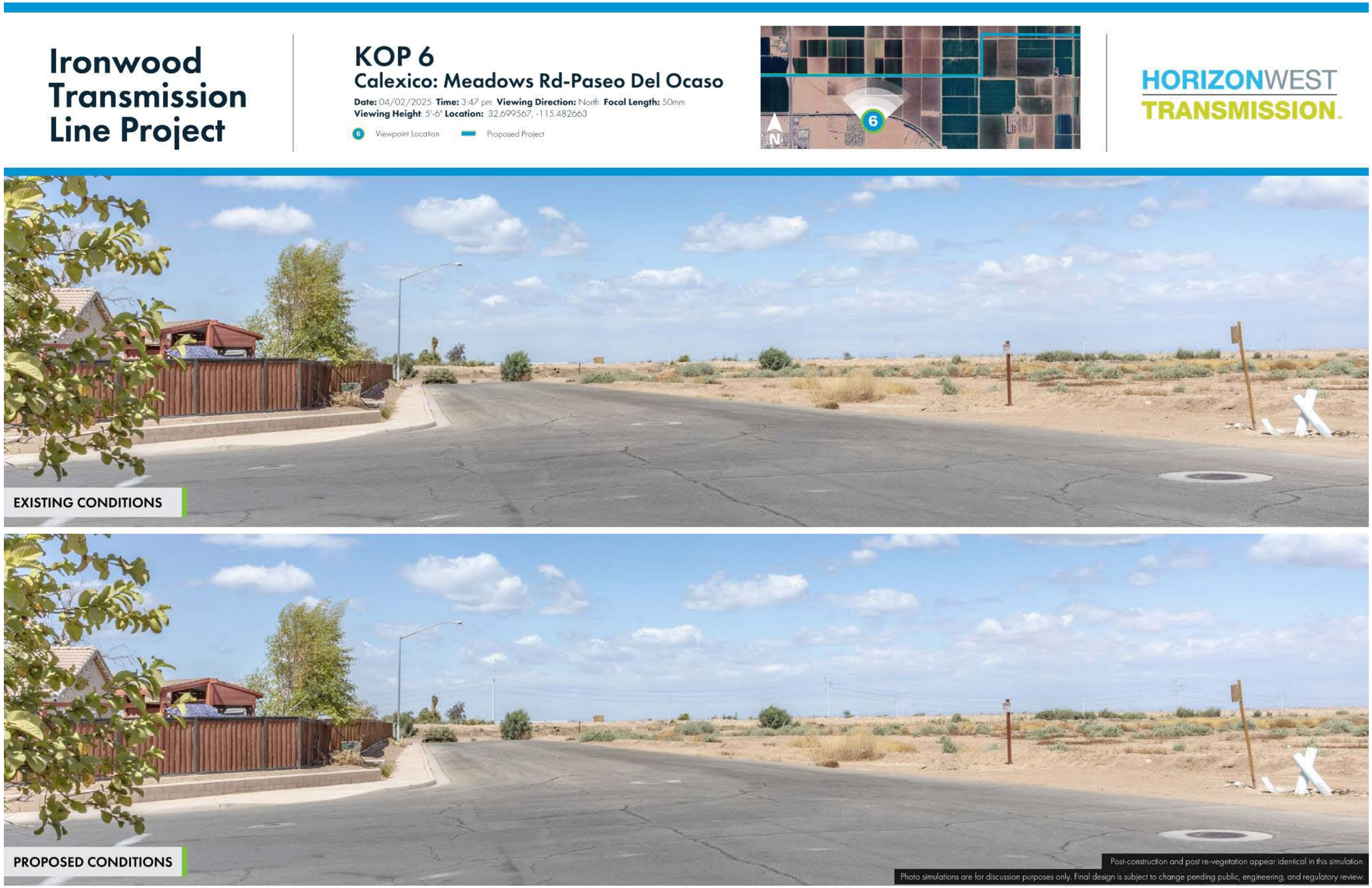


Figure 5.1-31 KOP 7 - Simulated View with Proposed Project



Figure 5.1-32 KOP 10 - Simulated View with Proposed Project



Figure 5.1-33 KOP 11 - Simulated View with Proposed Project



Figure 5.1-34 KOP 15 - Simulated View with Proposed Project



Figure 5.1-35 KOP 16 - Simulated View with Proposed Project-Post Construction

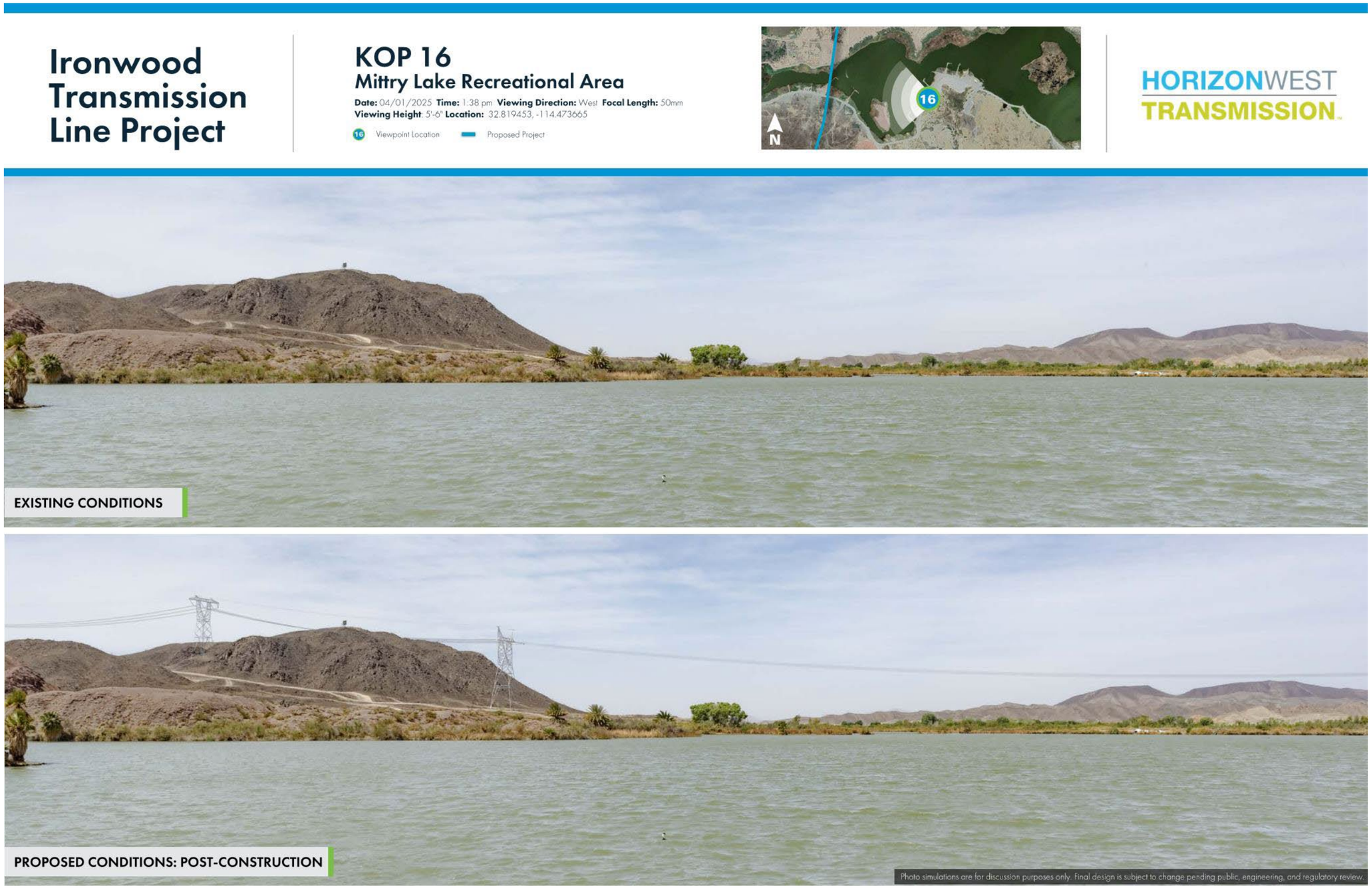


Figure 5.1-36 KOP 16 - Simulated View with Proposed Project-Post Revegetation

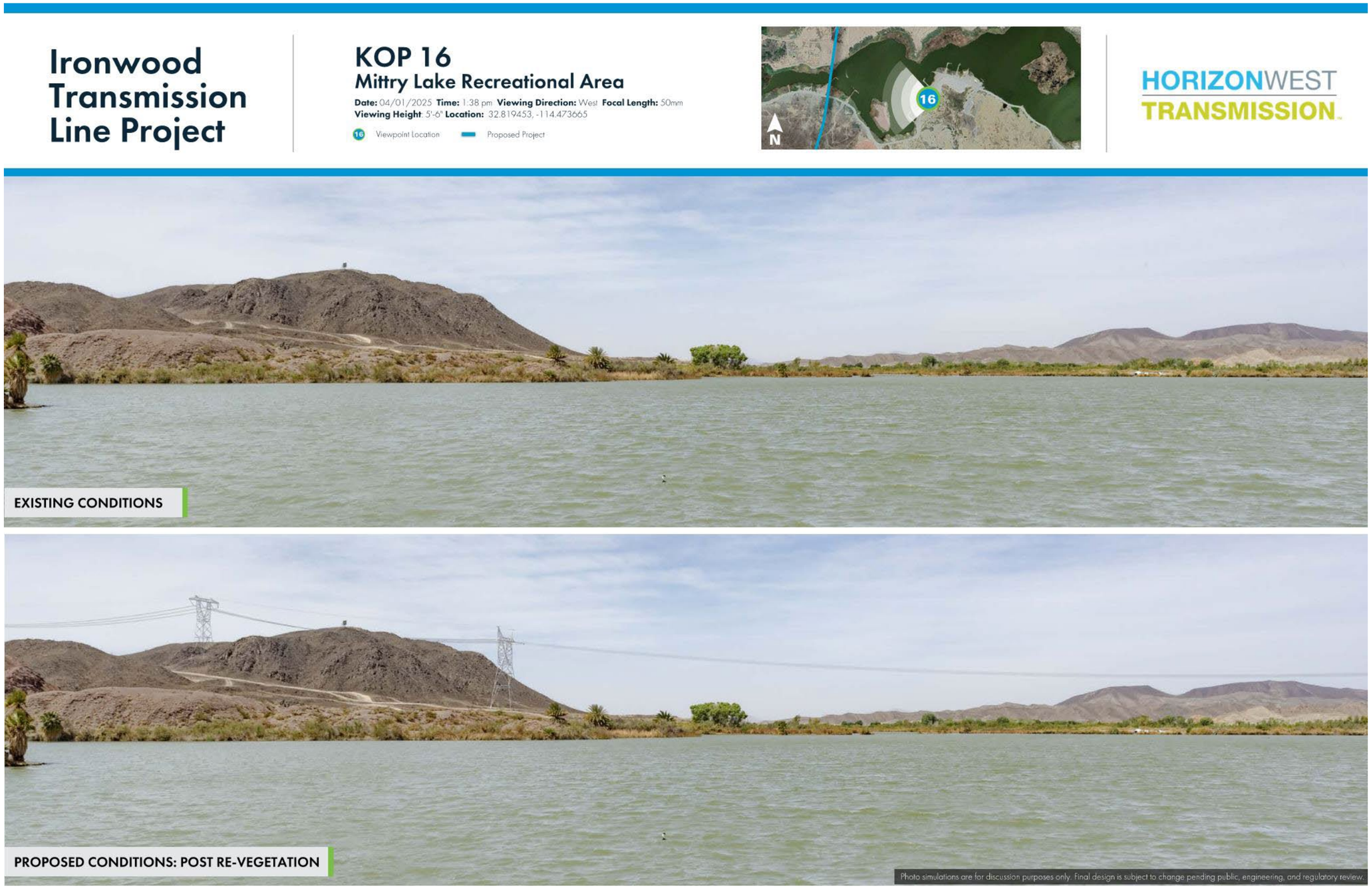


Figure 5.1-37 KOP 18 - Simulated View with Proposed Project



Figure 5.1-38 KOP 19 - Simulated View with Proposed Project

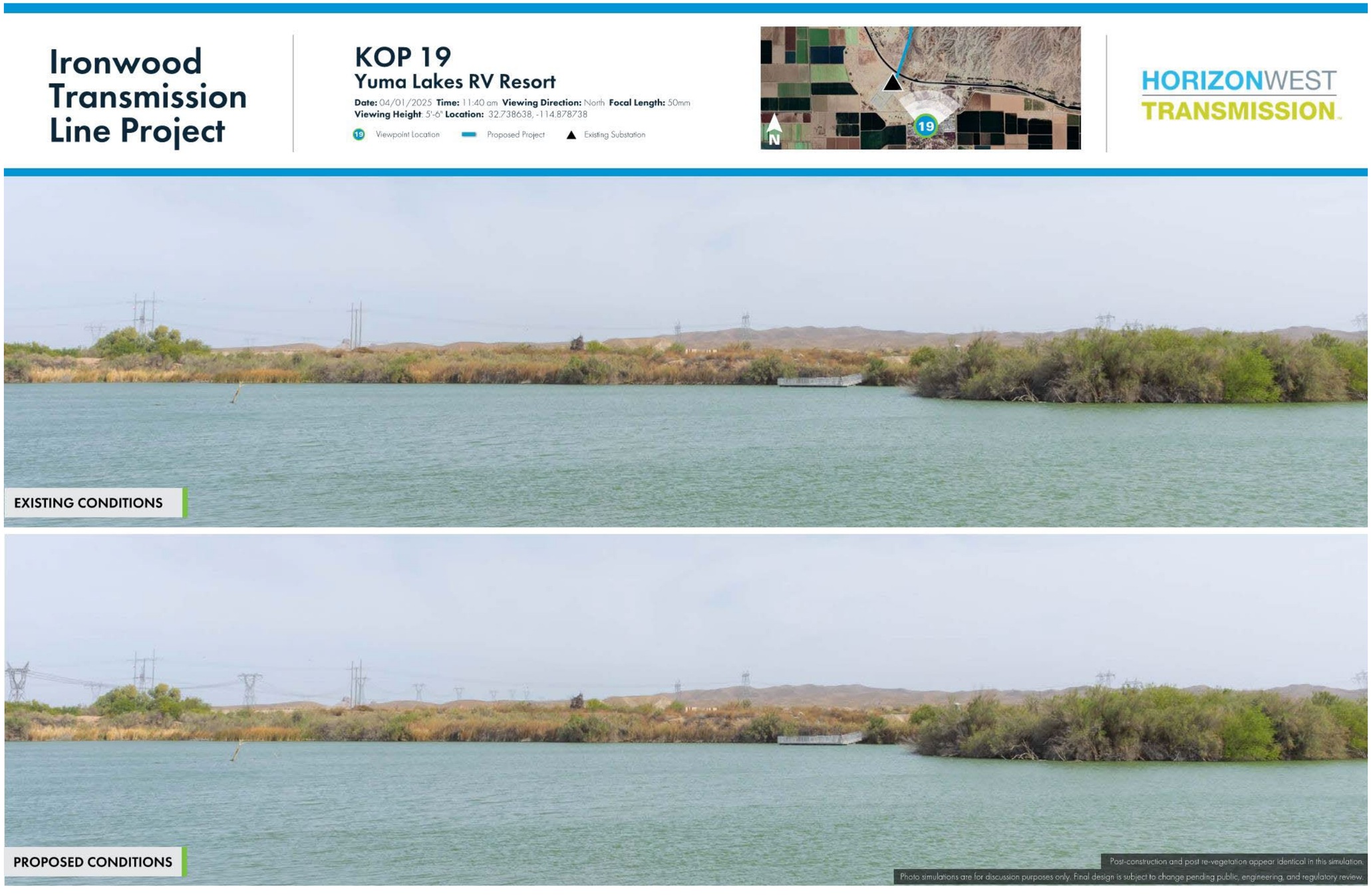
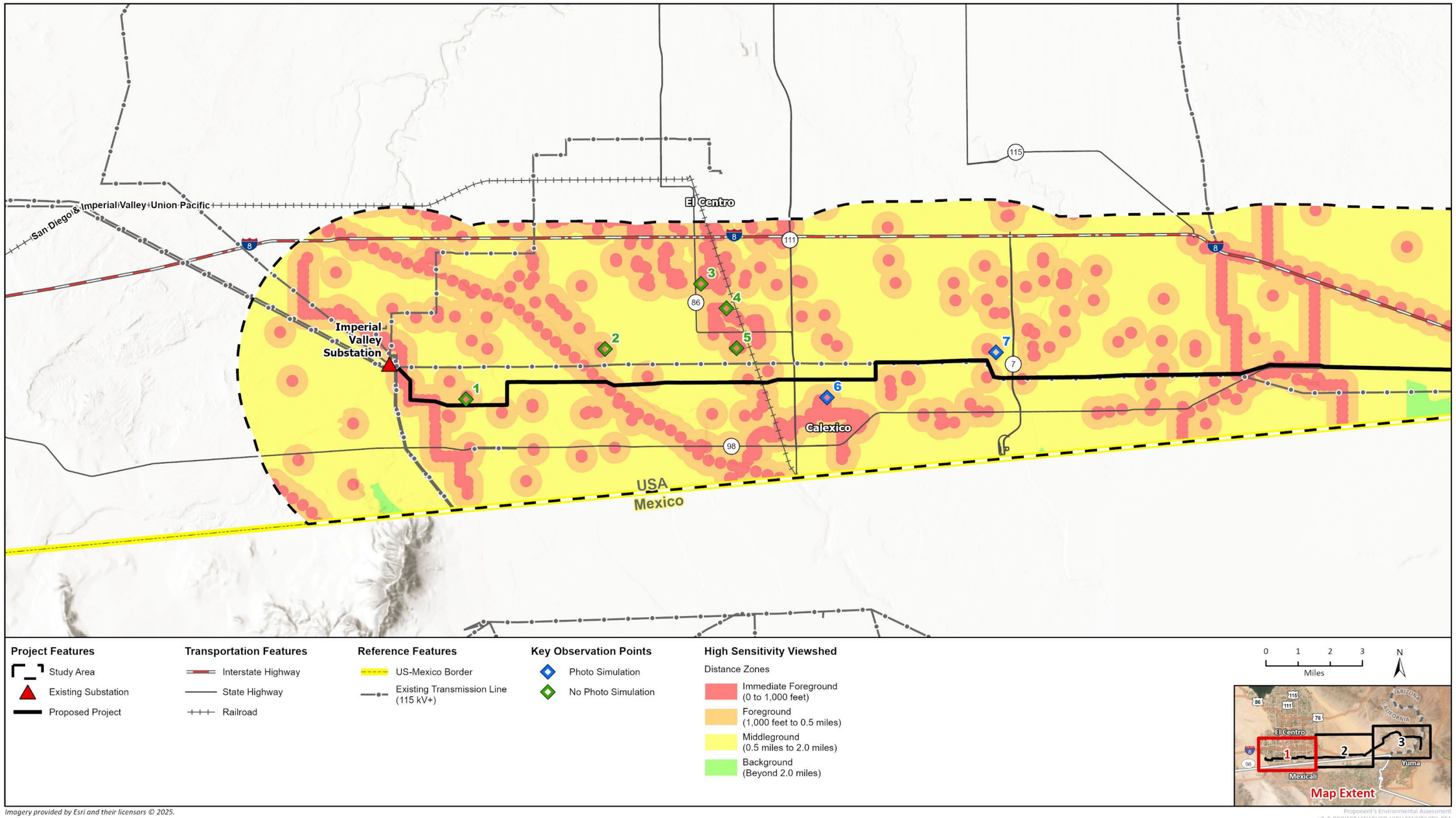


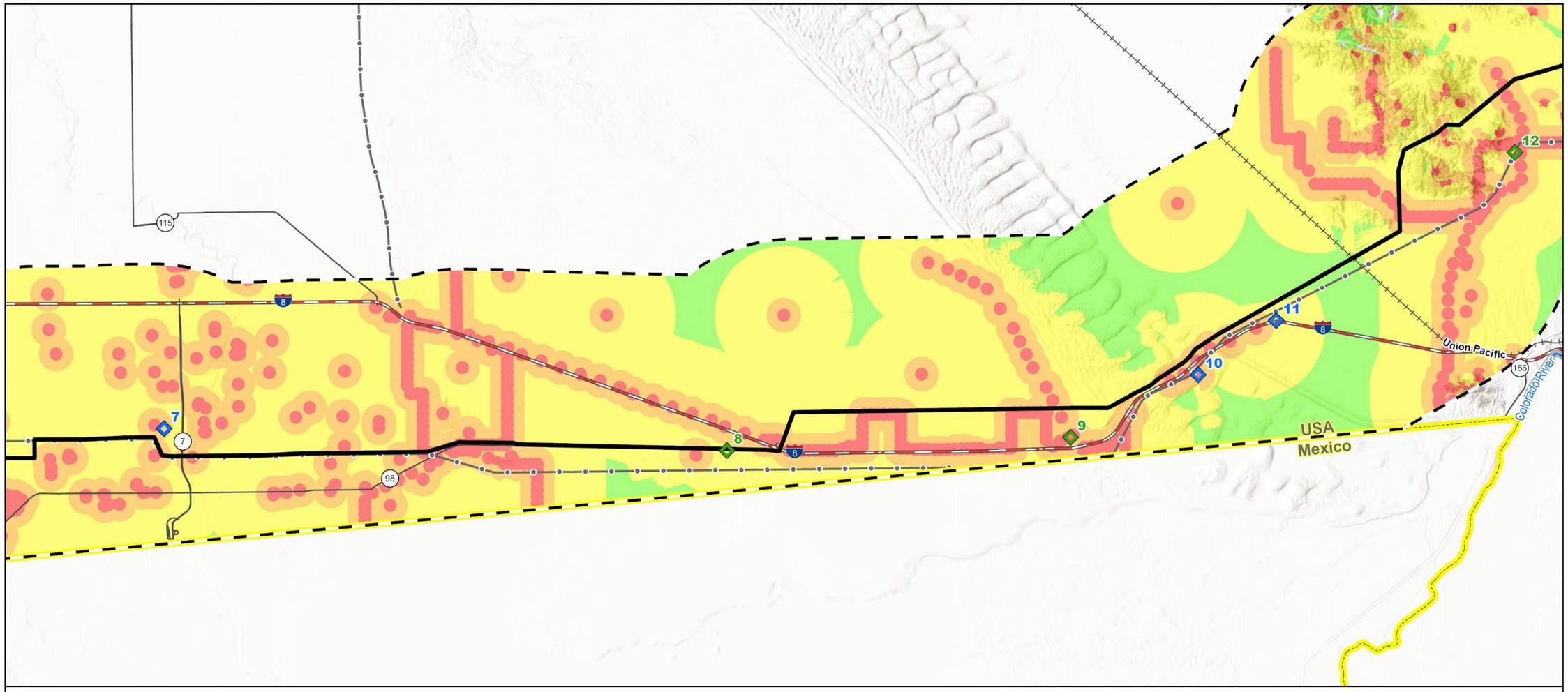
Figure 5.1-39 Project Viewshed-High Sensitivity



Imagery provided by Esri and their licensors © 2025.

Proponent's Environmental Assessment
V2_5-PROJECT VIEWSHED-HIGH SENSITIVITY_PEA

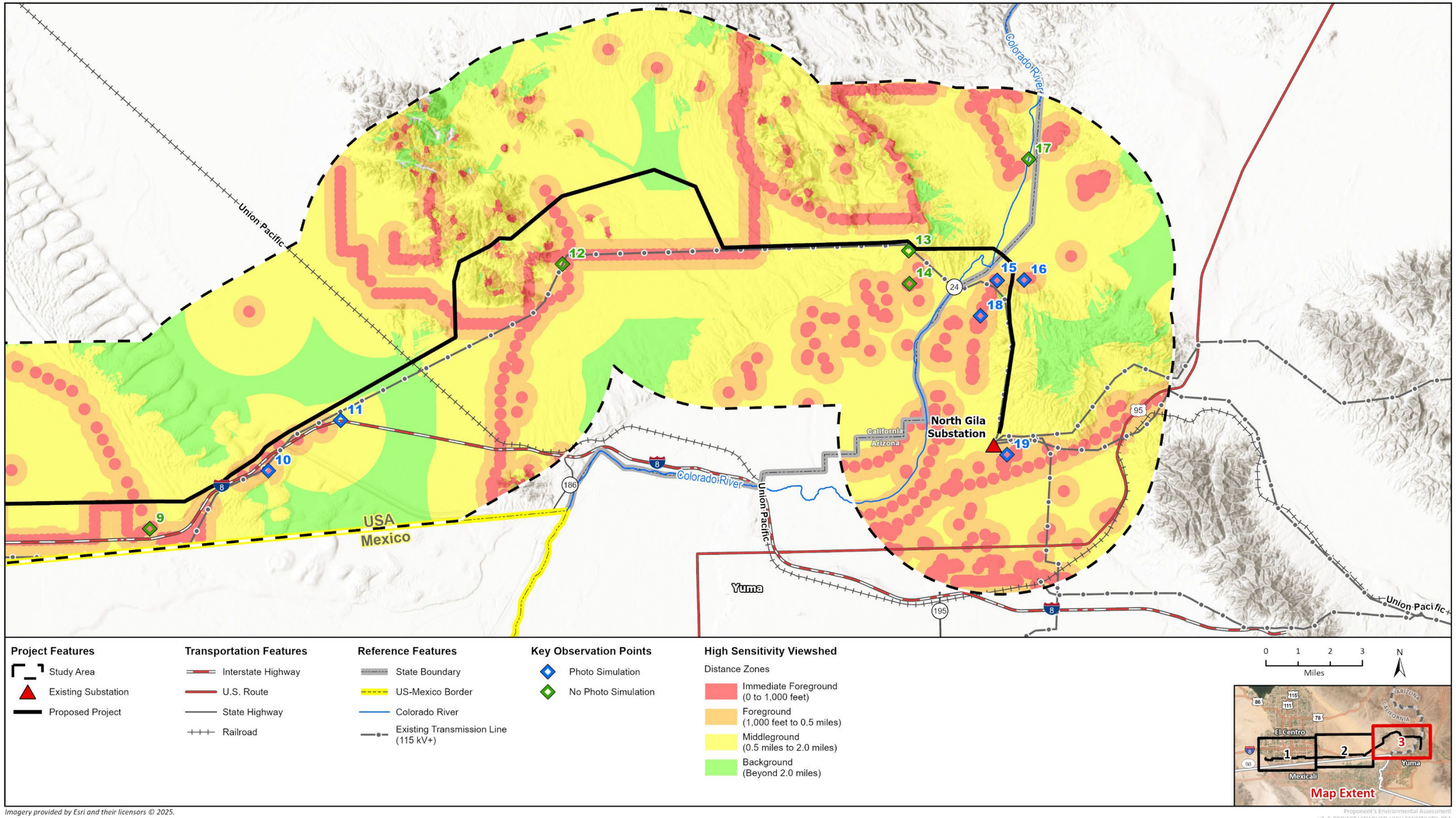
Figure 5.1-40 Project Viewshed-High Sensitivity



Imagery provided by Esri and their licensors © 2025.

Proponent's Environmental Assessment
v2_5-PROJECT VIEWSHED-HIGH SENSITIVITY .PEA

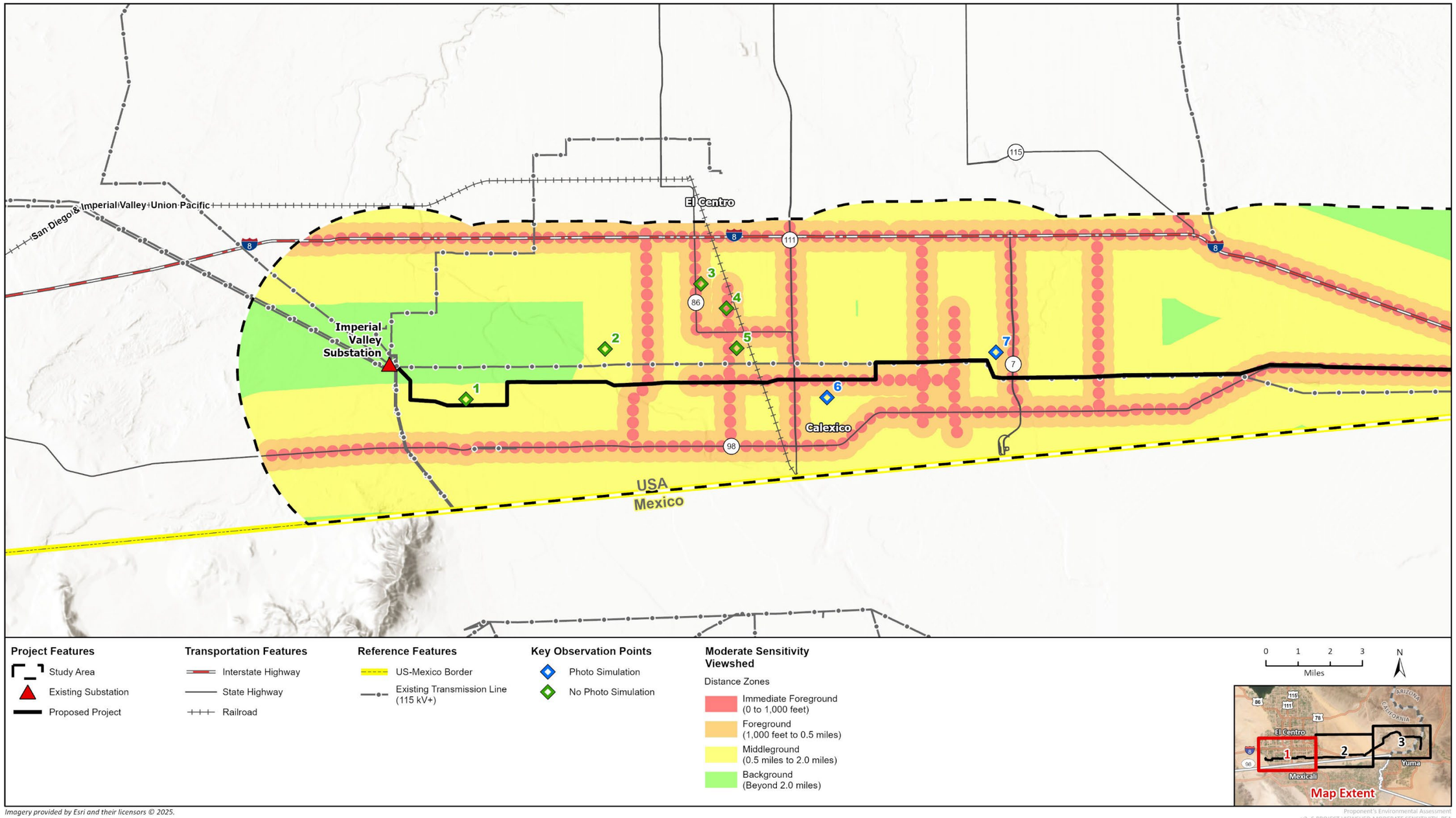
Figure 5.1-41 Project Viewshed-High Sensitivity



Imagery provided by Esri and their licensors © 2025.

Proponent's Environmental Assessment
V2_5-PROJECT VIEWSHED-HIGH SENSITIVITY_PEA

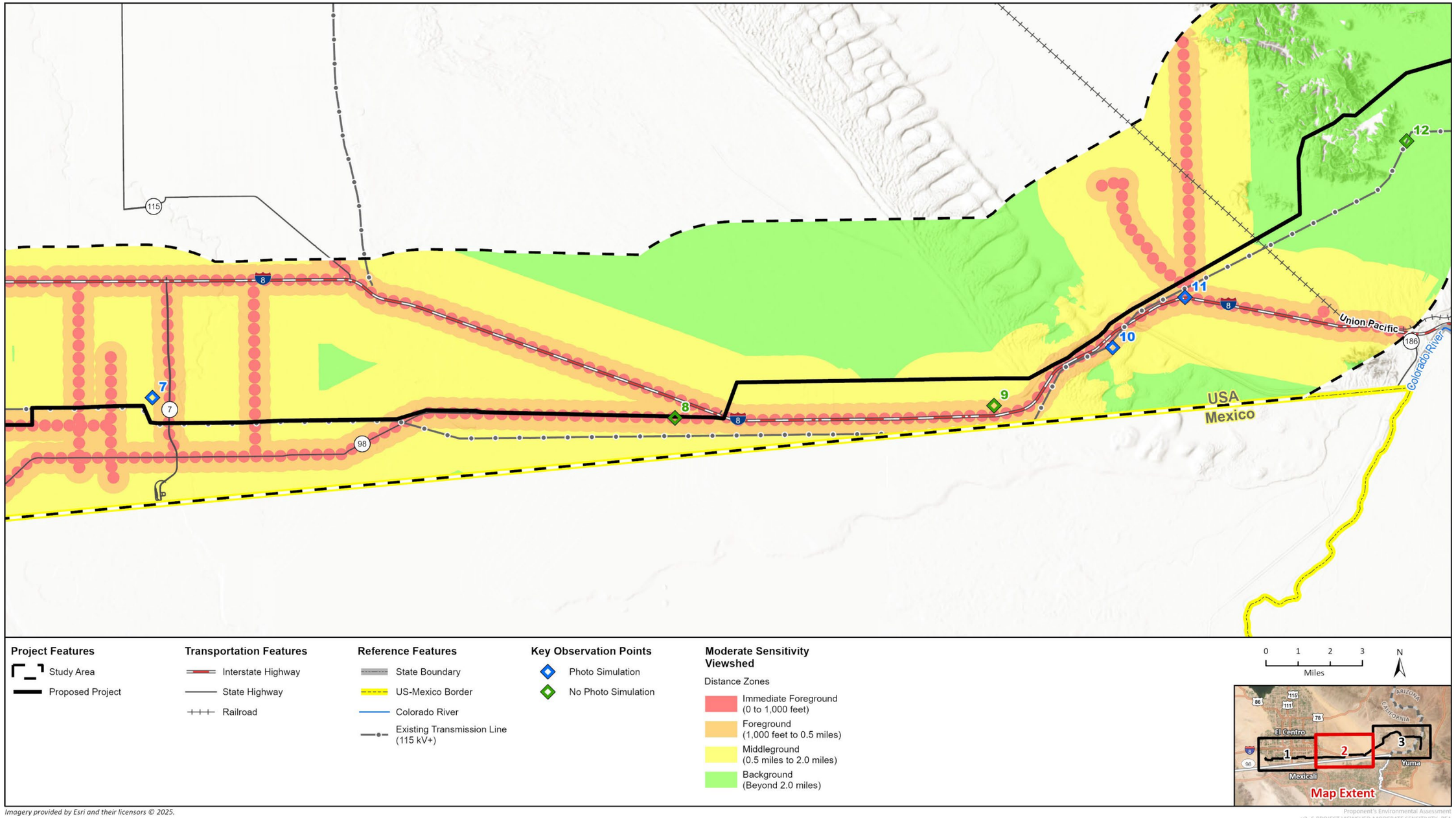
Figure 5.1-42 Project Viewshed-Moderate Sensitivity



Imagery provided by Esri and their licensors © 2025.

Proponent's Environmental Assessment
v2_6-PROJECT VIEWSHED-MODERATE SENSITIVITY_PEA

Figure 5.1-43 Project Viewshed-Moderate Sensitivity



Imagery provided by Esri and their licensors © 2025.

Proponent's Environmental Assessment
v2_6-PROJECT VIEWSHED-MODERATE SENSITIVITY_PEA

Figure 5.1-44 Project Viewshed-Moderate Sensitivity

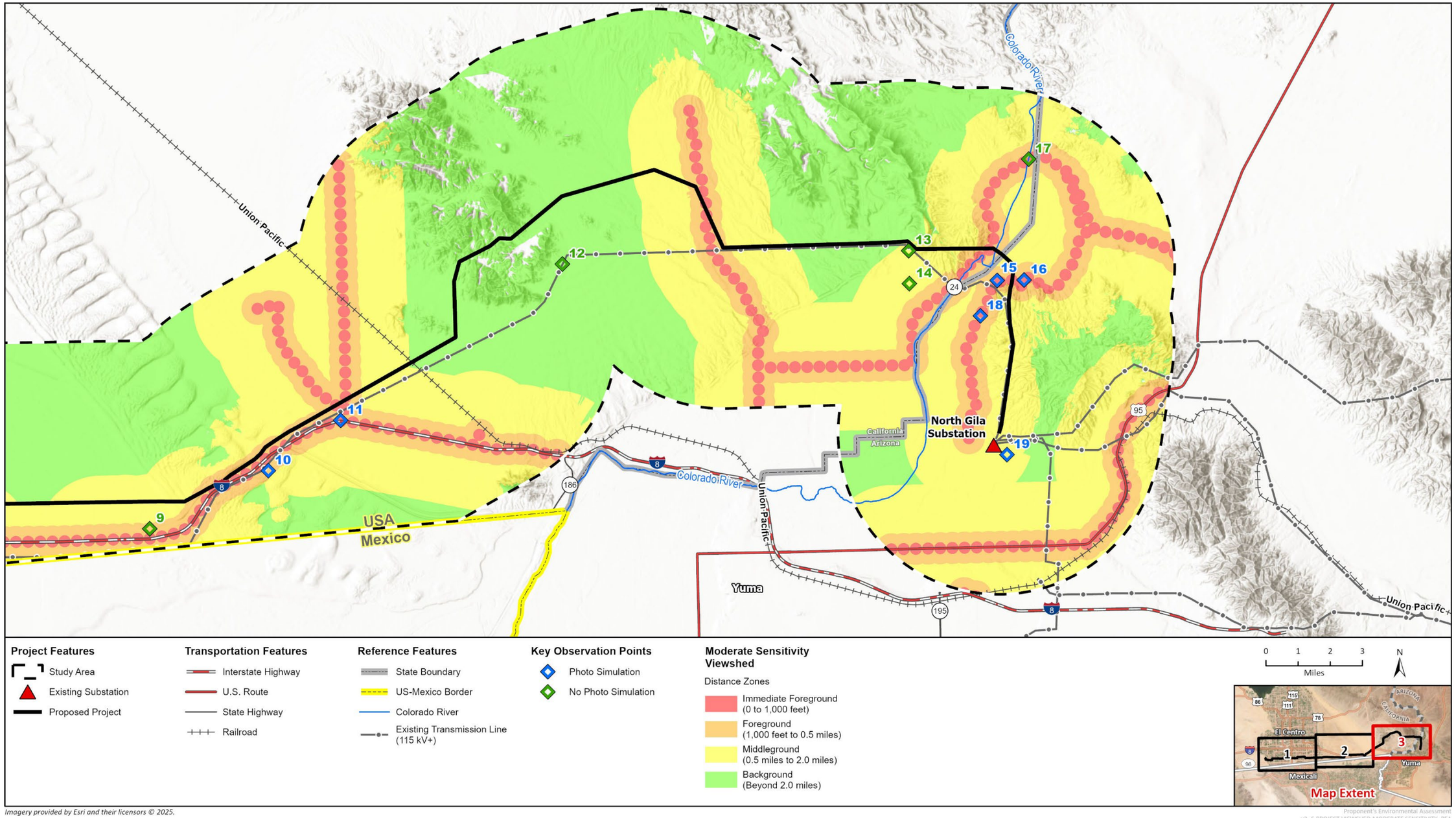


Figure 5.1-45 Project Viewshed-KOPs

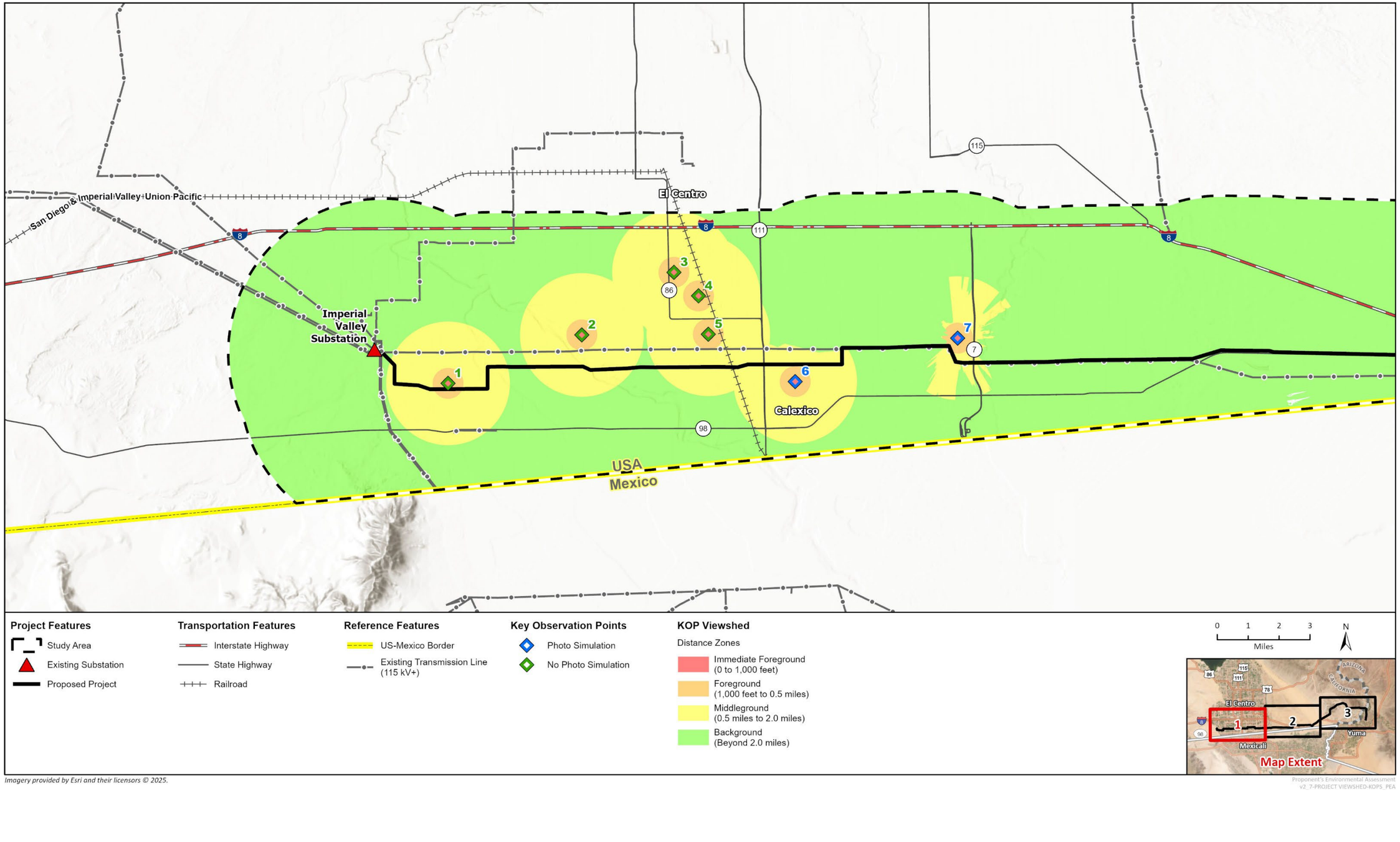
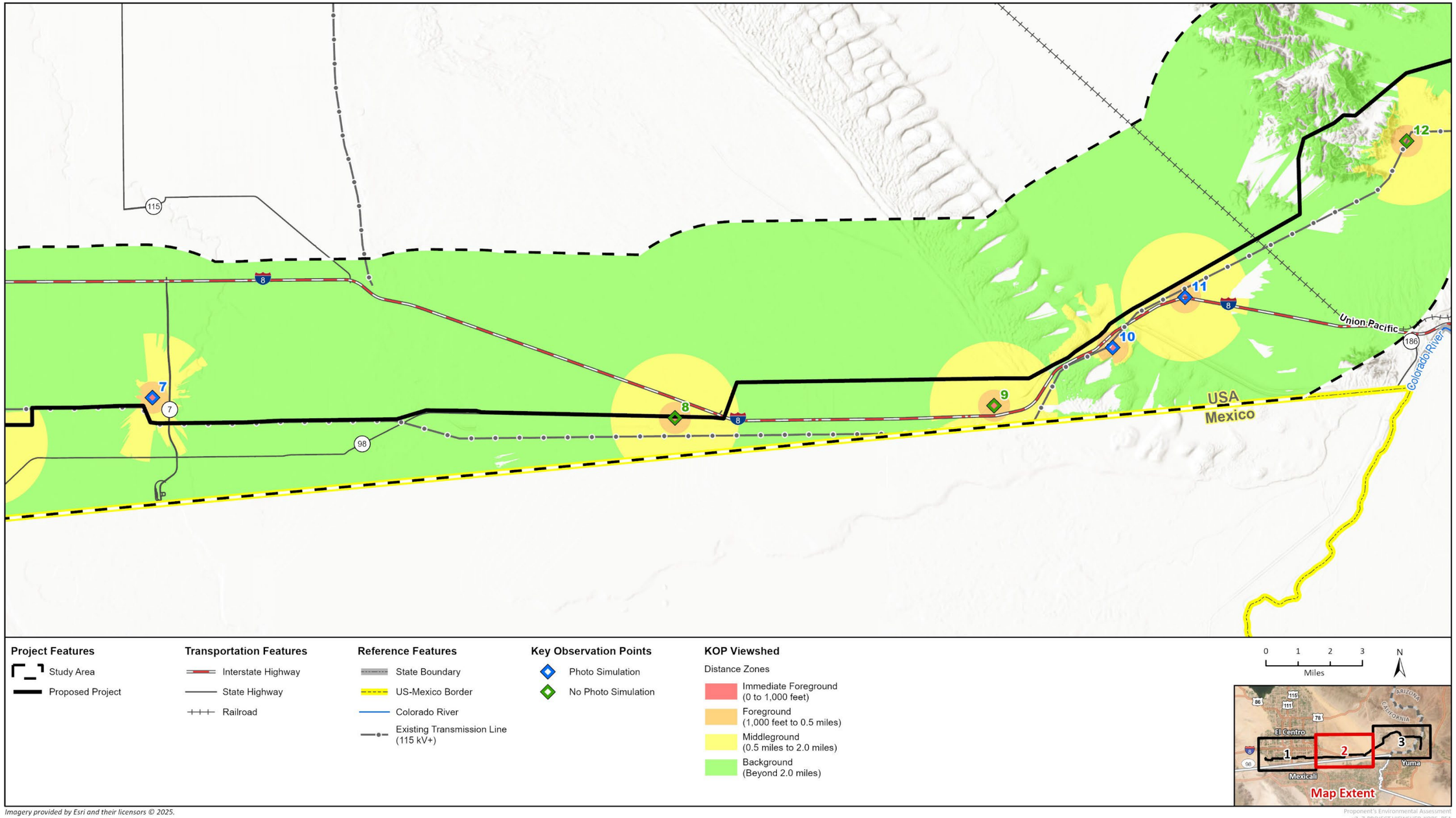


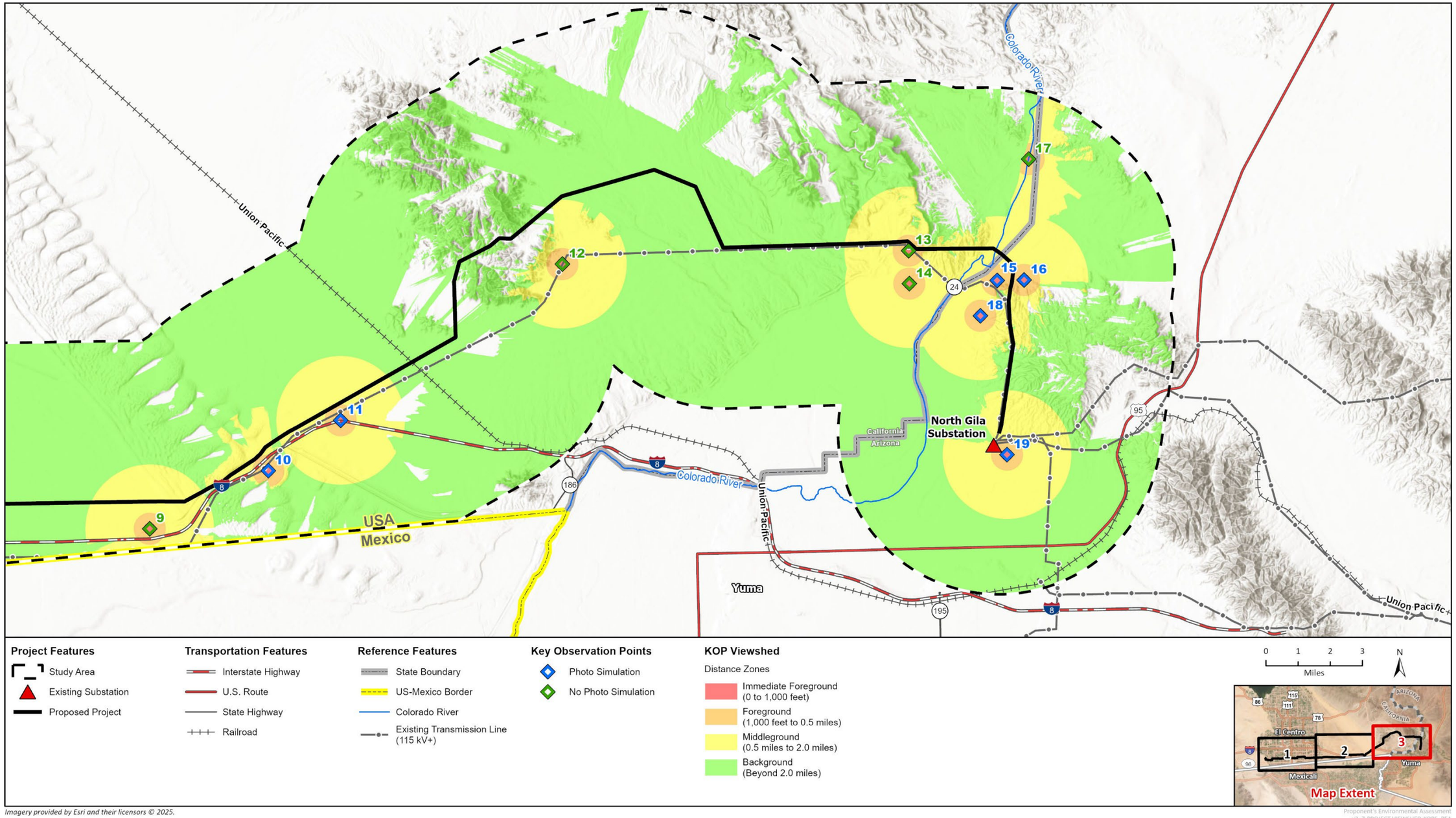
Figure 5.1-46 Project Viewshed-KOPs



Imagery provided by Esri and their licensors © 2025.

Proponent's Environmental Assessment
v2_7-PROJECT VIEWSHED-KOPS_PEA

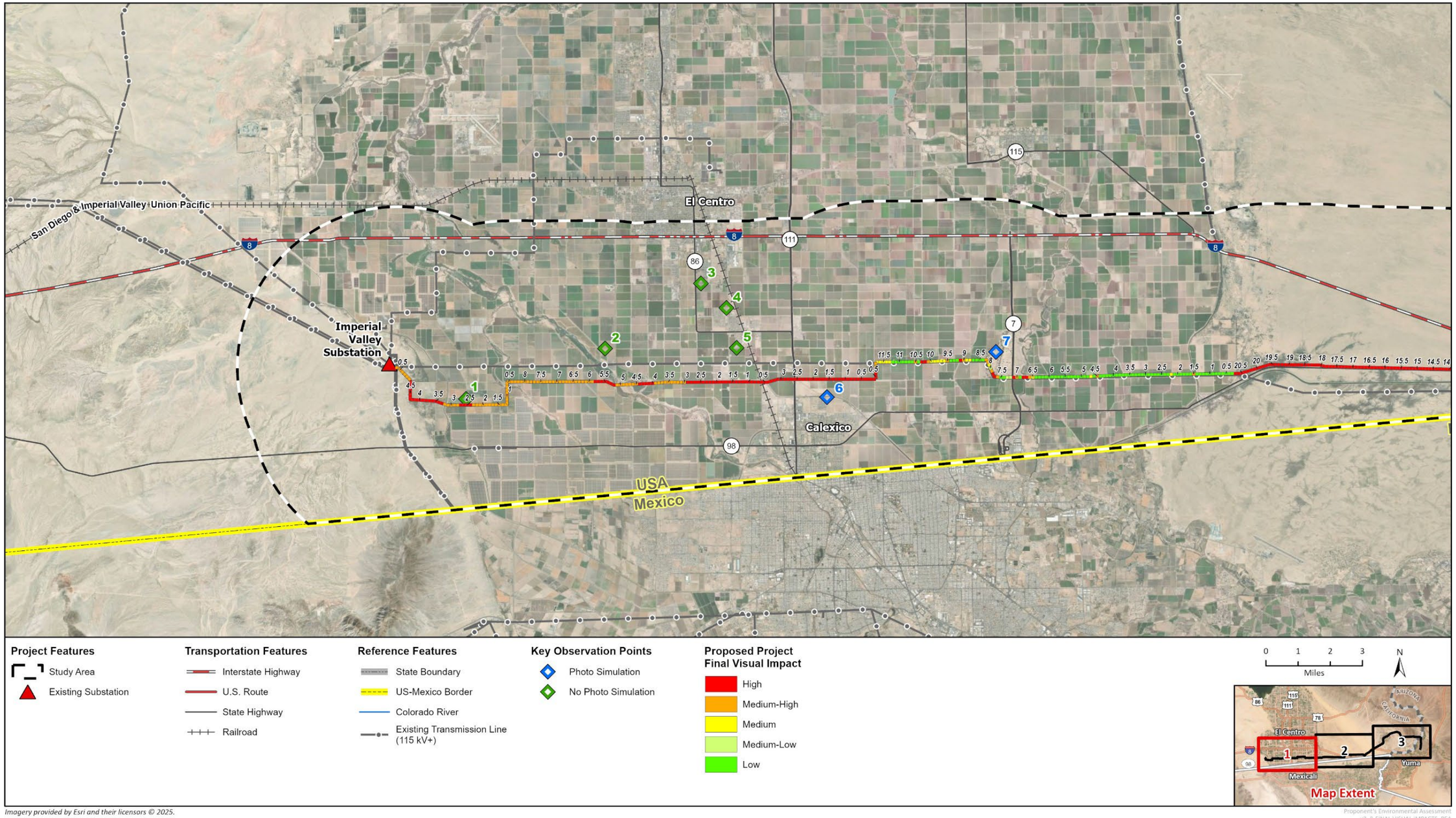
Figure 5.1-47 Project Viewshed-KOPs



Imagery provided by Esri and their licensors © 2025.

Proponent's Environmental Assessment
v2_7-PROJECT VIEWSHED-KOPS_PEA

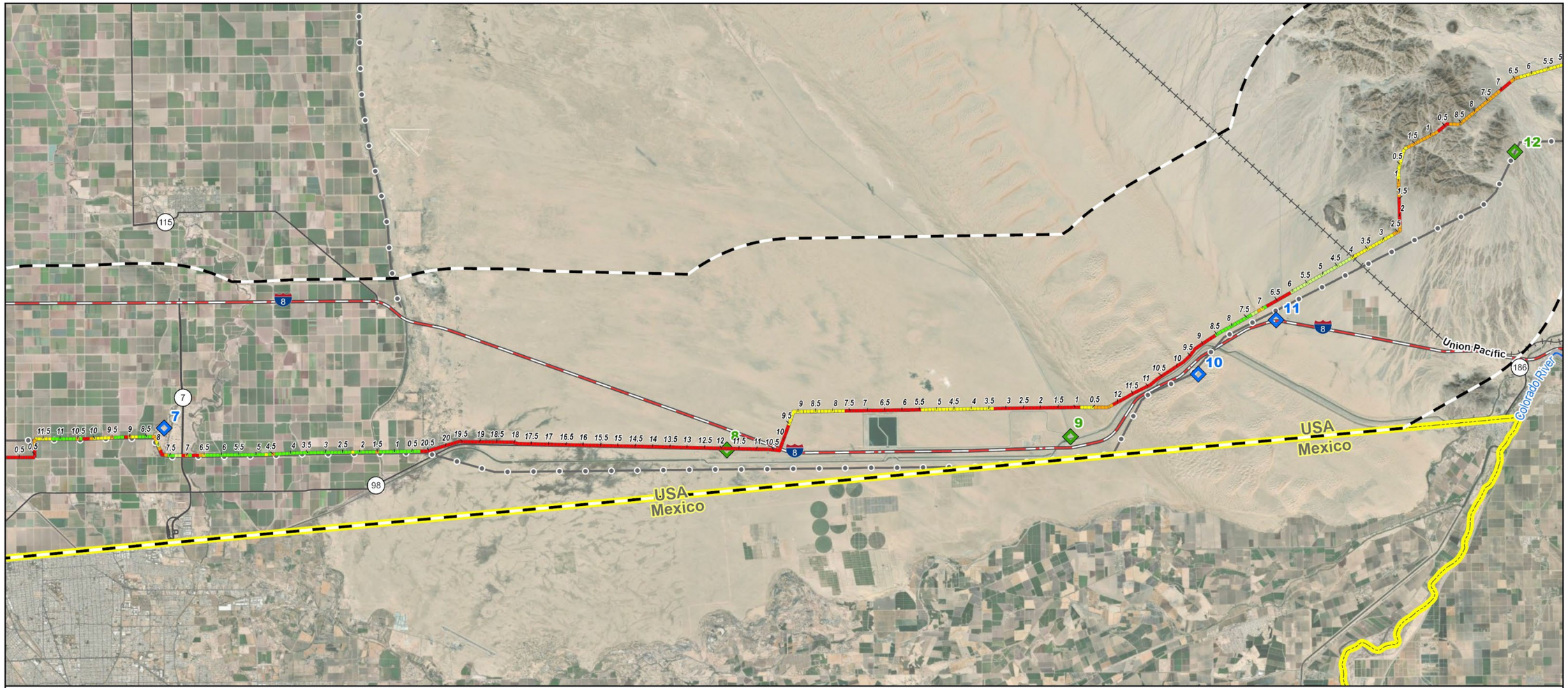
Figure 5.1-48 Final Visual Impacts



Imagery provided by Esri and their licensors © 2025.

Proponent's Environmental Assessment
v2_8-FINAL VISUAL IMPACTS_PEA

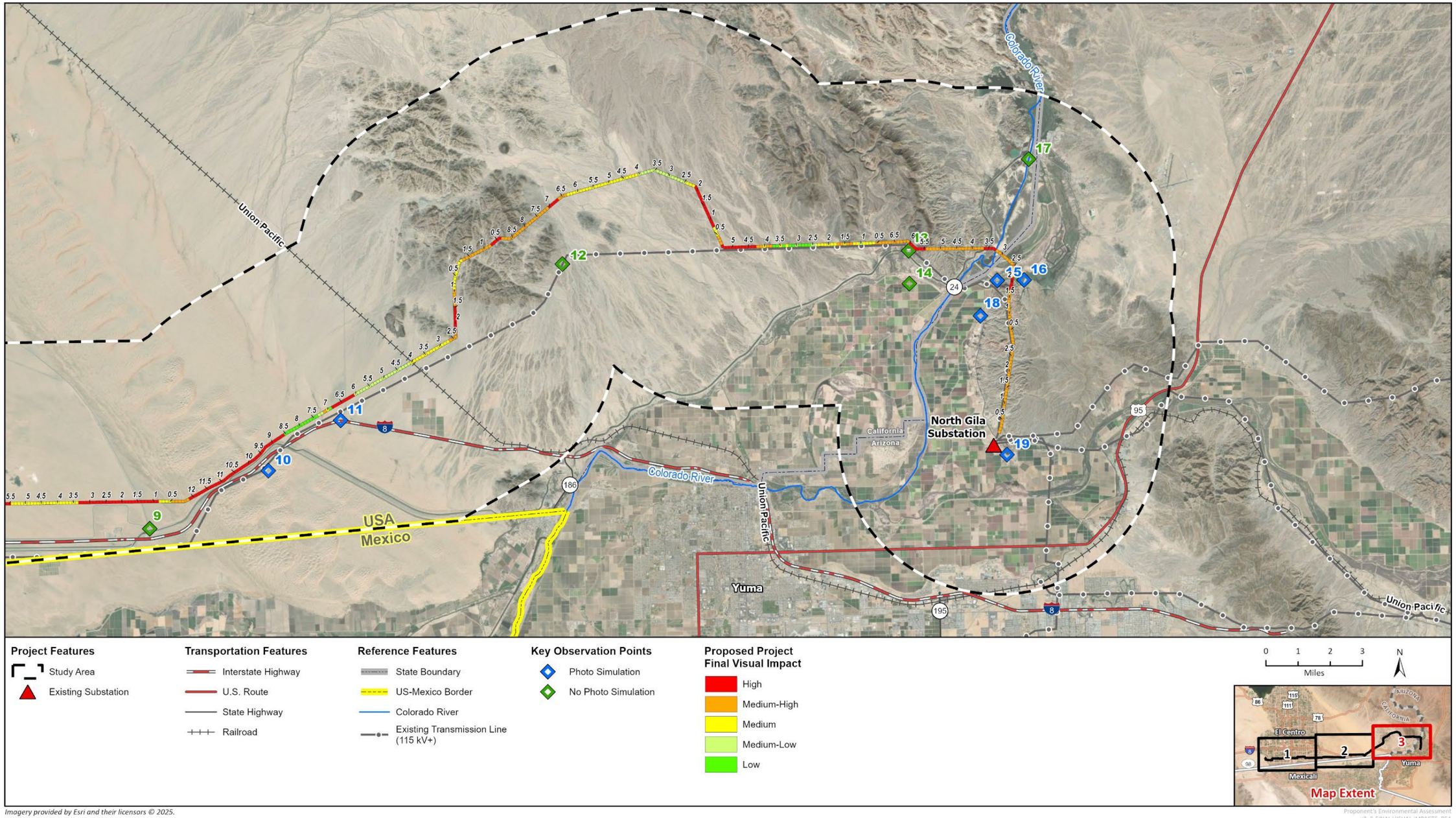
Figure 5.1-49 Final Visual Impacts



Imagery provided by Esri and their licensors © 2025.

Proponent's Environmental Assessment
v2_8-FINAL VISUAL IMPACTS_PEA

Figure 5.1-50 Final Visual Impacts



Imagery provided by Esri and their licensors © 2025.

Proponent's Environmental Assessment
v2_8-FINAL VISUAL IMPACTS_PEA

5.1.4.4 Summary Analysis of Visual Change

The Proposed Project construction and operation would have a less than significant impact on scenic vistas because there are no specific viewpoints or locations that provides expansive view of a highly valued landscape for the benefit of the general public, and there are no officially designated scenic vistas by public agencies by signage or in LMPs. Although there are expansive views of the surrounding landscape of scenic areas throughout the Proposed Project alignment, construction and operation would not substantially adversely affect those views. Significant, unavoidable impacts would occur from the degradation of public views of the Proposed Project where the Project crosses agricultural areas where no or minimal detracting developed feature or utility development occurs as seen within the immediate foreground or foreground as a result of strong structure contrasts. Similarly, strong or moderate structure contrasts as seen from KOPs in the immediate foreground and foreground would cause portions of the Proposed Project to be non-compliant with VRM Class II, and strong structure contrast as seen from KOPs in the immediate foreground and foreground would cause portions of the Proposed Project to be non-compliant with VRM Class III. Less than significant impacts would occur as a result of light or glare with the implementation of APMs, and no impacts on scenic highways would occur. Figure 5.1-48 through Figure 5.1-50 shows the final impact levels of the Proposed Project in 0.1 mile increments along the reference centerline and Table 5.1-11 summarizes visibility by distance zone for sensitive viewers, contrast levels, BLM VRM Classes crossed and distances of non-compliance, and final impact levels.

Table 5.1-11 Proposed Project Impact Summary

	Route Segment			
Data Category	**Segment 1**	**Segment 2**	**Segment 3**	**Total (mi.)**
Length (Miles)	37.5	20.3	29.0	**86.8**
Visibility-KOP (Miles)				
IFG	0.3	0.4	0.4	**1.1**
FG	2.2	0.7	1.1	**4.0**
MG	14.8	6.3	16.0	**37.1**
BG	19.2	12.9	11.5	**43.6**
NS	1.0	0	0	**1.0**
Visibility-High Sensitivity (Miles)				
IFG	3.3	6.4	5.7	**15.4**
FG	7.6	4.2	9.7	**21.5**
MG	22.8	9.7	13.6	**46.1**
BG	3.8	0	0	**3.8**
NS	0	0	0	**0**
Visibility-Moderate Sensitivity (Miles)				
IFG	4.4	10.3	8.6	**23.3**
FG	7.7	0.4	4.8	**12.9**
MG	11.6	9.6	14.8	**36.0**
BG	13.8	0	0.8	**14.6**
NS	0	0	0	**0**

Data Category	Route Segment			
	Segment 1	Segment 2	Segment 3	Total (mi.)
Project Contrast (Miles)				
S	33.6	20.3	18.5	**72.4**
MS	1.4	0	0.2	**1.6**
M	1.2	0	3.0	**4.2**
MW	0	0	0	**0**
W	1.3	0	7.3	**8.6**
BLM VRM Class (Miles)				
II	4.5	1.1	0	**4.6**
III	25.0	8.9	0.2	**34.1**
IV	4.3	5.3	1.9	**11.5**
BLM VRM Compliance				
Non-Compliant	10.9	5.4	0.2	**16.5**
Compliant	22.9	9.7	1.9	**34.5**
Final Impacts				
H	9.9	15.6	10.6	**36.1**
MH	14.1	0.4	8.9	**23.4**
M	7.1	4.3	1.6	**13.0**
Ml	4.2	0	0.3	**4.5**
L	2.2	0	7.6	**9.8**

Note: Numbers have been rounded for presentation purposes. Totals may not reflect the sum of the addends.

5.1.5 CPUC Draft Environmental Measures

There are no CPUC Draft Environmental Measures applicable to the Proposed Project.

5.1.5.1 Applicant Proposed Measures

The following APMs would be implemented to reduce aesthetic and visual impacts associated with the Project:

- **AES-1:** Vegetation removal would be minimized to the greatest extent feasible to allow for the safe construction and operation of the facilities and to minimize potentially significant visual impacts resulting from land scars.
- **AES-3:** Non-specular conductors would be used to reduce visual impacts.
- **AES-4:** "Dulled" galvanized steel or self-weathering finish structures would be used to reduce visual impacts.
- **AES-5:** Match Spans - Standard tower design would be modified to correspond with spacing of existing transmission line structures where feasible, and within limits of standard tower design. The typical span would be modified to correspond with existing structures, but not necessarily at every location. This would reduce visual contrast and/or potential operational conflicts.

This page intentionally left blank.

5.2 Agriculture and Forestry Resources

This section describes the agriculture and forestry resources in the vicinity of the Ironwood Transmission Line Project (Proposed Project), as well as impacts that may result from construction and operation of the Proposed Project.

Research for this analysis involved a review of the following resources:

- California Department of Conservation's (DOC) Farmland Mapping and Monitoring Program (FMMP) Important Farmland maps
- United States (U.S.) Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) publications
- U.S. Geological Survey (USGS) National Land Cover Database (NLCD)
- Local agency planning documents
- Aerial imagery

5.2.1 Environmental Setting

The Proposed Project is located in Imperial County, California and Yuma County, Arizona on federal, state, municipal, and private land. These lands include unincorporated areas of Imperial and Yuma counties, the city of Calexico, California, and public lands under the jurisdiction or management of the U.S. Bureau of Land Management, U.S. Bureau of Reclamation, and the California Department of Parks and Recreation. Approximately 29 percent of the Proposed Project crosses active agricultural areas. The environmental setting section describes the existing agricultural and forestry resources in the vicinity of the Proposed Project.

5.2.1.1 Agricultural Resources and Geographic Information System

5.2.1.1.1 California Areas Designated as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland

Agricultural land in California is designated by the DOC and identified in the FMMP (DOC 2022). Agricultural land is defined by the California Environmental Quality Act (CEQA) in California Public Resources Code (PRC) Section 21060.1. The goal of the FMMP is to provide consistent and impartial data to decision makers for use in assessing present status, reviewing trends, and planning for the future of California's agricultural land resources. The FMMP produces Important Farmland Maps, which combine soil quality, available irrigation, and land use information. "Important Farmland" is defined as land that qualifies under the FMMP as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland:

- **Prime Farmland** has the best combination of physical and chemical characteristics able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- **Farmland of Statewide Importance** is similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

- **Unique Farmland** consists of lesser quality soils and produces the state's leading agricultural crops. This land is usually irrigated, but includes non-irrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.

Additional categories, including Farmland of Local Importance, Grazing Land, Confined Animal Agriculture, Nonagricultural and Natural Vegetation, Semi-agricultural and Rural Commercial Land, Vacant or Disturbed Land, Rural Residential Land, Urban and Built-up Land, and Water, are identified within Important Farmland Maps, but are not considered Important Farmland for agricultural impact assessment purposes (DOC 2025).

The Proposed Project crosses lands identified as Prime Farmland, Farmland of Statewide Importance, and Unique Farmland (DOC 2022). Figure 5.2-1a, Figure 5.2-1b, and Figure 5.2-1c illustrate Farmland within 0.5 mile of the Proposed Project.

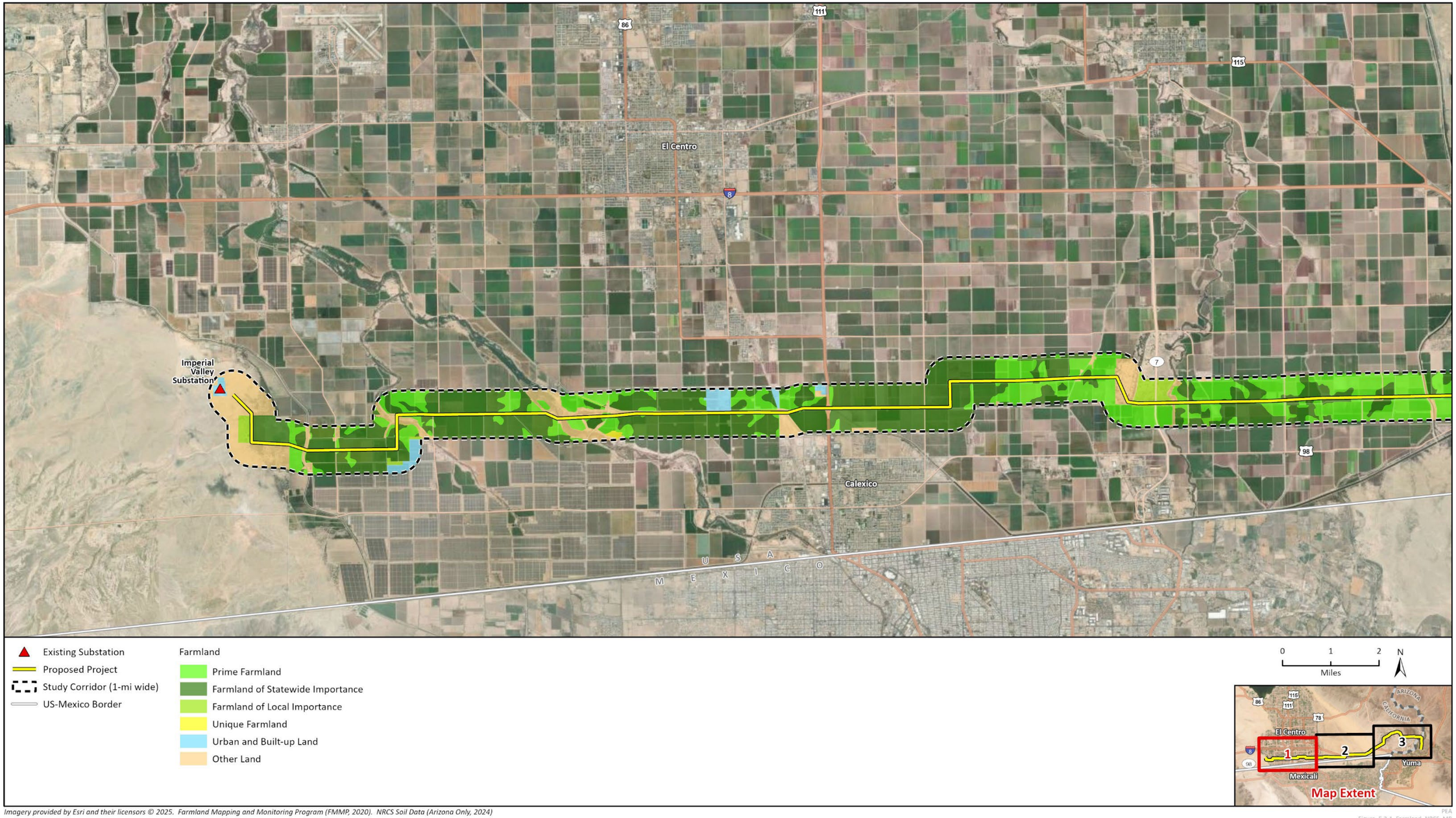
5.2.1.1.2 Arizona Areas Designated as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland

Agricultural land in Arizona is designated by the NRCS Web Soil Survey (2019). "Important Farmland" in Arizona is defined as land that qualifies under the NRCS as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland (NRCS 2019):

- **Prime Farmland** is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil quality, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. The water supply is dependable and of adequate quality. Prime farmland is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding.
- **Farmland of Statewide Importance** includes areas of soils that nearly meet the requirements for prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. Some areas may produce as high a yield as prime farmland if conditions are favorable.
- **Unique Farmland** is land other than prime farmland that is used for the production of specific high-value food and fiber crops, such as citrus, tree nuts, olives, cranberries, and other fruits and vegetables. It has the special combination of soil quality, growing season, moisture supply, temperature, humidity, air drainage, elevation, and aspect needed for the soil to economically produce sustainable high yields of these crops when properly managed. The water supply is dependable and of adequate quality. Nearness to markets is an additional consideration.

In Arizona, the Proposed Project crosses lands identified as Prime Farmland by the NRCS. Figure 5.2-1c illustrates Farmland within 0.5 mile of the Proposed Project.

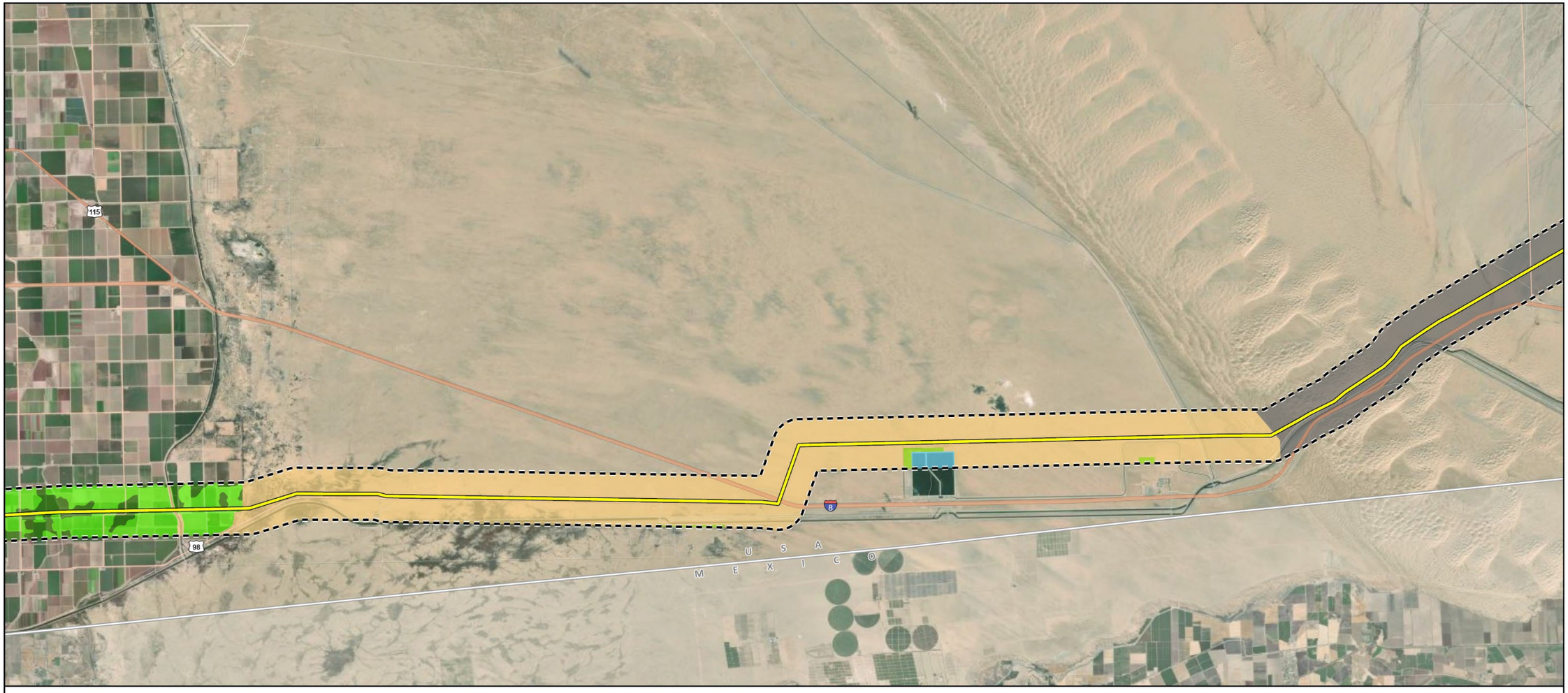
Figure 5.2-1a Farmland within 0.5 Mile of the Proposed Project



Imagery provided by Esri and their licensors © 2025. Farmland Mapping and Monitoring Program (FMMP, 2020). NRCS Soil Data (Arizona Only, 2024)

PEA
Figure_5.2-1_Farmland_NRCS_MB

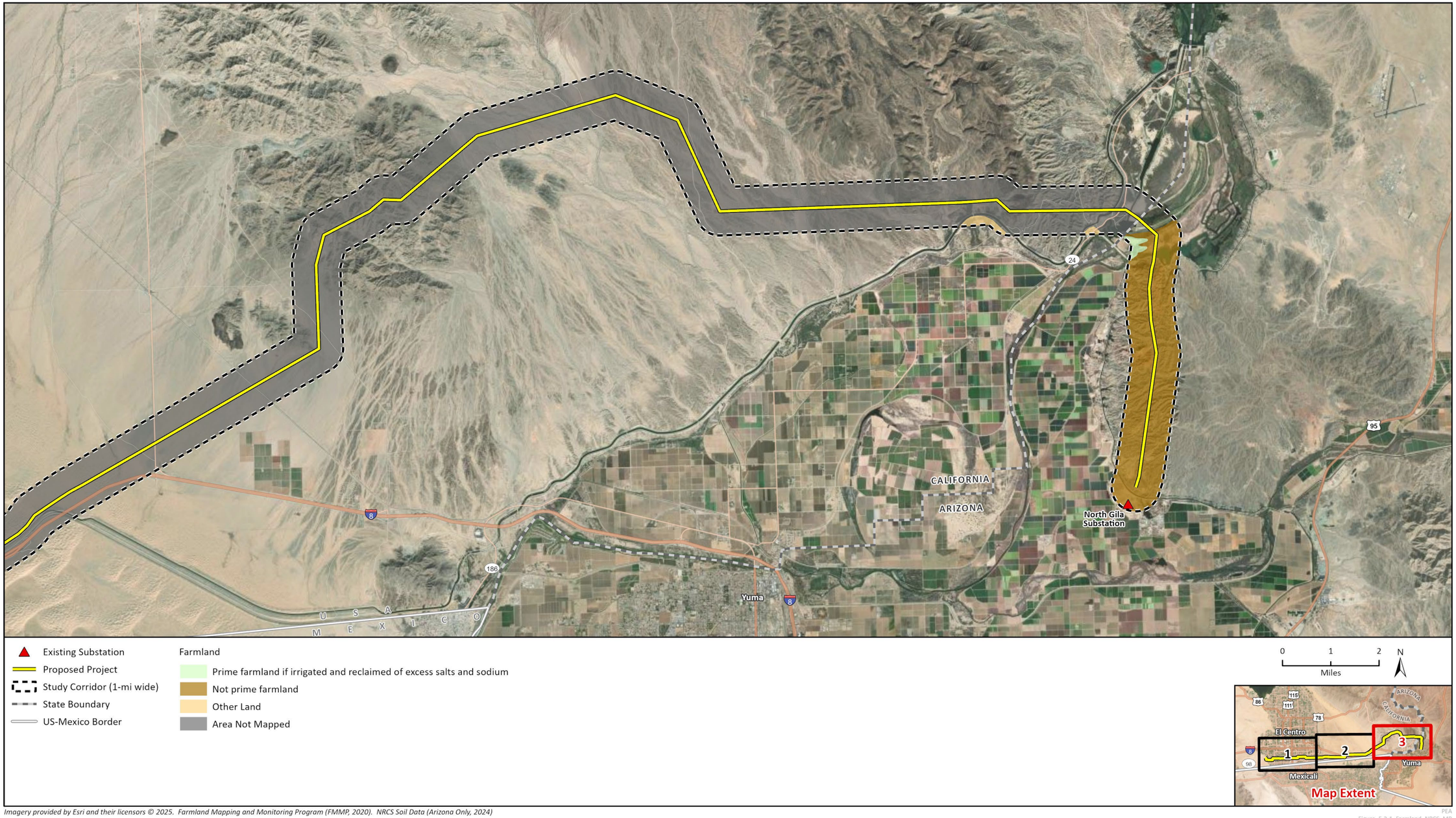
Figure 5.2-1b Farmland within 0.5 Mile of the Proposed Project



Imagery provided by Esri and their licensors © 2025. Farmland Mapping and Monitoring Program (FMMP, 2020). NRCS Soil Data (Arizona Only, 2024)

PEA
Figure_5.2-1_Farmland_NRCS_MB

Figure 5.2-1c Farmland within 0.5 Mile of the Proposed Project



Imagery provided by Esri and their licensors © 2025. Farmland Mapping and Monitoring Program (FMMP, 2020). NRCS Soil Data (Arizona Only, 2024)

PEA
Figure_5.2-1_Farmland_NRCS_MB

5.2.1.1.3 California Areas Under Williamson Act Contract

The California Land Conservation Act of 1965 (Williamson Act) Program is only applicable to California and Imperial County does not participate. Effective January 2011, Imperial County filed non-renewal on all Williamson Act contracts and is currently not entering into new contracts. The Williamson Act allows California counties to enter into contracts with private landowners to restrict specific parcels of land to agriculture or related open space use. Currently, Imperial County is one of only five counties in the state, and the only agricultural county, not to have the Williamson Act in place. As a result, there are no lands under the California Land Conservation Act of 1965 (Williamson Act Contract) within the Proposed Project and no portion of the Proposed Project traverses lands under a Williamson Act contract in Imperial County (DOC 2024). The closest Williamson Act parcels are located approximately 37 miles north of the Proposed Project.

5.2.1.1.4 California Agricultural Use Zoning

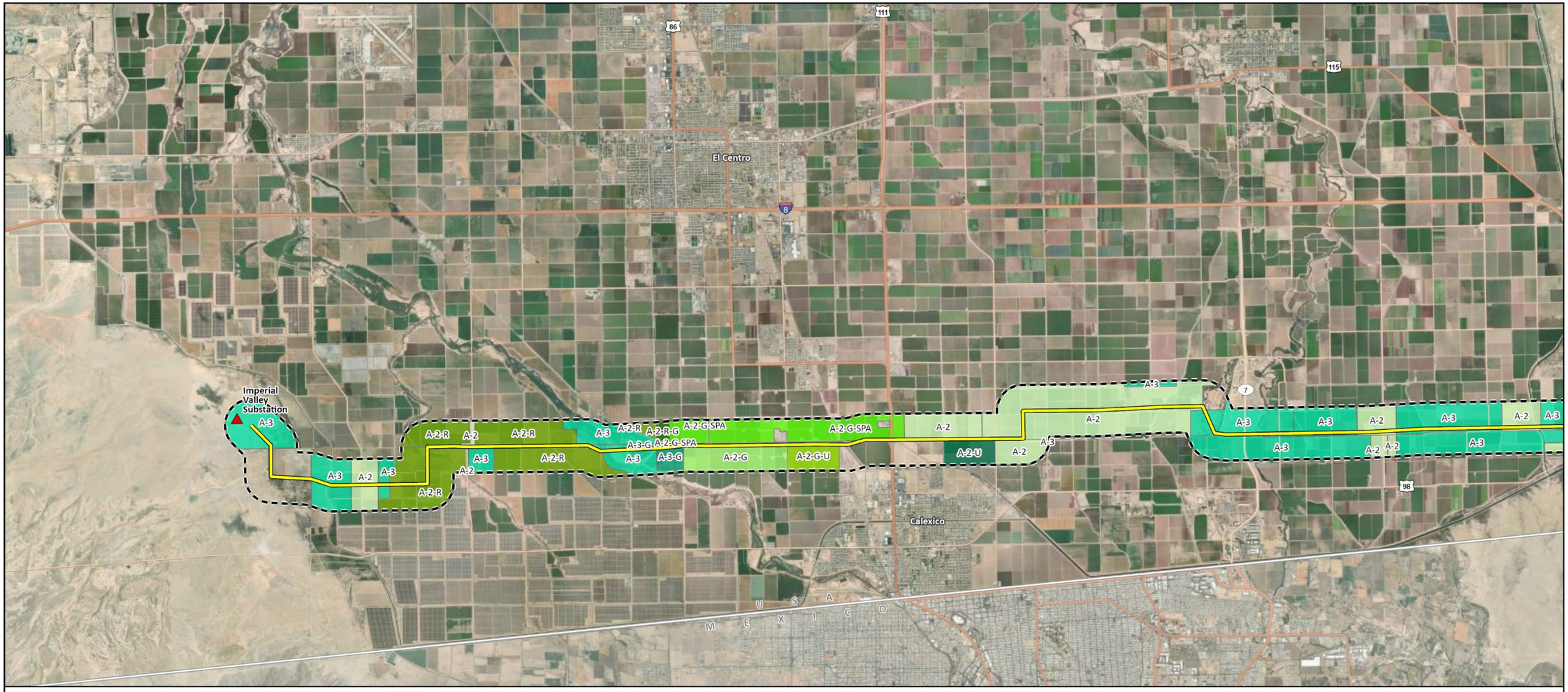
Figure 5.2-2a, Figure 5.2-2b, and Figure 5.2-2c illustrate the agricultural zoning districts within 0.5 mile of the Proposed Project. Approximately 31 percent (26.6 miles) of the Proposed Project is located on lands zoned for agricultural use in Imperial County. The Proposed Project does not cross any lands zoned for agricultural use in the city of Calexico. Table 5.2-1 shows agricultural use zoning crossed by the Proposed Project in Imperial County.

Table 5.2-1 Agricultural Use Zoning Crossed by the Proposed Project in Imperial County

Zoning district	Miles Crossed by the Proposed Project
General Agriculture (40-acre minimum) (A-2)	8.4
General Agriculture (40-acre minimum) - Geothermal Overlay (A-2-G)	2.0
General Agriculture (40-acre minimum) - Geothermal Overlay – Specific Plan Area (A-2-G-SPA)	0.8
General Agriculture (40-acre minimum) – Geothermal Overlay – Urban Areas (A-2-G-U)	1.0
General Agricultural/Rural Zone (A-2-R)	4.3
Heavy Agriculture (40 acres or larger) (A-3)	9.6
Heavy Agriculture (40 acres or larger) – Geothermal Overlay (A-3-G)	0.5

Source: Imperial County Planning and Development Services 2025.

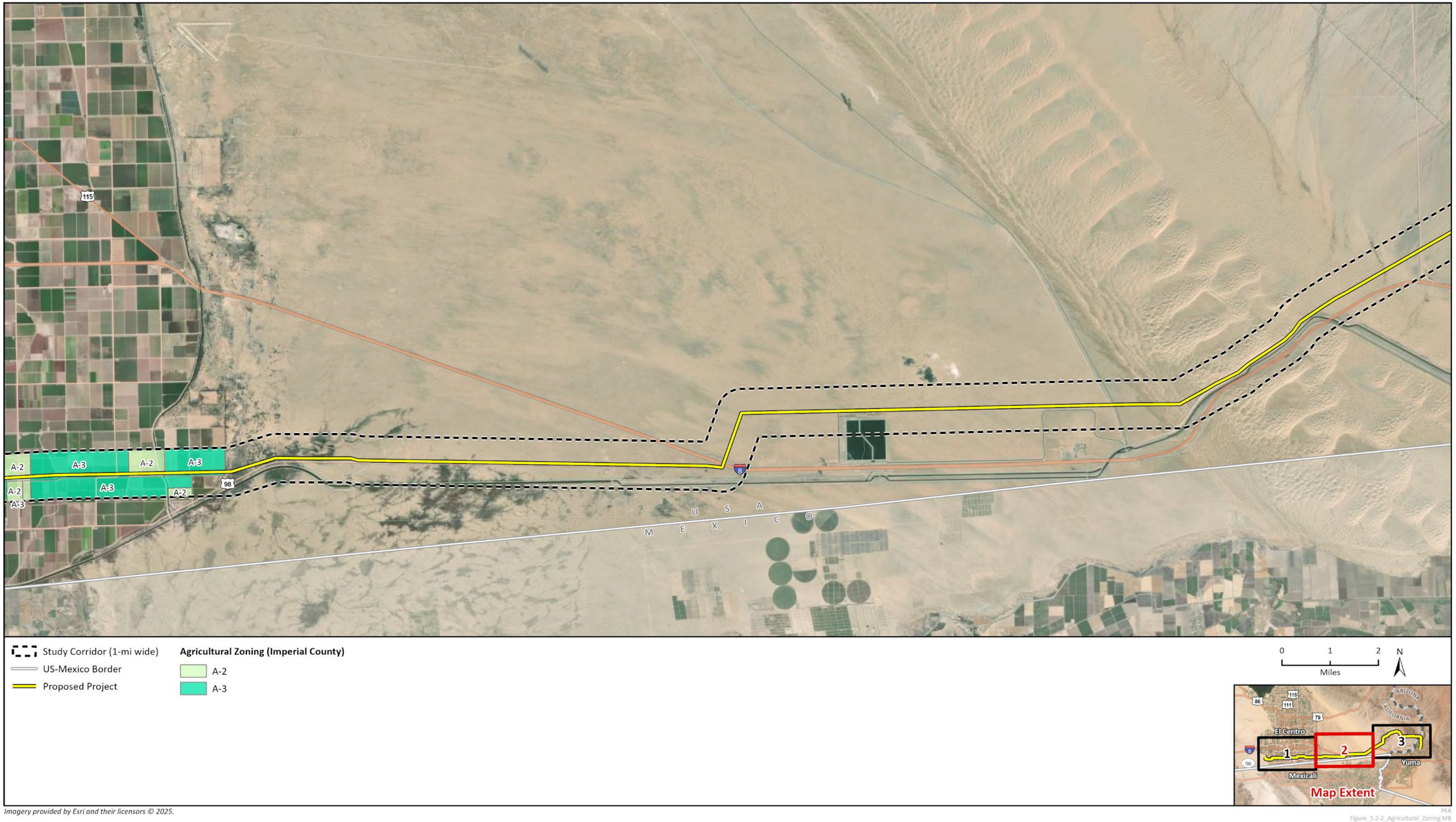
Figure 5.2-2a Agricultural Use Zoning within 0.5 Mile of the Proposed Project



Imagery provided by Esri and their licensors © 2025.

PEA
Figure_5.2-2_Agricultural_Zoning MB

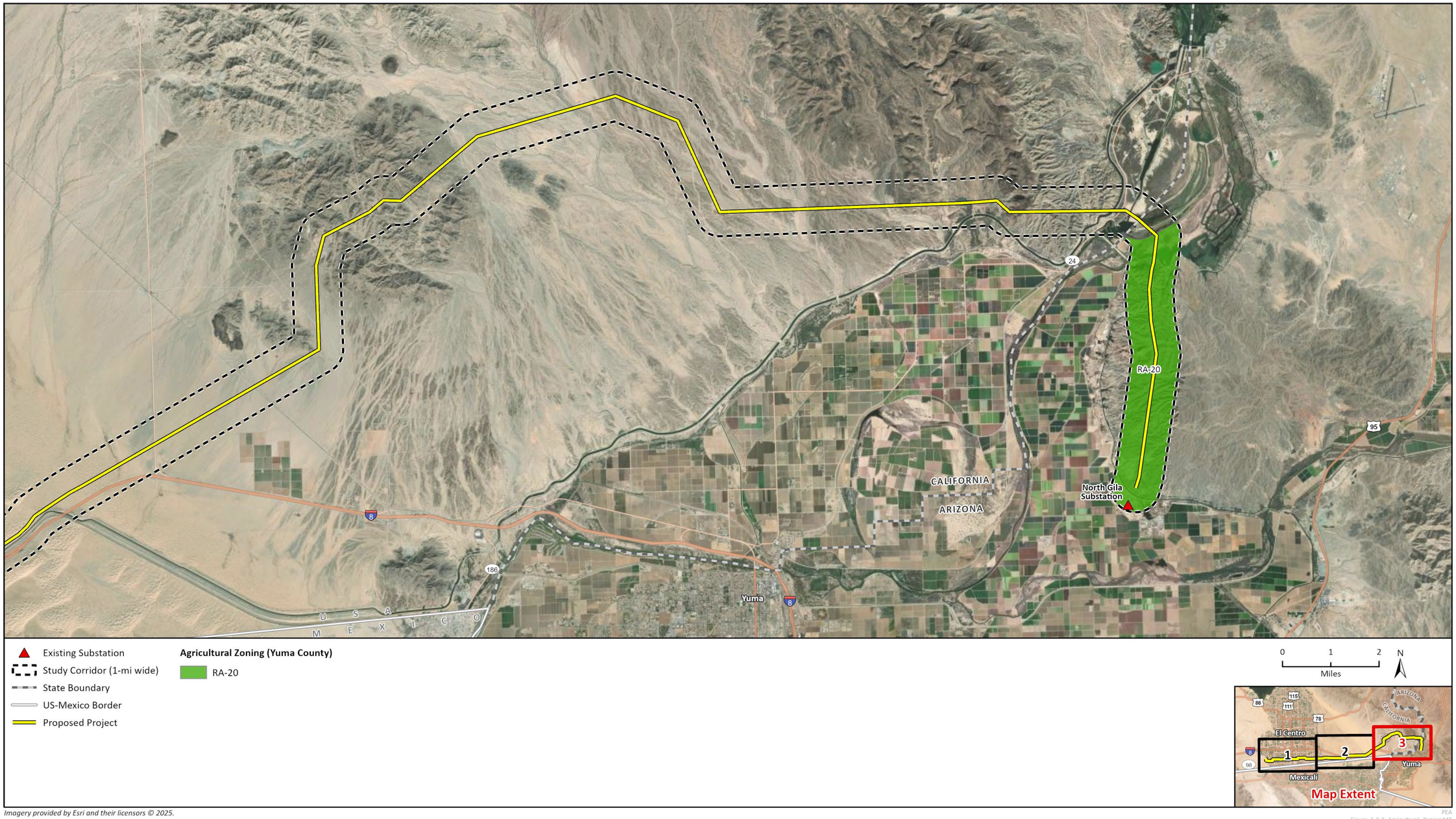
Figure 5.2-2b Agricultural Use Zoning within 0.5 Mile of the Proposed Project



Imagery provided by Esri and their licensors © 2025.

PEA
Figure_5.2-2_Agricultural_Zoning MB

Figure 5.2-2c Agricultural Use Zoning within 0.5 Mile of the Proposed Project



Imagery provided by Esri and their licensors © 2025.

PEA
Figure_5.2-2_Agricultural_Zoning MB

5.2.1.1.5 Arizona Agricultural Use Zoning

Figure 5.2-2c illustrates the agricultural zoning within 0.5 mile of the Proposed Project. Approximately 6 percent (5.3 miles) of the Proposed Project crosses lands zoned for agricultural use in Yuma County, all of which is zoned Rural Area – 20 Acre Minimum (RA-20). The RA zoning district is designated for agricultural uses.

5.2.1.1.6 California Areas Subject to Active Agricultural Use

Within Imperial County, the western approximately one-third of the Proposed Project traverses lands under active agricultural use. The Project crosses approximately 25.0 miles of land under active agricultural use. Figure 5.2-3a, Figure 5.2-3b, and Figure 5.2-3c illustrate lands under active agricultural use within 0.5 mile of the Proposed Project.

5.2.1.1.7 Arizona Areas Subject to Active Agricultural Use

Within Yuma County, the Proposed Project does not cross land under active agricultural use. Figure 5.2-3c illustrates lands under active agricultural use within 0.5 mile of the Proposed Project.

5.2.1.1.8 Geographic Information System Data

Geographic Information System (GIS) data for agricultural resources within 0.5 mile of the Proposed Project are provided under separate electronic cover.

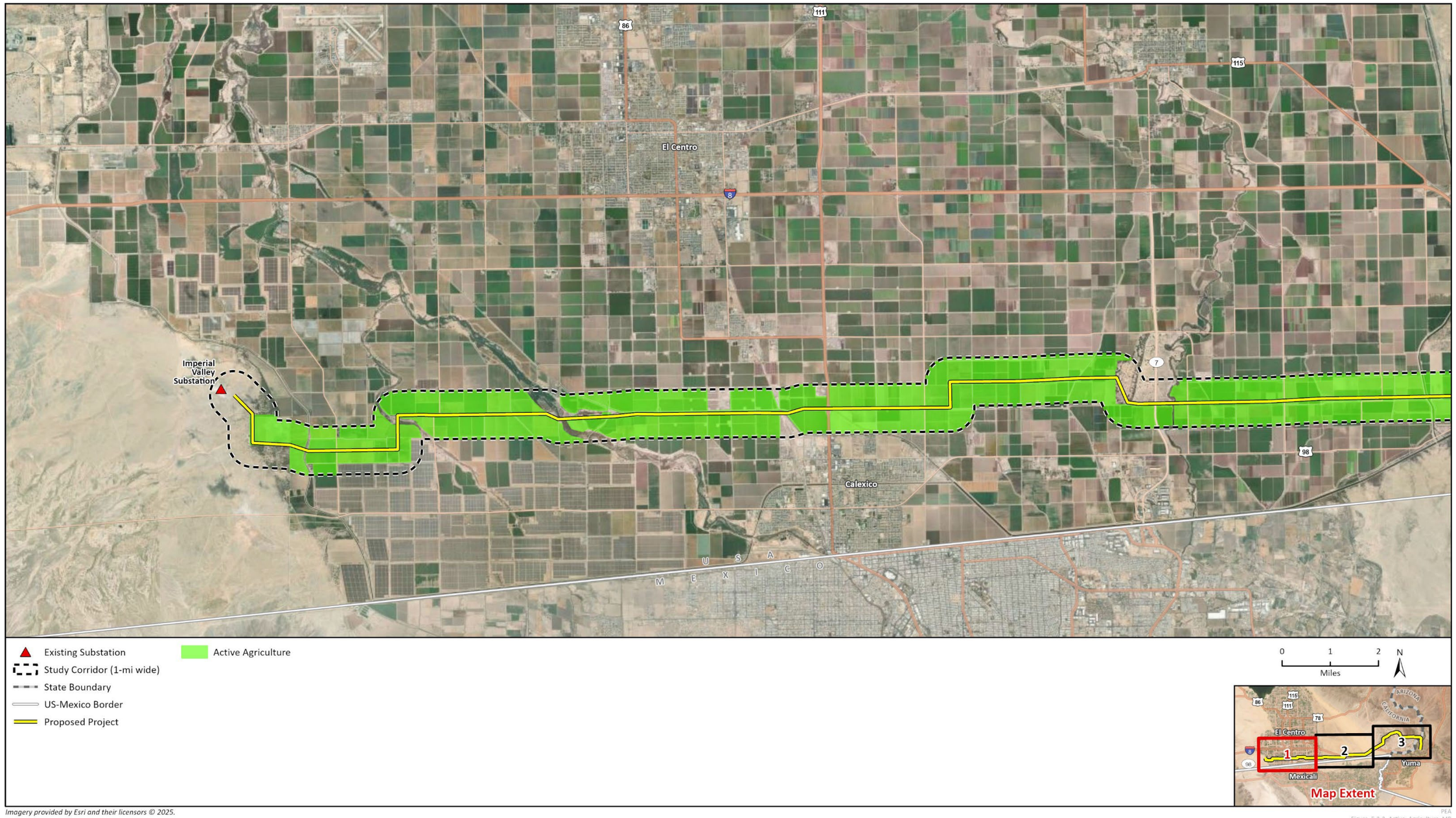
5.2.1.2 Forestry Resources and GIS

5.2.1.2.1 California Forest Land

Forest lands are defined in California PRC section 12220(g) as being capable of supporting "10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits."

The Proposed Project consists of barren land, shrub/scrub, cultivated crops, hay/pasture, evergreen forest, mixed forest, woody wetlands, emergent herbaceous wetlands, and herbaceous vegetation as classified by the NLCD (USGS 2024). While there are lands classified as forest within 0.5 mile of the Proposed Project, they do not support 10 percent native tree cover. No areas along the Proposed Project alignment meet the threshold for native tree cover or forest resource management as defined in PRC Section 12220(g). Therefore, the Proposed Project does not cross lands that qualify as forest land under the statutory definition. Figure 5.2-4a, Figure 5.2-4b, and Figure 5.2-4c illustrate land cover classifications within 0.5 mile of the Proposed Project.

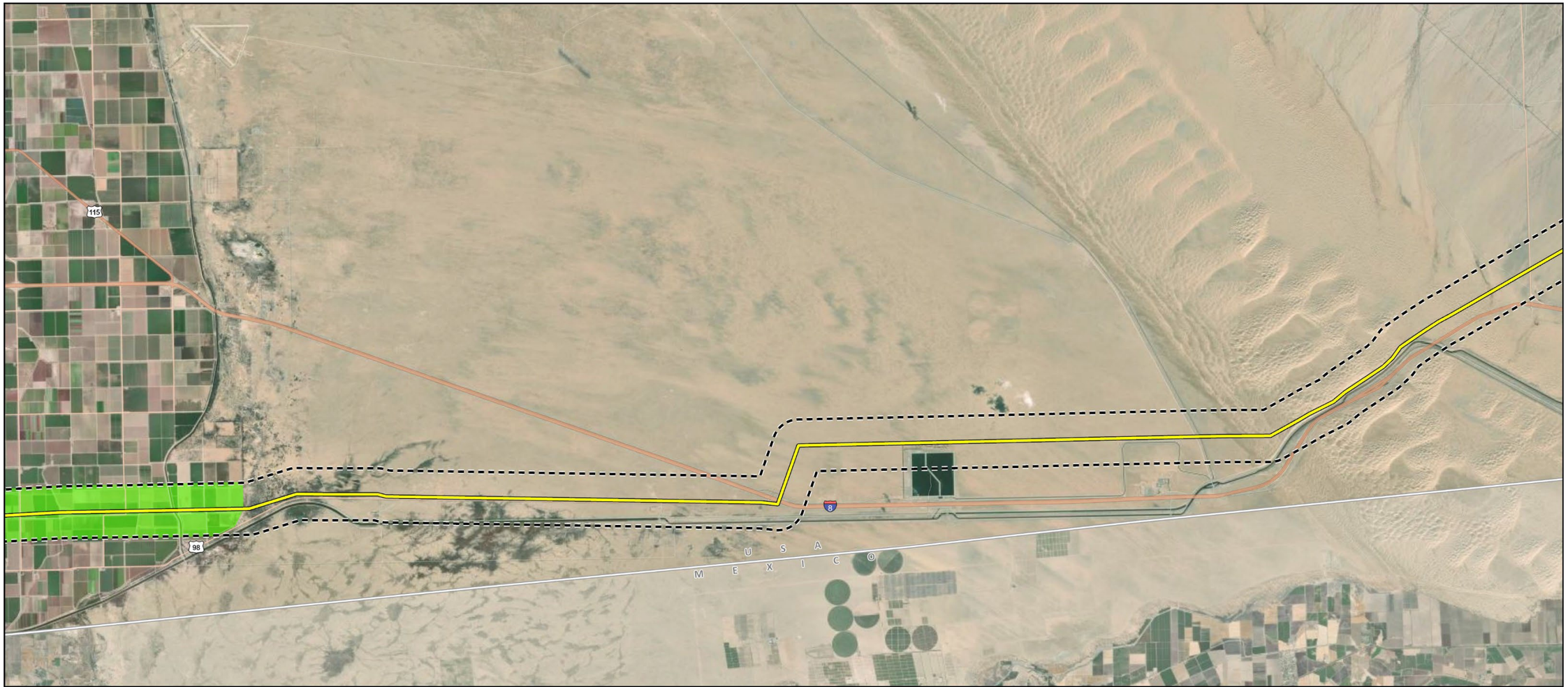
Figure 5.2-3a Active Agriculture within 0.5 Mile of the Proposed Project



Imagery provided by Esri and their licensors © 2025.

PEA
Figure_5.2-3_Active_Agriculture_MB

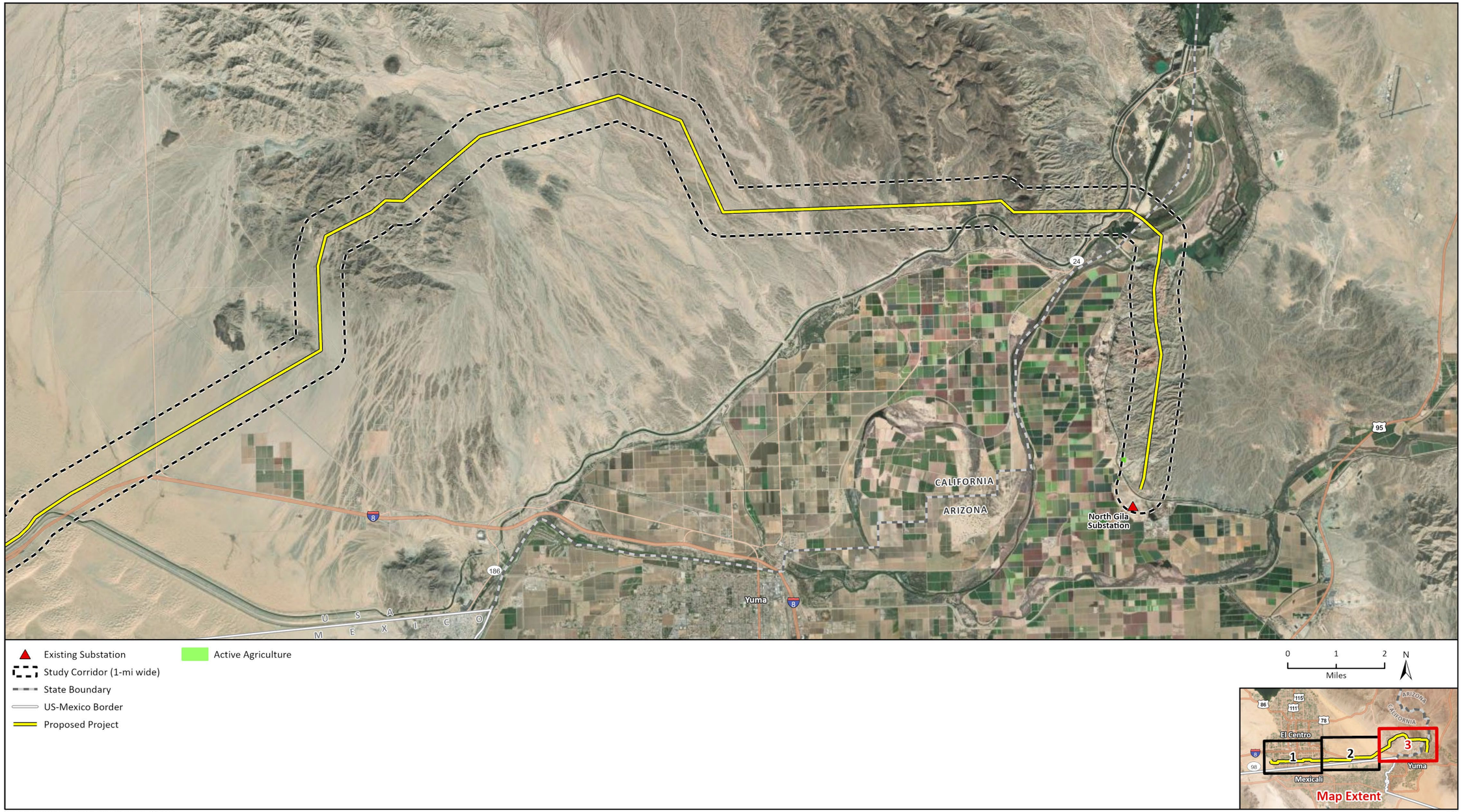
Figure 5.2-3b Active Agricultural within 0.5 Mile of the Proposed Project



Imagery provided by Esri and their licensors © 2025.

PEA
Figure_5.2-3_Active_Agriculture_MB

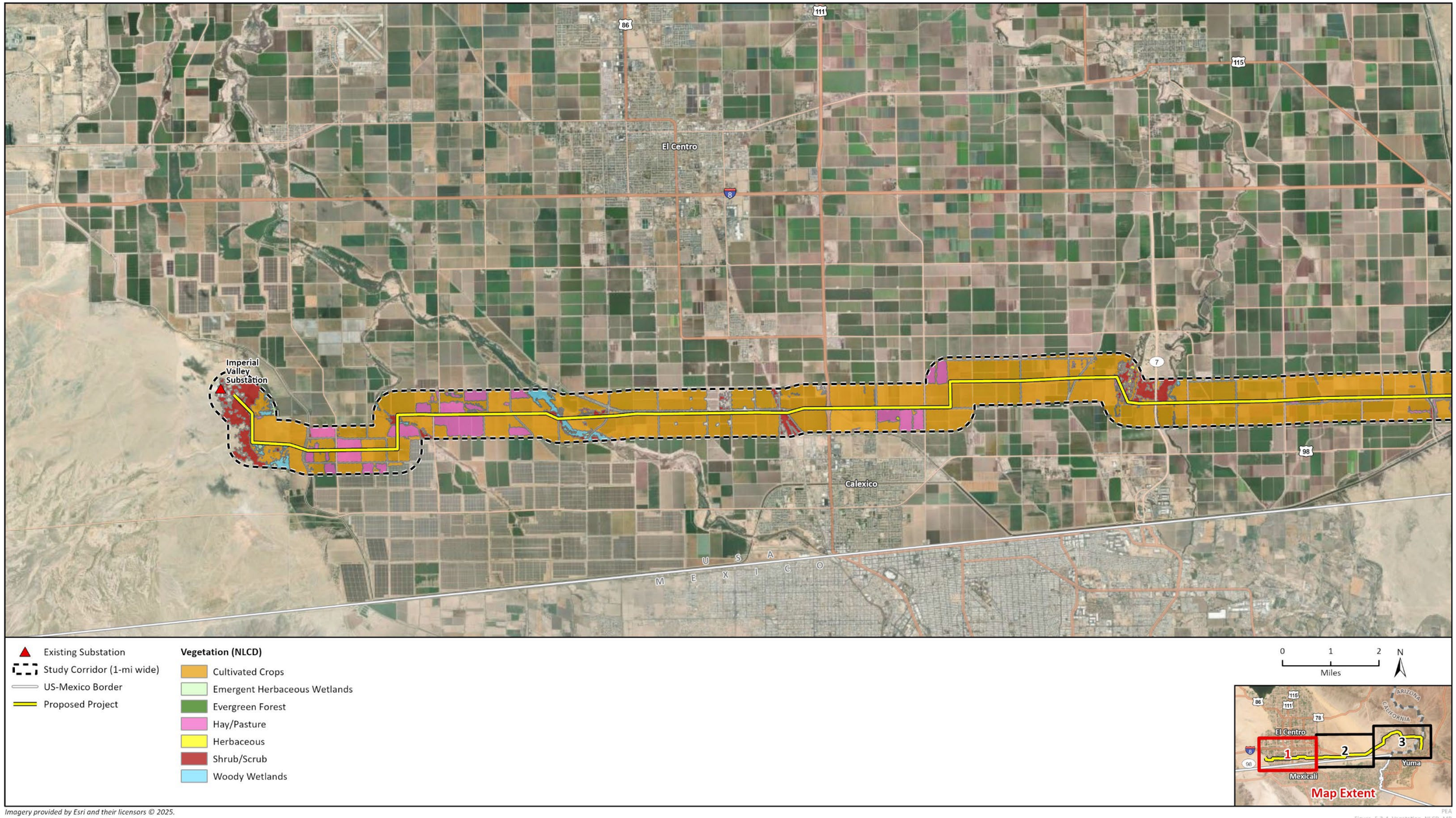
Figure 5.2-3c Active Agricultural within 0.5 Mile of the Proposed Project



Imagery provided by Esri and their licensors © 2025.

PEA
Figure_5.2-3_Active_Agriculture_MB

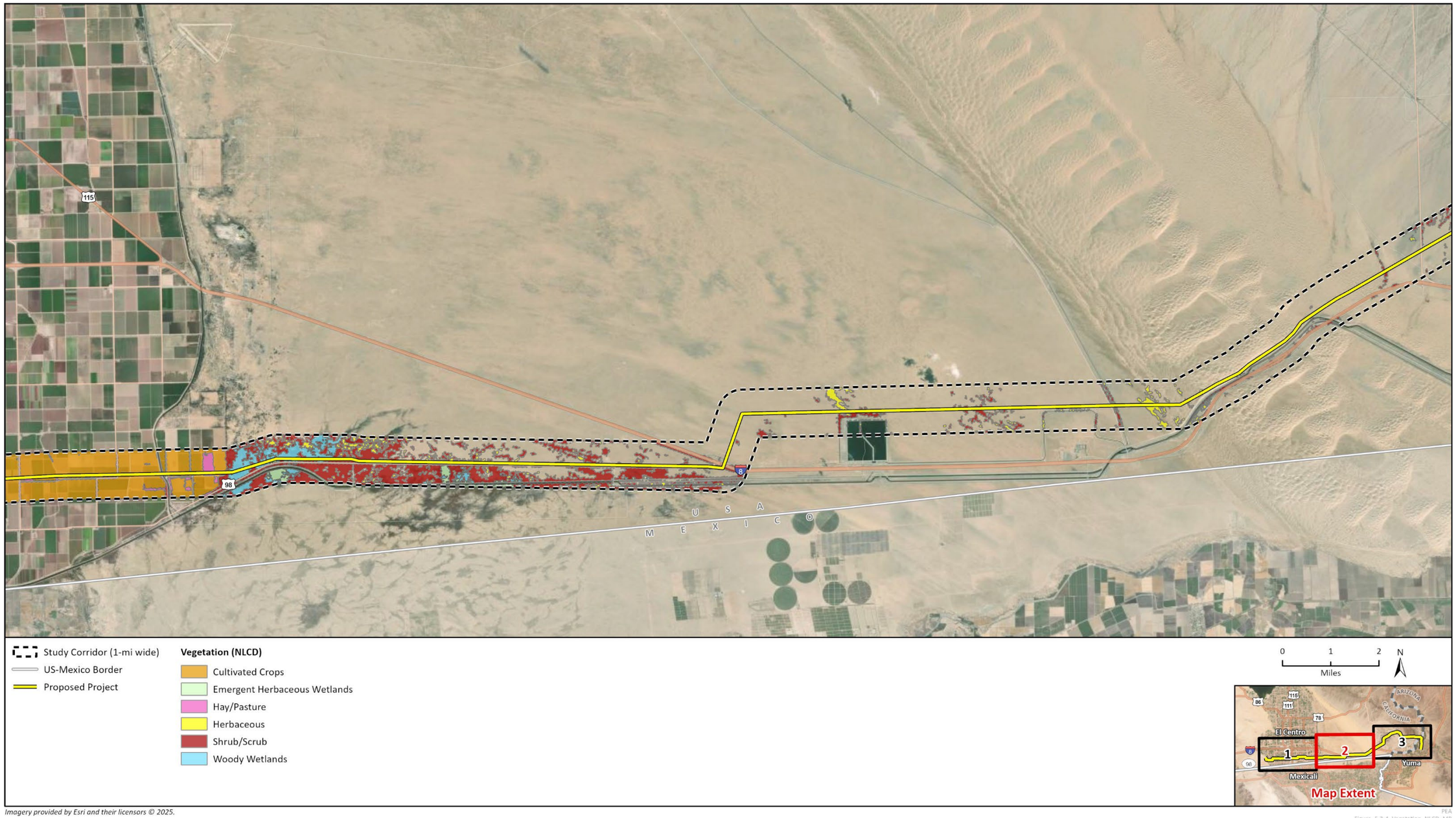
Figure 5.2-4a NLCD Vegetation Types within 0.5 Mile of the Proposed Project



Imagery provided by Esri and their licensors © 2025.

PEA
Figure_5.2-4_Vegetation_NLCD_MB

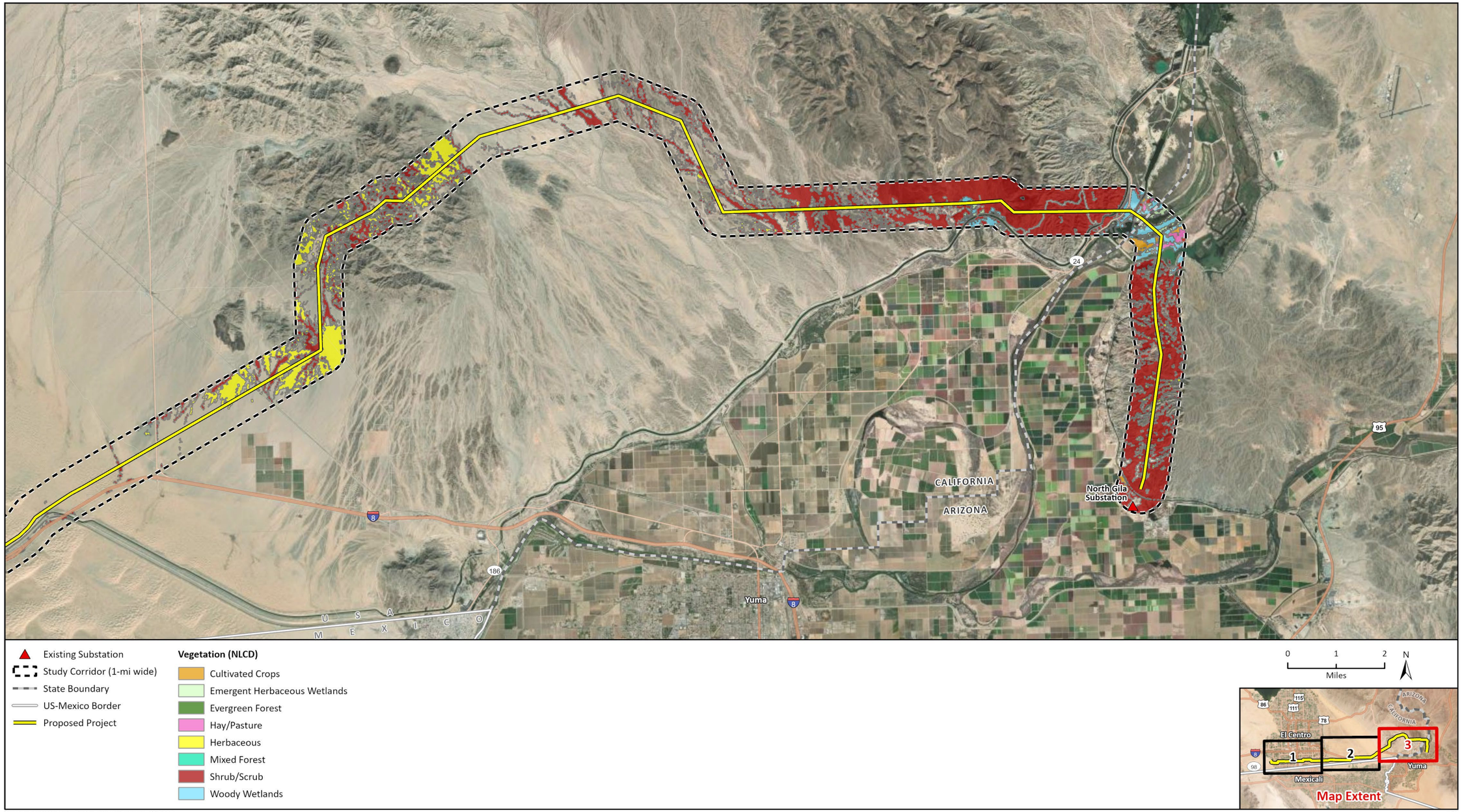
Figure 5.2-4b NLCD Vegetation Types within 0.5 Mile of the Proposed Project



Imagery provided by Esri and their licensors © 2025.

PEA
Figure_5.2-4_Vegetation_NLCD_MB

Figure 5.2-4c NLCD Vegetation Types within 0.5 Mile of the Proposed Project



Imagery provided by Esri and their licensors © 2025.

PEA
Figure_5.2-4_Vegetation_NLCD_MB

5.2.1.2.2 Arizona Forest Land

Figure 5.2-4c illustrates land cover classifications within 0.5 mile of the Proposed Project. The Proposed Project consists of land classified by the NLCD (USGS 2024) as shrub/scrub, cultivated crops, hay/pasture, emergent herbaceous wetlands, and woody wetlands. The Proposed Project does not cross land classified as forest.

5.2.1.2.3 California Timberland

PRC section 4526 defines timberland to mean "land, other than land owned by the federal government and land designated by the board [State Board of Forestry and Fire Protection] as experimental forest land, which is available for, and capable of, growing a crop of trees of a commercial species used to produce lumber and other forest products, including Christmas trees. Commercial species shall be determined by the board on a district basis." The Proposed Project does not traverse lands that meet the definition of timberland as defined by PRC section 4526.

PRC section 51104(g) defines a Timberland Production Zone (TPZ) as "an area which has been zoned pursuant to Section 51112 or 51113 and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses." The Proposed Project does not cross lands zoned by the city of Calexico for timberland production purposes (as defined by PRC section 51104[g]). The Proposed Project crosses the Heavy Agriculture and General Agriculture zoning districts in Imperial County, which permit timber production.

5.2.1.2.4 Arizona Timberland

Arizona Administrative Code does not include a section that defines or provides exclusions for timberland.

5.2.1.2.5 GIS Data

GIS data for forestry resources within 0.5 mile of the Proposed Project are provided under separate electronic cover.

5.2.2 Regulatory Setting

Federal, state, and local regulations were reviewed for applicability to the Proposed Project and are described below.

5.2.2.1 Federal

Farmland Protection Policy Act

The Farmland Protection Policy Act of 1981 is a set of programs and policies designed to protect farmland from urban sprawl. It governs projects that may irreversibly convert farmland either directly or indirectly to non-agricultural uses and is administered by the USDA. The Farmland Protection Policy Act also created a system to classify farmland uses that includes prime farmland, farmland of statewide importance, and unique farmland.

5.2.2.2 State of California

Williamson Act

The Williamson Act (California Government Code [CGC] Section 51200 et seq.) enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive property tax assessments that are much lower than normal because they are based upon farming and open space uses as opposed to full market value.

The Williamson Act also allows local governments to establish agricultural preserves, which are parcels of land set aside for agricultural uses (CGC Section 51230). They must include a minimum of 100 acres, and they typically avoid areas where public utility improvements and associated land acquisitions may be necessary. Imperial County does not participate in the California Land Conservation Act of 1965 (Williamson Act) Program; therefore, the Williamson Act is not relevant to the Proposed Project.

Farmland Mapping and Monitoring Program

The DOC, under the Division of Land Resource Protection, has established the FMMP to monitor the conversion of California's farmland to and from agricultural use. The goal of the FMMP is to provide consistent and impartial data to decision makers for use in assessing current status, reviewing trends, and planning for the future of California's agricultural land resources. The FMMP maps agriculturally viable lands and designates specific categories. The Proposed Project crosses lands designated as Important Farmland by the FMMP.

CGC Sections 51100 to 51155

Chapter 6.7 of the CGC (Sections 51100 to 51155) regulates timberlands within the State of California. According to the code, examples of compatible uses are watershed management; grazing; and the erection, construction, alteration, or maintenance of electric transmission facilities. Chapter 6.7 of the CGC includes the California Timberland Productivity Act of 1982 and the Forest Taxation Reform Act of 1976. Commercial timberlands are afforded protection through the State's Forest Taxation Reform Act of 1976, which mandates the creation of TPZs to restrict and protect commercial timber resources. The Proposed Project does not cross timberlands or TPZs; therefore, CGC Sections 51100 and 51155 are not relevant to the Proposed Project.

California PRC Section 12220 et seq.

PRC section 12220 et seq. includes provisions related to the California Forest Legacy Program Act of 2007. PRC section 12220 et seq. governs forestry, forests, and forest resources, as well as range and forage lands within the State of California. PRC section 12220(g) defines "forest land" as "land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits." The Proposed Project does not cross lands defined as forest land; therefore, PRC Section 12220 et seq. is not relevant to the Proposed Project.

5.2.2.2.1 California PRC Section 4526

PRC section 4526 defines "timberland" as "land, other than land owned by the federal government and land designated by the board as experimental forest land, which is available for, and capable of, growing a crop of trees of a commercial species used to produce lumber and other forest products, including Christmas trees. Commercial species shall be determined by the board on a district basis." The Proposed Project does not cross lands defined as timberland; therefore, PRC Section 4526 is not relevant to the Proposed Project.

5.2.2.3 State of Arizona

U.S. Department of Agriculture - Natural Resources Conservation Service

The Arizona Department of Agriculture, in coordination with the NRCS, relies on NRCS soil surveys, Land Capability Classification, and farmland mapping to identify and assess the state's agricultural resources. While Arizona does not have a formal statewide farmland monitoring program, NRCS designations, such as Prime Farmland, are commonly used in planning, permitting, and environmental reviews. These tools support land use decisions, evaluate agricultural viability, and help protect valuable farmland during project development. The Proposed Project crosses lands designated as Prime Farmland by the NRCS in Arizona.

Arizona Timber

Arizona's forested lands primarily fall under federal ownership (e.g., U.S. Forest Service, Bureau of Land Management), state trust lands, or private and tribal lands. The state does not designate TPZs, nor is there a statewide program exclusively devoted to timber production zoning.

The Arizona State Land Department, through its Forestry Division, oversees timber sales and manages forest health on state trust lands. The division's efforts focus on reducing wildfire risk, supporting sustainable timber harvesting, and providing technical assistance to private forest landowners. In addition, through the Forest Stewardship Program, established in partnership with the U.S. Forest Service, Arizona implements forest restoration and long-term forest management planning, enhancing ecosystem health, and maintaining timber resources. The Proposed Project does not cross forest or timberland.

5.2.2.4 Local

The California Public Utilities Commission (CPUC) has sole and exclusive state jurisdiction over the siting and design of the Proposed Project in California. Pursuant to CPUC General Order 131-E, Section XI.B:

> "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the Commission's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters."

The Arizona Corporation Commission's Arizona Power Plant and Transmission Line Siting Committee has state jurisdiction over the Proposed Project in Arizona. This committee may approve or deny a Certificate of Environmental Compatibility application and impose reasonable conditions. However, pursuant to Arizona Revised Statutes Section 40-360.06(D):

> "Any certificate granted by the committee shall be conditioned on compliance by the applicant with all applicable ordinances, master plans and regulations of the state, a county or an incorporated city or town, except that the committee may grant a certificate notwithstanding any such ordinance, master plan or regulation, exclusive of franchises, if the committee finds as a fact that compliance with such ordinance, master plan or regulation is unreasonably restrictive and compliance therewith is not feasible in view of technology available."

Consequently, local agencies do not have jurisdiction over the Proposed Project, but public utilities must consult with local agencies and consider their regulations. Accordingly, the following discussion of local land use regulations are provided for informational purposes only.

Imperial County General Plan

The Agricultural, Land Use, and Renewable Energy and Transmission elements of the Imperial County General Plan (Imperial County 2015a, 2015b, and 2015c) establish a framework to guide land use, protect farmland, and support renewable energy development while balancing environmental and community considerations. The plan outlines the following relevant goals and objectives related to these resources:

Agricultural Element

- All Important Farmland, including the categories of Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance, as defined by federal and State agencies, should be reserved for agricultural uses.
- Adopt policies that prohibit "leapfrogging" or "checkerboard" patterns of nonagricultural development in agricultural areas and confine future urbanization to adopted Sphere of Influence areas.
- Limit the introduction of conflicting uses into farming areas, including residential development of existing parcels which may create the potential for conflict with continued agricultural use of adjacent property.

Land Use Element

- Preserve commercial agriculture as a prime economic force.

Renewable Energy and Transmission Element

- Where practicable and cost-effective, design transmission lines to minimize impacts on agricultural, natural, and cultural resources, urban areas, military operation areas, and recreational activities.

Imperial County Zoning Ordinance

The Imperial County Land Use Ordinance (Title 9) established specific agricultural zoning districts to regulate land use in unincorporated areas. The Proposed Project includes the following zones designated for agricultural purposes (Imperial County Planning and Development Services 2025):

- **General Agriculture (40-acre minimum) (A-2)**

  The purpose of the General Agriculture (A-2) zone is to designate areas that are suitable and intended primarily for agriculture uses (limited) and agricultural-related compatible uses.

- **Heavy Agriculture (40 acres or larger) (A-3)**

  The purpose of the Heavy Agriculture (A-3) zone is to designate areas that are suitable for agricultural land uses, to prevent the encroachment of incompatible uses onto and within agricultural lands, and to prohibit the premature conversion of such lands to non-agricultural uses. Transmission lines, including supporting towers, poles microwave towers, and utility substations, are permitted within the A-3 zone.

Yuma County Comprehensive Plan

The Land Use Element of the Yuma County 2030 Comprehensive Plan (Yuma County 2023) maps designated planning areas specifically intended for analyzing county resources and monitoring development patterns. A portion of the Proposed Project falls within the North Gila Planning Area, where the predominant land use consists of agricultural activity.

Yuma County Zoning Ordinance

The Proposed Project includes the Rural Area (RA) zone designated for agricultural purposes (Yuma County 2016):

RA: Rural Area Zoning District

- The purpose of this district is to conserve and preserve farms, agricultural-related resources, continued agricultural use and other open space land uses fostering orderly growth in rural areas, prevent urban and agricultural land use conflicts, and allow rural lot development with emphasis on preserving the character of farming communities.
- Principal uses permitted in this zoning district include residential uses on large parcel sizes, farms, agricultural-related land uses, and open space or recreational uses. These regulations apply to all four of the Rural Area districts: Rural Area-40 Acre Minimum (RA-40), Rural Area-20 Acre Minimum (RA-20), Rural Area-10 Acre Minimum (RA-10), and Rural Area-5 Acre Minimum (RA-5).

City of Calexico General Plan

The Agricultural Element of the Calexico General Plan (City of Calexico 2015) contains the following goals and objectives related to agriculture and forestry resources:

- Carefully manage the conversion of agricultural land to residential, commercial, industrial, and other types of development.
  - Maintain agricultural lands for the longest feasible time.
- Conserve and preserve agricultural land located within Calexico's Sphere of Influence.
  - Minimize the loss of agricultural land zoned agricultural which is located within the Sphere of Influence.
- Enable agricultural land to co-exist in close proximity to other developed land uses.
  - Establish buffers between agricultural and non-agricultural uses.

City of Calexico Zoning Ordinance

The City of Calexico's Land Use Ordinance established the Agricultural zone to ensure land use regulations align with and support agricultural uses. Section 17.09.420 of the City of Calexico Zoning

Ordinance states that public utility installations are a permitted land use within the Agricultural zone (City of Calexico 2020).

5.2.3 Impact Questions

5.2.3.1 Agriculture and Forestry Impact Questions

The thresholds of significance for assessing impacts come from the CEQA Environmental Checklist. For agriculture and forestry resources, the CEQA Checklist asks, would the project:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use?
- Conflict with existing zoning for agricultural use, or a Williamson Act contract?
- Conflict with existing zoning for, or cause rezoning of, forest land (as defined in PRC Section 12220(g)), timberland (as defined by PRC section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?
- Result in the loss of forest land or conversion of forest land to non-forest use?
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?

5.2.3.2 Additional CEQA Impact Questions

There are no CPUC-identified additional CEQA impact questions.

5.2.4 Impact Analyses

5.2.4.1 Agriculture and Forestry Impact Analysis

5.2.4.1.1 Agriculture and Forestry Methodology

Agricultural and forestry impacts were evaluated based upon a review of DOC Important Farmland classifications, data from Imperial County, Yuma County, and the city of Calexico; regulatory requirements that apply to the various agricultural and forestry lands located within the vicinity of the Proposed Project; and the potential for the Proposed Project to affect agricultural and forestry resources.

5.2.4.1.2 Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use?

Construction

Project Components in California

Less than Significant Impact. To identify impacts on Important Farmland, the Proposed Project's preliminary engineering design and construction work areas were compared with FMMP data to

calculate the acreage of temporary and permanent ground disturbance. Table 5.2-2 and Table 5.2-3 show the approximate acreage of Important Farmland temporarily and permanently disturbed by the California portion of the Proposed Project, respectively.

Table 5.2-2 Acres of Temporary Important Farmland Disturbances by the Proposed Project in California

Important Farmland	Vegetation Clearing	Construction Laydown Yards	Work Pads	Temporary Access Roads	Temporary Total
Prime Farmland	0.0	22.9	111.3	5.5	**139.7**
Farmland of Statewide Importance	0.3	119.9	192.7	20.2	**333.1**
Unique Farmland	0.0	0.0	0.5	0.0	**0.6**
Total	**0.3**	**142.8**	**304.6**	**25.7**	**473.4**

Source: DOC 2022

Note: numbers may not add due to rounding

Table 5.2-3 Acres of Permanent Important Farmland Disturbances by the Proposed Project in California

Important Farmland	Structure Footprints	Improvements to Existing Access Roads	New Access Roads	Permanent Total
Prime Farmland	0.1	34.1	0.1	**34.3**
Farmland of Statewide Importance	0.2	31.2	0.2	**31.6**
Unique Farmland	0.0	0.1	0.0	**0.1**
Total	**0.3**	**65.3**	**0.3**	**65.9**

Source: DOC 2022

Note: numbers may not add due to rounding

As shown in Table 5.2-2, construction of the Proposed Project would temporarily disturb up to approximately 473.4 acres of Important Farmland, including 139.7 acres of Prime Farmland, 333.1 acres of Farmland of Statewide Importance, and 0.6 acre of Unique Farmland. As discussed in Section 3.7, upon the completion of construction, temporarily disturbed areas would be returned to their approximate preconstruction condition, unless otherwise requested by the landowners. Temporary impacts are not considered a conversion of Important Farmland to nonagricultural use in this analysis.

As shown in Table 5.2-3, construction of the Proposed Project would permanently disturb approximately 65.9 acres of Important Farmland to nonagricultural uses associated with improvements to existing access roads, construction of new access roads, and construction of transmission line structures placed within Important Farmland. The amount of Important Farmland that would be within the project footprint includes approximately 34.3 acres of Prime Farmland, approximately 31.6 acres of Farmland of Statewide Importance, and approximately 0.1 acre of Unique Farmland. The majority of the 65.9 acres of Important Farmland within the areas of permanent project disturbance involves improvements or expansions to existing access roads (65.3 acres). As these improvements would occur within previously disturbed areas that are not actively being used for agricultural purposes, these impacts would not involve the permanent conversion of agricultural lands. Therefore, impacts to Important Farmland from improvements to the existing

access roads will be insignificant. Based on the nominal amount of Important Farmland that would be converted to nonagricultural use from transmission line structures (0.3 acre) and new access roads (0.3 acre), this impact is less than significant.

Project Components in Arizona

Less than Significant Impact. To identify impacts on Important Farmland, the Proposed Project's preliminary engineering design and construction work areas were compared with NRCS data to calculate the acreage of temporary and permanent ground disturbance. Table 5.2-4 and Table 5.2-5 show the approximate acreage of Important Farmland temporarily and permanently disturbed in the Arizona portion of the Proposed Project, respectively.

Table 5.2-4 Acres of Temporary Important Farmland Disturbances by the Proposed Project in Arizona

Important Farmland	Vegetation Clearing	Construction Laydown Yards	Work Pads	Temporary Access Roads	Temporary Total
Prime Farmland	0.0	0.0	0.0	0.0	0.0
Farmland of Statewide Importance	0.0	0.0	0.0	0.0	0.0
Unique Farmland	0.0	0.0	0.0	0.0	0.0
Total	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Source: NRCS 2019

Table 5.2-5 Acres of Permanent Important Farmland Disturbances by the Proposed Project in Arizona

Important Farmland	Structure Footprints	Improvements to Existing Access Roads	New Access Roads	Permanent Total
Prime Farmland	0.0	1.5	0.0	1.5
Farmland of Statewide Importance	0.0	0.0	0.0	0.0
Unique Farmland	0.0	0.0	0.0	0.0
Total	**0.0**	**1.5**	**0.0**	**1.5**

Source: NRCS 2019

As shown in Table 5.2-4, construction of the Proposed Project would involve no temporary disturbance of Important Farmland. Temporary impacts are not considered a conversion of Important Farmland to nonagricultural use in this analysis.

As shown in Table 5.2-5, construction of the Proposed Project would permanently disturb approximately 1.5 acres of Prime Farmland to nonagricultural uses associated with improvements to existing access roads. As the number of acres disturbed would be nominal and the disturbance would occur within previously disturbed areas that are not actively being used for agricultural purposes, these impacts would not involve the permanent conversion of agricultural lands. Therefore, this impact would be less than significant.

Overall Project

Less than Significant Impact. Impacts on Important Farmland were analyzed by comparing FMMP and NRCS data for California and Arizona, respectively, with the Proposed Project's preliminary engineering design and construction work areas. Acreage was calculated considering temporary and permanent ground disturbance. Upon the completion of construction, temporary ground disturbance, estimated to be approximately 473.4 acres of Important Farmland within California, would be returned to preconstruction conditions, unless otherwise requested by the landowners. Therefore, temporary impacts are not considered a conversion of Farmland in this analysis.

The Proposed Project would involve permanent disturbance on approximately 65.9 acres of Important Farmland in California and 1.5 acres of Important Farmland in Arizona associated with improvements to existing access roads, construction of new access roads, and construction of 101 transmission line structures placed within Important Farmland . As shown in Table 5.2-3 and Table 5.2-5, the amount of Important Farmland that would be disturbed by the Proposed Project includes approximately 35.8 acres of Prime Farmland, approximately 31.6 acres of Farmland of Statewide Importance, and approximately 0.1 acre of Unique Farmland. The majority of disturbance of Important Farmland would be for improvements to existing roads. Therefore, this disturbance would occur within previously disturbed areas that are not actively being used for agricultural purposes. Based on the nominal amount of Important Farmland in California that would be converted to nonagricultural use from transmission line structures (0.3 acre) and new access roads (0.3 acre), the project would not result in the conversion of Important Farmland to non-agricultural use. This impact would be less than significant.

Operation

Project Components in California

Less than Significant Impact. Operation and maintenance (O&M) of the Proposed Project would involve periodic inspections, vegetation management, potential repairs, and access road upkeep—most of which occur within the right-of-way (ROW) and do not involve ground disturbance beyond previously impacted areas. Therefore, O&M activities would not convert Farmland to nonagricultural use. Permanent infrastructure would not preclude continued agricultural operations. Should agricultural impacts occur during O&M, restoration and compensation would be implemented according to the terms of the property easement agreement between HWT and the landowner.

Project Components in Arizona

Less than Significant Impact. O&M of the Proposed Project would involve periodic inspections, vegetation management, potential repairs, and access road upkeep—most of which occur within the ROW and would not involve ground disturbance beyond previously impacted areas. Therefore, O&M activities would not convert Farmland to nonagricultural use. Permanent infrastructure would not preclude continued agricultural operations. Should agricultural impacts occur during O&M, restoration and compensation would be implemented according to the terms of the property easement agreement between HWT and the landowner.

Overall Project

Less than Significant Impact. O&M of the Proposed Project would involve periodic inspections, vegetation management, potential repairs, and access road upkeep and would not involve ground disturbance beyond previously impacted areas. Therefore, O&M activities would not convert Farmland to nonagricultural use. Permanent infrastructure would not preclude continued agricultural operations. Should agricultural impacts occur during O&M, restoration and compensation would be implemented according to the terms of the property easement agreement between HWT and the landowner.

5.2.4.1.3 Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

Construction

Project Components in California

No Impact. Imperial County does not participate in the Williamson Act program; therefore, the Proposed Project would not cross any lands under a Williamson Act Contract. The closest Williamson Act parcels are located approximately 37 miles north of the Proposed Project.

The Proposed Project crosses the following zoning designations in Imperial County, which facilitate agricultural activities: Heavy Agriculture (A-3) and General Agriculture (A-2). According to Title 9 of the Imperial County Land Use Ordinance, facilities for the transmission of electricity are an approved use within A-3 and a permitted use within A-2, subject to the issuance of a Conditional Use Permit (Imperial County Planning and Development Services 2025). However, the CPUC has sole and exclusive state jurisdiction over the siting and design of the Proposed Project in California, pursuant to CPUC General Order 131-E, Section XI.B, and the Proposed Project would not require a Conditional Use Permit. Therefore, the Proposed Project would not conflict with existing zoning for agricultural use and would not conflict with the Williamson Act. No impact would occur.

Project Components in Arizona

No Impact. There is no agricultural zoning district in Yuma County. The Proposed Project crosses the Rural Area-20 (RA-20) zoning district, which is designated for agricultural uses. Utility facilities are permitted as a special use, subject to the issuance of a Special Use Permit (Yuma County 2016). However, the Arizona Corporation Commission's Arizona Power Plant and Transmission Line Siting Committee has state jurisdiction over the Proposed Project in Arizona and the Project would not require a Special Use Permit. The Proposed Project would not conflict with zoning for agricultural use, and no impacts would occur. Arizona does not participate in the Williamson Act Program, and therefore, would not conflict with the Williamson Act. No impact would occur.

Overall Project

No Impact. Construction of the Proposed Project would not conflict with existing agricultural zoning designations in Imperial County, Yuma County, or the city of Calexico, where utility facilities are considered a permitted use within agricultural zones. The Proposed Project would not conflict with the Williamson Act in California. Therefore, no impacts would occur.

Operation

Project Components in California

No Impact. O&M of the Proposed Project would involve periodic inspections, vegetation management, potential repairs, and access road upkeep. O&M activities for the Proposed Project would be consistent with the uses allowed under existing zoning. The Proposed Project would not conflict with active Williamson Act contracts because there are no such parcels in the vicinity of the Proposed Project. Therefore, no impacts would occur.

Project Components in Arizona

No Impact. O&M of the Proposed Project would involve periodic inspections, vegetation management, potential repairs, and access road upkeep. O&M activities for the Proposed Project would be consistent with the uses allowed under existing zoning. The Proposed Project would not conflict with active Williamson Act contracts because there are no such parcels in the vicinity of the Proposed Project. Therefore, no impacts would occur.

Overall Project

No Impact. O&M of the Proposed Project would involve periodic inspections, vegetation management, potential repairs, and access road upkeep. O&M activities for the Proposed Project would be consistent with the uses allowed under existing zoning. The Proposed Project would not conflict with active Williamson Act contracts in California because Imperial County does not participate in the program and there are no such parcels in the vicinity of the Proposed Project. Therefore, no impacts would occur.

5.2.4.1.4 Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

Construction

Project Components in California

No Impact. The Proposed Project would not be located on lands zoned or designated as forestland or timberland. The Proposed Project primarily crosses barren land, shrub/scrub, cultivated crops, hay/pasture, woody wetlands, and herbaceous vegetation—none of which meet the definitions of forest land under PRC Section 12220(g), timberland under PRC Section 4526, or TPZ under CGC Section 51104(g). Therefore, construction of the Proposed Project in California would not conflict with or require the rezoning of forest land, timberland, or TPZ-designated lands, and no impacts would occur.

Project Components in Arizona

No Impact. The Proposed Project would not be located on lands zoned or designated as forestland or timberland. The Proposed Project primarily crosses shrub/scrub vegetation. These land cover types do not support commercial timber production. Therefore, construction of the Proposed

Project in Arizona would not conflict with existing zoning or result in the rezoning of forest land or timberland, and no impacts would occur.

Overall Project

No Impact. The Proposed Project would not be located on lands zoned or designated as forestland or timberland. The Proposed Project primarily crosses barren land, shrub/scrub, cultivated crops, hay/pasture, woody wetlands, and herbaceous vegetation—none of which meet the definitions of forest land in California under PRC Section 12220(g), timberland under PRC Section 4526, or TPZ under CGC Section 51104(g). Therefore, construction of the Proposed Project would not conflict with or require the rezoning of forest land, timberland, or TPZ-designated lands, and no impacts would occur.

Operation

Project Components in California

No Impact. The Proposed Project would involve O&M activities periodic inspections, vegetation management, potential repairs, and access road upkeep. However, O&M of the Proposed Project would be consistent with uses allowed under existing zoning. The Proposed Project would not result in the rezoning of forest or timberland because there are no such lands in the vicinity of the Proposed Project. Therefore, no impacts would occur.

Project Components in Arizona

No Impact. The Proposed Project would involve O&M activities periodic inspections, vegetation management, potential repairs, and access road upkeep. However, O&M of the Proposed Project would be consistent with uses allowed under existing zoning. The Proposed Project would not result in the rezoning of forest or timberland because there are no such lands in the vicinity of the Proposed Project. Therefore, no impacts would occur.

Overall Project

No Impact. The Proposed Project would involve O&M activities periodic inspections, vegetation management, potential repairs, and access road upkeep. However, O&M of the Proposed Project would be consistent with uses allowed under existing zoning. The Proposed Project would not result in the rezoning of forest or timberland because there are no such lands in the vicinity of the Proposed Project. Therefore, no impacts would occur.

5.2.4.1.5 Would the project result in the loss of forest land or conversion of forest land to non-forest use?

Construction

Project Components in California

No Impact. The Proposed Project is not located on lands zoned or designated as forest land. The Proposed Project primarily crosses barren land, shrub/scrub, cultivated crops, hay/pasture, woody wetlands, and herbaceous vegetation—none of which meet the definitions of forest land under PRC Section 12220(g), timberland under PRC Section 4526, or TPZ under CGC Section 51104(g).

Therefore, construction of the Proposed Project would not result in the loss or conversion of forest land, and no impact would occur.

Project Components in Arizona

No Impact. The Proposed Project is not located on lands zoned or designated as forest land. The Proposed Project primarily crosses shrub/scrub. These land cover types do not support commercial timber production. Therefore, construction of the Proposed Project would not result in the loss or conversion of forest land, and no impact would occur.

Overall Project

No Impact. The Proposed Project is not located on lands zoned or designated as forest land. The Proposed Project primarily crosses barren land, shrub/scrub, cultivated crops, hay/pasture, woody wetlands, and herbaceous vegetation—none of which meet the definitions of forest land in California under PRC Section 12220(g), timberland under PRC Section 4526, or TPZ under CGC Section 51104(g). Therefore, construction of the Proposed Project would not result in the loss or conversion of forest land, and no impact would occur.

Operation

Project Components in California

No Impact. The Proposed Project would involve O&M activities periodic inspections, vegetation management, potential repairs, and access road upkeep. However, O&M of the Proposed Project would not affect forest land because the alignment is not located on lands zoned or designated as forest land or timberland. Therefore, no impacts related to the loss or conversion of forested land would occur.

Project Components in Arizona

No Impact. The Proposed Project would involve O&M activities periodic inspections, vegetation management, potential repairs, and access road upkeep. However, O&M of the Proposed Project would not affect forest land because the alignment is not located on lands zoned or designated as forest land or timberland. Therefore, no impacts related to the loss or conversion of forested land would occur.

Overall Project

No Impact. The Proposed Project would involve O&M activities periodic inspections, vegetation management, potential repairs, and access road upkeep. However, O&M of the Proposed Project would not affect forest land because the alignment is not located on lands zoned or designated as forest land or timberland. Therefore, no impacts related to the loss or conversion of forested land would occur.

5.2.4.1.6 Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

Construction

Project Components in California

No Impact. Construction of the Proposed Project would not involve any other changes in the existing environment that could result in the conversion of farmland to non-agricultural use or forest land to non-forest use. Construction of the Proposed Project would not impede the continued use of adjacent land for agricultural use and would not induce growth that would result in the conversion of Important Farmland to non-agricultural use. Therefore, no impact would occur.

Project Components in Arizona

No Impact. Construction of the Proposed Project would not involve any other changes in the existing environment that could result in the conversion of farmland to non-agricultural use or forest land to non-forest use. Construction of the Proposed Project would not impede the continued use of adjacent land for agricultural use and would not induce growth that would result in the conversion of Important Farmland to non-agricultural use. Therefore, no impact would occur.

Overall Project

No Impact. Construction of the Proposed Project would not involve any other changes in the existing environment that could result in the conversion of farmland to non-agricultural use or forest land to non-forest use. Construction of the Proposed Project would not impede the continued use of adjacent land for agricultural use and would not induce growth that would result in the conversion of Important Farmland to non-agricultural use. Therefore, no impact would occur.

Operation

Project Components in California

No Impact. O&M of the Proposed Project would not involve any other changes in the existing environment that could result in the conversion of farmland to non-agricultural use or forest land to non-forest use. O&M of the Proposed Project would not impede the continued use of adjacent land for agricultural use and would not induce growth that would result in the conversion of Important Farmland to non-agricultural use. Therefore, no impact would occur.

Project Components in Arizona

No Impact. O&M of the Proposed Project would not involve any other changes in the existing environment that could result in the conversion of farmland to non-agricultural use or forest land to non-forest use. O&M of the Proposed Project would not impede the continued use of adjacent land for agricultural use and would not induce growth that would result in the conversion of Important Farmland to non-agricultural use. Therefore, no impact would occur.

Overall Project

No Impact. O&M of the Proposed Project would not involve any other changes in the existing environment that could result in the conversion of farmland to non-agricultural use or forest land to non-forest use. O&M of the Proposed Project would not impede the continued use of adjacent land for agricultural use and would not induce growth that would result in the conversion of Important Farmland to non-agricultural use. Therefore, no impact would occur.

5.2.4.2 CPUC Draft Environmental Measures

There are no CPUC Draft Environmental Measures identified for Agricultural and Forestry Resources.

5.2.4.3 Applicant Proposed Measures

Impacts to agriculture and forestry resources would be less than significant and no applicant proposed measures are required.

This page left intentionally blank.

5.3 Air Quality

This section describes existing air quality in the vicinity of the Ironwood Transmission Line Project (Proposed Project) as well as the potential impacts to air quality from construction and operation of the Proposed Project.

Research for this analysis involved a review of the following resources:

- National Ambient Air Quality Standards (NAAQS) and California Air Quality Standards (CAAQS) established by the United States Environmental Protection Agency (USEPA) and California Air Resources Board (CARB), respectively.
- Regional air quality from CARB's iADAM system and USEPA's AirData Air Quality Monitors.
- Regional agency planning documents.
- Aerial imagery

5.3.1 Environmental Setting

The Proposed Project is located in Imperial County, California and Yuma County, Arizona on federal, state, municipal, and private land. These lands include unincorporated areas of Imperial and Yuma counties, the city of Calexico, California, and public lands under the jurisdiction or management of the U.S. Bureau of Land Management (BLM), U.S. Bureau of Reclamation, and the California Department of Parks and Recreation. This environmental setting section describes existing air quality in the vicinity of the Proposed Project.

5.3.1.1 Air Quality Plans

The California portion of the Proposed Project is located in Imperial County which is within the Salton Sea Air Basin (SSAB). The SSAB encompasses parts of Riverside and Imperial counties and includes the Salton Sea, the largest lake in California. The SSAB is bounded to the north by the Riverside-San Bernardino County line, to the east by several mountain ranges, to the west by the Riverside-San Diego County line, and to the south by the Mexico-United States border. Surrounding this basin are the Mojave Desert Air Basin to the north, the South Coast Air Basin to the northwest, the San Diego Air Basin to the west, the Mexico-United States border to the south, and the Arizona state line and Colorado River to the east. Within the SSAB, the Proposed Project falls under the jurisdiction of the Imperial County Air Pollution Control District (ICAPCD).

Additionally, the Proposed Project is located in Yuma County, located in the southwestern corner of Arizona. Yuma County is bordered to the west by Imperial County, California, and to the south by the Mexican state of Sonora. To the north, it is bordered by La Paz County, and to the east, it shares boundaries with Maricopa and Pima counties. Unlike California, Arizona is not divided into regional air basins. The Arizona Department of Environmental Quality (ADEQ) is primarily responsible for managing air quality in Yuma County.

The United States Environmental Protection Agency (USEPA) compares ambient air criteria pollutant measurements with National Ambient Air Quality Standards (NAAQS) to assess the status of air quality of regions within the states. Similarly, the California Air Resources Board (CARB) compares ambient air pollutant measurements in California to California Ambient Air Quality Standards (CAAQS). Based on these comparisons, regions within the states and California are designated as one of the following categories:

- Attainment. A region is designated as attainment if monitoring shows ambient concentrations of a specific pollutant are less than or equal to NAAQS or CAAQS. In addition, areas that have been redesignated from nonattainment to attainment are classified as "maintenance areas" for a 10-year period to ensure that the air quality improvements are sustained.
- Nonattainment. If the NAAQS or CAAQS is exceeded for a pollutant, then the region is designated as nonattainment for that pollutant.
- Unclassifiable. An area is designated as unclassifiable if the ambient air monitoring data are incomplete and do not support a designation of attainment or nonattainment.

The ICAPCD and ADEQ are responsible for ensuring that state and federal ambient air quality standards are achieved and maintained in their geographical jurisdictions. Health-based air quality standards have been established by California (i.e., CAAQS) and by the federal government (i.e., NAAQS) for the following criteria air pollutants: ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), particulate matter with a mean diameter of no more than 10 microns (PM_{10}), particulate matter with a mean diameter of no more than 2.5 microns ($PM_{2.5}$), sulfur dioxide (SO_2), and lead (Pb). Furthermore, California has set additional standards for sulfates, hydrogen sulfide (H_2S), vinyl chloride (C_2H_3Cl), and visibility reducing particles (VRP). Arizona does not have its own state air quality standards and instead adheres to the federal NAAQS. Attainment of the CAAQS and NAAQS protects sensitive receptors and the public from criteria pollutants that are known to have adverse human health effects.

As of April 2025, the latest year of available data is 2023. The ambient air in the Imperial County portion of the Proposed Project is classified by the CARB as nonattainment for O_3 and PM_{10} under the CAAQS. Additionally, as of April 2025, Imperial County is classified as nonattainment for O_3 and $PM_{2.5}$ under the NAAQS. The ambient air in Imperial County is either unclassified or classified as attainment for all other state and federally regulated air pollutants.

The ambient air in the Yuma County portion of the Project is classified as nonattainment for O_3 and PM_{10} under the NAAQS and either unclassified or classified as attainment for all other federal regulated air pollutants.

The attainment status for Imperial County and Yuma County is provided in Table 5.3-1. Approximately 80 miles of the new transmission line alignment are located within the jurisdiction of the ICAPCD. The remaining portion, approximately 6 miles, falls within the jurisdiction of the ADEQ.

Table 5.3-1 Air Quality Standards and Attainment Status

Pollutant	Averaging Time	CAAQS[1]		NAAQS[2]	
		Concentration	Status	Concentration	Status
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m^3)	Nonattainment	—	—
	8 Hours	0.070 ppm (137 µg/m^3)	Nonattainment	0.070 ppm	Nonattainment – Moderate (Imperial County) and Nonattainment – Marginal (Yuma County)
Respirable Particulate Matter (PM_{10})	24 Hours	50 µg/m^3	Nonattainment	150 µg/m^3	Attainment (Imperial County) and Nonattainment - Moderate (Yuma County)
	AAM	20 µg/m^3	Nonattainment	—	—

Pollutant	Averaging Time	CAAQS[1]		NAAQS[2]	
		Concentration	Status	Concentration	Status
Fine Particulate Matter ($PM_{2.5}$)	24 Hours	—	—	35 µg/m^3	Attainment/ Unclassified
	AAM	12 µg/m^3	Attainment	9.0 µg/m^3	Nonattainment – Moderate (Imperial County) and Attainment/Unclassified (Yuma County)
Carbon Monoxide (CO)	8 Hours	9.0 ppm (10 mg/m^3)	Attainment	9 ppm (10 mg/m^3)	Attainment/ Unclassified
	1 Hour	20 ppm (23 mg/m^3)	Attainment	35 ppm (40 mg/m^3)	Attainment/ Unclassified
Nitrogen Dioxide (NO_2)	AAM	0.030 ppm (57 µg/m^3)	Attainment	0.053 ppm (100 µg/m^3)	Attainment/ Unclassified
	1 Hour	0.18 ppm (339 µg/m^3)	Attainment	0.100 ppm (188 µg/m^3)	Attainment/ Unclassified
Sulfur Dioxide (SO_2)	24 Hours	0.04 ppm (105 µg/m^3)	Attainment	0.14 ppm (365 µg/m^3)	Attainment/ Unclassified
	1 Hour	0.25 ppm (655 µg/m^3)	Attainment	0.075 ppm (196 µg/m^3)	Attainment/ Unclassified
	AAM	—	—	0.030 ppm (80 µg/m^3)	Attainment/ Unclassified
Lead (Pb)	30-Day Average	1.5 µg/m^3	Attainment	—	—
	Calendar Quarter	—	—	1.5 µg/m^3	Attainment/ Unclassified
	Rolling 3-Month Average	—	—	0.15 µg/m^3	Attainment/ Unclassified
Visibility-Reducing Particles (VRP)	8 Hours	Extinction of 0.23 per km	Unclassified	No national standards	
Sulfates	24 Hours	25 µg/m^3	Attainment		
Hydrogen Sulfide (H_2S)	1 Hour	0.03 ppm (42 µg/m^3)	Unclassified		
Vinyl Chloride (C_2H_3Cl)	24 Hours	0.010 ppm (26 µg/m^3)	No information available		

Note: Some jurisdictions may have multiple attainment statuses for each pollutant. In these instances, the attainment status that represents the location of the Proposed Project has been reported. If the air quality in a geographic area meets or is cleaner than the national standard, it is called an attainment area (designated “attainment/unclassifiable”); areas that don't meet the national standard are called nonattainment areas. In some cases, the USEPA is not able to determine an area's status after evaluating the available information and those areas are designated "unclassifiable." The USEPA categorizes the severity of criteria pollutant issues in nonattainment areas into classifications: marginal, moderate, serious, severe, or extreme.

[1] The CAAQS are only applicable to the California portion of the Proposed Project.

[2] The NAAQS are applicable to both the Arizona and California portion of the Proposed Project.

Acronyms: ppm = parts per million; mg/m^3 = milligrams per cubic meter; µg/m^3 = micrograms per cubic meter; AAM = Annual Arithmetic Mean; km = kilometer; ICAPCD = Imperial County Air Pollution Control District; ADEQ = Arizona Department of Environmental Quality.

Source: CARB 2023 and USEPA 2024b

Under California law, air districts are required to prepare a plan for air quality improvement for pollutants for which the district is in nonattainment. The ICAPCD adopted the following State Implementation Plans (SIPs) to address how the air district will reduce air pollution for O_3, PM_{10}, and $PM_{2.5}$: *Imperial County 2017 State Implementation Plan for the 2008 8-Hour Ozone Standard* (2017a), *Imperial County 2018 Redesignation Request and Maintenance Plan for Particulate Matter Less than 10 Microns in Diameter* (2018a), *Imperial County 2018 Annual Particulate Matter Less than 2.5 Microns in Diameter State Implementation Plan* (2018b), and *Imperial County 2013 State Implementation Plan for the 2006 24-Hour $PM_{2.5}$ Moderate Nonattainment Area* (2014). In addition, ICAPCD adopted the *2009 Reasonably Available Control Technology State Implementation Plan* in 2010 (2010) to require emission controls to further reduce air pollutants for which the area is designated nonattainment.

ADEQ has developed specific plans to manage and improve air quality in Yuma, particularly focusing on PM_{10} and O_3 levels. To address O_3 nonattainment status, ADEQ has adopted an ozone maintenance plan, *SIP Revision: 2015 Ozone NAAQS, Yuma Redesignation Request and Maintenance Plan* (2023). This plan targets O_3 nonattainment issues. ADEQ is developing a nonattainment SIP to address the frequent exceedance of PM_{10} levels above the NAAQS in Yuma. This plan would include an updated emissions inventory, a modeled attainment demonstration, and strategies for exceptional events and PM_{10} controls as required by the Clean Air Act (CAA).

5.3.1.2 Air Quality

The ICAPCD and ADEQ monitor levels of various pollutants by using a network of monitoring stations throughout Imperial and Yuma County. The closest ambient air quality monitoring station to the Imperial County portion of the Proposed Project that monitors for 8-hour ozone, hourly O_3, NO_2, PM_{10}, and $PM_{2.5}$ measurements is Calexico-Ethel Street, approximately 3 miles south of the Proposed Project. This station is closer to urban traffic compared to other CARB air monitoring stations in Imperial Valley, allowing it to capture conservative background air quality for the portion of the Proposed Project in Imperial County. The following exceedances of the NAAQS and CAAQS for the portion of the Proposed Project in Imperial County were measured at this station during 2022, 2023, and 2024 and are shown in Table 5.3-2 (CARB 2024):

- The 1-hour O_3 CAAQS was exceeded from 2022 through 2024.
- The 8-hour O_3 NAAQS and CAAQS were exceeded from 2022 through 2024.
- The daily PM_{10} NAAQS and CAAQS were exceeded from 2022 through 2024.
- The 1-hour NO_X for NAAQS was exceeded in 2023.
- The daily $PM_{2.5}$ NAAQS were exceeded from 2022 through 2024.

The closest ambient air quality monitoring station to the Yuma County portion of the Proposed Project that monitors for O_3, PM_{10}, and $PM_{2.5}$ is Yuma Supersite, located approximately 10 miles south of the Proposed Project. This station provides the nearest representative data for the Proposed Project in Yuma County. The following exceedances of the NAAQS were measured at this station during 2021, 2022, and 2023 and shown in Table 5.3-3 (USEPA 2024a):

- The 8-hour O_3 NAAQS was exceeded from 2021 through 2023.
- The daily PM_{10} NAAQS was exceeded from 2021 through 2023.
- The daily $PM_{2.5}$ NAAQS was exceeded from 2021 through 2023.

Table 5.3-2 Imperial County Ambient Air Quality – Monitoring Station Measurements

Pollutant	2022	2023	2024
Ozone (ppm), Worst 1-Hour	**0.097**	**0.111**	**0.139**
Number of days above CAAQS (>0.09 ppm)	1	8	12
Ozone (ppm), Worst 8-Hour Average	**0.083**	**0.087**	**0.095**
Number of days above CAAQS (>0.070 ppm)	6	22	29
Number of days above NAAQS (>0.070 ppm)	6	22	29
Nitrogen Dioxide (ppm), Worst 1-Hour	**0.060**	**0.110**	**0.078**
Number of days above CAAQS (>0.180 ppm)	0	0	0
Number of days above NAAQS (>0.100 ppm)	0	1	0
Particulate Matter <10 microns (mg/m^3), Worst 24 Hours	**184.8**	**199.3**	**183.4**
Number of days above CAAQS (>50 mg/m3)	162	133	163
Number of days above NAAQS (>150 mg/m3)	2	2	5
Particulate Matter <2.5 microns (mg/m^3), Worst 24 Hours	**41.9**	**60.2**	**59.1**
Number of days above NAAQS (>35 mg/m^3)	5	1	9

Notes: ppm = parts per million; µg/m^3 = micrograms per cubic meter; CAAQS = California Ambient Air Quality Standard; NAAQS = National Ambient Air Quality Standard

Source: CARB 2024

Table 5.3-3 Yuma County Ambient Air Quality – Monitoring Station Measurements

Pollutant	2021	2022	2023
Ozone (ppm), Worst 1-Hour	**0.094**	**0.094**	**0.088**
Ozone (ppm), Worst 8-Hour Average	**0.082**	**0.073**	**0.076**
Number of days above NAAQS (>0.070 ppm)	3	1	4
Particulate Matter <10 microns (mg/m^3), Worst 24 Hours	**294.0**	**238**	**621**
Number of days above NAAQS (>150 mg/m3)	2	7	7
Particulate Matter <2.5 microns (mg/m^3), Worst 24 Hours	**45.2**	**46.7**	**60.2**
Number of days above NAAQS (>35 mg/m^3)	2	1	4

Notes: ppm = parts per million; µg/m^3 = micrograms per cubic meter; CAAQS = California Ambient Air Quality Standard; NAAQS = National Ambient Air Quality Standard

Source: USEPA 2024a

5.3.1.3 Sensitive Receptor Locations

Some exposed population groups—including children and people who are elderly or ill—can be especially vulnerable to airborne chemicals and irritants and are termed "sensitive receptors." In addition, due to sustained exposure durations, all persons located within residential areas are considered sensitive receptors. In general, sensitive receptor locations include, but are not limited to, schools, hospitals, day care centers, convalescence homes, residential uses, places of worship, libraries, offices, and city and county buildings. Given the remote nature of much of the Proposed Project alignment, sensitive receptor locations are dispersed along the route. There are several residences adjacent to the alignment, including one on the south side of the Proposed Project along Vencil Road in Imperial County, as detailed inTable 5.3-4 and shown in Figure 5.3-1.

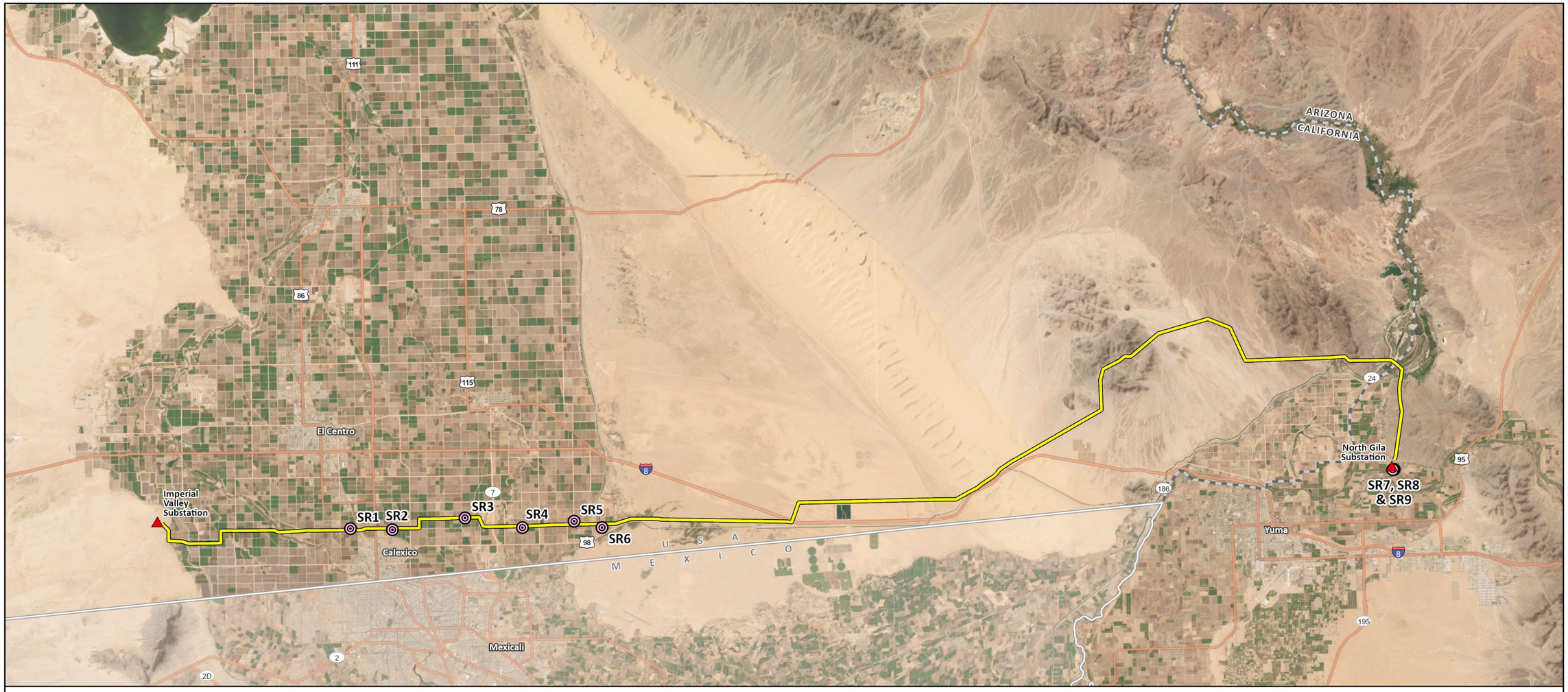
Table 5.3-4 Sensitive Receptors within 1,000 Feet of the Proposed Project

ID Number	Name	Location	Distance to Project Component (feet)	Project Component
SR1	Single Family Residence(s)	Jasper Rd and Ware Rd, near Central Main Canal; just outside of Calexico, CA	462	Proposed Project alignment
SR2	Single Family Residence(s)	Jasper Rd and Meadows Rd, near Alder Canal; Calexico, CA	446	Proposed Project alignment
SR3	Single Family Residence(s)	Along Claverie Rd, near Ash 9A Drain; east of Calexico, CA	125	Proposed Project alignment
SR4	Single Family Residence(s)	Along Vencil Rd, near Whitcomb 2 Drain; east of Calexico, CA	419	Proposed Project alignment
SR5	Single Family Residence(s)	Miller Rd and Kumberg Rd, west of junction of All American Canal and East Highline Canal; unincorporated Imperial County, CA	1,010	Proposed Project alignment
SR6	Single Family Residence(s)	Along Holdridge Rd, east of junction of All American Canal and East Highline Canal; unincorporated Imperial County, CA	1,112	Proposed Project alignment
SR7	Single Family Residence(s)	Along E County 6th St near S Canyon Ave, near North Gila Substation; northeast of Yuma, AZ	697	North Gila Substation
SR8	Single Family Residence(s)	Along E County 6th St near S Canyon Ave, near North Gila Substation; northeast of Yuma, AZ	891	North Gila Substation
SR9	Single Family Residence(s)	Along E County 6th St near S Canyon Ave, near North Gila Substation; northeast of Yuma, AZ	973	North Gila Substation

SR = sensitive receptor

Aerial imagery was used to identify potential sensitive receptors near the Proposed Project alignment for their potential exposure to pollutants and odors. Sensitive receptors are provided in Figure 5.3-1.

Figure 5.3-1 Sensitive Receptors within 1,000 Feet of the Proposed Project



Imagery provided by Esri and its licensors © 2025.

25-17237 PEA EPS Figures
PEA Figure X Sensitive Receptors 11x17_NoParks

5.3.2 Regulatory Setting

Federal, state, regional, and local regulations were reviewed for applicability to the Proposed Project.

5.3.2.1 Federal

Clean Air Act

The 1970 federal CAA established ambient air quality standards for six pollutants—O_3, PM_{10}, CO, NO_2, SO_2, and Pb—that are known to have adverse impacts on human health and the environment. To protect human health and the environment, the USEPA set primary and secondary maximum ambient thresholds for criteria air pollutants. The primary thresholds were set to protect human health, particularly for children and the elderly, as well as for individuals who suffer from chronic lung conditions (e.g., asthma and emphysema). The secondary standards were set to protect the natural environment and prevent further adverse effects on animals, crops, vegetation, and buildings. NAAQS are the combined primary and secondary standards set by the USEPA. The 1977 CAA Amendments required each state to develop and maintain a SIP for each criteria air pollutant that exceeds the NAAQS for that pollutant. The SIP serves as a tool to reduce levels of pollutants known to cause impacts if they exceed ambient thresholds and to achieve compliance with the NAAQS. In 1990, the CAA was further amended to strengthen regulation of both stationary and mobile emission sources for the criteria air pollutants. In 1997, $PM_{2.5}$ was also listed as a criteria air pollutant.

The Code of Federal Regulations (CFR) provides detailed guidance for documenting CAA Conformity Determination requirements, particularly through 40 CFR Part 93. This section outlines the policy, criteria, and procedures federal agencies must follow to ensure their actions conform to state or federal implementation plans aimed at attaining and maintaining the NAAQS. The regulations require federal activities in nonattainment and maintenance areas to demonstrate that their emissions would not interfere with the attainment or maintenance of NAAQS, thereby ensuring that federal actions do not worsen air quality or delay the achievement of air quality goals.

In 2001, the USEPA implemented new health-based NAAQS for O_3 and PM_{10}. The new federal O_3 standard of 0.080 ppm, established in 1997, was based on a longer averaging period (8 hours versus 1 hour), recognizing that prolonged exposure to O_3 is more damaging. In March 2008, the USEPA further lowered the 8-hour O_3 standard from 0.080 ppm to 0.075 ppm. On October 1, 2015, the USEPA strengthened the 8-hour O_3 standard from 0.075 ppm to 0.070 ppm. The PM_{10} standard, established in 1987, set a 24-hour concentration limit of 150 µg/m³, recognizing the health risks associated with PM. This standard has remained unchanged, ensuring consistent protection against short-term exposure to PM_{10}. On February 7, 2024, the USEPA lowered the annual $PM_{2.5}$ standard from 12 microgram per cubic meter (µg/m³) to 9 µg/m³ recognizing that $PM_{2.5}$ may remain in the lungs longer and contribute to greater respiratory illness. In 2010, USEPA implemented a new health-based NAAQS for NO_2. The new federal 1-hour NO_2 standard of 100 parts per billion was established to address short-term exposure risks, while the annual standard of 53 parts per billion, set in 1971, was retained to protect against long-term exposure. Table 5.3-1 contains a list of the NAAQS and CAAQS.

BLM Resource Management Plans

The entirety of the Project in California is located within BLM-managed California Desert Conservation Area (CDCA) and is covered by the California Desert Conservation Area Plan, Desert Renewable Energy Conservation Plan (DRECP), Imperial Sand Dunes Recreation Area Management Plan (Imperial Sand Dunes RAMP), and Northern and Eastern Colorado Desert Coordinated Management Plan. A portion of the Project within Arizona is managed under the Yuma Field Office RMP.

The DRECP Land Use Plan Amendment identifies a comprehensive suite of required conservation management actions to avoid, minimize, and/or mitigate adverse impacts on air quality. Additionally, the Imperial Sand Dunes RAMP also includes goals, objectives, and management actions related to air quality.

5.3.2.2 State of California

California Clean Air Act

The California Clean Air Act of 1988 (CCAA) provided the framework for the management of air quality throughout the state. The CCAA requires regional air quality management districts to develop and implement strategies to attain the CAAQS. For some pollutants, the CAAQS are more stringent than the NAAQS, and the CCAA mandated that the air quality management districts prepare air quality management plans specifying how both the federal and state standards would be met. The CAAQS are listed in Table 5.3-1.

A toxic air contaminant (TAC) is an air pollutant that may cause or contribute to an increase in mortality or serious illness or which may pose a present or potential hazard to human health. TACs may result in long-term health effects such as cancer, birth defects, neurological damage, asthma, or genetic damage, or short-term acute effects such as eye watering, respiratory irritation, runny nose, throat pain, and headaches. TACs are considered either carcinogenic or non-carcinogenic based on the nature of the health effects associated with exposure. For carcinogenic TACs, potential health impacts are evaluated in terms of overall relative risk expressed as excess cancer cases per one million exposed individuals. Non-carcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

TACs include both organic and inorganic chemical substances. One of the main sources of TACs in California is diesel engines that emit exhaust containing solid material known as diesel particulate matter (DPM); however, TACs may be emitted from a variety of common sources, including gasoline stations, motor vehicles, dry cleaners, industrial operations, painting operations, and research and teaching facilities.

In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect public health (Assembly Bill [AB] 1807: Health and Safety Code Sections 39650–39674). The Legislature established a two-step process to address the potential health effects from TACs. The first step is the risk assessment (or identification) phase. The second step is the risk management (or control) phase of the process.

The California Air Toxics Program establishes the process for the identification and control of TACs and includes provisions to make the public aware of significant toxic exposures and to reduce risk. Additionally, the Air Toxics "Hot Spots" Information and Assessment Act (AB 2588, 1987, Connelly Bill) was enacted in 1987 and requires stationary sources to report the types and quantities of

certain substances released into the air. The goals of the Air Toxics "Hot Spots" Act are to collect emission data, identify facilities having localized impacts, ascertain health risks, notify nearby residents of significant risks, and reduce those significant risks to acceptable levels. The Children's Environmental Health Protection Act, California Senate Bill (SB) 25 (Chapter 731, Escutia, Statutes of 1999), focuses on children's exposure to air pollutants. The act requires the CARB to review its air quality standards from a children's health perspective, evaluate the statewide air quality monitoring network, and develop any additional air toxic control measures needed to protect children's health.

5.3.2.3 State of Arizona

Arizona Department of Environmental Quality

In 1987 the Arizona State Legislature created the ADEQ to administer environmental laws in the State. Maricopa, Pima, and Pinal counties each have their own environmental departments, while Yuma County and all other counties fall under the jurisdiction of ADEQ (ADEQ 2024). The ADEQ follows the same ambient air quality designations as laid out in the federal CAA.

ADEQ requires several best practices for mitigating fugitive dust for construction activities. Requirements include:

- **Maintain Vegetative Cover.** Use cover crops in between tree rows and in between crop seasons or maintain plant residues. Do not leave open areas uncovered.
- **Create Wind Barriers.** Construct fences/structures or plant woody vegetation perpendicular to the prevailing wind direction to reduce wind speeds and capture larger particles.
- **Stabilize Access Roads.** Apply crust forming chemicals, add aggregate cover, and/or pave access roads and storage areas that are heavily traveled and left bare. Have a water truck on site for daily maintenance of roads during heavy traffic times or high wind days.
- **Maintain Rough Surfaces.** If clearing of vegetation is absolutely needed to plant the area, keep the soil surface rough with large clods. This keeps particle size large and reduces fugitive dust potential.
- **Limit Field/Soil Disturbance Activity.** Implement practices such as conservation tillage, precision farming, chemical irrigation, and combining tractor operations to reduce the number of passes in a given crop area.
- **Reduce Vehicle Speeds and Restrict Vehicle Access.** Lower speeds and less opportunity for vehicle travel across agricultural properties reduces soil disturbance and fugitive dust potential.
- **Water.** When possible, apply water to fields before planting/harvest and install irrigation systems first for water application early in field preparation processes.

Additionally, pursuant to section 18-02 of the Arizona Administrative Code (AAC), any construction projects that include the use of roadways or any material handling must include reasonable precautions to prevent excessive amounts of particulate matter becoming airborne (AAC Section 18-02). These precautions include the use of wetting agents, dust suppressants and efforts to cover the load (AAC Section 18-02). The AAC also requires that any off-road machinery (including trucks, graders, etc.) cannot emit smoke, with opacity exceeding 40 percent, for a period greater than 10 seconds unless it is within 10 minutes of cold starts (AAC Section 18-02).

5.3.2.4 Regional and Local

The California Public Utilities Commission (CPUC) has sole and exclusive state jurisdiction over the siting and design of the Proposed Project in California. Pursuant to CPUC General Order (G.O.) 131-E, Section XI.B:

> "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the Commission's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters."

Consequently, local agencies do not have jurisdiction over the Proposed Project, but public utilities must consult with local agencies and consider their regulations.

The Arizona Corporation Commission's Arizona Power Plant and Transmission Line Siting Committee has state jurisdiction over the Proposed Project in Arizona. This committee may approve or deny a Certificate of Environmental Compatibility application and impose reasonable conditions. However, pursuant to Arizona Revised Statutes Section 40-360.06(D):

> "Any certificate granted by the committee shall be conditioned on compliance by the applicant with all applicable ordinances, master plans and regulations of the state, a county or an incorporated city or town, except that the committee may grant a certificate notwithstanding any such ordinance, master plan or regulation, exclusive of franchises, if the committee finds as a fact that compliance with such ordinance, master plan or regulation is unreasonably restrictive and compliance therewith is not feasible in view of technology available."

As this Proponent's Environmental Assessment is being prepared for the CPUC, the following discussion of local land use regulations in California and Arizona are provided for informational purposes only.

Imperial County Air Pollution Control District

The ICAPCD aims to achieve and maintain both NAAQS and CAAQS, ensuring that air pollutants do not pose a nuisance or significant health threat. The ICAPCD established the following rules to regulate air quality that are applicable to the Proposed Project:

- Rule 403 – Opacity of Emissions. Rule 403 sets forth limitations on emissions of pollutants, including particulate matter, from individual sources.
- Rule 407 – Nuisances. No Person shall discharge from any Source whatsoever such quantities of Air Contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health or safety of any such persons or the public or which cause or have a natural tendency to cause injury or damage to business or property.
- Rule 800 – General Requirements for Control of Fine Particulate Matter. The purpose of this regulation is to reduce the amount of fine PM_{10} entrained in the ambient air as a result of emissions generated from anthropogenic (man-made) Fugitive Dust (PM_{10}) sources generated from within Imperial County by requiring actions to prevent, reduce, or mitigate PM_{10} emissions. The Rules contained within this Regulation have been developed pursuant to United States Environmental Protection Agency guidance for Serious PM_{10} Non Attainment Areas.

- Rule 801 – Construction and Earthmoving Activities. The purpose of this rule is to reduce the amount of fine PM_{10} entrained in the ambient air as a result of emissions generated from Construction and other Earthmoving Activities by requiring actions to prevent, reduce, or mitigate PM_{10} emissions.
- Rule 805 – Paved and Unpaved Roads. The purpose of this regulation is to reduce the amount of fine PM_{10} entrained in the ambient air as a result of emissions generated from new or existing public or private Paved or Unpaved Roads, road construction projects, or road modification projects by requiring actions to prevent, reduce, or mitigate PM_{10} emissions.

5.3.2.5 Air Permits

An air permit would be required if a stationary source is anticipated. Horizon West Transmission, LLC (HWT) has not identified the need to apply for or receive any air quality-related permits from ICAPCD or ADEQ for the Proposed Project. However, the Proposed Project may use diesel generators in the staging areas; if this is the case, there may be a potential need for a stationary source permit. HWT would comply with applicable rules and would develop and implement any required plans.

5.3.3 Impact Questions

5.3.3.1 Air Quality Impact Questions

The significant criteria for assessing impacts to air quality come from the California Environmental Quality Act (CEQA) Environmental Checklist. For air quality, the CEQA Environmental Checklist asks, would the Proposed Project:

- Conflict with or obstruct implementation of the applicable air quality plan?
- Result in a cumulatively considerable net increase of any criteria pollutant for which the Proposed Project region is nonattainment under an applicable federal or state ambient air quality standard?
- Expose sensitive receptors to substantial pollutant concentrations?
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

5.3.3.1.1 Regional Emissions Thresholds

Imperial County Air Pollution Control District

ICAPCD's CEQA Air Quality Handbook provides regional air quality significance thresholds for construction and operation of a Proposed Project. Table 5.3-5 contains the applicable thresholds for construction of the Proposed Project. Additionally, ICAPCD's CEQA Air Quality Handbook states that regardless of the size of the Project, the standard mitigation measures for construction equipment and fugitive PM_{10} must be implemented at all construction sites for construction equipment and fugitive dust found under Section 7.1, Construction Equipment and Fugitive PM_{10} Mitigation Measures, of ICAPCD CEQA Air Quality Handbook (ICAPCD 2017b).

Table 5.3-5 Thresholds of Significance for Construction Activities - ICAPCD

Pollutant	Threshold (Pounds per Day)
PM_{10}	150
ROG	75
NO_X	100
CO	550

Notes: PM_{10} = Particulate Matter with a mean diameter of no more than 10 microns; ROG = Reactive Organic Compounds; NO_x = Nitrogen Oxides; CO = Carbon Monoxide

Sources: ICAPCD 2017b

As shown in Table 5.3-6, projects with regional emissions of criteria pollutants below ICAPCD's Tier I threshold for operational activities would have a less than significant impact. Tier II projects with a potential to emit criteria pollutants above the thresholds of Tier I are considered to have a significant impact on regional air quality. Tier II projects are required to implement all standard mitigation measures, as well as identify and implement all feasible discretionary mitigation measures under ICAPCD's CEQA Air Quality Handbook Section 7.2, *Standard Mitigation Measures for Project Operations.*

Table 5.3-6 Thresholds of Significance for Operational Activities - ICAPCD

Pollutant	Tier 1 Threshold (Pounds per Day)	Tier 2 Threshold (Pounds per Day)
NO_x & ROGs	Less than 137	137 and Greater
SO_2 & PM_{10}	Less than 150	150 and greater
CO & $PM_{2.5}$	Less than 550	550 and greater

Notes: NO_x = Nitrogen Oxides; ROG = Reactive Organic Compounds; SO_2 = sulfur dioxide; PM_{10} = Particulate Matter with a mean diameter of no more than 10 microns; CO = Carbon Monoxide; $PM_{2.5}$ = Particulate Matter with a mean diameter of no more than 2.5 microns

Sources: ICAPCD 2017b

Operational emissions for the Proposed Project were not quantified, as they are anticipated to be minimal. The Proposed Project would include operation and maintenance (O&M) of the overhead transmission line once construction is complete. Ongoing O&M activities are necessary to ensure reliable service, as well as the safety of the utility worker and the general public, as mandated by the CPUC. Project facilities managed by HWT would be monitored remotely 24 hours a day, 7 days a week by the System Operations team at Lone Star Transmission, an HWT affiliate, in compliance with applicable regulations. The physical condition of facilities would be periodically inspected by field operations staff. HWT anticipates a small incremental increase in staffing to support the Proposed Project. The estimated full-time equivalent is 1 to 2 subject matter experts (SMEs). Additional staffing needs are minimal because HWT plans to integrate the Proposed Project into its existing O&M program currently executed by HWT and its affiliated SMEs and supported by external specialized contractors.

The Proposed Project's incremental increase in staffing would generate a small number of additional vehicle trips during O&M activities, specifically, an additional 24 O&M trips per year, and as such, emissions associated with Project operation in California would be negligible. Operational emissions in California, therefore, are not quantified and compared to the thresholds provided in Table 5.3-6 above; rather, operational emissions are discussed qualitatively.

Yuma County, Arizona

The CFR provides guidance to document CAA Conformity Determination requirements. 40 CFR Part 93.153(b)(2) defines *de minimis* levels, which are the minimum thresholds for which a conformity determination must be performed for criteria pollutants based on the federal attainment status of the pollutant in the air basin. The federal *de minimis* threshold for ROG and NO_X in ozone nonattainment areas that are classified as marginal is 50 tons per year. The federal *de minimis* threshold for PM_{10} nonattainment areas that are classified as moderate is 100 tons per year. The federal *de minimis* level for attainment/maintenance areas for CO, SO_2, and $PM_{2.5}$ is 100 tons per year. Table 5.3-7 presents the *de minimis* levels for conformity determination for construction and operation, respectively. The *de minimis* threshold is used to evaluate potential air quality impacts generated by construction of the Proposed Project in Yuma County, Arizona.

Table 5.3-7 Thresholds of Significance for Construction and Operations Activities- Yuma County

Pollutant	CAA Conformity Threshold
NO_X & ROG	50
CO	100
SO_2	100
PM_{10}	100
$PM_{2.5}$	100

Notes: NO_x = Nitrogen Oxides; ROG = Reactive Organic Compounds; CO = Carbon Monoxide; SO_2 = sulfur dioxide; PM_{10} = Particulate Matter with a mean diameter no more than 10 microns; $PM_{2.5}$ = Particulate Matter with a mean diameter no more than 2.5 microns

Sources: USEPA 2024c

Similar to the California portion of the Proposed Project, operational emissions from the Proposed Project's Arizona components would be minimal. Operational emissions in Arizona, therefore, are not quantified and compared to the thresholds provided in Table 5.3-7. Rather, operational emissions are discussed qualitatively in the sections below.

5.3.3.2 Additional CEQA Impact Questions

There are no CPUC-identified additional CEQA impact questions.

5.3.4 Impact Analysis

5.3.4.1 Air Quality Impact Analysis

5.3.4.1.1 Air Quality Methodology

Construction

Impacts to air quality were determined by comparing the anticipated emissions from construction of the Proposed Project against the daily emissions thresholds established by the ICAPCD and the annual emissions thresholds established by the USEPA. These emissions estimates were generated using the methodologies and factors implemented in version 2022.1 of the California Emissions

Estimator Model (CalEEMod)[1] and Swiss Federal Office of Civil Aviation *Guidance on the Determination of Helicopter Emissions*. Given the unique characteristics of a transmission line Proposed Project, CalEEMod is not specifically designed to accommodate the structure of Proposed Project information; rather, the methodologies, data inputs and emission factors from CalEEMod were incorporated into an Excel workbook.

CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with both construction and operations from a variety of land use projects. The model allows for the use of default data (e.g., emission factors, trip lengths, meteorology, source inventory) provided by the various California air districts to account for regional requirements and conditions, and/or user-defined inputs. The calculation methodology and input data used in CalEEMod can be found in the CalEEMod User's Guide Appendices A through H. The emission calculations details and methodologies are provided in Appendix C of the user's guide, and the default data tables provide the inputs, which are provided in Appendix G of the user's guide. For the purpose of this analysis, CalEEMod was also used to estimate Arizona emissions.

Helicopter emissions were estimated using the emission factors and methodology provided in the Swiss Federal Office of Civil Aviation *Guidance on the Determination of Helicopter Emissions.* It is anticipated that construction would involve the use of two light duty helicopters (assuming MD530F and Bell 407 aircraft types) during the Conductor and Wires Installation construction phase, as well as the use of one heavy duty helicopter (assuming Sikorsky UH-60A Blackhawk/ Boeing CH-47D Chinook aircraft types) during the Structure Installation construction phases. The light duty helicopters may be used for approximately six hours per day for eleven months during conductor and wire installation activities and the heavy-duty helicopter may be used for approximately eight hours per day for 15 days during structure installation activities. It is not currently known how many take-offs and landing events would occur during construction. As such, take-off and climb-out mode emission factors were used and applied to the total duration of helicopter use, representing take-off, cruising, and landing emissions. This approach is conservative and likely overestimates helicopter emissions during construction, as take-off emissions are higher than emissions during cruising and landing activities. Emission factors for the heavy-duty helicopter were derived from the emission factors for H-53 Super Stallion (T64-GE-416 Turboshaft 4,380 horsepower [hp] engine). Emission factors for the light duty helicopters were derived from the emission factors for Bell 206 Jet Ranger (Alison 250-C20 Turboshaft 420 hp engine). Construction schedules for these two phases are anticipated to partially overlap and could occur concurrently during this time. As such, it was assumed that all three helicopters would operate simultaneously on any given day to determine maximum daily emissions from helicopter use.

Construction-related blasting is anticipated; however, details regarding specific blasting locations, equipment types, and total amount of blasting materials to be used would be determined during final engineering. The analysis assumes that Ammonium Nitrate/Fuel Oil (ANFO) would be used as the explosive material because it is relatively inexpensive and considered safer to handle under controlled conditions (Giroux & Associates 2020). The analysis conservatively assumes that three blasting areas could be active each day, with each area limited to two blasting events and a maximum of 200 pounds of ANFO per blasting area per day. Additionally, it is assumed that six

[1] Imperial County has a similar desert climate to the Proposed Project location in Arizona, making it a suitable comparison for using CalEEMod. Although CalEEMod is specifically designed for projects in California, the emissions calculated will be comparable to those for an identical Proposed Project in Arizona.

blasting events could occur each week, for an estimated annual 84 blasting events.[2] Gaseous emission factors used for ANFO include 67 pounds of carbon monoxide per ton of explosive, 17 pounds of nitrogen oxides per ton of explosive, and 2 pounds of sulfur oxides per ton of explosive (San Diego Air Pollution Control District 2023). Emission factor equations for PM_{10} and $PM_{2.5}$ are based on blasting overburden material in USEPA AP-42 Table 11.9-1, *uncontrolled open dust sources at western surface coal mines,* where the geometric mean area blasted is 17,000 square feet (USEPA 1998). Blasted material would be crushed and backfilled onsite, and it is assumed that one rock crushing and processing unit would operate for eight hours at each blasting location. This equipment is assumed to be diesel-fueled, and emission factors were obtained from CalEEMod 2020.4.0 user guidelines (California Air Pollution Control Officers Association 2021).

Emission activities were analyzed on an overall Proposed Project basis. Construction would occur over eleven subphases. Activities are anticipated to occur from March 2029 to November 2030 for a total duration of approximately 20 months. Construction subphases include Staging Areas; Civil Crew (Road Work, Foundations, Ducts) – Flat Land Crew, Regular Crew, Foundation Crew; Civil Crew (Road Maintenance, BMP's, Gates); Structure Installation – Lattice-Guyed V Framing, Lattice-Guyed V Setting, Monopole and Lattice - 4-Legged, and Spotting; Conductor and Wires Installation, and Civil Crew (Clean Up). These individual crews would be spaced along the 86-mile transmission line performing construction activities and linearly progressing along the path, with the shortest distance between any two crews being approximately 0.25 miles or greater.[3]

The approximate duration, including start and end date, of each construction activity is presented in Table 3-11 of Chapter 3, Project Description. The information provided within Table 3-11, including – the type and quantity of offroad and onroad equipment needed for each phase; equipment fuel type; duration of use in a single day; estimated workforce; approximate start and end date; equipment hp; and estimated scheduled days - was used to estimate the Proposed Project's overall construction emissions.

Offroad emissions relied on the estimated equipment HP, primary equipment description, and probable fuel type to determine which emissions factors to use in the emissions modeling. Using CalEEMod, emission factors were derived and applied accordingly. Additionally, fugitive particulate matter (PM) emissions for fine and coarse PM were estimated using the equations for dust from material movement and grading onsite, as provided in Appendix C of the CalEEMod User's Guide.

Similarly, onroad emissions relied on the estimated workforce, probable fuel type and equipment description to determine which emission factors to use in the air modeling. CARB's Emission Factor Model (EMFAC) version 2021 emissions factors for year 2029 were used for each year of construction.[4] The EMFAC emissions model is developed and used by CARB to assess emissions from on-road vehicles including cars, trucks, and buses in California, and to support CARB's regulatory and air quality planning efforts. Vehicle types were categorized by EMFAC Classification (Light Heavy Duty Truck 2 [LHDT2] for pick-up trucks and worker trips; Heavy Heavy Duty Trucks [HHDT] for hauling trips and heavy duty trucks) and aggregate speeds were assumed. The CalEEMod default percentage of 50/50 percent paved/unpaved roads for Imperial County was used to estimate

[2] Approximately 16.3 miles of the proposed alignment are in the mountains, as shown in Figure 3-6, Blasting Plan Structures Overview, in Chapter 3 Project Description. That is approximately 18.9 percent of the proposed alignment; therefore, it is assumed 98 construction workdays (18.9 percent of total construction workdays) to complete construction of transmission lines in this area. Assuming 3 blasting areas per week, approximately 42 blasting areas would occur annually (with 2 blasting events per area).
[3] The 0.25 mile distance between crews is based on information provided by the applicant.
[4] Emission factors included in the analysis include exhaust emissions, as well as particulates from brake ware and tire ware.

fugitive particulate emissions from roadway dust using the equation provided in CalEEMod Appendix C, Section 5.14 (page C-45).

Methods to reduce fugitive PM_{10} emissions during construction include the watering of unpaved roads twice daily, which would result in a 55 percent reduction in fugitive PM_{10}, as well as limiting the max speed on roads to 25 mph, resulting in an additional 44 percent reduction in fugitive PM_{10}. Additional control measures that may be implemented but were not applied to the emissions calculation include applying chemical dust suppressants annually to unpaved parking areas (84 percent reduction).

While the potential sequencing of construction activities is dependent on final engineering and design, it is anticipated that some activities may be performed concurrently; for instance, pull and tension/stringing sites may be established at the same time as guard structures are being installed, and the restoration of disturbed areas may occur at the same time as staging area demobilization and restoration is occurring. Figure 3-8 and Section 3.6.4 of Chapter 3, Project Description provide additional information related to the construction schedule and proposed construction subphase sequencing. Maximum daily emissions represent the worst-case scenario for air quality that could occur on any one day of construction where more than one activity overlaps. As demonstrated in Figure 3-8 of Chapter 3, *Project Description*, at the peak of construction activity in 2030, all but one of the subphases are anticipated to overlap (Staging Areas). As such, daily emissions from each of these subphases were combined and compared to ICAPCD's thresholds, as this represents the most conservative daily emissions scenario. For annual emissions, all contributions from each construction phase were analyzed to capture the total long-term impact. The total Proposed Project emissions from each year, 2029-2030, were calculated as described above and then compared to the federal *de minimis* thresholds.

Daily emissions were primarily limited to activities in California, as the ICAPCD's thresholds are in terms of pounds per day. Proposed Project plans to develop an 86-mile transmission line in California and Arizona. Approximately 80 miles (93 percent) of construction would be in California and 6 miles (7 percent) of transmission line construction would be in Arizona. This percentage was applied to Overall Construction Emissions to determine the emissions for each state. The annual emissions were evaluated for California, Arizona, and the Project as a whole.

During the Structure Installation phase, it was assumed that approximately five trips per day would be needed to import structures and other construction material. Approximately 1,250 hauling trips would occur during the "Civic Crew (Road Work, Foundations, Ducts)," based on 20,000 cubic yards of material export and 16 cubic yard capacity per haul truck. For the export of this material, CalEEMod default trip length of 20 miles was used. Additionally, CalEEMod default values for Imperial County were used for worker trip length. It was assumed that 50 percent of total trips would be on paved roads, per Appendix G of the CalEEMod User Guide, *Default Data Tables*. Please refer to Appendix B for additional details about the assumptions and inputs used to estimate daily and annual emissions.

Due to the linear nature of Project construction, pollutant-generating activities would not occur at any single location for long periods, so a quantitative Health Risk Assessment is not necessary. Impacts to sensitive receptors are discussed qualitatively.

Operations

Project components would be monitored 24 hours a day, 7 days a week remotely by HWT's Lone Star Transmission team, with routine physical inspections by field staff. HWT will handle emergency repairs—like replacing damaged structures or re-stringing lines—prompted by storms, fires, or accidents. Regular O&M work, required for reliable service and public safety—including adherence to CPUC General Orders 95 and 128—is essential. To accommodate this, HWT expects to add just 1–2 full-time experts, integrating the Proposed Project into its existing maintenance program. HWT may use a light-duty helicopter to conduct transmission line aerial inspections once a year, for up to four hours in a day. No new access would be required for future inspections beyond access proposed for construction of the Proposed Project; ground-based inspections would be conducted using the existing and proposed network of access and spur roads. HWT anticipates up to one month of access road maintenance activities per year using the same construction equipment fleet and workforce as described in Table 3.11 associated with civil crew (road maintenance, BMPs, gates) activity.

Overall, maintenance and inspection activity will slightly increase but won't affect population growth or regional emissions inventories. For these reasons, operational emissions are discussed qualitatively.

5.3.4.1.2 Would the Proposed Project conflict with or obstruct implementation of the applicable air quality plan?

Construction

Project Components in California

Less than Significant Impact. The ICAPCD is the agency responsible for managing regional air quality and administering California and federal air pollution control programs, ensuring attainment and maintenance of the ambient air quality standards. The ICAPCD has established air quality plans to address nonattainment areas, including the 2018 Imperial County PM_{10} State Implementation Plan, the 2018 State Implementation Plan for the 12 µg/m^3 $PM_{2.5}$ Annual Standard, and the 2017 State Implementation Plan for the 75 ppb 8-hour Ozone Standard.

As shown on Table 5.3-8 in Section 5.3.4.1.3, construction emissions from the Proposed Project remain within the ICAPCD's established thresholds. As outlined in the ICAPCD CEQA Handbook, projects that meet these thresholds are deemed consistent with approved regional air quality plans. Moreover, the Project would also adhere to ICAPCD Regulation VIII, implementing fugitive dust controls during both construction and operation.

ICAPCD Regulation VIII is a comprehensive set of rules designed to reduce emissions of fine PM_{10} from fugitive dust sources throughout Imperial County. These rules were developed in response to the county's designation as a Serious PM_{10} Nonattainment Area under the Clean Air Act. Regulation VIII includes Rule 800 through Rule 806, each targeting specific sources of fugitive dust such as construction and earthmoving activities, bulk material handling, track-out from vehicles, open areas, paved and unpaved roads, and agricultural practices. The regulation defines key terms like "active operation," "fugitive dust," and "stabilized surface," and outlines the conditions under which dust-generating activities must be controlled. It also specifies acceptable dust suppression methods, including chemical stabilizers approved by CARB and the U.S. EPA, and mandates the use of track-out prevention devices at construction sites.

Compliance with Regulation VIII requires both existing and new sources of fugitive dust to implement Best Available Control Measures (BACM). Existing sources must comply within 90 days of rule adoption, while new sources must comply before initiating activities. Entities such as the Bureau of Land Management (BLM), Department of Parks and Recreation (DPR), and U.S. Border Patrol (BP) operating recreational off-highway vehicle (OHV) areas must submit and update dust control plans every two years. These plans must address all applicable rule sections and be reviewed by ICAPCD, CARB, and the U.S. EPA. The regulation also includes exemptions for emergency operations, endangered species protection, and certain military training activities. Overall, Regulation VIII enforces a proactive and structured approach to mitigating PM_{10} emissions, emphasizing accountability, recordkeeping, and periodic updates to ensure ongoing compliance.

Additionally, while unanticipated, any stationary emission sources on-site will be subject to ICAPCD Rule 207 (New and Modified Stationary Source Review) and Rule 201 (Permit-to-Construct and Operate), ensuring required permitting and oversight. Consequently, the Proposed Project will neither conflict with nor hinder applicable air quality plans, and its air quality impacts would be considered less than significant. Because construction of Proposed Project components in Imperial County, California would not result in air quality emissions above applicable thresholds, it would not conflict with applicable air quality plans.

Emissions associated with Proposed Project construction of components in California would be temporary and would represent a small fraction of the regional emission inventories included in the applicable air quality plans. Construction of the Proposed Project components in California would be performed in compliance with applicable air district rules and regulations, ensuring that activities would be consistent with air district efforts to achieve attainment and maintenance of the standards. The Proposed Project-related emissions occurring in California and in compliance with these rules and regulations would not conflict with or obstruct implementation of the applicable air quality plans. Impacts would be less than significant.

Project Components in Arizona

Less than Significant Impact. Similar to the California components discussed above, the ADEQ oversees air quality and enforces federal pollution control programs in Yuma County. The agency uses air quality plans to manage areas not meeting air standards, specifically the Yuma County PM_{10} Nonattainment State Implementation Plan and the Marginal Ozone Plan for the Yuma Nonattainment Area (2020).

Emissions from construction will be temporary, minor, and compliant with ADEQ regulations. As shown in Table 5.3-10 in Section 5.3.4.1.3, construction emissions from the Proposed Project in Yuma County would remain well below the USEPA's *De Minimis* threshold adopted under Arizona's SIP. In addition, the Proposed Project would implement all required fugitive dust controls—such as chemical stabilizers, gravel surfacing, vehicle speed limits, on-site inspections, and recordkeeping—in accordance with Arizona's nonattainment-area construction and dust regulations. Any on-site stationary emission sources will obtain proper permits as required by ADEQ, ensuring that oversight, emission control, and compliance monitoring are maintained. As a result, the Proposed Project aligns with the planning goals of the state/region and supports ongoing air quality management efforts.

Because the Proposed Project's emissions would remain within allowable limits, and because control measures and permitting would be in place, the Proposed Project would not conflict with Yuma County's air quality goals or impede state air quality plans. Consequently, air quality impacts from Project operations are expected to be less than significant. The Proposed Project in Arizona

would not lead to population growth or exceed forecasted vehicle travel, meaning it aligns with existing air quality plans. Therefore, the Proposed Project would not conflict with or hinder the implementation of air quality plans, resulting in a less than significant impact.

Overall Project

Less than Significant Impact. The ICAPCD and ADEQ are responsible for managing air quality and implementing state and federal air pollution control programs in their respective areas. As discussed above, both agencies have developed air quality plans to address regions that do not meet ambient air quality standards, known as nonattainment areas.

In Imperial County, California, the Proposed Project similarly operates under ICAPCD guidelines, maintaining construction emissions within district thresholds and adhering to Regulation VIII fugitive dust controls. On-site stationary sources will be subject to ICAPCD's NSR permit requirements (Rule 207) and operational permitting (Rule 201), ensuring enforceable emission controls. Thus, the Proposed Project would be consistent with regional air quality plans, yielding less-than-significant impacts in Imperial County.

In Yuma County, Arizona, which is designated a Moderate PM_{10} nonattainment area, the Proposed Project's construction emissions would remain within allowable SIP-based thresholds. The Proposed Project would employ required fugitive dust controls—such as stabilizers, speed limits, inspections, and recordkeeping—in compliance with ADEQ's evolving regulations addressing PM_{10} nonattainment. Any on-site stationary sources would obtain ADEQ permits, ensuring proper emission monitoring, control, and reporting. Consequently, the Proposed Project would align with Yuma's air quality improvement efforts and is expected to result in less-than-significant air quality impacts.

Additionally, the annual emissions generated during construction would be temporary and represent only a small portion of the total regional emissions included in those plans. Construction activities would be carried out in full compliance with ICAPCD and ADEQ regulations, ensuring consistency with efforts to achieve and maintain air quality standards.

Given the temporary and minimal nature of the construction emissions, and the fact that the Project aligns with regulatory requirements, the Proposed Project would not interfere with or obstruct the implementation of air quality plans in either jurisdiction. As a result, the Project would have a less than significant impact on regional air quality planning or compliance efforts.

Operation

Project Components in California

Less than Significant Impact. The Proposed Project would result in minimal emissions of criteria air pollutants, as it involves no major construction or combustion sources and only infrequent maintenance trips (up to 24 annually). Additionally, HWT may use a light-duty helicopter to conduct transmission line aerial inspections once a year, for up to four hours in a day and anticipates up to one month of access road maintenance activities per year using the same construction equipment fleet and workforce as described in Table 3-11 of Chapter 3, *Project Description,* associated with civil crew (road maintenance, BMPs, gates) activity.

These activities are not expected to generate significant quantities of ozone precursors, particulate matter, or other regulated pollutants. The Proposed Project is intended to mitigate resource deliverability to enable delivery of electrical energy generation, which may include renewable

energy. The Proposed Project also avoids the use of SF_6 switchgear, further reducing potential regional emission impacts. Because it would not conflict with applicable air quality plans or exceed CEQA significance thresholds, operation of the Proposed Project would have a less than significant impact on air quality and is consistent with regional and state air quality regulations.

Project Components in Arizona

Less than Significant Impact. As previously described, O&M activities associated with the Arizona components of the Proposed Project would include an estimated 24 annual maintenance and inspection trips, one day of light-duty helicopter use, and one month of access road maintenance activities. The anticipated annual emissions from regular O&M activities within Arizona would be minimal. As described above, the Arizona component of the Proposed Project would also reinforce system reliability and mitigate resource deliverability constraints to enable delivery of electrical energy generation, which may include renewable energy.

Because HWT complies with current regulations and because the Proposed Project's main objective is to reinforce system reliability, operation of the Proposed Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing emissions of criteria air pollutants. As a result, there would be a less than significant impact.

Overall Project

Less than Significant Impact. The Proposed Project involves O&M activities such as maintenance and inspection trips, as well as potential helicopter and offroad equipment use for access road maintenance. However, the Proposed Project would reinforce system reliability by providing redundancy. This would help alleviate deliverability constraints to San Diego and the Los Angeles Basin (Orange County, Los Angeles County) directly or indirectly through relief of other established pathways. On the eastern side of the Proposed Project, the Proposed Project would benefit the North Gila (Yuma, Arizona) area. Therefore, operation of the Proposed Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing emissions of criteria air pollutants. As a result, there would be a less than significant impact.

5.3.4.1.3 Would the Proposed Project result in a cumulatively considerable net increase of any criteria pollutant for which the Proposed Project region is nonattainment under an applicable federal or state ambient air quality standard?

Construction

Project Components in California

Less than Significant Impact. Proposed Project construction in California would require the use of off-road construction equipment, on-road vehicles, and up to three helicopters, as itemized in Table 3-9 in Chapter 3, Proposed Project Description. These vehicles would generate criteria air pollutant emissions that could contribute to existing or projected violations of the ambient air quality standards for ozone and PM_{10}. Table 5.3-8 summarizes the anticipated maximum daily emissions for each phase of construction and maximum daily emissions from overlapping phases, and compares them to the applicable ICAPCD regional construction emissions thresholds. Maximum daily overlapping emissions represent the maximum emissions that could occur if construction phases overlap. This is representative of the highest possible construction emissions that could occur on

any given day of construction, potentially exceeding the ICAPCD daily significance thresholds and resulting in potential NAAQS exceedances. As shown in Table 5.3-8, daily emissions of NO_x and PM_{10} would exceed applicable thresholds established by the ICAPCD during Project construction. As such, construction of the Proposed Project in California would result in a potentially significant impact.

Table 5.3-8 Maximum Daily Regional Construction Emissions for California Project Components

Construction Phase	Maximum Daily Emissions (Pounds per Day)					
	Reactive Organic Gas (ROG)	Nitrous Oxides (NO_x)	Carbon Monoxide (CO)	Sulfur Dioxide (SO_2)	Respirable Particulate Matter (PM_{10})	Fine Particulate Matter ($PM_{2.5}$)
Imperial County Air Pollution Control District						
Staging Areas	1	7	10	<1	102	10
Civil Crew (Road Work, Foundations, Ducts) - Flat Land Crew	3	23	25	<1	80	8
Civil Crew (Road Work, Foundations, Ducts) - Regular Crew	1	11	14	<1	56	6
Civil Crew (Road Work, Foundations, Ducts) - Foundation Crew	7	49	78	<1	241	25
Civil Crew (Road Maintenance, BMP's, Gates)	2	11	14	<1	121	12
Structure Installation - Lattice - Guyed V Framing	1	65	18	4	232	23
Structure Installation - Lattice - Guyed V Setting	3	21	28	<1	328	33
Structure Installation - Monopole and Lattice - 4-Legged	3	26	33	<1	245	25
Structure Installation - Spotting	<1	4	4	<1	227	23
Conductor and Wires Installation	18	148	166	2	1,063	114
Civil Crew (Clean Up)	<1	2	4	<1	86	9
Blasting	1	13	33	1	97	6
Maximum Daily Overlapping Phases	**40**	**371**	**417**	**7**	**2,775**	**284**
Threshold	**75**	**100**	**550**	**-**	**150**	**-**
Exceeded?	**No**	**Yes**	**No**	**Not Applicable (N/A)**	**Yes**	**N/A**

Construction of the Proposed Project would result in a potentially significant impact when assuming all subphase activities from all crews would occur at the same time in the same location. However, the ICAPCD emissions thresholds are designed to be protective of ambient air quality standards, which are concentration standards. The construction activities would be distributed along the 86-

mile transmission line such that applying these emissions thresholds for all subphase activities would not be representative of conditions that could cause an exceedance of an ambient air quality standard. Rather, scenarios that could potentially cause or contribute to exceedances of ambient air quality standards were analyzed on a localized basis.

The nature of equipment movement along the Proposed Project alignment involves distributed activity on a "per work crew" basis, with construction equipment typically spaced out along the length of the Proposed Project. Equipment and work crews operate independently and maintain separation, except in designated staging areas. A crew in the context of this Proposed Project refers to distinct groups of workers, equipment, and activities that operate within defined segments of a construction or project site. Each crew typically performs a specific function—such as structure installation and conductor and wires installation—and operates within a particular timeframe and location that moves along the Proposed Project alignment over time.

For the localized emissions analysis, each crew was treated as an individual source of emissions due to its unique composition of equipment, schedule, and scope of work. In an effort to provide a more realistic (but still conservative) emissions scenario, it was assumed that the staging area emissions (which are held stationary at a single location) would overlap with emissions produced from each of the other construction phase crews as those construction activities progress along the Proposed Project alignment and come within proximity of the staging areas. The crews were analyzed individually because they are spaced far enough apart along the transmission line (approximately 0.25 miles or greater between each crew)[5] such that any emissions from the varying crews occurring on any given day would not combine to cause a potential exceedance of the NAAQS at any given location. The use of a 0.25 mile (1,320 feet) or greater distance between crews is appropriate to apply to the ICAPCD's regional significance thresholds due to the various factors that influence ambient air quality concentrations. This includes wind direction and speed, the distance-decay relationship of specific pollutants, and the deposition rates of particulates typically found from linear sources, such as a road or freeway.

As discussed in CARB's Air Quality and Land Use Handbook (CARB 2005), there is an association between emission concentrations and distance. CARB found that measurements of traffic-related pollutants demonstrate that concentrations within 300 meters (approximately 1,000 feet) downwind of freeways were higher than regional values. This association of traffic related emissions with adverse health effects was seen within 1,000 feet and was strongest within 300 feet. This demonstrates that the adverse effects diminished with distance. In traffic-related studies highlighted by CARB, the additional non-cancer health risk attributable to proximity was seen within 1,000 feet and was strongest within 300 feet, with California freeway studies showing about a 70 percent reduction in particulate pollution levels at 500 feet (CARB 2005).

Similarly, gaseous pollutants, such as NO_x, demonstrate a distance-decay relationship, where pollutant concentrations decrease as a function of distance from an emissions source. In general, distance-decay gradients have different characteristics on upwind and downwind sides of a linear emissions source, such as a freeway or construction of a transmission line. On the upwind side, concentrations have been found to drop off to near background levels within 200 meters (656 feet) and, in the case of particulates, within approximately 100 meters (328 feet) or less (World Health Organization 2013). On the downwind side, concentrations do not generally reach background levels until 300–500 meters (984-1,640 feet). In general carbon monoxide, NO_2 and ultrafine particles exhibit a sharp distance-decay gradient.

[5] The 0.25 mile distance between crews is based on information provided by the applicant.

In the South Coast Air Quality Management District's (SCAQMD) Final Localized Significance Threshold (LST) Methodology (SCAQMD 2008), the SCAQMD uses distance-based thresholds for localized criteria air pollution impacts, with 500 meters (1,640 feet) being the furthest distance for assessing construction and industrial dust. As stated in the SCAQMD's LST Fact Sheet, LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable federal or state AAQS at the nearest sensitive receptor and can be used as another indicator of significance in a project's air quality impact analyses (SCAQMD 2009). Furthermore, the change in emissions thresholds for LSTs in relationship to distance demonstrates that pollutant concentrations drop off drastically with distance.

Similar to the SCAQMD, the ICAPCD emissions significance thresholds are designed to be protective of the NAAQS and prevent exceedances. As demonstrated above, the distance at which pollutant concentrations would drop off to background levels is anywhere from 1,000 to 1,640 feet (0.18-0.31 miles). As such, it is reasonable to assume that individual emission sources operating at a distance of 0.25 miles or greater would remain localized during construction of the Proposed Project, and would not overlap in a way that would cause cumulative emissions to exceed any federal or state standards beyond those presented in this analysis.

As discussed above, the localized individual crew approach is able to demonstrate whether the Proposed Project has the potential to cause or contribute to an exceedance of an ambient air quality standard.

As shown in Table 5.3-9 below, when construction activities are analyzed on a localized basis, emissions from the Proposed Project would not exceed ICAPCD's significance thresholds.[6]

[6] Please note that blasting emissions were excluded from localized individual crew analyses because it is anticipated that blasting would occur at least 2,800 feet away from the nearest sensitive receptors and not contribute to potential localized impacts.

Table 5.3-9 Maximum Daily Local Construction Emissions for California Project Components

Construction Phase	Maximum Daily Emissions (Pounds per Day)					
	Reactive Organic Gas (ROG)	Nitrous Oxides (NO_x)	Carbon Monoxide (CO)	Sulfur Dioxide (SO_2)	Respirable Particulate Matter (PM_{10})	Fine Particulate Matter ($PM_{2.5}$)
Imperial County Air Pollution Control District						
Staging Areas	1	6	10	<1	2	<1
Civil Crew (Road Work, Foundations, Ducts) - Flat Land Crew	1	11	12	<1	2	<1
Civil Crew (Road Work, Foundations, Ducts) - Regular Crew	1	11	14	<1	2	<1
Civil Crew (Road Work, Foundations, Ducts) - Foundation Crew	2	16	25	<1	6	1
Civil Crew (Road Maintenance, BMP's, Gates)	2	10	14	<1	3	<1
Structure Installation - Lattice - Guyed V Framing	1	63	13	4	8	<1
Structure Installation - Lattice - Guyed V Setting	1	5	7	<1	5	1
Structure Installation - Monopole and Lattice - 4-Legged	1	5	6	<1	4	<1
Structure Installation - Spotting	<1	3	3	<1	3	<1
Conductor and Wires Installation	10	81	90	2	19	6
Civil Crew (Clean Up)	<1	2	3	<1	2	<1
Maximum Daily Overlapping Phases	**10**	**81**	**90**	**4**	**19**	**6**
Threshold	**75**	**100**	**550**	**-**	**150**	**-**
Exceeded?	**No**	**No**	**No**	**Not Applicable (N/A)**	**No**	**N/A**

Additionally, as previously discussed, the ICAPCD's CEQA Air Quality Handbook states regardless of the size of a Proposed Project, the standard mitigation measures for construction equipment and fugitive PM_{10} must be implemented at all construction sites for construction equipment and fugitive dust. This is found under Section 7.1, Construction Equipment and Fugitive PM_{10} Mitigation Measures, of the ICAPCD CEQA Air Quality Handbook (ICAPCD 2017b).

To minimize PM_{10} emissions during construction, the Project will implement fugitive dust control measures consistent with ICAPCD Rule 800 requirements. These include regular watering of disturbed surfaces and unpaved roads to prevent visible dust emissions, with frequency adjusted based on activity levels, meteorological conditions, and proximity to sensitive receptors. Where

watering is impractical, chemical stabilizers approved by CARB, U.S. EPA, and ICAPCD should be applied to maintain a stabilized surface. Vehicle speeds on unpaved roads would be limited to 15–25 miles per hour, and gravel pads or rumble strips would be installed at site exits to reduce track-out. Stockpiles of bulk materials would be covered or stabilized and drop heights during loading and unloading would be minimized. Construction equipment would comply with a five-minute idling limit, and dust-generating activities would be suspended during high wind events when emissions cannot be adequately controlled. A Designated Representative would be responsible for implementing and monitoring these measures, ensuring compliance with ICAPCD's definition of Best Available Control Measures (BACMs). These actions are intended to maintain stabilized surfaces, reduce emissions from earthmoving and haul activities, and ensure that PM_{10} impacts remain below significance thresholds throughout the construction period.

Because the Proposed Project's maximum daily construction emissions per crew under the localized scenario would not exceed applicable air quality thresholds established by the ICAPCD for any criteria air pollutant and would adhere to control requirements as outlined in ICAPCD's CEQA Air Quality Handbook for construction emissions, the Proposed Project components in California would not result in a cumulatively considerable net increase of any criteria pollutant for which the Proposed Project region is nonattainment under an applicable federal or state ambient air quality standard. Therefore, a less than significant impact would occur from construction of the Proposed Project components in California.

Project Components in Arizona

Less than Significant Impact. Construction of the Proposed Project in Arizona would involve the use of off-road construction equipment, on-road vehicles, and up to three helicopters, as detailed in Table 3-11 of Chapter 3, *Project Description*. Usage of this equipment would result in emissions of CAPs, potentially contributing to existing or future exceedances of ambient air quality standards for ozone and PM_{10}. Table 5.3-10 provides a summary of the estimated annual emissions for each construction year and compares them against applicable *de minimis* thresholds. Similar to California emissions, Arizona construction emissions estimates assume that unpaved roads would be watered twice daily throughout the construction period. It is also assumed that dust control measures—such as twice-daily watering of disturbed surfaces during material movement, and a maximum speed limit of 25 miles per hour or less for hauling and worker vehicles—would be implemented to minimize fugitive dust during construction activities. As shown in Table 5.3-10, maximum daily emissions – assuming all construction crews and overlapping subphases would occur at the same time – would not exceed CAA Conformity thresholds for any criteria air pollutant during any phase of Proposed Project construction.

Table 5.3-10 Annual Regional Construction Emissions for Arizona Project Components

Construction Year	Annual Emissions (Tons per Year)					
	Reactive Organic Gas (ROG)	Nitrous Oxides (NO_x)	Carbon Monoxide (CO)	Sulfur Dioxide (SO_2)	Respirable Particulate Matter (PM_{10})	Fine Particulate Matter ($PM_{2.5}$)
Arizona Department of Environmental Quality						
2029	<1	2	2	<1	5	1
2030	<1	2	2	<1	6	1
CAA Conformity Threshold	**50**	**50**	**100**	**100**	**100**	**100**
Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Similar to the ICAPCD, ADEQ requires several best practices to control fugitive dust during construction and agricultural activities. These include maintaining vegetative cover or plant residues to avoid bare soil, creating wind barriers such as fences or vegetation to reduce wind-blown dust, stabilizing access roads with paving, aggregate, or chemical treatments, and keeping soil surfaces rough to minimize dust generation. Additional measures involve reducing vehicle speeds and applying water to construction areas before major activities such as site preparation. Having a water truck on-site for road maintenance during high-traffic periods or windy conditions is also recommended.

In addition, under Section 18-02 of AAC, construction projects involving roadways or material handling must implement reasonable precautions to prevent excessive PM from becoming airborne. These precautions include using water, wetting agents, dust suppressants, and covering loads. AAC also restricts off-road machinery, such as trucks and graders, from emitting visible smoke with an opacity greater than 40 percent for more than 10 seconds, except within 10 minutes of a cold start.

Because the Proposed Project's annual construction emissions would not exceed CAA Conformity thresholds for any criteria air pollutant and would adhere to control requirements as required by the ADEQ for construction emissions, the Proposed Project components in Arizona would not result in a cumulatively considerable net increase of any criteria pollutant for which the Proposed Project region is nonattainment under an applicable federal or state ambient air quality standard. Therefore, a less than significant impact would occur from construction of the Proposed Project components in Arizona.

Overall Project

Less than Significant Impact. As demonstrated in Table 5.3-9 and Table 5.3-10 above, emissions associated with construction of the Proposed Project would be less than significant when compared to ICAPCD and federal *de minimis* thresholds. Because the Proposed Project's construction emissions would not exceed these thresholds and would comply with the required control measures in both states, construction activities in California, Arizona, and overall Proposed Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the Proposed Project region is nonattainment under applicable federal or state ambient air quality standards. Therefore, the impact from construction of the Proposed Project components in both California and Arizona, as well as from the Proposed Project overall would be less than significant.

Operation

Project Components in California

Less than Significant Impact. Project facilities managed by Horizon West Transmission, LLC (HWT) would be monitored remotely 24/7 by the System Operations team at Lone Star Transmission, an HWT affiliate, in compliance with applicable regulations. The physical condition of facilities would be periodically inspected by field operations staff. HWT would conduct a wide variety of repair and maintenance activities in response to emergency situations such as damage resulting from high winds, storms, fires, and other natural disasters, and accidents. Such repairs could include replacement of downed structures or lines, or re-stringing conductors. Emergency repairs could be needed at any time. Ongoing O&M activities are necessary to ensure reliable service, as well as the safety of the utility worker and the general public, as mandated by the CPUC. HWT anticipates a small incremental increase in staffing of 1 to 2 employees to support the Proposed Project. The transmission lines would be maintained in a manner consistent with CPUC G.O. 95 and G.O. 128 as applicable, along with federal, state, and regional regulations. These G.O.s contain the standards for the operation and maintenance of transmission lines in California. HWT inspects transmission overhead facilities in a manner consistent with CPUC G.O.165, which requires observation a minimum of once per year, but inspection typically occurs more frequently to ensure system reliability. Trips to the Proposed Project to perform O&M activities would be minimal and infrequent, estimated at up to 24 annual trips (1 per month for 2 employees). Helicopters may be used for various O&M activities, including the transportation of transmission line workers, delivery of equipment and materials to structure sites, structure placement, hardware installation, and conductor or optical ground wires stringing operations. Overall, the Proposed Project would involve O&M activities such as increased maintenance and inspection trips. However, criteria air pollutant emissions associated with such activities would be minimal and would be below thresholds. This impact would be less than significant.

Project Components in Arizona

Less than Significant Impact. As described above under “Project Components in California,” following construction of the Proposed Project, O&M activities would occur as needed and could include activities such as repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, replacing structures, tree trimming, brush and weed control, and access road maintenance. O&M would also include routine inspections and emergency repair throughout rights-of-way (ROWs), which would require the use of vehicles and equipment.

Overall, and associated air pollutant emissions associated with O&M activities would be minimal. Therefore, this impact would be less than significant.

Overall Project

Less than Significant Impact. Project facilities managed by HWT would be monitored remotely 24/7 by the System Operations team at Lone Star Transmission, an HWT affiliate, in compliance with applicable regulations. The physical condition of facilities would be periodically inspected by field operations staff. HWT would conduct a wide variety of repair and maintenance activities in response to emergency situations such as damage resulting from high winds, storms, fires, and other natural disasters, and accidents. Such repairs could include replacement of downed structures or lines, or re-stringing conductors. Emergency repairs could be needed at any time. Ongoing O&M activities are necessary to ensure reliable service, as well as the safety of the utility worker and the general

public, as mandated by the CPUC. HWT anticipates a small incremental increase in staffing of 1 to 2 employees to support the Proposed Project. The transmission lines would be maintained in a manner consistent with CPUC G.O. 95 and G.O. 128 as applicable, along with federal, state, and regional regulations. These G.O.s contain the standards for the operation and maintenance of transmission lines in California. HWT inspects transmission overhead facilities in a manner consistent with CPUC G.O.165, which requires observation a minimum of once per year, but inspection typically occurs more frequently to ensure system reliability. Trips to the Proposed Project to perform O&M activities would be minimal and infrequent, estimated at up to 24 annual trips (1 per month for 2 employees). Helicopters may be used for various O&M activities, including the transportation of transmission line workers, delivery of equipment and materials to structure sites, structure placement, hardware installation, and conductor or optical ground wires stringing operations. Overall, the Proposed Project involve O&M activities such as maintenance and inspection trips. However, air pollutant emissions associated with such activities would be minimal and would be below thresholds. This impact would be less than significant.

For these reasons, operation of the Proposed Project overall would not result in a cumulatively considerable net increase of any criteria pollutant for which the Proposed Project region is nonattainment under applicable federal or state ambient air quality standards. Therefore, a less than significant impact would occur from operation of Proposed Project overall.

5.3.4.1.4 Would the Proposed Project expose sensitive receptors to substantial pollutant concentrations?

Construction

Project Components in California

Less than Significant Impact. Construction-related activities would result in temporary Proposed Project-generated emissions of DPM exhaust emissions from off-road, heavy-duty diesel equipment. DPM was identified as a TAC by CARB in 1998. The potential cancer risk from the inhalation of DPM outweighs the potential non-cancer health impacts and is therefore the focus of this analysis (CARB 2025).

CARB's Air Quality and Land Use Handbook: A Community Health Perspective (2005) recommends against siting sensitive receptors within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day. While these siting distances are not particular to construction activities, the primary source of TAC emissions from both freeways and construction equipment is DPM.

Sensitive receptors located in proximity to Proposed Project components may be subject to incremental increases in criteria air pollutant concentrations primarily resulting from fugitive dust emissions generated during earth-moving operations and vehicular movement on unpaved access roads. As detailed in Section 5.3.1.3, numerous residential dwellings are situated within a 1,000-foot radius of the Proposed Project components, thereby potentially placing sensitive populations within the zone of influence for particulate matter and other localized pollutants. As shown in Table 5.3-4, the nearest sensitive receptor to the Proposed Project is a single-family residence (SR5) located along Claverie Road, near Ash 9A Drain, east of Calexico. SR5 is approximately 125 feet north of the Proposed Project alignment.

The Proposed Project would construct approximately 812 linear feet of transmission line per day and would potentially expose sensitive receptors to one day of construction activity[7]. Due to the temporary and mobile nature of the Proposed Project, construction activities are not anticipated to occur at any single location for more than two months[8] within 1,000 feet of sensitive receptors, with separate crews working in succession. The Office of Environmental Health Hazard Assessment's (OEHHA's) health risk assessment guidance is to determine the exposure of sensitive receptors to toxic emissions on a 30-year exposure period (assumed to be the approximate time that a person spends in a household). Health risk assessments should be limited to the period/duration of activities associated with the Proposed Project. Therefore, the Proposed Project construction duration and corresponding exposure duration is less than one percent for a 30-year health risk calculation period; exposure to TAC emissions for sensitive receptors would be minimal.

The construction involves multiple crews operating concurrently but geographically dispersed across various segments of the Proposed Project. This dispersion reduces the likelihood of concentrated emissions at any single location, effectively lowering the localized pollutant burden near individual sensitive receptors. Consequently, the ambient pollutant levels experienced at specific receptor sites are expected to be substantially less than the aggregate emissions estimated for the entire California component of the Proposed Project. This spatial and temporal distribution of construction emissions further mitigates the potential for localized air quality impacts.

Furthermore, air quality emission estimates indicate that pollutant emissions attributable to construction activities associated with the Proposed Project components would remain below the significance thresholds established by applicable regulatory agencies. These thresholds are designed to ensure that short-term and long-term exposure levels do not exceed ambient air quality standards or related criteria pollutant limits. For these reasons, the Proposed Project is not expected to result in substantial TAC emissions near sensitive receptors in California.

Project Components in Arizona

Less than Significant Impact. As with the Project Components in California, DPM emissions would also be generated during construction activities associated with the Arizona portions of the Proposed Project. As previously noted, CARB advises against locating sensitive receptors within 500 feet of freeways, urban roads carrying over 100,000 vehicles per day, or rural roads with over 50,000 vehicles per day. Although these siting recommendations are not specific to construction activities, they are relevant because DPM is a primary TAC emitted by both freeway traffic and construction equipment. Approximately 6 miles of the Proposed Project is located in Arizona. As shown in Table 5.3-4 above, there are three sensitive receptors (SR 9-11) within 1,000 feet of the North Gila Station fenceline. However, due to the temporary and mobile nature of constructing the Proposed Project, construction activities do not remain in one location for extended periods. Additionally, all three sensitive receptors are more than 500 feet away from the Proposed Project. As discussed in CARB's Land Use Guidance (CARB 2005), at 500 feet, particulate concentrations decrease by an average of 70 percent, thus substantially reducing pollutant exposures to a less than significant level. Specifically, California freeway studies show about a 70 percent drop in particulate pollution levels at 500 feet. For these reasons, the Proposed Project is not expected to result in substantial TAC emissions near sensitive receptors in Arizona.

[7] Total roadway (~417,120 feet [79 miles]) divide by total construction days (514 days) = 811.5 linear feet per day
[8] Based on OEHHA Guidance Manual for Preparation of Health Risk Assessments (2015), it does not recommend assessing cancer risk for projects lasting less than two months.

Overall Project

Less than Significant Impact. Due to the temporary and mobile nature of the Proposed Project, construction activities do not remain in one location for extended periods. The California OEHHA identifies two months (or approximately 60 days) as an appropriate metric for evaluating short-term exposure in certain health risk assessments, particularly for construction-related activities. According to the OEHHA 2015 *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*, exposures lasting less than two months are considered acute or short-term and are evaluated differently from chronic exposures.

Based on the current construction schedule, emissions-generating activities at any one location are anticipated to last less than two months, which aligns with OEHHA's short-term exposure framework. This supports the conclusion that potential health risks associated with localized emissions would be short in duration and are not expected to result in significant health impacts or exceed applicable thresholds. As a result, potential exposure of sensitive receptors to TACs is minimal for the overall Proposed Project.

Sensitive receptors near Proposed Project components in Arizona and California could be exposed to temporary increases in criteria air pollutants from fugitive dust during construction activities. However, emissions are expected to remain below all applicable thresholds, and due to the dispersed nature of construction crews, localized emissions near any single receptor would likely be lower than overall Proposed Project emissions.

Operation

Project Components in California

Less than Significant Impact. The Proposed Project would involve O&M activities such as increased maintenance and inspection trips. The majority of new transmission and distribution facilities resulting from the Proposed Project would be located in areas with limited or no sensitive receptors. Typical O&M activities would last less than a single day at each pole location. Due to the limited sensitive receptors in the vicinity of the Proposed Project, limited emissions associated with these activities, and short-term nature of O&M activities, a less than significant impact is anticipated.

Project Components in Arizona

Less than Significant Impact. The Proposed Project would involve O&M activities such as additional maintenance and inspection trips. Most of the new transmission line structures and access roads would be located in areas with few or no sensitive receptors. Routine O&M tasks typically last less than one day at each structure location. Given the scarcity of sensitive receptors in the area, the minimal emissions from these activities, and their short duration, a less than significant impact is anticipated.

Overall Project

Less than Significant Impact The Proposed Project would involve O&M activities such as maintenance and inspection trips. Most of the Project components would be located in areas with few or no sensitive receptors. Routine O&M tasks are typically completed in less than one day at each pole location. Given the limited presence of sensitive receptors, the minimal emissions generated by these activities, and their short duration, the Proposed Project's O&M operations impacts would be less than significant.

5.3.4.1.5 Would the Proposed Project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Construction

Project Components in California

Less than Significant Impact. Due to the nature of Proposed Project components in California, impacts resulting from other emissions, such as odor, are unlikely. Typical nuisances include odor-producing H_2S, ammonia, chlorine, diesel engine emissions and other sulfide-related emissions. No significant sources of H2S, ammonia, chlorine, and other sulfide-related emissions would exist during construction. Diesel-engine emissions and the accompanying odor would be short-term, would be isolated to the immediate area surrounding the temporary construction areas and access roads, would be intermittent in nature, would disperse quickly, and would cease upon completion of construction. As described in Section 5.3.1.3, there are several sensitive receptors in the vicinity of the planned construction activities for Project components in California. Because emissions and associated odors would be temporary and disperse rapidly with distance from the source, and because the majority of construction activities would occur in unoccupied open areas, construction of the Proposed Project in California would not result in the frequent or long-term exposure of a substantial number of people to objectionable emissions and odors. Therefore, impacts would be less than significant.

Project Components in Arizona

Less than Significant Impact. Given the nature of the Proposed Project components in Arizona, emissions associated with nuisance odors are not expected to result in significant impacts. Common odor-producing compounds such as hydrogen sulfide, ammonia, chlorine, and other sulfide-related emissions are not anticipated to be present in meaningful quantities during construction. While diesel engine emissions may produce temporary odors, these would be confined to the immediate vicinity of active construction areas and access roads, would occur intermittently, disperse rapidly, and cease once construction is complete. As noted in Section 5.3.1.3, several sensitive receptors are located near the planned construction zones in Yuma County; however, because these emissions are short-term, dissipate quickly with distance, and most construction would occur in sparsely populated or unoccupied areas, exposure to objectionable odors would be infrequent and affect a limited number of individuals. As a result, odor-related impacts from the Arizona components of the Proposed Project would be less than significant.

Overall Project

Less than Significant Impact. The Proposed Project is not expected to generate significant impacts related to nuisance odors or similar emissions. Common sources of odor—such as hydrogen sulfide, ammonia, chlorine, and other sulfur-based compounds—are not associated with the type of construction activities planned and therefore are not anticipated to be present. While diesel-powered equipment may produce some temporary odors, these emissions would be localized to active construction zones and access routes, occur intermittently, and dissipate quickly in the open air. Construction activities will be short in duration and concentrated in areas with minimal nearby population, as outlined in Section 5.3.1.3. Given the limited number of sensitive receptors in the vicinity, the short-lived nature of emissions, and the rapid dispersion of any odors, the likelihood of

widespread or prolonged exposure to unpleasant smells is low. As such, odor-related impacts from the Proposed Project would be considered less than significant.

Operation

Project Components in California

Less than Significant Impact. The Proposed Project components in California would involve O&M activities such as maintenance and inspection trips and vegetation management. Potential emission sources associated with O&M activities in California would be limited, with the most likely source being diesel engine emissions and accompanying odors. These emissions would be short-term, limited to the location of the O&M activity in California, intermittent in nature, disperse quickly, and cease upon completion of the O&M activity at a given location in California. Because emissions would be temporary and disperse rapidly with distance from the source, and because the majority of O&M activities in California would occur in unoccupied open areas, O&M-generated emissions and odors in California would not result in the frequent or long-term exposure of a substantial number of people to objectionable odorous emissions. Therefore, impacts in California would be less than significant.

Project Components in Arizona

Less than Significant Impact. The Proposed Project components in Arizona would involve O&M activities such as maintenance and inspection trips and vegetation management. Emissions generated during O&M work would be minimal, with diesel engine exhaust and its associated odors representing the most likely source. Such emissions would be short-lived, localized to the specific site of activity, intermittent, and would dissipate quickly after the work is completed. Given the temporary nature of these emissions, their rapid dispersion, and the fact that most O&M activities in Arizona would take place in open, unpopulated areas, the potential for frequent or prolonged exposure to odorous emissions is low. As a result, O&M-related impacts in Arizona would be less than significant.

Overall Project

Less than Significant Impact. The Proposed Project components in Arizona would involve O&M activities such as maintenance and inspection trips and vegetation management. Emissions linked to these activities would be minimal, with diesel engine exhaust and related odors representing the most likely sources. These emissions would be short in duration, confined to the immediate area of each O&M task, occur intermittently, and dissipate quickly once the activity concludes. Given their temporary nature, the rapid dispersion of any odors, and the fact that most O&M work would take place in sparsely populated or undeveloped areas, the potential for frequent or long-term exposure to nuisance odors is low. Accordingly, the impact of O&M-generated emissions and odors would be considered less than significant.

5.3.4.2 Air Quality Emissions Modeling

Emissions from construction activities were estimated using emission factors and methods from CalEEMod v2022.1, Compilation of Air Pollutant Emission Factors, CARB vehicle emission models, and California Energy Commission and other agency studies (California Air Pollution Control Officers Association [CAPCOA] 2022). Helicopter emissions were estimated based on the Swiss Federal Office of Civil Aviation *Guidance on the Determination of Helicopter Emissions* (Federal Office of Civil

Aviation 2015). Emissions modeling results are presented in Appendix B; all calculations, presented in Microsoft Excel format, are provided to the CPUC under separate cover.

5.3.4.3 Air Quality Emissions Summary

Tables summarizing the air quality emissions for the Proposed Project and applicable thresholds for each applicable attainment area are presented in Section 5.3.4.2, which also includes a summary of emissions. The assumptions that were applied in the emissions estimates are also provided in Appendix B.

5.3.4.4 Health Risk Assessment

Review of Office of Environmental Health Hazard Assessment (OEHHA) guidance (OEHHA 2015) indicates that a Health Risk Assessment is not required for the Proposed Project because it does not include operation of new stationary sources that would result in the emissions of toxic air pollutants. Total duration of construction activities could extend for up to three years, but it is unlikely the activities within the vicinity of identified sensitive receptors would occur for longer than a few days, much less than the duration of a couple of months, which has been identified as the minimum time for evaluating cancer risks following OEHHA guidance. Section 3.6.5, Work Schedule, describes the various activities that generally range from 1 to 20 days.

5.3.5 CPUC Draft Environmental Measures

Attachment 4 of the CPUC's *Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments* includes CPUC Draft Environmental Measure 5.3, Dust Control During Construction. As described above, the Proposed Project would not result in significant impacts associated with air quality, and no environmental measures are necessary to reduce potential impacts. However, it should be noted that any construction dust control measures required under ICAPCD or ADEQ regulations will be implemented.

5.3.5.1 Applicant-Proposed Measures

No potentially significant impacts related to air quality have been identified and as such there are no Applicant Proposed Measures to reduce air quality impacts associated with the Proposed Project.

5.4 Biological Resources

This section describes the biological resources in the vicinity of the Ironwood Transmission Line Project (Proposed Project), as well as the potential impacts that may result from construction and operation of the Proposed Project. For this biological resources section of the PEA, the study area is defined as the Proposed Project alignment plus a 1,000-foot buffer (2,000-foot wide corridor) for vegetation communities and up to a 350-foot buffer (700-foot wide corridor) for other biological resources. For ancillary components of the Proposed Project, including existing access roads and laydown yards outside of the Proposed Project alignment, a 100 foot buffer was applied. The study area also includes two proposed point of change of ownership (POCO) areas around the substations.

Research for this analysis involved a background review of existing literature and databases, a reconnaissance survey to field-verify land-cover mapping and refine vegetation community compositions, and preparation of a Biological Resources Technical Report (BRTR; Appendix C-1) that documents the existing conditions within the study area. The background review included the following resources:

- **Aerial imagery of the study area.** (Google Earth Pro 2025)
- **California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) RareFind5.** Queries of the CNDDB included the study area plus a 5-mile buffer (CDFW 2025a)
- **California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants of California.** Query of the study area quadrangles (CNPS 2025b)
- **United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC).** An unofficial IPaC report was generated for the approximate study area to determine what federally listed species, critical habitat, migratory birds, or other federally regulated natural resources potentially occur (USFWS 2025a) (Appendix C-1, Attachment C)
- **CDFW Special Animals List.** Results of the database queries were cross-referenced with CDFW's Special Animals List to determine the current conservation status of each species identified (CDFW 2025b)
- **National Wetlands Inventory (NWI).** (USFWS 2025b)
- **National Hydrology Dataset (NHD).** (United States Geological Survey [USGS] 2025)
- **Watershed Boundary (WBD) Dataset.** (USGS 2025)
- **Natural Resources Conservation Service (NRCS) Web Soil Survey.** (United States Department of Agriculture [USDA], NRCS 2025a)
- **National List of Hydric Soils.** (USDA, NRCS 2025b)

5.4.1 Environmental Setting

The Proposed Project is located in western Yuma County, Arizona and Imperial County, California, crossing predominantly unincorporated lands as well as federal, state, municipal, and private land. These lands include unincorporated areas of Imperial and Yuma counties, the City of Calexico, California, and public lands under the jurisdiction or management of the U.S. Bureau of Land Management (BLM), U.S. Bureau of Reclamation, and the California Department of Parks and Recreation. The Proposed Project would connect the North Gila Substation in Arizona and Imperial Valley Substation in California. This section provides a description of the existing conditions related to biological resources present along the Proposed Project alignment.

5.4.1.1 Biological Resources Technical Report

The Ironwood Transmission Line Project Biological Resources Technical Report (BRTR) (Appendix C-1) summarizes the methodologies used during the desktop review and reconnaissance surveys that were performed for the Proposed Project. The BRTR is informed by reconnaissance surveys, which occurred between April 21 and April 29, 2025. The report discusses observed natural vegetation communities, potentially jurisdictional aquatic features, observed special-status species, and species with the potential to occur within the study area. The potential for species occurrence was evaluated based on species' ranges, habitat preferences, occurrence records from the database queries, and the range of suitable habitats present within the Proposed Project's study area as verified during the reconnaissance field surveys. The potential for each special status species to occur in the study area was assessed based on the following criteria:

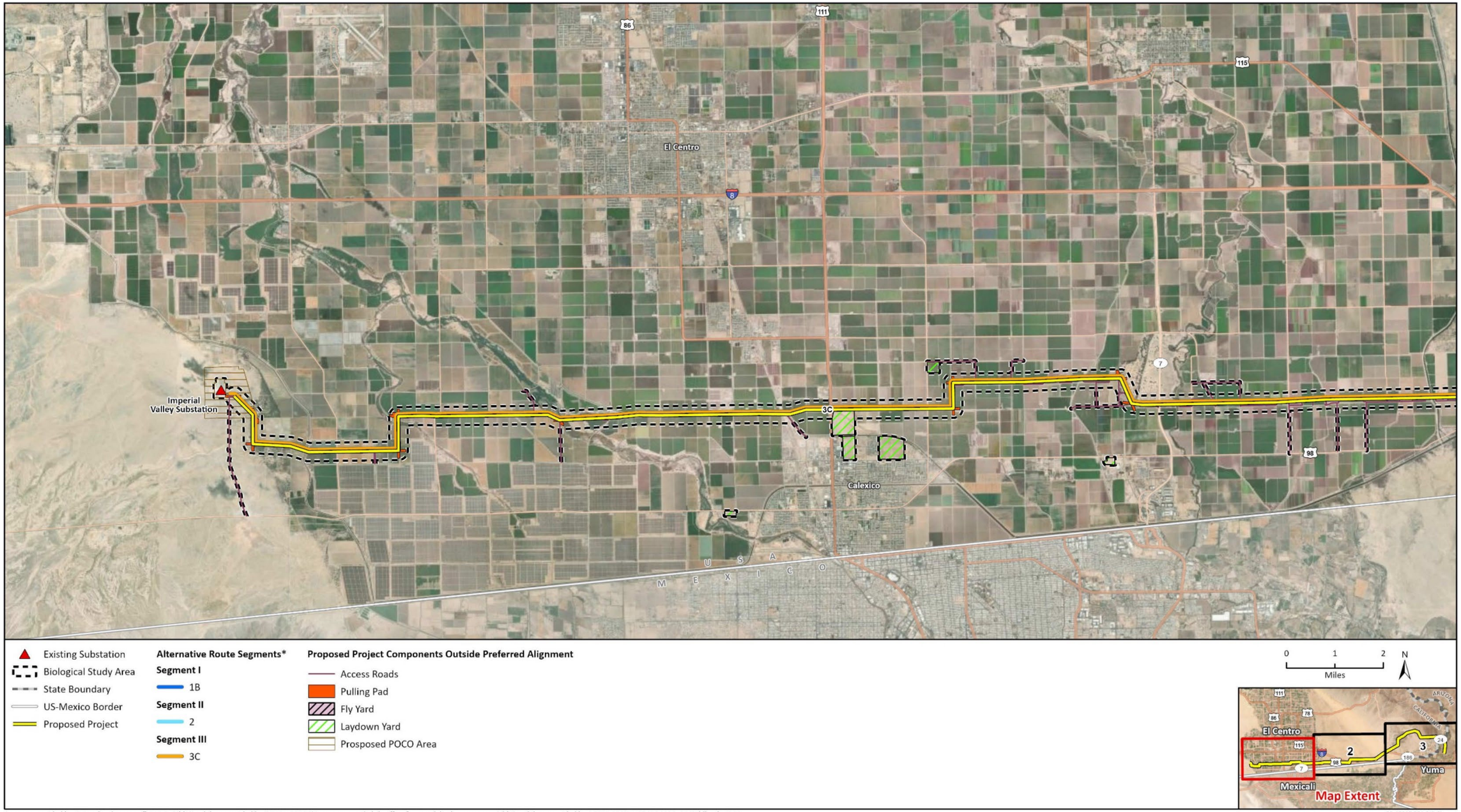
- **Present.** The species or positive sign was definitively determined to be present in the study area during a site visit or field survey.
- **Likely.** All study area features indicate this species is very likely present and should be expected according to the following criteria:
  - study area is within the species' geographic range/floristic province;
  - suitable habitat (e.g., soils, vegetation communities, elevation, roost sites, leaf litter/debris, water, host plants) is present; and
  - distance to the California Natural Diversity Database (CNDDB) records or other records from the past 25 years is within one mile (fish), 2 miles (plants), or 5 miles (mammals/birds/herps).
- **Unlikely.** Study area is within the species' geographic range and suitable habitat is present, but the species would not be expected to occur or be encountered according to the following criteria:
  - CNDDB or other records within 5 miles of the study area are over 25 years old; or
  - distance to records from the past 25 years is greater than 1 mile (fish), 2 miles (plants), or 5 miles (mammals/birds/herps).
- **Does Not Occur.** Species would not occur (or is very unlikely to occur) because the study area is outside the known or current geographic/elevation range, lacks habitat or suitable conditions, and/or there is reasonable certainty to assume absence. Other criteria include:
  - CNDDB or other records within 5 miles of the study area are from the past 75 years but the locations are noted as a "best guess" or are otherwise inaccurate.
  - No suitable habitat exists for this species.

5.4.1.2 Biological Resources Study Area (Local Setting)

The Biological Study Area (study area) includes the Proposed Project's estimated alignment area plus buffers to account for direct and indirect impacts to biological resources. An approximately 1,000-foot buffer from the Proposed Project alignment or feature centerline and an approximately 100-foot buffer for ancillary components of the Proposed Project (i.e. existing access roads and laydown yards outside of the Proposed Project alignment) were used for the Project's desktop review.[1] The biological study area is shown in Figure 5.4-1, Figure 5.4-2, and Figure 5.4-3, below.

[1] To align with Biological Resource Technical Report Standards (CPUC 2019), analyses specific to vegetation communities/land cover used a study area buffer of 1,000 feet based on desktop data (LandFire 2025). For ancillary project components outside of the 350-foot survey area buffer (700-foot corridor), an additional 100-foot buffer from the edge of the component was applied.

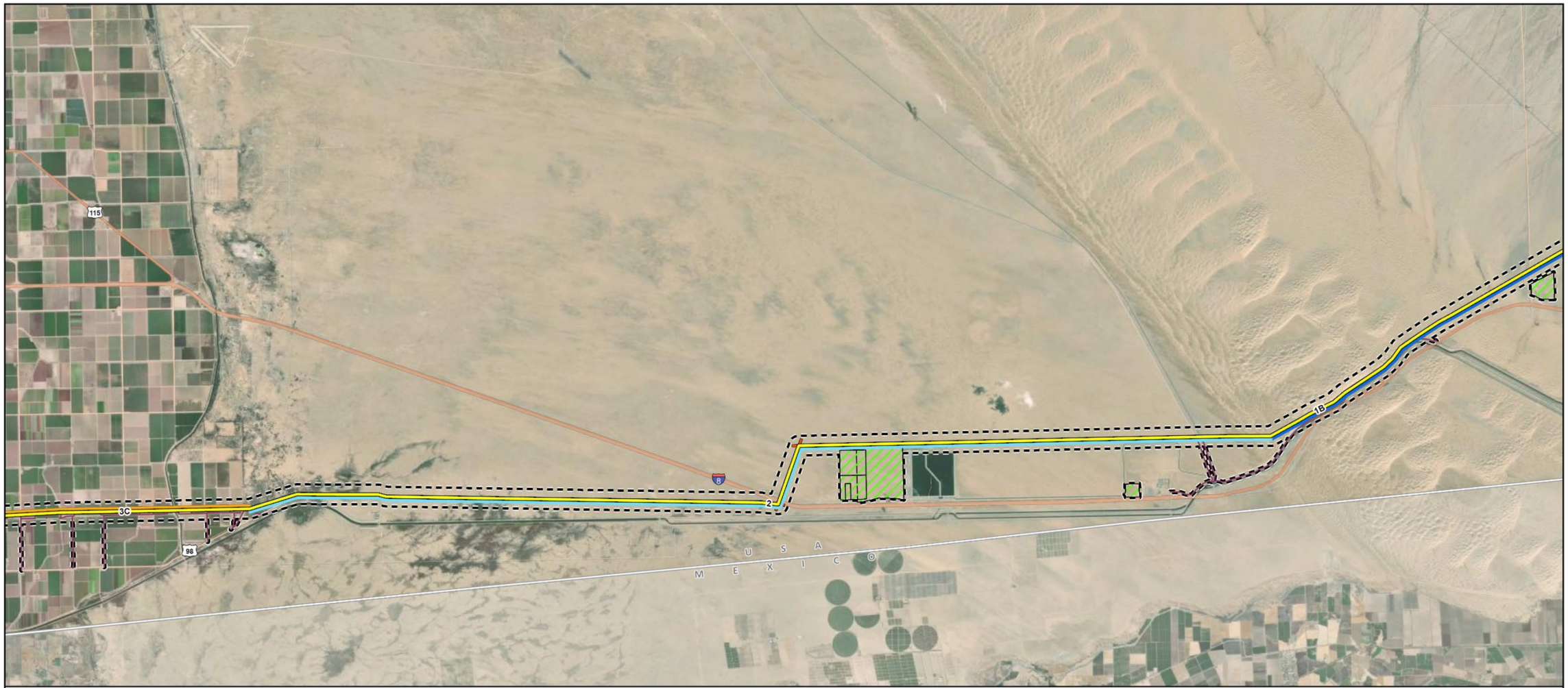
Figure 5.4-1 Biological Study Area – Segment 3



*Imagery provided by Esri and its licensors © 2026. Additional data provided by USDOT, 2025. *Segments are slightly offset for visual display purposes. Additional data provided by CEHCP 2010, FTHLICC 2003, SC Wildlands 2012.*

25-17237 PEA BIO Figures
PEA Fig X Study Area Overview

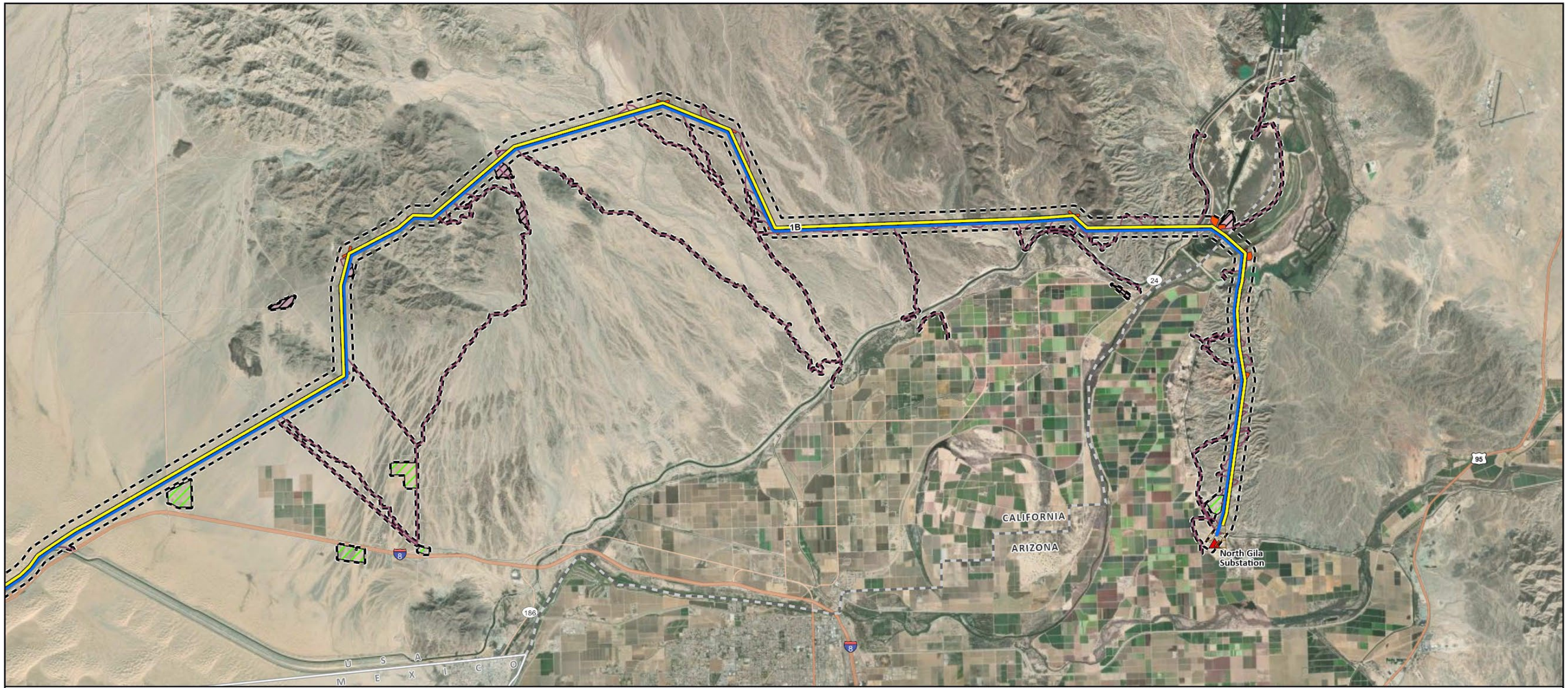
Figure 5.4-2 Biological Study Area – Segment 2



*Imagery provided by Esri and its licensors © 2026. Additional data provided by USDOT, 2025. *Segments are slightly offset for visual display purposes. Additional data provided by CEHCP 2010, FTHLICC 2003, SC Wildlands 2012.*

25-17237 PEA BIO Figures
PEA Fig X Study Area Overview

Figure 5.4-3 Biological Study Area – Segment 1



*Imagery provided by Esri and its licensors © 2026. Additional data provided by USDOT, 2025. *Segments are slightly offset for visual display purposes. Additional data provided by CEHCP 2010, FTHLICC 2003, SC Wildlands 2012.*

25-17237 PEA BIO Figures
PEA Fig X Study Area Overview

5.4.1.3 Vegetation Communities and Land Cover

The total study area for vegetation community mapping included a 1,000-foot buffer around the centerline of the Proposed Project alignment and an approximately 100-foot buffer for ancillary components (e.g. laydown yards and existing access roads). Because the field survey area—defined by a 350-foot buffer from the Proposed Project's centerline—was smaller than the full study area, survey results were supplemented with desktop data to develop a full analysis of the study area. Since desktop data provides vegetation and land cover information at a broader scale than field surveys, the survey area was analyzed separately from the overall study area. Representative site photographs were taken throughout the survey area to support field observations. (Appendix C-1, Attachment H).

Natural and semi-natural vegetation community classification was based on the systems provided in the online database of *A Manual of California Vegetation, Second Edition* (CNPS 2025c). Vegetation classifications were assigned, where applicable, at the alliance level. Classifications were modified as appropriate to reflect the existing site conditions (Sawyer et al. 2009, CNPS 2025a). *The Jepson Manual: Vascular Plants of California, Second Edition* and online Jepson eFlora were used for plant identification and nomenclature (Baldwin et al. 2012; Jepson Flora Project 2025).

Other land cover types have little to no vegetation and consist of both anthropogenically disturbed and natural areas. Developed and disturbed lands generally consist of temporarily and permanently anthropogenically influenced areas, including paved and unpaved roadways, buildings, quarries, aquaculture, associated infrastructure, and recently burned areas. One other land cover type is associated with potentially jurisdictional areas: open water.

Study Area

Vegetation mapping was performed by desktop analysis within the entirety of the study area (1,000-foot buffer of the Proposed Project centerline and 100-foot buffer for ancillary components) using LandFire's vegetation data and aerial imagery. There were 12 vegetation communities, 14 semi-natural communities, and 12 other land cover types identified during the desktop review of the study area.

Within the study area, vegetation is dominated by Sonora-Mojave creosote bush-White Bursage desert scrub, Sonoran Paloverde-mixed cacti desert scrub, Sonora-Mojave mixed salt desert scrub, interior west ruderal riparian scrub, and North American warm desert riparian woodland. Various other semi-natural communities such as Great Basin pinyon-juniper woodland and North American warm desert riparian shrubland are present at relatively low cover. Vegetation communities identified in the study area during desktop analysis are shown in Appendix C-2. Acreages for vegetation communities and other land cover types are shown below in Table 5.4-1 for the Proposed Project alignment and Table 5.4-2 for proposed ancillary components.

Table 5.4-1 Acres of Vegetation Communities and Land Cover Types within Study Area – Proposed Alignment

Vegetation Community/Land Cover Type[1]	Proposed Project Route[2]	Segment 1-1B[2]	Segment 2-2[2]	Segment 3-3C[2]
Natural Communities[1]				
Great Basin Pinyon-Juniper Woodland (6)[3]	23.8	5.1	1.2	8.6
Interior West Ruderal Riparian Forest (7)	111.2	22.3	9.8	24.1
Interior West Ruderal Riparian Scrub (8)	242.6	52.5	58.1	23.4
North American Warm Desert Riparian Herbaceous (14)	56.9	14.1	-	17.2
North American Warm Desert Riparian Mesquite Bosque Shrubland (15)	10.1	0.2	4.8	4.5
North American Warm Desert Riparian Shrubland (16)	44.9	10.3	6.6	7.5
North American Warm Desert Riparian Woodland (17)	46.7	12.4	3.6	11.8
North American Warm Desert Wash Shrubland (21)	17.6	11.6	-	-
Sonora-Mojave Creosotebush-White Bursage Desert Scrub (24)	2,703.0	1,433.8	115.4	194.4
Sonora-Mojave Mixed Salt Desert Scrub (25)	565.8	200.5	152.0	23.7
Sonoran Granite Outcrop Desert Scrub (27)	0.5	0.5	-	-
Sonoran Paloverde-Mixed Cacti Desert Scrub (28)	826.4	525.6	-	17.2
Semi-natural Communities				
North American Warm Desert Bedrock Cliff and Outcrop (10)	1,302.5	778.1	9.6	0.4
North American Warm Desert Ruderal & Planted Grassland (18)	56.6	1.8	2.8	21.0
North American Warm Desert Ruderal & Planted Scrub (19)	384.7	13.6	36.3	1756.0
Western Warm Temperate Close Grown Crop (29)	2,232.6	-	-	1,492.5
Western Warm Temperate Developed Herbaceous (30)	1.2	-	-	0.9
Western Warm Temperate Developed Shrubland (31)	3.9	-	-	3.4
Western Warm Temperate Fallow/Idle Cropland (32)	82.9	-	-	49.0
Western Warm Temperate Orchard (33)	2.2	1.0	-	-
Western Warm Temperate Pasture and Hayland (34)	1,341.8	14.0	-	851.9
Western Warm Temperate Row Crop (35)	1,763.6	1.0	1.8	1,156.4
Western Warm Temperate Urban Evergreen Forest	0.2	-	-	-

Vegetation Community/Land Cover Type[1]	Proposed Project Route[2]	Segment 1-1B[2]	Segment 2-2[2]	Segment 3-3C[2]
Western Warm Temperate Urban Herbaceous (36)	23.0	-	-	2.8
Western Warm Temperate Urban Shrubland (38)	23.4	-	-	21.1
Western Warm Temperate Wheat (39)	93.0	-	-	57.0
Other Land Cover				
Developed-High Intensity (2)	3.6	0.9	-	1.8
Developed-Low Intensity (3)	13.5	4.9	0.2	6.4
Developed-Medium Intensity (4)	5.6	2.1	-	3.0
Developed-Roads (5)	606.4	73.3	55.8	156.4
North American Warm Desert Active and Stabilized Dune (9)	3,447.8	639.7	1,601.2	-
North American Warm Desert Cienega (11)	54.3	25.7	11.2	4.8
North American Warm Desert Lower Montane Riparian Shrubland	0.5	-	-	-
North American Warm Desert Pavement (12)	4,224.6	1,572.0	1,118.8	79.4
North American Warm Desert Playa (13)	108.2	70.4	-	0.2
North American Warm Desert Volcanic Rockland (20)	476.4	309.6	6.4	-
Open Water (22)	249.2	101.1	22.8	25.3
Quarries-Strip Mines-Gravel Pits-Well and Wind Pads (23)	6.8	-	-	6.7
Total	**21,137.6**	**5,897.8**	**3,218.3**	**4,448.5**

[1] Vegetation communities and land cover type for the study area are provided from the LandFire dataset (2025).

[2] Units are in acres and are rounded from GIS calculations.

[3] Numerals indicate index value associated with Appendix C-2.

Note: This table is inclusive of the Proposed alignment study area, which includes a 1,000-foot buffer around the Project centerline.

Table 5.4-2 Vegetation Communities and Land Cover Types within Study Area – Ancillary Components

Vegetation Community or Land Cover Type	Global and State Rank	Total Acres Within Proposed Project Ancillary Components[3]
Arrow Weed Thickets	**G4S3**	**53.3**
Blue Palo Verde – Ironwood Woodland	**G4S4**	**232.6**
Cattail Marshes	G5S5	0.029
Creosote Bush – Brittle Bush Scrub	G5S4	72.6
Creosote Bush – White Burr Sage Scrub	G5S5	348.3
Creosote Bush Scrub	G5S5	1,278.4
Hardstem and California Bulrush Marshes	**GNR S3S4**	**3.7**
Mesquite Thickets	**G5S3**	**8.4**
Mojave-Sonoran Desert Dunes	**G4S3**	**1.9**
Semi-natural Communities		
Common Reed Marshes	GNR SNR	35.6
Tamarisk Thickets	GNA SNA	119.9
Other Land Cover		
Agriculture	N/A	373.4
Developed	N/A	927.0
Disturbed	N/A	608.1
Open Water	N/A	110.9

[1] Vegetation community ranks are from (CDFW 2025c). CDFW sensitive natural communities are indicated in **bold**. Communities were categorized only to the alliance level when 1) all associations are CDFW sensitive natural communities, 2) the alliance contains no CDFW sensitive natural communities, or 3) all CDFW sensitive natural communities were determined to be absent.

GNA SNA – Not applicable; community is not a suitable target for conservation
GNR – Global Rank not assessed

N/A – Not a vegetation community

[2] Acreages are rounded from geographic information systems (GIS) calculations.

[3] This table is inclusive of the ancillary component study area, which includes an approximately 100-foot buffer for ancillary components (e.g. laydown yards and existing access roads).

Survey Area

Thirteen natural vegetation communities, three semi-natural communities, and four other land cover types were identified in the survey area during the reconnaissance surveys (Appendix C-2). Surveyors confirmed habitat characteristics of these areas during reconnaissance field surveys.

Within the survey area, desert scrub vegetation communities are the most abundant and include creosote bush (Larrea *tridentata*), brittlebush (*Encelia farinosa*), and white bursage scrub (*Ambrosia dumosa*) communities. In vegetation communities containing a more complex canopy, palo verde (*Parkinsonia florida*), ironwood (*Olneya tesota*), and Fremont cottonwood (*Populus fremontii*) were commonly seen in the tree layer, with other native shrubs such as honey mesquite (*Prosopis glandulosa*) and non-native *Tamarisk spp.* present as subdominant species within the shrub layer. Various other native and non-native herbs are present at relatively low cover.

Plant species observed during the reconnaissance survey are included in the BRTR (Appendix C-1). Vegetation communities identified in the survey area during vegetation community mapping surveys are shown in Appendix C-2. Vegetation communities and land cover types in the survey area are described in detail in the BRTR (Appendix C-1) and summarized herein. Vegetation communities and other land cover types documented in surveys are provided in Appendix C-2. Included in the description of each alliance is the Global and State conservation status ranking. Communities dominated by non-native species are considered semi-natural alliances and have no Global and State rankings (ranking denoted as GNA SNA). CDFW sensitive natural communities are indicated in bold.

Table 5.4-3 Natural Communities and Land Cover Types Mapped in the Reconnaissance Survey Area

Vegetation Community or Land Cover Type	Global and State Rank	Total Acres Within Proposed Project Route[3]	Segment 1-1B[2,3]	Segment 2-2[2,3]	Segment 3-3C[2,3]
Arrow Weed Thickets	**G4S3**	**56.2**	**4.0**	**40.5**	**11.7**
Blue Palo Verde – Ironwood Woodland	**G4S4**	**434.6**	**434.6**	**-**	**-**
Bush Seepweed Scrub	**G4S3**	**90.8**	**-**	**90.8**	**-**
California Joint Fir – Longleaf Joint-Fir Scrub	**G5S4**	**83.5**	**-**	**83.5**	**-**
Cattail Marshes	G5S5	1.0	0.6	-	0.4
Creosote Bush – Brittle Bush Scrub	G5S4	983.0	983.0	-	-
Creosote Bush – White Burr Sage Scrub	G5S5	727.3	500.7	226.7	-
Creosote Bush Scrub	G5S5	2082.9	894.2	1117.4	71.3
Fremont Cottonwood Forest and Woodland	**G4S3**	**9.9**	**9.9**	**-**	**-**
Hardstem and California Bulrush Marshes	**GNR S3S4**	**10.8**	**10.8**	**-**	**-**
Mesquite Thickets	**G5S3**	**153.6**	**0.4**	**118.2**	**35.0**
Mojave-Sonoran Desert Dunes	**G4S3**	**170.9**	**170.9**	**-**	**-**
Quailbush Scrub	G4S4	6.6	6.6	-	-
Semi-natural Communities					
Common Reed Marshes	GNR SNR	3.7	3.0	-	0.7
Eucalyptus – Tree of Heaven – Black Locust Groves	GNA SNA	51.4	-	-	51.4
Tamarisk Thickets	GNA SNA	240.7	71.0	57.5	112.3
Other Land Cover					
Agriculture	N/A	1945.42	-	-	1945.42
Developed	N/A	66.60	12.10	5.03	49.47
Disturbed	N/A	160.18	48.77	12.28	99.13
Open Water	N/A	96.30	66.07	0.77	29.46

[1] Vegetation community ranks are from (CDFW 2025c). CDFW sensitive natural communities are indicated in **bold**. Communities were categorized only to the alliance level when 1) all associations are CDFW sensitive natural communities, 2) the alliance contains no CDFW sensitive natural communities, or 3) all CDFW sensitive natural communities were determined to be absent.

GNA SNA – Not applicable; community is not a suitable target for conservation
GNR – Global Rank not assessed

N/A – Not a vegetation community

[2] Acreages are rounded from geographic information systems (GIS) calculations.

[3] Proposed Project Route includes Segments 1-1B, 2-2, and 3-3C. Approximately 6 miles of Segment 1-1B is within Arizona (from the origin of the route to Mittry Lake). All remaining route segments are in California.

5.4.1.4 Aquatic Features

Based upon the findings of the site reconnaissance survey and literature/desktop review, aquatic resources potentially subject to United States Army Corps of Engineers (USACE), Colorado River Regional Water Quality Control Board (RWQCB), Arizona Department of Environmental Quality (ADEQ), and CDFW jurisdictions (collectively referred to as potential jurisdictional areas) are present in the study area. Potential jurisdictional features in the study area include freshwater emergent wetlands, freshwater forested/shrub wetlands, freshwater ponds, lakes, canals and culverts, and riverine resources. Major named aquatic resources in the study area include the Coachella Canal, All American Canal, East Highline Canal, Ash Main Canal, Alamitos Canal, Briar Canal, Westside Main Canal, Whitcomb Canal, Holt Canal, Yuma Main Canal, Cocopah Canal, Gila Gravity Main Canal, Greeson Wash, Main Outlet Drain, Haughtelin Lake, Mittry Lake, Alamo River, New River, Gila River, and the Colorado River.

Table 5.4-4 provides an overview of aquatic resources in the study area. Non-jurisdictional features are not included Table 5.4-4. Appendix C-2 provides a map of mapped aquatic resources in the study area for the Proposed Project. The acreages outlined in Table 5.4-4 do not represent acres of impacts to jurisdictional features. Once the Proposed Project's final work areas are specified a focused jurisdictional delineation will be performed to quantify actual impacts to waters of the state and waters of the U.S. The jurisdictional delineation will support the future acquisition of permits required to mitigate impacts to jurisdictional resources as a result of the Proposed Project's actions. For the purposes of environmental review, conservative estimates of impacts to waters of the state and waters of the U.S. have been based on work areas defined in the 30 percent design without accounting for inevitable design and micro-siting to avoid impacts to jurisdictional features, where feasible (see Section 5.4.5.1.4).

Table 5.4-4 Potentially Jurisdictional Aquatic Resources in the Study Area

NWI Type	State	Total Acres Within Proposed Project Study Area[1]
Freshwater Emergent Wetland	AZ	64.9
	CA	54.0
Freshwater Forested/Shrub Wetland	AZ	92.5
	CA	528.9
Freshwater Pond	AZ	1.1
	CA	6.5
Lake	AZ	28.2
Riverine	AZ	95.9
	CA	789.9

Source: USFWS NWI (USFWS 2025b)

[1] Proposed Project study area includes Segments 1-1B, 2-2, and 3-3C.

5.4.1.5 Habitat Assessment

For the purposes of this PEA, vegetation communities and plant and wildlife taxa were considered sensitive or special status if they were classified as one or more of the following:

- Species listed as threatened, endangered, or candidates for listing under the Federal Endangered Species Act (ESA)

- Species listed as rare, threatened, endangered, or candidates for listing under the California Endangered Species Act (CESA)
- Plants listed as rare or endangered under the California Native Plant Protection Act (California Fish and Game Code [CFGC], Section 1900 et seq.)
- Species designated as Fully Protected (FP), Species of Special Concern (SSC), or Watch List (WL) by CDFW
- Species designated as Sensitive by the BLM (BLM S)
- Birds designated as Birds of Conservation Concern (BCC) by USFWS
- Focus species in the Desert Renewable Energy Conservation Plan (DRECP) Land Use Planning Amendment (LUPA)
- Plants assigned a California Rare Plant Rank (CRPR) of 1 through 4 by the California Native Plant Society (CNPS 2025a)
- Species designated by the Arizona Native Plant Law as Highly Safeguarded, Salvage Restricted, Salvage Assessed, or Harvest Restricted (Ariz. Rev. Stat. § 3-903).
- Natural communities designated as sensitive by CDFW, based on NatureServe's (2012) methodologies to rank communities at both the Global (G) and State (S) levels, resulting in a rank ranging from 1 (very rare and threatened) to 5 (demonstrably secure). Natural communities with ranks of S1-S3 are considered sensitive natural communities (CDFW 2025c).
- Species protected under the Federal Bald and Golden Eagle Protection Act
- Species protected from take per CFGC Chapter 5, section 460 (CFGC 2019)
- Species identified as Species of Greatest Conservation Need (SGCN) by the Arizona Game and Fish Department (AZGFD) with the Arizona Wildlife Conservation Strategy
- Bats considered by the Western Bat Working Group (WBWG) to be "high" or "medium" priority (WBWG 2017)
- Species designated as locally important by the Local Agency (Imperial County and Yuma County, and City of El Centro, City of Calexico) and/or otherwise protected through ordinance or local policy.

A full list of plant and wildlife species, including special-status species, observed during the 2025 biological reconnaissance surveys is provided in Appendix C-1, Attachment D.

5.4.1.5.1 Quantifying Ground Disturbance

The applicant used land cover mapping and estimates of the Proposed Project's work area footprint (i.e., disturbance area) for temporary and permanent work areas as defined by the 30 percent design to calculate estimated acres of temporary and permanent disturbance that overlap sensitive vegetation communities (Section 5.4.5.1.2), jurisdictional waters (Section 5.4.5.1.4), and special status species' habitats (Section 5.4.5.1.2). The current estimates are based on the work-area footprint (temporary and permanent), as estimated from the 30 percent design, overlain on field verified vegetation community and land cover mapping.

5.4.1.5.2 Special-Status Plant Species

Of the 19 special-status plant species evaluated for potential to occur, the following eight species were determined to be present or likely to occur in the study area:

- Harwood's milkvetch (*Astragalus insularis var. harwoodii*),
- Peirson's milkvetch (*Astragalus magdalenae var. peirsonii*),
- saguaro (*Carnegiea gigantea*),
- Wiggins' croton (*Croton wigginsii*),
- Algodones Dunes sunflower (*Helianthus niveus* ssp*. tephrodes*),
- Parish's desert-thorn (*Lycium parishii*),
- giant spanish-needle (*Palafoxia arida* var. *gigantea*), and
- sand food (*Pholisma sonorae*).

The remaining 11 special-status plants were determined to be unlikely to occur or not to occur. Special-status plant species that were evaluated for potential to occur, species status, and species habitat requirements, and route location are listed in Table 5.4-5.

One federally listed plant species was determined likely to occur in the study area: Peirson's milkvetch (Federally Threatened [FT]). Two State listed plant species were determined to be likely to occur in the study area: Peirson's milkvetch (State Endangered [SE]) and Algodones Dunes sunflower (SE). These species were not observed during biological reconnaissance surveys conducted in 2025.

Beyond the limits of the survey area, special status plant species that either occur in the study area or were determined to likely occur in the study area are based on the results of the desktop and literature review are detailed in Appendix C-1.

Table 5.4-5 Special-Status Plant Species in the Study Area

Scientific Name Common Name	Status	Habitat Requirements	Proposed Route Segments	Potential to Occur
Abronia villosa var. *aurita* chaparral sand-verbena	None/None G5T2/S2 1B.1	Annual herb. Chaparral, coastal scrub, desert dunes. Sandy. Elevations: 245-5250ft. (75-1600m.) Blooms (Jan)Mar-Sep.	1B, 2, 3C	**Unlikely.** Suitable chaparral and desert dune habitat occurs in the study area. The elevation range of the study area is within the expected range of the species. However, there are no CNDDB documented occurrences of the species within 2 miles of the study area.
Astragalus insularis var. *harwoodii* Harwood's milkvetch	None/None G5T4/S2 2B.2	Annual herb. Desert dunes, Mojavean desert scrub. Gravelly (sometimes), sandy (sometimes). Elevations: 0-2330ft. (0-710m.) Blooms Jan-May.	1B	**Likely.** Suitable desert dune and desert scrub habitat occurs in the study area. The elevation range of the study area is within the expected range of the species. There is a recent CNDDB documented occurrence of the species within 2 miles of the study area from 2008.
			2, 3C	**Unlikely.** Suitable desert dune and desert scrub habitat occurs in the study area. The elevation range of the study area is within the expected range of the species. However, there are no CNDDB documented occurrences of the species within 2 miles of the study area.
Astragalus magdalenae var. *peirsonii* Peirson's milkvetch	FT/SE G3G4T1/S1 1B.2	Perennial herb. Desert dunes. Slopes and hollows in mobile dunes, usually to the lee of the prevailing winds. Elevations: 195-740ft. (60-225m.) Blooms Dec-Apr.	1B (California only), 2	**Likely.** Suitable desert dune habitat occurs in the study area. The elevation range of the study area is within the expected range of the species. There is a recent CNDDB documented occurrence of the species within 2 miles of the study area from 2018.
			3C	**Unlikely.** Suitable desert dune habitat occurs in the study area. However, the elevation range of the study area is not within the expected range of the species and there are no CNDDB documented occurrences of the species within 2 miles of the study area.
Astragalus sabulonum gravel milkvetch	None/None G4G5/S2 2B.2	Annual/perennial herb. Desert dunes, mojavean desert scrub, sonoran desert scrub. Flats, gravelly (sometimes), roadsides, sandy (usually), washes. Elevations: -195-3050ft. (-60-930m.) Blooms Feb-Jun.	1B, 2, 3C	**Unlikely.** Suitable desert dune and desert scrub habitat occurs in the study area. The elevation range of the study area is within the expected range of the species. However, there are no CNDDB documented occurrences of the species within 2 miles of the study area.

Scientific Name Common Name	Status	Habitat Requirements	Proposed Route Segments	Potential to Occur
Calliandra eriophylla pink fairy-duster	None/None G5/S3 2B.3	Perennial deciduous shrub. Sonoran desert scrub. Sandy or rocky sites in the desert. Elevations: 395-4920ft. (120-1500m.) Blooms Jan-Mar.	1B, 2, 3C	**Unlikely.** Suitable desert scrub habitat occurs in the study area. However, the elevation range of the study area is not within the expected range of the species. The most recent CNDDB documented occurrences of the species within 2 miles of the study area are from 1970 and 1990.
Carnegiea gigantea saguaro	None/None G5/S1 2B.2 APNP	Perennial stem. Sonoran desert scrub. Rocky sites. Elevations: 165-4920ft. (50-1500m.) Blooms May-Jun.	1B, 2, 3C	**Unlikely.** Suitable desert scrub habitat occurs in the study area. The elevation range of the study area is within the expected range of the species. However, there are no CNDDB documented occurrences of the species within 2 miles of the study area.
Croton wigginsii Wiggins' croton	None/None G2G3/S2 2B.2	Perennial shrub. Desert dunes, Sonoran desert scrub. On sand dunes and in sandy arroyos. Elevations: 165-330ft. (50-100m.) Blooms Mar-May.	1B, 2	**Likely.** Suitable desert dune and desert scrub habitat occurs in the study area. The elevation range of the study area is within the expected range of the species. There are three CNDDB documented occurrences of the species within 2 miles of the study area from 2002 – 2019.
			3C	**Unlikely.** Suitable desert dune and desert scrub habitat occurs in the study area. The elevation range of the study area is not within the expected range of the species. However, there are no CNDDB documented occurrences of the species within 2 miles of the study area.
Ditaxis claryana glandular ditaxis	None/None G3G4/S2 2B.2	Perennial herb. Mojavean desert scrub, Sonoran desert scrub. In dry washes and on rocky hillsides. Sandy soils. Elevations: 0-1525ft. (0-465m.) Blooms Oct-Mar.	1B, 2, 3C	**Unlikely.** Suitable desert scrub habitat occurs in the study area. The elevation range of the study area is within the expected range of the species. However, the most recent CNDDB documented occurrence of the species within 2 miles of the study area is from 1978.
Euphorbia abramsiana Abrams' spurge	None/None G4/S2 2B.2	Annual herb. Mojavean desert scrub, Sonoran desert scrub. Sandy sites. Elevations: -15-4300ft. (-5-1310m.) Blooms (Aug)Sep-Nov.	1B, 2, 3C	**Unlikely.** Suitable desert scrub habitat occurs in the study area. The elevation range of the study area is within the expected range of the species. However, there are no CNDDB documented occurrences of the species within 2 miles of the study area.

Scientific Name Common Name	Status	Habitat Requirements	Proposed Route Segments	Potential to Occur
Helianthus niveus ssp. *tephrodes* Algodones Dunes sunflower	None/SE G4T2/S1 1B.2	Perennial herb. Desert dunes. On partially stabilized desert dunes. Elevations: 165-330ft. (50-100m.) Blooms Sep-May.	1B (California only), 2	**Likely.** Suitable desert dune habitat occurs in the study area. The elevation range of the study area is within the expected range of the species. There is a recent CNDDB documented occurrence of the species within 2 miles of the study area from 2018.
			3C	**Unlikely.** Suitable desert dune habitat occurs in the study area. The elevation range of the study area is not within the expected range of the species. However, there are no CNDDB documented occurrences of the species within 2 miles of the study area.
Imperata brevifolia California satintail	None/None G3/S3 2B.1	Perennial rhizomatous herb. Chaparral, coastal scrub, meadows and seeps, Mojavean desert scrub, riparian scrub. Mesic sites, alkali seeps, riparian areas. 3-. Elevations: 0-3985ft. (0-1215m.) Blooms Sep-May.	1B, 2, 3C	**Unlikely.** Suitable chaparral, desert scrub, and riparian scrub habitat occurs in the study area. The elevation range of the study area is within the expected range of the species. However, there are no CNDDB documented occurrences of the species within 2 miles of the study area.
Lycium parishii Parish's desert-thorn	None/None G4/S1 2B.3	Perennial shrub. Coastal scrub, Sonoran desert scrub. Elevations: 445-3280ft. (135-1000m.) Blooms Mar-Apr.	1B, 2	**Unlikely.** Suitable desert scrub habitat occurs in the study area. The elevation range of the study area is within the expected range of the species. However, there are no CNDDB documented occurrences of the species within 2 miles of the study area.
			3C	**Likely.** Suitable desert scrub habitat occurs in the study area. The elevation range of the study area is within the expected range of the species. There are two CNDDB documented occurrences of the species within 2 miles of the study area from 2010.
Malperia tenuis brown turbans	None/None G4/S2 2B.3	Annual herb. Sonoran desert scrub. Sandy places and rocky slopes. Elevations: 50-1100ft. (15-335m.) Blooms (Feb)Mar-Apr.	1B, 2, 3C	**Unlikely.** Suitable desert scrub habitat occurs in the study area. The elevation range of the study area is within the expected range of the species. However, there are no CNDDB documented occurrences of the species within 2 miles of the study area.
Mentzelia hirsutissima hairy stickleaf	None/None G4/S3 2B.3	Annual herb. Sonoran desert scrub. Washes, fans, slopes, coarse rubble and talus slopes, rocky sites. Elevations: 0-2295ft. (0-700m.) Blooms Mar-May.	1B, 2, 3C	**Unlikely.** Suitable desert scrub habitat occurs in the study area. The elevation range of the study area is within the expected range of the species. However, there are no CNDDB documented occurrences of the species within 2 miles of the study area.

Scientific Name Common Name	Status	Habitat Requirements	Proposed Route Segments	Potential to Occur
Nama stenocarpa mud nama	None/None G4G5/S1S2 2B.2	Annual/perennial herb. Marshes and swamps. Lake shores, river banks, intermittently wet areas. Elevations: 15-1640ft. (5-500m.) Blooms Jan-Jul.	1B, 2, 3C	**Unlikely.** Suitable marsh and swamp habitat are present in the study area. The elevation range of the study area is within the expected range of the species. However, the most recent CNDDB documented occurrence of the species within 2 miles of the study area is from 1930.
Palafoxia arida var. *gigantea* giant spanish-needle	None/None G5T2/S1 1B.3	Annual/perennial herb. Desert dunes. Active and stable dune areas; associated with *Ammobroma sonorae*, *Astragalus lentiginosus borreganus*, etc. Elevations: 50-330ft. (15-100m.) Blooms Feb-May.	1B (California only), 2	**Likely.** Suitable desert dune habitat occurs in the study area. The elevation range of the study area is within the expected range of the species. There is a recent CNDDB documented occurrence of the species within 2 miles of the study area from 2013.
			3C	**Unlikely.** Suitable desert dune habitat occurs in the study area. The elevation range of the study area is not within the expected range of the species. However, there are no CNDDB documented occurrences of the species within 2 miles of the study area.
Petalonyx linearis narrow-leaf sandpaper-plant	None/None G4/S3 2B.3	Perennial shrub. Mojavean desert scrub, Sonoran desert scrub. Sandy or rocky canyons. Elevations: -80-3660ft. (-25-1115m.) Blooms (Jan-Feb)Mar-May(Jun-Dec).	1B, 2, 3C	**Unlikely.** Suitable desert scrub habitat occurs in the study area. The elevation range of the study area is within the expected range of the species. However, the most recent CNDDB documented occurrence of the species within 2 miles of the study area is from 1935.
Pholisma sonorae sand food	None/None G2/S2 1B.2 APNP	Perennial herb (parasitic). Desert dunes, Sonoran desert scrub. Loose, deep sand dunes, usually on the more stable, windward face. Elevations: 0-655ft. (0-200m.) Blooms (Mar)Apr-Jun.	1B, 2	**Likely.** Suitable desert dune and desert scrub habitat occurs in the study area. The elevation range of the study area is within the expected range of the species. There is a recent CNDDB documented occurrence of the species within 2 miles of the study area from 2018.
			3C	**Unlikely.** Suitable desert dune and desert scrub habitat occurs in the study area. The elevation range of the study area is not within the expected range of the species. The most recent CNDDB documented occurrence of the species within 2 miles of the study area is from 1937.

Scientific Name Common Name	Status	Habitat Requirements	Proposed Route Segments	Potential to Occur
Tidestromia eliassoniana Eliasson's woolly tidestromia	None/None G5/S2 2B.2	Annual herb. Mojavean desert scrub. Clay, flats, gravelly, rocky, volcanic. Elevations: 2150-6905ft. (655-2105m.) Blooms Jul-Oct.	1B, 2, 3C	**Unlikely.** Suitable desert scrub habitat occurs in the study area. The elevation range of the study area is not within the expected range of the species. However, the most recent CNDDB documented occurrence of the species within 2 miles of the study area is from 1955.

Regional Vicinity refers to within a five-mile search radius of the study area.

CRPR (CNPS California Rare Plant Rank)

1A = Presumed extirpated in California, and rare or extinct elsewhere

1B = Rare, Threatened, or Endangered in California and elsewhere

2A = Presumed extirpated in California, but common elsewhere

2B= Rare, Threatened, or Endangered in California, but more common elsewhere

3 = Need more information (Review List)

4 = Limited Distribution (Watch List)

CRPR Threat Code Extension

.1 = Seriously endangered in California (>80% of occurrences threatened/high degree and immediacy of threat)

.2 = Moderately threatened in California (20-80% of occurrences threatened/ moderate degree and immediacy of threat)

.3 = Not very endangered in California (<20% of occurrences threatened/ low degree and immediacy of threat)

Status (Federal/State)

SE = State Endangered

SC = State Candidate

SR = State Rare

BLM S = BLM Sensitive Species

APNP = Arizona Protected Native Plant

Other Statuses

G1 or S1 Critically Imperiled Globally or Subnationally (state)

G2 or S2 Imperiled Globally or Subnationally (state)

G3 or S3 Vulnerable to extirpation or extinction Globally or Subnationally (state)

G4/5 or S4/5 Apparently secure, common and abundant

Status (Regional)

DRECP = Desert Renewable Energy Conservation Plan Focus Species

[1] **Definitions Regarding Potential for Occurrence**

Occurs = The species and/or positive sign was observed on-site during site visit or field survey.

Likely = All site features indicate this species is very likely present and should be expected. Criteria include:

- Project site within geographic range;
- Suitable habitat present (e.g., soils, vegetation communities, elevation, roost sites, leaf litter/debris, water, host plants, etc.); and
- Distance to historical record(s) less than 25 years old is/are less than 500 feet (plants/fish), 1,000 feet (riparian wildlife), 1 mile (birds/bats), 2 miles (large mammals), or 3 miles (small mammals/herps).

Unlikely =The species could occur given presence of marginal habitat, but records of the species are not locally known or are greater than 25 years old.

Does Not Occur = The species would not occur because the project site is outside known or current geographic/elevation range, lacks habitat or suitable conditions, and/or there is reasonable certainty to assume absence based on historical records.

Source: CNPS 2025b; CDFW 2025a

5.4.1.5.3 Special-status Wildlife Species

Based on the database queries and literature review, a total of 53 special status wildlife species were evaluated for their potential to occur near the study area, which are listed in Table 5.4-6. Special-status wildlife species observed during reconnaissance surveys are mapped in Appendix C-1, Attachment F2.

The 27 special status wildlife species determined to be present or likely to occur within the study area are listed below:

- Mojave desert tortoise (*Gopherus agassizii*) – FT, SE, DRECP, SGCN, Lower Colorado River Multi-Species Conservation Program (LCR MSCP) Covered Species (CS)
- Sonoran desert tortoise (*Gopherus morafkai*) – SGCNflat-tailed horned lizard (*Phrynosoma mcallii*) – CDFW SCC, SGCN, LCR MSCP CS
- Colorado Desert fringe-toed lizard (*Uma notata*) – CDFW SSC, BLM S, DRECP Focus Species (DRECP), SGCN
- burrowing owl (*Athene cunicularia*) – State Candidate Endangered (SCE), CDFW SSC, USFWS BCC, DRECP, SGCN
- mountain plover (*Charadrius montanus*) – CDFW SSC, USFWS BCC, BLM S, SGCN
- western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) – FT, SE, BLM S, SGCN, LCR MSCP CS
- southwestern willow flycatcher (*Empidonax traillii extimus*) – Federally Endangered (FE), SE, SGCN, LCR MSCP CS
- yellow-breasted chat (*Icteria virens*) – CDFW SSC, SGCN
- least bittern (*Ixobrychus exilis*) – CDFW SSC, SGCN, LCR MSCP CS
- loggerhead shrike (*Lanius ludovicianus*) – CDFW SSC
- California black rail (*Laterallus jamaicensis coturniculus*) – State Threatened (ST), CDFW FP, BLM S, SGCN, LCR MSCP CS
- Gila woodpecker (*Melanerpes uropygialis*) – SE, USFWS BCC, BLM S, SGCN, LCR MSCP CS
- double-crested cormorant (*Nannopterum auritum*) – CDFW WL
- osprey (*Pandion haliaetus*) – CDFW WL
- black-tailed gnatcatcher (*Polioptila melanura*) – CDFW WL, SGCN
- Yuma clapper rail (*Rallus longirostris yumanensis*) – FE, ST, LCR MSCP CS
- Yuma Ridgway's rail (*Rallus obsoletus yumanensis*) – FE, ST, CDFW FP, SGCN
- Yellow warbler *(Setophagia petechia)* – CDFW SSC
- Sonoran yellow warbler (*Setophaga petechia sonorana*) – CDFW SSC, SGCN, LCR MSCP CS
- Arizona Bell's vireo (*Vireo bellii arizonae*) – SE, BLM S, SGCN, LCR MSCP CS
- California leaf-nosed bat (*Macrotus californicus*) – CDFW SSC, BLM S, SGCN, LCR MSCP CS
- western red bat (*Lasiurus blossevilli*) – SSC, LCR MSCP CS
- desert bighorn sheep (*Ovis canadensis nelsoni*) – CDFW FP, BLM S, DRECP
- Yuma hispid cotton rat (*Sigmodon hispidus eremicus*) – CDFW SSC, BLM S, SGCN, LCR MSCP CS
- American badger (*Taxidea taxus*) – CDFW SSC, BLM S, SGCN
- Desert kit fox (*Vulpes macrotis arsipus*) - DRECP

Table 5.4-6 Special-status Wildlife Species in the Study Area

Scientific Name Common Name	Status	Habitat Requirements	Route(s)	Potential to Occur[1]
Invertebrates				
Danaus Plexippus pop.1 Monarch Butterfly	FC/None G4T2T3/S2S3	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.	1B, 2, 3C	**Unlikely.** Suitable roosting habitat may be present in the study area. However, there are no occurrences of milkweed species within 5 miles of the study area. However, there are no CNDDB documented occurrences of the species within 5 miles of the study area.
Fish				
Gila elegans bonytail	FE/SE G1/S1	Found in the Colorado River bordering California. Adapted for swimming in swift water, but both adults and young need backwaters and eddies. Needs gravel riffles for spawning.	1B	**Unlikely.** Suitable stream habitat is present within the study area. However, there are no CNDDB documented occurrences of the species within 1 mile of the study area.
			2, 3C	**Does Not Occur.** Suitable stream habitat is not present within the study area. However, there are no CNDDB documented occurrences of the species within 1 mile of the study area.
Ptychocheilus lucius Colorado pikeminnow	FE/SE G1/SX CDFW FP SGCN	Native to the Colorado River bordering California.	1B	**Unlikely.** Suitable stream habitat is present within the study area. However, the most recent CNDDB documented occurrence of the species within 1 mile of the study area is from 1942.
			2, 3C	**Does Not Occur.** Suitable stream habitat is not present within the study area. However, there are no CNDDB documented occurrences of the species within 1 mile of the study area.
Xyrauchen texanus razorback sucker	FE/SE G1/S2 CDFW FP SGCN	Found in the Colorado River bordering California.	1B	**Unlikely.** Suitable stream habitat is present within the study area. However, the most recent CNDDB documented occurrence of the species within 1 mile of the study area is from 1981.
			2, 3C	**Does Not Occur.** Suitable stream habitat is not present within the study area. However, there are no CNDDB documented occurrences of the species within 1 mile of the study area.

Scientific Name Common Name	Status	Habitat Requirements	Route(s)	Potential to Occur[1]
Amphibians				
Incilius alvarius Sonoran Desert toad	None/None G5/SH CDFW SSC SGCN	Breeds in temporary pools and irrigation ditches along the Colorado River and southern Imperial Valley.	1B, 2	**Unlikely.** Suitable stream habitat is present in the study area. However, the most recent CNDDB documented occurrence of the species within 5 miles of the study area is from 1950.
			3C	**Unlikely.** Suitable stream habitat is present in the study area. The most recent CNDDB documented occurrence of the species within 5 miles of the study area is from 1912.
Lithobates pipiens northern leopard frog	None/None G5/S2 CDFW SSC SGCN	Native range is east of Sierra Nevada-Cascade Crest. Near permanent or semi-permanent water in a variety of habitats.	1B, 2	**Unlikely.** Suitable habitat is present in the study area. However, there are no CNDDB documented occurrences of the species within 5 miles of the study area.
			3C	**Unlikely.** Suitable stream habitat is present in the study area. The most recent CNDDB documented occurrence of the species within 5 miles of the study area is from 1929.
Lithobates yavapaiensis lowland leopard frog	None/None G4/SX CDFW SSC SGCN	Found along the Colorado River and in streams near the Salton Sea.	1B, 2, 3C	**Unlikely.** Suitable stream habitat is present in the study area. However, the most recent CNDDB documented occurrence of the species within 5 miles of the study area is from 1949.
Reptiles				
Gopherus agassizii desert tortoise	FT/ST G3/S2S3 DRECP SGCN	Resident of and widely distributed in the Mojave, Sonoran, and Colorado Deserts from below sea level to 2,200 meters (7,220 feet). Most common in desert scrub, desert wash, and Joshua tree habitats, but occurs in almost every desert habitat except those on the most precipitous slopes.	1B (California only)	**Present.** An inactive burrow for this species was observed during biological reconnaissance survey conducted in 2025. Suitable desert habitat is also present in the study area. There are four CNDDB documented occurrences of the species within 5 miles of the study area from 2001 – 2008.
			2, 3C	**Unlikely.** Suitable desert habitat is present in the study area. However, there are no CNDDB documented occurrences of the species within 5 miles of the study area.
Gopherus morafkai desert tortoise	SGCN	Resident of and widely distributed in the Sonoran Deserts from below sea level to 2,200 meters (7,220 feet). Most common in desert scrub, desert wash, and saguaro woodland habitats, but occurs in almost every desert habitat except those on the most precipitous slopes.	1B (Arizona only)	**Likely.** Suitable desert habitat is present in the study area and is within the species' range. CNDDB does not track records for Sonoran desert tortoise in Arizona.
			2, 3C	**Does Not Occur.** This subspecies is not found in this geographic area.

Scientific Name Common Name	Status	Habitat Requirements	Route(s)	Potential to Occur[1]
Heloderma suspectum cinctum banded Gila monster	None/None G4T3/S1 CDFW SSC SGCN	Inhabits the lower slopes of rocky canyons and arroyos, but is also found on desert flats among scrub and succulents.	1B, 2, 3C	**Unlikely.** Suitable desert scrub is present in the study area. However, the most recent CNDDB documented occurrence of the species within 5 miles of the study area is from 1964.
Kinosternon sonoriense Sonoran mud turtle	None/None G3/SH CDFW SSC SGCN	The lower Colorado River system in southeastern California.	1B, 2, 3C	**Unlikely.** Suitable river habitat is present in the study area. However, the most recent CNDDB documented occurrence of the species within 5 miles of the study area is from 1976.
Phrynosoma mcallii flat-tailed horned lizard	None/None G3/S3 CDFW SSC BLM S DRECP SGCN	Restricted to desert washes and desert flats in central Riverside, eastern San Diego, and Imperial counties.	1B, 2, 3C	**Likely.** Suitable desert habitat is present in the study area. There are seven CNDDB documented occurrences of the species within 5 miles of the study area from 2002 – 2013.
Uma notata Colorado Desert fringe-toed lizard	None/None G3/S2 CDFW SSC BLM S SGCN	Colorado Desert region; in sand dunes, dry lakebeds, sandy beaches or riverbanks, desert washes, or sparse desert scrub.	1B	**Unlikely.** Suitable desert dune, riverbanks, desert washes, and desert scrub habitat are present in the study area. However, there are no CNDDB documented occurrences of the species within 5 miles of the study area.
			2, 3C	**Likely.** Suitable desert dune, riverbanks, desert washes, and desert scrub habitat are present in the study area. There is a recent CNDDB documented occurrence of the species within 5 miles of the study area from 2003.
Birds				
Accipiter cooperii Cooper's hawk	None/None G5/S4 CDFW WL SGCN	Study area is located within the breeding range of the species. Woodland, chiefly of open, interrupted or marginal type. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also, live oaks.	1B, 2, 3C	**Unlikely.** Suitable interrupted and marginal woodland habitat are present in the study area. Suitable nesting habitat is also present in the study area. However, the most recent CNDDB documented occurrence of the species within 5 miles of the study area is from 1949.

Scientific Name Common Name	Status	Habitat Requirements	Route(s)	Potential to Occur[1]
Athene cunicularia burrowing owl	None/HWT G4/S2 CDFW SSC USFWS BCC BLM S DRECP SGCN	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel. Study area is located within the breeding range of this species.	1B, 2	**Likely.** Suitable grassland, desert, and scrubland habitats are present in the study area. Suitable burrowing habitat is likely present in the study area. There is a recent CNDDB documented occurrence of the species within 5 miles of the study area from 2002.
			3C	**Present.** This species was observed in the study area during the 2025 biological reconnaissance surveys. Suitable grassland, desert, and scrubland habitats are present in the study area. There are thirty-one CNDDB documented occurrences of the species within 2 miles of the study area from 2003 – 2016.
Buteo regalis ferruginous hawk	None/None G4/S3/S4 CDFW WL	Open grasslands, sagebrush flats, desert scrub, low foothills and fringes of pinyon and juniper habitats. Eats mostly lagomorphs, ground squirrels, and mice. Population trends may follow lagomorph population cycles. Ferruginous hawk does not breed within the study area but it does overlap with their wintering range.	1B, 2, 3C	**Unlikely.** Suitable open grassland and desert scrub habitat are not present in the study area. While ferruginous hawk is capable of foraging over agricultural areas, suitable natural foraging habitat is not present in the study area. There are no CNDDB documented occurrences of the species within 5 miles of the study area.
Charadrius montanus mountain plover	None/None G3/S2 CDFW SSC USFWS BCC BLM S SGCN	Short grasslands, freshly plowed fields, newly sprouting grain fields, and sometimes sod farms. Short vegetation, bare ground, and flat topography. Prefers grazed areas and areas with burrowing rodents. Species does not breed within the study area, but it is within their winter range.	1B (California only), 2	**Unlikely.** Suitable grassland, plowed field, and grain field habitat are present in the study area. However, there are no CNDDB documented occurrences of the species within 5 miles of the study area.
			3C	**Likely.** Suitable grassland, plowed field, and grain field habitat are present in the study area. There are two CNDDB documented occurrences of the species within 5 miles of the study area from 2008 – 2010.
Coccyzus americanus occidentalis western yellow-billed cuckoo	FT/SE G5T2T3/S1 BLM S SGCN	Breeding season range overlaps with the study area. Species migrates outside of the study area during the non-breeding season. Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	1B	**Likely.** Suitable riparian breeding and foraging habitat is present in the study area. There is a recent CNDDB documented occurrence of the species within 5 miles of the study area from 2010.
			2, 3C	**Unlikely.** Suitable riparian breeding and foraging habitat is present in the study area. However, there are no CNDDB documented occurrences of the species within 5 miles of the study area.

Scientific Name Common Name	Status	Habitat Requirements	Route(s)	Potential to Occur[1]
Colaptes chrysoides gilded flicker	None/SE G4/S2 USFWS BCC SGCN	Year-round resident of the Sonoran desert habitat and riparian woodlands along the Colorado River. Tightly tied to large cactus species for nesting and foraging.	1B, 2, 3C	**Unlikely.** Suitable desert and riparian habitat are present. However, this species is more closely tied to nesting in and around large cactus species than cottonwood or willow riparian trees. The most recent CNDDB documented occurrence of the species within 5 miles of the study area is from 1931.
Empidonax traillii extimus southwestern willow flycatcher	FE/SE G5T2/S3 SGCN	Southwestern willow flycatcher's breeding range overlaps portions of the study area. For nesting, the southwestern willow flycatcher requires dense riparian habitats with cottonwood/willow and tamarisk vegetation and microclimatic conditions that are dictated by the local surroundings. Saturated soils, standing water or nearby streams, pools, or cienegas are a component of nesting habitat that also influences the microclimate and density vegetation component. The southwestern willow flycatcher primarily eats flying insects.	1B	**Likely.** Suitable riparian breeding and foraging habitat is present in the study area. Species is a migrant and their range overlaps with the study area during the breeding season (May – September) only. There is a recent CNDDB documented occurrence of the species within 5 miles of the study area from 2010.
			2, 3C	**Unlikely.** Suitable riparian breeding and foraging habitat is present in the study area. Species is a migrant and their range overlaps with the study area during the breeding season (May – September) only. However, there are no CNDDB documented occurrences of the species within 5 miles of the study area.
Falco peregrinus anatum American peregrine falcon	G4T4/S3S4 CDFW WL	Year-round resident found near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Nest consists of a scrape or a depression or ledge in an open site.	1B, 2, 3C	**Unlikely.** Suitable habitat often used for foraging is present in portions of the study area and high cliffs for nesting occur in some portions of Segment 1 in the study area. Suitable human-made structures are also present in the study area. However, the most recent CNDDB documented occurrence of the species within 5 miles of the study area is from 1977.

Scientific Name Common Name	Status	Habitat Requirements	Route(s)	Potential to Occur[1]
Icteria virens yellow-breasted chat	None/None G5/S4 CDFW SSC SGCN	Summer resident; inhabits riparian thickets of willow and other brushy tangles near watercourses. Nests in low, dense riparian, consisting of willow, blackberry, wild grape; forages and nests within 10 ft of ground.	1B	**Present.** This species was observed in the study area during the 2025 biological reconnaissance surveys. This species favors dense, shrubby vegetation along riparian corridors and early successional habitats. Suitable riparian habitat is present in the study area. Suitable nesting habitat is also present in the study area. The most recent CNDDB documented occurrence of the species within 5 miles of the study area is from 1987.
			2, 3C	**Unlikely.** Suitable riparian habitat is present in the study area. However, there are no CNDDB documented occurrences of the species within 5 miles of the study area.
Ixobrychus exilis least bittern	None/None G4/S2 CDFW SSC SGCN	Year-round resident and colonial nester in marshlands and borders of ponds and reservoirs which provide ample cover.	1B	**Likely.** Suitable pond and reservoir habitat are present in the study area. There are three CNDDB documented occurrences of the species within 5 miles of the study area from 2006 – 2009.
			2, 3C	**Unlikely.** Suitable pond and reservoir habitat are present in the study area. However, there are no CNDDB documented occurrences of the species within 5 miles of the study area.
Lanius ludovicianus loggerhead shrike	None/None G4/S4 CDFW SSC	Year-round resident of broken woodlands, savannah, pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, scrub and washes. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	1B, 3C	**Unlikely.** This species prefers open habitats with scattered shrubs or perches such as fences and utility lines. However, there are no CNDDB documented occurrences of the species within 5 miles of the study area.
			2	**Present.** This species was observed in the study area during the 2025 biological reconnaissance surveys. Suitable open shrubland and desert scrub habitat is present. This includes creosote bush scrub, creosote bush–brittle bush scrub, creosote bush–white bursage scrub, quailbush scrub, and disturbed areas, which support the species' preference for open areas with scattered perches. However, there are no CNDDB documented occurrences of the species within 5 miles of the study area.
Laterallus jamaicensis coturniculus California black rail	None/ST G3T1/S2 CDFW FP BLM S SGCN	Year-round resident that inhabits freshwater marshes, wet meadows and shallow margins of saltwater marshes bordering larger bays. Needs water depths of about 1 inch that do not fluctuate during the year and dense vegetation for nesting habitat.	1B, 2, 3C	**Likely.** Suitable freshwater marshland habitat is present in the study area. There are seven CNDDB documented occurrences of the species within 5 miles of the study area from 2000 – 2009.

Scientific Name Common Name	Status	Habitat Requirements	Route(s)	Potential to Occur[1]
Melanerpes uropygialis Gila woodpecker	None/SE G5/S2 USFWS BCC BLM S SGCN	Year-round resident of desert scrub nester than prefers saguaro or other tall cactus species. Occasionally will nest in riparian woodland tree species, such as cottonwoods.	1B	**Present.** This species was observed in the study area during the 2025 biological reconnaissance surveys. Suitable desert scrub habitat is present in the study area. There are four CNDDB documented occurrences of the species within 5 miles of the study area from 2003 – 2011.
			2, 3C	**Unlikely.** Suitable freshwater marshland habitat is present in the study area. However, there are no CNDDB documented occurrences of the species within 5 miles of the study area.
Micrathene whitneyi elf owl	None/SE G4/S1 SGCN	In California, nesting area limited to cottonwood-willow and mesquite riparian zone along the Colorado River. Species is not found in the vicinity of the study area outside of the breeding season.	1B, 2, 3C	**Unlikely.** Suitable riparian habitat is present in the study area. However, the most recent CNDDB documented occurrence of the species within 5 miles of the study area is from 1998.
Myiarchus tyrannulus brown-crested flycatcher	None/None G5/S3 CDFW WL SGCN	Inhabits desert riparian areas along the Colorado River, as well as other desert oases and riparian areas NW to Victorville. Their breeding range overlaps with the eastern portion of the study area they are not found in the study area outside of the breeding season.	1B, 2, 3C	**Unlikely.** Suitable riparian habitat is present in the study area However, the most recent CNDDB documented occurrence of the species within 5 miles of the study area is from 1986.
Nannopterum auritum double-crested Cormorant	None/None G5/S4 CDFW WL	Colonial nester on coastal cliffs, offshore islands, and along lake margins in the interior of the state. Nests along coast on sequestered islets, usually on ground with sloping surface, or in tall trees along lake margins. Their range includes the eastern portion of the study area year-round.	1B, 2, 3C	**Present.** This species was observed in the study area during the 2025 biological reconnaissance surveys. Suitable aquatic and riparian habitat is present. Open water, common reed marshes, and Fremont cottonwood forest and woodland provide suitable habitat for this colonial nester. While there are no CNDDB documented occurrences of the species within 5 miles of the study area, there are many eBird records around Mittry Lake documenting this species.

Scientific Name Common Name	Status	Habitat Requirements	Route(s)	Potential to Occur[1]
Pandion haliaetus osprey	None/None G5/S4 CDFW WL	Ocean shore, bays, freshwater lakes, and larger streams. Large nests built in tree-tops within 15 miles of a good fish-producing body of water. This species occurs in this area typically during the winter and does not breed in this study area.	1B	**Present.** While there are no CNDDB documented occurrences of the species within 5 miles of the study area, this species was observed in the study area during the 2025 biological reconnaissance surveys. Suitable aquatic and riparian habitat is present. Open water, cattail and common reed marshes, and Fremont cottonwood forest and woodland offer appropriate nesting and foraging habitat near fish-bearing water bodies.
			2, 3C	**Unlikely.** Suitable aquatic and riparian habitat is present. Open water, cattail and common reed marshes, and Fremont cottonwood forest and woodland provide suitable conditions for nesting and foraging. However, there are no CNDDB documented occurrences of the species within 5 miles of the study area.
Piranga rubra summer tanager	None/None G5/S1 CDFW SSC SGCN	Summer resident of desert riparian along lower Colorado River, and locally elsewhere in California deserts. This species is not found in the vicinity of the study area outside of the breeding season.	1B, 2, 3C	**Unlikely.** Suitable riparian habitat is present in the study area However, the most recent CNDDB documented occurrence of the species within 5 miles of the study area is from 1983.
Polioptila melanura black-tailed gnatcatcher	None/None G5/S3S4 CDFW WL SGCN	Year-round resident in the study area that primarily inhabits wooded desert wash habitats; also occurs in desert scrub habitat, especially in winter.	1B	**Present.** This species was observed in the study area during the 2025 biological reconnaissance surveys. This species inhabits arid desert scrub and desert washes with native vegetation. Suitable desert wash and desert scrub habitat are present in the study area.
			2, 3C	**Unlikely.** Suitable desert wash and desert scrub habitat are present in the study area. However, there are no CNDDB documented occurrences of the species within 5 miles of the study area.
Pyrocephalus rubinus vermilion flycatcher	None/None G5/S2/S3 CDFW SSC SGCN	During the breeding season, inhabits desert riparian adjacent to irrigated fields, irrigation ditches, pastures, and other open, mesic areas.	1B, 2, 3C	**Unlikely.** Suitable desert riparian, irrigated field, irrigation ditch, and pasture habitat are present in the study area. However, the most recent CNDDB documented occurrence of the species within 5 miles of the study area is from 1964.
Rallus longirostris yumanensis Yuma clapper rail	FE/ST LCR MSCP CS	Year-round range overlaps the study area. Nests in freshwater marshes along the Colorado River and along the south end of the Salton Sea.	1B, 2, 3C	**Likely.** Suitable freshwater marsh habitat is present in the study area.

Scientific Name Common Name	Status	Habitat Requirements	Route(s)	Potential to Occur[1]
Rallus obsoletus yumanensis Yuma Ridgway's rail	FE/ST G3T1/S1 CDFW FP SGCN	Year-round range overlaps the study area. Nests in freshwater marshes along the Colorado River and along the south and east ends of the Salton Sea.	1B, 2, 3C	**Likely.** Suitable freshwater marsh habitat is present in the study area. There are recent CNDDB documented occurrences of the species within 5 miles of the study area from 2000 - 2009.
Setophagia petechia yellow warbler	None/None G5/S3 CDFW SSC	Breeding season range overlaps with the study area in California. Riparian plant associations in close proximity to water. Also nests in montane shrubbery in open conifer forests in Cascades and Sierra Nevada. Frequently found nesting and foraging in willow shrubs and thickets, and in other riparian plants including cottonwoods, sycamores, ash, and alders.	1B	**Present.** This species was observed in the study area during the 2025 biological reconnaissance surveys. Suitable riparian habitat is present in the study area. There are no CNDDB documented occurrences of this species within 5 miles of the study area.
			2, 3C	**Unlikely.** Suitable riparian habitat is present in the study area. However, there are no CNDDB documented occurrences of this species within 5 miles of the study area.
Setophaga petechia sonorana Sonoran yellow warbler	None/None G5T2T3/S2 CDFW SSC SGCN	Summer resident of Colorado River Valley, in riparian deciduous habitat. Below 600 ft elevation.	1B, 2, 3C	**Unlikely.** Suitable riparian habitat is present in the study area. However, the most recent CNDDB documented occurrence of the species within 5 miles of the study area is from 1916
Toxostoma crissale Crissal thrasher	None/None G5/S2 CDFW SSC SGCN	Year-round resident of southeastern deserts in desert riparian and desert wash habitats. Nests in dense vegetation along streams/washes. Preferred nesting substrate includes mesquite, screwbean mesquite, ironwood, catclaw, acacia, arrow weed, and willow.	1B, 2, 3C	**Unlikely.** Suitable desert riparian and desert wash habitat are present in the study area. Suitable nesting habitat is also present in the study area. The most recent CNDDB documented occurrence of the species within 5 miles of the study area is from 1986.
Toxostoma lecontei Le Conte's thrasher	None/None G4/S3 CDFW SSC SGCN	Year-round desert resident; primarily of open desert wash, desert scrub, alkali desert scrub, and desert succulent scrub habitats. Commonly nests in a dense, spiny shrub or densely branched cactus in desert wash habitat, usually 2-8 feet above ground.	1B, 2, 3C	**Unlikely.** Suitable desert wash and desert scrub habitat are present in the study area. Suitable nesting habitat is also present in the study area. The most recent CNDDB documented occurrence of the species within 5 miles of the study area is from 1896.

Scientific Name Common Name	Status	Habitat Requirements	Route(s)	Potential to Occur[1]
Vireo bellii arizonae Arizona Bell's vireo	None/SE G5T4/S3 BLM S SGCN	Summer resident along Colorado River. Migrates outside of the study area during the non-breeding season. Chiefly inhabits willow thickets with undergrowth of *Baccharis glutinosa*.	1B	**Likely.** Suitable stream habitat is present in the study area. There is a recent CNDDB documented occurrence of the species within 5 miles of the study area from 2011.
			2, 3C	**Does Not Occur.** Suitable stream habitat is not present within the study area. There are no CNDDB documented occurrences of the species within 5 miles of the study area.
Mammals				
Antilocapra americana sonoriensis Sonoran pronghorn	FE/None G5T1/SH	Desert washes, arroyos, grassland steppe and creosote scrub bajadas. Subspecies formerly found in the Colorado Desert of southeastern California. Subspecies extirpated from California in the 1940s but may be reintroduced back into its former range.	1B, 2, 3C	**Unlikely.** Suitable desert scrub and open desert habitat is present. Vegetation such as creosote bush scrub, creosote bush–brittle bush scrub, creosote bush–white bursage scrub, quailbush scrub, and Mojave-Sonoran desert dunes provide appropriate foraging and movement habitat. However, there are no CNDDB documented occurrences of the species within 5 miles of the study area.
Antrozous pallidus pallid bat	None/None G4/S3 CDFW SSC SGCN	Found in a variety of habitats including deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts in crevices of rock outcrops, caves, mine tunnels, buildings, bridges, and hollows of live and dead trees which must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	1B, 2, 3C	**Unlikely.** Suitable desert, grassland, shrubland, and forest habitat are present in the study area. However, the most recent CNDDB documented occurrence of the species within 5 miles of the study area is from 1998.
Corynorhinus townsendii Townsend's big-eared bat	None/None G4/S2 CDFW SSC SGCN	Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limited. Extremely sensitive to human disturbance.	1B, 2, 3C	**Unlikely.** Suitable habitat is present in the study area. However, the most recent CNDDB documented occurrence of the species within 5 miles of the study area is from 1991.

Scientific Name Common Name	Status	Habitat Requirements	Route(s)	Potential to Occur[1]
Eumops perotis californicus western mastiff bat	None/None G4G5T4/S3S4 CDFW SSC SGCN	Occurs in open, semi-arid to arid habitats, including coniferous and deciduous woodlands, coastal scrub, grasslands, and chaparral. Roosts in crevices in cliff faces and caves, and buildings. Roosts typically occur high above ground.	1B, 2, 3C	**Unlikely.** Suitable grassland and chaparral habitat are present in the study area. Suitable roosting habitat is present in the study area. However, the most recent CNDDB documented occurrence of the species within 5 miles of the study area is from 1993.
Lasiurus blossevillii western red bat	None/SCE LCR MSCP CS	Throughout California in riparian woodland habitats.	1B, 2, 3C	**Likely.** Suitable riparian woodland habitat is present in the study area.
Lasiurus xanthinus western yellow bat	None/None G4G5/S3 CDFW SSC SGCN	Found in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats.	1B, 2, 3C	**Unlikely.** Suitable desert riparian and desert wash habitat are present in the study area. However, there are no CNDDB documented occurrences of the species within 5 miles of the study area.
Macrotus californicus California leaf-nosed bat	None/None G3G4/S3 CDFW SSC BLM S SGCN	Desert riparian, desert wash, desert scrub, desert succulent scrub, alkali scrub and palm oasis habitats.	1B	**Likely.** Suitable desert riparian, desert wash, and desert scrub habitat are present in the study area. There is a recent CNDDB documented occurrence of the species within 5 miles of the study area from 2006.
			2, 3C	**Unlikely.** Suitable desert riparian, desert wash, and desert scrub habitat are present in the study area. However, there are no CNDDB documented occurrences of the species within 5 miles of the study area.
Myotis occultus Arizona Myotis	None/None G4G5/S1 CDFW SSC SGCN	Lowlands of the Colorado River and adjacent desert mountain ranges.	1B, 2, 3C	**Unlikely.** Suitable habitat is present in the study area. The most recent CNDDB documented occurrence of the species within 5 miles of the study area is from 1910.
Nyctinomops femorosaccus pocketed free-tailed bat	None/None G5/S3 CDFW SSC SGCN	Variety of arid areas in Southern California; pine-juniper woodlands, desert scrub, palm oasis, desert wash, desert riparian, etc. Rocky areas with high cliffs.	1B, 2, 3C	**Unlikely.** Suitable desert scrub, desert wash, and desert riparian habitat are present in the study area. However, there are no CNDDB documented occurrences of the species within 5 miles of the study area.
Nyctinomops macrotis big free-tailed bat	None/None G5/S3 CDFW SSC SGCN	Low-lying arid areas in Southern California.	1B, 2, 3C	**Unlikely.** Suitable habitat is present in the study area. However, there are no CNDDB documented occurrences of the species within 5 miles of the study area.

Scientific Name Common Name	Status	Habitat Requirements	Route(s)	Potential to Occur[1]
Ovis canadensis nelsoni desert bighorn sheep	None/None CDFW FP BLM S DRECP	Widely distributed from the White Mtns in Mono Co. to the Chocolate Mts in Imperial Co. Open, rocky, steep areas with available water and herbaceous forage.	1B	**Present.** This species was observed during biological reconnaissance surveys conducted in 2025.
			2, 3C	**Unlikely.** Suitable open, rocky, steep habitat with available water and herbaceous forage is not present in the study area. There are no CNDDB documented occurrences of the species within 5 miles of the study area.
Sigmodon hispidus eremicus Yuma hispid cotton rat	None/None G5T2T3/S2 CDFW SSC BLM S SGCN	Along the Colorado River and in grass and agricultural areas near irrigation waters.	1B, 2, 3C	**Likely.** Suitable stream, grassland, and agricultural habitat are present in the study area. There are two CNDDB documented occurrences of the species within 5 miles of the study area from 2007 and 2008.
Taxidea taxus American badger	None/None G5/S3 CDFW SSC BLM S SGCN	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	1B	**Likely.** Suitable shrub forest habitat with friable soil is present in the study area. Suitable prey habitat is present in the study area. The most recent CNDDB documented occurrence of the species within 5 miles of the study area is from 1931. There are three additional CNDDB documented occurrences of the species within 5 miles of the study area from unknown dates.
			2, 3C	**Unlikely.** Suitable shrub forest habitat with friable soil is present in the study area. Suitable prey habitat is present in the study area. However, there are no CNDDB documented occurrences of the species within 5 miles of the study area.
Vulpes macrotis mutica desert kit fox	None/ST DRECP	Open desert, on creosote bush flats, and amongst the sand dunes.	1B, 2	**Likely.** Suitable habitat with friable soil is present in the study area. Suitable prey habitat is present in the study area.
			3C	**Unlikely.** Suitable habitat with friable soil may be present in the study area. Suitable prey habitat may also be present in the study area. However, there are no CNDDB documented occurrences of the species within 5 miles of the study area.

Regional Vicinity refers to within a 5-mile search radius of site.

Status (Federal/State)

FE = Federal Endangered
FT = Federal Threatened
SE = State Endangered
ST = State Threatened
SSC = CDFW Species of Special Concern
FP = CDFW Fully Protected
WL = CDFW Watch List
BCC = Birds of Conservation Concern
SGCN = Species of Greatest Conservation Need (AZ)

Status (Regional)

BLM S = Bureau of Land Management Sensitive Species

Of the 27 special-status species that are present or likely to occur, all but one (Sonoran desert tortoise) have California special-status designations and seven have federal special-status designations: Mojave desert tortoise (FT), burrowing owl (BCC), mountain plover (BCC), western yellow-billed cuckoo (FT), southwestern willow flycatcher (FE), Gila woodpecker (BCC), and Yuma Ridgway's rail (FE).

The remaining 23 special-status wildlife species were designated as "unlikely" to occur or "does not occur" in the study area.

Potential suitable habitat for Mojave and Sonoran desert tortoises, flat-tailed horned lizard, Colorado Desert fringe-toed lizard, burrowing owl, mountain plover, western yellow-billed cuckoo, southwestern willow flycatcher, least bittern, California black rail, Gila woodpecker, osprey, double-crested cormorant, black-tailed gnatcatcher, Yuma Ridgway's rail, Sonoran yellow warbler, Arizona Bell's vireo, California leaf-nosed bat, desert bighorn sheep, Yuma hispid cotton rat, American badger, and desert kit fox were identified during desktop analysis and reconnaissance surveys (see below). Suitable habitat for each species was calculated via identifying corresponding suitable vegetation communities and land cover types within the survey area, as described below.

Reptiles

Sign of one special-status reptile species was observed during 2025 reconnaissance surveys in the survey area: Mojave desert tortoise (FT, ST, DRECP, SGCN). One potential inactive Mojave desert tortoise burrow was observed in Segment 1-1B[2]. The deteriorated burrow was constructed in the side of Pichaco Wash in blue palo verde-desert ironwood woodland/creosote scrub habitat. The roughly crescent-shaped burrow measured approximately 10 inches tall and 15 inches wide at the entrance, was partially collapsed from felled vegetation, and contained evidence of a runway leading toward the burrow entrance. No desert tortoise tracks or scat were observed in or around the burrow. Desert tortoises are likely to occur in creosote and desert scrub habitats present in the study area (Segment 1-1B), which contain friable soils that are suitable for this species to burrow and nest in.

There are approximately 6,438.2 acres of potentially suitable habitat for desert tortoises within the survey area consisting of creosote bush – brittle bush scrub, creosote bush – white burr sage scrub, and creosote bush scrub.

Flat-tailed horned lizard (CDFW SSC, SGCN) was not observed within the survey area during 2025 reconnaissance surveys. However, suitable habitats, including desert washes and flats found with desert scrub habitats, are present in the study area (Segment 1-1B, Segment 2-2, Segment 3-3C). There are seven CNDDB documented occurrences of the species within 5 miles of the study area from 2002 – 2013. The East Mesa Flat-tailed horned lizard Management Area also intersects Segment 2-2.

There are approximately 6,651.3 acres of potentially suitable habitat for flat-tailed horned lizards within the survey area consisting of creosote bush – brittle bush scrub, creosote bush – white burr sage scrub, creosote bush scrub, iodine bush scrub, Mojave-Sonoran desert dunes, quailbush scrub, and Saguaro – foothill Palo Verde – velvet mesquite desert scrub.

[2] Segment 1-1B and Segment 1-1D are collocated at the location of the potential desert tortoise burrow observation.

Colorado Desert fringe-toed lizard (CDFW SSC, SGCN) was not observed within the survey area during 2025 reconnaissance surveys. However, suitable desert dune, riverbanks, desert washes, and desert scrub habitat is present in the study area (Segment 1B, 2-2, Segment 3-3C). There is a recent CNDDB record within 5 miles of Segment 2-2 within 5 miles of the study area.

There are approximately 6,643.6 acres of potentially suitable habitat for Colorado Desert fringe-toed lizards within the survey area consisting of creosote bush – brittle bush scrub, creosote bush – white burr sage scrub, creosote bush scrub, Mojave-Sonoran desert dunes, and Saguaro – foothill Palo Verde – velvet mesquite desert scrub.

Birds

Seven special-status bird species were observed in the survey area during 2025 reconnaissance surveys: burrowing owl, yellow-breasted chat, loggerhead shrike, Gila woodpecker, double-crested cormorant, osprey, black-tailed gnatcatcher, and yellow warbler.

Burrowing owls (SCE, CDFW SSC, UDFWS BCC, DRECP, SGCN) are present in the study area and were observed during the 2025 biological reconnaissance surveys in Segment 3-3C. Multiple individuals were observed both in and out of their burrows, and additional burrows were observed without owls in view. Burrowing owls are present in suitable agricultural, desert, and scrubland habitat in the study area (Segment 1-1B, Segment 2-2, Segment 3-3C).

There are approximately 9,175.8 acres of potentially suitable habitat for burrowing owls within the survey area consisting of creosote bush – brittle bush scrub, creosote bush – white burr sage scrub, creosote bush scrub, iodine bush scrub, Mojave-Sonoran desert dunes, quailbush scrub, and agriculture.

Yellow-breasted chat (CDFW SSC, SGCN) were observed in the survey area during the 2025 biological reconnaissance surveys in Segment 1-1B. Yellow-breasted chat are likely to occur in suitable habitat containing dense, shrubby vegetation in the study area (Segment 2-2, Segment 3-3C). There are approximately 1,000.7 acres of potentially suitable habitat for yellow-breasted chats within the survey area consisting of American bulrush marsh (common three-square marsh), arrow weed thickets, bush seepweed scrub, California joint fir – longleaf joint-fir scrub, Fremont cottonwood forest and woodland, hardstem and California bulrush marshes, iodine bush scrub, mesquite thickets, quailbush scrub, common reed marshes, eucalyptus – tree of heaven – black locust groves, and tamarisk thickets.

Loggerhead shrike (CDFW SSC) was observed in the survey area during the 2025 biological reconnaissance surveys in Segment 2-2 within a tamarisk thicket and are considered present in open habitats with scattered shrubs or perch habitat within study area (Segment 1-1B, Segment 2-2). There are approximately 7,927.2acres of potentially suitable habitat for loggerhead shrikes within the survey area consisting of blue Palo Verde – ironwood woodland, bush seepweed scrub, California joint fir – longleaf joint-fir scrub, creosote bush – brittle bush scrub, creosote bush – white burr sage scrub, creosote bush scrub, mesquite thickets, quailbush scrub, and tamarisk thickets.

Gila woodpecker (SE, SGCN) was observed in the survey area during the 2025 biological reconnaissance surveys in Segment 1-1B and are considered present within areas of suitable desert riparian, desert wash, and orchard habitats, as well as saguaros for nesting within the study area. There are approximately 10,544.8 acres of potentially suitable habitat for Gila woodpeckers within the survey area consisting of American bulrush marsh (common three-square marsh), blue Palo Verde – ironwood woodland, cattail marshes, creosote bush – brittle bush scrub, creosote bush – white burr sage scrub, creosote bush scrub, Fremont cottonwood forest and woodland, hardstem

and California bulrush marshes, iodine bush scrub, mesquite thickets, quailbush scrub, saguaro – foothill Palo Verde – velvet mesquite desert scrub, common reed marshes, eucalyptus – tree of heaven – black locust groves, tamarisk thickets, agriculture, and open water.

Double-crested cormorant (CDFW WL) are present in the study area and were observed during the 2025 biological reconnaissance surveys in Segment 3-3C and are considered present in areas of suitable habitat is present throughout the study area. There are approximately 216.0 acres of potentially suitable habitat for double-crested cormorants within the survey area consisting of American bulrush marsh (common three-square marsh), cattail marshes, Fremont cottonwood forest and woodland, hardstem and California bulrush marshes, common reed marshes, and open water.

Osprey (CDFW WL) are present in the study area and were observed during the 2025 biological reconnaissance surveys in Segment 1-1B. Suitable habitat is present throughout the study area. There are approximately 364.0 acres of potentially suitable habitat for ospreys within the survey area consisting of American bulrush marsh (common three-square marsh), arrow weed thickets, cattail marshes, Fremont cottonwood forest and woodland, hardstem and California bulrush marshes, common reed marshes, and open water.

Black-tailed gnatcatchers (CDFW WL, SGCN) are present in the study area and were observed during the 2025 biological reconnaissance surveys in Segment 1-1B in blue palo verde – desert ironwood woodlands. Black-tailed gnatcatchers are present in arid desert scrub and desert washes with native vegetation within study area (Segment 1-1B, Segment 2-2). There are approximately 7,681.3 acres of potentially suitable habitat for black-tailed gnatcatchers within the survey area consisting of blue Palo Verde – ironwood woodland, California joint-fir – longleaf joint-fir scrub, creosote bush – brittle bush scrub, creosote bush – white burr sage scrub, creosote bush scrub, Fremont cottonwood forest and woodland, iodine bush scrub, quailbush scrub, and tamarisk thickets.

Yellow warbler (CDFW SSC, SGCN) are present in the study area and were observed during the 2025 biological reconnaissance surveys in Segment 1-1B. There are approximately 585.4 acres of potentially suitable habitat for yellow warblers within the survey area consisting of arrow weed thickets, Fremont cottonwood forest and woodland, and tamarisk thickets.

Mountain plover (CDFW SSC, SGCN) was not observed within the study area during 2025 reconnaissance surveys. However, suitable grassland habitat is present in the study area (Segment 3-3B). There are no CNDDB documented occurrences of the species within 5 miles of the study area.

There are approximately 2,615.2 acres of potentially suitable habitat for mountain plovers within the survey area consisting of bush seepweed scrub and agriculture.

Western yellow-billed cuckoo (FT, SE, SGCN) was not observed within the study area during 2025 reconnaissance surveys. However, suitable riparian forest habitat is present in the study area (Segment 1-1B). There is one CNDDB documented occurrence of the species within 5 miles of the study area from 2010 (Segment 1-1B). There are approximately 602.4 acres of potentially suitable habitat for western yellow-billed cuckoos within the survey area consisting of Fremont cottonwood forest and woodland, mesquite thickets, tamarisk thickets.

Southwestern willow flycatcher (FE, SE, SGCN) was not observed within the survey area during 2025 reconnaissance surveys. However, suitable large river system habitat is present in the study area (Segment 1-1B, Segment 2-2). There is one CNDDB documented occurrence of the species within 5 miles of the study area from 2010 (Segment 1-1B). There are approximately 767.6 acres of potentially suitable habitat for southwestern willow flycatchers within the survey area consisting of

American bulrush marsh (common three-square marsh), arrow weed thickets, cattail marshes, Fremont cottonwood forest and woodland, hardstem and California bulrush marshes, mesquite thickets, common reed marshes, and tamarisk thickets.

Least bittern (CDFW SSC) was not observed within the study area during 2025 reconnaissance surveys. However, suitable marsh and wetland habitat is present in the study area (Segment 1-1B, Segment 2-2). There are three CNDDB documented occurrences of the species within 5 miles of the study area from 2006 - 2009 (Segment 1-1B). There are approximately 791.4 acres of potentially suitable habitat for least bitterns within the survey area consisting of American bulrush marsh (common three-square marsh), arrow weed thickets, cattail marshes, Fremont cottonwood forest and woodland, hardstem and California bulrush marshes, common reed marshes, tamarisk thickets, and open water.

California black rail (ST, SGCN) was not observed within the survey area during 2025 reconnaissance surveys. However, suitable wet meadow habitat is present in the study area (Segment 1-1B, Segment 2-2, Segment 3-3B). There is one CNDDB documented occurrence of the species within 5 miles of the study area from 2008 (Segment 2-2, Segment 3-3C). There are approximately 165.1 acres of potentially suitable habitat for California black rails within the survey area consisting of American bulrush marsh (common three-square marsh), arrow weed thickets, cattail marshes, hardstem and California bulrush marshes, and common reed marshes.

Yuma clapper rail (FE, ST, LCR MSCP CS) was not observed within the survey area during 2025 reconnaissance surveys. However, suitable freshwater marsh habitat is present in the study area (Segment 1-1B, Segment 2-2, Segment 3-3C). There are approximately 592.5 acres of potentially suitable habitat for Yuma clapper rails within the survey area consisting of American bulrush marsh (common three-square marsh), arrow weed thickets, cattail marshes, hardstem and California bulrush marshes, iodine bush scrub, common reed marshes, and tamarisk thickets.

Yuma Ridgway's rail (FE, ST, SGCN) was not observed within the survey area during 2025 reconnaissance surveys. However, suitable freshwater marsh habitat is present in the study area (Segment 1-1B, Segment 2-2, Segment 3-3C). There are CNDDB documented occurrences of the species within 5 miles of the study area from 2000 - 2009. There are approximately 592.5 acres of potentially suitable habitat for Yuma Ridgway's rail within the survey area consisting of American bulrush marsh (common three-square marsh), arrow weed thickets, cattail marshes, hardstem and California bulrush marshes, iodine bush scrub, common reed marshes, and tamarisk thickets.

Sonoran yellow warbler (CDFW SSC, SGCN) was not observed within the survey area during 2025 reconnaissance surveys. However, suitable riparian habitat is present in the study area (Segment 1-1B, Segment 2). There is one CNDDB documented occurrence of the species within 5 miles of the study area from 1916 (Segment 1-1B). There are approximately 10.0 acres of potentially suitable habitat for Sonoran yellow warblers within the survey area consisting of Fremont cottonwood forest and woodland.

Arizona Bell's vireo (SE, SGCN) was not observed within the survey area during 2025 reconnaissance surveys. However, suitable willow thicket habitat is present in the study area (Segment 1-1B). There is one CNDDB documented occurrence of the species within 5 miles of the study area from 2011 (Segment 1-1B). There are approximately 791.4 acres of potentially suitable habitat for Arizona Bell's vireo within the survey area consisting of American bulrush marsh (common three-square marsh), arrow weed thickets, cattail marshes, Fremont cottonwood forest and woodland, hardstem and California bulrush marshes, common reed marshes, tamarisk thickets, and open water.

Mammals

One special-status mammal species was observed in the survey area during 2025 reconnaissance surveys: desert bighorn sheep (CDFW FP, BLM S, DRECP) in Segment 1-1B. The observed individuals were located within blue palo verde – desert ironwood woodlands and creosote bush scrub foraging along or in small groups of up to three. There are approximately 7,152.9 acres of potentially suitable habitat for desert bighorn sheep within the survey area consisting of blue Palo Verde – ironwood woodland, creosote bush – brittle bush scrub, creosote bush – white burr sage scrub, creosote bush scrub, and saguaro – foothill Palo Verde – velvet mesquite desert scrub.

California leaf-nosed bat (CDFW SSC, SGCN) was not observed within the survey area during 2025 reconnaissance surveys. However, suitable desert riparian, desert wash, and desert scrub habitat is present in the study area (Segment 1-1B). There is one CNDDB documented occurrence of the species within 5 miles of the study area from 2006 (Segment 1-1B). There are approximately 8,382.9 acres of potentially suitable habitat for California leaf-nosed bats within the survey area consisting of blue Palo Verde – ironwood woodland, creosote bush – brittle bush scrub, creosote bush – white burr sage scrub, creosote bush scrub, Fremont cottonwood forest and woodland, iodine bush scrub, quailbush scrub, saguaro – foothill Palo Verde – velvet mesquite desert scrub, and agriculture.

Western red bat (CDFW SSC, LCR MSCP CS) was not observed within the survey area during 2025 reconnaissance surveys. However, suitable riparian woodland habitat is present in the study area (Segment 1-1B). There are no CNDDB documented occurrence of the species within 5 miles of the study area. There are approximately 8,382.9 acres of potentially suitable habitat for western red bats within the survey area consisting of blue Palo Verde – ironwood woodland and Fremont cottonwood forest and woodland.

Yuma hispid cotton rat (CDFW SSC, BLM S, SGCN) was not observed within the study area during 2025 reconnaissance surveys. However, suitable wetland and upland habitat is present in the study area (Segment 1-1B, Segment 2-2, Segment 3-3C). There are two CNDDB documented occurrences of the species within 5 miles of the study area from 2007 and 2008. There are approximately 6,615.7 acres of potentially suitable habitat for Yuma hispid cotton rats within the survey area consisting of creosote bush scrub and tamarisk thickets.

American badger (CDFW SSC, SGCN) was not observed within the study area during 2025 reconnaissance surveys. However, suitable shrub forest habitat with friable soil present is present in the study area, and suitable prey habitat is also present in the study area (Segment 1-1B). The most recent CNDDB documented occurrence of the species within 5 miles of the study area is from 1931, and there are three additional CNDDB documented occurrences of the species within 5 miles of the study area from unknown dates (Segment 1-1B). There are approximately 4,806.0 acres of potentially suitable habitat for American badgers within the survey area consisting of blue Palo Verde – ironwood woodland and creosote bush scrub.

Desert kit fox (DRECP) was not observed within the study area during 2025 reconnaissance surveys. However, suitable open desert, sand dune, and creosote bush habitats with friable soils are present in the study area, and suitable prey habitat is also present in the study area (Segment 1-1B, Segment 2-2). There are no CNDDB documented occurrences of the species within 5 miles of the study area. There are approximately 11,394.8 acres of potentially suitable habitat for desert kit fox within the survey area consisting of blue Palo Verde – ironwood woodland and creosote bush scrub.

5.4.1.5.4 Sensitive Natural Communities

Sensitive natural communities are defined as communities of limited distribution within California or within a county or region. These communities may or may not contain special-status species. The state ranking system for S1 to S5 (CDFW 2024d, 2024a) includes the estimated number of existing acres in California for sensitive (S1 To S3) and non-sensitive (S4 and S5) natural communities. The rankings are defined as follows:

- S1, Critically Imperiled: Critically imperiled in California because of extreme rarity (often five or fewer occurrences) or because of some factor(s), such as very steep declines, making it especially vulnerable to extirpation from the state
- S2, Imperiled: Imperiled in California because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state
- S3, Vulnerable: Vulnerable in California due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation
- S4, Apparently Secure: Uncommon but not rare in the state; some cause for long-term concern due to declines or other factors
- S5, Secure: Common, widespread, and abundant in the state

Eleven sensitive natural communities occur in the survey area (American bulrush marsh, arrow weed thickets, blue palo verde – ironwood woodland, bush seepweed scrub, California joint fir – longleaf fir joint-fir scrub, Fremont cottonwood forest and woodland, hardstem and California bulrush marshes, iodine bush scrub, mesquite thickets, Mojave-Sonoran Desert dunes, and Saguaro – foothill palo verde – velvet mesquite desert scrub). American bulrush marsh is ranked G5S3, arrow weed thickets are ranked G4S3, blue palo verde – ironwood woodland is ranked G4S4, bush seepweed scrub is ranked G4S3, California joint fir – longleaf fir joint-fir scrub is ranked G5S4, Fremont cottonwood forest and woodland is ranked G4S3, hardstem and California bulrush marshes are ranked GNR S3S4, iodine bush scrub is ranked G4S3, mesquite thickets are ranked G5S3, Mojave-Sonoran Desert dunes are ranked G4S3, and Saguaro – foothill palo verde – velvet mesquite desert scrub is ranked G4S2. Sensitive natural communities are mapped in Appendix C-2, and the rarity rankings for vegetation communities are included in Table 5.4-2.

5.4.1.6 Critical Habitat

Critical habitat is defined as "the specific areas within the geographic area occupied by a species on which are found those physical or biological features essential to the conservation of the species and which may require special management considerations or protection" as defined in section 3(5)(A) of the CESA. The physical or biological features for critical habitat include: space for individual and population growth and for normal behavior; food, water, air, light, minerals, or other nutritional or physiological requirements; cover or shelter; sites for breeding, reproduction, or rearing (or development) of offspring; and habitats that are protected from disturbance or are representative of the historic, geographical, and ecological distributions of a species.

There is no USFWS-designated critical habitat within the study area. USFWS-designated critical habitat for Peirson's milkvetch and Razorback sucker occurs within 5 miles of the study area and is detailed in Table 5.4-7 below.

The physical or biological features for Peirson's milkvetch critical habitat include: Active sand dunes with wind regimes that provide space for individual and population growth, including sites for germination, reproduction, seed dispersal, seed bank, and pollination; west and/or northwest-facing sides of bowls, swales, and slopes of shifting sand habitats that allow for pollinator movement and wind dispersal of fruit and seeds; co-adapted psammophytic scrub plant community that provides habitat for insect pollinators, particularly the white-faced digger bee (*Habropodia pallida*), required for reproduction (USFWS 2008).

Proposed Project components are located approximately 1,800 feet from Peirson's milkvetch critical habitat (see Table 5.4-7).

The physical or biological features for Razorback sucker critical habitat include several key habitat components. Hydrologically, suitable habitat requires a reliable quantity and quality of water, characterized by appropriate temperature, dissolved oxygen levels, low contaminant concentrations, balanced nutrients, and manageable turbidity, delivered according to natural flow regimes that align with the species' life stages. Physical habitat includes various components of the Colorado River system, such as river channels, bottomlands, side channels, oxbows, backwaters, and other features within the 100-year floodplain that support spawning, nursery, feeding, and rearing functions or provide connectivity between these habitats. The biological environment encompasses food availability (linked to nutrient input and ecosystem productivity) as well as predator and competitor dynamics, which have been disrupted by the introduction of nonnative fish species. Areas deemed critical by the USFWS include those with known or suspected spawning populations, suitable nursery habitats, historically or currently occupied sites with potential for reestablishment, and locations needed to maintain species diversity and distribution (USFWS 1994, 59 FR 1018).

Proposed Project components are located approximately 2,890 feet from Razorback sucker critical habitat (see Table 5.4-7).

No other critical habitat is located within 5 miles of the Proposed Project alignment.

Table 5.4-7 Critical Habitat Within 5 Miles of the Study Area

Location	Common Name	Scientific Name	Minimum Distance from Nearest Proposed Project Component (feet)
California	Peirson's milkvetch	*Astragalus magdalenae* var. *peirsonii*	1,793.7
	Razorback sucker	*Xyrauchen texanus*	2,980.9
Arizona	Razorback sucker	*Xyrauchen texanus*	2,890.6

5.4.1.7 Native Wildlife Corridors and Nursery Sites

5.4.1.7.1 Native Wildlife Corridors

Native wildlife corridors that provide habitat connectivity across a broader geographic area are critical to the survival and reproduction of many plant and wildlife species. Similar terrain, vegetation types, water courses, mountain tops and ridgelines, and other natural features provide suitable contiguous habitats for passage from one area to another for food, water, and reproduction.

Wildlife corridors present within the study area include the Pacific Flyway, a major north-south corridor for migratory birds in North America, which runs along the Pacific Coast of North and South America, as well as the Mittry Lake Wildlife Area, which provides important aquatic and wetland habitats for migratory birds, especially during the winter months (AZGFD 2025a). Additionally, scrub

vegetation communities in the study area provide connectivity to other larger stretches of similar habitat, creating corridors for birds, mammals, and reptiles.

Two networks of wildlife connectivity linkages identified in the DRECP LUPA are located north of the study area. In addition, as shown in Figure 5.4-4, the Proposed Project is located near several designated conservation areas. The Yuha Basin Area of Critical Environmental Concern (ACEC), which overlaps a small portion of the southwest corner of the study area, the Lake Cahuilla ACEC and the East Mesa ACEC, which overlap with the center of the study area, and the Picacho ACEC, which overlaps with the northeastern portions of the study area, were specifically established by BLM to create and protect wildlife linkages to other conservation and wilderness areas (BLM et al. 2016). Additionally, the Flat-tailed Horned Lizard (FTHL) – Yuha Desert Management Area overlaps a small portion of the westernmost part of the study area, while the FTHL – East Mesa Management Area intersects the central portion of the study area. For additional details, see Appendix C-1.

The study area is also located near several Conservation Opportunity Areas (COAs), as identified by AZGFD. The Colorado River and Associated Backwaters aquatic COA overlaps with a small portion of the study area's northwest corner. The Imperial-Cibola and Mittry Lake Wildlife Area terrestrial COAs also overlap with a small portion of the study area's northwest corner. The Desert Mountains Complex terrestrial COA overlaps the western portion of the study area. The Lower Gila River terrestrial COA overlaps with the southwestern portion of the study area. These COAs represent specific areas on the landscape where actions will most likely lead to substantial improvements for wildlife and their habitats (AZGFD 2025c).

Additionally, a California Essential Habitat Connectivity Area extends into the middle of the study area, connecting the Sonoran Desert east of the Salton Sea with the Mojave Desert to the north. Landscape blocks, defined as large areas of intact, unfragmented lands and waters that provide habitat for wide-ranging species and support dynamic natural processes and resilient ecosystems, are also present within the middle of the study area. For additional details, see Appendix C-1, Attachment I.

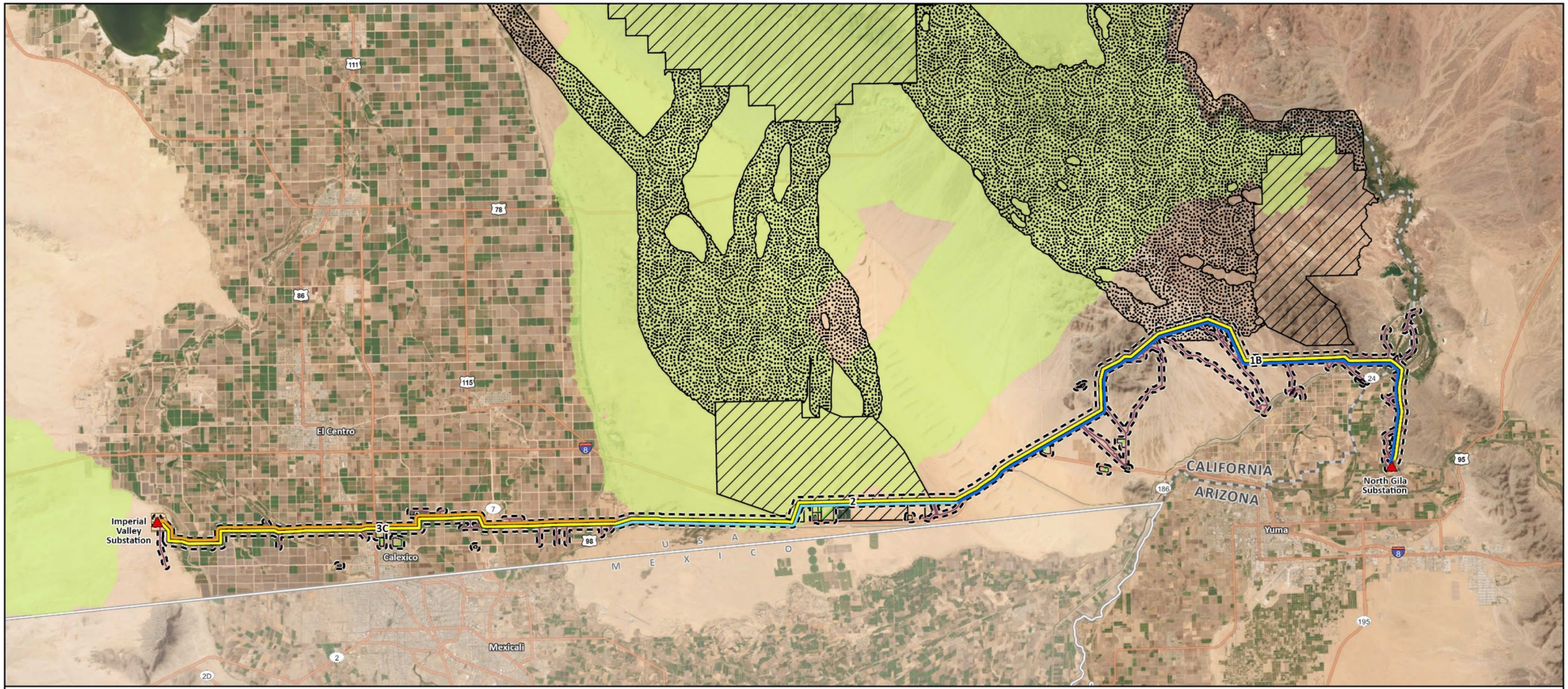
5.4.1.7.2 Nursery Sites

No regional or local native wildlife nursery sites are known to exist within 5 miles of the study area.

5.4.1.8 Biological Resource Management Areas

There is no adopted habitat conservation plan (HCP) or natural community conservation plan (NCCP) within the study area, and no known approved local, regional, or state habitat conservation plans covering the study area.

Figure 5.4-4 Wildlife Corridors in the Project Study Area



*Imagery provided by Esri and its licensors © 2026. *Segments and Biological Study Area are slightly offset for visual display purposes. Additional data provided by CEHCP 2010, FTHLICC 2003, SC Wildlands 2012.*

25-17237 PEA BIO Figures
PEA Figure X Wildlife Corridors 11x17 OVERVIEW

5.4.2 Regulatory Setting

The following is a brief summary of the regulatory context under which biological resources are managed at the federal, state, and local levels. A number of federal and State statutes provide a regulatory structure that guides the protection of biological resources. Agencies with the responsibility for protection of biological resources within the study area include:

- U.S. Army Corps of Engineers (wetlands and other waters of the United States);
- U.S. Fish and Wildlife Service (federally listed species and migratory birds);
- Bureau of Land Management (BLM-managed public lands, species designated as BLM sensitive);
- Lower Colorado River Multi-Species Conservation Program;
- Colorado River Regional Water Quality Control Board (waters of the State, California);
- California Department Fish and Wildlife (riparian areas, streambeds, and lakes, State-listed species, nesting birds, marine resources);
- Arizona Department of Agriculture (protected native plants);
- Arizona Department of Environmental Quality (waters of the State, Arizona); and
- Arizona Game and Fish Department (species of greatest conservation need).

5.4.2.1 Federal

United States Army Corps of Engineers

The USACE is responsible for administering several federal programs related to ensuring the quality and navigability of the nation's waters.

Clean Water Act Section 404

Congress enacted the Clean Water Act (CWA) "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Section 404 of the CWA authorizes the Secretary of the Army, acting through the USACE, to issue permits regulating the discharge of dredged or fill materials into the "navigable waters at specified disposal sites."

Section 502 of the CWA further defines "navigable waters" as "waters of the United States, including the territorial seas." "Waters of the United States" are broadly defined at 33 CFR Part 328.3 to include navigable waters, perennial and intermittent streams, lakes, rivers, ponds, as well as wetlands, marshes, and wet meadows.

The *Sackett v. EPA* (2023) decision redefined the scope of "waters of the United States" (WOTUS) by limiting federally jurisdictional wetlands to only those wetlands that have a continuous surface connection to relatively permanent bodies of water. Additionally, the *Sackett* ruling clarified that tributaries to traditional navigable waters qualify as WOTUS only if they exhibit seasonal or relatively permanent flow. The Court also explicitly rejected the "significant nexus" standard established under *Rapanos v. United States* (2006), thereby removing the broader WOTUS interpretation that had allowed for regulation of wetlands and waters based on ecological connectivity.

Waters of the U.S.

In summary, USACE and United States Environmental Protection Agency (USEPA) regulations define "waters of the United States" as follows:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:
    i. Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
    ii. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
    iii. Which are used or could be used for industrial purpose by industries in interstate commerce;
4. All impoundments of waters otherwise defined as waters of the United States;
5. Relatively permanent tributaries of waters identified in paragraphs (a)(1)-(4) of this section;
6. The territorial sea; or
7. Wetlands adjacent with a continuous surface connection to waters (other than waters that are themselves wetlands) identified in items 1-6 above.

Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the CWA, the final authority regarding CWA jurisdiction remains with the USEPA. Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA are not waters of the United States. The lateral limits of USACE jurisdiction in non-tidal waters is defined by the "ordinary high-water mark" (OHWM) unless adjacent wetlands are present. The OHWM is a line on the shore or edge of a channel established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed upon the bank, shelving, changes in the character of soil, destruction of vegetation, or the presence of debris (33 CFR 328.3(e)). As such, waters are recognized in the field by the presence of a defined watercourse with appropriate physical and topographic features.

If wetlands occur within, or adjacent and with a continuous surface connection to, waters of the United States, the lateral limits of USACE jurisdiction extend beyond the OHWM to the outer edge of the wetlands (33 CFR 328.4 (c)). The upstream limit of jurisdiction in the absence of adjacent wetlands with a continuous surface connection is the point beyond which the OHWM is no longer perceptible (33 CFR 328.4; see also 51 FR 41217).

Wetlands

The USACE defines wetlands as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil

conditions" (33 CFR 328.3). The USACE's delineation procedures identify wetlands in the field based on indicators of three wetland parameters: hydrophytic vegetation, hydric soils, and wetland hydrology. The following is a discussion of each of these parameters.

Hydrophytic Vegetation

Hydrophytic vegetation dominates areas where frequency and duration of inundation or soil saturation exerts a controlling influence on the plant species present. Plant species are assigned wetland indicator status according to the probability of their occurring in wetlands. More than fifty percent of the dominant plant species must have a wetland indicator status to meet the hydrophytic vegetation criterion. The USACE published the National Wetland Plant List (USACE 2018), which separates vascular plants into the following four basic categories based on plant species frequency of occurrence in wetlands:

i) **Obligate Wetland (OBL).** Almost always occur in wetlands.
ii) **Facultative Wetland (FACW).** Usually occur in wetlands, but occasionally found in non-wetlands.
iii) **Facultative (FAC).** Occur in wetlands or non-wetlands
iv) **Facultative Upland (FACU).** Usually occur in non-wetlands, but may occur in wetlands.
v) **Obligate Upland (UPL).** Almost never occur in wetlands.

The USACE considers OBL, FACW and FAC species to be indicators of wetlands. An area is considered to have hydrophytic vegetation when greater than 50 percent of the dominant species in each vegetative stratum (tree, shrub, and herb) fall within these categories. Any species not appearing on the United States Fish and Wildlife Service's list is assumed to be an upland species, almost never occurring in wetlands. In addition, an area needs to contain at least 5 percent vegetative cover to be considered as a vegetated wetland.

Hydric Soils

Hydric soils are saturated or inundated for a sufficient duration during the growing season to develop anaerobic or reducing conditions that favor the growth and regeneration of hydrophytic vegetation. Field indicators of wetland soils include observations of ponding, inundation, saturation, dark (low chroma) soil colors, bright mottles (concentrations of oxidized minerals such as iron), gleying (indicates reducing conditions by a blue-grey color), or accumulation of organic material. Additional supporting information includes documentation of soil as hydric or reference to wet conditions in the local soils survey, both of which must be verified in the field.

Wetland Hydrology

Wetland hydrology is inundation or soil saturation with a frequency and duration long enough to cause the development of hydric soils and plant communities dominated by hydrophytic vegetation. If direct observation of wetland hydrology is not possible (as in seasonal wetlands), or records of wetland hydrology are not available (such as stream gauges), assessment of wetland hydrology is frequently supported by field indicators, such as water marks, drift lines, sediment deposits, or drainage patterns in wetlands

Guidance

Interpreting recent U.S. Supreme Court decisions, and according to the Revised Definition of Waters of the United States (USACE 2023) and guidance from the Joint Memorandum (USACE/USEPA, 2025), the USACE and USEPA will assert jurisdiction over the following waters:

- Traditional navigable waters;
- Wetlands adjacent to traditional navigable waters with a continuous surface connection present;
- Non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months); and
- Wetlands that directly abut such tributaries via a continuous surface connection.

The USACE and USEPA generally will not assert jurisdiction over the following features:

- Swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow); and,
- Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.

United States Fish and Wildlife Service

The USFWS implements several laws protecting the Nation's fish and wildlife resources, including the Endangered Species Act (ESA; 16 United States Code [USC] Sections 153 et seq.), the Migratory Bird Treaty Act (MBTA; 16 USC Sections 703-711) and the Bald and Golden Eagle Protection Act (16 USC Section 668).

Endangered Species Act

The USFWS and National Marine Fisheries Service (NMFS) share responsibility for implementing the ESA. Generally, the USFWS implements the ESA for terrestrial and freshwater species, while the NMFS implements the ESA for marine and anadromous species. Projects that would result in "take" of any threatened or endangered wildlife species, or a threatened or endangered plant species if occurring on federal land, are required to obtain permits from the USFWS or NMFS through either Section 7 (interagency consultation with a federal nexus) or Section 10 (Habitat Conservation Plan) of the ESA, depending on the involvement by the federal government in funding, authorizing, or carrying out the project. The Section 7 permitting process is used to determine if a project would jeopardize the continued existence of a listed species and what measures would be required to avoid jeopardizing the species. "Take" under federal definition means to harass, harm (which includes habitat modification), pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Proposed or candidate species do not have the full protection of the ESA; however, the USFWS and NMFS advise project applicants that they could be elevated to listed status at any time.

Migratory Bird Treaty Act

The MBTA of 1918 implements four international conservation treaties that the U.S. entered into with Canada in 1916, Mexico in 1936, Japan in 1972, and Russia in 1976. It is intended to ensure the sustainability of populations of all protected migratory bird species. The law has been amended with the signing of each treaty, as well as when any of the treaties were amended, such as with Mexico in

1976 and Canada in 1995. The MBTA prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the USFWS. The list of migratory bird species protected by the law, in regulations at 50 CFR Part 10.13, is primarily based on bird families and species included in the four international treaties.

A migratory bird species is included on the list if it meets one or more of the following criteria: it occurs in the United States or U.S. territories as the result of natural biological or ecological processes and is currently, or was previously listed as, a species or part of a family protected by one of the four international treaties or their amendments, revised taxonomy results in it being newly split from a species that was previously on the list, and the new species occurs in the United States or U.S. territories as the result of natural biological or ecological processes, new evidence exists for its natural occurrence in the United States or U.S. territories resulting from natural distributional changes and the species occurs in a protected family.

In 2004, the Migratory Bird Treaty Reform Act limited the scope of the MBTA by stating the MBTA applies only to migratory bird species that are native to the United States or U.S. territories, and that a native migratory bird species is one that is present as a result of natural biological or ecological processes. The MBTA requires the USFWS to publish a list of all nonnative, human-introduced bird species to which the MBTA does not apply, and an updated list was published in 2020. The 2020 update identifies species belonging to biological families referred to in treaties the MBTA implements but are not protected because their presence in the United States or U.S. territories is solely the result of intentional or unintentional human-assisted introductions.

Finally, an M-Opinion issued by the U.S. Department of the Interior on April 11, 2025, rescinded the Biden-era M-Opinion M-37065 which had interpreted the MBTA to prohibit both intentional and incidental take of migratory birds. Instead, the 2025 M-Opinion states that incidental take of migratory birds is not prohibited under federal law, thereby reestablishing a literal reading of the MBTA that confines its prohibitions to intentional acts.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act prohibits anyone, without a permit issued by the USFWS, from “taking” bald or golden eagles, including their parts (including feathers), nests, or eggs. The Act provides criminal penalties for persons who “take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof.” The Act defines “take” as “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.”

“Disturb” means “to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.”

In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death or nest abandonment.

Bureau of Land Management

The BLM manages approximately 245 million acres of public lands across the United States, including extensive areas in California's desert region. The BLM implements several key statutes that guide the conservation and multiple-use management of these lands, including the Federal Land Policy and Management Act (FLPMA; 43 United States Code [USC] Sections 1701 et seq.), which directs the agency to manage public lands for multiple uses while ensuring the protection of natural resources. In the California Desert District, BLM land management is guided by California Desert Conservation Area (CDCA) Plan, as amended by the DRECP, which integrates renewable energy development with the long-term conservation of biological resources. Additionally, the BLM identifies and manages BLM sensitive species consistent with agency policies and resource management plans.

Federal Land Policy Management Act of 1976

In 1976, Congress passed the Federal Land Policy Management Act (FLPMA), which governs the manner by which public lands administered by the BLM are managed. The FLPMA requires BLM to develop land use plans, also known as Resource Management Plans, to guide BLM's management of public land.

BLM Sensitive Species

The BLM maintains a Sensitive Species Program to proactively identify and manage species that are considered vulnerable or at risk but are not currently listed as threatened or endangered under the ESA. These BLM sensitive species include wildlife and plants that require special management attention to prevent population declines that could lead to federal listing.

California Desert Conservation Area Plan

The CDCA Plan is a comprehensive, long-range plan for the management, use, development, and protection of lands within the CDCA, and it is required as part of the Federal Land Policy and Management Act of 1976 (FLPMA) and implemented by the BLM. The CDCA Plan defines rare, threatened, and endangered plants as those listed as endangered by the ESA; endangered or rare by CESA; or candidates for endangered or threatened listing by the USFWS. Rare, threatened, and endangered species are managed in accordance with applicable laws and regulations. These plants are also protected through consideration in all BLM site-specific environmental impact analysis to ensure that any action authorized by the BLM does not jeopardize listed plants or habitats supporting listed plants.

The CDCA Plan stabilizes and improves populations of listed plants through management and recovery plans developed and implemented cooperatively with the USFWS and CDFW. The CDCA Plan also prohibits the harvesting of plants that are listed as rare, threatened, or endangered. As part of Phase I of the DRECP, the BLM adopted an amendment to the CDCA Plan in September 2016—the LUPA to the CDCA Plan and Bishop Resource Management Plan, which is discussed further below.

Desert Renewable Energy Conservation Plan

The DRECP is a collaborative effort between the California Energy Commission (CEC), CDFW, BLM, and USFWS to advance federal and state natural resource conservation goals and other federal land management goals; meet the requirements of the ESA, CESA, Natural Community Conservation

Planning Act, and FLPMA; and facilitate the timely and streamlined permitting of renewable energy projects in the Mojave and Colorado/Sonoran desert regions of Southern California. The DRECP covers approximately 22.5 million acres in the desert regions of Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino, and San Diego Counties. The DRECP is being prepared in two phases. Phase I consisted of the LUPA to the CDCA Plan and Bishop Resource Management Plan. Phase II is ongoing and will consist of adopting a General Conservation Plan for approximately 5.5 million acres of non-federal land and a Conceptual Plan-Wide NCCP that encompasses the entire DRECP plan area.

The LUPA establishes management direction for the permitting of renewable energy and transmission development on approximately 10 million acres of BLM-managed lands in the DRECP area. The LUPA amends the CDCA Plan and the Bishop Resource Management Plans. The purpose of the LUPA is to conserve biological, environmental, cultural, recreation, scenic, and visual resources; respond to federal renewable energy goals and policies, including state-level renewable energy targets; and comply with the FLPMA. The LUPA prescribes conservation management actions.

Other BLM Resource Management Plans

The entirety of the study area in California is located within CDCA and is covered by the California Desert Conservation Area Plan, DRECP, Imperial Sand Dunes Recreation Area Management Plan, and Northern and Eastern Colorado Desert Coordinated Management Plan. A portion of the study area within Arizona is managed under the Yuma Field Office Resource Management Plan. The Imperial Sand Dunes Recreation Area Management Plan and Northern and Eastern Colorado Desert Coordinated Management Plan include goals, objectives, and management actions related to biological resources.

5.4.2.2 State of California

California Department of Fish and Wildlife

The CDFW derives its authority from the Fish and Game Code of California and administers several State laws protecting fish and wildlife resources and the habitats upon which they depend.

California Endangered Species Act

The CESA (Fish and Game Code Section 2050 et. seq.) prohibits take of State listed threatened or endangered. Take under CESA is defined as “Hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill” (Fish and Game Code sec. 86). This definition does not prohibit indirect harm by way of habitat modification, except where such harm is the proximate cause of death of a listed species. Where incidental take would occur during construction or other lawful activities, CESA allows the CDFW to issue an Incidental Take Permit upon finding, among other requirements, that impacts to the species have been minimized and fully mitigated. Unlike the federal ESA, CESA’s protections extend to candidate species during the period (typically one year) while the California Fish and Game Commission decides whether the species warrants CESA listing.

Native Plant Protection Act

The CDFW also has authority to administer the Native Plant Protection Act (NPPA) (Fish and Game Code Section 1900 et seq.). The NPPA requires the CDFW to establish criteria for determining if a species, subspecies, or variety of native plant is endangered or rare, and prohibits the take of listed plant species. Eligible species include those identified with California Rare Plant Rank (CRPR) of 1A,

1B, and 2, which meet the definitions of sections 1901, Chapter 10 (NPPA) or sections 2062 and 2067 (CESA) of the CFGC. Effective in 2015, CDFW promulgated regulations (14 CCR 786.9) under the authority of the NPPA, establishing that the CESA's permitting procedures would be applied to plants listed under the NPPA as "Rare." With this change, there is little practical difference for the regulated public between plants listed under CESA and those listed under the NPPA.

Fully Protected Species Laws

The CDFW enforces Sections 3511, 4700, 5050, and 5515 of the Fish and Game Code, which prohibit take of species designated as Fully Protected. The CDFW is not allowed to issue an Incidental Take Permit for Fully Protected species; therefore, impacts to these species must be avoided. The exception is situations where a NCCP is in place that authorizes take of the fully protected species.

Avian Protection Laws

California Fish and Game Code sections 3503, 3503.5, and 3513 describe unlawful take, possession, or destruction of native birds, nests, and eggs. Section 3503.5 of the Code protects all birds-of-prey and their eggs and nests against take, possession, or destruction of nests or eggs. Section 3513 makes it a State-level offense to take any bird in violation of the federal Migratory Bird Treaty Act.

Protection of Lakes and Streambeds

California Fish and Game Code section 1602 states that it is unlawful for any person to "substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake" without first notifying the CDFW of that activity. Thereafter, if CDFW determines and informs the entity that the activity will not substantially adversely affect any existing fish or wildlife resources, the entity may commence the activity. If, however, CDFG determines that the activity may substantially adversely affect an existing fish or wildlife resource, the entity may be required to obtain from CDFW a Streambed Alteration Agreement (SAA), which will include reasonable measures necessary to protect the affected resource(s), before the entity may conduct the activity described in the notification. Upon receiving a complete Notification of Lake/Streambed Alteration, CDFW has 60 days to present the entity with a Draft SAA. Upon review of the Draft SAA by the applicant, any problematic terms are negotiated with CDFW and a final SAA is executed.

The CDFW has not defined the term "stream" for the purposes of implementing its regulatory program under Section 1602, and the agency has not promulgated regulations directing how jurisdictional streambeds may be identified, or how their limits should be delineated. However, four relevant sources of information offer insight as to the appropriate limits of CDFW jurisdiction as discussed below.

The plain language of Section 1602 of CFGC establishes the following general concepts:

- References "river," "stream," and "lake"
- References "natural flow"
- References "bed," "bank," and "channel"

- **Applicable court decisions**, in particular *Rutherford v. State of California* (188 Cal App. 3d 1276 (1987), which interpreted Section 1602's use of "stream" to be as defined in common law. The Court indicated that a "stream" is commonly understood to:
  - Have a source and a terminus

- Have banks and a channel
- Convey flow at least periodically, but need not flow continuously and may at times appear outwardly dry
- Represent the depression between the banks worn by the regular and usual flow of the water
- Include the area between the opposing banks measured from the foot of the banks from the top of the water at its ordinary stage, including intervening sand bars
- Include the land that is covered by the water in its ordinary low stage
- Include lands below the OHWM

- **CDFW regulations** defining "stream" for other purposes, including sport fishing (14 CCR 1.72) and streambed alterations associated with cannabis production (14 CCR 722(c)(21)), which indicate that a stream:
  - Flows at least periodically or intermittently
  - Flows through a bed or channel having banks
  - Supports fish or aquatic life
  - Can be dry for a period of time
  - Includes watercourses where surface or subsurface flow supports or has supported riparian vegetation

- **Guidance documents**, including *A Field Guide to Lake and Streambed Alteration Agreements* (CDFG 1994) and *Methods to Describe and Delineate Episodic Stream Processes on Arid Landscapes for Permitting Utility-Scale Solar Power Plants* (Brady and Vyverberg 2013), which suggest the following:
  - A stream may flow perennially or episodically
  - A stream is defined by the course in which water currently flows, or has flowed during the historical hydrologic course regime (approximately the last 200 years)
  - Width of a stream course can reasonably be identified by physical or biological indicators
  - A stream may have one or more channels (single thread vs. compound form)
  - Features such as braided channels, low-flow channels, active channels, banks associated with secondary channels, floodplains, islands, and stream-associated vegetation, are interconnected parts of the watercourse
  - Canals, aqueducts, irrigation ditches, and other means of water conveyance can be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife
  - Biologic components of a stream may include aquatic and riparian vegetation, all aquatic wildlife including fish, amphibians, reptiles, invertebrates, and terrestrial species which derive benefits from the stream system
  - The lateral extent of a stream can be measured in different ways depending on the particular situation and the type of fish or wildlife resource at risk

The tenets listed above, among others, are applied to establish the boundaries of streambeds in various environments. Importance of each factor may be weighted based on site-specific considerations and the applicability of the indicators to the streambed at hand.

Colorado River Regional Water Quality Control Board

The State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCBs) have jurisdiction over "waters of the State," which are defined as any surface water or groundwater, including saline waters, within the boundaries of the state (California Water Code sec. 13050(e)). These agencies also have responsibilities for administering portions of the CWA.

Clean Water Act Section 401

Section 401 of the CWA requires an applicant requesting a federal license or permit for an activity that may result in any discharge into navigable waters (such as a Section 404 Permit) to provide State certification that the proposed activity will not violate State and federal water quality standards. In California, CWA Section 401 Water Quality Certification (Section 401 Certification) is issued by the RWQCBs and by the SWRCB for multi-region projects.

The process begins when an applicant submits an application to the RWQCB and informs the USACE (or the applicable agency from which a license or permit was requested) that an application has been submitted. The USACE will then determine a "reasonable period of time" for the RWQCB to act on the application; this is typically 60 days for routine projects and longer for complex projects but may not exceed one year. When the period has elapsed, if the RWQCB has not either issued or denied the application for Section 401 Certification, the USACE may determine that Certification has been waived and issue the requested permit. If a Section 401 Certification is issued it may include binding conditions, imposed either through the Certification itself or through the requested federal license or permit.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Act is the principal law governing water quality regulation in California. It establishes a comprehensive program to protect water quality and the beneficial uses of water. The Porter-Cologne Act applies to surface waters, wetlands, and ground water and to both point and nonpoint sources of pollution. Pursuant to the Porter-Cologne Act (California Water Code section 13000 et seq.), the policy of the State is as follows: The quality of all the waters of the State shall be protected. All activities and factors affecting the quality of water shall be regulated to attain the highest water quality within reason. The State must be prepared to exercise its full power and jurisdiction to protect the quality of water in the State from degradation.

The Porter-Cologne Act established nine RWQCBs (based on watershed boundaries) and the SWRCB, which are charged with implementing its provisions and which have primary responsibility for protecting water quality in California. The SWRCB provides program guidance and oversight, allocates funds, and reviews RWQCB decisions. In addition, the SWRCB allocates rights to the use of surface water. The RWQCBs have primary responsibility for individual permitting, inspection, and enforcement actions within each of nine hydrologic regions. The SWRCB and RWQCBs have numerous nonpoint source related responsibilities, including monitoring and assessment, planning, financial assistance, and management.

Section 13260 of the Porter-Cologne Act requires any person discharging or proposing to discharge waste that could affect the quality of waters of the State to file a Report of Waste Discharge with the appropriate RWQCB. The RWQCB may then authorize the discharge, subject to conditions, by issuing Waste Discharge Requirements (WDRs). While this requirement was historically applied primarily to outfalls and similar point source discharges, the SWRCB's *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State*, effective May 2020,

make it clear that the agency will apply the Porter-Cologne Act's requirements to discharges of dredge and fill material as well. The *Procedures* state that they are to be used in issuing CWA Section 401 Certifications and WDRs, and largely mirror the existing review requirements for CWA Section 404 Permits and Section 401 Certifications, incorporating most elements of the USEPA's *Section 404(b)(1) Guidelines*. Following issuance of the *Procedures*, the SWRCB produced a consolidated application form for dredge/fill discharges that can be used to obtain a CWA Section 401 Water Quality Certification, WDRs, or both.

Non-Wetland Waters of the State

The SWRCB and RWQCBs have not established regulations for field determinations of waters of the State except for wetlands currently. In many cases the RWQCBs interpret the limits of waters of the State to be bounded by the OHWM unless isolated conditions or ephemeral waters are present. However, in the absence of statewide guidance each RWQCB may interpret jurisdictional boundaries within their region and the SWRCB has encouraged applicants to confirm jurisdictional limits with their RWQCB before submitting applications. As determined by the RWQCB, waters of the State may include riparian areas or other locations outside the OHWM, leading to a larger jurisdictional area over a given water body compared to the USACE.

Wetland Waters of the State

Procedures for defining wetland waters of the State pursuant to the SWRCB's *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* went into effect May 28, 2020 (SWRCB 2021). The SWRCB defines an area as a wetland if, under normal circumstances, the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and the area's vegetation is dominated by hydrophytes or the area lacks vegetation. The SWRCB's Implementation Guidance for the Wetland Definition and Procedures for Discharges of Dredge and Fill Material to Waters of the State (2021), states that waters of the U.S. and waters of the State should be delineated using the standard USACE delineation procedures, taking into consideration that the methods shall be modified only to allow for the fact that a lack of vegetation does not preclude an area from meeting the definition of a wetland.

5.4.2.3 State of Arizona

Arizona Department of Agriculture

The Arizona Department of Agriculture is responsible for administering the Arizona Native Plant Law (A.R.S. §§ 3-901 to 3-933), which regulates the harvesting, sale, and transport of native plants to ensure their conservation and sustainable use.

Arizona Native Plant Law

The Arizona Native Plant Law (Arizona Revised Statutes Title 3, Chapter 7) was enacted to protect rare plant species from being over harvested. There are four Protected Native Plant Categories, including Highly Safeguarded, Salvage Restricted, Salvage Assessed, and Harvest Restricted. Removal of species protected under the Arizona Native Plant Law may require pursuing appropriate permits through the Arizona Department of Agriculture.

Arizona Department of Environmental Quality

The ADEQ is the state agency charged with protecting Arizona's water quality in accordance with state and federal laws. ADEQ administers the CWA Section 401 Water Quality Certification program, which requires that any federally permitted project involving discharges into waters of the United States obtain state certification verifying compliance with Arizona's water quality standards. This certification process ensures that activities such as construction, development, or industrial operations do not degrade surface waters or impair beneficial uses. The ADEQ also monitors and regulates surface water quality through the Arizona Pollutant Discharge Elimination System program.

Arizona Game and Fish Department

The AZGFD is the primary state agency responsible for managing and conserving Arizona's wildlife and their habitats. AZGFD administers the state's Wildlife Code and manages programs aimed at protecting game and nongame species throughout the state. The department identifies and prioritizes Species of Greatest Conservation Need (SGCN) as part of the Arizona Wildlife Conservation Strategy, guiding targeted conservation actions to address threats and improve the status of vulnerable species.

Arizona Wildlife Conservation Strategy

The Arizona Wildlife Conservation Strategy is a ten-year plan that seeks to identify species requiring conservation efforts to prevent their listing under the ESA. These species, as designated by the AZGFD, are classified as SGCN (AZGFD 2025).

Species designated as SGCN may be specifically covered under a signed conservation agreement or strategic plan, or may be considered a closed season species (as identified in Arizona Game and Fish Commission Orders 40, 41, 42 or 43).

5.4.2.4 Local

The California Public Utilities Commission (CPUC) has sole and exclusive state jurisdiction over the siting and design of the Proposed Project in California. Pursuant to CPUC General Order (G.O.) 131-E, Section XI.B:

> "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the Commission's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters."

Consequently, local agencies do not have jurisdiction over the Proposed Project, but public utilities must consult with local agencies and consider their regulations.

The Arizona Corporation Commission's Arizona Power Plant and Transmission Line Siting Committee has state jurisdiction over the Proposed Project in Arizona. This committee may approve or deny a Certificate of Environmental Compatibility application and impose reasonable conditions. However, pursuant to Arizona Revised Statutes Section 40-360.06(D):

> "Any certificate granted by the committee shall be conditioned on compliance by the applicant with all applicable ordinances, master plans and regulations of the state, a county or an incorporated city or town, except that the committee may grant a certificate notwithstanding

any such ordinance, master plan or regulation, exclusive of franchises, if the committee finds as a fact that compliance with such ordinance, master plan or regulation is unreasonably restrictive and compliance therewith is not feasible in view of technology available."

As this PEA is being prepared for the CPUC, the following discussion of local land use regulations in California and Arizona is provided for informational purposes only.

Imperial County General Plan

The Conservation and Open Space Element of the Imperial County General Plan provides detailed plans and measures for the preservation and management of biological and cultural resources, soils, minerals, energy, regional aesthetics, air quality, and open space (Imperial County 2016). The purpose of this element is to recognize that natural resources must be maintained for their ecological value for the direct benefit to the public and to protect open space for the preservation of natural resources, the managed production of resources, outdoor recreation, and for public health and safety. In addition, the purpose of this element is to promote the protection, maintenance, and use of the County's natural resources with particular emphasis on scarce resources, and to prevent wasteful exploitation, destruction, and neglect of the state's natural resources. The goals and objectives have been developed to reflect the County's values, aims, and aspirations while the policies and programs implement the goals and objectives and set specific performance objectives. Below are the relevant goals, objectives, and policies contained in the Imperial County General Plan associated with biological resources:

Conservation of Environmental Resources for Future Generations

Goal 1: Environmental resources shall be conserved for the future generations by minimizing environmental impacts in all land use decisions and educating the public on their value.

Objective 1.6: Promote the conservation of ecological sites and preservation of cultural resource sites through scientific investigation and public education.

Conservation of Biological Resources

Goal 2: The County will integrate programmatic strategies for the conservation of critical habitats to manage their integrity, function, productivity, and long-term viability.

Objective 2.1: Designate critical habitats for Federally and State-listed species.

Objective 2.2: Develop management programs, including preservation of habitat for flattailed horned lizard, desert pupfish, and burrowing owl.

Objective 2.3: Support investigation of long-term climate change effects on biological resources.

Objective 2.4: Use the CEQA and NEPA process to identify, conserve and restore sensitive vegetation and wildlife resources.

Open Space and Recreation Conservation

Policy No. 2: The County shall participate in conducting detailed investigations into the significance, location, extent, and condition of natural resources in the County.

Imperial County Municipal Code

The following Imperial County Ordinances pertain to the protection of biological resources:

- Chapter 12.48: Wild Flowers and Trees
  - § 12.48.010 *Picking or destroying of certain trees and flowers*: Requires permits for picking blossoms, branches, leaves, and berries or removing: mountain dogwood, snow play, tiger lily, western azalea, California holly toyon berry, maiden-hair fern, sword fern family, giant canyon fern.
  - § 12.48.030 *Yucca plant*: Restricts digging up, removing or destroying, and picking blooms or blossoms from any Yucca Plant without a permit.
  - § 12.48.040 *Yucca trees*: Restricts digging up, removing or destroying any of the following species without a permit:
    - Quixote plant, Joshua tree, Spanish dagger, desert lily, fan palm, desert holly, desert verbena, desert evening primrose, smoke tree, lupine, ocotillo, desert willow, sand food, scarlet bugler, and indigo bush.
  - § 12.48.050 *Cactus*: Restricts digging up, picking, removing or destroying any of the following species without a permit:
    - Cholla, barrel cactus, giant cactus, strawberry or fish hook cactus, bird nest cactus, acanthus, hedgehog cactus, torch cactus, beavertail cactus, clavate cactus, grizzly bear cactus, optunia cactus, marguey or agaves.
  - § 12.48.070 *Shrubs*: Restricts digging up, removing or destroying crucifixion thorn shrubs without a permit.
- 93102.00 *Prohibited Discharges:* Except as provided in Section 93102.01, no person shall discharge, facilitate, cause, permit, or allow to be discharged to the stormwater conveyance system, either directly or indirectly, any of the following:
  - A. Any non-stormwater, except in compliance with the requirements of this division;
  - B. Any stormwater that may cause or threaten to cause a condition of pollution or nuisance, as defined in California Water Code section 13050;
  - C. Any stormwater that may cause, threaten to cause, or contributes to an exceedance of any water quality standard in a Statewide Water Quality Control Plan, the California Toxics Rule, or the Basin Plan;
  - D. Stormwater containing hazardous substances;
  - E. Runoff in excess of incidental runoff as defined by the state of California Department of Water Resources Phase II Small MS4s General Permit (Order No. 2013-0001-DWQ); and
  - F. Any other stormwater identified by the enforcement agency to be a significant source of pollutants.

Yuma County Comprehensive Plan

The Environmental Element of the Yuma County Comprehensive Plan includes analysis, policies, and strategies to address any anticipated effects of the plan's elements and new development called for by the plan on air and water quality and natural resources (Yuma County 2023). The purpose of this

Element is to assess and outline strategies to avoid, minimize and mitigate anticipated effects on environmental resources. Specific functions include:

- Ensure compliance with existing State and Federal laws
- Recognize the value and condition of existing natural resources in the county and their ecological value.
- Determine the extent to which development activities are required to comply with the goals, objectives and policies contained within the Plan.
- Promote the use of natural resources in the county in a manner that provides for continued economic viability.
- Foster a sense of environmental stewardship between governmental agencies and private entities.

Below are the specific policies contained in the Yuma County Comprehensive Plan Environmental Element associated with biological resources:

- EPP.3: Encourage the protection and preservation of existing habitat areas for threatened or endangered plant and wildlife species.
- EPP.4: Encourage consideration of the natural environment during the review of new development projects including options for the preservation of the native vegetation, wildlife and washes.
- EPP.8: Encourage development to retain washes in their natural state.

Yuma County Municipal Code

The following Yuma County ordinances pertain to the protection of biological resources:

- § 17.06.609 *Environmental Performance Standards*: Requires applications for new construction or reconstruction for non-single-family residential purposes to provide a proposal which addresses:
  - A. Drainage and stormwater runoff
  - B. Natural hazards where affecting the site
  - C. Erosion controls during and after construction
  - D. Reclamation and/or revegetation and landscaping
  - E. Preservation of unique natural features

City of Calexico General Plan

The Conservation/Open Space Element of the City of Calexico General Plan addresses the identification, conservation, development, and use of natural resources. These include, but are not limited to, development of farmland, flood control, water pollution, erosion, and endangered species (City of Calexico 2015). Below are the specific policies contained in the City of Calexico General Plan associated with biological resources (Section 5.4.1.3):

- Policy No. 3
  - a. Support regional and sub-regional efforts to conserve ecological and biological resources in the City and surrounding areas.

- b. Support efforts to integrate natural wetlands treatment systems as part of the New River Improvement Project described in Section 5.2.5.
- c. Projects of one acre or more involving alteration or development of undisturbed land shall be required to submit a biological survey conducted by a qualified biologist to the City of Calexico. A focused biological study may be required if habitat that could potentially support a listed or threatened species exists on the site.

City of Calexico Municipal Code

The following City of Calexico ordinances pertain to the protection of biological resources:

- § 17.09.530 *Property Development Standards – OS Zone*
  - A. *General Requirements:* Requires consideration of development standards for topography, water/drainage, significant ridgeline, oak tree preservation, significant ecological areas, and any environmental factors.
  - B. *Performance Standards:* Requires development in open space areas to:
    - 1. Minimize alteration to the natural landform.
    - 3. Protect the natural drainage of the area.
    - 4. Protect waterways from indiscriminate erosion and pollution.
    - 5. Protect lands having biological significance.
    - 6. Protect areas with significant native vegetation and habitat value.
    - 7. Protect natural areas for ecologic, educational, and other scientific study purposes.
- Chapter 13.50 *Urban Storm Water Quality Management and Discharge Control*
  - Codifies the requirements of Section 402(p)(3) of the Clean Water Act, 33 U.S.C. Section 1342, and the Porter-Cologne Water Quality Control Act, Water Code Section 13000 et seq., as embodied in the city's current National Pollutant Discharge Elimination System (NPDES) permit, and protects water resources from illicit discharge and pollution.
- § 13.50.030 *Discharge prohibitions:* Prohibits any person to:
  - 1. Cause, allow or facilitate any non-storm water discharge except in compliance with the requirements of this chapter and in compliance with any separate individual or general NPDES permit;
  - 2. Cause, allow or facilitate any illicit discharge;
  - 3. Discharge any material into the MS4, or any watercourse within the city's jurisdiction that may cause, or threaten to cause a condition of pollution, contamination, or nuisance within the meaning of California Water Code Section 13050 or that may cause or contribute to a violation of the city's NPDES permit, the Clean Water Act or the Porter-Cologne Water Quality Control Act;
  - 4. Discharge to areas of special biological significance except in compliance with all applicable NPDES permits, waivers, orders and other regulatory controls; or
  - 5. Discharge any water from a premises that is not storm water and that is not incidental runoff.

- § 13.50.070 *Best management practices required:* Requires responsible party for any premises, site, activity, operation, or facility that may discharge any pollutant to the MS4 to implement those best management practices (BMPs) approved by the Director in accordance with this chapter, or with any local, state, or federal law, rule, regulation, or permit
- § 13.50.080 *Watercourse Protection*
  - B. The person responsible for any premises through which a watercourse passes must maintain existing privately owned structures within or adjacent to a watercourse, so that such structures will not become a hazard to the use, function, or physical integrity of the watercourse. Maintenance must be conducted in a manner that does not adversely impact waterway species

5.4.3 Habitat Conservation Plans

The Lower Colorado River (LCR) Multi-Species Conservation Program (MSCP) covers a program area of over 400 miles of the LCR from Lake Mead to the southernmost border with Mexico, and includes the states of California, Nevada, and Arizona. Implemented over a 50-year period, the program accommodates current water diversions and power production, and will optimize opportunities for future water and power development by providing ESA compliance through the implementation of the 2004 LCR MSCP Habitat Conservation Plan, referred to herein as "LCR MSCP HCP" (LCR MSCP 2025a).

The LCR MSCP HCP is implemented by the U.S. Bureau of Reclamation, and includes general and species-specific conservation measures for 27 "covered" species and five "evaluation" species. Covered species are species included under the ESA incidental take authorization and are either currently listed or proposed for listing as threatened or endangered under the ESA or are protected under Arizona, California, or Nevada law; or may become listed during the 50-year LCR MSCP HCP term that are affected by covered activities. Evaluation species are species that could become listed in the future; however, sufficient information was not available at the time the Habitat Conservation Plan was written to determine the effects of covered activities or to develop conservation measures for these species (LCR MSCP 2025b).

The LCR MSCP HCP includes a designated list of covered applicants, such as AGFD or hydroelectric power contract holders (i.e. Parker Dam), and covered activities such as water diversions, conveyance facilities, and electrical generation and transmission facilities (LCR MSCP 2004).

5.4.4 Impact Questions

5.4.4.1 Biological Resources Impact Questions

The thresholds of significance for assessing impacts come from the CEQA Environmental Checklist. For biological resources, the CEQA Checklist asks, would the project:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) or United States Fish and Wildlife Service (USFWS)?
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS?

- Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, and coastal) through direct removal, filling, hydrological interruption, or other means?
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridor, or impede the use of native wildlife nursery sites?
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?
- Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional, or state habitat conservation plan?

5.4.4.2 Additional CEQA Impact Questions

There is one CPUC-identified additional CEQA impact question:

- Would the project create a substantial collision or electrocution risk for birds or bats?

5.4.5 Impact Analysis

5.4.5.1 Biological Resources Impact Analysis

5.4.5.1.1 Biological Resources Methodology

The BRTR (Appendix C-1) summarizes the methodologies used during the desktop review and reconnaissance surveys performed for the Proposed Project. The BRTR discusses observed natural vegetation communities, potentially jurisdictional aquatic features, observed special-status species, and species with the potential to occur within the study area.

5.4.5.1.2 Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status in local or regional plans, policies, or regulations, or by the CDFW or USFWS?

Construction

Project Components in California

Less than Significant Impact with Mitigation. Potential impacts to special-status plant and wildlife species may include temporary loss of habitat associated with ground-disturbing activities such as vegetation trimming, overland travel, and establishment of staging areas and may be potentially significant without mitigation. Permanent loss of habitat would result from the installation of new transmission infrastructure and new or improved access or spur roads. These temporary and permanent impacts may include other direct and indirect impacts that result in direct loss of habitat as described below.

The following subsections describe the impact analyses for special-status plant and wildlife species and critical habitat. This impact analysis is based on the potential for special status species to occur as defined by the presence of suitable habitat and the Project's anticipated disturbance (temporary and permanent) of the suitable habitat within the Project alignment. The mix of vegetation communities that define suitable habitat varies among species but for all species discussed below it

includes one or more of the mapped natural vegetation communities, jurisdictional features or other land cover (e.g., agriculture) mapped within the study area. The total acres of disturbance to individual species' habitat presented below represents a direct overlay of the 30 percent design on mapped habitat features for each species; this represents the extent of suitable habitat for each species along the alignment. In general, a greater amount of suitable habitat equates to a higher potential for species occurrence, and therefore a higher potential for species impacts.

HWT would implement Applicant Proposed Measures (APMs) that would reduce impacts to special-status species. Details on APMs are provided in Section 5.4.6.1.

SPECIAL-STATUS PLANT SPECIES

The eight special-status plant species determined present or likely to occur within the survey area are listed below. No special-status plant species were observed within California during the 2025 reconnaissance surveys. Temporary and permanent disturbance areas are show in Table 5.4-8.

- For Harwood's milkvetch, an annual herb, there are approximately 6,041.4 acres of potentially suitable habitat present in the survey area in California. Approximately 0.6 percent of potentially suitable habitat for Harwood's milkvetch (33.8 acres of 6,041.4 total acres) may be permanently disturbed by the Proposed Project, and approximately 0.2 percent of potentially suitable habitat (13.1 acres of 6,041.4 total acres) may be temporarily disturbed by the Proposed Project.
- For Pierson's milkvetch, a perennial herb, there are approximately 205.4 acres of potentially suitable habitat in the survey area in California. Approximately 16.5 percent of potentially suitable habitat for Pierson's milkvetch (33.8 acres of 205.4 total acres) may be permanently disturbed by the Proposed Project, and approximately 5.7 percent of potentially suitable habitat (11.7 acres of 205.4 total acres) may be temporarily disturbed by the Proposed Project.
- For Wiggins' croton, a perennial shrub, there are approximately 6,041.4 acres of potentially suitable habitat in the survey area in California. Approximately 6.1 percent of potentially suitable habitat for Wiggin's croton (370.7 acres of 6,041.4 total acres) may be permanently disturbed by the Proposed Project, and approximately 25.9 percent of potentially suitable habitat (1,564.2 acres of 6,041.4 total acres) may be temporarily disturbed by the Proposed Project.
- For Algodones Dunes sunflower, a perennial herb, there are approximately 205.4 acres of potentially suitable habitat in the survey area in California. Approximately 16.5 percent of potentially suitable habitat for Algodones Dunes sunflower (33.8 acres of 205.4 total acres) may be permanently disturbed by the Proposed Project, and approximately 5.7 percent of potentially suitable habitat (11.7 acres of 205.4 total acres) may be temporarily disturbed by the Proposed Project.
- For Parish's desert thorn, a perennial shrub, there are approximately 5,835.9 acres of potentially suitable habitat in the survey area in California. Approximately 5.8 percent of potentially suitable habitat for Parish's desert thorn (336.8 acres of 5,835.9total acres) may be permanently disturbed by the Proposed Project, and approximately 26.6 percent of potentially suitable habitat (1,552.5 acres of 5,835.9total acres) may be temporarily disturbed by the Proposed Project.
- For giant spanish-needle, an annual/perennial herb, there are approximately 205.4 acres of potentially suitable habitat in the survey area in California. Approximately 16.5 percent of potentially suitable habitat for giant spanish-needle (33.8 acres of 205.4 total acres) may be

permanently disturbed by the Proposed Project, and approximately 5.7 percent of potentially suitable habitat (11.7 acres of 205.4 total acres) may be temporarily disturbed by the Proposed Project.

- For sand food, a parasitic perennial herb, there are approximately 6,041.4 acres of potentially suitable habitat in the survey area in California. Approximately 6.1 percent of potentially suitable habitat for sand food (370.7 acres of 6,041.4 total acres) may be permanently disturbed by the Proposed Project, and approximately 25.9 percent of potentially suitable habitat (1,564.2 acres of 6,041.4 total acres) may be temporarily disturbed by the Proposed Project.
- For saguaro, a perennial cactus, there are approximately 5,835.9 acres of potentially suitable habitat in the survey area in California. Approximately 5.8 percent of potentially suitable habitat for saguaro (336.8 acres of 5,835.9 total acres) may be permanently disturbed by the Proposed Project, and approximately 26.6 percent of potentially suitable habitat (1,552.5 acres of 5,835.9 total acres) may be temporarily disturbed by the Proposed Project.

Construction activities, including grading, blasting, vegetation clearing and grubbing, earth-moving, and vehicle traffic may result in the direct crushing, removal, or burial of individual plants, and may cause erosion, sedimentation, or increased exposure to natural elements (e.g. excess sun or wind) that may alter the existing habitat for these species. Construction-related traffic may create dust that adheres to leaves and interferes with photosynthesis and plant reproduction. Topsoil disturbed from grading may contain seeds, bulbs, nutrients, and mycorrhizae that special-status plant species may utilize for survival and for maintaining sustainable colonies in an area. Incidental introductions of invasive non-native weeds because of construction activities have the potential to reduce habitat quality in the immediate area and beyond through direct competition and occupation of prime germination sites. Higher percent cover of non-native plants, especially invasive grasses, may also facilitate fires in the area.

New, permanent facilities including transmission infrastructure, new or improved access roads, and spur roads may impact special-status plants directly and would remove suitable habitat and/or individuals.

Approximately 0.2 percent of potentially suitable habitat for Harwood's milkvetch, Pierson's milkvetch (5.7 percent), Wiggin's croton (25.9 percent), Algodones Dunes sunflower (5.7 percent), Parish's desert thorn (26.6 percent), giant spanish-needle (5.7 percent), saguaro (26.6 percent), and sand food (25.9 percent) would be temporarily disturbed by construction of the Proposed Project. Approximately 0.6 percent of potentially suitable habitat for Harwood's milkvetch, Pierson's milkvetch (16.5 percent), Wiggin's croton (6.1 percent), Algodones Dunes sunflower (16.5 percent), Parish's desert thorn (5.8 percent), giant spanish-needle (16.5 percent), saguaro (5.8 percent), and sand food (6.1 percent) be permanently disturbed by construction of the Proposed Project. Overall, direct impacts to these species from Proposed Project construction would be low relative to the total extent of the species' suitable habitat.

To avoid and minimize potential impacts to special-status plants and reduce those impacts to less than significant levels, HWT would implement APMs. Impacts to individuals from construction activities such as native vegetation clearing and grubbing, grading, blasting, and earth-moving would be reduced through implementation of several APMs, beginning with BIO-1: Worker's Environmental Awareness Training (WEAP), to ensure contractor understanding and implementation of the following protective measures. Additionally, BIO-2: Pre-construction Biological Clearance Survey and Monitoring would be implemented, which includes pre-construction biological surveys and flagging boundaries of special-status plants for avoidance, and minimizing

impacts to native plant species, when feasible. Impacts would be further minimized with implementation of APM BIO-8: Special-status Herbaceous Plants, which includes the establishment of 25-foot avoidance buffers based on focused surveys and pre-construction survey results. To avoid and minimize potential impacts to special-status perennial plants, individuals and colonies of these species would be flagged and avoided, when feasible, and APM BIO-9: Special-status Perennial Plants and Other Species would be implemented, which also includes pre-construction surveys and avoidance buffers, if needed. If impacts cannot be avoided, per APM BIO-9, HWT would obtain a Section 2081 Incidental Take Permit (ITP) from CDFW if the species is CESA listed or remains a candidate for listing at the time of construction. To compensate for any permanent loss of individual state listed plants, HWT would implement APM BIO-12: Habitat Compensation Plan, which would demonstrate how HWT would purchase mitigation lands to offset permanent impacts caused by the Proposed Project.

To reduce competition from noxious and invasive weeds, which may crowd out special-status plant species, HWT would develop and implement an Invasive Plant Management Plan (IPMP) as described in APM BIO-7: Develop Invasive Plant Management Plan. If populations or individuals of special-status plants cannot be avoided, HWT would implement restoration activities as described in APM BIO-6: Develop and Implement Habitat Restoration Plan (HRP). The HRP would include provisions to restore special-status plant species removed during Proposed Project construction activities, along with suitable habitat for the species.

Proposed Project implementation of APM BIO-1, APM BIO-7, APM BIO-8, and APM BIO-9, and compliance with any future Proposed Project ITP conditions would reduce impacts to special status plant species to a less than significant level.

SPECIAL-STATUS WILDLIFE SPECIES

Twenty-seven special-status wildlife species have been determined to be present or likely to occur within the survey area, eight of which were documented in California during the 2025 reconnaissance surveys (see Table 5.4-6 and Appendix C-1, Attachment F2).

Potential impacts on special-status wildlife species could occur during grading, blasting, vegetation clearing and grubbing, gravel placement, and installation of new facilities. Vehicle traffic may result in the direct crushing or burial of ground-dwelling wildlife and their burrows and dens. Increased noise, artificial light, and increased human presence may restrict individuals from accessing foraging areas or may alter site conditions and reduce the overall quality of habitat available. The Proposed Project would introduce permanent facilities including transmission infrastructure, new or improved access roads, and spur roads.

Reptiles

Three special-status reptile species were determined present or likely to occur within the survey area in California. Mojave desert tortoise (FT, DRECP, SE, SGCN) was determined present based on one potential inactive desert tortoise burrow observed during 2025 reconnaissance surveys in California along Segment 1-1B. While no live tortoise were observed, potentially suitable habitat exists in the foothills and mountains west of the Colorado River, including approximately 5,835.9 acres in the survey area. Approximately 5.8 percent of potentially suitable habitat for desert tortoise (336.8 acres of 5,835.9 total acres) may be permanently disturbed by the Proposed Project, and approximately 26.6 percent of potentially suitable habitat (1,552.5 acres of 5,835.9 total acres) may be temporarily disturbed by the Proposed Project.

Two additional reptile species, flat-tailed horned lizard and Colorado Desert fringe-toed lizard, are also expected to occur in California.

Flat-tailed horned lizard (CDFW SSC, SGCN) was not observed in the survey area in California during 2025 reconnaissance surveys; however, there are approximately 6,041.4 acres of potentially suitable habitat within the survey area. Approximately 6.1 percent of potentially suitable habitat for flat-tailed horned lizard (370.7 acres of 6,041.4total acres) may be permanently disturbed by the Proposed Project, and approximately 25.9 percent of potentially suitable habitat (1,564.2 acres of 6,041.4 total acres) may be temporarily disturbed by the Proposed Project.

Colorado Desert fringe-toed lizard (CDFW SSC, BLM S, DRECP, SGCN) was not observed in the survey area in California during 2025 reconnaissance surveys; however, there are approximately 6,041.4 acres of potentially suitable habitat within the survey area. Approximately 6.1 percent of potentially suitable habitat for Colorado Desert fringe-toed lizard (370.7 acres of 6,041.4 total acres) may be permanently disturbed by the Proposed Project, and approximately 25.9 percent of potentially suitable habitat (1,564.2 acres of 6,041.4 total acres) may be temporarily disturbed by the Proposed Project.

Potential construction impacts to special status reptiles may result from ground-disturbing activities, including vehicle or equipment strikes, individuals falling into excavation areas, reduction of refugia habitats, and by accidental crushing or burying of active burrows by construction vehicles and activities. Ground-disturbing activities have the potential to increase colonization of weedy species and reduce native vegetation cover. Incidental introductions of invasive non-native weeds have the potential to reduce habitat quality in the immediate area and beyond through direct competition and occupation of prime germination sites for suitable food plant species. Human activities and food waste may also pose threats to special-status reptiles by attracting opportunistic predators such as ravens, coyotes, and feral dogs to construction work areas. The watering of access roads and construction work areas for dust mitigation can result in ponding, which can attract reptiles into areas where they may be more susceptible to direct impacts.

Approximately 26.6 percent of potentially suitable habitat for desert tortoise, flat-tailed horned lizard (25.9 percent), and Colorado Desert fringe-toed lizard (25.9 percent) could be temporarily disturbed by construction of the Proposed Project in California. Approximately 5.8 percent of potentially suitable habitat for desert tortoise, flat-tailed horned lizard (6.1 percent), and Colorado Desert fringe-toed lizard (6.1 percent) could be permanently disturbed by construction of the Proposed Project in California. However, work within these areas would not cause the local population of desert tortoise, flat-tailed horned lizard, or Colorado Desert fringe-toed lizards to become unviable or preclude movement, dispersal, or gene flow within the population; nor would it substantially reduce the availability of forage plant species, invertebrate prey species, suitable substrates and vegetation for burrowing and shelter, or habitat protected from disturbance and human-caused mortality within suitable habitat areas.

Potential impacts to special-status reptile species and suitable habitat during construction include permanent and temporary impacts. The majority of impacts will be temporary and intermittent in nature (lasting only as long as construction work at a given site) and would be limited in their potential geographic scope. New, permanent facilities including new transmission infrastructure, new or improved access roads, and spur roads would result in the permanent removal of suitable habitat for special-status reptile species.

Impacts to special-status reptile species may be significant without mitigation. To avoid and minimize impacts to desert tortoise and other special-status reptiles from Proposed Project activities such as native vegetation clearing, grubbing, grading, blasting, and gravel placement, HWT would implement APM BIO-2: Pre-construction Biological Clearance Survey and Monitoring, which includes pre-construction biological surveys and flagging for avoidance of sensitive plants, burrows, and locations of any special-status reptiles and minimizing impacts to native vegetation when feasible. HWT would also implement APM BIO-1: WEAP to ensure contractor understanding and implementation of these protective measures. Further, HWT would implement APM BIO-5: Desert Tortoise, which includes pre-construction surveys, and construction monitoring to avoid impacts to desert tortoise; and for areas and construction activities where avoidance is not possible, obtaining necessary permits, such as an ITP from CDFW or other agency authorizations for lands under their jurisdiction.

To reduce impacts to suitable habitat for desert tortoise and other special-status reptile species resulting from introduction of noxious and invasive weeds which may reduce habitat quality for sensitive reptile species, HWT would develop and implement an IPMP as described in APM BIO-7. If impacts to desert tortoise and special-status reptile habitat cannot be avoided, HWT would implement restoration activities as described in APM BIO-6: Develop and Implement HRP. The HRP would include provisions to restore suitable habitat for desert tortoise and special-status reptile species if such habitat is removed during Proposed Project work activities. To compensate for any permanent loss of habitat, HWT would implement APM BIO-12: Habitat Compensation Plan, which would demonstrate how HWT would purchase mitigation lands to offset permanent impacts caused by the Proposed Project. The measures outlined in these APMs would serve to avoid and minimize potential impacts to the desert tortoise and other special-status reptile species. With the implementation of these APMs, impacts to special-status reptiles would be less than significant.

Birds

Of the 26 special-status wildlife species determined to be present or likely to occur within the survey area in California, 16 are bird species. Eight special-status bird species were observed within the survey area in California during reconnaissance surveys: burrowing owl, yellow-breasted chat, loggerhead shrike, Gila woodpecker, double-crested cormorant, osprey, black-tailed gnatcatcher, and yellow warbler. The nine other special-status bird species likely to occur in the survey area within California are listed below.

- Mountain plover (CDFW SSC, USFWS BCC, BLM S, SGCN) was not observed in the survey area in California during 2025 reconnaissance surveys; however, there are approximately 2,611.1 acres of potentially suitable habitat within the survey area. Approximately 2.7 percent of potentially suitable habitat (71.0 acres of 2,611.1 total acres) may be permanently disturbed by the Proposed Project, and approximately 19.4 percent of potentially suitable habitat (506.5 acres of 2,611.1 total acres) may be temporarily disturbed by the Proposed Project.
- Western yellow-billed cuckoo (FT, SE, BLM S, SGCN) was not observed in the survey area in California during 2025 reconnaissance surveys; however, there are approximately 521.5 acres of potentially suitable habitat within the survey area. Approximately 4.3 percent of potentially suitable habitat (22.5 acres of 521.5 total acres) may be permanently disturbed by the Proposed Project, and approximately 20.5 percent of potentially suitable habitat (107.1 acres of 521.5 total acres) may be temporarily disturbed by the Proposed Project.

- Southwestern willow flycatcher (FE, SE, SGCN) was not observed in the survey area in California during 2025 reconnaissance surveys; however, there are approximately 650.2 acres of potentially suitable habitat within the survey area. Approximately 4.8 percent of potentially suitable habitat (31.5 acres of 650.2 total acres) may be permanently disturbed by the Proposed Project, and approximately 18.3 percent of potentially suitable habitat (119.1 acres of 650.2 total acres) may be temporarily disturbed by the Proposed Project.
- Least bittern (CDFW SSC, SGCN) was not observed in the survey area in California during 2025 reconnaissance surveys; however, there are approximately 642.9 acres of potentially suitable habitat within the survey area. Approximately 3.5 percent of potentially suitable habitat (22.2 acres of 642.9 total acres) may be permanently disturbed by the Proposed Project, and approximately 14.5 percent of potentially suitable habitat (93.1 acres of 642.9 total acres) may be temporarily disturbed by the Proposed Project.
- California black rail (ST, CDFW FP, BLM S, SGCN) was not observed in the survey area in California during 2025 reconnaissance surveys; however, there are approximately 128.7 acres of potentially suitable habitat within the survey area. Approximately 6.9 percent of potentially suitable habitat (8.9 acres of 128.7 total acres) may be permanently disturbed by the Proposed Project, and approximately 9.4 percent of potentially suitable habitat (12.1 acres of 128.7 total acres) may be temporarily disturbed by the Proposed Project.
- Yuma clapper rail (FE, ST, LCR MSCP CS) was not observed in the survey area in California during 2025 reconnaissance surveys; however, there are approximately 485.5 acres of potentially suitable habitat within the survey area. Approximately 4.2 percent of potentially suitable habitat (20.6 acres of 485.5 total acres) may be permanently disturbed by the Proposed Project, and approximately 18.8 percent of potentially suitable habitat (91.1 acres of 485.5 total acres) may be temporarily disturbed by the Proposed Project.
- Yuma Ridgway's rail (FE, ST, CDFW FP, SGCN) was not observed in the survey area in California during 2025 reconnaissance surveys; however, there are approximately 485.5 acres of potentially suitable habitat within the survey area. Approximately 4.2 percent of potentially suitable habitat (20.6 acres of 485.5 total acres) may be permanently disturbed by the Proposed Project, and approximately 18.8 percent of potentially suitable habitat (91.1 acres of 485.5 total acres) may be temporarily disturbed by the Proposed Project.
- Sonoran yellow warbler (CDFW SSC, SGCN) was not observed in the survey area in California during 2025 reconnaissance surveys and there is no suitable habitat within the survey area in California. Therefore, no permanent or temporary impacts are expected to potentially suitable habitat by the Proposed Project.
- Arizona Bell's vireo (SE, BLM S, SGCN) was not observed in the survey area in California during 2025 reconnaissance surveys; however, there are approximately 642.9 acres of potentially suitable habitat within the survey area. Approximately 3.5 percent of potentially suitable habitat (22.2 acres of 642.9 total acres) may be permanently disturbed by the Proposed Project, and approximately 14.5 percent of potentially suitable habitat (93.1 acres of 642.9 total acres) may be temporarily disturbed by the Proposed Project.
- Burrowing owl (SCE, CDFW SSC, USFWS BCC, DRECP, SGCN) were observed within the survey area in California during the 2025 reconnaissance surveys within Segment 3-3C, along the western extents of the survey area. Multiple individuals were observed both in and out of their burrows, and additional burrows were observed without owls in view. There are approximately 8,561.7 acres of potentially suitable habitat within the survey area. Approximately 5.1 percent of potentially suitable habitat (433.2 acres of 8,561.7 total acres) may be permanently disturbed

by the Proposed Project, and approximately 24.1 percent of potentially suitable habitat (2,066.5 acres of 8,561.7 total acres) may be temporarily disturbed by the Proposed Project.

- Yellow-breasted chat (CDFW SSC, SGCN) were observed in the survey area in California during the 2025 biological reconnaissance surveys in Segment 1-1B. There are approximately 875.6 acres of potentially suitable habitat within the survey area. Approximately 5.7 percent of potentially suitable habitat (50.2 acres of 875.6 total acres) may be permanently disturbed by the Proposed Project, and approximately 15.4 percent of potentially suitable habitat (90.8 acres of 875.6 total acres) may be temporarily disturbed by the Proposed Project.
- Loggerhead shrike (CDFW SSC) were observed in California during the 2025 biological reconnaissance surveys in Segment 2-2 flying around, and perched within, a tamarisk thicket. There are approximately 7,170.3 acres of potentially suitable habitat within the survey area. Approximately 5.8 percent of potentially suitable habitat (414.0 acres of 7,170.3 total acres) may be permanently disturbed by the Proposed Project, and approximately 24.4 percent of potentially suitable habitat (1748.8 acres of 7,170.3 total acres) may be temporarily disturbed by the Proposed Project.
- Gila woodpecker (SE, USFWS BCC, BLM S, SGCN) were observed in the survey area in California during the 2025 biological reconnaissance surveys in Segment 1B. There are approximately 9,729.3 acres of potentially suitable habitat within the survey area. Approximately 4.8 percent of potentially suitable habitat (468.0 acres of 9,729.3 total acres) may be permanently disturbed by the Proposed Project, and approximately 23.2 percent of potentially suitable habitat (2,252.5 acres of 9,729.3 total acres) may be temporarily disturbed by the Proposed Project.
- Double-crested cormorant (CDFW WL) are present in the survey area in California and were observed during the 2025 biological reconnaissance surveys in Segment 3B. There are approximately 161.4 acres of potentially suitable habitat within the survey area. Less than 1.0 percent of potentially suitable habitat (1.6 acres of 161.4 total acres) may be permanently disturbed by the Proposed Project, and approximately 1.4 percent of potentially suitable habitat (2.3 acres of 161.4 total acres) may be temporarily disturbed by the Proposed Project.
- Osprey (CDFW WL) are present in the survey area in California and were observed during the 2025 biological reconnaissance surveys in Segment 1-1B. There are approximately 286.1 acres of potentially suitable habitat within the survey area. Approximately 3.7 percent of potentially suitable habitat (10.6 acres of 286.1 total acres) may be permanently disturbed by the Proposed Project, and approximately 4.9 percent of potentially suitable habitat (14.1 acres of 286.1 total acres) may be temporarily disturbed by the Proposed Project.
- Black-tailed gnatcatchers (CDFW WL, SGCN) are present in the survey area in California and were observed during the 2025 biological reconnaissance surveys in Segment 1-1B in blue palo verde – desert ironwood woodlands. There are approximately 6,914.9 acres of potentially suitable habitat within the survey area. Approximately 5.7 percent of potentially suitable habitat (394.7 acres of 6,914.9 total acres) may be permanently disturbed by the Proposed Project, and approximately 24.8 percent of potentially suitable habitat (1,716.7 acres of 6,914.9 total acres) may be temporarily disturbed by the Proposed Project.
- Yellow warbler (CDFW SSC) are present in the survey area in California and were observed during the 2025 biological reconnaissance surveys in Segment 1-1B. There are approximately 481.4 acres of potentially suitable habitat within the survey area. Approximately 4.3 percent of potentially suitable habitat (20.6 acres of 481.4 total acres) may be permanently disturbed by the Proposed Project, and approximately 18.9 percent of potentially suitable habitat (90.8 acres of 481.4 total acres) may be temporarily disturbed by the Proposed Project.

Proposed Project construction work activities would potentially impact special-status birds, their nests, and nesting and foraging habitats. Potential impacts may result from vegetation clearing and ground disturbance within nesting and foraging habitat, as well as accidental crushing or burying of ground nests or active burrows by construction vehicles. An increase in vehicle traffic, noise at work sites, and human presence could result in an interruption of normal bird nesting behaviors or nest abandonment. Proposed Project activities may potentially impact the quality of foraging habitat for raptors, passerines, and other special-status bird species that use habitats within the study area. The majority of these potential impacts to nesting and special-status bird species during construction would be temporary and intermittent in nature (lasting only as long as construction work at a given site) and would be limited in their potential geographic scope.

The Proposed Project would introduce, permanently, new transmission infrastructure, new or improved access roads, and spur roads. New poles and transmission lines could result in a risk of collisions, line strikes, or electrocution to special-status and non-special-status migratory birds in the future. New or improved access roads would also remove suitable habitat within the study area for bird species.

Special-status bird species that are present or likely to occur within the study area in California are found in several different habitat types including general desert scrub and riparian vegetation communities. Within these vegetation communities, the quantity of suitable habitat removed would be low relative to the extent of these habitat types mapped throughout the study area and would result in less than significant impact to these species. To avoid potential line strikes or electrocution to birds, the Proposed Project transmission facilities would be designed while considering the latest guidance provided in the Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2025. This guidance is expected to be issued in the fall of 2025 and HWT will review and incorporate into their design, as feasible. Transmission facilities would also be evaluated for potential collision reduction devices in accordance with Reducing Avian Collisions with Power Lines: The State of Art in 2012 (APLIC 2012). Design consistency with APLIC would reduce any collision or electrocution impacts to a less than significant level.

Impacts to special-status bird species may be significant without mitigation. To ensure compliance with MBTA and CFGC section 3503.5 and to avoid and minimize potentially significant impacts to special-status bird species from construction activities, HWT would implement APM BIO-1: WEAP, to ensure contractor understanding and implementation of these protective measures. HWT would develop a Nesting Bird Management Plan per APM BIO-3. The survey, avoidance, and adaptive management measures in the Plan would reduce impacts to nesting birds within the study area. Avoidance and minimization measures for the burrowing owl are provided in APM BIO-4 and include a pre-construction survey, preparation of a burrowing owl management plan, and conducting protocol-level surveys for burrowing owls. In addition, mitigation strategies such as restoration of suitable avian habitat are addressed in APM BIO-6: Develop and Implement HRP, and reduction of weed competition with important plant species in APM BIO-7: Develop and Implement IPMP. To compensate for any permanent loss of habitat, HWT would implement APM BIO-12: Habitat Compensation Plan, which would demonstrate how HWT would purchase mitigation lands to offset permanent impacts caused by the Proposed Project. With the implementation of these APMs, impacts to special-status birds would be less than significant.

Mammals

Of the 26 special-status wildlife species determined to be present or likely to occur within the survey area in California, six are mammal species. No special-status mammals were observed during reconnaissance surveys in California; however, the species below have potential to occur.

Western red bat (CDFW SSC, LCR MSCP CS) was not observed in the survey area in California during 2025 reconnaissance surveys; however, there are approximately 7,604.0 acres of potentially suitable habitat within the survey area. Approximately 6.3 percent of potentially suitable habitat (481.4 acres of 7,604.0 total acres) may be permanently disturbed by the Proposed Project, and approximately 22.8 percent of potentially suitable habitat (1,733.2 acres of 7,604.0 total acres) may be temporarily disturbed by the Proposed Project.

California leaf-nosed bat (CDFW SSC, BLM S, SGCN) was not observed in the survey area in California during 2025 reconnaissance surveys; however, there are approximately 7,604.0 acres of potentially suitable habitat within the survey area. Approximately 6.3 percent of potentially suitable habitat (481.4 acres of 7,604.0 total acres) may be permanently disturbed by the Proposed Project, and approximately 22.8 percent of potentially suitable habitat (1,733.2 acres of 7,604.0 total acres) may be temporarily disturbed by the Proposed Project.

Yuma hispid cotton rat (CDFW SSC, BLM S, SGCN) was not observed in the survey area in California during 2025 reconnaissance surveys; however, there are approximately 6,494.8 acres of potentially suitable habitat within the survey area. Approximately 4.0 percent of potentially suitable habitat (257.3 acres of 6,494.8 total acres) may be permanently disturbed by the Proposed Project, and approximately 27.2 percent of potentially suitable habitat (1,765.2 acres of 6,494.8 total acres) may be temporarily disturbed by the Proposed Project.

American badger (CDFW SSC, BLM S, SGCN) was not observed in the survey area in California during 2025 reconnaissance surveys; however, there are approximately 4,613.3 acres of potentially suitable habitat within the survey area. Approximately 5.1 percent of potentially suitable habitat (234.8 acres of 4,613.3 total acres) may be permanently disturbed by the Proposed Project, and approximately 29.2 percent of potentially suitable habitat (1,345.3 acres of 4,613.3 total acres) may be temporarily disturbed by the Proposed Project.

Desert kit fox (DRECP) was not observed in the survey area in California during 2025 reconnaissance surveys; however, there are approximately 10,567.5 acres of potentially suitable habitat within the survey area. Approximately 5.4 percent of potentially suitable habitat (571.5 acres of 10,567.5 total acres) may be permanently disturbed by the Proposed Project, and approximately 24.8 percent of potentially suitable habitat (2,621.2 acres of 10,567.5 total acres) may be temporarily disturbed by the Proposed Project.

Desert big horn sheep (CDFW FP, BLM S, DRECP) were not observed in California during reconnaissance surveys, however they were observed directly across the state line, in Arizona. Approximately 6,474.8 acres of potentially suitable habitat exists in the survey area. Approximately 5.8 percent of potentially suitable habitat (377.0 acres of 6,474.8 total acres) may be permanently disturbed by the Proposed Project, and approximately 25.3 percent of potentially suitable habitat (1,634.9 acres of 6,474.8 total acres) may be temporarily disturbed by the Proposed Project.

Potential impacts to special-status mammal species may result from ground disturbing activities that can include vehicle or equipment strikes, individuals falling into excavation areas or from height (e.g. big horn sheep lambs falling from cliffs due to being startled by vehicles, equipment, or helicopters), disruption of migration pathways or water sources, reduction of refugia habitats, and

accidental crushing or burying of active burrows by construction vehicles and activities. Ground-disturbing activities have the potential to increase colonization of weed species and reduce native vegetation. Incidental introductions of invasive non-native weeds have the potential to reduce habitat quality in the immediate area and beyond through direct competition and occupation of prime germination sites of prime forage species. The majority of potential impacts to special-status mammal species during construction of the Proposed Project would be temporary and intermittent in nature and would be limited in their potential geographic scope.

Permanent impacts from the new transmission infrastructure, new or improved access roads, and spur roads would remove suitable habitat for special-status species. Potentially suitable habitat removed through Project implementation would be minimal relative to the acreage of potentially suitable habitat throughout the study area and would result in a less than significant impact to these species.

Impacts to special-status mammal species may be significant without mitigation. To generally avoid and minimize potential impacts to special-status mammals during construction, HWT would implement APM BIO-2: Pre-construction Biological Clearance Survey and Monitoring, which includes pre-construction biological surveys and flagging boundaries of special-status plants, special-status mammal burrows, watering holes, and other relevant species habitat for avoidance, when feasible. HWT would also implement APM BIO-1: WEAP to ensure contractor understanding and implementation of these protective measures. Mitigation strategies addressed in APM BIO-6: Develop and Implement HRP, and APM BIO-7: Develop and Implement IPMP would reduce weed competition with essential native forage species for mammals. Implementation of APM BIO-11: Avoid Impacts to Desert Big horn Sheep will ensure any big horn sheep individuals or associated sensitive resources (watering holes) are identified prior to doing construction so impacts so they can be avoided. Limited operating period around known lambing areas, if present, will also further reduce impacts. To compensate for any permanent loss of habitat, HWT would implement APM BIO-12: Habitat Compensation Plan, which would demonstrate how HWT would purchase mitigation lands to offset permanent impacts caused by the Proposed Project. Implementation of these APMs would reduce direct and indirect impacts to all mammals.

With the implementation of these APMs, impacts to special-status mammals would be less than significant.

Project Components in Arizona

Less than Significant Impact with Mitigation. Potential impacts to special-status plant and wildlife species may include temporary loss of habitat associated with ground-disturbing activities including vegetation trimming, overland travel, and establishment of staging areas. Permanent loss of habitat would result from the installation of new transmission infrastructure and new or improved access and spur roads. These temporary and permanent impacts may include other direct and indirect impacts than direct loss of habitat as described below.

The following subsections describe the impact analyses for special-status plant and wildlife species and critical habitat. HWT would implement APMs that would reduce impacts to special-status species. Details on APMs are provided in Section 5.4.6.1.

SPECIAL-STATUS PLANT SPECIES

The five special-status plant species determined present or likely to occur within the study area in Arizona are listed below.

- For Saguaro, a perennial cactus, there are approximately 602.2 acres of potentially suitable habitat present in the survey area in Arizona. Approximately 7.4 percent of potentially suitable habitat for saguaro (44.5 acres of 602.2 total acres) may be permanently disturbed by the Proposed Project, and approximately 8.6 percent of potentially suitable habitat (51.5 acres of 602.2 total acres) may be temporarily disturbed by the Proposed Project.
- For Harwood's milkvetch, an annual herb, there are approximately 602.2 acres of potentially suitable habitat are present in the survey area in Arizona. The Project would not permanently disturb any potentially suitable habitat for Harwood's milkvetch (0 acres of 602.2 total acres). Approximately 0.2 percent of potentially suitable habitat (51.4 acres of 602.2 total acres) may be temporarily disturbed by the Proposed Project.
- For Wiggins' croton, a perennial shrub, there are approximately 602.2 acres of potentially suitable habitat in the survey area in Arizona. Approximately 7.4 percent of potentially suitable habitat for Wiggin's croton (44.5 acres of 602.2 total acres) may be permanently disturbed by the Proposed Project, and approximately 8.6 percent of potentially suitable habitat (51.5 acres of 602.2 total acres) may be temporarily disturbed by the Proposed Project.
- For Parish's desert thorn, a perennial shrub, there are approximately 602.2 acres of potentially suitable habitat in the survey area in Arizona. Approximately 7.4 percent of potentially suitable habitat for Parish's desert thorn (44.5 acres of 602.2 total acres) may be permanently disturbed by the Proposed Project, and approximately 8.6 percent of potentially suitable habitat (51.5 acres of 602.2 total acres) may be temporarily disturbed by the Proposed Project.
- For sand food, a parasitic perennial herb, there are approximately 602.2 acres of potentially suitable habitat in the survey area in Arizona. Approximately 7.4 percent of potentially suitable habitat for sand food (44.5 acres of 602.2 total acres) may be permanently disturbed by the Proposed Project, and approximately 8.6 percent of potentially suitable habitat (51.5 acres of 602.2 total acres) may be temporarily disturbed by the Proposed Project.

Construction activities, including grading, blasting, vegetation clearing and grubbing, earth-moving, and vehicle traffic may result in the direct crushing, removal, or burial of individual plants, and may cause erosion and/or sedimentation that may alter the existing habitat for these species (e.g. excess exposure to sun or wind). Construction-related traffic may create dust that adheres to leaves and interferes with photosynthesis and plant reproduction. Topsoil impacted from grading may contain seeds, bulbs, nutrients, and mycorrhizae that special-status plant species may utilize for survival and for maintaining sustainable colonies in an area. Incidental introductions of invasive non-native weeds because of construction activities have the potential to reduce habitat quality in the immediate area and beyond through direct competition and occupation of prime germination sites. Higher percent cover of non-native plants, especially invasive grasses, may also facilitate fires in the area.

New, permanent facilities including transmission infrastructure, new or improved access roads, and spur roads may impact special-status plants directly and would remove suitable habitat.

Approximately 8.6 percent of potentially suitable habitat for saguaro, Harwood's milkvetch (0.2 percent), Wiggin's croton (8.6 percent), Parish's desert thorn (8.6 percent), and sand food (8.6 percent) could be temporarily disturbed by construction of the Proposed Project. Approximately 7.4 percent of potentially suitable habitat for saguaro, Wiggin's croton (7.4 percent), Parish's desert thorn (7.4 percent), and sand food (7.4 percent) could be permanently disturbed by construction of the Proposed Project. Overall, direct impacts to these species from Proposed Project construction would likely be negligible relative to the total extent of the species' suitable habitat. To avoid and

minimize potential impacts to special-status plant species from construction activities such as native vegetation clearing and grubbing, grading, blasting, and earth-moving, HWT would implement APM BIO-2: Pre-construction Biological Clearance Survey and Monitoring, and APM BIO-9: Special-status Perennial Plants and Other Species, which includes pre-construction surveys and buffers flagging special-status plants, and minimizing native vegetation impacts when feasible. HWT would also implement APM BIO-1: WEAP to ensure contractor understanding and implementation of these protective measures. Impacts to special-status plant species may be significant without mitigation.

To avoid and minimize potential impacts to special-status herbaceous plants, individuals and colonies of these species would be flagged and avoided, when feasible, and APM BIO-8: Special-status Herbaceous Plants would be implemented, which includes pre-construction surveys and initial establishment of 25-foot avoidance buffers based on focused surveys and pre-construction survey results. If a smaller buffer is required, HWT will develop and implement a site-specific monitoring plan to minimize direct impacts to special-status plants. To avoid and minimize potential impacts to special-status perennial plants, individuals and colonies of these species would be flagged and avoided, when feasible, and APM BIO-9: Special-status Perennial Plants and Other Species would be implemented, which includes pre-construction surveys and buffers to avoid saguaros and their seeds and seedbanks as agreed to by AZGF. If impacts cannot be avoided, per APM BIO-9, HWT would consult with AZGF to obtain authorization for removal or transplant

To reduce competition from noxious and invasive weeds, which may crowd out special-status plant species, HWT would develop and implement an IPMP as described in APM BIO-7: Develop and Implement IPMP. If populations or individuals of special-status plants cannot be avoided, HWT would implement restoration activities as described in APM BIO-6: Develop and Implement HRP. The HRP would include provisions to restore special-status plant species removed during Proposed Project construction activities, along with suitable habitat for the species.

Proposed Project implementation of APM BIO-2, APM BIO-8, APM BIO-9, APM BIO-1, and APM BIO-7 and compliance with the ITP conditions would reduce impacts to special status plant species to a less than significant level.

SPECIAL-STATUS WILDLIFE SPECIES

None of the 27 special-status wildlife species that are present or have the potential to occur within the study area were observed in Arizona, however suitable habitat is present for 26 of 27 species and is described in greater detail below.

Potential impacts on special-status wildlife species could occur during grading, blasting, vegetation clearing and grubbing, gravel placement, and installation of new facilities. Vehicle traffic may result in the direct crushing or burial of ground-dwelling wildlife and their burrows and dens. Increased noise, artificial light, and increased human presence may restrict individuals from accessing foraging areas or may alter site conditions and reduce the overall quality of habitat available. The Proposed Project would introduce permanent facilities including transmission infrastructure, new or improved access roads, and spur roads.

Reptiles

While no special-status reptile species were observed during 2025 reconnaissance surveys, the below special-status wildlife species have the potential to occur in the study area within Arizona based on the presence of suitable habitat.

- Sonoran desert tortoise (SGCN) was not observed in the survey area within Arizona during 2025 reconnaissance surveys; however, approximately 602.2 acres of suitable habitat are present in the survey area. Approximately 7.4 percent of potentially suitable habitat for desert tortoise (44.5 acres of 602.2 total acres) may be permanently disturbed by the Proposed Project, and approximately 8.6 percent of potentially suitable habitat (51.5 acres of 602.2 total acres) may be temporarily disturbed by the Proposed Project.
- Flat-tailed horned lizard (CDFW SSC, SGCN) was not observed in the survey area within Arizona during 2025 reconnaissance surveys; however, approximately 610.0 acres of suitable habitat are present in the survey area. Approximately 7.3 percent of potentially suitable habitat for flat-tailed horned lizard (44.6 acres of 610.0 total acres) may be permanently disturbed by the Proposed Project, and approximately 8.5 percent of potentially suitable habitat (51.7 acres of 610.0 total acres) may be temporarily disturbed by the Proposed Project.
- Colorado Desert fringe-toed lizard (CDFW SSC, BLM S, DRECP, SGCN) was not observed in the survey area within Arizona during 2025 reconnaissance surveys; however, there are approximately 602.2 acres of potentially suitable habitat within the survey area. Approximately 7.4 percent of potentially suitable habitat for Colorado Desert fringe-toed lizard (44.5 acres of 602.2 total acres) may be permanently disturbed by the Proposed Project, and approximately 8.6 percent of potentially suitable habitat (51.5 acres of 602.2 total acres) may be temporarily disturbed by the Proposed Project.

Potential construction impacts to special status reptiles in Arizona may result from ground-disturbing activities, including vehicle or equipment strikes, individuals falling into excavation areas, reduction of refugia habitats, and by accidental crushing or burying of active burrows by construction vehicles and activities. Ground-disturbing activities have the potential to increase colonization of weedy species and reduce native vegetation cover. Incidental introductions of invasive non-native weeds have the potential to reduce habitat quality in the immediate area and beyond through direct competition and occupation of prime germination sites for suitable food plant species. Human activities and food waste may also pose threats to special-status reptiles by attracting opportunistic predators such as ravens, coyotes, and feral dogs to construction work areas. The watering of access roads and construction work areas for dust mitigation can result in ponding, which can attract reptiles into areas where they may be more susceptible to direct impacts. Impacts to special-status reptile species will be potentially significant without mitigation.

Approximately 8.6 percent of potentially suitable habitat for desert tortoise, flat-tailed horned lizard (8.5 percent), and Colorado Desert fringe-toed lizard (8.6 percent) could be temporarily disturbed by construction of the Proposed Project. Approximately 7.4 percent of potentially suitable habitat for desert tortoise, flat-tailed horned lizard (7.3 percent), and Colorado Desert fringe-toed lizard (7.4 percent) could be permanently disturbed by construction of the Proposed Project. Although suitable habitat is present within the study area, where potential temporary and permanent impact areas would occur, work within these areas would not cause the local population of flat-tailed horned lizards or Colorado Desert fringe-toed lizards to become unviable or preclude movement, dispersal, or gene flow within the population; nor would it substantially reduce the availability of forage plant species, invertebrate prey species, suitable substrates and vegetation for burrowing and shelter, or habitat protected from disturbance and human-caused mortality within suitable habitat areas.

Potential impacts to special-status reptile species and suitable habitat during construction includes permanent and temporary impacts. The majority of impacts will be temporary and intermittent in nature (lasting only as long as construction work at a given site) and would be limited in their potential geographic scope. New, permanent facilities including new transmission infrastructure,

new or improved access roads, blasting areas, and spur roads would result in the permanent removal of suitable habitat for special-status reptile species. The quantity of habitat permanently removed would be low relative to the extent of potential suitable habitat present throughout the survey area (less than 8 percent of available habitat within the survey area for all special status reptile species).

Impacts to special-status reptile species may be significant without mitigation. To avoid and minimize potential impacts to special-status reptiles from Proposed Project activities such as native vegetation clearing, grubbing, grading, blasting, and gravel placement, HWT would implement APM BIO-2: Pre-construction Biological Clearance Survey and Monitoring, which includes pre-construction biological surveys and flagging boundaries of special-status reptile burrows, watering holes, and other habitat for avoidance, when feasible. HWT would also implement APM BIO-1: WEAP to ensure contractor understanding and implementation of these protective measures. Further, HWT would implement APM BIO-5: Desert Tortoise, which includes pre-construction surveys, and construction monitoring to avoid impacts to desert tortoise; and for areas and construction activities where avoidance is not possible, obtaining necessary permits, such as an ITP from CDFW or other agency authorizations for lands under their jurisdiction.

To reduce impacts to suitable habitat resulting from introduction of noxious and invasive weeds which may reduce habitat quality for special-status reptile species, HWT would develop and implement an IPMP as described in APM BIO-7: Develop and Implement IPMP. If impacts to special-status reptile habitat cannot be avoided, HWT would implement restoration activities as described in APM BIO-6: Develop and Implement HRP. The HRP would include provisions to restore suitable habitat for special-status reptile species if such habitat is removed during Proposed Project work activities. The measures outlined in these APMs would serve to avoid and minimize potential impacts to special-status reptile species. With the implementation of these avoidance measures and APMs, impacts to special-status reptiles would be less than significant.

Birds

While no special-status bird species were observed during 2025 reconnaissance surveys within Arizona, the below special-status bird species could occur in the study area based on the presence of suitable habitat.

- Burrowing owl (SCE, CDFW SSC, USFWS BCC, DRECP, SGCN) was not observed in the survey area in Arizona during 2025 reconnaissance surveys; however, approximately 614.1 acres of suitable habitat is present in the survey area. Approximately 7.3 percent of potentially suitable habitat (44.6 acres of 614.1 total acres) may be permanently disturbed by the Proposed Project, and approximately 8.4 percent of potentially suitable habitat (51.7 acres of 614.1 total acres) may be temporarily disturbed by the Proposed Project.
- Loggerhead shrike (CDFW SSC) were observed in California during the 2025 biological reconnaissance surveys in Segment 2-2 flying around, and perched within, a tamarisk thicket. There are approximately 756.9 acres of potentially suitable habitat within the survey area. Approximately 6.9 percent of potentially suitable habitat (51.9 acres of 756.9 total acres) may be permanently disturbed by the Proposed Project, and approximately 8.8 percent of potentially suitable habitat (66.3 acres of 756.9 total acres) may be temporarily disturbed by the Proposed Project.

- Osprey (CDFW WL) are present in the survey area in Arizona and were observed during the 2025 biological reconnaissance surveys in Segment 1-1B. There are approximately 77.9 acres of potentially suitable habitat within the survey area. Approximately 4.0 percent of potentially suitable habitat (3.1 acres of 77.9 total acres) may be permanently disturbed by the Proposed Project, and approximately 7.3 percent of potentially suitable habitat (5.7 acres of 77.9 total acres) may be temporarily disturbed by the Proposed Project.
- Double-crested cormorant (CDFW WL) are present in the survey area in Arizona and were observed during the 2025 biological reconnaissance surveys in Segment 3B. There are approximately 54.5 acres of potentially suitable habitat within the survey area. Less than 1.5 percent of potentially suitable habitat (0.8 acres of 54.5 total acres) may be permanently disturbed by the Proposed Project, and approximately 7.4 percent of potentially suitable habitat (4.0 acres of 54.5 total acres) may be temporarily disturbed by the Proposed Project.
- Mountain plover (CDFW SSC, USFWS BCC, BLM S, SGCN) was not observed in the survey area in Arizona during 2025 reconnaissance surveys; however, approximately 4.1 acres of suitable habitat are present in survey area. No disturbance is expected to occur within suitable Mountain Plover habitat within the survey area in Arizona.
- Western yellow-billed cuckoo (FT, SE, BLM S, SGCN) was not observed in the survey area in Arizona during 2025 reconnaissance surveys; however, approximately 81.0 acres of suitable habitat are present in survey area. Approximately 2.4 percent of potentially suitable habitat (1.9 acre of 81.0 total acres) may be permanently disturbed by the Proposed Project, and approximately 20.2 percent of potentially suitable habitat (16.4 acres of 81.0 total acres) may be temporarily disturbed by the Proposed Project.
- Southwestern willow flycatcher (FE, SE, SGCN) was not observed in the survey area in Arizona during 2025 reconnaissance surveys; however, approximately 117.4 acres of suitable habitat are present in survey area. Approximately 3.6 percent of potentially suitable habitat (4.2 acres of 117.4 total acres) may be permanently disturbed by the Proposed Project, and approximately 15.5 percent of potentially suitable habitat (18.2 acres of 117.4 total acres) may be temporarily disturbed by the Proposed Project.
- Yellow-breasted chat (CDFW SSC, SGCN) was not observed in the survey area in Arizona during 2025 reconnaissance surveys; however, approximately 125.2 acres of suitable habitat occurs within the survey area. Approximately 3.5 percent of potentially suitable habitat (4.4 acres of 125.2 total acres) may be permanently disturbed by the Proposed Project, and approximately 14.7 percent of potentially suitable habitat (18.5 acres of 125.2 total acres) may be temporarily disturbed by the Proposed Project
- Least bittern (CDFW SSC, SGCN) was not observed in the survey area in Arizona during 2025 reconnaissance surveys; however, approximately 148.5 acres of suitable habitat are present in the survey area. Approximately 3.4 percent of potentially suitable habitat (5.0 acres of 148.5 total acres) may be permanently disturbed by the Proposed Project, and approximately 13.3 percent of potentially suitable habitat (19.7 acres of 148.5 total acres) may be temporarily disturbed by the Proposed Project.
- California black rail (ST, CDFW FP, BLM S, SGCN) was not observed in the survey area in Arizona during 2025 reconnaissance surveys; however, approximately 36.4 acres of suitable habitat are present in the survey area. Approximately 6.3 percent of potentially suitable habitat (2.3 acres of 36.4 total acres) may be permanently disturbed by the Proposed Project, and approximately 5.2 percent of potentially suitable habitat (1.9 acres of 36.4 total acres) may be temporarily disturbed by the Proposed Project.

- Gila woodpecker (SE, USFWS BCC, BLM S, SGCN) was not observed in the survey area in Arizona during 2025 reconnaissance surveys; however, approximately 815.5 acres of suitable habitat is present in the survey area. Approximately 6.5 percent of potentially suitable habitat (52.7 acres of 815.5 total acres) may be permanently disturbed by the Proposed Project, and approximately 8.5 percent of potentially suitable habitat (68.9 acres of 815.5 total acres) may be temporarily disturbed by the Proposed Project.
- Black-tailed gnatcatcher (CDFW WL, SGCN) was not observed in the survey area in Arizona during 2025 reconnaissance surveys; however, approximately 766.4 acres of suitable habitat is present in the survey area. Approximately, 6.8 percent of potentially suitable habitat (51.9 acres of 766.4 total acres) may be permanently disturbed by the Proposed Project, and approximately 9.0 percent of potentially suitable habitat (68.6 acres of 766.4 total acres) may be temporarily disturbed by the Proposed Project
- Yuma clapper rail (FE, ST, LCR MSCP CS) was not observed in the survey area in Arizona during 2025 reconnaissance surveys; however, approximately 107.0 acres of suitable habitat is present in the survey area. Approximately, 3.9 percent of potentially suitable habitat (4.2 acres of 107.0 total acres) may be permanently disturbed by the Proposed Project, and approximately 14.9 percent of potentially suitable habitat (15.9 acres of 107.0 total acres) may be temporarily disturbed by the Proposed Project.
- Yuma Ridgway's rail (FE, ST, CDFW FP, SGCN) was not observed in the survey area in Arizona during 2025 reconnaissance surveys; however, approximately 107.0 acres of suitable habitat is present in the survey area. Approximately, 3.9 percent of potentially suitable habitat (4.2 acres of 107.0 total acres) may be permanently disturbed by the Proposed Project, and approximately 14.9 percent of potentially suitable habitat (15.9 acres of 107.0 total acres) may be temporarily disturbed by the Proposed Project.
- Sonoran yellow warbler (CDFW SSC, SGCN) was not observed in the survey area in Arizona during 2025 reconnaissance surveys; however, approximately 10.0 acres of suitable habitat are present in the survey area. No permanent impacts are expected by the Proposed Project, and approximately 23.2 percent of potentially suitable habitat (2.3 acres of 10.0 total acres) may be temporarily disturbed by the Proposed Project.
- Arizona Bell's vireo (SE, BLM S, SGCN) was not observed in the survey area in Arizona during 2025 reconnaissance surveys; however, approximately 148.5 acres of suitable habitat are present in the survey area. Approximately 3.4 percent of potentially suitable habitat (5.0 acres of 148.5 total acres) may be permanently disturbed by the Proposed Project, and approximately 13.3 percent of potentially suitable habitat (19.7 acres of 148.5 total acres) may be temporarily disturbed by the Proposed Project.

Potential nesting and foraging habitat are also present for several avian species that were not observed but are protected under the MBTA and CFGC 3503.5.

Proposed Project construction activities would potentially impact special-status birds, their nests, and foraging habitats. Potential impacts may result from vegetation clearing and ground disturbance within nesting habitat, as well as accidental crushing or burying of ground nests or active burrows by construction vehicles. An increase in vehicle traffic, noise at work sites, and human presence could result in an interruption of normal bird nesting behaviors or nest abandonment. Proposed Project activities may potentially impact the quality of foraging habitat for raptors, passerines, and other special-status bird species that use habitats within the study area. These potential impacts to nesting and special-status bird species during construction would be

temporary and intermittent in nature (lasting only as long as construction work at a given site) and would be limited in their potential geographic scope.

The Proposed Project would introduce permanent new transmission infrastructure, new or improved access roads, and spur roads. New poles and transmission lines could result in a risk of collisions, line strikes, or electrocution to special-status and non-special-status migratory birds in the future. New or improved access roads and spur roads would also remove suitable habitat within the study area for bird species.

While the Proposed Project proposes temporary and permanent impacts to the habitat supporting special-status bird species, likely supporting one or a few individuals, the amount of acres being permanently disturbed is small compared to the amount of available habitat within the survey area (average percentage impact to a species' suitable habitat mapped within the survey area is approximately 4 percent). Vast amounts of suitable habitat are also present outside of the study area, particularly in Segments 1 and 2. These relatively minimal impacts to habitat would result in a less than significant impact to these species. To avoid potential line strikes or electrocution to birds, the Proposed Project transmission facilities would be designed while considering the latest guidance provided in the Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2025. This guidance is expected to be issued in the fall of 2025 and HWT will review and incorporate into their design, as feasible. Transmission facilities would also be evaluated for potential collision reduction devices in accordance with Reducing Avian Collisions with Power Lines: The State of Art in 2012 (APLIC 2012). Design consistency with APLIC would reduce any collision or electrocution impacts to a less than significant level.

Impacts to special-status bird species may be significant without mitigation. To ensure compliance with MBTA and CFGC section 3503.5 and to avoid and minimize potential impacts to special-status bird species from construction activities, HWT would implement APM BIO-1: WEAP, to ensure contractor understanding and implementation of these protective measures. HWT would develop a Nesting Bird Management Plan per APM BIO-3. The survey, avoidance, and adaptive management measures in the Plan would reduce impacts to nesting birds within the study area. Avoidance and minimization measures for the burrowing owl are provided in APM BIO-4 and include a pre-construction survey, preparation of a burrowing owl management plan, and conducting protocol-level surveys for burrowing owls. In addition, mitigation strategies such as restoration of suitable avian habitat are addressed in APM BIO-6: Develop and Implement HRP, and reduction of weed competition with important plant species in APM BIO-7: Develop and Implement IPMP. With the implementation of these APMs, impacts to special-status birds would be less than significant.

Mammals

One special-status mammal species was observed during 2025 reconnaissance surveys in Arizona: desert big horn sheep (CDFW FP, BLM S, DRECP). Approximately 678.1 acres of potentially suitable habitat exists in the survey area. Approximately 7.3 percent of potentially suitable habitat (49.8 acres of 678.1 total acres) may be permanently disturbed by the Proposed Project, and approximately 7.7 percent of potentially suitable habitat (52.1 acres of 678.1 total acres) may be temporarily disturbed by the Proposed Project.

While not observed in Arizona, the following special-status mammal species could occur in the study area within Arizona based on the presence of suitable habitat.

Western red bat (CDFW SSC, LCR MSCP CS) was not observed in the survey area during 2025 reconnaissance surveys; however, approximately 778.9 acres of suitable habitat is present in the survey area. Approximately 6.7 percent of potentially suitable habitat (52.2 acres of 778.9 total acres) may be permanently disturbed by the Proposed Project, and approximately 13.6 percent of potentially suitable habitat (106.3 acres of 778.9 total acres) may be temporarily disturbed by the Proposed Project.

California leaf-nosed bat (CDFW SSC, SGCN) was not observed in the survey area during 2025 reconnaissance surveys; however, approximately 778.9 acres of suitable habitat is present in the survey area. Approximately 6.7 percent of potentially suitable habitat (52.2 acres of 778.9 total acres) may be permanently disturbed by the Proposed Project, and approximately 13.6 percent of potentially suitable habitat (106.3 acres of 778.9 total acres) may be temporarily disturbed by the Proposed Project.

Yuma hispid cotton rat (CDFW SSC, BLM S, SGCN) was not observed in the survey area in Arizona during 2025 reconnaissance surveys; however, there are approximately 120.9 acres of potentially suitable habitat within the survey area. Approximately 5.8 percent of potentially suitable habitat (7.0 acres of 120.9 total acres) may be permanently disturbed by the Proposed Project, and approximately 8.5 percent of potentially suitable habitat (10.3 acres of 120.9 total acres) may be temporarily disturbed by the Proposed Project.

American badger (CDFW SSC, BLM S, SGCN) was not observed in the survey area in Arizona during 2025 reconnaissance surveys; however, there are approximately 192.7 acres of potentially suitable habitat within the survey area. Approximately 6.4 percent of potentially suitable habitat (12.4 acres of 192.7 total acres) may be permanently disturbed by the Proposed Project, and approximately 5.6 percent of potentially suitable habitat (10.8 acres of 192.7 total acres) may be temporarily disturbed by the Proposed Project.

Desert kit fox (DRECP) was not observed in the survey area in Arizona during 2025 reconnaissance surveys; however, there are approximately 827.3 acres of potentially suitable habitat within the survey area. Approximately 7.1 percent of potentially suitable habitat (59.0 acres of 827.3 total acres) may be permanently disturbed by the Proposed Project, and approximately 16.8 percent of potentially suitable habitat (139.2 acres of 827.3 total acres) may be temporarily disturbed by the Proposed Project.

Potential impacts to special-status mammal species may result from ground disturbing activities that can include vehicle or equipment strikes, individuals falling into excavation areas, disruption of migration pathways, reduction of refugia habitats, and accidental crushing or burying of active burrows by construction vehicles and activities. Ground-disturbing activities have the potential to increase colonization of weed species and reduce native vegetation. Incidental introductions of invasive non-native weeds have the potential to reduce habitat quality in the immediate area and beyond through direct competition and occupation of prime germination sites of prime forage species. Potential impacts to special-status mammal species during construction of the Proposed Project would be temporary and intermittent in nature and would be limited in their potential geographic scope.

Permanent impacts from the new transmission infrastructure, new or improved access roads, and spur roads would remove suitable habitat for special-status species. The amount of habitat removed through Proposed Project implementation, likely supporting one or a few individuals, would be minimal relative to the amount of habitat mapped throughout the study area, and would result in a less than significant impact to these species.

Impacts to special-status mammal species may be significant without mitigation. To generally avoid and minimize potential impacts to special-status mammals during construction, HWT would implement APM BIO-2: Pre-construction Biological Clearance Survey and Monitoring, which includes pre-construction biological surveys and flagging boundaries of special-status mammal burrows, watering holes, and other habitat for avoidance, when feasible. HWT would also implement APM BIO-1: WEAP to ensure contractor understanding and implementation of these protective measures. Mitigation strategies addressed in APM BIO-6: Develop and Implement HRP, and APM BIO-7: Develop and Implement IPMP would reduce weed competition with essential native forage species for mammals. Implementation of these APMs would reduce direct and indirect impacts to all mammals.

With the implementation of these APMs, impacts to special-status mammals would be less than significant.

Overall Project

Less than Significant Impact with Mitigation. The Proposed Project would have less than significant impacts to special-status plant species with implementation of APM BIO-2, APM BIO-8, APM BIO-9, APM BIO-1, and BIO-7 and compliance with the ITP conditions. The Proposed Project would have less than significant impacts to special-status wildlife species with implementation of APM BIO-1, APM BIO-2, APM BIO-6, APM BIO-7, APM BIO-3, and APM BIO-4.

Operation

Project Components in California

Less than Significant Impact. As presented in Chapter 3, Proposed Project Description, operations and maintenance (O&M) activities associated with the Proposed Project would include activities such as repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, repairing or replacing poles and towers, tree trimming, brush and weed control, and access road maintenance, which would require the use of vehicles and equipment.

Trips to the Proposed Project site to perform O&M activities would be minimal and infrequent. O&M vehicle trips associated with the Proposed Project are estimated to be up to 24 trips annually (1 trip per month for 2 employees), and O&M activities would occur within access, spur roads, or on transmission infrastructure on newly acquired rights-of-way (ROWs).

Vehicles used for O&M activities could result in the direct crushing of individual special-status plants or disruption of photosynthesis from traffic-related dust; for special-status wildlife, impacts could include potential vehicle or equipment strikes. Tree trimming, brush and weed control could result in bird nest disruption or destruction. Incidental or emergency pole or tower replacements could result in special-status mammals or reptiles falling into excavation areas. Incidental introduction of invasive non-native plant species or contamination from spills resulting from O&M activities has the potential to reduce habitat quality for both special-status plants and wildlife species. To avoid impacts to special-status species, HWT would implement existing Best Management Practices (BMPs) for O&M including, but not limited to, minimizing work area, crew check for bird nests, rare plants, and injured/trapped wildlife, spill release/prevention, weed maintenance and prevention, and dust control. Given the periodic but infrequent nature of operational activities, and implementation of BMPs, operational impacts to special status species would be less than significant.be minimal and infrequent. O&M vehicle trips are estimated to be up to 24 trips annually

(1 trip per month for 2 employees), and O&M activities would occur within access, spur roads, or on transmission infrastructure on newly acquired rights-of-way (ROWs).

To avoid impacts to special-status species, HWT would implement existing Best Management Practices (BMPs) for O&M including, but not limited to, minimizing work area, crew check for bird nests, rare plants, and injured/trapped wildlife, spill release/prevention, weed maintenance and prevention, and dust control. Given the periodic but infrequent nature of operational activities, and implementation of BMPs, operational impacts to special status species in California would be less than significant.

Project Components in Arizona

Less than Significant Impact. Operations and maintenance (O&M) activities and impacts would be the same in Arizona and California.

To avoid impacts to special-status species, HWT would implement existing Best Management Practices (BMPs) for O&M including, but not limited to, minimizing work area, crew check for bird nests, rare plants, and injured/trapped wildlife, spill release/prevention, weed maintenance and prevention, and dust control. Given the periodic but infrequent nature of operational activities, and implementation of BMPs, operational impacts to special status species in Arizona would be less than significant.

Overall Project

Less than Significant Impact. With implementation of BMPs, operational impacts to special status species would be less than significant.

5.4.5.1.3 Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS?

Construction

Project Components in California

Less than Significant Impact with Mitigation. Potential impacts on riparian habitat or other sensitive natural communities may include temporary and permanent loss of habitat associated with ground-disturbing activities and may also include other direct and indirect impacts. Potential temporary impacts include areas where vegetation communities overlap with proposed temporary work areas along the proposed alignments, such as guard structures, conductor/cable splicing areas, cable/conductor pull-and-tension/stringing sites, and staging areas, that are known at this time and are not currently disturbed. Potential permanent impacts include areas where vegetation communities overlap with the permanent footprint associated with proposed new or improved access roads, spur roads, and individual poles/structures installed along transmission alignments that are known at this time and not currently disturbed.

Seven sensitive natural communities were observed within the study area in California, covering approximately 1,310.8 acres. All seven sensitive natural communities overlap proposed temporary construction work areas with helicopter landing zones, guard structures, conductor/cable splicing areas, cable/conductor pull-and-tension/stringing sites, and staging areas that are known at this

time and are not currently disturbed. Permanent impacts include potential pole installation in areas not currently disturbed and new or improved unpaved access roads along the Proposed Project alignment. Temporary impacts include work areas associated with project activity such as staging, parking, work areas around permanent project infrastructure. Using the project's disturbance areas as defined by the 30 percent design, impacts to sensitive vegetation communities as a result of the construction activities are estimated to include approximately 142.3 acres of temporary impacts and approximately 108.2acres of permanent impacts (Table 5.4-8).

Table 5.4-8 Potential Impacts to Sensitive Natural Communities in California

Vegetation Alliance	Total Area Mapped within Survey Area (acres)	Area Mapped within Anticipated Work Areas with Temporary Impacts (acres)[1]	Area Mapped within Anticipated Work Areas with Permanent Impacts (acres)	California States Rarity Ranking
Upland shrubland alliances (all alliances and their association are sensitive unless a sensitive association is included within a non-sensitive alliance)				
Arrow Weed Thickets	124.7	11.8	8.9	G4S3
Blue Palo Verde – Ironwood Woodland	638.8	82.4	40.1	G4S4
Bush Seepweed Scrub	90.8	4.1	8.4	G4S3
California Joint Fir – Longleaf Joint-Fir Scrub	83.4	4.1	6.0	G5S4
Hardstem and California Bulrush Marshes	3.1	0.1	0.0	GNR S3S4
Mesquite Thickets	164.7	28.0	10.8	G5S3
Mojave-Sonoran Desert Dunes	205.4	11.7	33.8	G4S3
Total Acres Sensitive Native Vegetation	**1,310.8**	**142.3**	**108.2**	**N/A**

1 Potential temporary impact acreages include areas where features overlap with preliminary temporary work areas within the study area, as determined by 30 percent Project design.

[2] Potential permanent impact acreages include areas where features overlap with preliminary permanent work areas within the study area, as determined by 30 percent Project design.

Note: Due to rounding, total acreage may not equal the column sum.

Construction activities in temporary work areas, including grading, vegetation clearing, excavating, earth-moving, rehabilitation of existing roads, establishment of staging areas and vehicle traffic may result in the direct crushing or burial of individual plants in sensitive natural communities, along with erosion and/or sedimentation that may alter the existing habitat. Construction-related traffic may create dust that adheres to leaves and interferes with photosynthesis and plant reproduction. Topsoil impacted from grading may contain seeds, bulbs, nutrients and mycorrhizae that plant species may utilize for survival and for maintaining sustainable colonies in an area. Incidental introduction of invasive non-native plant species as a result of construction activities has the potential to reduce habitat quality in the construction area and surrounding the study area through direct competition and occupation of prime generation sites. Higher non-native plant cover, especially invasive grass species, may facilitate fires in the area. New, permanent facilities including transmission facilities and a new, unpaved access road in the Proposed Project ROW may impact sensitive natural communities directly. Impacts to sensitive natural communities may be significant without mitigation.

To avoid and minimize potential impacts to sensitive natural communities from construction activities such as native vegetation clearing and grubbing, grading, blasting, and earth-moving, HWT would implement APM BIO-1: WEAP, to ensure contractor understanding and implementation of all protective measures. Additionally, APM BIO-2: Pre-construction Biological Clearance Survey and Monitoring includes pre-construction biological surveys and flagging boundaries of sensitive natural communities for avoidance, and minimizing native vegetation impacts, when feasible. In addition, mitigation strategies such as special-status plant species restoration are addressed in APM BIO-6: Develop and Implement HRP, and reduction of weed competition with special-status plant species in APM BIO-7: Develop Invasive Plant Management Plan. HWT would also implement two measures that focus on avoiding and minimizing potential impacts to special-status herbaceous species, shrubs, trees, and cacti, which may be important components of natural communities in Proposed Project work areas: APM BIO-8: Special-status Herbaceous Plants and APM BIO-9: Special-status Perennial Plants and Other Species. Further, implementation of APM BIO-10: Avoid and/or Minimize Impacts to Waters and Wetlands, would ensure minimization of impacts to special-status natural communities occurring in CDFW jurisdictional areas.

With the implementation of these APMs, impacts to sensitive natural communities would be less than significant

Project Components in Arizona

Less than Significant Impact with Mitigation. Potential impacts on riparian habitat or other sensitive natural communities may include temporary and permanent loss of habitat associated with ground-disturbing activities and may also include other direct and indirect impacts. Potential temporary impacts include areas where vegetation communities overlap with proposed temporary work areas along the proposed alignments, such as guard structures, conductor/cable splicing areas, cable/conductor pull-and-tension/stringing sites, and staging areas, that are known at this time and are not currently disturbed. Potential permanent impacts include areas where vegetation communities overlap with the permanent footprint associated with proposed new or improved access roads, spur roads, and individual poles/structures installed along transmission alignments that are known at this time and not currently disturbed.

Five sensitive natural communities were observed within the study area, covering approximately 122.1 acres. Four of the sensitive natural communities overlap proposed temporary construction work areas with helicopter landing zones, guard structures, conductor/cable splicing areas, cable/conductor pull-and-tension/stringing sites, and staging areas that are known at this time and are not currently disturbed. Anticipated impacts to sensitive vegetation as a result of the construction activities are anticipated to primarily be temporary and total approximately 6.0 acres, as shown in Table 5.4-9. Permanent impacts include potential pole installation in areas not currently disturbed and new or heavily-improved unpaved access roads along the Proposed Project alignment and total approximately 7.6 acres.

Table 5.4-9 Potential Impacts to Sensitive Natural Communities in Arizona

Vegetation Alliance	Total Area Mapped within Study Area (acres)	Area Mapped within Anticipated Work Areas with Temporary Impacts (acres)[1]	Area Mapped within Anticipated Work Areas with Permanent Impacts (acres)	California States Rarity Ranking
Upland shrubland alliances (all alliances and their association are sensitive unless a sensitive association is included within a non-sensitive alliance)				
Arrow Weed Thickets	23.4	1.6	2.3	G4S3
Blue Palo Verde – Ironwood Woodland	75.9	2.0	5.4	G4S4
Fremont Cottonwood Forest and Woodland	10.0	2.3	0.0	G4S3
Hardstem and California Bulrush Marshes	12.5	< 0.1	0.0	GNR S3S4
Mesquite Thickets	0.4	0.0	0.0	G5S3
Total Acres Sensitive Native Vegetation	**122.1**	**6.0**	**7.6**	**N/A**

1 Potential temporary impact acreages include areas where features overlap with preliminary temporary work areas within the study area, as determined by 30 percent Project Design.

[2] Potential permanent impact acreages include areas where features overlap with preliminary permanent work areas within the study area, as determined by 30 percent Project Design.

Note: Due to rounding, totals may not equal the column sum.

Construction activities in temporary work areas, including grading, vegetation clearing, excavating, earth-moving, rehabilitation of existing roads, establishment of staging areas and vehicle traffic may result in the direct crushing or burial of individual plants in sensitive natural communities, along with erosion and/or sedimentation that may alter the existing habitat. Construction-related traffic may create dust that adheres to leaves and interferes with photosynthesis and plant reproduction. Topsoil impacted from grading may contain seeds, bulbs, nutrients and mycorrhizae that plant species may utilize for survival and for maintaining sustainable colonies in an area. Incidental introduction of invasive non-native plant species as a result of construction activities has the potential to reduce habitat quality in the construction area and surrounding the study area through direct competition and occupation of prime generation sites. Higher non-native plant cover, especially invasive grass species, may facilitate fires in the area. New, permanent facilities including transmission facilities and a new, unpaved access road in the Proposed Project ROW may impact sensitive natural communities directly. Impacts to sensitive natural communities may be significant without mitigation.

To avoid and minimize potential impacts to sensitive natural communities from construction activities such as native vegetation clearing and grubbing, grading, blasting, and earth-moving, HWT would implement APM BIO-1: WEAP, to ensure contractor understanding and implementation of all protective measures. Additionally, APM BIO-2: Pre-construction Biological Clearance Survey and Monitoring includes pre-construction biological surveys and flagging boundaries of sensitive natural communities for avoidance, and minimizing native vegetation impacts, when feasible. In addition, mitigation strategies such as special-status plant species restoration are addressed in APM BIO-6: Develop and Implement HRP, and reduction of weed competition with special-status plant species in APM BIO-7: Develop Invasive Plant Management Plan. HWT would also implement two measures that focus on avoiding and minimizing potential impacts to special-status herbaceous species, shrubs, trees, and cacti, which may be important components of natural communities in Proposed

Project work areas: APM BIO-8: Special-status Herbaceous Plants and APM BIO-9: Special-status Perennial Plants and Other Species.

With the implementation of these APMs, impacts to sensitive natural communities would be less than significant.

Overall Project

Less than Significant Impact with Mitigation. With implementation of APM BIO-1, APM BIO-6, APM BIO-7, APM BIO-8, APM BIO-9, and APM BIO-10, Proposed Project construction impacts would have less than significant impacts to sensitive natural communities in California and Arizona.

Operation

Project Components in California

Less than Significant Impact. As presented in Chapter 3, Proposed Project Description, O&M activities associated with the Proposed Project would include monthly tower inspections, insulator washing, access road maintenance, and vegetation management required by California Public Resources Code sections 4292 and 4293 and CPUC G.O. 95 Rule 35, Vegetation Management. Anticipated O&M vehicle trips associated with the Proposed Project would be minimal (estimated to be up to 24 trips annually, 1 trip per month for 2 employees). O&M activities would occur within newly acquired ROWs, and BMPs such as reduced speed limits, and staying on access roads to conduct inspections would further limit impacts.

Vehicles used for O&M activities could result in the direct crushing of individual plants in sensitive natural communities or disruption of photosynthesis from traffic-related dust. Tree trimming, brush and weed control could result in bird nest disruption or destruction. To prevent incidental introduction of invasive non-native plant species or contamination from spills, HWT would implement existing BMPs for O&M including, but not limited to, minimizing work area, spill release/prevention, weed maintenance and prevention, and dust control. Given the periodic but infrequent nature of these continuing operations, and implementation of BMPs, this impact would be less than significant.

Project Components in Arizona

Less than Significant Impact. As discussed above for potential operational impacts in California, O&M activities associated with the Proposed Project would include monthly tower inspections, insulator washing, access road maintenance, and vegetation management required by California Public Resources Code sections 4292 and 4293 and CPUC G.O. 95 Rule 35, Vegetation Management. Anticipated O&M vehicle trips associated with the Proposed Project would be minimal (estimated to be up to 24 trips annually, 1 trip per month for 2 employees). O&M activities would occur within newly acquired ROWs, and BMPs such as reduced speed limits, and staying on access roads to conduct inspections would further limit impacts.

To prevent incidental introduction of invasive non-native plant species or contamination from spills, HWT would implement existing BMPs for O&M including, but not limited to, minimizing work area, spill release/prevention, weed maintenance and prevention, and dust control. Given the periodic but infrequent nature of these continuing operations, and implementation of BMPs, this operational impacts within Arizona would be less than significant.

Overall Project

Less than Significant Impact. With implementation of operational BMPs to minimize work area, spill release/prevention, weed maintenance and prevention, and dust control, operational impacts to sensitive natural communities would be less than significant.

5.4.5.1.4 Would the project have a substantial adverse effect on state or federally protected wetlands and waters, as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, and coastal) through direct removal, filling, hydrological interruption, or other means?

Construction

Project Components in California

Less than Significant Impact with Mitigation. HWT would site structures and locate and orient construction work areas to avoid state and federal jurisdictional waters to the maximum extent possible. Federal waters are present within the eastern portion of the study area in California, around the Colorado River. Most state-jurisdictional features in the study area are interior draining, with no connection to federal waters, with the exception of any relatively permanent features that directly drain into the Colorado River or other federal waters. Temporary impacts within vegetated and unvegetated jurisdictional features include overland travel, foot traffic, structure construction and temporary work areas. Construction activities within these areas include vegetation removal, minor grading and gravel placement, and material laydown. Permanent impacts include the footprint of new or improved access roads, spur roads, and individual poles/structures installed along transmission alignments that are known at this time and not currently disturbed.

The extent of temporary and permanent impacts to jurisdictional areas known at this time is presented in Table 5.4-10. Impacts to jurisdictional areas are subject to change but may be significant without mitigation. Final impact calculations would be included during permit coordination with appropriate state jurisdictional agency permit approximately one to two years prior to construction activities.

Table 5.4-10 Jurisdictional Waters Potential Temporary and Permanent Impacts in California

Feature	Temporary Impacts (acres)[1]	Permanent Impacts (acres)[2]
RWQCB Waters of the State	122.1	37.0
CDFW 1602	122.1	37.0
U.S. Army Corps of Engineers (Colorado River)	37.0	4.3

[1] Potential temporary impact acreages include areas where features overlap with preliminary temporary work areas within the study area, as determined by 30 percent Project design.

[2] Potential permanent impact acreages include areas where features overlap with preliminary permanent work areas within the study area, as determined by 30 percent Project design.

At locations where overland travel methods are implemented in vegetated jurisdictional features, revegetation of temporarily disturbed overland travel routes would be unnecessary because overland travel methods would preserve the root mass of existing woody vegetation to allow crown resprouting to occur. Where more activities than overland travel are planned, temporarily disturbed

areas would be restored in-place to pre-construction contours by implementing topsoil salvage and replacement (which allows natural recruitment reseeding), and revegetation where necessary. Recontouring would be implemented to restore preexisting hydrological function to the system and topsoil would be salvaged to allow for the naturally occurring seed bank to reestablish.

HWT would obtain all necessary permits and authorizations, including a 404 U.S. Army Corps of Engineers authorization under Nationwide Permit 57 (NWP 57) or similar, 401 Water Quality Certification from the RWQCB, and a Section 1602 Streambed Alteration Agreement from CDFW, prior to construction. HWT would comply with all conditions of approval identified in permits and authorizations. Further, HWT would develop and implement one or more Proposed Project-specific Storm Water Pollution Prevention Plans SWPPP(s) that would include BMPs to prevent erosion and sedimentation into wetlands and streams and would protect water quality during construction. Compliance with such typical conditions is reflected in the measures contained in APM BIO-10; through implementation of this APM, HWT would avoid or minimize impacts to state jurisdictional waters and riparian habitat by siting activities outside these areas, implementing appropriate BMPs, mitigating for permanent impacts, and performing restoration for temporary impacts. With the implementation of APM BIO-10, implementation of the Proposed Project-specific SWPPP, and compliance with permits and authorizations issued for the Proposed Project, impacts on jurisdictional waters would be less than significant.

Project Components in Arizona

Less than Significant Impact with Mitigation. HWT would site structures and locate and orient construction work areas to avoid state jurisdictional waters to the maximum extent possible. Federal waters are present within the study area in the eastern portion of the study area in Arizona, around the Colorado River. Most state-jurisdictional features in the study area are interior draining, with no connection to federal waters, with the exception of any relatively permanent features that directly drain into the Colorado River or other federal waters within the study area. Temporary impacts within vegetated and unvegetated jurisdictional features include overland travel, foot traffic, structure construction and temporary work areas. Construction activities within these areas include vegetation removal, minor grading and gravel placement, and material laydown. Permanent impacts include the footprint of new or improved access roads, spur roads, and individual poles/structures installed along transmission alignments that are known at this time and not currently disturbed.

The extent of temporary and permanent impacts to jurisdictional areas known at this time is presented in Table 5.4-11. Impacts to jurisdictional areas are subject to change. Final impact calculations would be included during permit coordination with appropriate state jurisdictional agency permit approximately one to two years prior to construction activities.

Table 5.4-11 Jurisdictional Waters Potential Temporary and Permanent Impacts in Arizona

Feature	Temporary Impacts (acres)[1]	Permanent Impacts (acres)[2]
AZ Department of Env. Quality	6.5	3.0
U.S. Army Corps of Engineers (Colorado River)	18.2	1.1

[1] Potential temporary impact acreages include areas where features overlap with preliminary temporary work areas within the study area, as determined by 30 percent Project design.

[2] Potential permanent impact acreages include areas where features overlap with preliminary permanent work areas within the study area, as determined by 30 percent Project design.

At locations where overland travel methods are implemented in vegetated jurisdictional features, revegetation of temporarily disturbed overland travel routes would be unnecessary because overland travel methods would preserve the root mass of existing woody vegetation to allow crown resprouting to occur. Where more activities than overland travel are planned, temporarily disturbed areas would be restored in-place to pre-construction contours by implementing topsoil salvage and replacement (which allows natural recruitment reseeding), and revegetation where necessary. Recontouring would be implemented to restore preexisting hydrological function to the system and topsoil would be salvaged to allow for the naturally occurring seed bank to reestablish.

Without mitigation, impacts to jurisdictional waters may be significant due to the loss of stream or open water habitats, disruption of water flows, or increased sedimentation. HWT would obtain all necessary permits and authorizations, including a 404 U.S. Army Corps of Engineers authorization under Nationwide Permit 57 (NWP 57) or similar and a 401 Water Quality Certification from the Arizona Department of Environmental Quality. HWT would comply with all conditions of approval identified in permits and authorizations. Further, HWT would develop and implement one or more Proposed Project-specific SWPPP(s) that would include BMPs to prevent erosion and sedimentation into wetlands and streams and would protect water quality during construction. Compliance with such typical conditions is reflected in the measures contained in APM BIO-10; through implementation of this APM, HWT would avoid or minimize impacts to state jurisdictional waters and riparian habitat by siting activities outside these areas, implementing appropriate BMPs, mitigating for permanent impacts, and performing restoration for temporary impacts. With the implementation of APM BIO-10, implementation of the Proposed Project-specific SWPPP, and compliance with permits and authorizations issued for the Proposed Project, impacts on jurisdictional waters would be less than significant.

Overall Project

Less than Significant Impact with Mitigation. Implementation of APM BIO-10, implementation of the Proposed Project-specific SWPPP, and compliance with permits and authorizations issued for the Proposed Project (RWQCB Waste Discharge Permit and CDFW Section 1602 Streambed Alteration Agreement), construction impacts on jurisdictional waters would be less than significant.

Operation

Project Components in California

Less than Significant Impact. As presented in Chapter 3, Proposed Project Description, O&M activities associated with the Proposed Project would be inclusive of, but not limited to, repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, repairing or replacing poles and towers, tree trimming, brush and weed control, and access road maintenance, which would require the use of vehicles and equipment.

Trips to the Proposed Project site to perform O&M activities would be minimal and infrequent. O&M vehicle trips associated with the Proposed Project are estimated to be up to 24 trips annually (1 trip per month for 2 employees) and would occur within newly acquired ROWs and would not impact wetlands. O&M activities typically do not impact water quality or result in discharges to waters, as ground disturbing activities are not usually required for O&M. However, if ground disturbance were necessary, BMPs would be implemented to protect resources from any sediment discharges and affected areas would be restored to pre-disturbance conditions. With the implementation of BMPs and the restoration of affected areas to pre-disturbance conditions, O&M

activities are not anticipated to result in the impact of state protected waters and drainages. In addition, if it is necessary to conduct any work within a channel or to remove riparian vegetation, the work would require approval from the RWQCB or CDFW as well as adherence to any permit conditions associated with that approval. Therefore, impacts would be less than significant.

Project Components in Arizona

Less than Significant Impact. As discussed above for potential operational impacts in California, O&M activities in Arizona would be minimal and infrequent. With implementation of BMPs described above for California, operational impacts to jurisdictional waters would be less than significant.

Overall Project

Less than Significant Impact. With the implementation of BMPs and the restoration of affected areas to pre-disturbance conditions, and adherence to any permit conditions, operational impacts to state protected waters and drainages would be less than significant.

5.4.5.1.5 Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridor, or impede the use of native wildlife nursery sites?

Construction

Project Components in California

Less than Significant Impact. The Proposed Project would temporarily introduce construction activities into the environment that would affect only small, geographically dispersed areas at any one time. This may result in temporarily altered movement paths for individual wildlife but would not likely create substantial barriers to wildlife movement. In addition, no regional or local native wildlife nursery sites are known to occur within the study area. Therefore, construction impacts related to the movement of wildlife, migratory wildlife corridors, or native wildlife nursery sites in California would be less than significant.

Project Components in Arizona

Less than Significant Impact. As discussed above for potential construction impacts in California, the Proposed Project would temporarily introduce construction activities into the environment that would affect only small, geographically dispersed areas at any one time. This may result in temporarily altered movement paths for individual wildlife but would not likely create substantial barriers to wildlife movement. In addition, no regional or local native wildlife nursery sites are known to occur within the study area. Therefore, construction impacts related to the movement of wildlife, migratory wildlife corridors, or native wildlife nursery sites in Arizona would be less than significant.

Overall Project

Less than Significant Impact. Due to the small footprint and temporary nature of construction in a given work area at any one time, and the lack of native wildlife nursery sites, construction impacts related to the movement of wildlife, migratory wildlife corridors, or native wildlife nursery sites area would be less than significant.

Operation

Project Components in California

Less than Significant Impact. Proposed permanent new transmission facilities, new or improved access roads, and spur roads may interfere with the movement of individual animals but would not create significant barriers to the movement of wildlife species. Proposed new access roads would be within the existing direct and indirect impact area as close to existing roads as feasible; any additional impact to wildlife movement from the new road is likely to be minimal. Due to their small cross-sections, proposed new transmission structures themselves would not create barriers to the movement of any native or migratory wildlife species. Likewise, proposed new transmission structures would not create barriers in potential movement corridors for ground-dwelling wildlife species that may cross portions of the study area. New poles and lines, however, could result in a risk of collisions for birds, interfering with the movement of individuals or flocks.

To avoid impacts to avian movement from new transmission lines, all transmission facilities for the Proposed Project would be designed to follow the intent of Suggested Practices for Avian Protection on Power Lines: the State of the Art in 2025, which is expected to be released in the fall of 2025. Furthermore, all transmission facilities would be evaluated for potential collision risk and, where determined to be high risk, lines would be marked with collision reduction devices in accordance with Reducing Avian Collisions with Power Lines: The State of the Art in 2012 (APLIC 2012), thus ensuring that potential impacts to avian movement are less than significant.

As presented in Chapter 3, Proposed Project Description, O&M activities associated with the Proposed Project would include monthly tower inspections, insulator washing, vegetation management, and access road maintenance. Anticipated O&M vehicle trips associated with the Proposed Project are estimated to be minimal - up to 24 trips annually (1 trip per month for 2 employees). Proposed O&M activities would occur within newly acquired ROWs, and BMPs such as reduced speed limits, and staying on access roads to conduct inspections would further limit impacts to resources. Given the periodic but infrequent nature of operational activities, and the implementation of BMPs, potential impacts to wildlife movement or established corridors in California would be less than significant.

Project Components in Arizona

Less than Significant Impact. As discussed above for potential operational impacts in California, proposed permanent new transmission facilities, new or improved access roads, and spur roads in Arizona may interfere with the movement of individual animals but would not create significant barriers to the movement of wildlife species due to roads being within existing direct and indirect impact areas and as close to existing roads, as feasible. Transmission structures and towers would also not impact migratory wildlife due to their small size, allowing wildlife to easily move around them.

Implementation of the latest power line design features and implementation of collision reduction devises will help reduce avian collisions and ensure that potential impacts to avian movement are less than significant.

O&M activities associated with the Proposed Project would be periodic but infrequent in nature, and with the implementation of BMPs, potential impacts to wildlife movement or established corridors in Arizona would be less than significant.

Overall Project

Less than Significant Impact. Proposed new transmission structures would not create barriers in potential movement corridors for ground-dwelling wildlife species that may cross portions of the study area. Design of the Proposed Project would implement BMPs and follow the Suggested Practices for Avian Protection on Power Lines: the State of the Art in 2025 (expected to be released in the fall of 2025), and Reducing Avian Collisions with Power Lines: The State of the Art in 2012 (APLIC 2012) to ensure that potential impacts to avian movement are less than significant. Proposed Project operational impacts to wildlife movement would be less than significant.

5.4.5.1.6 Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Construction

Project Components in California

Less than Significant Impact with Mitigation. As presented in Section 5.4.2, the Imperial County General Plan and Municipal Code, City of Calexico General Plan and Municipal Code, and City of El Centro General Plan and Municipal Code all contain policies and ordinances intended to protect biological resources, including sensitive natural communities, special-status species, waterways and wetlands, and other habitat. Without mitigation, potential impacts to biological resources, as described in Section 5.4.4, may be potentially significant. Implementation of the APMs described in Section 5.4.6.1, including BIO-1: WEAP, BIO-2: Pre-construction Biological Clearance Surveys and Monitoring, BIO-3: Nesting Bird Management Plan, BIO-4: Burrowing Owl, BIO-5: Desert Tortoise, BIO-6: Develop and Implement HRP, BIO-7: Develop Invasive Plant Management Plan, BIO-8: Special-status Herbaceous Plants, BIO-9: Special-status Perennial Plants and Other Species, and BIO-10: Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats, would ensure the protection of the resources identified in the Plans and Municipal Codes, or the minimization of impacts to said resources. With implementation of these APMs, the Proposed Project would not conflict with any local policies or ordinances protecting biological resources and impacts would be less than significant.

Project Components in Arizona

Less than Significant Impact with Mitigation. As presented in Section 5.4.2, the Yuma County Comprehensive Plan and the Yuma County Municipal Code contain policies and ordinances intended to protect biological resources, including sensitive natural communities, special-status species, waterways and wetlands, and other habitat. Without mitigation, potential impacts to biological resources, as described in Section 5.4.5.1, may be potentially significant. Implementation of the APMs described in Section 5.4.6.1, including BIO-2: Pre-construction Biological Clearance Surveys and Monitoring, BIO-1: WEAP, BIO-3: Nesting Bird Management Plan, BIO-6: Develop and Implement HRP, BIO-7: Develop Invasive Plant Management Plan, BIO-8: Special-status Herbaceous Plants, BIO-9: Special-status Perennial Plants and Other Species, and BIO-10: Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats, would ensure the protection of the resources identified in the Plans and Municipal Codes, or the minimization of impacts to said resources. With implementation of these APMs, the Proposed Project would not conflict with any local policies or ordinances protecting biological resources and impacts would be less than significant.

Overall Project

Less than Significant Impact with Mitigation. In California, implementation of APMs BIO-1: WEAP, BIO-2: Pre-construction Biological Clearance Surveys and Monitoring, BIO-3: Nesting Bird Management Plan, BIO-4: Burrowing Owl, BIO-5: Desert Tortoise, BIO-6: Develop and Implement HRP, BIO-7: Develop Invasive Plant Management Plan, BIO-8: Special-status Herbaceous Plants, BIO-9: Special-status Perennial Plants and Other Species, and BIO-10: Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats would ensure that the Proposed Project would not conflict with any local policies or ordinances protecting biological resources during construction. In Arizona, implementation of APMs BIO-1: WEAP, BIO-2: Pre-construction Biological Clearance Surveys and Monitoring, BIO-3: Nesting Bird Management Plan, BIO-6: Develop and Implement HRP, BIO-7: Develop Invasive Plant Management Plan, BIO-8: Special-status Herbaceous Plants, BIO-9: Special-status Perennial Plants and Other Species, and BIO-10: Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats would ensure that the Proposed Project would not conflict with any local policies or ordinances protecting biological resources during construction. Impacts would be less than significant with implementation of these APMs.

Operation

Project Components in California

No Impact. As presented in Chapter 3, Proposed Project Description, O&M activities associated with the Proposed Project would include monthly tower inspections, insulator washing, vegetation management, and access road maintenance. Trips to the Project site to perform O&M activities would be minimal and infrequent. O&M vehicle trips associated with the Proposed Project are estimated to be up to 24 trips annually (1 trip per month for 2 employees). Additionally, O&M activities, would occur within newly acquired ROWs and with the implementation of BMPs for reduced vehicle speeds, dust and erosion, would not conflict with local ordinances or policies related to the protection of biological resources; therefore, there no impact would occur.

Project Components in Arizona

No Impact. As discussed above for potential operational impacts in California, O&M activities would be minimal and infrequent, and would occur within newly acquired ROWs and with the implementation of BMPs for reduced vehicle speeds, dust and erosion. The Proposed Project would not conflict with local ordinances or policies related to the protection of biological resources; therefore, no impact would occur.

Overall Project

No Impact. Proposed Project operational activities would occur within newly acquired ROWs—and would implement BMPs to minimize vehicle speeds, and control dust and erosion—and would not conflict with local ordinances or policies related to the protection of biological resources; therefore, no impact would occur.

5.4.5.1.7 Would the project conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan?

Construction

Project Components in California

No Impact. The Proposed Project traverses portions of the LCR MSCP HCP area along the California/Arizona border (Appendix C-1, Attachment B). The LCR MSCP HCP includes a designated list of covered applicants, such as AGFD or hydroelectric power contract holders (i.e. Parker Dam), and covered activities such as water diversions, conveyance facilities, and electrical generation and transmission facilities. Because HWT is not a covered applicant, and the Proposed Project transmission facilities do not connect with hydropower along the LCR, the LCR MSCP would not apply to the Proposed Project.

There are no other adopted HCPs or NCCPs within the Proposed Project, and no known approved local, regional, or state habitat conservation plans covering the Proposed Project alignment in California. Therefore, there would be no impact under this criterion.

Project Components in Arizona

No Impact. The Proposed Project traverses portions of the LCR MSCP HCP area near Mittry Lake (Appendix C-1, Attachment B). The LCR MSCP HCP includes a designated list of covered applicants, such as AGFD or hydroelectric power contract holders (i.e. Parker Dam), and covered activities such as water diversions, conveyance facilities, and electrical generation and transmission facilities. Because HWT is not a covered applicant, and the Proposed Project transmission facilities do not connect with hydropower along the LCR, the LCR MSCP would not apply to the Proposed Project.

There are no other adopted HCPs or NCCPs within the Proposed Project, and no known approved local, regional, or state habitat conservation plans covering the Proposed Project alignment in Arizona. Therefore, there would be no impact under this criterion.

Overall Project

No Impact. Construction of the Proposed Project would have no impact to adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plans.

Operation

Project Components in California

No Impact. Operations work is consistent with the discussion provided in the "Construction" portion of Section 5.4.5.1.7. Because HWT is not a covered applicant, and the Proposed Project transmission facilities do not connect with hydropower along the LCR, the LCR MSCP would not apply to the Proposed Project and no other adopted HCPs or NCCPs are within the Proposed Project in California. Therefore, there would be no impacts under this criterion.

Project Components in Arizona

No Impact. Operations work is consistent with the discussion provided in the "Construction" portion of Section 5.4.5.1.7. Because HWT is not a covered applicant, and the Proposed Project transmission

facilities do not connect with hydropower along the LCR, the LCR MSCP would not apply to the Proposed Project and no other adopted HCPs or NCCPs are within the Proposed Project in Arizona. Therefore, there would be no impacts under this criterion.

Overall Project

No Impact. Operation of the Proposed Project would have no impacts to adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plans.

5.4.5.1.8 Would the project create a substantial collision or electrocution risk for birds or bats?

Construction

Project Components in California

Less than Significant Impact. Special-status and non-special-status bird species addressed in Sections 5.4.1.5.3 and 5.4.5.1.2 are present, or have potential to occur, within the study area, and are listed in Appendix C-1, Attachment D. Special-status bat species do not occur within the study area, but non-special-status bat species roosting outside the study area may forage within it.

The Proposed Project would temporarily introduce construction equipment into the environment that, by its presence and use, could present a collision risk for birds or bats. Because construction equipment is large, solid, generally non-static, highly visible, and does not include exposed, live currents, collision or electrocution risk for birds or bats from such equipment is anticipated to be very low; therefore, a less than significant impact would occur under this criterion.

Project Components in Arizona

Less than Significant Impact. As discussed above for potential construction impacts in California, special-status and non-special-status bird species addressed in Sections 5.4.1.5.3 and 5.4.5.1.2 have potential to occur within the Proposed Project in Arizona, and are listed in Appendix C-1, Attachment D. Special-status bat species do not occur within the study area, but non-special-status bat species roosting outside the study area may forage within it.

The Proposed Project would temporarily introduce construction equipment into the environment that, by its presence and use, could present a collision risk for birds or bats. Because construction equipment is large, solid, generally non-static, highly visible, and does not include exposed, live currents, collision or electrocution risk for birds or bats from such equipment is anticipated to be very low; therefore, a less than significant impact would occur under this criterion.

Overall Project

Less than Significant Impact. Construction of the Proposed Project would have less than significant impacts related to collusion or electrocution risk for birds or bats.

Operation

Project Components in California

Less than Significant Impact. As presented in Chapter 3, Proposed Project Description, O&M activities associated with the Proposed Project would include monthly tower inspections, insulator

washing, vegetation management, and access road maintenance. Trips to the Proposed Project site to perform O&M activities would be minimal and infrequent. O&M vehicle trips associated with the Proposed Project are estimated to be up to 24 trips annually (1 trip per month for 2 employees). The Proposed Project would temporarily introduce O&M equipment into the environment that, by its presence and use, could present a collision risk for birds or bats.

All transmission facilities for the Proposed Project would be designed to follow the intent of Suggested Practices for Avian Protection on Power Lines: State of the Art in 2025, expected for release in fall 2025. Further, all transmission facilities would be evaluated for potential collision risk and, where determined to be high risk, lines would be marked with collision reduction devices in accordance with Reducing Avian Collisions with Power Lines: The State of the Art in 2012 (APLIC 2012). Design consistency with APLIC would reduce collision or electrocution impacts.

Because O&M equipment and vehicles are large, solid, generally non-static, moderately-to-highly visible, and do not include exposed, live currents, collision or electrocution risk for birds or bats from such equipment is anticipated to be very low; therefore, a less than significant impact would occur under this criterion.

Project Components in Arizona

Less than Significant Impact. As discussed above for potential operational impacts in California, trips to the Proposed Project site to perform O&M activities would be minimal and infrequent. O&M vehicle trips associated with the Proposed Project are estimated to be up to 24 trips annually (1 trip per month for 2 employees). The Proposed Project would temporarily introduce O&M equipment into the environment that, by its presence and use, could present a collision risk for birds or bats.

All transmission facilities for the Proposed Project would be designed to follow the intent of Suggested Practices for Avian Protection on Power Lines: State of the Art in 2025, expected to release in fall 2025. Further, all transmission facilities would be evaluated for potential collision risk and, where determined to be high risk, lines would be marked with collision reduction devices in accordance with Reducing Avian Collisions with Power Lines: The State of the Art in 2012 (APLIC 2012). Design consistency with APLIC would reduce collision or electrocution impacts.

Because O&M equipment and vehicles are large, solid, generally non-static, moderately-to-highly visible, and do not include exposed, live currents, collision or electrocution risk for birds or bats from such equipment is anticipated to be very low; therefore, a less than significant impact would occur under this criterion.

Overall Project

Less than Significant Impact. Operation of the Proposed Project would have less than significant impacts related to collision or electrocution risk for birds or bats.

5.4.5.2 Quantify Habitat Impacts

Habitat impacts for known disturbance areas are quantified for the Proposed Project alignment and are presented in Table 5.4-5 and Table 5.4-6 of Section 5.4.1.5.

5.4.5.3 Special-status Species Impacts

Impacts to special-status species are addressed in Section 5.4.5.1.2, above.

5.4.5.4 Wetland Impacts

Impacts to RWQCB and CDFW jurisdictional waters are addressed in Section 5.4.5.1.4, above. The extent of temporary and permanent impacts to jurisdictional areas known at this time are presented in Table 5.4-10 and Table 5.4-11. HWT would site structures and locate and orient construction work areas to avoid wetlands to the maximum extent possible. HWT would obtain all necessary permits and authorizations and would implement APM BIO-10. With implementation of this APM, HWT would avoid or minimize impacts to state jurisdictional waters and riparian habitat by siting activities outside these areas, implementing appropriate BMPs, mitigating for permanent impacts, and performing restoration for temporary impacts.

5.4.5.5 Avian Impacts

Impacts to avian species are addressed in the impact analysis above in Sections 5.4.5.1.2 and 5.4.5.1.8.

5.4.6 CPUC Draft Environmental Measures

There are no CPUC Draft Environmental Measures identified for Biological Resources.

5.4.6.1 Applicant Proposed Measures

The following APMs would be implemented to reduce biological resources impacts associated with the Proposed Project:

BIO-1: Worker's Environmental Awareness Training Program (WEAP)

All workers on the Proposed Project site shall be required to attend a Worker's Environmental Awareness Training Program (WEAP). Training shall inform all construction personnel of the resource protection and avoidance measures as well as procedures to be followed upon the discovery of environmental resources. The WEAP training shall include, at a minimum, the following topics so crews will understand their obligations:

- ESA boundaries
- Housekeeping (Trash and equipment cleaning)
- Safety
- Work stoppage
- Communication Protocol
- Consequences of non-compliance

BIO-2: Pre-construction Biological Clearance Surveys and Monitoring

Pre-construction clearance surveys shall be performed by a qualified biologist (i.e., a biologist with the requisite education and experience to address specific resources), to avoid or minimize impacts on special-status plants and wildlife species, habitat, nesting birds and other sensitive biological resources in areas with the potential for resources to be present. Sensitive resources identified during the clearance survey shall be either:

- flagged for avoidance;
- moved to outside impact areas;

- avoided by implementing procedures to avoid impacts to individuals while impacting habitat (e.g., burrows, dens, etc.);
- or documented based on permit authorizations.

Specific details on the pre-construction survey requirements may be found within measures for each individual species. The construction area shall be flagged and staked, and vegetation to be avoided within the construction area shall be flagged to minimize impacts, where feasible.

Where special-status species (e.g., reptiles, birds, mammals, and bat roosts) or unique resources (defined by regulations and local conservation plans) are known to occur and there is a potential for significant impacts, qualified biologists shall monitor construction activities to ensure that impacts to special-status species, sensitive vegetation types, wildlife habitat, and unique resources are avoided and minimized.

BIO-3: Nesting Bird Management Plan

HWT shall prepare a Nesting Bird Management Plan (NBMP) in coordination with the CPUC, Bureau of Land Management (BLM), CDFW, and USFWS. The NBMP shall describe methods to minimize potential Proposed Project effects to nesting birds and avoid any potential for unauthorized take. Proposed Project-related disturbance including construction and pre-construction activities shall not proceed within buffer distances of active nests as specified by a qualified biologist until approval of the NBMP by the CPUC and BLM in consultation with the CDFW and USFWS.

NBMP Content. The NBMP shall include: (1) definitions of default nest avoidance buffers for each species or group of species, depending on characteristics and conservation status for each species; (2) a notification procedure for buffer distance reductions should they become necessary; (3) a rigorous monitoring protocol, including qualifications of monitors, monitoring schedule, and field methods, to ensure that any Proposed Project-related effects to nesting birds shall be minimized; and (4) a protocol for documenting and reporting any inadvertent contact or effects to birds or nests. The paragraphs below describe the NBMP requirements in further detail.

Background. The NBMP shall include the following:

1. A summary of applicable state and federal laws and regulations, including definition of what constitutes a nest or active nest under state and federal law.
2. A procedure for amendment of the NBMP, should there be changes in applicable state or federal regulations.
3. A list of bird species potentially nesting on or near the ROW or other work areas, indicating approximate nesting seasons, nesting habitat, typical nest locations (e.g., ground, vegetation, structures, etc.), tolerance to disturbance (if known) and any conservation status for each species. This section shall also note any species that do not require avoidance measures (e.g., rock pigeons).
4. A list of the types of Proposed Project construction activities that may occur during nesting season, with a short description of the noise and physical disturbance resulting from each activity.
5. Clearing of any vegetation, site preparation in open or barren areas, or other Proposed Project-related activities that may adversely affect breeding birds shall be scheduled outside the nesting season, as feasible.

Pre-construction Nest Surveys. Pre-construction nest surveys shall be conducted prior to any construction activities scheduled during the breeding period. For the Proposed Project, the breeding period shall be defined as January 1 through August 31. The NBMP shall describe the proposed field methods, survey timing, and qualifications of field biologists. Field biologist qualifications shall be subject to review by the CPUC and BLM. The avian biologists conducting the surveys shall be experienced bird surveyors and familiar with standard nest-locating techniques such as those described in Martin and Guepel (1993). Nest surveys shall focus on visual searches for nest locations and observations of bird activities and movement to detect nesting activity (e.g., carrying nest materials or food, territorial displays, courtship behavior). Surveys shall be conducted in accordance with the following guidelines.

1. Surveys shall cover all potential nesting habitat within the ROW or other work areas within 500 feet of these areas for raptors and 300 feet for non-raptors.
2. Pre-construction surveys shall be conducted for each work area, no longer than 10 days prior to the start of construction activity. On the first day of construction at any given site, a qualified Avian Biologist shall perform a pre-construction "sweep" to identify any bird nests or other resources that may have appeared since the 10-day survey.
3. HWT shall provide the CPUC and BLM a report describing the findings of the pre-construction nest surveys, including the time, date, and duration of the survey; identity of the surveyor(s); a list of species observed; and electronic data identifying nest locations and the boundaries of buffer zones. The electronic data set will be updated following each preconstruction nest survey throughout the nesting season. The format and contents of this report shall be described in the draft NBMP and will be subject to review and approval by the CPUC and BLM.

Nest Buffers and Acceptable Activities. The NBMP shall specify measures to delineate buffers on the work site, to consist of clearly visible marking and signage. Buffer locations shall be communicated to the construction contractor and shall remain in effect until formally discontinued (when each nest is no longer active). In addition, the NBMP shall specify measures to ensure the buffers are observed, including a direct communication and decision protocol to stop work within buffer areas. In some cases, active nests may be found while work is underway. Therefore, the NBMP shall include a protocol for stopping ongoing work within the buffer area, securing the work site, and removing personnel and equipment from the buffer.

The NBMP shall describe proposed measures to avoid take or adverse effects to nests, such as buffer distances from active nests. These measures shall be based on the specific nature of the bird species and conservation status, and other pertinent factors. The NBMP shall identify bird species (or groups of species) that are relatively tolerant or intolerant of human activities and specify smaller or larger buffer distances as appropriate for each species. If no information is available to specify a buffer distance for a species, then the NBMP shall specify 300 feet as a standard buffer distance, and 500 feet for raptors and special-status species. Nest management for listed threatened or endangered species shall be prescribed in a USFWS Biological Opinion, CDFW Incidental Take Permit, or both. All applicable avoidance measures, including buffer distances, must be continued until nest monitoring (below) confirms that the nestlings have fledged and dispersed, or the nest is no longer active. For each special-status species potentially nesting within or near Proposed Project work areas, the NBMP shall specify applicable buffers and any additional nest protection measures, specialty monitoring, or restrictions on work activities, if needed.

The NBMP shall identify acceptable work activities within nest buffers (e.g., pedestrian access for inspection or BMP repair) including conditions and restrictions, and any monitoring required. The NBMP shall include pictorial representation showing buffer distances for ground buffers, vertical helicopter buffers, and horizontal helicopter buffers for nests near the ground and nests in towers.

Nest Buffer Modification or Reduction. At times, HWT or its contractor may propose buffer distances different from those approved in the NBMP. Buffer adjustments shall be reviewed and recommended by a qualified avian biologist, who has been approved by the CPUC and BLM in consultation with the CDFW and USFWS. The NBMP shall provide a procedure and timing requirements for notifying the CPUC, BLM, CDFW, and USFWS of any planned adjustments to nest buffers. Separate and distinct procedures shall be provided for special-status birds. The NBMP shall list the information to be included in buffer reduction notifications in a standardized format.

Nest Deterrents. The NBMP shall describe any proposed measures or deterrents to prevent or reduce bird nesting activity on Proposed Project equipment or facilities, such as buoys, visual or auditory hazing devices, bird repellents, securing of materials, and netting of materials, vehicles, and equipment. It shall also include timing for installation of nest deterrents and field confirmation to prevent effects to any active nest; guidance for the contractor to install, maintain, and remove nest deterrents according to product specifications; and periodic monitoring of nest deterrents to ensure proper installation and functioning and prevent injury or entrapment of birds or other animals. In the event that an active nest is located on Proposed Project facilities, materials or equipment, HWT shall avoid disturbance or use of the facilities, materials or equipment (e.g., by red-tag) until the nest is no longer active.

Communication. The NBMP shall specify the responsibilities of construction monitors regarding nests and nest issues and specify a direct communication protocol to ensure that nest information and potential adverse impacts to nesting birds can be promptly communicated from nest monitors to construction monitors, so that any needed actions can be taken immediately.

The NBMP shall specify a procedure to be implemented following accidental disturbance of nests, including wildlife rehabilitation options. It also will describe any proposed measures, and applicable circumstances, to prevent take of precocial young of ground-nesting birds such as killdeer or quail. For example, chick fences may be used to prevent them from entering work areas and access roads. Finally, the NBMP shall specify a procedure for removal of inactive nests, including verification that the nest is inactive and a notification/approval and approval process prior to removal.

Monitoring. HWT shall be responsible for monitoring the implementation, conformance, and efficacy of the avoidance measures (above). The NBMP shall include specific monitoring measures to track any active bird nest within or adjacent to Proposed Project work areas, bird nesting activity, Proposed Project-related disturbance, and outcome of each nest. For nests with reduced buffers, HWT shall monitor each nest until nestlings have fledged and dispersed or until the nest becomes inactive. Nests with default buffers do not require further monitoring once construction work is completed in the area. New nests discovered after work completion in an area shall not require monitoring. In addition, monitoring shall include pre-construction surveys, daily sweeps of work areas and equipment, and any special monitoring requirements for particular activities (tree trimming, vegetation removal, etc.) or particular species (noise monitoring, etc.). Nest monitoring shall continue throughout the breeding season during each year of the Proposed Project's construction activities.

Reporting. Throughout the construction phase of the Proposed Project, nest locations, Proposed Project activities in the vicinity of nests (including helicopter traces), and any adjustments to buffer areas shall be updated and available to CPUC monitors on a daily basis. All buffer reduction notifications and prompt notifications of nest-related non-compliance and corrective actions shall be made via email to CPUC monitors. In addition, the NBMP shall specify the format and content of nest data to be provided in regular monitoring and compliance reports. At the end of each year's nest season, HWT shall submit an annual NBMP report to the CPUC, BLM, CDFW, and USFWS.

BIO-4: Burrowing Owl

Pre-construction survey. A pre-construction, focused burrowing owl survey shall be conducted no more than 30 days prior to initial start of construction within habitat to determine if any occupied burrows are present. If occupied burrows are found, adequate buffers shall be established around burrows. Adequate buffers shall be determined by a Project Avian Biologist based upon field conditions and resource agency guidelines for wintering burrows and breeding season burrows.

Conduct Surveys and Avoidance for Burrowing Owl. Burrowing owl surveys shall be conducted in accordance with the most current CDFW guidelines (CDFG, 2012; or updated guidelines as they become available). HWT shall take measures to avoid impacts to any active burrowing owl burrow within or adjacent to a work area. The default buffer for a burrowing owl burrow is 656 feet for ground construction, and 656 feet horizontal and 200 feet vertical for helicopter construction. Binocular surveys may be substituted for protocol field surveys on private lands adjacent to the Proposed Project site only when HWT has made reasonable attempts to obtain permission to enter the property for survey work but was unable to obtain such permission.

If active burrowing owl burrows are located within Proposed Project work areas that cannot be avoided, HWT shall work with CDFW to acquire an Incidental Take Permit (ITP).

BIO-5: Desert Tortoise

Pre-construction Surveys/Construction Monitoring. Prior to initial ground-disturbing activities, a biological monitor under the supervision of a USFWS- or CDFW-approved biologist—with experience monitoring and handling desert tortoise (includes both Mojave and Sonoran desert tortoises)—shall conduct a pre-activity survey in all work areas within potential desert tortoise habitat, plus an approximately 100-foot buffer. All desert tortoise burrows within the pre-activity survey area (including desert tortoise pallets) shall be prominently flagged at that time so that they may be avoided during work activities.

An approved biologist shall be onsite to monitor vegetation removal, blasting, and grading and provide regular inspections of all other construction activities within desert tortoise habitat. The approved biologist shall have the authority to halt all non-emergency actions (as soon as safely possible) that may result in harm to the desert tortoise and shall assist in the overall implementation of APMs for desert tortoise.

In the event a desert tortoise is encountered in the work area, all work shall cease, and the approved biologist shall be contacted. Work will not commence until the animal has voluntarily moved to a safe distance away from the work area. If it does not move on its own within 15 minutes, an authorized biologist may remove and relocate the animal to a safe location if authorized under existing permit conditions. No tortoise shall be handled except under authorization from the USFWS and CDFW. Encounters with desert tortoise shall be documented and provided to the appropriate wildlife resource agencies. In the event a dead or injured desert tortoise is observed,

the approved biologist will be responsible for notifying HWT's Herpetologist and reporting the incident to the wildlife resource agencies.

Avoid and Minimize Impacts. All Proposed Project activities located within areas identified as desert tortoise habitat shall implement the following avoidance and minimization measures:

1. **Under Vehicle Checks.** Desert tortoises commonly seek shade during the hottest times of the day. Employees working within the geographic range of this species will be required to check under their equipment or vehicles before they are moved. If desert tortoises are encountered, the vehicle shall not be moved until the tortoise has voluntarily moved away from the equipment or vehicle.
2. **Disposal of Trash.** Trash and food items shall be contained in closed containers and removed daily to reduce attractiveness to opportunistic predators, such as common ravens (*Corvus corax*), coyotes (*Canis latrans*), and feral dogs (*Canis lupus familiaris*).
3. **Pets Prohibited.** Employees shall not bring pets or other animals to the Proposed Project area, unless the animal is ADA compliant.
4. **Vehicle Travel.** During construction-related activities, motor vehicles shall be limited to maintained roads, designated routes, and areas identified as being permanently or temporarily affected by construction within the Proposed Project footprint. Motor vehicle speeds shall not exceed 15 miles per hour on Proposed Project-specific construction routes and temporary work areas within habitat for desert tortoise.
5. **Trapped Animal Prevention.** All auger holes, trenches, pits, or other steep-sided excavations that may pose a hazard to desert tortoise shall be either constructed with escape ramps (earthen or wooden) or securely covered when unattended to prevent entrapping animals. At the start and end of each workday, and just before backfilling, all excavations shall be inspected for trapped animals. If found, trapped animals shall be removed by the qualified biologist and relocated to outside the Proposed Project footprint, as required in all applicable permits or habitat conservation plans.

Coordinate with Agencies and Mitigation. HWT shall obtain take coverage and consult with the USFWS, CDFW, and/or land management agencies. In addition to obtaining the necessary permits and authorizations, which may include conducting protocol surveys as required by the agencies, the Proposed Project shall mitigate for temporary and permanent impacts. Mitigation ratios shall be determined based on the results of protocol surveys/habitat assessment, incorporating quality of habitat, population density, and land classification (i.e. BLM Areas of Critical Environmental Concern) into final mitigation ratios.

BIO-6: Develop and Implement Habitat Restoration Plan (HRP)

HWT shall develop and implement a Habitat Restoration Plan (HRP). Temporary impacts to regulated species' habitats, plant species, and vegetation communities shall be restored. Regulated species and vegetation communities include all species designated as threatened, endangered or rare, sensitive, or of concern by resource or land agencies. Species and vegetation communities that require restoration shall be determined by the resource agencies through the permitting process.

HWT shall consult with appropriate agencies during development of the HRP and implement the HRP in conjunction with applicable permit conditions and mitigation measures. The HRP shall be submitted to the CPUC and BLM for review and approval prior to the start of construction. Invasive plant management shall be performed in conjunction with the HRP per the Invasive Plant Management Plan (BIO-7).

Habitat Restoration Plan. For all restoration sites, the HRP shall include:

1. Restoration goals and objectives based on vegetation type and jurisdictional status of each site.
2. Quantitative restoration success criteria.
3. Implementation details as applicable. Details may include topsoil stockpiling and handling, postconstruction site preparation, soil decompaction and recontouring, planting and seeding palettes to include only native, locally sourced materials with confirmed ability to produce from suppliers, fall or other suitable season-season planting or seeding dates.
4. Maintenance details, which may include weeding, irrigation, or hand-watering schedule and equipment, and erosion control.
5. Monitoring and Reporting, specifying monitoring schedule and data collection methods throughout establishment of vegetation with key indicators of successful or unsuccessful progress, and quantitative criteria values to objectively determine success or failure at the conclusion of the monitoring period.
6. Adaptive management procedures such as reseeding, re-planting, drainage repairs, adjustments to irrigation schedule, and repair or remediation of sites to meet success criteria on schedule.

For species and vegetation communities with permit requirements including wetlands and riparian habitats, the goal of the HRP shall be to restore plant species, habitat values, or vegetation communities. For restoration sites, the goals, objectives, and success criteria specified in the HRP shall include native species cover and species richness compatible with the specific vegetation and habitat type.

If an unforeseen catastrophic event (e.g., flood, fire, or other event beyond HWT control) damages a restoration site within the monitoring period, HWT shall assess adjacent areas to adjust maintenance activities and success standards in coordination with the agencies. In all areas, seed and/or potted nursery stock of locally native species shall be used. The list of plants observed during botanical surveys of the Proposed Project area shall be used as a guide to site-specific plant selection, additional appropriate species may be included.

Monitoring of the restoration sites shall continue annually until HRP success criteria are achieved. HWT shall be responsible for implementing adaptive management as needed.

For all restoration areas, HWT shall provide annual reports to the CPUC and BLM to verify the total vegetation acreage subject to restoration, areas that have been completed, and areas still outstanding. The annual reports shall also include a summary of the restoration and adaptive management activities for the previous year, success criteria progress and completion, and any adjustments to planned activities, for the upcoming year.

BIO-7: Develop and Implement Invasive Plant Management Plan.

HWT shall prepare and implement an Invasive Plant Management Plan (IPMP). This plan shall include measures designed to avoid the introduction and spread of new nonnative invasive plant species (invasive plants) and minimize the spread of existing invasive plants resulting from Proposed Project activities. The IPMP must meet the BLM's requirements for NEPA disclosure and analysis if herbicide use is proposed for the Proposed Project. The IPMP shall be submitted to the CPUC and BLM for review and approval prior to the start of construction.

For the purpose of the IPMP, invasive plants shall include plants that (1) are invasive and rated high or moderate for negative ecological impact in the California Invasive Plant Inventory Database (Cal-IPC 2025), or (2) aid and promote the spread of wildfires such as *Bromus tectorum* (cheatgrass), *Brassica tournefortii* (Sahara mustard), and Bromus *madritensis* spp*. rubens* (red brome)) or (3) are identified by the BLM as special concern. The IPMP shall be implemented throughout Proposed Project pre-construction, construction, and restoration phases.

Invasive Plant Management Plan. The IPMP shall include the information defined in the following sections:

1. **Assessment.** An assessment of the Proposed Project's potential to cause spread or the introduction of invasive plants into new areas, or to introduce new invasive plants into the ROW. This section shall list known and potential invasive plants occurring on the ROW and in the Proposed Project region and identify threat rankings and potential for Proposed Project-related occurrence or spread for each species. This section shall identify control goals (e.g., eradication, suppression, or containment) for invasive plants of concern with potential to occur on the ROW.
2. **Pre-construction Invasive Plant Inventory.** HWT shall inventory all invasive plants of concern in areas (both within and outside the ROW) subject to Proposed Project-related vegetation removal/disturbance, "drive and crush," and ground-disturbing activity. The invasive plants inventory area shall also include vehicle and equipment access routes within the ROW and all Proposed Project staging and storage yards. Invasive plants of concern shall be mapped by area of occurrence and percent cover. The map shall be updated with new occurrences at least once a year.
3. **Pre-construction Invasive Plants Treatment.** Invasive plant infestations identified in the pre-construction invasive plants inventory shall be evaluated to identify potential for Proposed Project-related spread and potential benefits (if any) of pre-construction treatment. Pre-construction treatment shall consider the specific invasive plants, potential seed banks, or other issues. The IPMP shall identify any infestations to be controlled or eradicated prior to Proposed Project construction. Control and follow-up monitoring of pre-construction invasive plants treatment sites shall follow methods identified in appropriate sections of the IPMP.
4. **Prevention.** The IPMP shall specify methods to minimize potential transport of new invasive plant seeds onto the ROW, or from one section of the ROW to another. The ROW may be divided into "weed zones," based on invasive plants of concern in the ROW. The IPMP shall specify inspection procedures for construction equipment entering the Proposed Project area. Vehicles and equipment may be inspected and cleaned at entry points to specified sections of the ROW, and before leaving work sites where invasive plants of concern must be contained locally. Off road construction equipment shall be inspected to ensure it is free of any dirt or mud that could contain invasive plant seeds, roots, or rhizomes, and the tracks, outriggers, tires, and undercarriage shall be carefully washed, with special attention being paid to axles, frame, cross members, motor mounts, underneath steps, running boards, and front bumper/brush guard assemblies. Other construction vehicles (e.g., pick-up trucks) that shall be frequently entering and exiting the site shall be inspected and washed on an as-needed basis. Tools such as chainsaws, hand clippers, pruners, etc., shall be cleaned of dirt and mud before entering Proposed Project work areas.

   All vehicles shall be washed off-site when possible. If off-site washing is infeasible, on-site cleaning stations (including air washing) shall be set up at specified locations to clean equipment before it enters the work area. Wash stations shall be located away from native habitat or

special-status species occurrences. Wastewater from cleaning stations shall not be allowed to run off the cleaning station site. When vehicles and equipment are washed, a daily log must be kept stating the location, date and time, types of equipment, methods used, and personnel present. The log shall contain the signature of the responsible crewmember. Written or electronic logs shall be available to the BLM and CPUC monitors on request.

Erosion control materials (e.g., straw bales) must be certified free of invasive plant seed ("weed-free") before they are brought onto the site. The IPMP must prohibit on-site storage or disposal of mulch or green waste that may contain invasive plant material. Mulch or green waste shall be removed from the site in a covered vehicle to prevent seed dispersal and transported to a licensed landfill or composting facility.

The IPMP shall specify guidelines for any soil, gravel, mulch, or fill material to be imported into the Proposed Project area, transported from site to site within the Proposed Project area, or transported from the Proposed Project area to an off-site location, to prevent the introduction or spread of invasive plants to or from the Proposed Project area.

5. **Monitoring.** The IPMP shall specify methods to survey for invasive plants of concern during pre-construction, construction, and restoration phases; and shall specify qualifications of specialists responsible for invasive plant monitoring and identification. It must include a monitoring schedule to ensure timely detection and immediate control of new invasive plant infestations to prevent further spread. Surveying and monitoring for invasive plant infestations shall occur at least two times per year, to coincide with the early detection period for early season and late season invasive plants. The monitoring section shall also describe methods for post-eradication monitoring to evaluate success of control efforts and any need for follow-up control.
6. **Control.** The IPMP must specify manual and chemical invasive plant control methods to be employed. The IPMP shall include only invasive plant control measures with a demonstrated record of success for target invasive plants, based on the best available information. The plan shall describe proposed methods for promptly scheduling and implementing control activity when any Proposed Project-related invasive plant infestation is located (e.g., located on a Proposed Project disturbance site), to ensure effective and timely invasive plant control. Invasive plant infestations must be controlled or eradicated as soon as possible upon discovery, and before they go to seed, or when appropriate with the goal to prevent further spread. All proposed invasive plant control methods must minimize disturbance to native vegetation, limit ingress and egress to defined routes, and avoid damage to any environmentally sensitive areas (ESAs) identified within or adjacent to the ROW. New infestations by invasive plants of concern shall be treated at a minimum of once annually until eradication, suppression, or containment goals are met. Invasive plant occurrences can be considered eradicated when no new seedlings or resprouts are observed for three consecutive years, or a single season where new seedlings or resprouts are observed in reference populations but not at the control site. Invasive plant control efforts may cease when eradication is complete.

   Manual control shall specify well-timed removal of invasive plants or their seed heads with hand tools; seed heads and plants must be disposed of in accordance with guidelines from the Imperial County and Yuma County Agricultural Commissioners if such guidelines are available.

   The chemical control section must include specific and detailed plans for any herbicide use. It must indicate where herbicides will be used, which herbicides shall be used, and specify techniques to be used to avoid drift or residual toxicity to native vegetation or special-status plants, consistent with BLM's Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States (BLM, 2007) and National Invasive Species Management Plan (NISC, 2008). All

herbicide applications shall follow U.S. Environmental Protection Agency label instructions and shall be in accordance with federal, state, and local laws and regulations. Only state and BLM-approved herbicides may be used. Herbicide treatment shall be implemented by a Licensed Qualified Applicator. Herbicides shall be applied in accordance with product labels and applicator licenses. Herbicides shall not be applied during or within 24 hours of high confidence predicted rain. Only water-safe herbicides shall be used in riparian areas or within channels (engineered or not) where they could run off into downstream areas. Herbicides shall not be applied in high wind conditions.

7. **Reporting schedule and contents.** The IPMP shall specify the reporting schedule and contents of each report.

BIO-8: Special-status Herbaceous Plants

HWT shall avoid, minimize or mitigate impacts to any state or federally listed or California Rare Plant Rank (CRPR) 1 or 2 herbaceous plants that may be located on the Proposed Project disturbance areas or surrounding buffer areas.

Pre-construction survey. Pre-construction clearance surveys in areas where special-status plant species potentially occur shall be performed by a qualified biologist (i.e., a biologist with the requisite education and experience to address specific resources), which may be chosen from a previously approved CPUC approved biologist, to avoid or minimize impacts on special-status plants. Disturbance free buffers for special-status herbaceous species shall be 25-ft from the individual and/or occurrence boundary. These buffers shall be established from the previously conducted focused surveys and preconstruction survey results. If a smaller buffer is required, HWT shall develop and implement site-specific monitoring plan to minimize direct impacts to the species. The plan shall be submitted to the CPUC for review and approval.

In the event of a discovery of previously undescribed species, the boundary of the occurrence (defined by CNDDB as all individuals within a ¼ mile of each other) shall be flagged, avoided, and monitored as discussed above and the CPUC, CDFW, and/or USFWS shall be notified.

Focused Survey. For construction areas where special-status plant species potentially occur and focused surveys have not occurred, focused surveys shall take place prior to construction. Focused surveys shall be conducted consistent with methodology described in *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (CDFW 2018).

Restoration and Mitigation. HWT shall implement the following activities; other conflicting permit conditions shall supersede the activities below.

1. **Coordinate with Agencies.** Agencies shall approve any impacts to special-status plants. Impacts in excess of 10 percent of any occurrence, or other percentage required by agency regulations on lands under their jurisdiction, shall be restored or mitigated.
2. **Habitat Restoration and Revegetation.** A Habitat Restoration Plan (HRP) shall address topsoil, plant or propagules salvage, and restoration. A Habitat Mitigation and Management Plan (HMMP) shall address mitigation. Approval of the HRP by appropriate agencies is required before impacts to special-status plant occurrences are allowed. A draft HMMP shall be submitted to the appropriate agencies prior to impacts to special-status plants. For more information see APM BIO-6.

3. **Salvage.** If required by agency regulations on lands under their jurisdiction, HWT shall consult with a qualified restoration ecologist or horticulturist regarding the feasibility and likely success of salvage efforts for each species. If salvage is feasible, based on prior success with similar species, HWT shall include salvage methods in the HRP. For special-status plants, the goal shall be to preserve existing populations or establish new populations. The HRP shall include at minimum: (a) species and locations of plants identified for salvage; (b) criteria for determining whether a species is appropriate for salvage; (c) the appropriate season for salvage; (d) equipment and methods for collection, transport, and re-planting plants or propagules, to retain intact soil conditions and maximize success; (e) details regarding storage of plants or propagules for each species; (f) location of the proposed recipient site, and detailed site preparation and plant introduction techniques, as applicable; (g) a description of the irrigation, and other maintenance activities, as applicable; (h) success criteria, including specific timeframe for survivorship of each species; and (i) a detailed monitoring program, commensurate with the HRP goals. Invasive plant control for special-status plants shall be addressed in the Invasive Plant Management Plan (IPMP, APM BIO-7).
4. **Off-site compensation.** Where restoration is not feasible, HWT shall provide compensation lands consisting of habitat occupied by the impacted CRPR 1 or 2 ranked plant occurrences at a 1:1 ratio of acreage for any occupied habitat affected by the Proposed Project. Occupied habitat shall be calculated on the Proposed Project site and on the compensation lands as including each special-status plant occurrence. If compensation is selected as a means of mitigating special-status plant impacts, it may be accomplished by purchasing credit in an established mitigation bank, acquiring conservation easements, or direct purchase and preservation of compensation lands. Compensation for these impacts may be "nested" or "layered" with compensation for habitat loss.

Agency Coordination. Annual construction monitoring reports shall be submitted to the CPUC and BLM. Reports shall include, but not be limited to, number of plants impacted, details of plants or propagules salvaged, stored, and transplanted (salvage and transplanting locations, species, number, size, condition, etc.); adaptive management efforts implemented (date, location, type of treatment, results, etc.); and evaluation of success of transplantation. After construction, salvage status shall be described in the HRP annual report.

In the event of an unexpected discovery of a new species or previously undocumented occurrence, the same steps shall be used as discussed above. In addition, when there is an unexpected discovery of a new species, the CPUC and CDFW and/or BLM shall be notified.

BIO-9: Special-status Perennial Plants and Other Species

HWT shall avoid, minimize or mitigate impacts and other special-status perennial plants.

Pre-construction survey. Pre-construction surveys shall be conducted by a qualified specialist to identify any saguaro or other special-status perennial plants in the Proposed Project area. Where saguaro are known to occur, all work shall occur outside an appropriate buffer to avoid individual saguaro cactus, seeds, and seedbank as agreed to by CDFW. Where other special-status perennial species are known to occur, all work shall occur outside an appropriate buffer to avoid individual plants or groupings as agreed to by CDFW. If impacts that would result in take cannot be avoided, HWT shall obtain a Section 2081(b) ITP from CDFW if the species is CESA listed or a candidate for listing, and shall implement additional measures pursuant to the ITP. Buffer reductions may occur with the implementation of appropriate ITP measures. A qualified botanist/arborist monitor, with

the authority to halt work, shall be present whenever work occurs within reduced buffers for special-status perennial species as required by CDFW.

Compensatory Restoration. If an ITP for saguaro and/or other special-status perennial plant species is obtained, then compensation for impacts shall be addressed through the permit conditions.

BIO-10: Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats.

The Proposed Project shall avoid and/or minimize impacts to all state jurisdictional waters, wetlands, and riparian habitat that occur within the Proposed Project area where feasible. All grading, blasting, fill, staging of equipment, infrastructure construction or removal, and all other construction activities shall be designed, sited, and conducted outside of state and federally jurisdictional waters, wetlands, and riparian habitat.

The implementation of appropriate Best Management Practices (BMPs) (e.g., silt fencing, straw wattles, secondary containment, avoiding fueling within 100 feet of jurisdictional waters, etc.) shall be utilized to ensure that indirect impacts to jurisdictional waters, wetlands, and riparian areas are avoided or minimized. BMPs are also necessary to reduce the risk of an unintended release of sediment or other material into jurisdictional waters. New and upgraded roadways shall use at-grade type stream crossings unless installation or repair of culverts is required. Stockpiled and bermed sediment shall be redistributed or removed from the site so as not to alter flows. New poles shall be sited outside stream channels.

If permanent impacts to waters, wetlands, and riparian habitats are unavoidable, they shall be mitigated at a minimum of a 1:1 ratio, or at a ratio determined by the applicable Resource Agencies (i.e., U.S. Army Corps of Engineers, the State Water Resources Control Board/Regional Water Quality Control Boards, and California Department of Fish and Wildlife). Temporary impacts to jurisdictional waters shall be returned to pre-existing contours upon completion of the work.

BIO-11: Avoid Impacts to Desert Bighorn Sheep.

Determination of Desert Bighorn Sheep Habitat: CDFW shall determine desert bighorn sheep habitat within the Project area based on data gathered by CDFW Wildlife Biologists. HWT, in conjunction with a Designated Biologist(s), shall coordinate with CDFW to obtain information on desert bighorn sheep habitat, including lambing habitat and water sources, within the Project area in advance of Project activities, and HWT shall implement appropriate avoidance and minimization measures to avoid impacts to desert bighorn sheep in these areas. Avoidance and minimization measures should be in place prior to the start of construction and any ground-disturbing activities.

Limited Operating Period: If feasible, activities within occupied desert bighorn sheep habitat shall be avoided during the peak lambing period (December 1 through June 30, or earlier, if data are available to demonstrate to the satisfaction of CDFW that six weeks have elapsed from the last date of lambing). Furthermore, no sudden, loud noises (e.g., from heavy machinery, pile driving, or blasting) shall occur within 1 km of lambing habitat, and no low-elevation helicopter flights shall occur within 1 km of lambing habitat.

Construction Noise: Sound pressure levels shall not exceed 85 dB measured at 50 ft from the noise. Sudden, loud noises (e.g., heavy machinery, blasting, pile driving, low-elevation helicopter flights) that may startle bighorn sheep shall be avoided within 1 km of desert bighorn sheep habitat.

Pre-construction Surveys and Ongoing Monitoring: When work is being implemented in or within 1- km of desert bighorn sheep habitat, a Designated Biologist(s) shall assess presence of bighorn sheep in the vicinity of work areas and helicopter flight paths. The Designated Biologist shall coordinate directly with CDFW Wildlife Biologists for guidance with specific questions as situations arise. If ewes or lambs are present within 1 km of the work area, work shall be suspended in that area. The 1-km buffer may be reduced in coordination with CDFW if it is determined that bighorn sheep are not at risk. Factors such as distance of the activities from the sheep, nature of construction activities, duration of activities, topography, work area located in trees or other natural features that attenuate the sound, etc. should be taken into consideration. The Designated Biologist shall be present at the work site(s) to monitor for bighorn sheep during all activities in bighorn sheep habitat. The Designated Biologist shall work with project personnel to cease or defer activities when bighorn sheep are close enough to be disturbed by the activities.

Helicopter Use: Helicopter flight paths and landings shall be delineated prior to implementation in coordination with the CDFW Wildlife Biologist to ensure protection of desert bighorn sheep habitat by incorporating appropriate species-specific vertical and horizontal buffers and Limited Operating Periods.

Reporting of Mortality or Injury: HWT shall immediately report any bighorn sheep mortalities, whatever the cause, to CDFW as soon as possible after the observation. The bighorn sheep carcass shall be covered and left in place until the CDFW biologist can examine it and determine the proper disposal method.

Disease Prevention: A boot disinfection station shall be set up at the staging area. If workers have any potential contact with grounds occupied by sheep or goats (for example, at home, visiting a farm, attending a County fair, going to a petting zoo, etc.), they shall disinfect their boots before going to the work site. Workers shall also ensure that their vehicles/equipment are washed at either a project wash station or a commercial wash if there is a chance that the tires or interior may be contaminated. Alternatively, personnel can be required to change their footwear so that contaminated footwear is not used in work vehicles or on the Project site.

Water Sources: In the event that bighorn sheep abandon the use of one or more water sources as a result of disturbance associated with the Project, HWT shall create additional water sources after consulting with appropriate agency personnel (CDFW and USFWS) to select location(s) and provide assistance in establishing additional water sources(s).

BIO-12: Habitat Compensation Plan.

Habitat Compensation Plan: HWT shall prepare a Habitat Compensation Plan for CDFW review and approval prior to implementation. The Habitat Compensation Plan shall include compensatory mitigation for CESA-listed and other special-status species expected to be impacted by Project activities.

Compensatory Mitigation for Desert Tortoise and Burrowing Owl: Offsite compensatory mitigation shall occur at no less than a 5:1 ratio for impacts to critical desert tortoise habitat and no less than a 3:1 ratio for impacts to non-critical suitable desert tortoise habitat. Offsite compensatory mitigation shall occur at no less than a 3:1 ratio for impacts to Burrowing Owl. Compensatory mitigation for these CESA- listed species shall be fulfilled through (1) the purchase of CDFW-approved mitigation bank credits or (2) acquisition and transfer of fee title of lands, protection in perpetuity through recordation of a conservation easement with a legally appropriate entity acting as grantee, land management in perpetuity, and funding of management activities through the calculation and

deposit of an endowment fund. Compensatory mitigation shall be fulfilled prior to start of Project activities unless a security is provided to ensure funding for CDFW to complete these activities.

Desert Kit Fox and American Badger: If desert kit fox or American badger are proposed to be relocated from an active burrow or an active burrow shall be impacted, HWT shall have a Qualified Biologist prepare and implement an exclusion plan to be performed outside of breeding/pupping season and after juvenile dispersal. HWT shall implement compensatory mitigation such that the habitat acreage and number of dens (desert kit fox and American badger) and individuals impacted (American badger) are replaced at no less than a 2:1 ratio.

Flat-tailed Horned Lizard and Colorado Desert fringe-toed lizard: If impacts to Flat-tailed Horned Lizard or Colorado Desert fringe-toed lizard and their habitats are expected, HWT shall provide compensatory mitigation such that the habitat acreage and lizards impacted are replaced at no less than a 2:1 ratio, in advance of impacts.

Burrowing Owl: If impacts are expected to occur to an occupied burrow, HWT shall obtain an Incidental Take Permit (ITP) under CA Fish and Game Code 2081 to authorize the take and provide compensatory mitigation. Mitigation shall be implemented consistent with the requirements within the ITP.

Bats: If impacts are expected to occur to bat roosting habitat, HWT shall provide compensatory mitigation sufficient to replace the total area of roosting habitat at no less than a 2:1 ratio, in advance of impacts.

Sensitive Vegetation Communities: HWT shall compensate for anticipated impacts to Fremont cottonwood forest and woodland, hardstem and California Bulrush marshes, iodine bush scrub, mesquite thickets, Mojave-Sonoran desert dunes, American bulrush marsh (common three-square marsh), arrow weed thickets, blue palo verde – ironwood woodland, bush seepweed scrub, and California joint fir – longleaf joint fir scrub through onsite restoration (BIO- 6) and land acquisition and/or preservation at a minimum ratio of 2:1.

This page intentionally left blank.

5.5 Cultural Resources

This section describes the cultural resources in the vicinity of the Ironwood Transmission Line Project (Proposed Project), as well as the potential impacts that may result from construction and operation of the Proposed Project. See Section 5.18, Tribal Cultural Resources, for information related to cultural resources potentially of importance to California Native American tribes.

Cultural resources are defined as any object or specific location of past human activity, occupation, or use that is identifiable through historical documentation, inventory, or oral evidence. Cultural resources can be separated into three categories: archaeological, built environment, and traditional cultural resources. Archaeological resources include both prehistoric and historic era remains of human activity. Prehistoric resources can include lithic scatters, ceramic scatters, quarries, habitation sites, temporary camps/rock rings, ceremonial sites, and trails. Historic era archaeological resources can consist of structural remains (e.g., concrete foundations), historical objects (e.g., bottles and cans), features (e.g., refuse deposits or scatters), and sites (e.g., resources that contain one or more of the aforementioned categories). Built environment resources range from historical buildings to canals, historical roads and trails, bridges, ditches, cemeteries, and electrical infrastructure, such as transmission lines, substations, and generating facilities. Traditional cultural resources are described in Section 5.18, Tribal Cultural Resources.

This section is based on information obtained primarily through a literature review completed in support of the Proposed Project.

5.5.1 Environmental Setting

The Proposed Project is located in western Yuma County, Arizona and Imperial County, California, crossing predominantly unincorporated lands as well as federal, state, municipal, and private land. These lands include unincorporated areas of Imperial and Yuma counties, the city of Calexico, California, and public lands under the jurisdiction or management of the U.S. Bureau of Land Management (BLM), U.S. Bureau of Reclamation, and the California Department of Parks and Recreation.

The Proposed Project lies within the Colorado Desert province in Imperial County, California, and Yuma County, Arizona. The Colorado Desert province is a low-lying barren desert basin, about 245 feet below mean sea level, in part, dominated by the Salton Sea. The province is a depressed block between active branches of the alluvium-covered San Andreas Fault with the southern extension of the Mojave Desert on the east (California Geologic Survey 2002). There are bedrock-controlled channels in the mountains that carry seasonal flows through alluvial channels below to the Salton Sea and a few rivers that evolved from irrigation drainage water flow to the Salton Sea from Imperial and Coachella Valleys (United States Department of Agriculture [USDA] 2025). The largest water feature in the Colorado Desert province is the Salton Sea, which measures approximately 40 miles in length by 16 miles in width (USDA 2025). Land use within the region changed between the early 1800s and 1900s due to the introduction of plant and animal species related to grazing, agriculture, and urbanization (USDA 2025). Agricultural communities make up a large portion of the region, and irrigated agricultural areas in Imperial Valley, Coachella Valley, and Palo Verde Valley draw heavily from California's allotment of water from the Colorado River (Michaelsen 2009).

The Proposed Project falls into five different ecoregions: the Imperial/Lower Coachella Valleys, the Central Sonoran/Colorado Desert Basins, the Sand Hills/Sand Dunes, the Lower Colorado/Gila River Valleys, and the Central Sonoran/Colorado Desert Mountains (Griffith et al. 2016). Elevations within the Proposed Project alignment range between approximately 35 feet (10.7 meters) below mean sea level northeast of Calexico and 1,800 feet (5,487 meters) above mean sea level northeast of Yuma. The western portion of the Proposed Project traverses the city of Calexico, with the southern portion of El Centro and unincorporated Heber in the vicinity. These communities lie within an agricultural hub with a focus on mid-winter salad vegetables and cattle livestock. New River runs through the western portion of the Proposed Project west of Calexico and flows from Baja California towards the Salton Sea. Similarly, the Alamo River is located east of Calexico and runs parallel to New River. Agricultural communities are also located within the eastern portion of the Proposed Project on either side of the Colorado River and include unincorporated Winterhaven and Bard. Interstate 8 bisects the Proposed Project just south of Date City and runs towards the Algodones Dunes until it crosses the Colorado River north of Yuma.

Under federal law, the Area of Potential Effects (APE) is the geographic area or areas within which a Proposed Project may directly or indirectly cause changes in the character or use of historic resources. The determination of the APE is influenced by the project's setting, the scale and nature of the Proposed Project, and the different kinds of effects that may result from the Proposed Project (36 CFR 800.16[d]). The Area of Potential Impacts (API) is the commensurate California Environmental Quality Act (CEQA)-level equivalent and is effectively similar in implementation. For the purpose of this assessment, the APE and API are identical and will collectively be referred to as the "APE". The APE is defined to identify resources in the area that have potential for historic significance, that should be evaluated for eligibility for the National Register of Historic Places (NRHP), and that may be directly or indirectly affected by the Proposed Project .

The proposed draft direct APE[1] is focused on the potential of the Proposed Project to result in effects to archaeological and built environment historic resources that exist within the direct area of disturbance for the Proposed Project. As most archaeological historic resources are located below grade, this draft direct APE was developed in consideration of ground disturbance that would occur as part of the Proposed Project. Therefore, the draft direct APE is comprised of a 250-foot-wide corridor, referred to herein as the alignment corridor, and up to 50-feet from either side of the alignment corridor. Additionally, the draft direct APE includes a 50-foot-wide buffer from either side of the centerline for access roads and a 50-foot wide buffer for staging areas and lay down yards. Fifty feet is sufficient to capture adjacent resources that may require avoidance measures.

The Visual Auditory and Atmospheric (VAA) APE is focused on the potential of the Proposed Project to result specifically in visual, auditory, and atmospheric effects to known historic resources. The draft VAA APE is limited to 0.50 miles from the Proposed Project.

The cumulative effects APE refers to the geographic area within which the Project may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist, when combined with effects from other past, present, and reasonable near future actions. The cumulative effects APE specifically addresses the potential for incremental impacts that, when considered collectively with impacts from other actions regardless of what agency (federal or nonfederal) or person undertakes the other actions, could have a significant effect on historic properties. Cumulative effects may be direct and/or indirect, or reasonably foreseeable effects caused by the Project that may occur over time, be farther removed in distance or be cumulative.

[1] The draft direct APE is currently under review by BLM for final approval.

For the purposes of this Project, the cumulative effects APE will be coterminous with the direct effects and VAA APEs and evaluate known or potential historic properties or sites of religious and cultural significance to the Tribes (Traditional Cultural Properties, or TCPs).

5.5.1.1 Cultural Resources Reports

This section is based on information obtained primarily through a literature review completed for the Class I Inventory, Tribal Participation Plan, Ethnographic Literature Review and Work Plan and Research Design in support of the Proposed Project, all of which are under review by the BLM.

5.5.1.2 Cultural Resources Summary

The following section provides a high-level summary of the physical and cultural history of the Proposed Project Study Area. The Study Area is defined below.

Cultural Resources Class I Inventory Study Area

A Cultural Resources Study Area was developed in the Class I Inventory for the preliminary Proposed Project route selection to identify the geographic limits for the cultural resources investigation. The Study Area included nine route alternatives with 250-foot-wide right-of-way (ROW) that would include elements proposed for construction by the Proposed Project. The Study Area additionally included a 50-foot buffer on either side of the ROW, to ensure that potential effects to historic resources located adjacent to or intersecting with the route alternatives are considered. The Study Area also considered the vertical limits of the Proposed Project. The maximum depth of construction associated with the Proposed Project is expected to reach 40 feet below ground surface (bgs) to accommodate the construction of transmission tower foundations. The Proposed Project's maximum height is expected not to exceed 200 feet, which is below the threshold at which a structure may affect navigable airspace based on Federal Aviation Administration guidelines. Therefore, the Study Area spans from 40 feet bgs to 200 feet above grade.

The Study Area included route alternatives that encompass federal lands under the jurisdiction or management of the U.S. Bureau of Land Management (BLM), U.S. Bureau of Reclamation , U.S. Bureau of Indian Affairs, U.S. Department of Defense; state lands managed by the California State Lands Commission, California Department of Parks and Recreation, and the Arizona State Trust Land Department; tribal lands including the Fort Yuma Quechan Indian Reservation county/city lands managed by Imperial County, California, Yuma County, Arizona, and the cities of Calexico, California and Yuma, Arizona; and private lands.

Prehistoric Background

The Proposed Project lies in what generally is described as the Colorado Desert region (Schaefer and Laylander 2007:247) and encompasses the Study Area. Though it shares similarities with the adjacent Mojave and Sonoran deserts, the Colorado Desert possesses a unique and distinct natural and cultural history (Schaefer and Laylander 2007:247). The Colorado Desert is bordered on the west by the Peninsular Range and the Pacific Coastal Plain, the Colorado River to the east, the Mojave Desert to the north, and the Gulf of California to the south. This part of the Colorado Desert is the Salton Trough, which lies primarily within today's Imperial, Riverside, San Diego and parts of Yuma counties.

Although now an arid region, a series of lakes collectively referred to as Lake Cahuilla (Lake LeConte, Blake's Sea) covered much of the Salton Trough throughout the Holocene. Lake Cahuilla was formed by the western diversion of the Colorado River into the Salton Trough when natural sediment barriers blocked the river's flow south to the Gulf of California. After at least three episodes of infilling and recession between 1200 CE and the late 1600s, Lake Cahuilla is believed to have receded for the last time around 1580 CE, with a brief inundation in the late 1600s (Buckles and Krantz 2005, Laylander 1995, Schaefer and Laylander 2007, Waters 1983). The freshwater fish, shellfish, migratory birds, and riparian flora and fauna associated with the lake may have been important factors in human subsistence and settlement patterns during most of the Prehistoric Period.

The lake experienced many partial infillings and fluctuations in level over time (Schaefer n.d., Laylander 2006). Some scholars argue that the desiccation of the lake caused permanent shoreline populations to move out of the valley and into the mountains to the west and the Colorado River to the east. Others argue that the valley was seasonally inhabited by small mobile groups due to unstable seasonal fluctuations in lake levels. Once the lake dried up, these groups would have altered their seasonal rounds to exclude Lake Cahuilla or to focus on newly exposed resources on the lakebed (Schaefer n.d.).

The recession of Lake Cahuilla would have been accompanied by increasing salinity levels. This would have impoverished and eliminated the freshwater fauna and flora living in and around the lake.

It is possible however, that the lake could have continued to be exploitable by humans at least as low as 180 feet (55 meters) below sea level (Laylander 2006).

Paleo-Indian Period (ca. 10,000 – 6000 BCE)

In contrast to the dry climate of today, California's desert regions during the late Pleistocene and the early Holocene contained a series of large, pluvial lakes. Archaeological evidence suggests that early Holocene hunter-gathers of the desert region were well adapted to the wetland environments supported by these lakes. Sites were typically located on or near the shores of former pluvial lakes and marshes and have artifact assemblages marked by their diversity of flaked-stone artifacts. Such sites, however, have not been documented for the Colorado Desert region, including for the nearly 10,000-year-old pluvial shoreline of Lake Cahuilla (Moratto 1984: 96, Schaefer and Laylander 2007: 247).

The San Dieguito Complex is a well-defined expression or cultural pattern of the Paleo-Indian Period in the California desert region. Originally named for the cultural sequence in western San Diego County (Rogers 1929, 1939), the complex now incorporates additional local patterns within the Colorado and Mojave Deserts and the western Great Basin (Warren 1967). Leaf-shaped points and knives, crescents, and scrapers characterize the artifact assemblages throughout the region. Moratto (1984: 92) subsumed the numerous local patterns (including the Lake Mojave Period of Warren 1967) under the overarching Western Pluvial Lakes Tradition (WPLT), first defined by Bedwell (1970). Current studies regarding the Colorado Desert, however, typically reference the Paleo-Indian Period or San Dieguito Complex, rather than the WPLT (cf., Schaefer and Laylander 2007).

Early Archaic Period (6000–2000 BCE)

As the pluvial conditions of the Pleistocene transitioned to the more arid Holocene climate, many of the lakes and wetlands present during the Paleo-Indian Period began to dry up. By the Early Archaic, many of these wetlands had disappeared. Desert populations appear to have adapted to these more arid conditions by withdrawing to the margins of the desert or concentrating around the few oases still present within it (Warren 1984: 413-414). A brief period of moister conditions may have led to a temporary reoccupation of the desert region between 4500 and 3500 BCE. However, evidence from the Mojave Desert and western Great Basin sites suggests that most Early Archaic sites were temporary, seasonal camps of small, highly mobile groups. Slab metates and hand stones (used to process hard seeds), shaped scrapers, and the Pinto-style Projectile point characterize the artifact assemblages of the Pinto Basin Complex. In the Colorado Desert, the Indian Hill rockshelter is recognized as one of the best understood Archaic Period sites, with occupation extending back more than 4,000 years (Schaefer and Laylander 2007: 247).

Late Archaic Period (2000 BCE–500 CE)

The onset of the Late Archaic coincides with the beginning of the Little Pluvial, a brief period of moister climatic conditions. By the second half of the Late Archaic, arid conditions returned. Desert peoples appear to have been well adapted to these conditions by this time, however, and no notable drop in population appeared to have occurred. Late Archaic sites are characterized by a wider range of diagnostic projectile points, such as the Gypsum and Elko types, as well as split-twig figurines, the latter typically preserved in caves (Warren 1984: 416–417). Hand stones and metates continued to be employed but were supplemented by the introduction of mortars and pestles during this period. Based on ethnographic analogy and site location, Warren (1984: 419) suggests that mortars and pestles were used to process mesquite pods. The bow and arrow also appear to have been introduced near the end of this period. In addition, this period is marked by an increased presence of exotic trade goods, including shell ornaments from the Pacific coast.

Several large Late Archaic Period sites in the Colorado Desert indicate increased sedentism, particularly in the northern Coachella Valley (Love and Dahdul 2002, Schaefer and Laylander 2007). Late Archaic sites near the maximum shoreline of Lake Cahuilla indicate rabbits supplemented lacustrine food sources such as fish, shellfish, and migratory waterfowl (Schaefer and Laylander 2007). Long-distance trade is evidenced in these assemblages by the presence of obsidian from the Coso volcanic field in Inyo County and shell beads from the Gulf of California.

Late Prehistoric Period (500 CE–Historic Contact)

The period from the end of the Archaic Period to European contact was a time of complex and ongoing change in material culture, burial practices, and subsistence focus. These changes most likely reflect both cultural influences from outside the region and in situ cultural adaptations in response to shifts in environmental conditions. The Late Prehistoric, commonly called the Patayan Period in the Colorado Desert, is identified by the introduction of pottery and marked by stronger regional differentiation. While the artifact assemblages are similar to those of the Late Archaic, there are notable differences. In addition to ceramics, cremation first appears in the archaeological record in the Colorado Desert at this time. In general, projectile points are smaller and triangular in shape. Regional differentiation in the distribution of projectile point and pottery types was due, in part, to trade and influences of neighboring cultures in the Lower Colorado River and Great Basin. Such influence includes the major migration into Southern California of Takic-speaking people

(Uto-Aztecan language group) from the Great Basin region (Nevada, Utah, and eastern California) (Warren 1968).

The Patayan sequence cultural pattern within the Colorado Desert region is divided into three periods with different pottery types and regional site distributions. Cottonwood Triangular and Desert-Side Notched projectile points, the change from extended inhumations to cremations, the introduction of pottery, networks of trail systems (with pot-drops and trail-side shrines), and the late introduction of small-scale agriculture characterize the Patayan period in general. Pottery is increasingly common throughout the period, including brown wares manufactured from upland clay sources (e.g., Tizon Brown Ware) and buff wares made from lowland sedimentary clays (e.g., Colorado Buff Ware). Material culture also included clay figurines and pipes, bedrock grinding slicks and mortars, worked bone tools, and rock art with an increasing progression toward distinctive Patayan symbolism (Schaefer and Laylander 2007: 249). Interregional exchange goods include shell beads from the coast and Gulf of California, wonderstone from Rainbow Rock near today's Imperial City, and obsidian from Obsidian Butte near the southern end of today's Salton Sea, which at various times in the past was covered by the waters of Holocene Lake Cahuilla. The cyclical filling and desiccation of Lake Cahuilla appears to have dictated the settlement patterns in the Salton Trough and Coachella Valley during this period.

During Patayan I (ca. 800 – 1050 CE), mobile groups settled seasonally along the Lower Colorado River, practicing a mixed hunter-gatherer and horticultural economy. Their tool kit included pottery and Cottonwood Triangular and Desert-Side Notched projectile points. The agricultural-based Hohokam on the upper Gila River likely influenced this cultural pattern. Patayan II (ca. 950 – 1500 CE) is characterized by the spread of these cultural traits from the Colorado River into the Colorado and Mojave Deserts. It also coincides with the infilling of Lake Cahuilla, as well as locally manufactured new ceramic types, such as Tizon Brown Ware. Patayan III (1500 CE to European contact) is marked by the ultimate recession of Lake Cahuilla, the occurrence of specific pottery types (Colorado Buff Ware and painted pottery), and the practice of small-scale agriculture.

Ethnographic Background

A review of ethnographic information for the Tribes with ancestral ties to the Study Area is included in Section 5.15, Tribal Cultural Resources.

Historic Background

The post-Contact history of California is generally divided into three periods: the Spanish period (1769–1822), the Mexican period (1822–1848), and the American period (1848–present). Each of these periods is briefly described in the following section. This section focuses heavily on California as the Proposed Project is largely located within California, however some information related to Arizona is included for context.

Spanish Period (1769–1822)

Juan Rodriguez Cabrillo in 1542 led the first European expedition to observe what is now called southern California. For more than 200 years, Cabrillo and other Spanish, Portuguese, British, and Russian explorers sailed the Alta (upper) California coast and made limited inland expeditions, but they did not establish permanent settlements (Bean 1968; Rolle 2003).

Gaspar de Portolá and Franciscan Father Junipero Serra established the first Spanish settlement in Alta California at Mission San Diego de Alcalá in 1769. This was the first of 21 missions erected by the Spanish between 1769 and 1823. Portolá continued north, reaching San Francisco Bay in 1769. During this period, Spain also deeded ranchos to prominent citizens and soldiers, though very few in comparison to the following Mexican Period. To manage and expand their herds of cattle on these large ranchos, colonists enlisted the labor of the surrounding Native American population (Engelhardt 1927a). The missions were responsible for administrating to the local Indians as well as converting the population to Christianity (Engelhardt 1927b). The contact with diseases brought by Europeans greatly reduced the Native American population.

The first recorded Spanish explorer to enter the Colorado Desert was Father Eusebio Francisco Kino, a Jesuit missionary, who reached the Colorado River in 1702. Later, in 1771, Friar Francisco Garcés made trips into the region following Kino's route crossing the Colorado River from the east. Spanish soldier Juan Bautista de Anza led a 1774 expedition accompanied by Garcés that successfully crossed the Colorado River into the Imperial Valley. In 1775, Anza returned accompanied by more than 240 emigrants and soldiers who crossed the Colorado into present-day Imperial County with assistance from the Yuma tribe (Gough 2012). This group of emigrants established the mission and presidio of San Francisco. Anza's route across Imperial Valley became known as the Desert Trail, which was abandoned by European travelers following the 1781 destruction of Spanish settlements along the Colorado River by Quechan Indians. Among the destroyed were the missions of Puerto de Purisíma Concepción and San Pedro y San Pablo de Bicuñer, which had been established in 1780 (Bean 1968:45). The Desert Trail was not used again until the Mexican period.

Mexican Period (1822–1848)

The Mexican period commenced when news of the success of the Mexican Revolution (1810-1821) against the Spanish crown reached California in 1822. This period was an era of extensive interior land grant development and exploration by American fur trappers west of the Sierra Nevada Mountains. The California missions declined in power and were ultimately secularized in 1834. The hallmark of the Mexican period was large ranchos deeded to prominent Mexican citizens, frequently soldiers, by the governor. These ranchos became important economic and social centers; however, no ranchos were claimed in the arid Imperial Valley.

During the Mexican period, the Desert Trail was reestablished by Mexico in 1822. Lieutenant of Engineers Romualdo Pacheco and several soldiers built and occupied an adobe fort along the route near the present-day city of Imperial in 1825-1826, the only Mexican fort in Alta California. On April 26, 1826, Kumeyaay Indians attacked the fort, killing three soldiers and wounding others, which led Pacheco to abandon the fort and return to San Diego (California Office of Historic Preservation 2012).

American Period (1848–Present)

The American Period officially began with the signing of the Treaty of Guadalupe Hidalgo in 1848, in which the United States agreed to pay Mexico $15 million for the territory that included California, Nevada, Utah, and parts of Colorado, Arizona, New Mexico, and Wyoming. In the early American period, Imperial County remained largely unsettled, with the exception of some U.S. Calvary camps and forts scattered throughout the region to protect travelers from Native American hostilities.

During the early American Period, cattle ranches dominated much of Southern California, although droughts and population growth resulted in farming and urban professions supplanting ranching through the late nineteenth century. During the Gold Rush period beginning in 1848, an estimated

8,000 people traveled across the Colorado Desert en route to California gold fields (Laflin 1998). Numerous roads and routes were established for this purpose and limited gold mining occurred within Imperial County.

Thousands of settlers and immigrants continued to pour into California and Arizona, particularly after the completion of the transcontinental railroad in 1869. Nevertheless, Imperial and western Yuma County experienced very little settlement in the nineteenth century, prior to the development of irrigation.

Study Area History

The Proposed Project is located in the southernmost portion of Imperial County, California, along the United States-Mexico border and extends eastward through the southeasternmost region of Imperial County and into the northwesternmost portion of Yuma County, Arizona, along the Arizona-California border.

The western third of the Proposed Project in the southernmost area of the Imperial Valley contains the communities of Seely, El Centro, Heber, and Calexico in its vicinity. These communities were settled primarily after 1900, following the organization of the Imperial Land Company (Romer 1922). In 1900, the population of Imperial County (a part of San Diego County until 1907) was less than 1,000. By 1910, the County's population grew to over 13,000 (Southern California Panama Expositions Commission [SCPEC] 1914). Seeley, located in the northwestern vicinity of the Proposed Project, grew more rapidly beginning around 1910, and was at the time centered in a cotton growing area. Along with a bank and hotel, Seeley featured two cotton gins (SCPEC 1914). In addition to cotton cultivation, alfalfa was a major crop but was grown in surplus demand and expensive to export. However, excess alfalfa was used to feed cows across some 2,000 dairies that were established in the county during the twentieth century (Clark and Severen 2024). El Centro, the county seat, was among the youngest of the County's population centers, but by 1914 grew to 7,000 people (SCPEC 1914). Heber developed during the same period as a smaller settlement between El Centro and Calexico along the Southern Pacific Railroad's main line. Calexico, located along the United States-Mexico border, reached 3,000 residents by 1914. Calexico's location along the railroad, and proximity to cotton fields in Mexico, enabled it to emerge as a cotton ginning location.

To the east of Calexico, the central portion of the Proposed Project generally occupies the corridor containing the following: Interstate 8, which was constructed between the late 1960s to the early 1970s (AARoads.com 2009), Highway 98, which was originally established as part of the state highway system in 1933 (AARoads.com 2007), and the All-American Canal (AAC), developed between 1930 and 1940. Within this area, the Warren H. Brock Reservoir, built between 2008 and 2010 by the Imperial Irrigation District (IID), is located to the immediate north of Interstate 8 and the AAC (IID 2015). This facility is located on the former site of the Brock Research Center, which grew a variety of crops across 500 acres of land between the 1940s and 1950s, with research focused on identifying fruits and vegetables that could be adapted to the Imperial Valley's arid climate (IID 2024).

Development in Imperial County during the twentieth century relied heavily on the creation of an expansive system of canals for irrigation and reliable water provision, as well as transportation routes that were extended through the region between early twentieth century to the mid-twentieth century. The California Development Company built the Alamo Canal in 1901 as the first canal to serve the county (Clark and Severen 2024). This canal channeled water from the Colorado River into Mexico and returned to California (Clark and Severen 2024). By 1905, 12 water districts

redirected most of the water conveyed to Imperial Valley from the Colorado River. However, flooding and frequently clogged canals led to shortcomings in the system and the company's bankruptcy in 1909. IID was established in 1911 and acquired properties of the California Development Company (Clark and Severen 2024). Over the next decade, IID acquired 13 other water companies. The district's most notable project was the development of the AAC between 1930 and 1940, which replaced the Alamo Canal. By 1942, the AAC was the sole source of imported water for the valley (Clark and Severen 2024).

In the eastern third of the Proposed Project, desert land separates the populated areas noted above and the Brock Reservoir from agricultural areas and population centers occupying the project site's eastern vicinity in the southeasternmost area of Imperial County, bordering Yuma County, Arizona. The Proposed Project includes lands along the southern edge of the Cargo Muchacho Mountains and Obregon Hills, and agricultural lands along the Colorado River. Several communities of varying size, for example the City of Yuma in Arizona and the Fort Yuma Quechan Indian Reservation flanking the Colorado River in California are also located within the vicinity of the Proposed Project. This area also includes the Yuma Crossing National Heritage Area, which consists of areas in California and Arizona on either side of the Colorado River, including the Yuma Crossing National Historic Landmark comprised of Fort Yuma, Yuma Territorial Prison, and U.S. Army Quartermaster Depot, state parks related to the prison and depot, and historic districts in the City of Yuma (NPS 1978). The Yuma Crossing area was a settlement location for Native Americans and was frequented by European explorers between 1540 and the late eighteenth century, including Spanish explorer Juan Bautista de Anza. Initially, a favorable relationship between native peoples and the Spanish enabled Spanish settlers to pass safely through the area and continue northward to Alta California. However, tensions arose over control of the crossing in the early 1780s, eventually resulting in destruction of the Spanish settlements that had been established in the area by the Quechan (NPS 2019).

Occupying the northeastern portion of the Proposed Project vicinity, the Fort Yuma Quechan Indian Reservation was established in 1884 on lands formerly associated with the U.S. military posts Camp Calhoun (established 1849) and Camp Yuma (built in 1852 to replace Camp Calhoun following a fire, renamed Fort Yuma in 1855). These lands were transferred in 1884 to the U.S. Department of the Interior and the Quechan Indian Tribe. In 1885, the Fort Yuma Boarding School was established in Winterhaven, a small community south of the Reservation. The school educated and trained Native American youth in an effort to assimilate them to American culture (Farr 1918). The school operated under the Catholic Church until 1900. Fort Yuma was designated as California State Landmark No. 806 in 1965. A portion of the former campus appears to be operated as part of the Fort Yuma Health Care Center by the Quechan Tribe (California Office of Historic Preservation 2024). The unincorporated community of Bard, located southeast of the Reservation, was established in 1910, after the eastern portion of the Reservation was declared surplus under the provisions of the Dawes Act of 1887, which allowed the federal government to break up tribal lands into individual plots in exchange for land ownership and citizenship for Native Americans (NPS 2021). Bard currently remains largely agricultural.

Occupying the southeastern portion of the Proposed Project vicinity, the present-day City of Yuma is located on the south side of Yuma Crossing. Yuma historically provided a favorable location for crossing of the Colorado River, both by Native Americans and during periods of European exploration and settlement in the region. The portion of Arizona encompassing present day Yuma, previously part of Mexico, became part of the United States following the Gadsden Purchase in 1854 and was popular with Anglo-American settlers during the years of the California Gold Rush years

from 1848 to ca. 1855, and during a second rush when gold was found along the Colorado River in 1858 (Arizona State Parks & Trails 2024). In 1862, a flood destroyed the City of Yuma, then referred to as Colorado City, and led to its renaming as Arizona City. In the same year the U.S. Army established a Quartermaster Depot for the storage of military supplies on the south side of the Colorado River, now located within the Colorado River State Historic Park (formerly Yuma Crossing State Historic Park and Yuma Quartermaster Depot State Historic Park). Arizona City was incorporated in 1871; in 1873 its name was changed to Yuma. In 1876, Yuma Territorial Prison was constructed in the Yuma Crossing area. The prison operated until overcrowding forced its closure in 1909. It is now part of Yuma Territorial Prison State Historic Park (Arizona State Parks & Trails 2024).

In 1877, the Southern Pacific Railroad reached this portion of Arizona. During the early twentieth century and due to a history of destructive flooding, the U.S. Bureau of Reclamation (then the U.S. Reclamation Services) began a major irrigation project in the area, known as the Yuma Project. The project included construction of Laguna Dam between 1905 and 1909 and the Yuma Siphon in 1912 (Garrett 1979). Another major flood devastated Yuma's downtown in 1916, leading to post-flood reconstruction in the 1920s. Since this period, reclamation has enabled the Gila and Yuma Valleys to support farming operations, with major crops in the area including lettuce and melons, and citrus crops (City of Yuma 2022). During World War II, the federal government expanded an existing aviation facility located to the southeast of the downtown, known as Fly Field, to create Yuma Army Air Base as a pilot training facility (United States Marine Corps 2024). In the same period, the U.S. Army established the Yuma Proving Ground for training troops (Arizona Department of Environmental Quality 2024). In 1943, the facility began testing bridge and river crossing equipment, boats, and vehicles under the Army Corps of Engineers. After a brief post-war deactivation and management by the Bureau of Land Management, the base was reactivated in 1951. In 1959 the Marine Corps took control of the base, which was redesignated as Marine Corps Air Station Yuma (MCAS Yuma) (Unites State Marine Corp 2024). Both facilities remain active, with Yuma Proving Ground located to the east and outside of Proposed Project, and MCAS Yuma located to the southeast and outside of the Proposed Project. Since the mid-twentieth century, the Yuma area has continued to be a popular travel destination, including for tourism related to its layered history.

Cultural Resources Methods

Archaeological Methods

Rincon Consultants, Inc. conducted a Class I Information Inventory (Class I Inventory) Rincon 2025a), which included delineation of the initial Study Area (discussed below) which encompasses the Proposed Project, review of regulatory setting, background research including a search of the California Historical Resources Information System and the Arizona Site Database, a Sacred Lands File search, development of the natural and cultural contexts, parcel review to identify built environment resources over 50 years in age, and geoarchaeological review. At the time of this writing, the Class I Inventory is under review by the BLM. Additionally, Rincon has prepared a Work Plan and Research Design (Rincon 2025b), which includes conducting a Class III Inventory fieldwork and associated tasks. The Work Plan and Research Design is currently under review by the BLM.

Records Search Methods

On November 13, 2024, Rincon received CHRIS records search results (Record Search ID 3762) from the SCIC. The SCIC is the official state repository for cultural resources records and reports for the Imperial County. The purpose of the records search was to identify previously recorded cultural resources, as well as previously conducted cultural resources studies within the Study Area and the

records search radius. To identify potential resources not identified by the CHRIS records search, Rincon also reviewed the following: NRHP, the California Register of Historical Resources (CRHR), the Arizona and California Historical Landmarks list, and the Built Environment Resources Directory, as well as its predecessor the California State Historic Property Data File. Additionally, Rincon reviewed the Archaeological Resources Database.

On January 16, 2025 (Record Search ID 202502130555), Rincon completed a review of the AZ Site Database, the state repository for cultural resources related documents. The purpose was to identify documented cultural resources, previously completed studies, historic districts, and other related resources within the records search radius. Rincon also reviewed the Arizona Register of Historic Properties.

Sacred Lands File Search

California Public Resources Code (PRC) section 5097.91 established the Native American Heritage Commission (NAHC), the duties of which include taking inventory of places of religious or social significance to Native Americans and identifying known graves and cemeteries of Native Americans on private lands. PRC section 5097.98 specifies a protocol to be followed when the NAHC is notified of a discovery of Native American human remains from a county coroner.

The NAHC was contacted on March 4, 2025, requesting a search of its Sacred Lands File (SLF) for the Proposed Project area. A search of the SLF was completed for the Proposed Project on April 16, 2025, with positive results and the NAHC provided a list of 29 contacts. The contacts from the SLF search are provided in Appendix E.

Background and Archival Research

Rincon Consultants, Inc. completed additional background and archival research in support of the Class I Inventory in November 2024. A variety of primary and secondary source materials were consulted. Sources included, but were not limited to, historical maps, aerial photographs, and written histories of the area. The following sources, in addition to those listed in Chapter 9, References, were used to develop an understanding of the Study Area and its context:

- AZ Site Database
- Arizona Register of Historic Places (ARHP)
- CHRIS including local registers
- Heritage File Search at BLM El Centro Field Office
- California Native American Heritage Commission Sacred Lands File Search
- Ethnographic Literature
- Parcel data from the Imperial County Assessors' Office
- Parcel data for Yuma County provided by POWER Engineers
- Historical aerial photographs accessed via NETR Online
- Historical aerial photographs accessed via University of California, Santa Barbara Library FrameFinder
- Historical USGS topographic maps
- Historical newspaper clippings obtained from Newspapers.com and the California Digital Newspaper Collection
- Geologic Maps via the USGS National Geologic Map Database
- USDA Web Soil Survey

Parcel Review

Rincon performed a review of all parcels within the Study Area to determine if they contain buildings, structures, or objects that require consideration as built environment resources. If a parcel contains a building, structure, or object constructed in or before 1981, it is considered a historic period parcel that meets the threshold for consideration as a built environment resource. To identify historic period parcels, Rincon compared contemporary satellite imagery of each parcel within the Study Area with historical aerial photographs and/or topographical maps of the same area. If existing buildings and/or structures evident in contemporary satellite imagery were also depicted in historical aerial photography or topographical maps dating to 1981 or earlier, the parcel is considered historic period. Historic period parcels may require future recordation and evaluation to determine if they qualify as historic properties.

Desktop Geoarchaeological Review

Rincon assessed the geoarchaeological sensitivity of the Study Area. Sources reviewed as part of the Class I Inventory includes geologic maps, soil survey maps, and an ethnographic and archaeological literature review.

Class III Inventory Fieldwork

Class III Inventory Fieldwork will include obtaining fieldwork authorizations and permits, survey methods, resource documentation, limited subsurface testing and test excavation, and reporting of results. The Work Plan and Research design which presents the methodology for the Class III and associated tasks is currently under review by the BLM.

Cultural Resources Results

Records Search Results

The results for the archaeological records search are included in the Class I Inventory, which is currently under review by the BLM. The results of the records search identified historic period and archaeological resources in the Study Area and determined their National Register of Historic Places (NRHP) and/or California Register of Historic Resources (CRHR) eligibility. The results of the records search and survey will be considered during the final design and engineering of the Proposed Project to minimize impacts on cultural resources during construction. No records provided to Rincon by the BLM are included in this PEA section.

The CHRIS and AZ Site records search and background research identified 322 cultural resources studies that have been previously conducted within the records search radius. Additionally, the cultural resources records repository review and background research identified 1,036 archaeological resources that have been previously recorded within the records search radius. Of these resources, 866 were identified through the SCIC repository and 170 were identified through the AZ Site. Of the 1,036 archaeological resources identified, 37 are located within the Proposed Project alignment. Prehistoric resources primarily include a village site, trails, lithic and pottery scatters, sleeping circles, petroglyphs, geoglyphs, and a hearth. Historical resources included a mining site, roads, and refuse scatters.

Of the 37 resources located within the Proposed Project, 16 are historic resources, 9 are prehistoric resources, and one is a multicomponent resource. Missing data includes 9 site records from the AZ Site Database that are restricted to the BLM Yuma Field Office and two SCIC site records, which

were not available. One prehistoric site was identified as a village site that contained a range of features and artifacts including petroglyphs, sleeping circles, a pottery sherd scatter, and a trail segment. The remainder of the prehistoric sites consisted of a mix of lithic and pottery scatters, prehistoric trail segments, circular clearings, rock cairns and alignments, petroglyphs, and geoglyphs.

Three prehistoric resources, AZ X:3:14(ASM), AZ X:7:10(ASM), and AZ-050-1372, are recommended eligible for listing on the NRHP. Resource AZ X:3:14(ASM) is a village site and consists of petroglyphs, multiple sleeping circles, a pottery sherd scatter, and a trail segment. Resource AZ X:7:10 (ASM) consists of 20 cleared circles, a trail segment, hearth, and lithic scatter. Resource AZ-050-1372 is comprised of multiple rock rings and two core tools.

Identified historic resources included a railroad segment, two road segments, four canals, one transmission line, two mine sites, a mine site with an associated refuse scatter, and a road segment with an associated refuse scatter. No additional historic resources within the Proposed Project have been determined eligible or are currently listed on the NRHP.

The cultural resources records repository review and background research identified 46 previously recorded built environment resources in the records search radius. They primarily include historic period water or power conveyance, and transportation-related features. One built environment resource, the Gila Gravity Main Canal (AZ X:7:20 [ASM]), was identified within the Proposed Project and is listed in the NRHP. In addition to its individual eligibility, the Gila Gravity Main Canal appears to be a contributing resource to the determined NRHP eligible Yuma Project Irrigation Historic District. Additional research is necessary to confirm the boundaries of Yuma Project Irrigation Historic District; it remains unclear how much of the district may be located within the Proposed Project.

Parcel Review

The results for the parcel review are included in the Class I Inventory, which is currently under review by the BLM. Overall, the review consisted of 193 parcels within the Proposed Project, 108 of which contain potential of-age buildings and/or structures that may require future recordation and evaluation. Buildings and/or structures of historic age included a range of types, including roads, agricultural water conveyances, buildings, and water resources infrastructure.

Desktop Geoarchaeological Review

The results for the desktop geoarchaeological review are included in the Class I Inventory, which is currently under review by the BLM. The geologic map review indicates the Proposed Project is comprised of Holocene and Late Pleistocene geologic units, which encompass human occupation of the region and are conducive to the natural burial and preservation of archaeological resources. Furthermore, the soils map review suggests many of the soil series present within these Holocene and Late Pleistocene age geologic units represent depositional environments wherein archaeological materials could be buried by alluvial, eolian, or lacustrine sediments and preserved. The north-central and northeastern portions of the Proposed Project are punctuated by geologic units that pre-date human occupation of the region, and therefore, are not conducive to the natural burial and preservation of archaeological materials.

The archaeological and ethnographic literature review indicates the archaeological record within and surrounding the Proposed Project is largely comprised of task-specific temporary camps clustered along the relic shorelines of Lake Cahuilla and on the margins of the Colorado River

floodplain. These temporary camps contain relatively sparse assemblages with little diversity in artifact classes present and are generally shallow in depth. Intensive occupation by groups identified in the ethnographic literature appears to have coalesced along segments of the New, Alamo, and Colorado rivers. It is at these "village" sites wherein more extensive subsurface archaeological materials representing a greater diversity of activities could be identified.

In summary, the geoarchaeological review indicates that much of Proposed Project vicinity is sensitive for the presence of surface and subsurface archaeological deposits based on the age of geologic units present and the depositional nature of most of the identified soil series. Should archaeological deposits be present, they would likely represent temporary camps outside the New, Alamo, and Colorado River corridors, and possibly village sites within the river corridors. Geologic units with little likelihood to contain buried archaeological deposits based on their pre-Late Pleistocene ages, punctuate the north-central and northeastern portions of the study. These geologic units are not conducive to the natural burial and preservation of archaeological materials.

Class III Inventory Fieldwork

The Class III Inventory Fieldwork and associated tasks are under review by the BLM, and results are pending.

5.5.1.3 Cultural Resource Survey Boundaries

Rincon drafted a Work Plan and Research Design for the Proposed Project, which is currently under review by the BLM. Methodology includes obtaining fieldwork authorizations and project specific ARPA permits, and Class III inventory fieldwork. Following the approval of the APE by the BLM and consulting parties described in Section 5.5.1, the fieldwork limits will be identified and incorporated into the Work Plan and Research Design.

5.5.2 Regulatory Setting

Federal, state, and local regulations were reviewed for applicability to the Proposed Project.

5.5.2.1 Federal

Section 106 of the National Historic Preservation Act

The National Historic Preservation Action (NHPA) of 1966 is a landmark piece of U.S. legislation that established a national preservation program and a system of procedural protection, which encourages the identification and protection of historic and archaeological resources at the federal, state, and local levels. The NHPA also introduced Section 106 of the NHPA, which requires federal agencies to consult with the Advisory Council on Historic Preservation (ACHP) to take into account the effects of their undertakings on historic properties. The Section 106 process involves identification of significant historic resources within an APE; determination if the undertaking will cause an adverse effect on historic properties; and resolution of those adverse effects through execution of a Memorandum of Agreement or Programmatic Agreement (PA). Regulation 36 CFR Part 800 defines how federal agencies meet these responsibilities, and 36 CFR 800.5(a) describes the process for evaluating a project's adverse effects on historic properties. An adverse effect is found when a federal undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register of Historic Places (NRHP) in a manner that would diminish the integrity of the property's location, design, setting,

materials, workmanship, feeling, or association. Examples of adverse effects are provided in 36 CFR 800(a)(2) and include, but are not limited to:

- Physical destruction of or damage to all or part of the property
- Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties (36 CFR Part 68) and applicable guidelines
- Removal of the property from its historic location
- Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance
- Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features
- Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization
- Transfer, lease, or sale of property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance

National Register of Historic Places

The NRHP is the official list of historic places in the United States. Authorized by Section 101 of the NHPA, the NRHP is part of a national program, administered by the by the National Park Service (NPS), aimed at supporting public and private efforts to identify, evaluate, and protect the nation's historic places. The NRHP includes an official list of cultural resources worthy of preservation including districts sites, buildings, structures, architecture, archaeology and objects significant in American history. Pursuant to 36 CFR 60.4, a property is eligible for listing in the NRHP if it meets one or more of the following criteria:

Criterion A: Is associated with events that have made a significant contribution to the broad patterns of our history

Criterion B: Is associated with the lives of persons significant in our past

Criterion C: Embodies the distinctive characteristics of a type, period, or method of installation, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction

Criterion D: Has yielded, or may be likely to yield, information important in prehistory or history

In addition to meeting at least one of the above designation criteria, resources must also retain integrity. The NPS recognizes seven aspects or qualities that, considered together, define historic integrity. To retain integrity, a property must possess several of these seven qualities, if not all, defined in the following manner:

Location: The place where the historic property was constructed or the place where the historic event occurred

Design: The combination of elements that create the form, plan, space, structure, and style of a property

Setting:	The physical environment of a historic property
Materials:	The physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property
Workmanship:	The physical evidence of the crafts of a particular culture or people during any given period in history or prehistory
Feeling:	A property's expression of the aesthetic or historic sense of a particular period of time
Association:	The direct link between an important historic event or person and a historic property

Certain properties are generally considered ineligible for listing in the NRHP, including cemeteries, birthplaces, graves of historical figures, properties owned by religious institutions, relocated structures, or commemorative properties. These properties can be eligible for listing, however, if they meet special requirements, called Criteria Considerations, in addition to meeting the regular requirements. Additionally, a property must be at least 50 years of age to be eligible for listing in the NRHP. The NPS states that 50 years is the general estimate of the time needed to develop the necessary historical perspective to evaluate significance (NPS 1997: 41). Properties which are less than 50 years of age must be determined to have "exceptional importance" to be considered eligible for NRHP listing.

Archaeological Resources Protection Act

The Archeological Resources Protection Act of 1979 provides for the protection of archaeological resources more than 100 years old and which occur on federally owned or controlled lands. The statute makes it unlawful to excavate and remove items of archaeological interest from federal lands without a permit, and it defines the process for obtaining such a permit from the federal agency responsible. This process includes a 30-day notification to interested persons, including Indian tribes, by the agency to receive comments regarding the intended issuing of a permit. The law establishes a process for prosecuting people who illegally remove archaeological materials from lands subject to the Archeological Resources Protection Act. The law also provides for curation of archaeological artifacts, ecofacts, notes, records, photographs, and other items associated with collections made on federal lands. Standards for curation are provided for in regulations at 36 CFR Part 79.

Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act of 1990 provides a process for museums and federal agencies to return certain Native American "cultural items" including human remains, funerary objects, sacred objects, and objects of cultural patrimony to lineal descendants, culturally affiliated Indian tribes and Native Hawaiian organizations, if the legitimate cultural affiliation of the cultural items can be determined according to the law. Museums, as defined under the statute, are required to inventory cultural items in their possession and determine which items can be repatriated to the appropriate party. Cultural items intentionally or unintentionally excavated and removed from federal or tribal lands may be subject to the Native American Graves Protection and Repatriation Act.

BLM Resource Management Plans

The entirety of the Proposed Project in California is located within BLM-managed California Desert Conservation Area (CDCA) and is covered by the California Desert Conservation Area Plan, Desert Renewable Energy Conservation Plan (DRECP), Imperial Sand Dunes Recreation Area Management Plan (Imperial Sand Dunes RAMP), and Northern and Eastern Colorado Desert Coordinated Management Plan. A portion of the Proposed Project within Arizona is managed under the Yuma Field Office Resource Management Plan.

The DRECP Land Use Plan Amendment identifies a comprehensive suite of required conservation management actions to avoid, minimize, and/or mitigate adverse impacts on cultural resources. Additionally, the Imperial Sand Dunes RAMP includes goals, objectives, and management actions related to cultural resources.

5.5.2.2 State of California

California Environmental Quality Act

The CEQA Statute (Public Resources Code [PRC] section 21000 *et seq*.) and the CEQA Guidelines (14 California Code of Regulations [CCR] sections 15000 *et seq*.) direct lead agencies to determine whether cultural resources are "historically significant" resources. CEQA requires that potential project impacts to cultural resources be assessed and requires mitigation if significant (or "unique") cultural resources would be affected (PRC section 21083.2 [a-1] and CEQA Guidelines Appendix G). Generally, a cultural resource is considered "historically significant" if the resource is 45 years old or older; possesses integrity of location, design, setting, materials, workmanship, feeling, and association; and meets the requirements for listing on the California Register of Historical Resources (CRHR) under any one of the following criteria:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. Is associated with the lives of persons important in our past;
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or,
4. Has yielded, or may be likely to yield, information important in prehistory or history (14 CCR 15064.5[a][3]).

The statutes and guidelines specify how cultural resources are to be managed in the context of projects, such as the Proposed Project. Archival and field surveys must be conducted and identified cultural resources must be inventoried and evaluated in prescribed ways. Prehistoric and historical archaeological resources as well as historic built environment resources deemed "historically significant" must be considered in project planning and development. Resources eligible for listing on the CRHR are referred to as "historical resources."

If a Lead Agency determines that an archaeological site is a historical resource, the provisions of PRC Section 21084.1 and CEQA Guidelines (14 CCR) Section 15064.5 would apply. If an archaeological site does not meet the CEQA Guidelines criteria for a historical resource, the site is to be treated in accordance with the provisions of PRC section 21083 regarding unique archaeological resources. The CEQA Guidelines note that if a resource is neither a unique archaeological resource nor a historical resource, the effects of a project on that resource shall not be considered a significant effect on the environment (CEQA Guidelines Section 15064[c][4]).

California Register of Historical Resources

Cultural resources include archaeological and historic objects, sites and districts, historic buildings and structures, and sites and resources of concern to local Native Americans and other ethnic groups. Cultural resources that meet the criteria of eligibility to the CRHR are termed "historic resources." Archaeological resources that do not meet CRHR criteria also may be evaluated as "unique"; impacts to such resources could be considered significant, as described below.

A site meets the criteria for inclusion on the CRHR if:

a) It is associated with events that have made a significant contribution to the broad patterns of California's History and Cultural Heritage;
b) It is associated with the life or lives of a person or people important to California's past;
c) It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or,
d) It has yielded, or may be likely to yield, information important to prehistory or history.

A resource eligible for the CRHR must meet one of the criteria of significance described above and retain enough of its historic character or appearance (integrity) to be recognizable as a historical resource and to convey the reason for its significance. It is possible that a historic resource may not retain sufficient integrity to meet the criteria for listing in the National Register, but it may still be eligible for listing in the California Register.

The CRHR automatically includes the following:

- California properties listed on the National Register and those formally Determined Eligible for the National Register
- California Registered Historical Landmarks from No. 770 onward
- Those California Points of Historical Interest that have been evaluated by the Office of Historic Preservation (OHP) and have been recommended to the State Historical Commission for inclusion on the California Register

Other resources that may be nominated to the CRHR include:

- Historical resources contributing to historic districts
- Individual historical resources (standalone resources not contributing to a historic district)
- Historical resources designated or listed as local landmarks, or designated under any local ordinance, such as an historic preservation overlay zone

Impacts to "unique archaeological resources" also are considered under CEQA, as described under PRC 21083.2. A unique archaeological resource under CEQA is described in Section 5.5.2.2.1, California Environmental Quality Act.

California Assembly Bill 52 of 2014

As of July 1, 2015, Assembly Bill (AB) 52 was enacted and expands CEQA by defining a new resource category, "tribal cultural resources". AB 52 establishes, "a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment" (PRC section 21084.2). It further states the CEQA lead

agency shall establish measures to avoid impacts that would alter the significant characteristics of a tribal cultural resource, when feasible (PRC section 21084.3).

PRC section 21074 (a)(1)(A) and (B) define tribal cultural resources as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe" and that meets at least one of the following criteria, as summarized in CEQA Guidelines Appendix G:

1. Listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in PRC section 5020.1(k)
2. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC section 5024.1. In applying these criteria, the lead agency shall consider the significance of the resource to a California Native American tribe.

AB 52 also establishes a formal consultation process with California Native American tribes that must be completed before a CEQA document can be certified. Under AB 52, lead agencies are required to "begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project." California Native American tribes to be included in the process are those that have requested notice of projects proposed within the jurisdiction of the lead agency.

California Health and Safety Code

Section 7050.5 of the California Health and Safety Code states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the remains are discovered has determined if the remains are subject to the coroner's authority. If the human remains are of Native American origin, the coroner must notify the NAHC within 24 hours of this identification.

California Public Resources Code § 5097.98

Section 5097.98 of the PRC states that the NAHC, upon notification of the discovery of Native American human remains pursuant to Health and Safety Code section 7050.5, shall immediately notify those persons (i.e., the Most Likely Descendant [MLD]) that it believes to be descended from the deceased. With permission of the landowner or a designated representative, the MLD may inspect the remains and any associated cultural materials and make recommendations for treatment or disposition of the remains and associated grave goods. The MLD shall provide recommendations or preferences for treatment of the remains and associated cultural materials within 48 hours of being granted access to the site.

5.5.2.3 State of Arizona

Arizona Antiquities Act (A.R.S. §41-841 et seq.)

The Arizona Antiquities Act is a series of five statutes which regulate the treatment of archaeological and paleontological resources which exist on state lands. These parts of these statutes relevant to archaeological resources describe: the necessity of a permit to survey, report, document, excavate and treat archaeological resources, identifying the Arizona state museum as the issuer of such permits, prohibition of unnecessary defacement of vertebrate paleontological resources or sites,

and the requirement for prompt reporting of archaeological discoveries to the Arizona state museum.

Chapter 8 of the Arizona Board of Regents Policy Manual outlines the guiding principles of the Arizona State Museum, which includes its role in enforcing and implementing the Arizona Antiquities Act. This chapter includes more detail on permit application and terms, discovery notification, and authority of the Arizona State Museum of waive certain regulations.

5.5.2.4 Local

The CPUC has sole and exclusive state jurisdiction over the siting and design of the Proposed Project in California. Pursuant to CPUC General Order (G.O.) 131-E, Section XI.B:

> "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the Commission's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters."

Consequently, local agencies do not have jurisdiction over the Proposed Project, but public utilities must consult with local agencies and consider their regulations.

The Arizona Corporation Commission's Arizona Power Plant and Transmission Line Siting Committee has state jurisdiction over the Proposed Project in Arizona. This committee may approve or deny a Certificate of Environmental Compatibility application and impose reasonable conditions. However, pursuant to Arizona Revised Statutes Section 40-360.06(D):

> "Any certificate granted by the committee shall be conditioned on compliance by the applicant with all applicable ordinances, master plans and regulations of the state, a county or an incorporated city or town, except that the committee may grant a certificate notwithstanding any such ordinance, master plan or regulation, exclusive of franchises, if the committee finds as a fact that compliance with such ordinance, master plan or regulation is unreasonably restrictive and compliance therewith is not feasible in view of technology available."

As this Proponent's Environmental Assessment is being prepared for the CPUC, the following discussion of local land use regulations in California and Arizona is provided for informational purposes only.

Imperial County General Plan

The Renewable Energy and Transmission Element of the Imperial County General Plan contains the following goals and objectives related to cultural resources (Imperial County 2022a):

Goal 1: Support the safe and orderly development of renewable energy while providing for the protection of environmental resources.

Objective 1.1: The County of Imperial supports the overall goals of the Desert Renewable Energy Conservation Plan to provide a balance between the development of renewable energy resources while preserving sensitive environmental resources within its jurisdiction.

Objective 1.2: Lessen impacts of site and design production facilities on agricultural, natural, and cultural resources.

Objective 1.4: Analyze potential impacts on agricultural, natural, and cultural resources, as appropriate

Objective 1.5: Require appropriate mitigation and monitoring for environmental issues associated with developing renewable energy facilities

Goal 2: Encourage development of electrical transmission lines along routes which minimize potential environmental effects.

Objective 2.2: Where practicable and cost-effective, design transmission lines to minimize impacts on agricultural, natural, and cultural resources, urban areas, military operation areas, and recreational activities.

Goal 8: Develop overlay zones that will facilitate the development of renewable energy resources while preserving and protecting agricultural, natural, and cultural resources. Development of overlay zones shall include coordination with Draft Renewable Energy and Transmission Element Page 28 (Revised October 6, 2015), Federal, State, County, Tribal governments, educational entities, the public and local industries.

Yuma County 2030 Comprehensive Plan

The Environmental Element of the Yuma County 2030 Comprehensive Plan contains the following policies and actions related to cultural resources (Yuma County 2024):

Environmental Policies and Priorities (EPP).14: Encourage protection of cultural sites which meet national, state or local criteria for historic designation from destruction or harmful alteration.

EPP.15: Encourage the preservation of significant cultural and archaeological resources within all developments.

Environmental Action (EA).2: Work with the State Historic Preservation Office, Arizona Site Steward Program and Arizona Archaeological Society to inventory and develop a program to manage cultural resources.

5.5.3 Impact Questions

This section will be completed following the completion of the cultural resources reports.

5.5.3.1 Cultural Resources Impact Questions

The thresholds of significance for assessing impacts come from the CEQA Environmental Checklist. For cultural resources, the CEQA Checklist asks, would the project:

- Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?
- Cause a substantial adverse change in the significance of an archeological resource pursuant to Section 15064.5?
- Disturb any human remains, including those interred outside of dedicated cemeteries?

5.5.3.2 Additional CEQA Impact Questions

There are no CPUC-identified additional CEQA impact questions.

5.5.4 Impact Analysis

5.5.4.1 Cultural Resources Impact Analysis

5.5.4.1.1 Cultural Resources Methodology

The impact analysis will be based on information obtained primarily through a literature review and as described in section 5.5.1.2.5, Cultural Resources Methods.

The CEQA Guidelines specify that a "substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" (CEQA Guidelines Section 15064.5). Material impairment occurs when a project alters in an adverse manner or demolishes "those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion" or eligibility for inclusion in the NRHP, CRHR, or local register. In addition, pursuant to CEQA Guidelines Section 15126.2, the "direct and indirect significant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the short-term and long-term effects."

The following guides and requirements are of particular relevance to this study's analysis of indirect impacts to historic resources. Pursuant to CEQA Guidelines Section 15378, study of a project under CEQA requires consideration of "the whole of an action, which has the potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment." CEQA Guidelines Section 15064[d] further defines direct and indirect impacts as follows:

- A direct physical change in the environment which is caused by and immediately related to the project.
- An indirect physical change in the environment, which is not immediately related to the project, but which is caused indirectly by the project.
- If a direct physical change in the environment in turn causes another change in the environment, then the other change is an indirect physical change in the environment.
- An indirect physical change is to be considered only if that change is a reasonably foreseeable impact which may be caused by the project.

5.5.4.1.2 Would the project cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?

Construction

Project Components in California

No Determination. The results of the Class I Inventory are currently under review by the BLM. Additionally, the Work Plan and Research Design is also under review by the BLM, and results for the Class III Inventory Fieldwork of the project components in California are pending. Therefore, no determination has been made.

Project Components in Arizona

No Determination. The results of the Class I Inventory are currently under review by the BLM. Additionally, the Work Plan and Research Design is also under review by the BLM, and results for the Class III Inventory Fieldwork of the project components in Arizona are pending. Therefore, no determination has been made.

Overall Project

No Determination. The results of the Class I Inventory are currently under review by the BLM. Additionally, the Work Plan and Research Design is also under review by the BLM, and results for the Class III Inventory Fieldwork are pending. Therefore, no determination has been made.

Operation

Project Components in California

No Determination. The results of the Class I Inventory are pending and currently under review by the BLM. Additionally, the Work Plan and Research Design is also under review by the BLM, and results for the Class III Inventory Fieldwork of project components in California are pending. Therefore, no determination has been made.

Project Components in Arizona

No Determination. The results of the Class I Inventory are pending and currently under review by the BLM. Additionally, the Work Plan and Research Design is also under review by the BLM, and results for the Class III Inventory Fieldwork of project components in Arizona are pending. Therefore, no determination has been made.

Overall Project

No Determination. The results of the Class I Inventory are pending and currently under review by the BLM. Additionally, the Work Plan and Research Design is also under review by the BLM, and results for the Class III Inventory Fieldwork are pending. Therefore, no determination has been made.

5.5.4.1.3 Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Construction

Project Components in California

No Determination. Construction activities requiring ground disturbance could potentially disturb buried cultural deposits or archaeological sites as a result of the Proposed Project within California. Ground-disturbing activities would include, but not be limited to, installation of new transmission tower foundations. Prior to construction, HWT would implement Applicant Proposed Measure (APM) CUL-1, which includes conducting a survey to identify historic resources within the resource study corridor for the Proposed Project. The survey area would include the Area of Potential Effects, the area in which potential direct and indirect effects to historic resources may occur. The Area of Potential Effects would be developed in coordination with the appropriate agencies. The methods

and results of the surveys would be compiled into a Class III Inventory Report subject to review by the appropriate agencies. To the extent feasible, the Proposed Project would be designed to avoid resources eligible for the National Register of Historic Places and California Register of Historic Resources, in cooperation with the appropriate agencies.

Pursuant to APM CUL-2, management of cultural/historical resources would follow applicable federal and state standards and guidelines. HWT would prepare and implement a Post-Review Discovery Management Plan addressing the post-review discovery of cultural resources during construction. The Proposed Project Archaeologist or their representative would be responsible for responding to unanticipated discoveries, implementing appropriate buffers and/or stopping work, and communicating with the appropriate agencies in accordance with the plan. Human remains would be treated in accordance with applicable federal and state laws.

The results of the Class I Inventory are pending and currently under review by the BLM. Additionally, the Work Plan and Research Design is also under review by the BLM, and results for the Class III Inventory Fieldwork are pending. Therefore, no determination has been made.

Project Components in Arizona

No Determination. Construction activities requiring ground disturbance could potentially disturb buried cultural deposits or archaeological sites as a result of the Proposed Project within Arizona. Ground-disturbing activities would include, but not be limited to, installation of new transmission tower foundations. As described above under "Project Components in California," APM CUL-1 and APM CUL-2 would be implemented to identify and manage cultural/historical resources. Nonetheless, the results of the Class I Inventory are pending and currently under review by the BLM. Additionally, the Work Plan and Research Design is also under review by the BLM, and results for the Class III Inventory Fieldwork are pending. Therefore, no determination has been made.

Overall Project

No Determination. Construction activities requiring ground disturbance could potentially disturb buried cultural deposits or archaeological sites as a result of the Proposed Project. Ground-disturbing activities would include, but are not limited to, installation of new transmission tower foundations, access roads, and temporary staging areas. As described above under "Project Components in California," APM CUL-1 and APM CUL-2 would be implemented to identify and manage cultural/historical resources. Nonetheless, the results of the Class I Inventory are pending and currently under review by the BLM. Additionally, the Work Plan and Research Design is also under review by the BLM, and results for the Class III Inventory Fieldwork are pending. Therefore, no determination has been made.

Operation

Project Components in California

No Determination. Operation and maintenance (O&M) activities associated with the Proposed Project would occur within the new right-of-way (ROW). Following construction of the Proposed Project, O&M activities would consist of regular transmission line maintenance, repairs, vegetation and weed management and inspections. O&M activities may impact archaeological resources if O&M activities take place in undisturbed areas, areas that were not included in the field surveys, or in areas with undiscovered archaeological resources. Pursuant to APM CUL-1, HWT would conduct a survey to identify historic resources within the resource study corridor for the Proposed Project. The

survey area would include the Area of Potential Effects, the area in which potential direct and indirect effects to historic resources may occur. Pursuant to APM CUL-2, the Proposed Project Archaeologist or their representative would be responsible for responding to unanticipated discoveries, implementing appropriate buffers and/or stopping work, and communicating with the appropriate agencies in accordance with the plan. Human remains would be treated in accordance with applicable federal and state laws. The results of the Class I Inventory are pending and currently under review by the BLM. Additionally, the Work Plan and Research Design is also under review by the BLM, and results for the Class III Inventory Fieldwork of project components within California are pending. Therefore, no determination has been made.

Project Components in Arizona

No Determination. The results of the Class I Inventory are pending and currently under review by the BLM. Additionally, the Work Plan and Research Design is also under review by the BLM, and results for the Class III Inventory Fieldwork within Arizona are pending. Therefore, no determination has been made.

Overall Project

No Determination.

The results of the Class I Inventory are pending and currently under review by the BLM. Additionally, the Work Plan and Research Design is also under review by the BLM, and results for the Class III Inventory Fieldwork are pending. Therefore, no determination has been made.

5.5.4.1.4 Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

Construction

Project Components in California

Less than Significant Impact with Mitigation. The Class I Inventory did not identify pre-historic human remains along the Proposed Project alignment. It is not always possible to predict where human remains, including Native American human remains that might occur outside of formal cemeteries, may occur. Therefore, it is possible that human remains could be uncovered during ground-disturbing activities. However, implementation of a Worker Environmental Awareness Program (WEAP) under APM WEA-1 would help workers identify potential human remains and establish procedures for stopping work and notifying cultural resource staff and construction supervisors in the event that human remains are detected.

As described in APM CUL-2, human remains would be treated in accordance with applicable federal and state laws. If human remains are inadvertently discovered during construction activities, all work in the vicinity of the find would cease, and the area would be secured and protected to ensure that no additional disturbance occurs. If human remains are uncovered within the Proposed Project in California, the county coroner would then be contacted in accordance with CEQA Guidelines section 15064.5(e), AB 2641, PRC sections 15064.5(e) and 15064.5(d), and California Health and Safety Code (HSC) section 7050.5. The coroner would have two working days to examine the remains after being notified. If the coroner determines that the remains are Native American (i.e., not subject to the coroner's authority) and located on private or state land, the coroner would have 24 hours to notify the NAHC of the determination.

Under PRC section 5097.98, the NAHC would be required to identify a Most Likely Descendant (MLD), notify that person, and request that they inspect the remains and make recommendations for treatment and/or disposition. The MLD would have 48 hours after being granted site access to inspect the find and make recommendations for treatment of the human remains. Work would be suspended in the area of the find until the MLD and landowner confer on the mitigation and treatment of the human remains. However, the human remains and associated burial items would be reburied, with appropriate dignity, on the property in a location not subject to further subsurface disturbance if one of the following occurs:

- The NAHC is unable to identify an MLD.
- The MLD identified fails to make a recommendation.
- The recommendation of the MLD is rejected and the mediation provided in PRC section 5097.94(k) fails to provide measures acceptable to the landowner.

This procedure would ensure that the remains are treated in accordance with section 15064.5(d) and (e) of the CEQA Guidelines, HSC section 7050.5, and PRC sections 5097.98 and 5097.99.

As described in Section 5.5.2, Regulatory Setting, cultural resources intentionally or unintentionally excavated and removed from federal lands may be subject to NAGPRA if the resources are confirmed to be of Native American origin. In the event that Native American items are inadvertently discovered on federal lands, NAGPRA requires that the responsible federal agency must be immediately notified by telephone and in writing. Following the receipt of the written notification, the federal agency must certify the receipt of it within three days. The activity that resulted in the discovery must be stopped immediately after discovery and may not resume until 30 days after the applicable federal agency certifies the receipt of the notification. The federal agency would also be responsible for taking immediate steps, if necessary, to further secure and protect the remains and/or items that were discovered. During this process, the federal agency would notify any MLDs or applicable Native American tribes of the discovery, obtain written confirmation of the notification, and initiate consultation, if necessary. Following consultation, the federal agency would prepare, approve, and sign a written NAGPRA Plan of Action (43 CFR 10.3 and 10.5), which would specify the treatment, care, and handling of the discovered remains and cultural resources.

HWT would comply with the applicable regulations to ensure the protection of human remains and burial sites during construction. With implementation of APM CUL-2 and APM WEA-1, impacts to human remains during construction would be reduced to less than significant levels.

Project Components in Arizona

Less than Significant Impact with Mitigation. The Class I Inventory did not identify pre-historic human remains along the Proposed Project alignment within Arizona. However, it is not always possible to predict where human remains, including Native American human remains that might occur outside of formal cemeteries, may occur. Therefore, it is possible that human remains could be uncovered during ground-disturbing activities. As described above under "Project Components in California," implementation of the WEAP under APM WEA-1 would help workers identify potential human remains and establish procedures for stopping work and notifying cultural resource staff and construction supervisors in the event that human remains are detected. In addition, APM CUL-2 would be implemented and in accordance with this APM, if human remains are inadvertently discovered during construction activities, all work in the vicinity of the find would cease and the area would be secured and protected to ensure that no additional disturbance occurs

If human remains are uncovered within the Proposed Project in Arizona, the Director of the Arizona State Museum (ASM) would then be contacted within three working days in accordance with the Arizona Antiquities Act (A.R.S. §41-841 et seq.). The ASM Director would then notify all potentially interested parties, including but not limited to the next of kin, culturally or religiously affiliated groups, the Governor's Office on Tribal Relations, the Inter Tribal Council of Arizona, and the State Historic Preservation Officer. Following notification, the director would facilitate consultation with all notified parties to determine the following course of action, including disposition or remains or reburial.

HWT would comply with the applicable regulations to ensure the protection of human remains and burial sites during construction. With implementation of APM CUL-2 and APM WEA-1, impacts to human remains during construction would be reduced to less than significant levels.

Overall Project

Less than Significant Impact with Mitigation. The Class I Inventory did not identify prehistoric human remains along the Proposed Project alignment within California. As described above under "Project Components in California" and "Project Components in Arizona," HWT would comply with the applicable regulations to ensure the protection of human remains and burial sites during construction. With implementation of APM CUL-2 and APM WEA-1, impacts to human remains during construction would be reduced to less than significant levels.

Operation

Project Components in California

Less than Significant Impact with Mitigation. As previously described, O&M activities such as maintenance and inspection trips and vegetation management associated with the Proposed Project would occur within the existing or new ROW within California. O&M activities within existing or new ROWs within California would have a low potential to encounter human remains if any are present. If human remains are discovered during O&M activities of the Project, work would stop, the APMs previously outlined including APM CUL-2 and APM WEA-1 would be implemented, and the remains would be treated in accordance with applicable laws. Therefore, any potential impacts would be less than significant with mitigation.

Project Components in Arizona

Less than Significant Impact with Mitigation. As previously described, O&M activities such as maintenance and inspection trips and vegetation management associated with the Proposed Project would occur within the existing or new ROW within Arizona. O&M activities within existing or new ROWs within Arizona would have a low potential to encounter human remains if any are present. If human remains are discovered during O&M activities of the Project, work would stop, the APMs previously outlined including APM CUL-2 and APM WEA-1 would be implemented, and the remains would be treated in accordance with applicable laws. Therefore, any potential impacts would be less than significant with mitigation.

Overall Project

Less than Significant Impact with Mitigation. As previously described, O&M activities associated with the Proposed Project such as maintenance and inspection trips and vegetation management would occur within the existing or new ROW. O&M activities within existing or new ROWs would

have a low potential to encounter human remains if any are present. If human remains are discovered during O&M activities of the Project, work would stop, the APMs previously outlined including APM CUL-2 and APM WEA-1 would be implemented, and the remains would be treated in accordance with applicable laws. Therefore, any potential impacts would be less than significant with mitigation.

5.5.4.2 Human Remains

The potential for encountering human remains or grave goods during the construction of the Proposed Project is low. The procedures that would be used if human remains are encountered are described in Section 5.5.4.2.3 above.

5.5.4.3 Resource Avoidance

The avoidance procedures that would be implemented to avoid known resources are described in APMs CUL-1, CUL-2, and WEA-1.

5.5.5 CPUC Draft Environmental Measures

There is one CPUC Draft Environmental Measure related to cultural resources: "Human Remains (Construction and Maintenance)." However, as described in Section 5.5.4.1.4, impacts to human remains would be less than significant with compliance with existing regulations and adherence to APM CUL-2 and APM WEA-1. No CPUC Draft Environmental Measures are required.

5.5.5.1 Applicant Proposed Measures

The following cultural resource-specific APMs would be implemented to reduce impacts associated with the Proposed Project.

- **CUL-1:** Prior to construction, HWT would conduct a survey to identify historic resources within the resource study corridor for the Proposed Project. The survey area would include the Area of Potential Effects, the area in which potential direct and indirect effects to historic resources may occur. The Area of Potential Effects would be developed in coordination with the appropriate agencies. The methods and results of the surveys would be compiled into a Class III Inventory Report subject to review by the appropriate agencies. To the extent feasible, the Proposed Project would be designed to avoid resources eligible for the National Register of Historic Places and California Register of Historic Resources, in cooperation with the appropriate agencies using micro-siting techniques.
- **CUL-2:** Management of cultural/historical resources would follow applicable federal and state standards and guidelines. HWT would prepare and implement a Post-Review Discovery Management Plan addressing the post-review discovery of cultural resources during construction. The Proposed Project Archaeologist or their representative would be responsible for responding to unanticipated discoveries, implementing appropriate buffers and/or stopping work, and communicating with the appropriate agencies in accordance with the plan. Human remains would be treated in accordance with applicable federal and state laws.
- **WEA-1:** All workers on the Proposed Project site would be required to attend a Worker's Environmental Awareness Program (WEAP) training. The training would inform all construction personnel of the resource protection and avoidance measures as well as procedures to be followed upon the discovery of environmental resources. The WEAP training would include, at a minimum, the following topics so crews would understand their obligations: 1) roles and

responsibilities of Proposed Project personnel, including the stop work authority of biological, cultural, paleontological, and tribal monitors; 2) avoidance area boundaries; 3) good housekeeping practices; 4) Proposed Project mitigation measures and permit conditions; 5) communication protocol; 6) legal protections for sensitive resources and for non-compliance; and 7) notification and reporting requirements.

This page intentionally left blank.

5.6 Energy

This section describes the energy-consumption attributes of the Ironwood Transmission Line Project (Proposed Project), as well as an assessment of impacts that have the potential to occur during construction and operation of the Proposed Project.

Research for this analysis involved a review of the following resources:

- California Energy Commission (CEC) California Energy Consumption Database
- California Department of Tax and Fee Administration fuel taxes statistics and reports
- United States Energy Information Administration (USEIA) Arizona State Energy Profile
- Local agency planning documents

5.6.1 Environmental Setting

The Proposed Project is located in Imperial County, California and Yuma County, Arizona on federal, state, municipal, and private land. These lands include unincorporated areas of Imperial and Yuma counties, the city of Calexico, California, and public lands under the jurisdiction or management of the U.S. Bureau of Land Management, U.S. Bureau of Reclamation, and the California Department of Parks and Recreation.

5.6.1.1 Existing Energy Use

The Proposed Project would not replace or upgrade an existing facility but would connect two existing substations with a new transmission line. Therefore, there is no existing energy use associated with the Proposed Project. The subsections that follow describe existing energy use in the vicinity of the Proposed Project.

Electricity Consumption

Electricity for the portion of the Proposed Project in Imperial County is supplied by the Imperial Irrigation District (IID). Table 5.6-1 shows electricity consumption by sector in the IID service area based on the latest available data from the CEC. As shown, IID delivered approximately 3.7billion kilowatt-hours (kWh) in 2024.

Table 5.6-1 Electricity Consumption within IID's Service Territory in 2024

Electricity Consumption (Millions of kWh)							
Agricultural and Water Pump	Commercial Building	Transportation, Communications & Utilities	Industry	Mining and Construction	Residential	Streetlight	Total
250	1,079	190	169	74	1,900	5	3,667

Source: CEC 2024a

Table 5.6-2 shows electricity consumption in Imperial County based on the latest available data from the CEC. As summarized in Table 5.6-2, approximately 1.5 billion kWh of electricity were consumed in Imperial County in 2022.

Table 5.6-2 Electricity Consumption by Imperial County in 2024

	Electricity Consumption (Millions of kWh)		
County	Residential Use	Non-Residential Use	Total
Imperial	668	880	1,548

Source: CEC 2024a

Table 5.6-3 shows electricity consumption by sector in Arizona based on the latest available data from the USEIA[1]. As shown, Arizona consumed approximately 86 billion kWh in 2023. Yuma County specific data is not available.

Table 5.6-3 Electricity Consumption within State of Arizona in 2023

Electricity Consumption (Millions of kWh)				
Residential	Commercial	Industrial	Transportation	Total
38,992	32,619	14,297	10,066	85,919

Source: USEIA 2024

Gasoline, Diesel, and Jet Fuel Consumption

In 2023, gasoline sales in California totaled 11,685 million gallons, accounting for 84 percent of the total fuel consumed. The remaining fuel consumption was comprised of other fuels, including diesel, E85, propane, and natural gas (CEC 2025). Diesel is the second most consumed fuel and is used by heavy-duty trucks, delivery vehicles, buses, trains, ships, boats and barges, farm equipment, construction equipment, and heavy-duty military vehicles and equipment (CEC 2024b). In 2024, taxable gasoline sales (including aviation gasoline) in California accounted for approximately 13.41 billion gallons of gasoline, taxable diesel fuel sales accounted for approximately 2.97 billion gallons of diesel fuel, and taxable jet fuel sales accounted for approximately 212.62 million gallons of jet fuel (California Department of Tax and Fee Administration 2025a, 2025b, and 2025c).

In 2022, approximately 69.7 million gallons of gasoline and approximately 13.2 million gallons of jet fuel were consumed in Arizona (USEIA 2022). Public data for diesel fuel consumption in Arizona is not available.

5.6.1.2 Electric Utility Operations

For the California portion of the project, IID is the electricity service provider. IID provides electric power to more than 165,000 customer meters in the Imperial Valley and parts of Riverside and San Diego counties. As the sixth-largest utility in California, IID controls more than 1,100 megawatts of energy derived from a diverse resource portfolio that includes its own generation, and long- and short-term power purchases (IID 2024).

For the Arizona portion of the project, Arizona Public Service is the electricity service provider. Arizona Public Service is Arizona's largest and longest serving energy provider that generates energy for approximately 1.4 million customers in Arizona. The service territory stretches across the state (Arizona Public Service 2024).

[1] Energy consumption data for Yuma County isn't readily available. Using Arizona State energy consumption data as a proxy for Yuma County is appropriate because it reflects general trends and patterns that are likely similar across the state, providing a useful estimate in the absence of specific county-level data.

5.6.2 Regulatory Setting

Federal, state, and local regulations were reviewed for applicability to the Proposed Project. Applicable regulations have been listed and described in the following subsections.

5.6.2.1 Federal

National Energy Conservation Policy Act

The National Energy Conservation Policy Act (NECPA), 42 United States (U.S.) Code (USC) § 8201 *et seq*., established energy-efficiency standards for consumer projects and includes a residential program for low-income weatherization assistance, grants, and loan guarantees for energy conservation in schools and hospitals, as well as energy efficiency standards for new construction. NECPA also established fuel economy standards for on-road motor vehicles in the U.S. The National Highway Traffic and Safety Administration, which is part of the U.S. Department of Transportation (USDOT), is responsible for establishing additional vehicle standards and revising existing standards under the NECPA. The USDOT is authorized to assess penalties for noncompliance.

National Energy Policy Act of 2005

The National Energy Policy Act of 2005, 42 USC § 13201 *et seq*., sets equipment energy efficiency standards, seeks to reduce reliance on nonrenewable energy resources, and provides incentives to reduce current demand on these resources. This includes establishing programs to improve the reliability and efficiency of distributed energy resources and systems by integrating advanced energy technologies with grid connectivity.

Energy and Independence Security Act of 2007 and Corporate Average Fuel Economy Standards

The Energy and Independence Security Act of 2007, 42 USC § 17001, sets federal energy management requirements in several areas, including energy reduction goals for federal buildings, facility management and benchmarking, performance and standards for new buildings and major renovations, high-performance buildings, energy savings performance contracts, metering, energy-efficient product procurement, and reduction in petroleum use by methods including setting automobile efficiency standards and increases in alternative fuel use. This act also amends portions of the NECPA, as described previously.

Construction Equipment Fuel Efficiency Standard

USEPA sets emission standards for construction equipment. The first federal standards (Tier 1) were adopted in 1994 for all off-road engines over 50 horsepower and were phased in by 2000. A new standard was adopted in 1998 that introduced Tier 1 for all equipment below 50 horsepower and established the Tier 2 and Tier 3 standards. The Tier 2 and Tier 3 standards were phased in by 2008 for all equipment. The current iteration of emissions standards for construction equipment are the Tier 4 efficiency requirements and are contained in 40 Code of Federal Regulations Parts 1039, 1065, and 1068. Emissions requirements for new off-road Tier 4 vehicles were completely phased in by the end of 2015.

5.6.2.2 State of California

State of California Integrated Energy Policy

Senate Bill 1389 (Chapter 568, Statutes of 2002) required the CEC to conduct assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices. The CEC uses these assessments and forecasts to develop energy policies that conserve resources, protect the environment, ensure energy reliability, enhance the state's economy, and protect public health and safety. The most recent assessment, the *2023 Integrated Energy Policy Report*, highlights the implementation of California's innovative policies and the role they have played in establishing a clean energy economy and provides more detail on several key energy policies, including decarbonizing buildings, increasing energy efficiency savings, and integrating more renewable energy into the electricity system (CEC 2024c).

Senate Bill 100

Senate Bill 100, signed into law in September 2018, amends the California Renewables Portfolio Standard Program. The program requires the California Public Utilities Commission (CPUC) to establish a renewables portfolio standard requiring all retail sellers to procure a minimum quantity of electricity products from eligible renewable energy resources so that the total kilowatt-hours of those products sold to their retail end-use customers achieve 25 percent of retail sales by December 31, 2016; 33 percent by December 31, 2020; 40 percent by December 31, 2024; 50 percent by December 31, 2026; and 60 percent by December 31, 2030. The program additionally requires each local publicly owned electric utility to procure a minimum quantity of electricity products from eligible renewable energy resources to achieve the procurement requirements established by the program.

Senate Bill 1020

Adopted on September 16, 2022, SB 1020 creates clean electricity targets for eligible renewable energy resources and zero-carbon resources to supply 90 percent of retail sale electricity by 2035, 95 percent by 2040, 100 percent by 2045, and 100 percent of electricity procured to serve all state agencies by 2035. This bill states that to achieve this, carbon emissions should not be increased elsewhere in the western grid.

2022 Scoping Plan

CARB published the Final 2022 Climate Change Scoping Plan (2022 Scoping Plan) in November 2022 (CARB 2022). The 2022 Scoping Plan builds upon the framework established by the 2008 Climate Change Scoping Plan and previous updates while identifying a new, technologically feasible, cost-effective, and equity-focused path to achieve California's climate target. The 2022 Scoping Plan includes policies to achieve a significant reduction in fossil fuel combustion, further reductions in short-lived climate pollutants, support for sustainable development, increased action on natural and working lands to reduce emissions and sequester carbon, and the capture and storage of carbon. The 2022 Scoping Plan would reduce demand for liquid petroleum by 94 percent and total fossil fuel by 86 percent in 2045 relative to 2022.

5.6.2.3 State of Arizona

Renewable Energy Standard & Tariff

In 2006, the Arizona Corporation Commission (ACC) approved the Renewable Energy Standard and Tariff. ACC regulates the rates and services of electricity, natural gas, water, and telecommunications companies. These rules require that regulated electric utilities generate 15 percent of their energy from renewable resources by 2025. Each year, Arizona's utility companies are required to file annual implementation plans describing how they will comply with the Renewable Energy Standard and Tariff rules. The proposals include incentives for customers who install solar energy technologies for their own homes and businesses. The ACC's Renewable Energy Standards encourage utilities to use solar, wind, biomass, biogas, geothermal and other similar technologies to generate "clean" energy to power Arizona's future (ACC 2025).

5.6.2.4 Local

The CPUC has sole and exclusive state jurisdiction over the siting and design of the Proposed Project in California. Pursuant to CPUC General Order (G.O.) 131-E, Section XI.B:

> "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the Commission's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters."

Consequently, local agencies do not have jurisdiction over the Proposed Project, but public utilities must consult with local agencies and consider their regulations.

The ACC's Arizona Power Plant and Transmission Line Siting Committee has state jurisdiction over the Proposed Project in Arizona. This committee may approve or deny a Certificate of Environmental Compatibility application and impose reasonable conditions. However, pursuant to Arizona Revised Statutes Section 40-360.06(D):

> "Any certificate granted by the committee shall be conditioned on compliance by the applicant with all applicable ordinances, master plans and regulations of the state, a county or an incorporated city or town, except that the committee may grant a certificate notwithstanding any such ordinance, master plan or regulation, exclusive of franchises, if the committee finds as a fact that compliance with such ordinance, master plan or regulation is unreasonably restrictive and compliance therewith is not feasible in view of technology available."

As this Proponent's Environmental Assessment is being prepared for the CPUC, the following discussion of local land use regulations in California and Arizona is provided for informational purposes only.

Imperial County General Plan

The Imperial County General Plan Renewable Energy and Transmission Element includes the following goal and objective related to energy (Imperial County 2015):

Goal 2: Encourage development of electrical transmission lines along routes which minimize potential environmental effects.

Objective 2.2: Where practicable and cost-effective, design transmission lines to minimize impacts on agricultural, natural, and cultural resources, urban areas, military operation areas, and recreational activities.

Yuma County General Plan

Yuma County's General Plan Section 10 – Energy Element include the following actions related to energy conservation (Yuma County 2023):

Action EA.1: Work with utility providers through the planning process to identify appropriate locations and buffering for future energy generation and transmission projects.

Action EA.3: Work closely with utility providers during planning and evaluation of development plans to access cumulative, county-wide impacts on energy availability and reliability.

Action EA.6: Promote energy efficient construction and effective land use patterns.

City of Calexico General Plan

Calexico's General Plan Land Use Element includes the following objective and policy related to energy (City of Calexico 2007):

Objective 21: The City shall encourage infill and adjacent new development to provide for the efficient use of existing infrastructure, avoid "leap frog" new development and to reduce impacts to agriculture.

Policy 21a: The extension of water and sewer service facilities such as transmission lines or pumps to accommodate new development projects should be limited to one-quarter mile across an undeveloped area.

5.6.3 Impact Questions

5.6.3.1 Energy Impact Questions

The thresholds of significance for assessing impacts come from the California Environmental Quality Act (CEQA) Environmental Checklist. For Energy, the CEQA Checklist asks, would the Proposed Project:

- Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?
- Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

5.6.3.2 Additional CEQA Impact Questions

The CPUC has identified one additional CEQA impact question:

- Would the project add capacity for the purpose of serving a nonrenewable energy resource?

5.6.4 Impact Analysis

5.6.4.1 Energy Impact Analysis

5.6.4.1.1 Energy Methodology

Construction

Impacts related to energy associated with the Proposed Project were determined by comparing the anticipated fuel consumption from construction of the Proposed Project to current fuel use within the Proposed Project area. The construction fuel consumption was estimated using the methodologies and factors implemented in California Emissions Estimator Model (CalEEMod) Version 2022.1[2]. Given the unique characteristics of a transmission line project, CalEEMod is not specifically designed to accommodate the structure of project information; rather, the methodologies, data inputs and emission factors were incorporated into an Excel workbook. Construction energy consumption was modeled based on applicant provided equipment list and usage data, the Proposed Project area, fuel consumption factors from South Coast Air Quality Management Districts' 1993 CEQA Air Quality Handbook, and the Swiss Federal Office of Civil Aviation *Guidance on the Determination of Helicopter Emissions*.

Construction energy use was assessed based on Applicant-provided information, as detailed in Section 5.3, Air Quality. Project construction is anticipated to begin in 2029, which would include off-road and on-road construction vehicles. If, for various site planning, financial, or other reasons, the onset of construction is delayed to a later date than assumed in the modeling analysis, construction impacts would be similar to or less than those analyzed, because a more energy-efficient and cleaner burning standard construction equipment and vehicle fleet mix would be expected in the future. This is because of CARB's In-Use Off-Road Diesel Fueled Fleets regulations require construction equipment fleet operators to phase-in less polluting heavy-duty equipment and trucks over time. Construction energy consumption would result primarily from transportation fuels (e.g., diesel and gasoline) used for haul trucks, heavy-duty construction equipment, and construction workers traveling to and from the project site. Construction activities can vary substantially from day to day, depending on the specific type of construction activity and the number of workers and vendors traveling to the project site. This analysis considers these factors and provides the estimated maximum construction energy consumption for the purpose of evaluating the associated impacts on energy resources. In addition, these construction energy estimates present a "worst case scenario" that assumes each piece of construction equipment would operate 5 to 8 hours per day during the specific construction phase. Therefore, construction energy estimates would be conservative.

Electricity

During project construction, energy would be consumed in the form of electricity associated with the conveyance of water used for dust control (including supply and conveyance) and disturbed areas would be watered twice per day during the staging area and civil crew phases. Each gallon of delivered portable water in Colorado River Region is associated with 0.002 kWh of electricity, based on CalEEMod default assumptions. During the construction phases, the use of dozers, graders,

[2] Imperial County has a similar desert climate to the project location in Arizona, making it a suitable comparison for using CalEEMod. Although CalEEMod is specifically designed for projects in California, the emissions calculated are comparable to those for an identical project in Arizona.

crawler tractor, and other construction equipment would disturb half an acre per eight hours of construction, based on CalEEMod default assumptions (California Air Pollution Control Officer Association 2022). The gallons of water used to suppress one acre of disturbed soil per day is approximately 3,020.

Transportation Fuels

Fuel consumption from on-site heavy-duty construction equipment, including generators at each staging area, was calculated based on the applicant provided equipment use, hours per day, number of days, and load factors provided by CalEEMod default assumptions included in Appendix B. The total horsepower was multiplied by the hours of use, days of use, load factor, and Compression-Ignition Engine Brake-Specific Fuel Consumption factor provided by the USEPA to estimate fuel usage (USEPA 2021). Fuel consumption from construction on-road worker trips and vendor and delivery/haul trucks was calculated using applicant provided trip estimates, and the trip distance was provided by CalEEMod default assumptions in Imperial County. Total VMT for these on-road vehicles were then calculated for each type of construction-related trip and divided by the corresponding miles per gallon factor using the USDOT National Transportation Statistics (USDOT 2023a and 2023b).

The construction equipment, vendor trucks, and haul trucks would primarily be diesel-fueled, while the construction worker commute vehicles would primarily be gasoline-fueled. For the purposes of this assessment, it is conservatively assumed that all heavy-duty construction equipment would be diesel-fueled. In addition, it is assumed the haul trucks would be diesel-fueled.

Operation

Upon completion of construction activities, the project maintenance and inspection activities would be minimal, resulting in low operational energy consumption. Therefore, the operational energy demand is addressed qualitatively.

5.6.4.1.2 Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption or energy resources, during project construction or operation?

Construction

Project Components in California

Less than Significant Impact. As described in Chapter 3, Proposed Project Description, the Proposed Project is intended to mitigate resource deliverability constraints to enable delivery of electrical energy generation. The Proposed Project involves the development of an 80-mile transmission line within California, representing approximately 93 percent of the total 86-mile Proposed Project length. This percentage was applied to Overall Construction Emissions to determine the emissions for each state. Construction of the portion of the Proposed Project in California would require consumption of fuel to power construction vehicles, equipment, helicopters, and crushing and processing of materials after blasting as summarized in Table 5.6-4.

Table 5.6-4 Construction Fuel Consumption from California Project Components

Primary Equipment Description	Gasoline (gallons)	Diesel (gallons)	Jet A (gallons)
Worker Vehicles	25,336	0	0
Construction Vehicles	0	75,027	0
Construction Equipment	0	1,253,032	0
Helicopter and Support	0		289,252
Blasting	0	1,036	0
Total	**25,336**	**1,329,096**	**289,252**

See Appendix B for Energy Assumptions and Calculations

Based on the information provided in Section 5.6.1.1 for statewide California fuel consumption, Proposed Project construction activities would represent less than 0.001 percent of total gasoline consumption, 0.05 percent of total diesel consumption, and 0.13 percent of total Jet A fuel consumption in the state of California in 2024 (California Department of Tax and Fee Administration 2025a, 2025b, 2025c).

Construction contractors would be required to comply with the provisions of California Code of Regulations Title 13 Sections 2449 and 2485, which prohibit diesel-fueled commercial motor vehicles and off-road diesel vehicles from idling for more than five minutes, which would minimize unnecessary fuel consumption. Furthermore, per applicable regulatory requirements such as 2022 CALGreen, Proposed Project construction would comply with construction waste management practices to divert a minimum of 65 percent of construction debris. These practices would result in efficient use of the energy necessary to construct the Proposed Project. Additionally, in the interest of cost-efficiency, construction contractors also would not utilize fuel in a manner that is wasteful or unnecessary. Overall, the construction activities would be temporary and would not involve the inefficient, wasteful, and unnecessary use of energy during construction. As a result, impacts would be less than significant.

Project Components in Arizona

Less than Significant Impact. As described in Chapter 3, Proposed Project Description, the Proposed Project is intended to mitigate resource deliverability constraints to enable delivery of electrical energy generation. Six miles (seven percent) of transmission line construction for the Proposed Project occurs in Arizona. This percentage was applied to Overall Construction Emissions to determine the emissions for each state. Construction of the portion of the Proposed Project in Arizona would require consumption of fuel to power construction vehicles, equipment, helicopters, and crushing and processing of materials after blasting as summarized in Table 5.6-5.

Table 5.6-5 Construction Fuel Consumption from Arizona Project Components

Primary Equipment Description	Gasoline (gallons)	Diesel (gallons)	Jet A (gallons)
Worker Vehicles	1,907	0	0
Construction Vehicles	0	5,647	0
Construction Equipment	0	94,314	0
Helicopter and Support	0	0	21,772
Blasting	0	78	0
Total	**1,097**	**100,039**	**21,772**

See Appendix B for Energy Assumptions and Calculations

Based on the information in Section 5.6.1.1 for Arizona fuel consumption, the Proposed Project construction activities would represent less than 0.03 percent of total gasoline and 0.16 percent of total jet fuel consumption in the state of Arizona.

Similar to the Project components in California, the Proposed Project components in Arizona would not utilize fuel in a manner that is wasteful or unnecessary in the interest of cost saving. In addition, construction would be short-term and temporary. At this time, there is no publicly available data specifically detailing diesel fuel consumption in the state of Arizona**.** As a result, impacts would be less than significant.

Overall Project

Less than Significant Impact. Construction of the Proposed Project would require consumption of fuel to power construction vehicles, equipment, helicopters, and crushing and processing of materials after blasting as summarized in Table 5.6-6. However, as shown in the Table 5.6-4 and Table 5.6-5, the Proposed Project construction activities would result in minimal fuel consumption in the states of California and Arizona combined. In addition, construction would be short-term and temporary. As a result, the project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption or energy resources, during project construction.

Table 5.6-6 Construction Fuel Consumption from All Project Components

Primary Equipment Description	Gasoline (gallons)	Diesel (gallons)	Jet A (gallons)
Worker Vehicles	27,243	0	0
Construction Vehicles	0	80,675	0
Construction Equipment	0	1,347,347	0
Helicopter and Support	0	0	311,024
Blasting	**0**	**1,114**	**0**
Total	**27,243**	**1,429,135**	**311,024**

In addition, offsite electricity would be used to convey water needed for water trucks, which would be used two times per day for the duration of construction. Based on this, site watering activities would consume approximately 3,858,050 gallons of water, which corresponds with 8,889 kWh of electricity. Therefore, Project demand would be within IID's annual forecasted energy to serve load of 4,268,000,000 kWh in 2029 (CEC 2024c). Over the course of the construction period, the Proposed Project would consume a minimal amount of electricity.

Operation

Project Components in California

Less than Significant Impact. As presented in Chapter 3, Proposed Project Description, operations and maintenance O&M activities associated with the Proposed Project would be similar to those currently performed by utility providers in the Proposed Project area. O&M activities would include routine inspections and emergency repair within substations and throughout rights-of-way, which would require the use of vehicles and equipment. Horizon West Transmission (HWT) would inspect transmission overhead facilities in a manner consistent with CPUC G.O. 95, G.O. 128, and G.O. 165.

The Proposed Project would add 1 to 2 full-time employees to support O&M, but maintenance of the Proposed Project would ultimately be integrated into HWT's existing O&M program currently executed by HWT and supported by external specialized contractors. Trips to the Proposed Project area to perform O&M activities would be minimal and infrequent, estimated at up to 24 annual trips (1 per month for 2 employees). Helicopters may be used for various O&M activities, including the transportation of transmission line workers, delivery of equipment and materials to structure sites, structure placement, hardware installation, and conductor or optical ground wires stringing operations. Helicopter landing areas may be located in places where access by road is infeasible. This represents a minor incremental increase in the total energy that is presently consumed on other existing facilities in the Proposed Project area. Operational fuel consumption in California was not quantified, as the anticipated level of activity is minimal and unlikely to place any significant demand on local or regional fuel supplies. The Proposed Project's incremental increase in staffing in California would generate a small number of additional vehicle trips during operations and maintenance (O&M) activities, and as such, energy associated with Proposed Project operation in California would be negligible**.**

Therefore, operational energy impacts in California would be less than significant.

Project Components in Arizona

Less than Significant Impact. The Proposed Project's incremental increase in staffing in Arizona would generate a small number of additional vehicle trips during O&M activities, and as such, energy associated with Proposed Project operation in Arizona would be negligible**.** O&M activities for the Proposed Project would be the same across both California and Arizona. Similarly to the discussion above in *Project Components in California*, the Proposed Project would result in minimal O&M activities in Arizona, such as increased maintenance and inspection trips. This represents a minor incremental increase in the total energy that is presently consumed on other existing facilities in the Proposed Project area. Operational fuel consumption in Arizona was not quantified, as the anticipated level of activity is minimal and unlikely to place any significant demand on local or regional fuel supplies, and. operational energy impacts in Arizona would be less than significant.

Overall Project

Less than Significant Impact. As described previously, operational fuel consumption for the Proposed Project was not quantified, as the anticipated level of activity is minimal and unlikely to place any significant demand on local or regional fuel supplies. The incremental increase in staffing would generate a small number of additional vehicle trips during operations activities, and as such, energy associated with Proposed Project operation in would be negligible**.** Overall, the Proposed Project would result in a nominal increase in O&M activities, such as increased maintenance and inspection trips. Therefore, total energy consumption would be minimal and unlikely to place any significant demand on local or regional fuel or electricity supplies. As a result, impacts would be less than significant.

5.6.4.1.3 Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Construction

Project Components in California

No Impact. As part of the Proposed Project in Imperial County, California, new transmission towers, poles, foundations, conductors, insulators and associated hardware, overhead ground wire, and fiber optic facilities would be installed. The Proposed Project is intended to mitigate resource deliverability constraints as identified in the California Independent System Operator (CAISO)'s 2022-2023 Transmission Plan to enable delivery of electrical energy generation, which may include renewable energy, in the resource portfolios approved by the CPUC and therefore would not impede the development of renewable energy projects. As stated previously in Section 5.6.2, none of the local plans that address energy efficiency are applicable to the Proposed Project. Therefore, construction of the Proposed Project components in California would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency, and no impact would occur.

Project Components in Arizona

No Impact. As part of the Proposed Project in Yuma County, Arizona, new transmission towers, poles, foundations, conductors, insulators and associated hardware, overhead ground wire, and fiber optic facilities would be installed. As noted previously, the Proposed Project is intended to mitigate resource deliverability constraints and enable delivery of electrical energy generation, which may include renewable energy. As stated previously in Section 5.6.2, none of the local plans that address energy efficiency are applicable to the Proposed Project. Therefore, construction of the Proposed Project components in Arizona would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency, and no impact would occur.

Overall Project

No Impact. As discussed under Project Components in California and Arizona above, the Proposed Project intends to mitigate resource deliverability constraints and enable delivery of electrical energy generation, which may include renewable energy. There are no local or regional plans that address energy efficiency that are applicable to the Proposed Project. Therefore, construction of the overall Proposed Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency, and no impact would occur.

Operation

Project Components in California

No Impact. Project facilities managed by HWT would be monitored remotely 24/7 by the System Operations team at Lone Star Transmission, an HWT affiliate, in compliance with Federal Energy Regulatory Commission regulations. The physical condition of facilities in Imperial County, California would be periodically inspected by field operations staff. HWT would conduct a wide variety of repair and maintenance activities in response to emergency situations such as damage resulting from high winds, storms, fires, and other natural disasters, and accidents. Such repairs could include replacement of downed structures or lines, or re-stringing conductors. Emergency repairs could be

needed at any time. Ongoing O&M activities are necessary to ensure reliable service, as well as the safety of the utility worker and the general public, as mandated by the CPUC.

HWT anticipates a small incremental increase in staffing to support the Proposed Project components located in Imperial County, California. The estimated full-time equivalent is 1 to 2 subject matter experts. Additional staffing needs are minimal because HWT plans to integrate the Proposed Project into its existing O&M program currently executed by HWT and its affiliated subject matter experts, and supported by external specialized contractors. As a result, the Proposed Project would result in a nominal increase in O&M activities, such as increased maintenance and inspection trips. As stated previously in Section 5.6.2, none of the local plans that address energy efficiency are applicable to the Proposed Project. Therefore, O&M of the Proposed Project components located in Imperial County, California would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency, and no impact would occur.

Project Components in Arizona

No Impact. Similar to the project components in California, Project facilities in Arizona would be managed by HWT and would be monitored remotely 24/7 by the System Operations team at Lone Star Transmission. Additionally, site visits by field staff would occur periodically and HWT would conduct repair and maintenance activities in response to emergency situations.

HWT anticipates a small incremental increase in staffing to support the Proposed Project components located in Yuma County, Arizona. As a result, the Proposed Project would result in a nominal increase in O&M activities, such as increased maintenance and inspection trips. As stated previously in Section 5.6.2, none of the local plans that address energy efficiency are applicable to the Proposed Project. Therefore, O&M of the Proposed Project components located in Yuma County, Arizona would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency, and no impact would occur.

Overall Project

No Impact. As noted above, Project facilities in California and Arizona would be managed by HWT, monitored remotely by Lone Star Transmission, and inspected, repaired, and maintained by field staff and HWT during routine inspections or emergency situations.

HWT anticipates a small incremental increase in staffing to support the Proposed Project. As a result, the Proposed Project would result in a nominal increase in O&M activities, such as increased maintenance and inspection trips. As stated previously in Section 5.6.2, none of the local plans that address energy efficiency are applicable to the Proposed Project. Therefore, O&M of the Proposed Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency, and no impact would occur.

5.6.4.1.4 Would the project add capacity for the purpose of serving a nonrenewable energy resource?

Construction

Project Components in California

Serving a nonrenewable energy resource is not a purpose of the Proposed Project; therefore, no impact would occur.

Project Components in Arizona

Serving a nonrenewable energy resource is not a purpose of the Proposed Project; therefore, no impact would occur.

Overall Project

Serving a nonrenewable energy resource is not a purpose of the Proposed Project; therefore, no impact would occur.

Operation

Project Components in California

Serving a nonrenewable energy resource is not a purpose of the Proposed Project; therefore, no impact would occur.

Project Components in Arizona

Serving a nonrenewable energy resource is not a purpose of the Proposed Project; therefore, no impact would occur.

Overall Project

Serving a nonrenewable energy resource is not a purpose of the Proposed Project; therefore, no impact would occur.

5.6.4.2 Nonrenewable Energy

The Proposed Project would include construction and operation of the overhead transmission line, up to the point of change of ownership within approximately 100 feet of the connecting utilities' substation property lines. At each substation, the applicable utility would install the 500 kV transmission line from the respective point of change of ownership and line shunt reactors to a new 500 kV bus within the substation to enable interconnection of the Proposed Project. The Proposed Project would not modify the existing utility system.

The Proposed Project would reinforce system reliability and allow delivery of electrical energy generation to Southern California while benefitting customers directly in San Diego County and Imperial County. The Proposed Project along with other transmission projects included in CAISO's 2022-2023 Transmission Planning Process (Imperial Valley-North of SONGS, North of SONGS-Serrano, and Serrano-Delamo-Mesa transmission line projects) would help alleviate deliverability constraints and allow deliverability of energy resources, which may include renewable energy, to San Diego and the Los Angeles Basin (Orange County, Los Angeles County) directly or indirectly through relief of other established pathways. On the eastern side of the Proposed Project area, the Proposed Project would benefit the North Gila (Yuma, Arizona) area. Thus, the Proposed Project is not specific to non-renewable energy projects.

5.6.4.3 Fuels and Energy Use

Total Energy Requirements of the Proposed Project by Fuel Type and End Use

Table 5.6-4 and Table 5.6-5 provides an estimate of the volume of fuels (i.e., gasoline, diesel, and Jet A) that would be used during construction of the Proposed Project in California and Arizona.

Additionally, Section 5.6.4.2, Energy Impact Analysis, provides an estimate of total electricity use during construction of the Proposed Project in California and Arizona.

As discussed previously, O&M activities associated with the Proposed Project would be similar to those currently performed for existing facilities. It is anticipated that regular O&M activities would increase minimally compared to existing activities. Therefore, operation of the Proposed Project would result in an incremental increase in consumption of fuels above the volumes currently consumed.

Energy Conservation Equipment and Design Features

The Proposed Project includes neither equipment nor design features with a primary or sole purpose of energy conservation.

Energy Supplies That Would Serve the Project

Proposed Project construction would not require any new energy supplies. As described in Chapter 3, power would be supplied to staging areas from existing local distribution lines, as needed. If local distribution lines are not available, as a conservative approach, temporary power may be provided from an electric-powered generator. All other energy required for the construction phase would be obtained from existing energy purveyors. As described previously, Proposed Project operation would result in an incremental increase in diesel fuel as a result of the new transmission lines.

As related to existing renewable and non-renewable energy, the Proposed Project would connect the North Gila Substation in Arizona and Imperial Valley Substation in California. The Proposed Project is intended to mitigate resource deliverability constraints as identified in the CAISO's 2022-2023 Transmission Plan to meet renewable generation requirements established in the CPUC-developed renewable generation portfolios. The CAISO approved the Proposed Project as necessary to help mitigate the East of Miguel deliverability constraint, which the CAISO found presently results in zero deliverability for resources in the CPUC's base portfolio (3,080 megawatt) and sensitivity portfolio (10,398 megawatt) of renewable resources (CAISO 2022-2023 TPP at 96, 99). Ultimately, the Proposed Project would help support state renewable portfolio standard goals, contributing to reduced carbon emissions and relieving strained transmission corridors. The Proposed Project would not and is not intended to interconnect any new sources of non-renewable energy.

5.6.5 CPUC Draft Environmental Measures

There are no CPUC Draft Environmental Measures identified for energy.

5.6.5.1 Applicant Proposed Measures

No Applicant Proposed Measures specific to energy have been developed to reduce an impact that has been identified in Section 5.6.3.

This page intentionally left blank.

5.7 Geology, Soils, and Paleontological Resources

This section describes the geological, soils, and paleontological resources in the vicinity of the Ironwood Transmission Line Project (Proposed Project), as well as potential impacts that may result from construction and operation of the Proposed Project.

Research for this analysis involved a review of the following resources:

- California Department of Conservation's (DOC) reported California landslides map
- Local agency planning documents
- State Water Resources Control Board's (SWRCB) Revised Universal Soil Loss Equation (RUSLE) K-Values information
- United States Bureau of Reclamation's (USBR) Characteristics and Problems of Collapsible Soil information
- United States Department of Agriculture's (USDA) Understanding Soil Risks and Hazards Using Soil Survey to Identify Areas with Risks and Hazards to Human Life and Property document
- USDA Web Soil Survey resource
- USDA Wind Erodibility Groups information
- United States Geological Survey (USGS) U.S. Quaternary Faults online map
- U.S. Bureau of Land Management (BLM) Potential Fossil Yield Classification system

A desktop paleontological resources technical report (PRTR) is currently being prepared for the Proposed Project, which will include all required components of a paleontological resources analysis per CPUC PEA guidelines. The PRTR will include a paleontological sensitivity assessment of all geologic units underlying Proposed Project components per the BLM's Potential Fossil Yield Classification (PFYC) paleontological sensitivity scale; paleontological records searches of the Natural History Museum of Los Angeles County, San Diego Natural History Museum, and Arizona Museum of Natural History; a map showing all known paleontological localities within 500 feet of Proposed Project components; a paleontological impact analysis of the Proposed Project; and, if necessary, recommendations for paleontological mitigation. The PRTR will be summarized in this section of the PEA, and the full desktop paleontological resources technical report will be attached to the PEA as a confidential appendix due to it containing the precise location of known paleontological resources. Once the PRTR has been reviewed and approved by BLM, it will be provided to the CPUC.

5.7.1 Environmental Setting

The Proposed Project is located in Imperial County, California and Yuma County, Arizona on federal, state, municipal, and private land. These lands include unincorporated areas of Imperial and Yuma counties, the city of Calexico, California and public lands under the jurisdiction or management of the BLM, USBR, and the California Department of Parks and Recreation. The Proposed Project is located almost entirely within undeveloped open areas. This section describes the geological, soils-related, and paleontological setting.

5.7.1.1 Regional and Local Geologic Setting

The Proposed Project is located in the Colorado Desert province, one of the eleven geomorphic provinces of California (CGS 2002). The Colorado Desert province extends from the Coachella Valley

in the northwest, south to the U.S.-Mexico border, and east to the Colorado River (Norris and Webb 1976). The eastern border of the Colorado Desert province is formed by the Peninsular Ranges. The northern border is formed in part by the San Bernardino Mountains of the Transverse Ranges, but east of this range's terminus, the border between the Colorado Desert province and Mojave Desert province is poorly defined. The dominant feature of the Colorado Desert province is the Salton Trough, in which the artificial Salton Sea lies; however, many natural predecessors of the Salton Sea occurred here, the most recent of which existed during the last millennium and is known as Lake Cahuilla. Elsewhere in the eastern part of the Colorado Desert province, mountains and hills are found, which are formed of pre-Cambrian metasedimentary and igneous rocks, Mesozoic intrusive igneous rocks, and late Cenozoic volcanic rocks.

The Proposed Project alignment extends the entire east-west breadth of the Colorado Desert province and into Arizona with its southern edge corresponding to the U.S.-Mexico border. The western end of the Proposed Project is at the western border of the Imperial Valley, the lowest-lying and topographically flattest part of the Salton Trough. Within the Imperial Valley, the Proposed Project is crossed by the New River, Alamo River, and numerous artificial irrigation canals. East of the Imperial Valley, the Proposed Project crosses part of the Algodones Dunes, Chocolate Mountains, Cargo Muchacho Mountains, and Ogilby Hills. The eastern end of the Proposed Project lies within the Colorado River Valley on both the west and east sides of the river. The eastern edge of the Proposed Project also crosses part of the Laguna Mountains in Arizona.

Physiography

The principal mountain and valley areas crossed by the Proposed Project are described below. The boundaries between these areas are not sharply defined, and the descriptions are general. The Proposed Project crosses over Algodones Sand Dunes and the Cargo Muchacho Mountains.

Algodones Sand Dunes

The Algodones Sand Dunes (Dunes) cover an area approximately 40 miles long and 5 miles wide, and the Dunes often reach heights of 300 feet above the desert floor. The Imperial Sand Dunes are a sub-section of the Algodones Sand Dunes, which are managed by the BLM. The vast majority of the Dunes are in Imperial County, but they extend a few miles into northern Baja California Norte in Mexico. The Dunes trend northwest to southeast along the east side of the Salton Trough. Geologically, the sand consists of 60 to 70 percent quartz and 30 to 40 percent feldspar with traces of biotite, magnetite, garnet, and epidote. An iron oxide coating is present on some 25 to 60 percent of the particles, giving the Dunes an orange cast. Approximately 60 percent of the grains are subrounded to subangular and nearly all grains are frosted or pitted. The Dunes are formed primarily from beach sand associated with the sea sands from the late Pleistocene and Holocene and freshwater lake sands that occupied the Salton Sink on a sporadic basis for tens of thousands of years. The geology surrounding the Dunes consists primarily of Quaternary alluvium, which consists of Pleistocene and Holocene deposits of sand, clay, silt, and gravel derived from local sources (USGS 1984).

Cargo Muchacho Mountains

The Cargo Muchacho Mountains are a mountain range approximately 8 miles long and 3 miles wide located in the southeast Colorado Desert in Imperial County. The Cargo Muchacho Mountains contain mineral deposits and are home to the American Girl Mine, the Golden Bee Mine, and the Cargo Mine. The Cargo Muchacho Mountains are composed of quartzites and schists that have been

intruded by granitic rocks, andesite, and dioritic dikes. Gold deposits are located on the west side of the range and occur in both metamorphic and granitic rocks (Mindat 2024).

5.7.1.2 Seismic Hazards

Faults and Seismicity

The state of California considers a fault to be active if the fault is well-defined and if there is evidence of surface displacement along the fault during the Holocene epoch (i.e., within the past 11,000 years). The time in which a fault was last known to have slipped, referred to as age, is directly linked to how active a fault is considered to be. In addition, potentially active faults are those that have demonstrated activity within the Quaternary period (i.e., approximately the past 1.6 million years). Fault type is defined by the angle of the fault with respect to the surface and the direction of slip. Faults that move horizontally are known as strike-slip faults and are classified as either right-lateral or left-lateral. Faults which show both dip-slip and strike-slip motion are known as oblique-slip faults. A normal fault is a fault in which the block above the fault has moved downward relative to the block below (USGS 2024a).

Table 5.7-1 includes mapped faults within 10 miles of the Proposed Project alignment in the United States, including fault type, fault and section length, slip rate, and maximum estimated moment magnitude. The fault locations are shown on Figure 5.7-1. As shown in Figure 5.7-1, the Imperial Fault and the Algodones Fault cross the Proposed Project alignment, while the Northern Centinela Fault is located approximately 1 mile south of the Proposed Project alignment on the western end.

Surface Fault Rupture

The state of California has established “Alquist-Priolo Special Studies Zones” in areas where Holocene faults pose a risk of surface displacement. The Alquist-Priolo Earthquake Fault Zoning Act of 1972 regulates the construction and development of buildings intended for human occupancy to avoid rupture hazards from surface faults. This act does not specifically regulate substations and transmission lines, but it does aid in defining areas where fault rupture is most likely to occur. One Alquist Priolo fault, the Imperial Fault, crosses into the Proposed Project alignment. The Imperial Fault crosses the Proposed Project alignment within the Proposed Project alignment and the Northern Centinela Fault is located approximately 1 mile south of the western portion of the Proposed Project alignment. Due to the presence of faults in the Proposed Project alignment, there is potential for surface rupture due to fault plane displacement during the design life of the Proposed Project.

Seismic Ground Shaking

Several factors influence how ground motion interacts with structures, making the impact hazard of ground shaking difficult to predict. Seismic waves propagating through the earth’s crust are responsible for the ground vibrations normally felt during an earthquake. Seismic waves can vibrate in any direction and at different frequencies, depending on the frequency content of the earthquake, its rupture mechanism, the distance from the seismic epicenter, and the path and material through which the waves are propagating. Ground shaking due to nearby and distant earthquakes should be anticipated during the life of the Proposed Project.

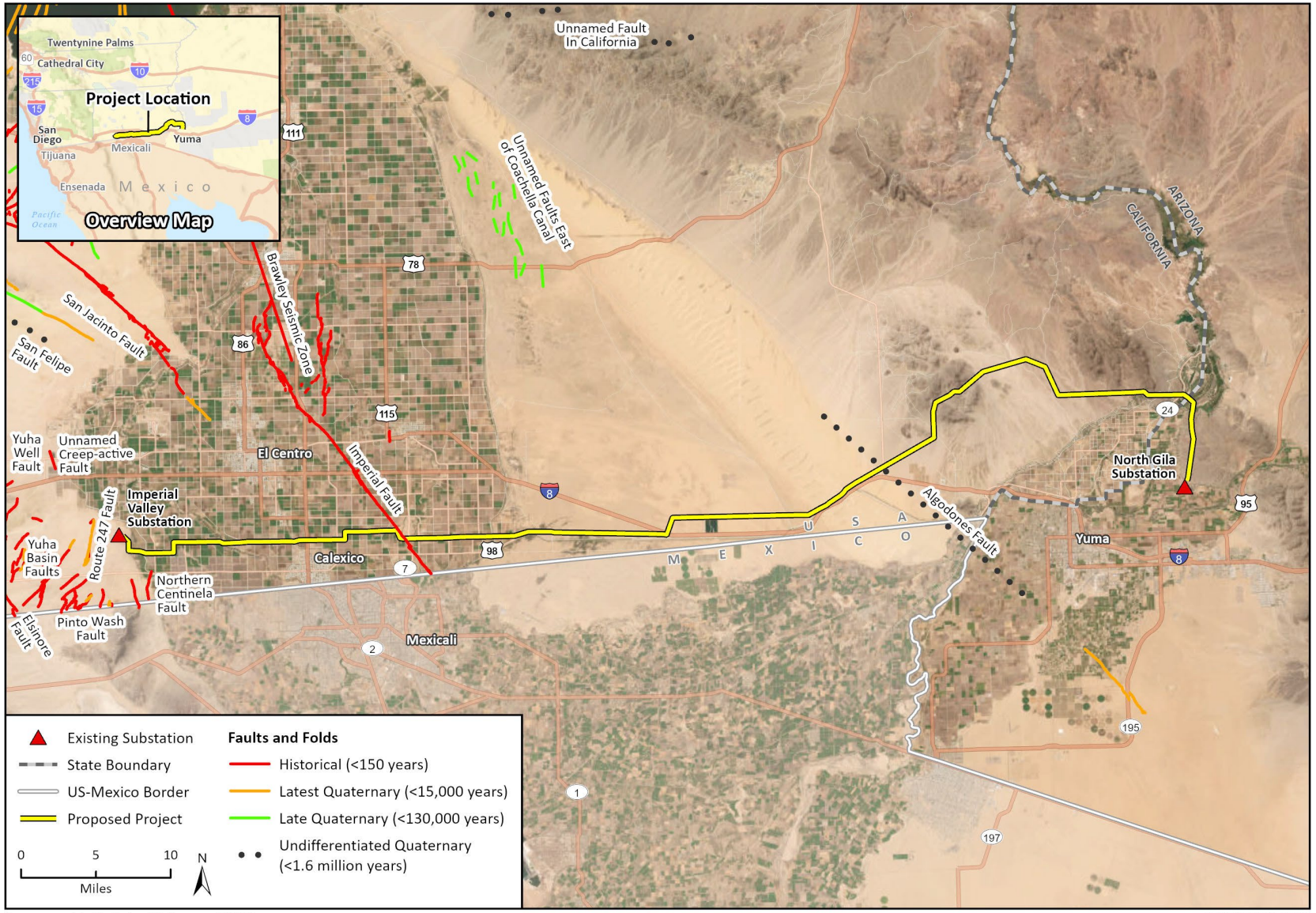
Table 5.7-1 Faults Located within 10 Miles of the Proposed Project

Fault Zone	Fault Name	Fault Type	Fault Section	Age of last Known Slip	Slip Rate	Maximum Moment Magnitude	Approximate Distance to Proposed Project (miles)
Algodones Fault Zone	Algodones Fault	Normal	None	Latest Quaternary (< 15,000 years)	Between 0.2 and 1.0 mm/yr	N/A	Crosses Alignment
Brawley Seismic Zone	Brawley Fault	Right lateral	None	Historical (< 150 years)	Greater than 5.0 mm/yr	6.4	6.0
Elsinore Fault Zone	Elsinore Fault	Normal	Laguna Salada section	Historical (< 150 years)	Between 1.0 and 5.0 mm/yr	7.5	8.5
Imperial Fault Zone	Imperial Fault	Right lateral	None	Historical (< 150 years)	Greater than 5.0 mm/yr	7.0	Crosses Alignment
Northern Centinela Fault Zone	Northern Centinela Fault	Left lateral	None	Historical (< 150 years)	N/A	N/A	1.2
Pinto Wash Fault Zone	Pinto Wash Fault	Normal	None	Historical (< 150 years)	N/A	N/A	3.4
Route 247 Fault Zone	Route 247 Fault	Left lateral	None	Historical (< 150 years)	N/A	N/A	2.0
San Jacinto Fault Zone	San Jacinto Fault	Right lateral	Superstition Hills section	Historical (< 150 years)	Between 1.0 and 5.0 mm/yr	7.5	8.2
None	Unnamed Creep-Active Fault	Unspecified	None	Historical (< 150 years)	N/A	N/A	6.3
Yuha Basin Fault Zone	Yuha Basin Faults	Left lateral	None	Historical (< 150 years)	N/A	N/A	3.2
Yuha Well Fault Zone	Yuha Well Fault	Left lateral	None	Historical (< 150 years)	N/A	N/A	8.2

Source: USGS 2024b, DOC 2024a, HWTDC 2024

N/A = not available, mm/yr = millimeters per year

Figure 5.7-1 Faults Located in the Proposed Project Area



Imagery provided by Esri and its licensors © 2025.
Additional data provided by USGS 2020.

25-17237 PEA CR Figures
PEA Fig 5.7-1 Fault Zones 8.5x11

An earthquake is commonly described by the amount of energy released, which has traditionally been quantified using the Richter scale. However, seismologists have recently begun using a Moment Magnitude scale because it provides a more accurate measurement of a major earthquake's size. Specifically, the Moment Magnitude is based on the measurement of maximum motion recorded by a seismograph. The Moment Magnitude and Richter scales are almost identical for earthquakes of less than magnitude 7.0. Moment Magnitude scale readings are slightly greater than a corresponding Richter scale reading for earthquakes with magnitudes greater than 7.0. Table 5.7-1 shows faults within 10 miles of the Proposed Project alignment in the United States as well as the Maximum Moment Magnitude for each fault.

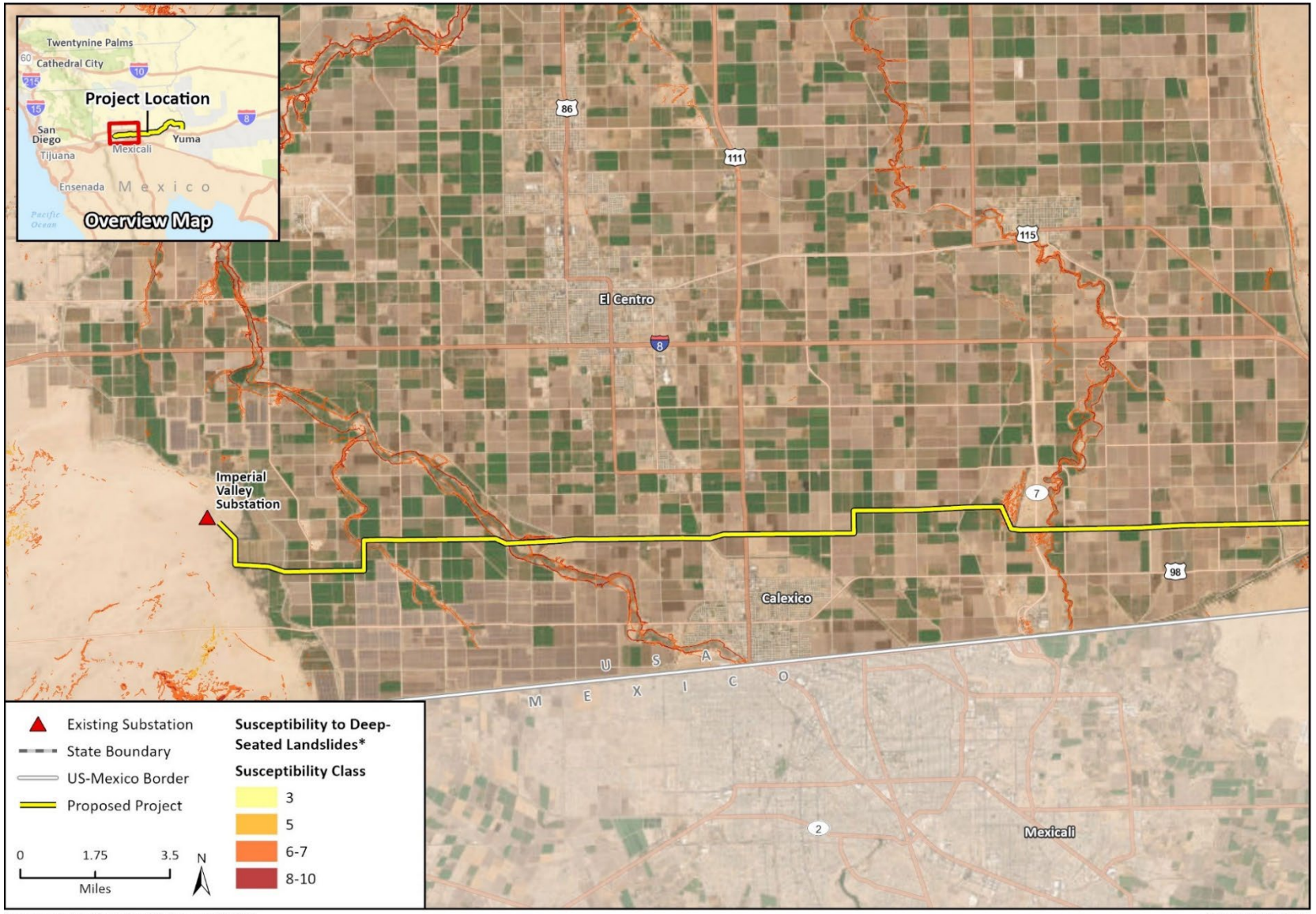
Liquefaction

Liquefaction occurs where strong ground motions produce a rise in pore-water pressures that in turn causes granular material to briefly lose strength and liquefy. This can lead to settlement, lateral spreading, and damage to structures, even in areas of flat topography. Ground motions can potentially trigger liquefaction in areas of unconsolidated granular sediment and shallow groundwater. The risk of liquefaction is highest in areas with high predicted ground motions, unconsolidated sediments, and shallow groundwater. The Proposed Project alignment is not mapped within a known liquefaction zone on the California Geologic Survey (CGS) Seismic Hazards Program Liquefaction Zones map (CGS 2022).

Slope Instability

Landslides typically occur on moderate-to-steep slopes when masses of rock or earth move down a slope. Landslides can be caused by natural events (e.g., rainfall, earthquakes, and soil erosion) or human activities (e.g., grading) that can result in unstable fill slopes or excessive cuts. Important factors that affect slope stability include the steepness of the slope and the strength of rock or soil materials. Topography in the area consists of gently sloping alluvial plains with a series of steep rock buttes and several arroyos. No records of major historical landslides were found in the Proposed Project alignment. The closest historical landslide was approximately 55 miles to the west (DOC 2024b). Landslide susceptibility is shown on a scale of zero to 10, with zero representing land that has a very low susceptibility to landslides and 10 representing land with the highest risk of landslides. Landslide susceptibility of 5 represents moderate landslide risk; 6 to 7 represents high landslide risk; and 8 and above represents very high landslide risk. Figure 5.7-2a through Figure 5.7-2c shows the landslide susceptibility along the Proposed Project alignment. The Proposed Project alignment crosses multiple areas with a landslide susceptibility greater than five in unincorporated Imperial County (Figure 5.7-2a); an area with landslide susceptibility of 8 to 10 near the New River (Figure 5.7-2a); an area north and northwest of the intersection of SR-98 and SR-7 (Figure 5.7-2a); an area with landslide susceptibility of 6 to 10 in the vicinity of the Imperial Sand Dunes running parallel to Interstate 8 (Figure 5.7-2b); an area with landslide susceptibility of five to nine in the vicinity of the Cargo Muchacho Mountains (Figure 5.7-2c); and an area towards the length of the end of the Proposed Project alignment with a landslide susceptibility of 8 to 10 in the vicinity of the Fort Yuma Indian Reservation north of the City of Yuma (see Figure 5.7-2c).

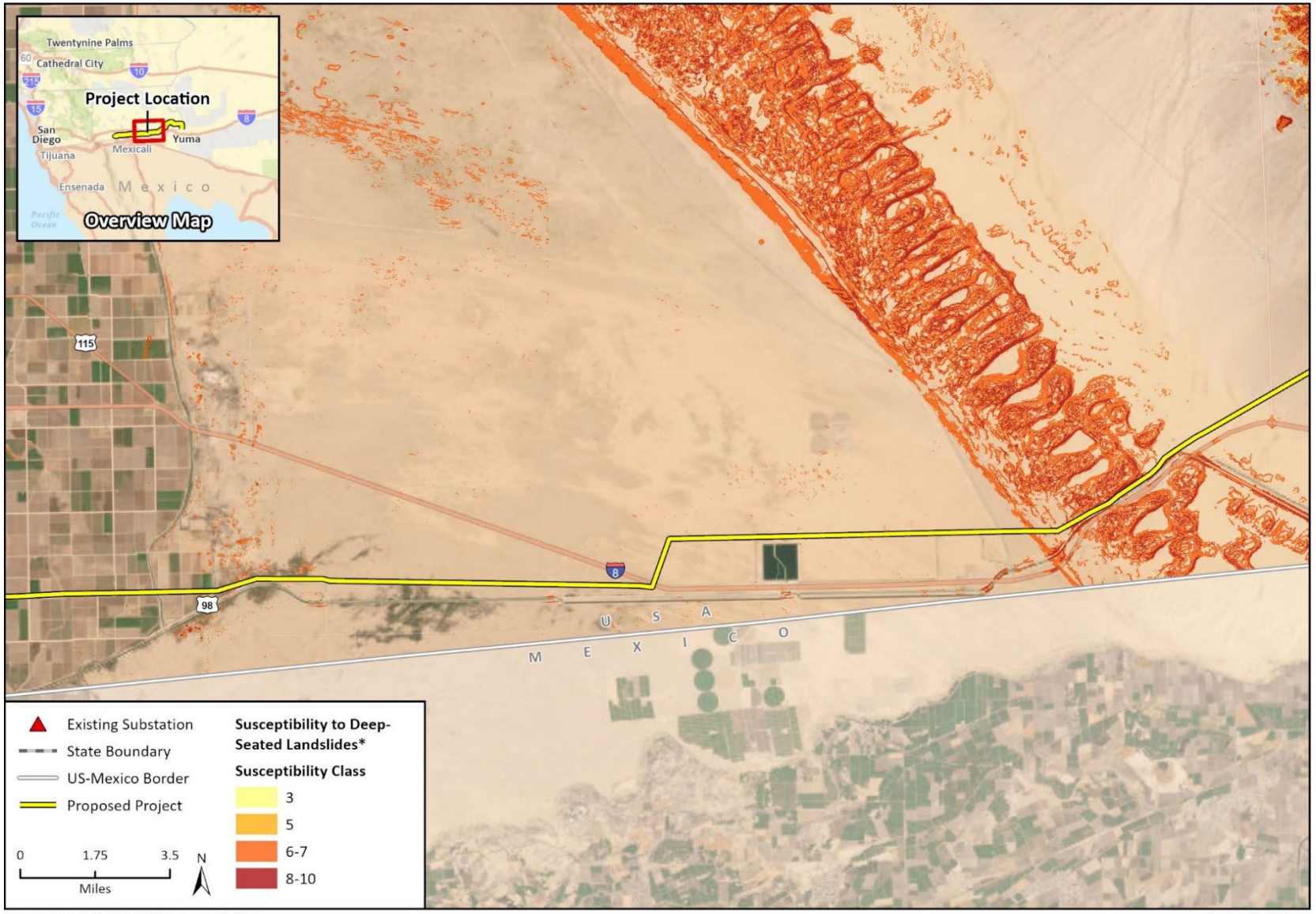
Figure 5.7-2a Landslide Susceptibility in the Vicinity of the Proposed Project Alignment



Imagery provided by Esri and its licensors © 2025.
*Additional data provided by the California Geological Survey 2011. *Equivalent state-level spatial data for Arizona not available.*

25-17237 PEA CR Figures
PEA Fig 5.7-2 Landslide Susceptibility 8.5x11

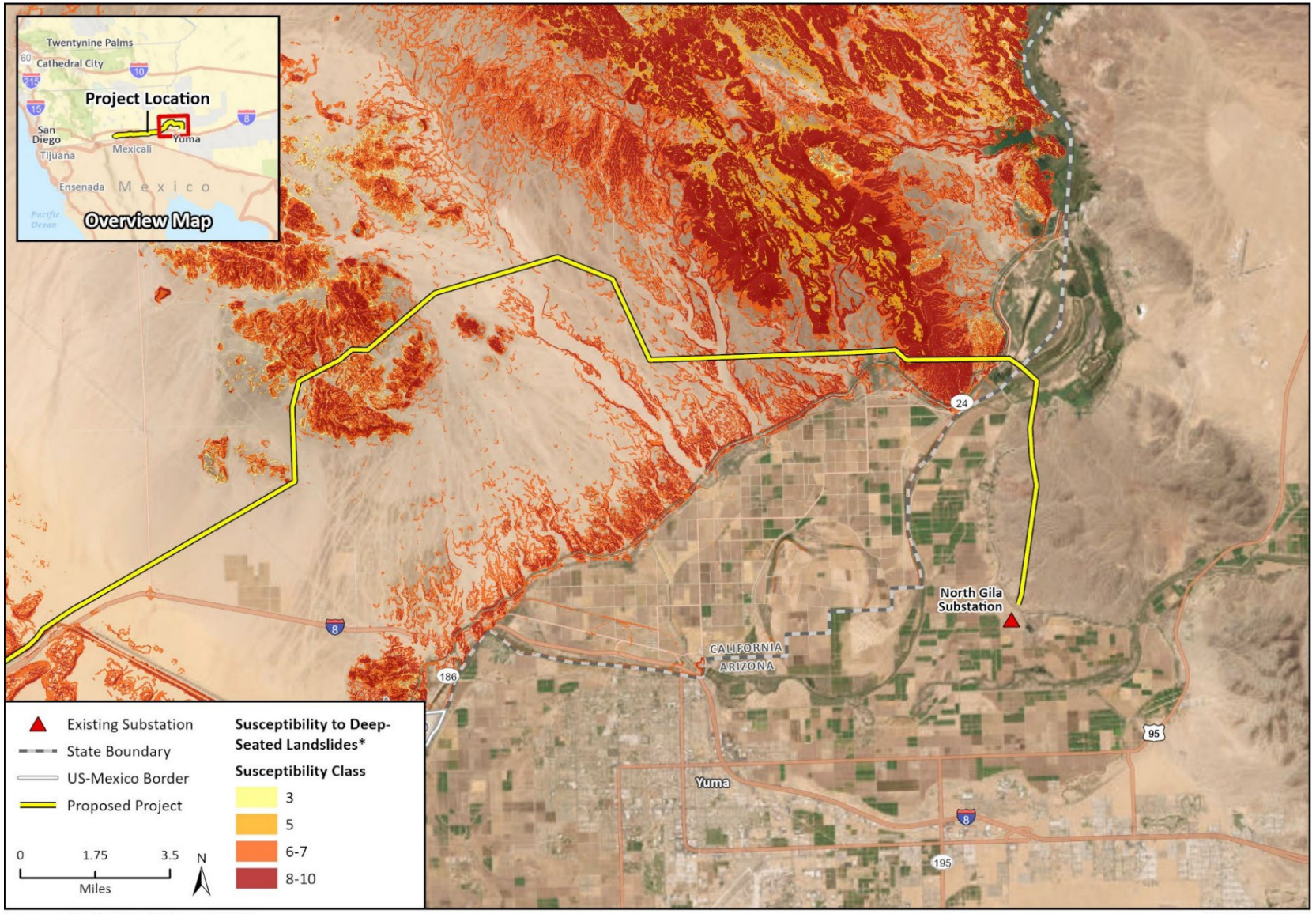
Figure 5.7-2b Landslide Susceptibility in the Proposed Project Alignment



Imagery provided by Esri and its licensors © 2025.
*Additional data provided by the California Geological Survey 2011. *Equivalent state-level spatial data for Arizona not available.*

25-17237 PEA CR Figures
PEA Fig 5.7-2 Landslide Susceptibility 8.5x11

Figure 5.7-2c Landslide Susceptibility in the Proposed Project Alignment



Imagery provided by Esri and its licensors © 2025.
*Additional data provided by the California Geological Survey 2011. *Equivalent state-level spatial data for Arizona not available.*

25-17237 PEA CR Figures
PEA Fig 5.7-2 Landslide Susceptibility 8.5x11

Soil Erosion

The USDA has developed a rating, known as the "erodibility factor" or "K-factor," to evaluate the susceptibility of soils to erosion by water. The soil-erodibility factor (K) represents: (1) the susceptibility of soil or surface material to erosion, (2) the transportability of the sediment, and (3) the amount and rate of runoff given a particular rainfall input, as measured under a standard condition (SWRCB n.d.). K-factor ratings are numbered 0.0 through 0.65, with 0.0 - 0.25 being considered low erosion susceptibility, 0.25 – 0.45 being moderate susceptibility, and 0.45 - 0.65 being high susceptibility.

The soils along the Proposed Project alignment typically have low to high K-factor ratings and fall between 0.05 to 0.64.

Wind erosion is similarly most prevalent in silty and fine sandy soils with sparse vegetation. Erosion associated with precipitation or wind is identified as a hazard in Imperial County, particularly the Algodones Sand Dunes and Picacho and Cargo Muchacho Mountains which intersect sections of the Proposed Project alignment (Imperial County 2022a). Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion. Wind erodibility is rated on a scale of 0 to 310, with 0 being soils that are not susceptible to wind erosion due to coarse fragments or wetness and 310 being soils that are made up of very fine sand, fine sand, sand, or coarse sand that are highly susceptible to wind erosion (USDA 2002). Sands have different textures that vary with ratings between 160 to 310. However, because sands are often found together it is assumed that soils made up of these sand types will be somewhere within 160 to 310 range (USDA 2002).

Soils found along the Proposed Project alignment typically have low wind erodibility ratings, with the majority of soils having a wind erodibility rating of 5, as shown in Table 5.7-2.

Collapsible Soils

Collapsible soils are defined by the USBR as any unsaturated soil that goes through a radical rearrangement of particles and a great decrease in volume upon wetting, additional loading, or both (USBR 1992). Collapse occurs as water enters the pores between the individual sand and silt grains and weakens the "bonding" of the clays or other binding agents. Overburden or applied weight causes soil particles to slide across one another (shear), filling voids and resulting in a reduction in the overall volume of the soil (USDA 2004). Soils susceptible to collapse typically contain a large amount of void space, low bulk density, geologically young age, clay content of less than 30 percent, and a large percentage of pore space, in the range of 40 to 60 percent. Soil units present in the Proposed Project alignment have moderate bulk densities ranging from 1.23 to 1.6 grams per cubic centimeter (g/cm^3); however, several soil units have clay contents less than 30 percent (USDA 2024). Therefore, local soils could be subject to collapse.

Expansive Soils

An expansive soil is any soil that is prone to large volume changes through shrinking and swelling. Volume changes are directly related to changing moisture conditions. The swelling capacity of a soil unit can cause heaving or lifting of structures whilst shrinkage can cause differential settlement. Linear extensibility percent is the linear expression of the volume difference of natural soil. The linear extensibility is considered to be higher in soils with high levels of clay, typically Hydrologic Group D (USDA 2009). Linear extensibility percent are generally numbered from 0-percent to 9-

percent, with less than 3-percent being considered low linear extensibility, 3-percent to 6-percent being considered moderate linear extensibility, 6-percent to 9-percent being considered high linear extensibility, and greater than 9-percent being considered very high linear extensibility. Linear extensibility percent ranges from 0.1-percent to 8.5-percent in the Proposed Project Alignment and there are soils classified as Hydrologic Group D throughout the Proposed Project alignment (see Table 5.7-2 in Section 5.7.1.4). Therefore, expansive soils could be present within the Proposed Project alignment.

Subsidence

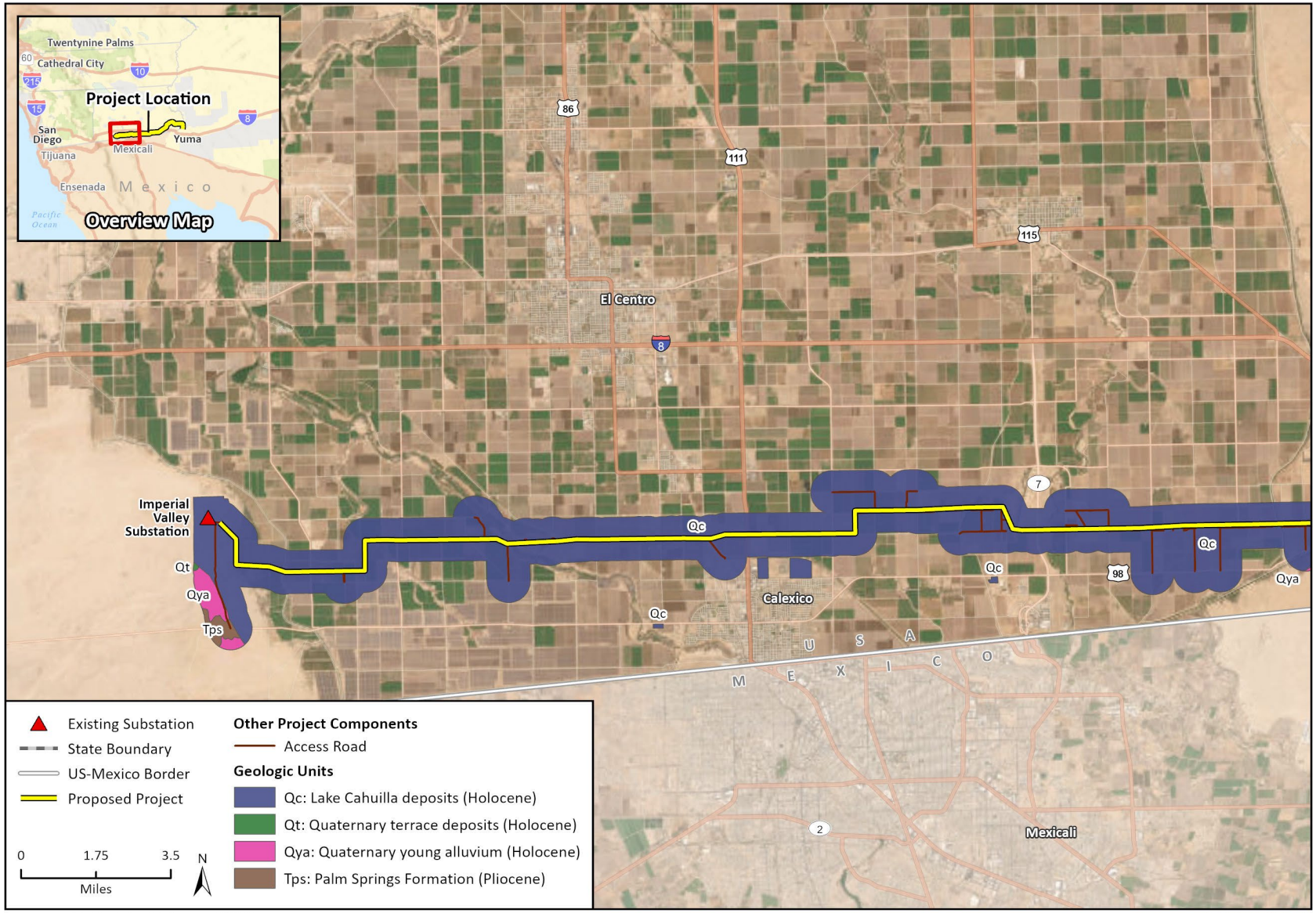
Land subsidence is a type of ground failure that can be aggravated by ground shaking. It is most often caused by the withdrawal of large volumes of fluids from underground reservoirs, but it can also occur by the addition of surface water to certain types of soils. As outlined in the Imperial Valley General Plan Seismic and Public Safety Element, the Valley experiences a continuous natural subsidence toward the Salton Sea. Natural subsidence has been occurring within the Salton Trough, averaging nearly two inches per year at the center of the Salton Sea and it decreases to zero near the Mexican border. Earthquakes and geothermal resource development are the two main causes of subsidence in Imperial County (Imperial County 2015b). The BLM Desert Renewable Energy Conservation Plan (DRECP) lists five known geothermal resource areas (KGRAs) and three geothermal lease resource areas in Imperial County. As outlined in the USGS Land Subsidence Map, the Proposed Project alignment would not be located within an area of land subsidence (USGS 2024c).

5.7.1.3 Geologic Units

Geologic units underlying 1 mile of the Proposed Project are shown on Figure 5.7-3a through Figure 5.7-3c. According to geologic mapping by Dibblee and Minch (2008a and 2008b), Jennings et al. (2010), Morton (1977), and Wilson (1960), 15 distinct geologic units underlie the Proposed Project alignment:

- Quaternary young alluvium
- Lake Cahuilla deposits
- Quaternary terrace deposits
- Undifferentiated Quaternary alluvium
- Quaternary sand deposits
- Quaternary older alluvium
- Gila Group
- Palm Springs Formation
- Tertiary breccia
- Tertiary basalt
- Cretaceous andesite
- Mesozoic gneiss
- Mesozoic granitic rocks
- Tumco/Vitrefax deposits
- Chuckwalla Complex

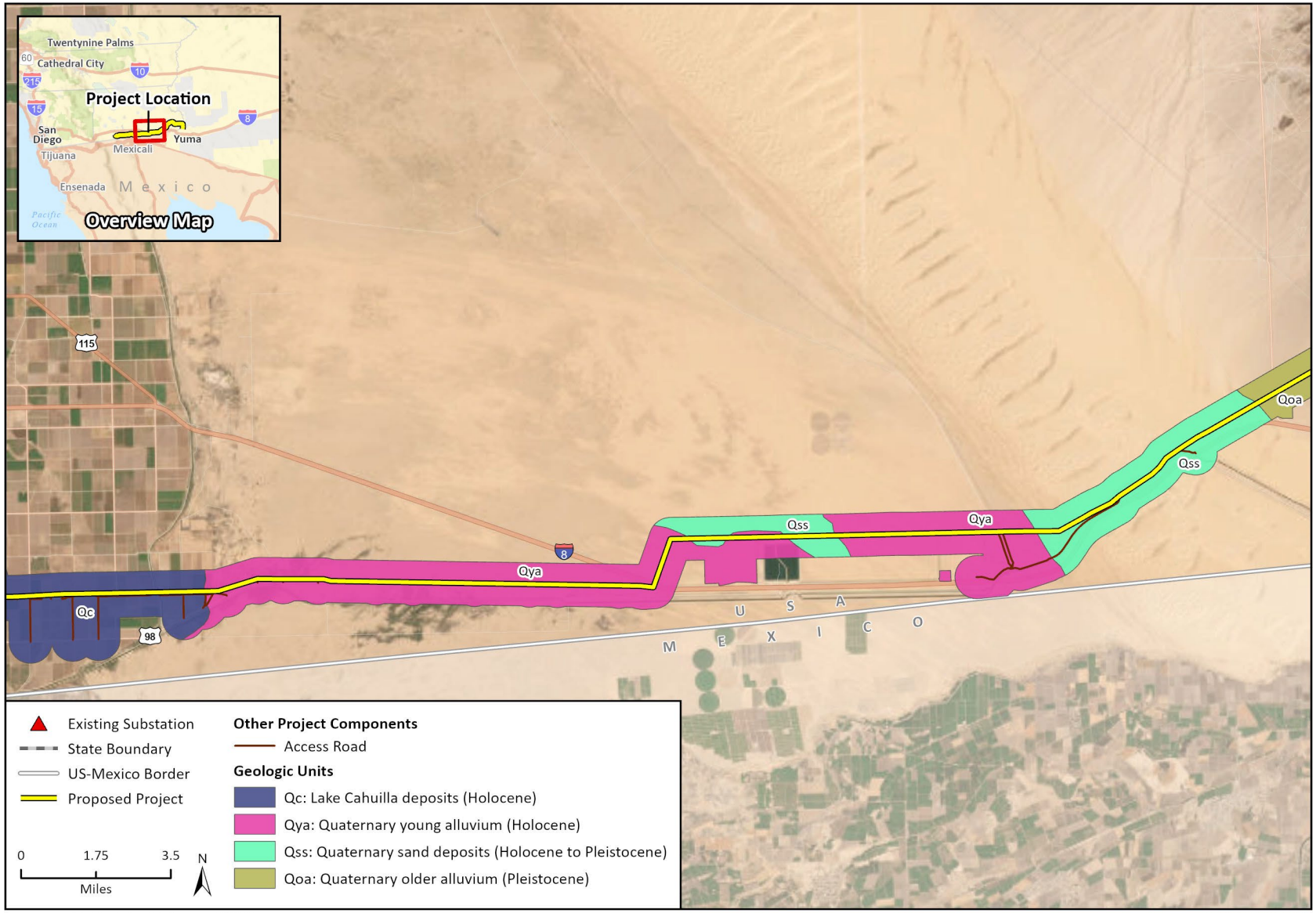
Figure 5.7-3a Geologic Units within 1 Mile of the Proposed Project Alignment



Imagery provided by Esri and its licensors © 2026.
Additional data provided by BLM 2022.

25-17237 PEA CR Figures
PEA Fig 5.7-4 Geologic Units 8.5x11

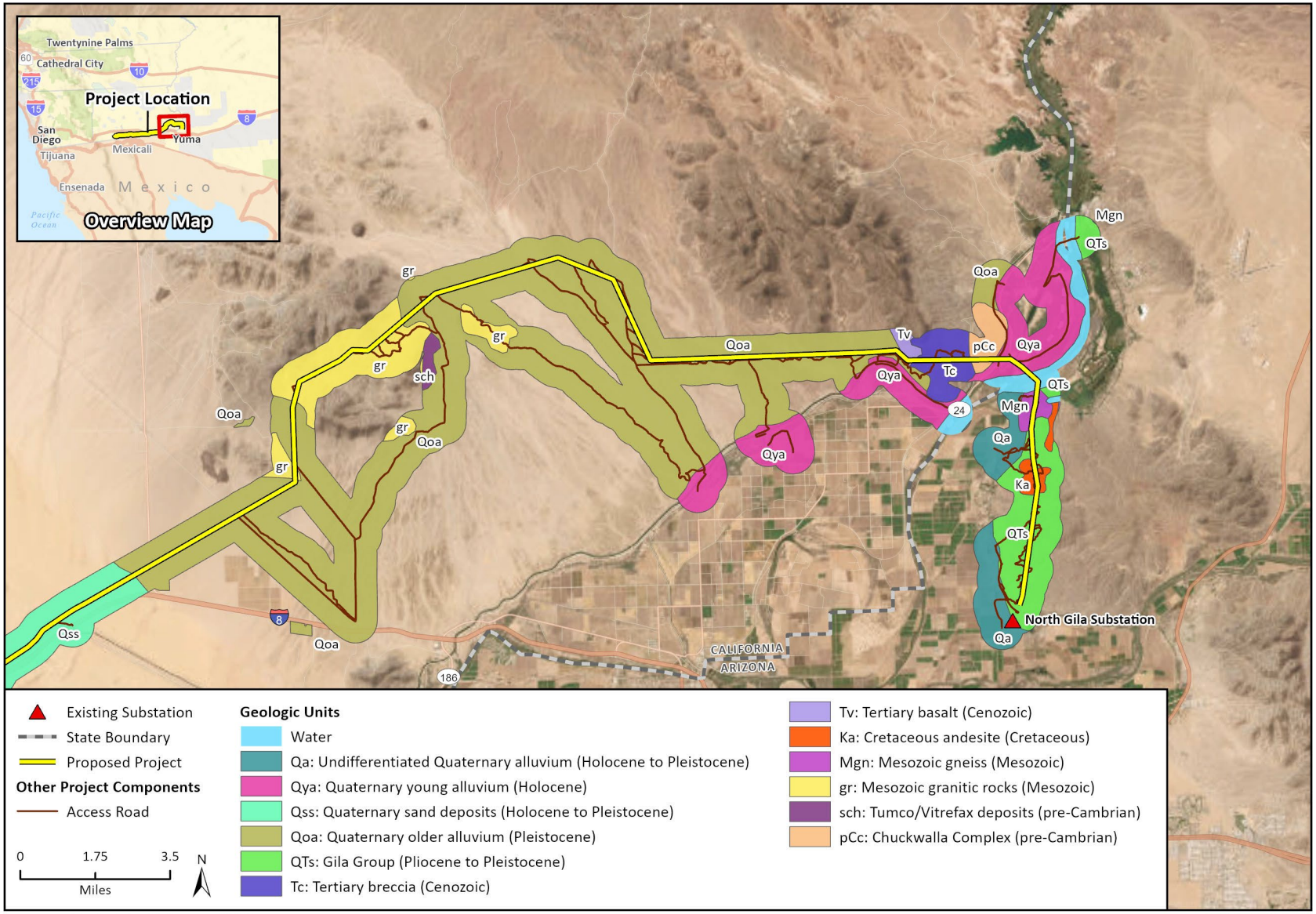
Figure 5.7-3b Geologic Units within 1 Mile of the Proposed Project Alignment



Imagery provided by Esri and its licensors © 2026.
Additional data provided by BLM 2022.

25-17237 PEA CR Figures
PEA Fig 5.7-4 Geologic Units 8.5x11

Figure 5.7-3c Geologic Units within 1 Mile of the Proposed Project Alignment



Imagery provided by Esri and its licensors © 2026.
Additional data provided by BLM 2022.

25-17237 PEA CR Figures
PEA Fig 5.7-4 Geologic Units 8.5x11

For the purposes of this analysis, equivalent geologic units that are referred to by different names by the different geologic maps identified above are combined. These combinations are as follows:

Quaternary young alluvium includes:

- Alluvial sand, gravel, silt, and clay of valley areas (Qa) of Dibblee and Minch (2008a and 2008b)
- Alluvium, lake, playa, and terrace deposits (Q) of Jennings et al. (2010)
- Alluvium (Qal) of Morton (1977)

Lake Cahuilla deposits include:

- Cahuilla Beds (Qc) of Dibblee and Minch (2008a and 2008b)
- Undifferentiated Alluvial sand, gravel, silt, and clay of valley areas and Cahuilla Beds (Qa-Qc) of Dibblee and Minch (2008a and 2008b)
- Lake beds (Ql) of Morton (1977)

Undifferentiated Quaternary alluvium includes:

- Sand, silt, and gravel (Qs) of Wilson (1960)

Quaternary sand deposits include:

- Extensive marine and nonmarine sand deposits (Qs) of Jennings et al. (2010)
- Dune sands (Qs) of Morton (1977)

Quaternary older alluvium includes:

- Older alluvium, lake, playa, and terrace deposits (Qoa) of Jennings et al. (2010)
- Older alluvium (Qc) of Morton (1977)

Gila Group includes:

- Sand, silt, gravel, and conglomerate (QTs) of Wilson (1960)

Tertiary breccia includes:

- Undivided Tertiary sandstone, shale, conglomerate, breccia, and ancient lake deposits (Tc) of Jennings et al. (2010)
- Sedimentary breccia (Tbr) of Morton (1977)

Tertiary basalt includes:

- Tertiary volcanic flow rocks (Tv) of Jennings et al. (2010)
- Basalt flows (Tv^{b}) of Morton (1977)

Mesozoic granitic rocks include:

- Mesozoic granite, quartz monzonite, granodiorite, and quartz diorite (gr^{Mz}) of Jennings et al. (2010)
- Granitic rocks (gr) of Morton (1977)

Tumco/Vitrefax deposits include:

- Schists of various types (sch) of Jennings et al. (2010)
- Tumco Formation (mst) of Morton (1977)
- Vitrefax Formaiton (msv) of Morton (1977)

Chuckwalla Complex includes:

- Complex of Precambrian igneous and metamorphic rocks (pCc) of Jennings et al. (2010)
- Chuckwalla Complex (mc) of Morton (1977)

5.7.1.4 Soils

The soil types occurring along 1 mile of the Proposed Project alignment, as mapped by the USDA Web Soil Survey (USDA 2024), are listed in Table 5.7-2 and shown in Figure 5.7-4a through Figure 5.7-4c. The table also documents a number of critical soil properties required to evaluate potential impacts of the Proposed Project, including Hydrologic Group, wind erodibility, slope percent, and stability concerns.

The Hydrologic Group classification is a measure of infiltration rate and runoff potential. Group A soils have the highest infiltration rates and lowest runoff potentials; they are typically coarse-grained and deep. Conversely, Group D soils have the lowest infiltration rates and highest runoff potential; they are typically fine-grained and shallow, or in areas with high water tables. Groups B and C are intermediate. Soils along the Proposed Project alignment are classified as A, B, C, and D, with the most common of these being A and C.

Table 5.7-2 Mapped Soil Units and Soil Properties

Alignment Map Unit Symbol	National Map Unit Symbol	Map Unit Name	Hydrologic Group	Linear Extensibility (percent)	K factor	Wind Erodibility Index (T/Ac/Yr[1])	Slope Percent	Stability Concerns[2]
12	1sf1	Holtville clay	C	3.3	0.43	5	0-1	Moderately Expansive, Moderate Susceptibility to Erosion
13	2tdtv	Indio silt loam, 0 to 1 percent slopes	B	1.2	0.64	4	0-1	High Susceptibility to Erosion
16	1sf5	Indio-Lagunita Ripley complex	B	1.5	0.55	5	0-1	High Susceptibility to Erosion
20	2svvt	Laposa-Rock outcrop complex, 15 to 75 percent slopes	B	0.2	0.05	2	15-75	None
24	1sfg	Riply silt loam	B	1.5	0.55	3	0-1	High Susceptibility to Erosion
27	1sfk	Salorthids, nearly level	Not Available	Not Available	Not Available	3	0-1	Not Available
30	1sfp	Torriorthents-Torrifluevents complex, 1 to 50 percent slopes	Not Available	Not Available	Not Available	Not Available	1-50	Not Available
100	31hld	Antho loamy fine sand	A	0.8	0.55	5	0-1	High Susceptibility to Erosion
101	31hlf	Antho-Superstition complex, 0 to 1 percents lopes	A	0.8	0.55	5	0-1	High Susceptibility to Erosion
102	h8z8	Badland	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
104	2mxlb	Caslo taxon above family, saline	C/D	0.9	0.49	5	0-1	High Susceptibility to Erosion
106	h8zd	Glenbar clay loam, wet	C	4.5	0.43	5	0-1	Moderately Expansive, Moderate Susceptibility to Erosion
107	2mxlc	Glenbar loam	C	4.1	0.49	3	0-1	Moderately Expansive, High Susceptibility to Erosion

Alignment Map Unit Symbol	National Map Unit Symbol	Map Unit Name	Hydrologic Group	Linear Extensibility (percent)	K factor	Wind Erodibility Index (T/Ac/Yr[1])	Slope Percent	Stability Concerns[2]
108	31hlc	Holtville loam	D	1.3	0.64	3	0-2	High Susceptibility to Erosion
109	31hlg	Holtville silty clay	D	2.6	0.64	5	0-2	High Susceptibility to Erosion
110	31hlb	Holtville silty clay, wet	D	3.3	0.64	5	0-2	Moderately Expansive, High Susceptibility to Erosion
111	31hlh	Holtville-Imperial silty clay loams complex, 0 to 2 percent slopes	D	3	0.55	5	0-2	Moderately Expansive, High Susceptibility to Erosion
114	h8zn	Imperial silty clay, wet	C	7.5	0.32	5	0-2	Highly Expansive, Moderate Susceptibility to Erosion
115	2n7xh	Imperial-Glenbar silty clay loams complex, 0 to 2 percent slopes, wet	D	7.7	0.43	5	0-2	Highly Expansive, Moderate Susceptibility to Erosion
116	2mxlf	Imperial-Glenbar silty clay loams complex, 2 to 5 percent slopes	D	8.5	0.43	5	2-5	Highly Expansive, Moderate Susceptibility to Erosion
117	2myt0	Indio loam	C	0.7	0.64	5	0-2	High Susceptibility to Erosion
118	2myt1	Indio loam, wet	C	0.7	0.64	5	0-2	High Susceptibility to Erosion
119	2mxlg	Indio-Vint complex, 0 to 2 percent slopes	C	0.7	0.64	5	0-2	High Susceptibility to Erosion
122	2myt4	Meloland very fine sandy loam, wet	C	5.2	0.55	4	0-2	Moderately Expansive, High Susceptibility to Erosion
123	31hlp	Meloland-Holtville 0 to 2 percent slopes, wet	C/D	5.6	0.64	5	0-2	Moderately Expansive, High Susceptibility to Erosion

Alignment Map Unit Symbol	National Map Unit Symbol	Map Unit Name	Hydrologic Group	Linear Extensibility (percent)	K factor	Wind Erodibility Index (T/Ac/Yr[1])	Slope Percent	Stability Concerns[2]
127	2myt5	Niland loamy fine sand	C	5.1	0.32	4	0-2	Moderately Expansive, Moderate Susceptibility to Erosion
129	h904	Pits	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
130	2mxlq	Rositas sand, 0 to 2 percent slopes	A	0.1	0.05	5	0-2	None
132	2mxln	Rositas fine sand, 0 to 2 percent slopes	A	0.1	0.05	5	0-2	None
133	2mxlp/ 319g8	Rositas fine sand, 2 to 9 percent slopes	A	0.1	0.05	5	2-9	None
134	31hlk	Rositas fine sand, 9 to 30 percent slopes	A	0.1	0.05	5	9-30	None
135	2mxlr	Rositas fine sand, wet	A	0.1	0.05	5	0-2	None
136	31hll	Rositas loamy fine sand, 0 to 2 percent	A	0.1	0.20	5	0-2	None
138	h90f	Rositas-Superstition loamy fine sands	A	1.5	0.24	5	0-1	None
139	2myt8	Superstition loamy fine sand	A	0.1	0.24	5	1-9	None
142	2mxlv	Vint loamy very fine sand, wet	A/D	0.2	0.55	5	0-2	High Susceptibility to Erosion
144	31hls	Vint and Indio very fine sandy loams undifferentiated group, 0 to 2 slopes, wet	A/D	0.2	0.43	5	0-2	Moderate Susceptibility to Erosion

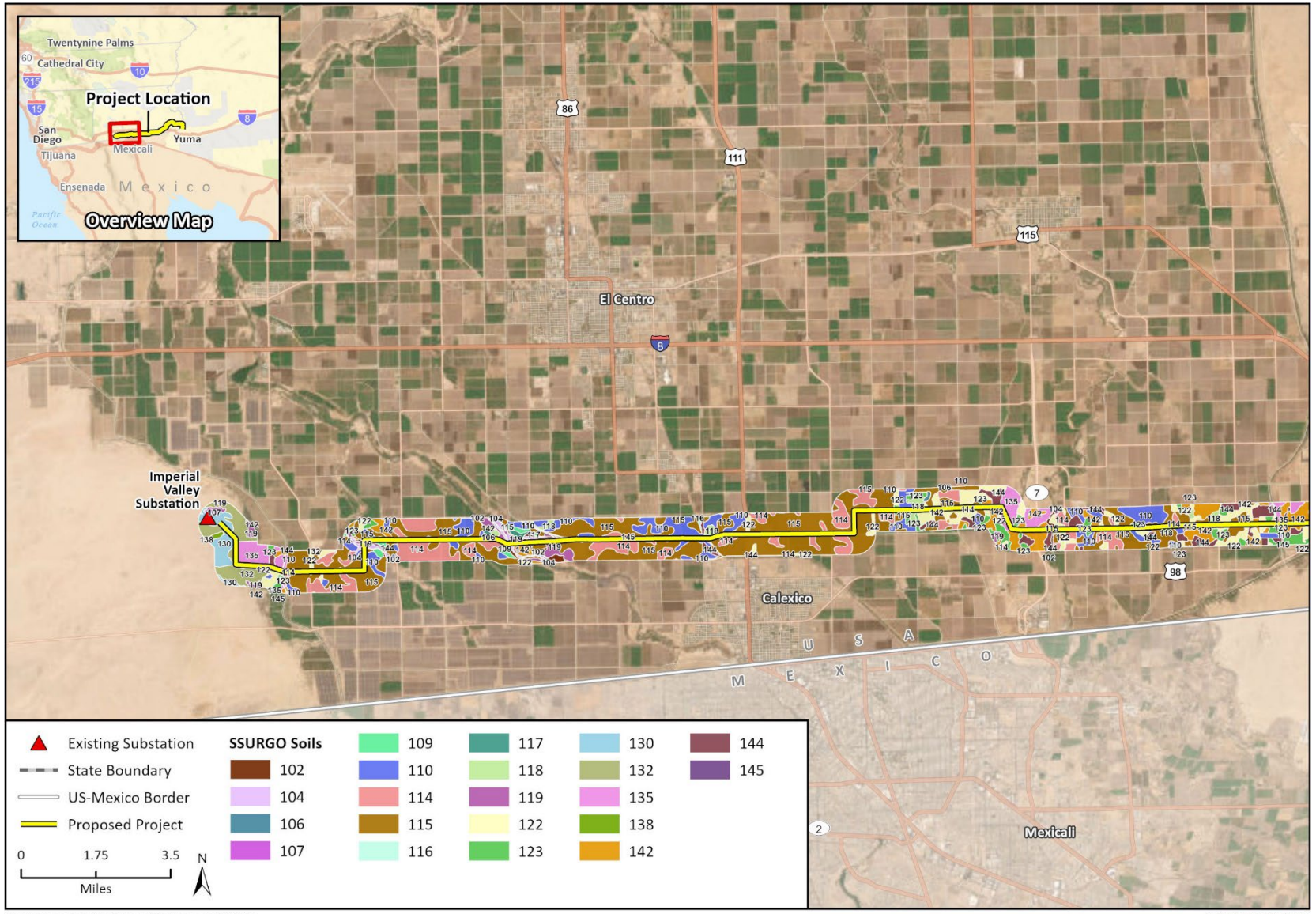
[1] Mass in tons of soil moved per unit area (acre) per year

[2] Stability concerns include soils that have properties prone to erosion, liquefaction, and differential settling

Note: Units 35 and 36 shown in Figure 5.7-3c are not soil units and are numbers for dam and surface water, and thus are excluded from this table

Sources: USDA 2022, USDA 2002

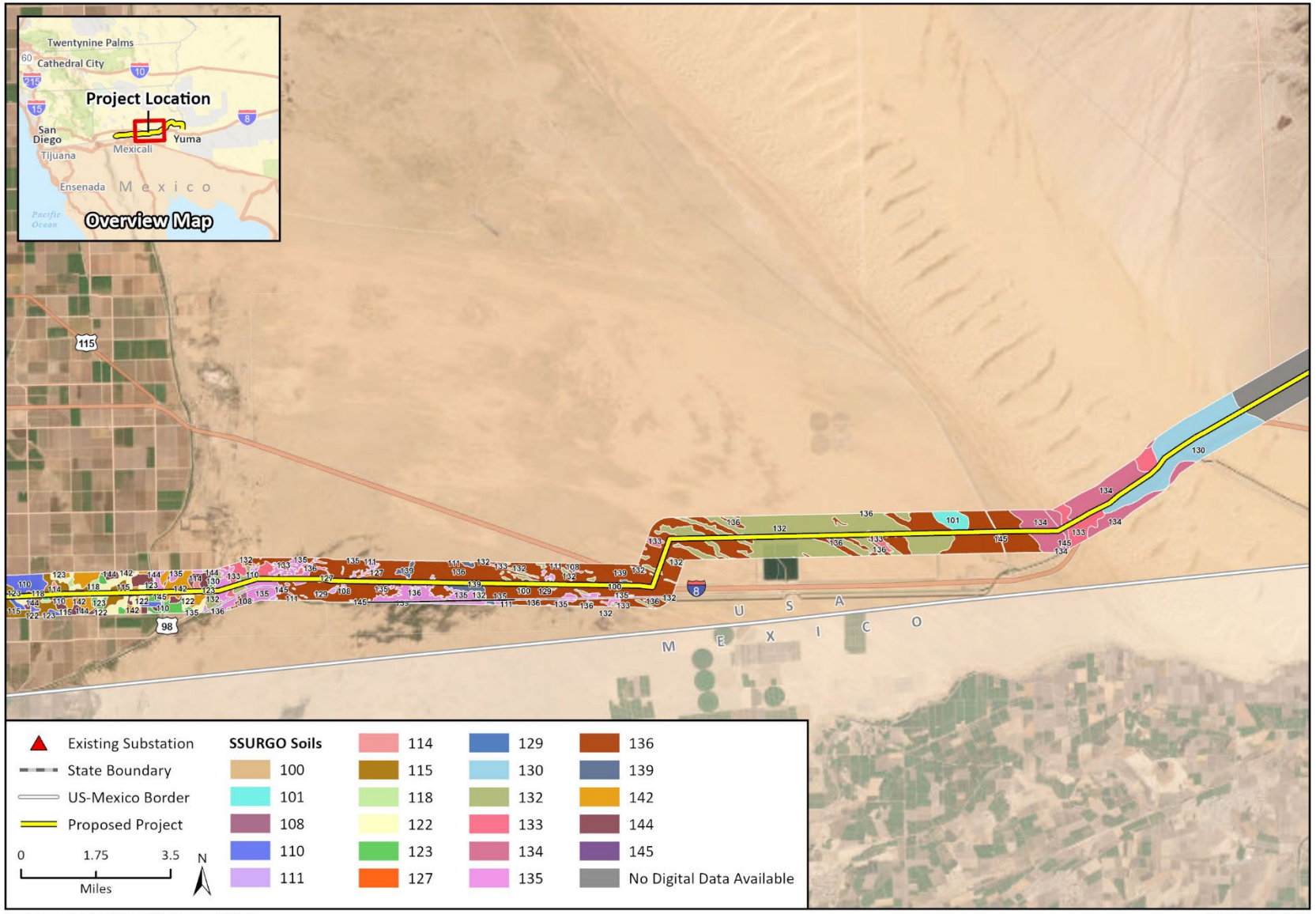
Figure 5.7-4a Soil Types within 1 Mile of Proposed Project Alignment



Imagery provided by Esri and its licensors © 2025.
Additional data provided by USDA NRCS 2024.

25-17237 PEA CR Figures
PEA Fig 5.7-3 Soils 8.5x11

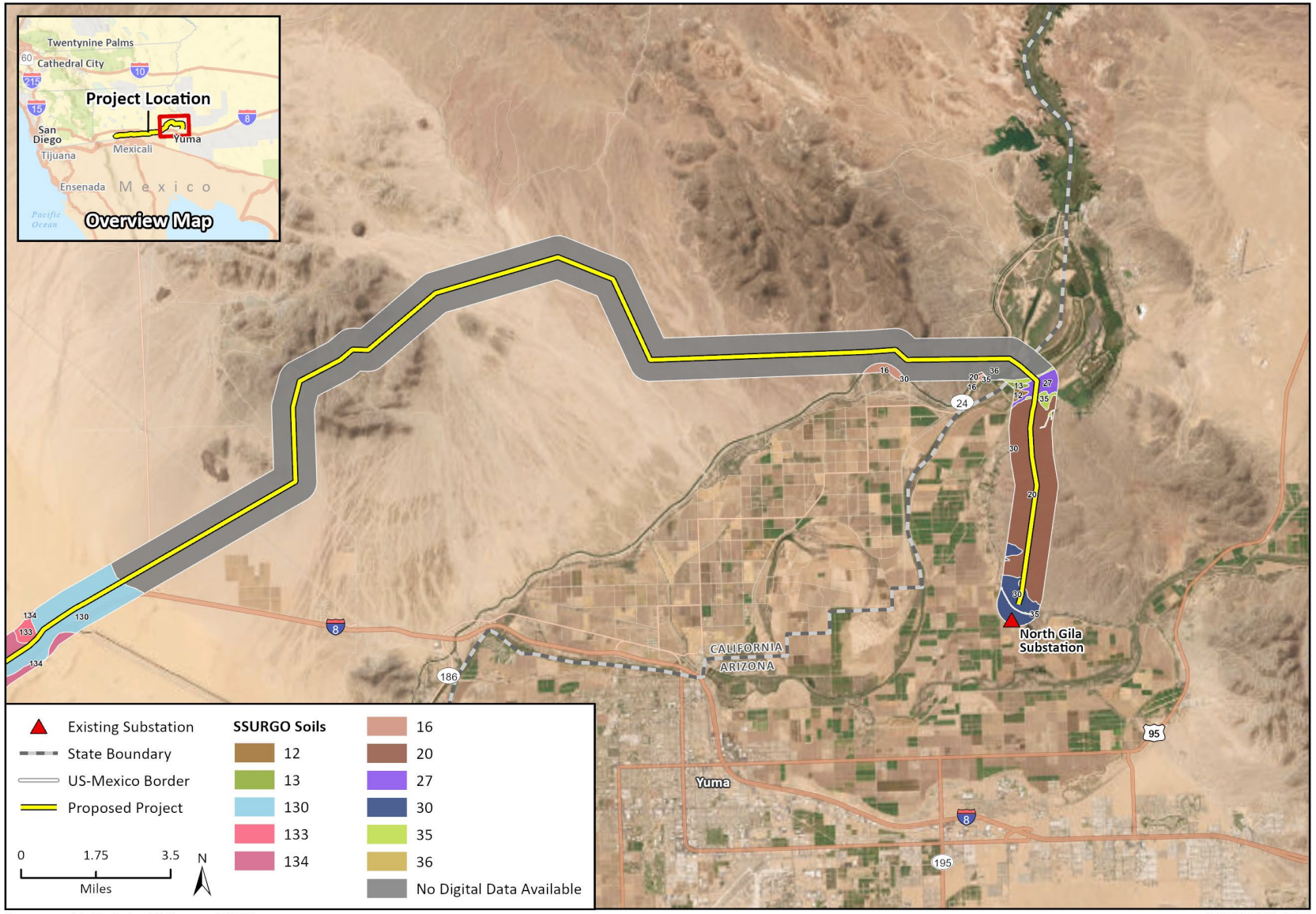
Figure 5.7-4b Soil Types within 1 Mile of Proposed Project Alignment



Imagery provided by Esri and its licensors © 2025.
Additional data provided by USDA NRCS 2024.

25-17237 PEA CR Figures
PEA Fig 5.7-3 Soils 8.5x11

Figure 5.7-4c Soil Types within 1 Mile of Proposed Project Alignment



Imagery provided by Esri and its licensors © 2025.
Additional data provided by USDA NRCS 2024.

25-17237 PEA CR Figures
PEA Fig 5.7-3 Soils 8.5x11

5.7.1.5 Paleontological Report

Paleontological resources, or fossils, are the evidence of once-living organisms preserved in the rock record. They include both the fossilized remains of ancient plants and animals and the traces thereof (e.g., trackways, imprints, burrows, etc.). Paleontological resources are not found in "soil" but are contained within the geologic deposits or bedrock that underlies the soil layer. Typically, fossils are greater than 5,000 years old (i.e., older than middle Holocene in age) and are typically preserved in sedimentary rocks. Although rare, fossils can also be preserved in volcanic rocks and low-grade metamorphic rocks under certain conditions (Society of Vertebrate Paleontology [SVP] 2010). Fossils occur in a non-continuous and often unpredictable distribution within some sedimentary units, and the potential for fossils to occur within sedimentary units depends on several factors. It is possible to evaluate the potential for geologic units to contain scientifically important paleontological resources, and therefore evaluate the potential for impacts to those resources and provide mitigation for paleontological resources if they are discovered during construction of a development project.

A PRTR for the Proposed Project is currently under review by the BLM. The PRTR will include a paleontological sensitivity assessment of all geologic units underlying Proposed Project components per the BLM's PFYC paleontological sensitivity scale; paleontological records searches of the Natural History Museum of Los Angeles County, San Diego Natural History Museum, and Arizona Museum of Natural History; a map showing all known paleontological localities within 500 feet of Proposed Project components; a paleontological impact analysis of the Proposed Project; and, if necessary, recommendations for paleontological mitigation. Until the PRTR is approved by the BLM, the paleontological impact analysis in this chapter should be treated as provisional.

The Potential Fossil Yield Classification (PFYC) system was developed to provide baseline guidance for assessing paleontological resources and allow BLM employees to make initial assessments of paleontological resources. The presence of paleontological resources is known to be correlated with mapped geologic units, and the PFYC was created based on available geologic maps. The system assigns a class value to each geological unit, representing the potential abundance and significance of paleontological resources that occur in that geological unit. A complete discussion of the background and context for the PFYC system is provided in BLM Instructional Memorandum 2016-124 (BLM 2016). The BLM has published PFYC data for large portions of the western United States, including the project area (BLM 2023). The descriptions of each PFYC classification from BLM (2016) are as follows:

- **Class 1 – Very Low.** Geologic units that are not likely to contain recognizable paleontological resources. Units assigned to Class 1 typically have one or more of the following characteristics:
  - Geologic units are igneous or metamorphic, excluding air-fall and reworked volcanic ash units
  - Geologic units are Precambrian in age
    1. Management concerns for paleontological resources in Class 1 units are usually negligible or not applicable
    2. Paleontological mitigation is unlikely to be necessary except in very rare or isolated circumstances that result in the unanticipated presence of paleontological resources, such as unmapped geology contained within a mapped geologic unit. For example, young fissure fill deposits often contain fossils but are too limited in extent to be represented on a geological map; a lava flow that preserves evidence of past life, or

caves that contain important paleontological resources. Such exceptions are the reason that no geologic unit is assigned a Class 0.

Overall, the probability of impacting significant paleontological resources is very low and further assessment of paleontological resources is usually unnecessary. An assignment of Class 1 normally does not trigger further analysis unless paleontological resources are known or found to exist. However, standard stipulations should be put in place prior to authorizing any land use action to accommodate an unanticipated discovery.

- **Class 2 – Low.** Geologic units that are not likely to contain paleontological resources. Units assigned to Class 2 typically have one or more of the following characteristics:
  - Field surveys have verified that significant paleontological resources are not present or are very rare
  - Units are generally younger than 10,000 years before present.
  - Recent aeolian deposits
  - Sediments exhibit significant physical and chemical changes (i.e., diagenetic alteration) that make fossil preservation unlikely
    1. Except where paleontological resources are known or found to exist, management concerns for paleontological resources are generally low and further assessment is usually unnecessary except in occasional or isolated circumstances.
    2. Paleontological mitigation is only necessary where paleontological resources are known or found to exist.

The probability of impacting significant paleontological resources is low. Localities containing important paleontological resources may exist but are occasional and should be managed on a case-by-case basis. An assignment of Class 2 may not trigger further analysis unless paleontological resources are known or found to exist. However, standard stipulations should be put in place prior to authorizing any land use action to accommodate unanticipated discoveries.

- **Class 3 – Moderate.** Sedimentary geologic units where fossil content varies in significance, abundance, and predictable occurrence. Units assigned to Class 3 have some of the following characteristics:
  - Marine in origin with sporadic known occurrences of paleontological resources
  - Paleontological resources may occur intermittently, but abundance is known to be low
  - Units may contain significant paleontological resources, but these occurrences are widely scattered
  - The potential for an authorized land use to impact a significant paleontological resource is known to be low-to-moderate
    1. Management concerns for paleontological resources are moderate because the existence of significant paleontological resources is known to be low. Common invertebrate or plant fossils may be found in the area, and opportunities may exist for casual collecting.
    2. Paleontological mitigation strategies will be proposed based on the nature of the proposed activity.

This classification includes units of moderate or infrequent occurrence of paleontological resources. Management considerations cover a broad range of options that may include record searches, pre-disturbance surveys, monitoring, mitigation, or avoidance. Surface-disturbing activities may require assessment by a qualified paleontologist to determine whether significant paleontological resources occur near a proposed action, and whether the action could affect the paleontological resources.

- **Class 4 – High.** Geologic units that are known to contain a high occurrence of paleontological resources. Units assigned to Class 4 typically have the following characteristics:
  - Significant paleontological resources have been documented but may vary in occurrence and predictability
  - Surface disturbing activities may adversely affect paleontological resources
  - Rare or uncommon fossils, including nonvertebrate (such as soft body preservation) or unusual plant fossils, may be present
  - Illegal collecting activities may impact some areas
    1. Management concerns for paleontological resources in Class 4 are moderate to high, depending on the proposed action.
    2. Paleontological mitigation strategies will depend on the nature of the proposed activity, but field assessment by a qualified paleontologist is normally needed to assess local conditions.

  The probability for impacting significant paleontological resources is moderate to high and is dependent on the proposed action. Mitigation plans must consider the nature of the proposed disturbance, such as removal or penetration of protective surface alluvium or soils, potential for future accelerated erosion, or increased ease of access that could result in looting. Detailed field assessment is normally required, and on-site monitoring or spot-checking may be necessary during land disturbing activities. In some cases, avoidance of known paleontological resources may be necessary.

- **Class 5 – Very High.** Highly fossiliferous geologic units that consistently and predictably produce significant paleontological resources. Units assigned to Class 5 have some or all of the following characteristics:
  - Significant paleontological resources have been documented and occur consistently
  - Paleontological resources are highly susceptible to adverse impacts from surface disturbing activities
  - Unit is frequently the focus of illegal collecting activities
    1. Management concerns for paleontological resources in Class 5 areas are high to very high.
    2. A field survey by a qualified paleontologist is almost always needed. Paleontological mitigation may be necessary before or during surface disturbing activities.

  The probability for impacting significant paleontological resources is high. The area should be assessed prior to land tenure adjustments. Pre-work surveys are usually needed, and on-site monitoring may be necessary during land use activities. Avoidance or resource preservation through controlled access, designation of areas of avoidance, or special management designations should be considered.

- **Class U – Unknown Potential.** Geologic units that cannot receive an informed PFYC assignment. Characteristics of Class U may include:
  - Geological units may exhibit features or preservational conditions that suggest significant paleontological resources could be present, but little information about the actual paleontological resources of the unit or area is known
  - Geological units represented on a map are based on lithologic character or basis of origin but have not been studied in detail
  - Scientific literature does not exist or does not reveal the nature of paleontological resources
  - Reports of paleontological resources are anecdotal or have not been verified
  - Area or geologic unit is poorly or under-studied
  - BLM staff has not yet been able to assess the nature of the geologic unit
    1. Until a provisional assignment is made, geologic units that have an unknown potential have medium to high management concerns.
    2. Lacking other information, field surveys are normally necessary, especially prior to authorizing a ground-disturbing activity.

  An assignment of "Unknown" may indicate the unit or area is poorly studied, and field surveys are needed to verify the presence or absence of paleontological resources. Literature searches or consultation with professional colleagues may allow an unknown unit to be provisionally assigned to another Class, but the geological unit should be formally assigned to a Class after adequate survey and research is performed to make an informed determination.

Based on geologic mapping (BLM, 2023; Dibblee and Minch, 2008a, 2008b; Jennings et al., 2010; Wilson, 1960), the Proposed Project area is underlain by 15 geologic units (Figure 5.7-3a through Figure 5.7-3c). Quaternary surficial deposits include Quaternary young alluvium, Quaternary sand deposits, Lake Cahuilla deposits, Quaternary terrace deposits, Quaternary undifferentiated alluvium, and Quaternary older alluvium. Bedrock sedimentary rock units include the Gila Group, Palm Springs Formation, and Tertiary breccia. Igneous and metamorphic rock units include Tertiary basalt, Cretaceous andesite, Mesozoic gneiss, Mesozoic granitic rocks, Tumco-Vitrefax formation, and the Chuckwalla Complex. Geologic units with very low potential (PFYC 1) include Tertiary basalt, Cretaceous andesite, Mesozoic gneiss, Mesozoic granitic rocks, and the Chuckwalla Complex. Geologic units with low potential (PFYC 2) include young alluvium, sand deposits, and terrace deposits. Geologic units with moderate potential (PFYC 3) include Lake Cahuilla Deposits. Geologic units with high potential (PFYC 4) include the Gila Group and the Palm Springs Formation. Geologic units with unknown potential (PFYC U) include undifferentiated alluvium, older alluvium, Tertiary breccia, and the Tumco-Vitrefax formation. Table 5.7-3 summarizes the geologic units within the Proposed area, their age, and their paleontological sensitivity.

Table 5.7-3 Geologic Units of Project Area and Paleontological Sensitivity

Geologic Unit	Age	Typical Fossils	PFYC
Quaternary young alluvium	Holocene	Unfossilized remains of modern species, but early Holocene animal and plant remains are relevant to research concerning climatic and environmental change	2 (low potential)
Quaternary sand deposits	Pleistocene and Holocene	–	2 (low potential)
Lake Cahuilla deposits	Pleistocene and Holocene	Small terrestrial vertebrates, fish, freshwater mollusks, freshwater microinvertebrates, pollen	3 (moderate potential)
Quaternary terrace deposits	Holocene	Unfossilized remains of modern species, but early Holocene animal and plant remains are relevant to research concerning climatic and environmental change	2 (low potential)
Undifferentiated Quaternary alluvium	Pleistocene and Holocene	Holocene alluvium contains unfossilized remains of modern animal and plant species. Pleistocene alluvium contains remains of Ice Age animals and plants	U (unknown potential)
Quaternary older alluvium	Pleistocene	Horse, camel, giant ground sloth, pocket mouse	U (unknown potential)
Gila Group	Late Miocene, Pliocene, and Pleistocene	Reptiles (turtles), birds, and diverse mammals including ground sloth, glyptodont, rodents, horse, camel, peccary, and gomphothere	4 (high potential)
Palm Springs Formation	Pliocene and Pleistocene	Diverse and well-preserved terrestrial vertebrates including turtles, snakes, lizards, hawks, eagle, vulture, ground sloth, mastodon, horse, camel, llama, and small mammals; plant macrofossils and pollen	4 (high potential)
Tertiary breccia	Paleogene and Neogene	No information available	U (unknown potential)
Tertiary basalt	Paleogene and Neogene	Fossils are only rarely preserved in basalt because basalt forms at extremely high temperatures	1 (very low potential)
Cretaceous andesite	Cretaceous	Fossils are not preserved in andesite because it is an intrusive igneous rock but they may be preserved in associated andesitic sedimentary rocks	1 (very low potential)
Mesozoic gneiss	Mesozoic	Fossils are only rarely preserved in gneiss when metamorphosed from sedimentary rocks such as shale, but not metamorphosed igneous rocks	1 (very low potential)
Mesozoic granitic rocks	Mesozoic	Fossils are not preserved in granitic rocks which are of intrusive igneous origin	1 (very low potential)
Tumco-Vitrefax formation	Pre-Cambrian	Fossils are not preserved in this unit due to its age and composition	1 (very low potential)
Chuckwalla Complex	Pre-Cambrian	Fossils are not preserved in metavolcanic units of Pre-Cambrian age	1 (very low potential)

Museum record searches were requested to determine the presence of previously recorded fossil localities within the Proposed Project area. The record searches were completed by the San Diego Natural History Museum (SDNHM) and the Natural History Museum of Los Angeles County (NHMLA). A request was made to the Arizona Museum of Natural History (AZMNH), but the museum declined to perform the record search. An additional record search was conducted on the online Paleobiology Database (PBDB). The results of these searches are as follows:

- **SDNHM:** The SDNHM has 29 previously recorded localities within one mile of the Proposed Project area in Lake Cahuilla deposits. These localities yielded charophytes, freshwater invertebrates, freshwater and terrestrial vertebrates (frog, fish, rodent). One additional locality in older alluvium located approximately two miles south of the Proposed Project area yielded teeth of an extinct horse.
- **NHMLA:** The NHMLA has 862 vertebrate localities and 43 invertebrate localities in the Imperial Valley. Only one locality (LACM VP 1719) is in close proximity to the Proposed Project area. However, the lack of precise coordinates make it impossible to determine its location relative to the Proposed Project area. This locality yielded fossil horse remains.
- **AZMNH:** The AZMNH declined to perform a paleontological record search for the Proposed Project.
- **Paleobiology Database:** The PBDB has 26 fossil locality records in Imperial County, California. However, none are located within the Proposed Project area or in the same geologic units that are within the Proposed Project area. The PBDB has two fossil locality records from Yuma County, Arizona. However, neither of these are located within the Proposed Project area or in the same geologic units that are within the Proposed Project area.

None of these museums include known paleontological localities within 500 feet of the Proposed Project on non-federal lands; however, there are paleontological localities known from federal lands within 500 feet of the Proposed Project. Pursuant to guidance from the BLM, the location of these localities cannot be shared at this time. Therefore, no confidential maps depicting the location of known fossil localities is included in this PEA.

5.7.2 Regulatory Setting

5.7.2.1 Federal

Federal, state, and local regulations were reviewed for applicability to the Proposed Project.

National Earthquake Hazards Reduction Act of 1977

The National Earthquake Hazards Reduction Act of 1977 (Public Law 95-124) created the National Earthquake Hazards Reduction Program (NEHRP), establishing a long-term earthquake risk reduction program to better understand, predict, and mitigate risks associated with seismic events. Four federal agencies are responsible for coordinating activities under NEHRP: USGS; National Science Foundation (NSF); Federal Emergency Management Agency (FEMA); and National Institute of Standards and Technology (NIST). Since its inception, NEHRP has shifted its focus from earthquake prediction to hazard reduction. The current program objectives (FEMA 2021) are as follows:

1. Improve understanding of earthquake processes and impacts;
2. Develop cost-effective measures to reduce earthquake impacts on individuals, the built environment, and society-at-large; and
3. Improve the earthquake resilience of communities nationwide.

Implementation of NEHRP objectives is accomplished primarily through original research, publications, and recommendations and guidelines for state, regional, and local agencies in the development of plans and policies to promote safety and emergency planning.

National Environmental Policy Act

The National Environmental Policy Act (NEPA), as amended, directs federal agencies to "Preserve important historic, cultural, and natural aspects of our national heritage" (42 U.S. Code [USC] 4331, Section 101(b) (4)). The current interpretation of this language has included scientifically important paleontological resources among those resources that may require preservation.

Federal Land Policy and Management Act of 1976

The Federal Land Policy and Management Act (FLPMA) (43 USC 1701-1782) requires that public lands be managed in a manner that will protect the quality of their scientific values. Specifically, FLPMA was established as a public land policy to "provide for the management, protection, development, and enhancement of the public lands." FLPMA requires federal agencies to manage public lands so that environmental, historic, archeological, and scientific resources are preserved and protected, where appropriate. Though FLPMA does not refer specifically to fossils, the law does protect scientific resources such as significant fossils, including vertebrate remains. FLPMA regulates the "use and development of public lands and resources through easements, licenses, and permits." The law requires the public lands to be inventoried so that the data can be used to make informed land-use decisions, and requires permits for the use, occupancy, and development of the certain public lands, including the collection of significant fossils for scientific purposes (43 USC 1701 section 102, 302).

Antiquities Act

The Antiquities Act of 1906 (16 USC 431-433) provides for the preservation and protection of historic and prehistoric ruins and monuments as well as any "object of antiquity" found on government-controlled lands. Although there is no specific mention of natural or paleontological resources in the Act itself, or in the Act's uniform rules and regulations (Title 43 Part 3, Code of Federal Regulations [43 CFR 3]), the term "objects of antiquity" has been interpreted to include fossils by the BLM and other federal agencies.

Federal Cave Resources Protection Act

The Federal Cave Resources Protection Act of 1988 (16 U.S.C. § 4301 – 4309) includes paleontological resources in the list of materials that constitute a "cave resource" and subject to protection when on federal lands. Therefore, any reference to "cave resource" in the law applies to paleontological resources.

CFR Title 43

Under Title 43, Code of Federal Regulations (CFR) section 8365.1–5, the collection of scientific and paleontological resources, including vertebrate fossils, on federal land is prohibited. The collection of a "reasonable amount" of common invertebrate or plant fossils for noncommercial purposes is permissible (43 CFR 8365.1–5).

Archaeological and Paleontological Salvage (23 USC 305)

Statute 23 USC 305 amends the Antiquities Act of 1906. Specifically, it states:

> "Funds authorized to be appropriated to carry out this title to the extent approved as necessary, by the highway department of any State, may be used for archaeological and paleontological salvage in that state in compliance with the Act entitled 'An Act for the preservation of American Antiquities,' approved June 8, 1906 (PL 59-209; 16 USC 431-433), and State laws where applicable."

This statute allows funding for mitigation of paleontological resources recovered pursuant to federal aid highway projects, provided that "excavated objects and information are to be used for public purposes without private gain to any individual or organization" (Federal Register [FR] 46(19): 9570).

Paleontological Resources Preservation Act of 2009

The Paleontological Resources Preservation Act (PRPA) is part of the Omnibus Public Land Management Act of 2009 (PL 111-011 Subtitle D). This act directs the Secretary of the Interior or the Secretary of Agriculture to manage and protect paleontological resources on federal and Indian land and to develop plans for inventorying, monitoring, and deriving the scientific and educational use of such resources. It prohibits the removal of paleontological resources from federal land without a permit issued under this act, establishes penalties for violation of this act, and creates a program to increase public awareness about these resources. A paleontological resource use permit is required to collect paleontological resources of scientific interest. The act requires that paleontological resources collected under a permit remain United States property, preserved for the public in an approved repository, and available for scientific research and public education. The act also requires that the nature and location of paleontological resources on public lands remain confidential as a means of protecting the resources from theft and vandalism. Section 6301 of the PRPA and Departmental Proposed Rule at 43 CFR Part 49 define a paleontological resource as:

> "Any fossilized remains, traces, or imprints of organisms, preserved in or on the earth's crust, that are of paleontological interest and that provide information about the history of life on earth, except that the term does not include— (A) any materials associated with an archaeological resource… (B) any cultural item… (C) Resources determined in writing by the authorized officer to lack paleontological interest or not provide information about the history of life on earth, based on scientific and other management considerations."

Consistent with the definition of a paleontological resource under the PRPA, those paleontological resources that lack scientific interest (e.g., resources that are ubiquitous or do not provide information about the history of life on earth) are considered scientifically non-significant fossils.

Regulations for implementing the PRPA on lands managed by the Department of the Interior (DOI), except for the Bureau of Indian Affairs (i.e., BLM, National Park Service, USBR, and U.S. Fish and Wildlife Service [USFWS]), are found in the CFR Title 43 Subtitle A Part 49. These regulations describe the areas and types of resources for which PRPA applies, confidentiality of paleontological sites, requirements for individuals wishing to conduct paleontological research or mitigation on DOI lands, management of collected paleontological resources, 'casual collection' (i.e., fossil collection that does not require a permit), and penalties for violating the PRPA.

Bureau of Land Management

The BLM published Permanent Instruction Memorandum (PIM) 2022-009 as the Final Rule to clarify ways in which PRPA should be implemented on BLM-administered lands that may differ from other DOI lands. These include specific policies related to paleontological permitting, confidentiality of paleontological sites, casual collection, and affirming the PFYC as the paleontological sensitivity scale by which geologic units on BLM lands will be assessed. The PFYC scale is a five-level (plus 'unknown') system that was first published as Instruction Memorandum 2016-124 (U.S. BLM 2016).

BLM Resource Management Plans

The entirety of the Proposed Project alignment in California is located within BLM-managed California Desert Conservation Area (CDCA) and is covered by the California Desert Conservation Area Plan DRECP, Imperial Sand Dunes Recreation Area Management Plan (Imperial Sand Dunes RAMP), and Northern and Eastern Colorado Desert Coordinated Management Plan. A portion of the Proposed Project alignment within Arizona is managed under the Yuma Field Office Resource Management Plan.

The DRECP Land Use Plan Amendment identifies a comprehensive suite of required conservation management actions to avoid, minimize, and/or mitigate adverse impacts related to soils and on paleontological resources. Additionally, the Imperial Sand Dunes RAMP includes goals, objectives, and management actions related to soils and paleontological resources.

Bureau of Reclamation

The USBR has not published further clarification on how PRPA shall be implemented on lands under its jurisdiction since CFR Title 43 Subtitle A Part 49 was finalized.

5.7.2.2 State of California

California Building Code

The Proposed Project is subject to the applicable sections of Title 24, Part 2 of the California Building Code (CBC), which is administered by the California Building Standards Commission. Under state law, all building standards must be centralized in Title 24 to be enforceable. The CBC contains necessary California amendments, which are based on American Society of Civil Engineers/Structural Engineering Institute (AHWT/SEI) Standards. The AHWT/SEI Standard provides requirements for general structural design and includes means for determining earthquake loads, as well as other loads for inclusion into building codes. The earthquake design requirements take into account the occupancy category of the structure, site class, soil classifications, and various seismic coefficients, which are used to determine a seismic design category (SDC) for a project. Once a project is categorized according to an SDC, design specifications can be determined. The provisions of the CBC apply to the construction, alteration, movement, replacement, and demolition of every building or structure—or any appurtenances connected or attached to such buildings or structures—throughout California.

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was enacted by the state in 1972 to mitigate the hazards of surface faulting on structures planned for human occupancy and other critical structures. The state has established regulatory zones, known as earthquake fault zones, around the surface

traces of active faults. Earthquake fault zone maps have been issued for use by government agencies to plan and review new construction projects. In addition to residential projects, structures planned for human occupancy that are associated with industrial and commercial projects are also a concern near the Alquist-Priolo earthquake fault zones.

California Public Utilities Commission General Order 95

California Public Utilities Commission (CPUC) General Order (G.O.) 95 Rules for Overhead Line Construction provides general standards for the design and construction of overhead electric transmission lines.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act of 1990 (California Public Resources Code [PRC], Chapter 7.8, §2690-2699.6) directs the CGS to identify and map areas prone to liquefaction, earthquake induced landslides, and amplified ground shaking. The purpose of this program is to minimize the loss of life and property through the identification, evaluation, and mitigation of seismic hazards. Seismic Hazard Zone Maps that identify Zones of Required Investigation have been generated as a result of the program. Counties and cities are then required to use the Seismic Hazard Zone Maps in their land use planning and building permit processes. The Proposed Project is in an area that has not yet been mapped as part of the Seismic Hazards Mapping Act.

California Public Resources Code Section 5097.5

Section 5097.5 of the PRC states:

> "No person shall knowingly and willfully excavate upon, or remove, destroy, injure, or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological, or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands." (PRC 5097.5(a).)
>
> "A violation of this section is a misdemeanor, punishable by a fine not exceeding ten thousand dollars ($10,000), or by imprisonment in a county jail not to exceed one year, or by both that fine and imprisonment." (PRC 5097.5(c).)

As used in this PRC section, "public lands" means lands owned by, or under the jurisdiction of, the state or any city, county, district, authority, or public corporation, or any agency thereof. Consequently, public agencies are required to comply with PRC 5097.5 for their own activities, including construction and maintenance, as well as for permit actions (e.g., encroachment permits) undertaken by others.

5.7.2.3 State of Arizona

Parts of the Proposed Project would be constructed in Arizona, therefore, the following Arizona regulations would apply to the Proposed Project.

Arizona Building Code

Codes are adopted locally in Arizona and are predominantly the International Codes. The Proposed Project is subject to the applicable sections of International Building Code (IBC), which is administered by the International Code Council. The IBC includes seismic provisions to help ensure

that structures can withstand the forces of earthquake. Specifically, Chapter 16 of the IBC outlines requirements for structural design and sections 1610, 1613, and 1616 provides guidelines for soil loads and hydrostatic pressure, earthquake loads, and structural integrity, respectively.

Arizona Revised Statutes Title 49 Section 49-152

Title 49, Section 49-152 of the Arizona Revised Statutes outlines standards for soil remediation and restrictions on property use.

State of Arizona Hazard Mitigation Plan

The State of Arizona Hazard Mitigation Plan (HMP) was prepared by the Arizona Department of Emergency Management and Military Affairs, Division of Emergency Management (DEMA/EM) and adopted on November 1, 2023. The HMP identifies 15 hazards that pose a threat to the communities throughout the State and presents a strategy that has the potential to reduce or eliminate the risks and vulnerabilities associated with the identified hazards. The HMP specifically outlines mitigation strategies for earthquakes, landslides, and subsidence (DEMA/EM 2023).

Arizona Antiquities Act (A.R.S. §41-841 et seq.)

The Arizona Antiquities Act is a series of five statutes which regulate the treatment of vertebrate paleontological (and archaeological) resources which exist on state lands. These parts of these statutes relevant to paleontological resources describe: the necessity of a permit to survey or collect vertebrate paleontological resources, identifying the Arizona state museum as the issuer of such permits, prohibition of unnecessary defacement of vertebrate paleontological resources or sites, and the requirement for prompt reporting of paleontological discoveries to the Arizona state museum.

Chapter Eight of the Arizona Board of Regents Policy Manual outlines the guiding principles of the Arizona State Museum, which includes its role in enforcing and implementing the Arizona Antiquities Act. This chapter includes more detail on permit application and terms, discovery notification, and authority of the Arizona State Museum of waive certain regulations.

5.7.2.4 Local

The CPUC has sole and exclusive state jurisdiction over the siting and design of the Proposed Project in California. Pursuant to CPUC G.O. 131-E, Section XI.B:

> "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the Commission's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters."

Consequently, local agencies do not have jurisdiction over the Proposed Project, but public utilities must consult with local agencies and consider their regulations.

The Arizona Corporation Commission's Arizona Power Plant and Transmission Line Siting Committee has state jurisdiction over the Proposed Project in Arizona. This committee may approve or deny a Certificate of Environmental Compatibility application and impose reasonable conditions. However, pursuant to Arizona Revised Statutes Section 40-360.06(D):

> "Any certificate granted by the committee shall be conditioned on compliance by the applicant with all applicable ordinances, master plans and regulations of the state, a county or an incorporated city or town, except that the committee may grant a certificate notwithstanding any such ordinance, master plan or regulation, exclusive of franchises, if the committee finds as a fact that compliance with such ordinance, master plan or regulation is unreasonably restrictive and compliance therewith is not feasible in view of technology available."

As this PEA is being prepared for the CPUC, the following discussion of local land use regulations in California and Arizona are provided for informational purposes only.

Imperial County Municipal Code

Imperial County Municipal Code (ICMC) Chapter 11 sets forth guidance and regulations for grading and states that no person shall do any grading or cause the same to be done without having first obtained a permit from the county engineer, unless specified as exempt. ICMC Section 93104.01 states that any project regardless of size shall develop and submit a site-specific erosion and sediment control plan when applying for a grading or building permit.

Imperial County General Plan

The Renewable Energy and Transmission Element of the Imperial County General Plan contains the following goals and objectives related to geology and soils (Imperial County 2022b):

Goal 1: Support the safe and orderly development of renewable energy while providing for the protection of environmental resources.

- Objective 1.1: The County of Imperial supports the overall goals of the Desert Renewable Energy Conservation Plan to provide a balance between the development of renewable energy resources while preserving sensitive environmental resources within its jurisdiction.
- Objective 1.2: Lessen impacts of site and design production facilities on agricultural, natural, and cultural resources.
- Objective 1.4: Analyze potential impacts on agricultural, natural, and cultural resources, as appropriate
- Objective 1.5: Require appropriate mitigation and monitoring for environmental issues associated with developing renewable energy facilities

Goal 7: Actively minimize the potential for land subsidence to occur as a result of renewable energy operations.

- Objective 7.1: Require that all renewable energy facilities, where deemed appropriate, include design features that will prevent subsidence and other surface conditions from impacting existing land uses.
- Objective 7.3: Require renewable energy facility permittees to establish and monitor subsidence detection networks in areas affected by permitted project activities.
- Objective 7.4: Require monitoring programs for determining the possibility or extent of induced subsidence

The Seismic and Public Safety Element of the Imperial County General Plan contains the following goals and objectives related to geology and soils (Imperial County 2022a):

Goal 1: Integrate public health and resilience into land use planning.

Objective 1.1: Incorporate data on areas with geological and seismic hazards into the land use review process and future development processes. As development is proposed, developers shall be required to provide information related to these hazards.

Objective 1.4: Require seismic risks be avoided, when feasible, and mitigation measures, commensurate with risks, be taken to reduce injury, loss of life, destruction of property, and disruption of service.

Objective 1.5: Collaborate with local, state, and federal agencies and the private sector to minimize risk of disruption to critical facilities and lifelines.

Objective 1.6: Ensure natural hazards are considered when siting critical facilities, as well as the extent to which the range, frequency, and intensity of environmental hazards may change due to climate change, as applicable.

Goal 2: Avoid loss of life, injury, and property damage from seismic and geologic hazards.

Objective 2.1: Ensure that no structure for human occupancy, other than one-story wood-frame structures, shall be permitted within 50 feet of an active fault trace, as designated on maps compiled by the State Geologist under the Alquist-Priolo Geologist Hazards Zone Act.

Objective 2.2: Require new development in areas prone to geologic hazards (e.g., landslides, slope instability) to be adequately protected against these hazards. Any development in hillside areas shall prepare drainage plans to direct runoff and drainage away from potentially unstable slopes. New developments shall incorporate hillside design techniques and features to mitigate and support slope stability.

Objective 2.3: Require that geological and geotechnical investigations for new development proposals in areas with potential earthquake-induced liquefaction, landslides, or settlement. To the extent feasible, the County will limit intensive developments and land uses along rivers and waterways where it is likely that erosion could cause property damage or threaten life during high-precipitation events.

Objective 2.5: Participate in local and regional emergency preparedness planning efforts with public and quasi-public agencies (e.g., the Imperial County Sheriff's Office, the Imperial County Fire Department, Caltrans District 11) to ensure the continued functionality of major utility services and roadways in the event of a major earthquake.

Objective 2.6: Implement development restrictions and seismic study requirements around active faults pursuant to the Alquist-Priolo Act to ensure that potential impacts of seismic hazards are mitigated.

Objective 2.7: Require suppliers of all existing utilities that cross active faults to file with the County an operation plan describing the probable effects of failures at the fault and the various emergency facilities and procedures that exist to ensure that failure does not threaten public safety.

Objective 2.10: Require that grading activities preserve natural features, including vegetation, terrain, watercourses, and similar resources, wherever feasible.

Goal 6: Prepare for and respond to natural and human-caused disasters to deliver vital services in the event of emergency to avoid the loss of life and minimize impacts to health and property.

Objective 6.4: Reduce risk and damage from seismic hazards by updating appropriate regulations, such as that found in Title 9 of the County Code of Ordinances.

Objective 6.6: Support and assist in informing the public and other agencies of the hazards and risks of earthquakes and of techniques to employ to reduce those hazards.

Objective 6.7: Maintain and use geologic and seismic information as provided by the United States Geological Survey and California Geological Survey.

Objective 6.8: As appropriate, require rehabilitation of buildings that pose a public hazard from inadequate structural design.

Objective 6.9: Avoid and minimize death, injuries, property damage, and economic and social dislocation resulting from natural hazards through appropriate planning and emergency measures.

Objective 6.18: Identify critical facilities in hazard-prone areas and work to relocate or harden these facilities to reduce risk of damage and loss of service.

Objective 6.19: Ensure that all public services, municipal operations, and critical facilities can continue operating during and after a hazard or emergency event to meet community needs to the greatest extent possible.

Objective 6.21: Promote strengthening of planned and existing utilities and lifelines, the retrofit and rehabilitation of existing weak structures, and the relocation of critical facilities within hazard-prone areas.

City of Calexico Municipal Code

The City of Calexico Municipal Code (CMC) Chapter 15.64 establishes standards for earthquake hazard reduction in existing buildings. Section 13.50.100 of the CMC outlines requirements for construction activities including preparation of an erosion and sediment control plan, permit coverage, compliance with the Construction General Permit, and adherence to California Stormwater Quality Association's (CASQA) Construction Best Management Practices (BMP) Manual.

City of Calexico General Plan

The City of Calexico General Plan Conservation/Open Space Element contains the following goals and policies related to geology and soils (City of Calexico 2015a):

Goal 2: Properly manage soils as development is proposed and evaluated in the future.

Objective: Continue using soil management techniques that minimize soil related problems, including erosion, shrink-swell behavior, and septic tank failure.

Policies:

- To reduce or eliminate soil erosion and pollution, ensure that construction activity is in compliance with the State's General Permit for Construction Activities administered by the California Regional Water Quality Control Board, located in Palm Desert (Region 7). One condition of this permit is the development and implementation of a site-specific Storm Water Pollution Prevention Plan that identifies BMPs to reduce/eliminate erosion and sedimentation associated with construction.
- Require of all new development requiring discretionary approval a geotechnical investigation by a registered geotechnical engineer that discusses, at least, liquefaction, subsidence, shrink/swell potential, soil strength, landslide potential, distance to known fault rupture zones. All geotechnical studies shall be submitted to the city of Calexico Building and Safety Department for review and approval.
- Soils with moderate or high permeability capacity should be left undeveloped (perhaps used as open space where appropriate) to reduce runoff and facilitate groundwater recharge.
- Agricultural areas should not be disturbed to the extent that erosion will occur without the initiation of proper soil management measures.

The City of Calexico General Plan Safety Element contains the following goals and policies related to geology and soils (City of Calexico 2015b):

Goal: To identify and minimize, to the extent possible or feasible, the risks to persons and property caused by natural and human-induced hazards.

Objective: Maintain acceptable risk levels when conducting land use planning.

Policies:

- The scale of acceptable risk for new structures shall continue to be used to determine the type and location of future land use.
- Land uses should not be subjected to greater risk than the level the scale suggests unless no other alternative exists.
- Require a geologic/geotechnical investigation for all projects whose uses or intensities attain a Level of Acceptable Risk rating that exceeds ordinary levels.
- Require a geologic/geotechnical study to contain a site-specific evaluation of peak horizontal ground acceleration.

Goal: Reduce the risk of seismic or other geologic hazards in Calexico.

Objective: Promote Policies and programs that reduce the risk to the community from geologic and seismic hazards.

Policies:

- Maintain standards to identify and mitigate seismic hazards.
- Consider design and construction standards that exceed the minimums set forth in the Uniform Building Code (UBC) due to the area's high potential for seismic acceleration.

- Require all development to adhere to standards for grading and construction which reduce the potential of seismic hazards.

Yuma County Codes

The Yuma County Comprehensive Building Safety Code includes the 2018 IBC. The proposed project would be required to comply with the IBC sections outlined under Section 5.7.1.1.30, *Arizona Building Code*.

Yuma County Zoning Ordinance

The Yuma County Zoning Ordinance (YCZO) Section 302.00 outlines development standards and use regulations and Section 302.02 outlines hillside development standards. Section 302.02H(16) states that building sites shall be located in accordance with the recommendations of a soils and/or geological report, if needed, and the site shall be free of any geological hazards or unsuitable or unstable soil conditions unless otherwise proven that such conditions do not affect the building site's stability; and Section 302.02I(3) states a geologic hazard and soils report, prepared by a State of Arizona licensed geologist or civil engineer, may be required determining any site conditions that may affect slope stability, geologic hazards or other soil-bearing qualities, which would need to be addressed for proposed improvements (Yuma County 2016).

Yuma County Comprehensive Plan

The Safety Element of the Yuma County Comprehensive Plan contains the following policies and actions related to geology and soils (Yuma County 2023):

Policy SPP.1:	Promote disaster-resistant future development.
Policy SPP.4:	Improve hazard mitigation coordination and communication with federal, state, local and tribal governments.
Policy SPP.8:	Reduce levels of human loss and damage and losses to existing and future critical facilities/infrastructure and other community assets due to earthquake.
Policy SPP.10:	Reduce levels of human loss and damage and losses to existing and future critical facilities/infrastructure and other community assets due to other natural/ human caused hazards.
Action SA.1:	Update, develop and support general plans, ordinances and codes in accordance with state and federal regulations to limit development in hazard areas or build to standards that will prevent or reduce damage.
Action SA.2:	Adopt and support local, state and federal codes that protect assets and new development in hazard areas.
Action SA.3:	Educate the public to increase awareness of hazards and opportunities for mitigation actions.
Action SA.4:	Promote partnerships among the federal, state, counties, local and tribal governments to identify, prioritize and implement mitigation actions.
Action SA.16:	Develop a comprehensive approach to reducing the level of damage and losses due to earthquakes.

Action SA.17: Adopt and support local, state and federal codes that protect assets and new development in earthquake hazard areas.

Action SA.19: Adopt and support local, state and federal codes to protect life, property and natural resources from natural/ human caused hazards.

5.7.3 Impact Questions

5.7.3.1 Geology, Soils, and Paleontological Resources Impact Questions

The thresholds of significance for assessing impacts come from the California Environmental Quality Act (CEQA) Environmental Checklist. For geology, soils, and paleontological resources, the CEQA Checklist asks, would the project:

- Directly or indirectly cause potential substantial adverse effects, including the risk of loss, or injury, or death involving: rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault (Refer to Division of Mines and Geology Special Publication 42.); strong seismic ground shaking; seismic-related ground failure, including liquefaction; and landslides?
- Result in substantial soil erosion or the loss of topsoil?
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?
- Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

5.7.3.2 Additional CEQA Questions

There are no CPUC-identified additional CEQA impact questions.

5.7.4 Impact Analysis

5.7.4.1 Geology, Soils, and Paleontological Resources Impact Analysis

5.7.4.1.1 Geology, Soils, and Paleontological Resources Methodology

Geology and soils impacts were evaluated based upon a desktop review of the SWRCB RUSLE K-Values publications, and online resources from the California DOC, USBR, USDA, USGS, and local planning documents to evaluate the potential for the Proposed Project to be subject to geologic and soil hazards.

The potential for the Proposed Project to impact paleontological resources will be assessed based on a review of each geologic unit that may be affected by Proposed Project construction or operation. This assessment will be based on scientific literature, online paleontological databases, records searches from natural history museums that are likely to contain collections from the Proposed Project area, the BLM PFYC paleontological sensitivity scale, and a field survey. A significant impact to paleontological resources would be considered the damage or destruction of a scientifically significant paleontological resource or the removal of that resource from its original context. CEQA does not define "a unique paleontological resource or site." However, SVP has defined a "significant paleontological resource" in the context of environmental review as follows:

> "Fossils and fossiliferous deposits, here defined as consisting of identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic information. Paleontological resources are typically to be older than recorded human history and/or older than middle Holocene (i.e., older than about 5,000 radiocarbon years) (SVP 2010)."

5.7.4.1.2 Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, of death involving: rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault (Refer to Division of Mines and Geology Special Publication 42); strong seismic ground shaking; seismic-related ground failure, including liquefaction; and landslides?

Construction

Project Components in California

Less than Significant Impact with Mitigation. The Proposed Project is not within a mapped Alquist-Priolo Earthquake Fault Zone. As shown on Figure 5.7-1, the Proposed Project alignment crosses the Imperial Fault and the Algodones Fault and is located approximately 1 mile north of the Northern Centinela Fault. The Imperial and Northern Centinela faults are Historic aged faults, meaning that they have demonstrated activity within the past 150 years, while the Algodones Fault is an Undifferentiated Quaternary aged fault, meaning that it has demonstrated activity within the past 1.6 million years. Given the nature of the Proposed Project, structures may be located by the previously mentioned faults but would not introduce habitable structures and, as such, would not pose substantial risk of loss, injury, or death as a result of potential fault rupture.

As the Proposed Project is located in an area with faults, it is susceptible to earthquake forces and seismic shaking. Based on Map Sheet 48: Earthquake Shaking Potential for California (DOC 2016), the portion of the Proposed Project alignment crossing the Imperial Fault is within an area classified as experiencing stronger and more frequent shaking, while other portions of the alignment are within areas classified as experiencing lower levels of shaking less frequently, in comparison to other areas of California. Nonetheless, the transmission infrastructure involved would not be used for human occupancy and would be designed to be consistent with CPUC G.O. 95, which ensures adequate service and safety of persons engaged in the construction, maintenance, operation, or use of overhead electrical lines and to the public in general. In addition, the Proposed Project would

comply with the California Building Code which outlines requirements for seismic design for structures. As a result, the Proposed Project would be able to withstand reasonably foreseeable seismic events. Incorporation of these standard engineering practices would ensure that people or structures would not be exposed to hazards associated with strong seismic ground shaking and impacts would be less than significant.

The Proposed Project is not mapped within a known liquefaction zone on the CGS Seismic Hazards Program Liquefaction Zones map (CGS 2022). As shown in Figure 5.7-2a through Figure 5.7-2c, the Proposed Project alignment crosses multiple areas with a landslide susceptibility greater than five in unincorporated Imperial County (Figure 5.7-2a): an area with landslide susceptibility of 8 to 10 near the New River (Figure 5.7-2a); an area north and northwest of the intersection of SR-98 and SR-7 (Figure 5.7-2a); an area with landslide susceptibility of 6 to 10 in the vicinity of the Imperial Sand Dunes running parallel to Interstate 8 (Figure 5.7-2b); an area with landslide susceptibility of five to nine in the vicinity of the Cargo Muchacho Mountains (Figure 5.7-2c).Nonetheless, the Proposed Project would be required to comply with State regulations related to liquefaction and landslides. Specifically, the Proposed Project would be designed to be consistent with design and engineering standards contained in CPUC G.O.95, which includes requirements for transmission line strength, pole setting depths, and foundation resistance. In addition, the Proposed Project would implement Applicant Proposed Measure (APM) GEO-1, which would require preparation of a Geotechnical Investigation analyzing site preparation, soil bearing capacity, structural foundations, grading practices, landslides, liquefaction, seismic ground shaking, expansive/unstable soils, and soil erosion; and implementation of recommendations. Therefore, with implementation of APM GEO-1, construction impacts related to rupture of a known earthquake fault, strong seismic ground shaking, seismic related-ground failure, liquefaction, and landslides would be less than significant.

Project Components in Arizona

Less than Significant Impact with Mitigation. As shown on Figure 5.7-1, the Proposed Project alignment does not cross through faults in Arizona, and therefore the portions of the Proposed Project alignment in Arizona would be subject to less intense and less frequent shaking. Similarly, the Proposed Project in Arizona is not mapped within a known liquefaction zone on the CGS Seismic Hazards Program Liquefaction Zones map (CGS 2022). However, as shown in Figure 5.7-2c, an area towards the length of the end of the Proposed Project alignment in the vicinity of the Fort Yuma Indian Reservation has a landslide susceptibility of 8 to 10. Nonetheless, similar to the analysis above, the Proposed Project would be designed to be consistent with CPUC G.O. 95, which ensures adequate service and safety of persons engaged in the construction, maintenance, operation, or use of overhead electrical lines and to the public in general. In addition, the Proposed Project would be subject to the Arizona Building Code, specifically Chapter 16 of the IBC which outlines requirements for structural design and sections 1610, 1613, and 1616 which provide guidelines for soil loads and hydrostatic pressure, earthquake loads, and structural integrity; as well as Arizona Corporation Commission requirements, which require projects siting a 115 kV or greater transmission line to obtain a CEC prior to construction. Furthermore, the Proposed Project would be required to comply with Section 302.02G(3b) of the YCZO which states the location, design, installation and maintenance of electric power distribution lines should be completed with the minimum soil and site disturbance as is feasible; Section 302.02H(16) of the YCZO which states that building sites should be located in accordance with the recommendations of a soils and/or geological report; and Section 302.02I(3) of the YCZO which states that a geologic hazard and soils report should be prepared. Lastly, similar to the analysis above, the Proposed Project would implement APM GEO-1, which would require preparation of a Geotechnical Investigation analyzing site preparation, soil

bearing capacity, structural foundations, grading practices, landslides, liquefaction, seismic ground shaking, expansive/unstable soils, and soil erosion; and implementation of recommendations. Therefore, with adherence to Arizona regulations and APM GEO-1, construction impacts related to rupture of a known earthquake fault, strong seismic ground shaking, seismic related-ground failure, liquefaction, and landslides would be less than significant.

Overall Project

Less than Significant Impact with Mitigation. With implementation of APM GEO-1, the Proposed Project would have less than significant construction impacts related to rupture of a known earthquake fault, strong seismic ground shaking, seismic related-ground failure, liquefaction, and landslides.

Operation

Project Components in California

Less Than Significant Impact. Operation and maintenance (O&M) activities associated with the Proposed Project would occur as needed and could include activities such as repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, replacing structures, tree trimming, brush and weed control, and access road maintenance. O&M would also include routine inspections and emergency repair within substations and throughout rights-of-way (ROWs), which would require the use of vehicles and equipment. HWT inspects transmission overhead facilities in a manner consistent with CPUC G.O. 165, which requires observation a minimum of once per year, but inspection typically occurs more frequently to ensure system reliability. O&M activities would not involve substantial ground disturbance or installation of new features that would expose people or structures to seismic hazards. As a result, operational impacts would be less than significant.

Project Components in Arizona

Less than Significant Impact. Operational impacts resulting from O&M activities would be generally the same in Arizona as in California. Similar to the analysis above, operational impacts would be less than significant.

Overall Project

Less than Significant Impact. The Proposed Project would have less than significant operational impacts related to rupture of a known earthquake fault, strong seismic ground shaking, seismic related-ground failure, liquefaction, and landslides. This impact would be less than significant.

5.7.4.1.3 Would the project result in substantial soil erosion or the loss of topsoil?

Construction

Project Components in California

Less Than Significant Impact. As described in Section 3.5.4.6, grading is anticipated along the Proposed Project alignment, along new access roads, and at proposed O&M structure pads. Detailed grading quantities for these Proposed Project components are summarized in Table 3-7 in Chapter

3, Proposed Project Description. Site preparation for the Proposed Project for staging areas and structure work areas is expected to include minor grading and/or grubbing as needed to provide a reasonably level and vegetation-free surface. All soil is anticipated to be balanced on-site. Ground-disturbing activities would expose soil to erosion by removing the vegetative cover and potentially compromising the soil structure; grading activities could potentially result in soil movement that would cause a substantial loss of topsoil. Rain and wind may potentially further detach soil particles and transport them off-site. As shown in Table 5.7-2, most soils found along the Proposed Project alignment are either not erosive or have moderate to high susceptibility to erosion. HWT would apply for coverage under a General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Order 2009-0009-DWQ as amended by Order 2010-0014-DWQ and any following versions applicable at the time of construction. This general permit requires submittal of a Notice of Intent, preparation of project-specific stormwater pollution prevention plans (SWPPPs), and implementation of site-specific BMPs to address material management, non-stormwater discharge, sediment discharge, and erosion control. Information based on the soil type, slope, and other on-site characteristics would be used to develop appropriate BMPs to ensure that erosion and sedimentation would be controlled during construction of the Proposed Project. In addition, the Proposed Project would adhere to State and local regulations outlined above under Section 5.7.4.2.1, which would require preparation of erosion and sediment control plans and adherence to standards for grading and construction. Therefore, with adherence to California and local regulations, including implementation of the SWPPP and BMPs to control erosion and prevent off-site sedimentation, substantial soil erosion is not anticipated to occur. Impacts during construction would be less than significant.

Project Components in Arizona

Less than Significant Impact. As shown in Table 5.7-2, most soils found along the Proposed Project alignment in Arizona typically are either not erosive or have moderate to high susceptibility to erosion. Similar to the analysis above, with adherence to Arizona and local regulations, including implementation of the SWPPP and BMPs to control erosion and prevent off-site sedimentation, substantial soil erosion is not anticipated to occur. Impacts during construction would be less than significant.

Overall Project

Less than Significant Impact. The Proposed Project would not result in substantial soil erosion or the loss of topsoil during construction in both California and Arizona with implementation of State regulations and BMPs. This impact would be less than significant.

Operation

Project Components in California

Less than Significant Impact. As previously described, the Proposed Project involve O&M activities such as increased maintenance and inspection trips. However, O&M activities themselves do not involve substantial ground disturbance and would therefore not result in substantial soil erosion or the loss of topsoil. This impact would be less than significant.

Project Components in Arizona

Less than Significant Impact. Similar to the analysis above, O&M activities themselves do not involve substantial ground disturbance and would therefore not result in substantial soil erosion or the loss of topsoil. This impact would be less than significant.

Overall Project

Less than Significant Impact. O&M activities themselves do not involve substantial ground disturbance and would therefore not result in substantial soil erosion or the loss of topsoil during operation in both California and Arizona. This impact would be less than significant.

5.7.4.1.4 Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Construction

Project Components in California

Less than Significant Impact with Mitigation. As discussed in Section 5.7.1.2, local soils could be unstable and could be subject to collapse. As shown in Figure 5.7-2a and Figure 5.7-2b, the Proposed Project alignment crosses multiple areas with a landslide susceptibility greater than five in unincorporated Imperial County (Figure 5.7-2a): an area with landslide susceptibility of 8 to 10 near the New River (Figure 5.7-2a); an area north and northwest of the intersection of SR-98 and SR-7 (Figure 5.7-2a); an area with landslide susceptibility of 6 to 10 in the vicinity of the Imperial Sand Dunes running parallel to Interstate 8 (Figure 5.7-2b); an area with landslide susceptibility of five to nine in the vicinity of the Cargo Muchacho Mountains (Figure 5.7-2c). Soils subject to collapse, liquefaction, and lateral spreading may be locally present. Nonetheless, the Proposed Project would be required to adhere to design and engineering standards contained in CPUC G.O.95 and would implement APM GEO-1 and implement all recommendations from the Geotechnical Report. As discussed in Section 5.7.1.2, the Proposed Project alignment would not be located within an area of land subsidence and would not include extensive dewatering or extraction of oil and gas resulting in subsidence. Therefore, impacts associated with the risk of landslides, lateral spreading, subsidence, liquefaction, and collapse would be less than significant as geotechnical report recommendations would be incorporated into Proposed Project design with APM GEO-1.

Project Components in Arizona

Less than Significant Impact with Mitigation. As shown in Figure 5.7-2c, the Proposed Project alignment crosses areas with a landslide susceptibility of 8 to 10 in the vicinity of the Fort Yuma Indian Reservation. Soils subject to collapse, liquefaction, and lateral spreading may also be locally present. Similar to the analysis above, the Proposed Project would be required to adhere to Arizona regulations outlined above under Section 5.7.4.2.1 as well as APM GEO-1 and implement all recommendations from the Geotechnical Report and also be consistent with design and engineering standards contained in CPUC G.O. 95. Therefore, impacts associated with the risk of landslides, lateral spreading, subsidence, liquefaction, and collapse would be less than significant.

Overall Project

Less than Significant Impact with Mitigation. Although the Proposed Project could potentially be located on unstable soils, with adherence to State regulations and implementation APM GEO-1 and recommendations outlined in the Geotechnical Report, impacts associated with the risk of landslides, lateral spreading, subsidence, liquefaction, and collapse would be less than significant.

Operation

Project Components in California

No Impact. As previously described, O&M activities associated with the Proposed Project would be similar to those currently performed by HWT for existing substations and their associated lines and infrastructure. The Proposed Project would involve O&M activities such as increased maintenance and inspection trips. However, these O&M activities would not involve ground disturbance or installation of features that would cause unstable soils or result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. No impact would occur.

Project Components in Arizona

No Impact. Similar to the analysis above, O&M activities would not involve ground disturbance or installation of features that would cause unstable soils or result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. No impact would occur.

Overall Project

No Impact. O&M activities for the Proposed Project would not cause unstable soils or result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse during operation in both California and Arizona. There would be no impact.

5.7.4.1.5 Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

Construction

Project Components in California

Less than Significant Impact with Mitigation. Table 5.7-2 shows hydrologic group and stability concerns for soils along the Proposed Project alignment. Although most soils are classified as Hydrologic Group A and C, which typically have higher infiltration rates and lower runoff potentials, some soils along the Proposed Project alignment are classified as Hydrologic Group D and are moderately to highly expansive. In addition, soils along the Proposed Project alignment in California have linear extensibilities ranging from low to high. Nonetheless, expansive soils along the Proposed Project alignment are unlikely to pose a geotechnical problem because new poles/structures would be buried with foundation depths of 4 to 40 feet (depending on pole type and location). Thus, the foundation structures for the Proposed Project would be buried below the shallow expansive soil and would not be located on expansive soil, as defined in the Uniform Building Code (1994) as amended in the California Building Code (2013), creating substantial risks to life or property. Furthermore, the Proposed Project would be required to implement APM GEO-1, which would require preparation of a Geotechnical Investigation analyzing site preparation, soil bearing capacity,

structural foundations, grading practices, landslides, liquefaction, seismic ground shaking, expansive/unstable soils, and soil erosion; and implementation of recommendations. Therefore, this impact would be less than significant.

Project Components in Arizona

Less than Significant Impact with Mitigation. Soils along the Proposed Project alignment in Arizona are classified as Hydrologic Groups B and C and range from not expansive to moderately expansive, with low linear extensibility. Nonetheless, the Proposed Project would be required to implement APM GEO-1 and implement all recommendations from the Geotechnical Report, ensuring impacts related to expansive soils would be less than significant.

Overall Project

Less than Significant Impact with Mitigation. The Proposed Project could potentially be located on expansive soils. However, with implementation of APM GEO-1 and all recommendations outlined in the Geotechnical Report, construction-related impacts in both California and Arizona would be less than significant.

Operation

Project Components in California

No Impact. As previously described, O&M activities associated with the Proposed Project would be similar to those currently performed by HWT for existing substations and their associated lines and infrastructure. The Proposed Project would involve O&M activities such as increased maintenance and inspection trips. However, O&M activities themselves do not involve substantial ground disturbance or installation of new features that would create risks to life or property related to expansive soils. No impact would occur.

Project Components in Arizona

No Impact. Similar to the analysis above, O&M activities for the Proposed Project alignment in Arizona would not involve substantial ground disturbance or installation of new features that would create risks to life or property related to expansive soils. No impact would occur.

Overall Project

No Impact. There would be no impact related to expansive soils during operation in both California and Arizona.

5.7.4.1.6 Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

Construction

Project Components in California

No Impact. Construction of the Proposed Project would not involve use of a septic tank or alternative wastewater disposal system. Wastewater generated at portable toilets during construction would be disposed of off-site at appropriate facilities. No impact would occur in California.

Project Components in Arizona

No Impact. Construction of the Proposed Project would not involve use of a septic tank or alternative wastewater disposal system. Wastewater generated at portable toilets during construction would be disposed of off-site at appropriate facilities. No impact would occur in Arizona.

Overall Project

No Impact. There would be no impact related to septic tanks or alternative wastewater disposal systems during construction in both California and Arizona.

Operation

Project Components in California

No Impact. The Proposed Project does not include operation of a septic tank or alternative wastewater disposal system. No impact would occur in California.

Project Components in Arizona

No Impact. The Proposed Project does not include operation of a septic tank or alternative wastewater disposal system. No impact would occur in Arizona.

Overall Project

No Impact. There would be no impact related to septic tanks or alternative wastewater disposal systems during operation in both California and Arizona.

5.7.4.1.7 Would the project directly or indirectly destroy a unique paleontological resource or site or unique geological feature?

Significant impacts to paleontological resources include the destruction, damage, or loss of scientifically important paleontological resources or associated stratigraphic data. Direct impacts could result from ground-disturbing activities (i.e., grading, excavating, trenching) in undisturbed sediments or geologic units with PFYC 3, 4, 5, or U paleontological sensitivity which have the potential to significantly impact paleontological resources under CEQA. Significant portions of the Proposed Project will be built on geologic units with PFYC Class 3, 4, or U paleontological sensitivity (Table 5.7-3; Figure 5.7-3a through Figure 5.7-3c). Indirect impacts to paleontological resources may be created by increased accessibility to important paleontological resources leading to looting or vandalism.

Construction

Project Components in California

Less than Significant Impact with Mitigation. Multiple types of ground-disturbing activities are proposed for the Proposed Project. The new transmission structures will require foundations ranging from 3 to 12 feet in diameter and 4 to 50 feet deep depending on the type of structure and properties of the sediment. Many of these foundations will require drilling to a depth where Holocene-aged sediments with PFYC 2 paleontological sensitivity increase in age to where they should be considered PFYC 4 or PFYC U. Therefore, drilling/excavations for structure foundations

may significantly impact paleontological resources. Five levels of access road are proposed for the Proposed Project based on the level of work needed to ready them for use during construction. Type 3 (new roads) and Type 4 (temporary roads) would require significant grading that could significantly impact paleontological resources. Transmission structure pads may require grading that could result in significant impacts to paleontological resources depending on the local topography. All staging areas are relatively level, so the minimal grading that would be required to prepare them for use is not anticipated to impact paleontological resources. Proposed Project ground-disturbing activities with the potential to impact paleontological resources in California will occur in areas with PFYC 1, 2, 3, and U paleontological sensitivity. The Project would implement APMs to reduce the potential for significant impacts. APM PAL-1 requires the preparation of a Paleontological Resources Monitoring and Mitigation Plan that provides detailed procedures for construction monitoring and fossil and data recovery. APM PAL-2 requires paleontological monitoring in PFYC 3, 4, 5, or U geologic units. APM PAL-3 requires the recovery of scientifically significant fossil discoveries and associated data, and APM PAL-4 requires the compilation of a paleontological resources construction monitoring report. Impacts to paleontological resources would be reduced to a less-than-significant level with incorporation of APM PAL-1 through APM PAL-4.

The Proposed Project would not result in indirect impacts on paleontological resources during construction since it would not increase public access (potentially leading to increased illegal fossil collecting or vandalism).

Project Components in Arizona

Less than Significant Impact with Mitigation. Construction impacts in Arizona would be the same as construction impacts in California. Proposed Project ground-disturbing activities with the potential to impact paleontological resources in Arizona will occur in areas with PFYC 1, 2, and 4 paleontological sensitivity. These impacts would be reduced to a less-than-significant level with the implementation of APM PAL-1 through APM PAL-4.

The Proposed Project would not result in indirect impacts on paleontological resources during construction since it would not increase public access (potentially leading to increased illegal fossil collecting or vandalism).

Overall Project

Less than Significant Impact with Mitigation. Proposed Project ground-disturbing construction activities with the potential to impact paleontological resources would occur in areas with PFYC 1, 2, 3, 4, and U paleontological sensitivity. These impacts would be reduced to a less-than-significant level with the implementation of APM PAL-1 through APM PAL-4.

The Proposed Project would not result in indirect impacts on paleontological resources during construction since it would not increase public access (potentially leading to increased illegal fossil collecting or vandalism).

Operation

Project Components in California

No Impact. The Proposed Project would involve O&M activities such as increased maintenance and inspection trips. However, O&M activities themselves do not involve substantial ground disturbance or installation of new features that would result in damage to unique paleontological resources or sites. No impact would occur.

Project Components in Arizona

No Impact. The Proposed Project would involve O&M activities such as increased maintenance and inspection trips. However, O&M activities themselves do not involve substantial ground disturbance or installation of new features that would result in damage to unique paleontological resources or sites. No impact would occur.

Overall Project

No Impact. The Proposed Project would involve O&M activities such as increased maintenance and inspection trips. However, O&M activities themselves do not involve substantial ground disturbance or installation of new features that would result in damage to unique paleontological resources or sites. No impact would occur.

5.7.4.2 Geotechnical Requirements

The Proposed Project would implement APM GEO-1 and prepare a Geotechnical Report.

5.7.4.3 Paleontological Resources

According to the BLM PFYC paleontological sensitivity scale, within the Proposed Project area, one geologic unit has a Moderate (PFYC 3) potential to contain paleontological resources, Lake Cahuilla deposits; two geologic units have a High (PFYC 4) potential to contain paleontological resources, Gila Group and Palm Springs Formation; and three geologic units have an Unknown (PFYC U) potential to contain paleontological resources, undifferentiated Quaternary alluvium, Quaternary older alluvium, and Tertiary breccia(Table 5.7-3). Additionally, Holocene-aged geologic units with PFYC 2 paleontological sensitivity increase in age with depth, and deep excavations, such as those required for transmission structure installation, may reach depths at which these sediments would be considered to have PFYC 4 or U paleontological sensitivity. These geologic units include Quaternary young alluvium, Quaternary sand deposits, and Quaternary terrace deposits. Ground-disturbing activities within geologic units with PFYC Class 3, 4, or U paleontological sensitivity may result in adverse direct impacts to scientifically important paleontological-resources. Impacts to paleontological resources are evaluated in Section 5.7.4.2.6.

5.7.5 CPUC Draft Environmental Measures

There are no CPUC Draft Environmental Measures identified for Geology, Soils, and Paleontological resources.

5.7.5.1 Applicant Proposed Measures

The following APM would be implemented to reduce geology and soils impacts associated with the Proposed Project:

- **GEO-1:** Prior to construction, HWT would retain a licensed geotechnical or civil engineer to prepare a Geotechnical Report for the Proposed Project alignment to identify potential geologic hazards and provide recommendations on the following:
  - Site preparation
  - Soil bearing capacity
  - Structural foundations
  - Grading practices

- Landslides
- Liquefaction
- Seismic ground shaking
- Expansive/unstable soils
- Soil erosion

HWT would implement all recommendations outlined in the Geotechnical Report during construction.

The following APMs would be implemented to reduce paleontological resources impacts associated with the Proposed Project. These APMs may be refined following completion of the PRTR based on requirements of the BLM.

- **PAL-1:** Following completion of field surveys and prior to construction, a Paleontological Resources Monitoring and Mitigation Plan (PRMMP) shall be prepared by a Qualified Paleontologist retained by HWT. The Qualified Paleontologist shall be an individual meeting Society of Vertebrate Paleontology (SVP) standards for a Qualified Professional Paleontologist and approved as a Principal Investigator on active BLM Paleontological Resource Use Permits in California and Arizona. The PRMMP shall guide all paleontological resource monitoring and mitigation efforts during construction and shall conform with SVP and BLM policies and procedures, and best practices in paleontology mitigation. It shall include specifications for a pre-construction workers environmental awareness training program focused on the types of paleontological resources that could be encountered during construction, detailed procedures for construction monitoring and fossil and data recovery, a table and maps specifying monitoring locations and levels of effort, an unanticipated discovery plan for implementation in the event of fossil discoveries made by construction personnel in the absence of a paleontological monitor, and project-specific notification procedures for both non-significant and significant fossil discoveries made by paleontological monitors. The PRMMP shall be approved by the lead and cooperating agencies prior to construction.
- **PAL-2:** Paleontological monitoring shall take place in areas underlain by Potential Fossil Yield Classification (PFYC) 3, 4, 5, or U geologic units. Typically, full-time monitoring shall be required in PFYC 4, 5, and U geologic units whereas part-time monitoring (spot-checking) shall be required in PFYC 3 geologic units and monitoring shall not be required in PFYC 1 and 2 geologic units, except where excavations in PFYC 2 geologic units reach depths at which they are considered to have a higher PFYC rating. All paleontological monitors must be approved and listed on the BLM Paleontological Resource Use Permits as Field Monitors and be directly supervised by an approved Field Agent and/or Principal Investigator. Monitors and Field Agents shall be responsible for inspecting excavated areas, graded surfaces, and spoils piles for the presence of paleontological resources. When fossils are unearthed during construction, the construction equipment operator and foreman shall be notified, work in the immediate vicinity shall be temporarily diverted, and the discovery site shall be cordoned off until the fossil discovery can be explored and its scientific significance evaluated. Non-significant fossil localities shall typically be left in place whereas significant fossil discoveries shall be salvaged. All fossil discoveries shall be fully documented regardless of their scientific significance.
- **PAL-3:** Scientifically significant fossil discoveries and associated data shall be recovered by BLM-approved Field Monitors under the supervision of a Field Agent and/or a Principal Investigator according to accepted professional paleontological standards. All recovered fossils shall be

removed from the construction site as soon as possible and transported to a secure paleontological laboratory facility for preparation, inventory, identification, and transfer to a paleontological repository for curation and permanent storage. For this project, the repository for California fossils is the San Diego Natural History Museum and the repository for Arizona fossils is the New Mexico Museum of Natural History and Science.

- **PAL-4:** The results of the paleontological monitoring program shall be compiled in a paleontological resource construction monitoring report prepared according to BLM standards (BLM H-8270-1 and BLM 2009-011). The monitoring report shall be submitted to the BLM along with a repository receipt listing all curated fossils within 60 days from the end of project construction.

This page left intentionally blank.

5.8 Greenhouse Gas Emissions

This section describes the greenhouse gas (GHG) regulations that are applicable to electrical transmission projects and evaluates the potential impacts from construction and operation of the Ironwood Transmission Line Project (Proposed Project).

Research for this analysis involved a review of the following resources:

- Intergovernmental Panel on Climate Change (IPCC) reports
- Local agency planning documents

5.8.1 Environmental Setting

Gases that absorb and re-emit infrared radiation in the atmosphere are called GHGs. The gases that are widely seen as the principal contributors to human-induced climate change include carbon dioxide (CO_2), methane (CH_4), nitrous oxides (N_2O), fluorinated gases such as hydrofluorocarbons and perfluorocarbons, and sulfur hexafluoride (SF_6). Water vapor is excluded from the list of GHGs because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation.

Different types of GHGs have varying global warming potentials (GWP). The GWP of a GHG is the potential of a gas or aerosol to trap heat in the atmosphere over a specified timescale (generally, 100 years). Because GHGs absorb different amounts of heat, a common reference gas (CO_2) is used to relate the amount of heat absorbed to the amount of the gas emitted, referred to as "carbon dioxide equivalent" (CO_2e), which is the amount of GHG emitted multiplied by its GWP. Carbon dioxide has a 100-year GWP of one. By contrast, methane has a GWP of 30, meaning its global warming effect is 30 times greater than CO_2 on a molecule per molecule basis (IPCC 2021).

Climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period. The term "climate change" is often used interchangeably with the term "global warming," but climate change is preferred because it conveys that other changes are happening in addition to rising temperatures. The baseline against which these changes are measured originates in historical records that identify temperature changes that occurred in the past, such as during previous ice ages. The global climate is changing continuously, as evidenced in the geologic record which indicates repeated episodes of substantial warming and cooling. The rate of change has typically been incremental, with warming or cooling trends occurring over the course of thousands of years. The past 10,000 years have been marked by a period of incremental warming, as glaciers have steadily retreated across the globe. However, scientists have observed an acceleration in the rate of warming over the past 150 years. The IPCC expressed in its Sixth Assessment Report (2021) that the rise and continued growth of atmospheric CO_2 concentrations is unequivocally due to human activities. Human influence has warmed the atmosphere, ocean, and land, which has led the climate to warm at an unprecedented rate in the last 2,000 years. It is estimated that between the period of 1850 through 2019, a total of 2,390 gigatonnes of anthropogenic CO_2 was emitted. It is likely that anthropogenic activities have increased the global surface temperature by approximately 1.07 degrees Celsius between the years 2010 through 2019 (IPCC 2021).

The Proposed Project is located in Imperial County, California and Yuma County, Arizona on federal, state, municipal, and private land. These lands include unincorporated areas of Imperial and Yuma counties, the city of Calexico, California, and public lands under the jurisdiction or management of the U.S. Bureau of Land Management, U.S. Bureau of Reclamation, and the California Department of Parks and Recreation. The California portion of the Proposed Project is located in Imperial County which is within the Salton Sea Air Basin (SSAB). The SSAB encompasses parts of Riverside and Imperial counties and includes the Salton Sea, the largest lake in California. The SSAB is bounded to the north by the Riverside-San Bernardino County line, to the east by several mountain ranges, to the west by the Riverside-San Diego County line, and to the south by the Mexico-United States border. Surrounding this basin are the Mojave Desert Air Basin to the north, the South Coast Air Basin to the northwest, the San Diego Air Basin to the west, the Mexico-United States border to the south, and the Arizona state line and Colorado River to the east. Within the SSAB, the Proposed Project falls under the jurisdiction of the Imperial County Air Pollution Control District (ICAPCD).

Additionally, the Proposed Project is located in Yuma County, located in the southwestern corner of Arizona. Unlike California, Arizona is not divided into regional air basins. The Arizona Department of Environmental Quality (ADEQ) is primarily responsible for managing air quality in Yuma County.

The Proposed Project would not replace or upgrade an existing facility but would connect two existing substations with new transmission lines. Therefore, there are no existing GHG emissions associated with the Proposed Project.

5.8.2 Regulatory Setting

Federal, state, and local regulations were reviewed for applicability to the Proposed Project.

5.8.2.1 Federal

Federal Mandatory Reporting of Greenhouse Gases (Section 40 Code of Federal Regulations [C.F.R.] Part 98)

The United States (U.S.) Environmental Protection Agency (USEPA) promulgated the Federal Mandatory Reporting of Greenhouse Gases rule in 2009 to require mandatory reporting of GHGs from large GHG emissions sources in 31 source categories in the U.S. In general, the threshold for reporting is 25,000 metric tons or more of CO_2e. Reporting is at the facility level, except that certain suppliers of fossil fuels and industrial GHGs, along with vehicle and engine manufacturers, report at the corporate level. Facilities and suppliers began collecting data on January 1, 2010. Manufacturers of vehicles and engines outside of the light-duty sector began reporting CO_2 for model year 2011 and other GHGs in subsequent model years as part of existing USEPA certification programs.

5.8.2.2 State of California

The California Air Resources Board (CARB) is responsible for the coordination and oversight of state and local air pollution control programs in California. There are numerous regulations aimed at reducing the state's GHG emissions. These initiatives are summarized below.

Executive Order B-30-15

Executive Order B-30-15 establishes an interim GHG reduction target of 40 percent below 1990 levels by 2030 and directs state agencies to take additional actions to prepare for the impacts of

climate change. These actions are captured in the state's adaptation strategy, Safeguarding California (CARB 2018), which is to be updated every 3 years.

Executive Order B-55-18

On September 10, 2018, former Governor Brown issued Executive Order B-55-18, which established a new statewide goal of achieving carbon neutrality by 2045 and maintaining net negative emissions thereafter. This goal is in addition to the existing statewide GHG reduction targets established by Senate Bill (SB) 375, SB 32, SB 1383, and SB 100.

Global Warming Solutions Act of 2006 (AB 32 and SB 32)

The "California Global Warming Solutions Act of 2006" (AB 32) outlines California's major legislative initiative for reducing GHG emissions. AB 32 codifies the statewide goal of reducing GHG emissions to 1990 levels by 2020 and requires CARB to prepare a Scoping Plan that outlines the main state strategies for reducing GHG emissions to meet the 2020 deadline, and to update the Scoping Plan every five years. CARB approved the initial Scoping Plan on December 11, 2008, which included GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste, among others (CARB 2008). Many of the GHG reduction measures included in the most recent versions of the Scoping Plan (e.g., Low Carbon Fuel Standard, Advanced Clean Car standards, and Cap-and-Trade) have been adopted since the Scoping Plan's initial approval. In addition, AB 32 requires CARB to adopt regulations to require reporting and verification of statewide GHG emissions. Based on this guidance, CARB approved a 1990 statewide GHG level and 2020 target of 431 metric tons (MT) of CO_2e, which was achieved in 2016.

The CARB approved the 2013 scoping Plan update in May 2014. The update defined the CARB's climate change priorities for the next five years, set the groundwork to reach post-2020 statewide goals, and highlighted California's progress toward meeting the "near-term" 2020 GHG emission reduction goals defined in the original Scoping Plan. It also evaluated how to align the state's longer term GHG reduction strategies with other state policy priorities, including those for water, waste, natural resources, clean energy, transportation, and land use (CARB 2014).

On September 8, 2016, the governor signed SB 32 into law, extending the California Global Warming Solutions Act of 2006 by requiring the state to further reduce GHG emissions to 40 percent below 1990 levels by 2030 (the other provisions of AB 32 remain unchanged). On December 14, 2017, the CARB adopted the 2017 Scoping Plan, which provides a framework for achieving the 2030 target. The 2017 Scoping Plan relies on the continuation and expansion of existing policies and regulations, such as the Cap-and-Trade Program, and implementation of recently adopted policies and legislation, such as SB 1383 and SB 100 (discussed later). The 2017 Scoping Plan also put an increased emphasis on innovation, adoption of existing technology, and strategic investment to support its strategies. As with the 2013 Scoping Plan update, the 2017 Scoping Plan does not provide project-level thresholds for land use development. Instead, it recommends that local governments adopt policies and locally appropriate quantitative thresholds consistent with statewide per capita goals of six MT of CO_2e by 2030 and two MT of CO_2e by 2050 (CARB 2017). As stated in the 2017 Scoping Plan, these goals may be appropriate for plan-level analyses (city, county, sub-regional, or regional level), but not for specific individual projects because they include all emissions sectors in the state (CARB 2017).

Assembly Bill 1279

AB 1279, "The California Climate Crisis Act," was passed on September 16, 2022, and declares the State will achieve net zero GHG emissions as soon as possible, but no later than 2045, and will achieve and maintain net negative GHG emissions thereafter. In addition, the bill directs the State to reduce GHG emissions by 85 percent below 1990 levels no later than 2045.

CARB published the Final 2022 Climate Change Scoping Plan in November 2022 (2022 Update) (CARB 2022). The 2022 Update builds upon the framework established by the 2008 Climate Change Scoping Plan and previous updates while identifying new, technologically feasible, cost-effective, and equity-focused paths to achieve the policies set forth in AB 1279, including California's 2045 GHG reduction target. The 2022 Update includes policies to achieve a significant reduction in fossil fuel combustion, further reductions in short-lived climate pollutants, support for sustainable development, increased action on natural and working lands (NWL) to reduce emissions and sequester carbon, and the capture and storage of carbon.

The 2022 Update assesses the progress California is making toward reducing its GHG emissions by at least 40 percent below 1990 levels by 2030, as called for in SB 32 and laid out in the 2017 Scoping Plan; addresses recent legislation and direction from Governor Newsom; extends and expands upon these earlier plans; implements a target of reducing anthropogenic emissions to 85 percent below 1990 levels by 2045; and takes an additional step of adding carbon neutrality as a science-based guide for California's climate work. As stated in the 2022 Update, "The plan outlines how carbon neutrality can be achieved by taking bold steps to reduce GHGs to meet the anthropogenic emissions target and by expanding actions to capture and store carbon through the state's NWL and using a variety of mechanical approaches" (CARB 2022). Specifically, the 2022 Update:

- Identifies a path to keep California on track to meet its SB 32 GHG reduction target of at least 40 percent below 1990 emissions by 2030
- Identifies a technologically feasible, cost-effective path to achieve carbon neutrality by 2045 and a reduction in anthropogenic emissions by 85 percent below 1990 levels
- Focuses on strategies for reducing California's dependency on petroleum to provide consumers with clean energy options that address climate change, improve air quality, and support economic growth and clean sector jobs
- Integrates equity and protecting California's most impacted communities as driving principles throughout the document
- Incorporates the contribution of NWL to the state's GHG emissions, as well as their role in achieving carbon neutrality
- Relies on the most up-to-date science, including the need to deploy all viable tools to address the existential threat that climate change presents, including carbon capture and sequestration, as well as direct air capture
- Evaluates the substantial health and economic benefits of taking action to reduce GHGs
- Identifies key implementation actions to ensure success

In addition to reducing emissions from transportation, energy, and industrial sectors, the 2022 Update includes emissions and carbon sequestration in NWL and explores how NWL contribute to long-term climate goals. Under the Scoping Plan Scenario, California's 2030 emissions are anticipated to be 48 percent below 1990 levels, representing an acceleration of the current SB 32 target. Cap-and-Trade regulation continues to play a large factor in the reduction of near-term

emissions for meeting the accelerated 2030 reduction target. Every sector of the economy will need to begin to transition in this decade to meet the state's GHG reduction goals and achieve carbon neutrality no later than 2045. The 2022 Update approaches decarbonization from two perspectives, managing a phasedown of existing energy sources and technologies, as well as increasing, developing, and deploying alternative clean energy sources and technology.

California Mandatory Greenhouse Gas Reporting Regulation (17 California Code of Regulations §§ 95100 – 95133)

Pursuant to AB 32, CARB adopted the California Mandatory Greenhouse Gas Reporting Regulation. The facilities that are required to annually report their GHG emissions include electricity-generating facilities, electricity retail providers and power marketers, oil refineries, hydrogen plants, cement plants, cogeneration facilities, and industrial sources that emit over 25,000 metric tons per year of CO_2 from stationary source combustion. In particular, retail providers of electricity are required to report fugitive emissions of SF_6 related to transmission and distribution systems in California that the retail provider or marketer is responsible for maintaining in proper working order (CARB 2025).

SB 100

Adopted on September 10, 2018, SB 100 supports the reduction of GHG emissions from the electricity sector by accelerating the state's Renewables Portfolio Standard Program, which was last updated by SB 350 in 2015. SB 100 requires electricity providers to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020, 60 percent by 2030, and 100 percent by 2045.

Executive Order N-79-20

On September 23, 2020, Governor Newsom issued Executive Order N-79-20, which established the following new statewide goals:

- All new passenger cars and trucks sold in-state to be zero-emission by 2035
- All medium- and heavy-duty vehicles in the state to be zero-emission by 2045 for all operations where feasible and by 2035 for drayage trucks
- All off-road vehicles and equipment to be zero-emission by 2035 where feasible

Executive Order N-79-20 directs CARB, the Governor's Office of Business and Economic Development, the CEC, the California Department of Transportation, and other state agencies to take steps toward drafting regulations and strategies and leveraging agency resources toward achieving these goals.

5.8.2.3 State of Arizona

Renewable Energy Standard & Tariff

In 2006, the Arizona Corporation Commission (ACC) approved the Renewable Energy Standard and Tariff. ACC regulates the rates and services of electricity, natural gas, water, and telecommunications companies. These rules require that regulated electric utilities must generate 15 percent of their energy from renewable resources by 2025. Each year, Arizona's utility companies are required to file annual implementation plans describing how they will comply with the Renewable Energy Standard and Tariff rules. The proposals include incentives for customers who

install solar energy technologies for their own homes and businesses. The Arizona Corporation Commission's Renewable Energy Standards encourage utilities to use solar, wind, biomass, biogas, geothermal and other similar technologies to generate "clean" energy to power Arizona's future.

Executive Order 2006-13

Adopted on September 8, 2006, Governor Napolitano issued Executive Order 2006-13, which established the goal for the State of Arizona to reduce GHG emissions in Arizona to its 2000 emissions level by 2020 and to 50 percent below its 2000 emissions level by 2040.

Clean Arizona Plan

The Governor's Office of Resiliency in conjunction with Northern Arizona University developed The Clean Arizona Plan which includes key measures, projects, and opportunities that would improve air quality, especially in low-income, historically underserved, rural, and tribal Arizona. The Clean Arizona Plan includes a Priority Climate Action Plan (PCAP) and a statewide inventory of GHG emissions across Arizona to support the PCAP. The Arizona PCAP GHG Inventory sets a baseline year of 2000 and a reporting year of 2021. The baseline year of 2000 was set to provide continuity from Arizona's previous climate action plan published in 2006. The predecessor to the PCAP, the Arizona Climate Change Advisory Group's Climate Change Action Plan, provided an overarching recommendation to reduce statewide GHG emissions to 2000 levels by 2020. In 2021, Arizona emitted approximately 107.8 million metric tons of CO_2e across all GHG emissions sectors. Further, between 2000 and 2021, Arizona's GHG emissions remained relatively flat, notching only a slight increase from the 107.7 million metric tons of CO_2e emitted in 2000. The PCAP includes the following priority measures that can be pursued through the Climate Pollution Reduction Grant implementation grants:

- Building Sector:
  - Expand access to weatherization, energy efficiency upgrades, and electrification.
  - Support municipalities in adopting up-to-date building energy codes.
- Electricity Sector:
  - Deploy solar-plus-battery systems.
  - Implement on-site renewable generation and battery storage at public institutions.
- Transportation Sector:
  - Enable zero-emission fleets.
  - Increase publicly accessible electric vehicle charging infrastructure.
- Waste, Water, and Sustainable Materials:
  - Develop innovative solutions to reduce emissions from forest management, municipal solid waste, and wastewater processes.
- Workforce Development:
  - Create a clean-tech workforce to support the transition to a sustainable economy.

By prioritizing these measures, the Clean Arizona Plan identifies opportunities totaling a reduction of 8,835,826 metric tons of GHG emissions reductions and the potential for hundreds of millions of dollars of investment in communities across Arizona (Arizona Governor's Office of Resiliency 2024).

5.8.2.4 Local

The California Public Utilities Commission (CPUC) has sole and exclusive state jurisdiction over the siting and design of the Proposed Project in California. Pursuant to CPUC General Order (G.O.) 131-E, Section XI.B:

> "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the Commission's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters."

Consequently, local agencies do not have jurisdiction over the Proposed Project, but public utilities must consult with local agencies and consider their regulations. The Arizona Corporation Commission's Arizona Power Plant and Transmission Line Siting Committee has state jurisdiction over the Proposed Project in Arizona. This committee may approve or deny a Certificate of Environmental Compatibility application and impose reasonable conditions. However, pursuant to Arizona Revised Statutes Section §40-360.06(D):

> "Any certificate granted by the committee shall be conditioned on compliance by the applicant with all applicable ordinances, master plans and regulations of the state, a county or an incorporated city or town, except that the committee may grant a certificate notwithstanding any such ordinance, master plan or regulation, exclusive of franchises, if the committee finds as a fact that compliance with such ordinance, master plan or regulation is unreasonably restrictive and compliance therewith is not feasible in view of technology available." (ARS §40-360.06(D))

As this Proponent's Environmental Assessment is being prepared for the CPUC, the following discussion of local land use regulations in California and Arizona is provided for informational purposes only.

5.8.3 Impact Questions

5.8.3.1 Greenhouse Gas Impact Questions

The thresholds of significance for assessing impacts come from the California Environmental Quality Act (CEQA) Environmental Checklist. For GHG emissions, the CEQA Checklist asks, would the project:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions?

5.8.3.1.1 Local Emissions Thresholds

The ICAPCD has not adopted a GHG significance threshold or guidance to address project-level GHG emissions with respect to the 2030 target established by SB 32. Thus, in the absence of any GHG emissions significance thresholds, Proposed Project emissions will be compared to the Mojave Desert Air Quality Management District (MDAQMD) threshold of 100,000 metric tons of CO_2e annually. This threshold is appropriate as the MDAQMD GHG thresholds were formulated based on similar geography and climate patterns as found in Imperial County and are also employed for use in CEQA GHG analyses in the Riverside County portion of the Salton Sea Air Basin, the same air basin that encompasses a portion of the Proposed Project.

There are no applicable regulatory guidelines related to GHG emissions from the State of Arizona or Yuma County. Yuma County has a similar geography and climate patterns as found in Imperial County. Therefore, as described above, the 100,000-metric ton of CO_2e threshold is appropriate for the Proposed Project components in Yuma County, Arizona.

5.8.3.2 Additional CEQA Impact Questions

There are no CPUC-identified additional CEQA impact questions.

5.8.4 Impact Analysis

5.8.4.1 Greenhouse Gas Impact Analysis

5.8.4.1.1 Greenhouse Gas Methodology

Construction

During construction, the Proposed Project would generate GHG emissions primarily from the use of internal combustion engines to power on-site equipment as well as off-site transportation of workers and materials. GHG emissions estimates were generated using the methodologies and factors implemented in version 2022.1 of the California Emissions Estimator Model (CalEEMod)[1] and Swiss Federal Office of Civil Aviation *Guidance on the Determination of Helicopter Emissions*. Given the unique characteristics of a transmission line project, CalEEMod is not specifically designed to accommodate the structure of project information; rather, the methodologies, data inputs and emission factors were incorporated into an Excel workbook. The California Air Resources Board's (CARB) EMFAC 2021 emissions factors for 2029 were used for each year of construction. The EMFAC emissions model is developed and used by CARB to assess emissions from on-road vehicles including cars, trucks, and buses in California, and to support CARB's regulatory and air quality planning efforts. Vehicle types were categorized by EMFAC Classification (LHDT2 or HHDT) and aggregate speeds were assumed.

GHG emission activities were analyzed on an overall project basis. Construction would occur over ten subphases, including Staging Areas; Civil Crew (Road Work, Foundations, Ducts) – Flat Land Crew, Regular Crew, Foundation Crew; Civil Crew (Road Maintenance, BMPs, Gates); Structure Installation – Lattice-Guyed V Framing, Lattice-Guyed V Setting, Monopole and Lattice - 4-Legged, and Spotting; Conductor and Wires Installation, and Civil Crew (Clean Up). Activities are anticipated to occur from March 2029 to November 2030 for a total duration of 20 months. See section 5.3, *Air Quality,* and Appendix B for the inputs, assumptions, and emissions results related to GHG emissions.

The annual construction activity and assumptions for each construction phase were used to estimate GHG emissions and capture the total long-term contributions. In their *Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California* (Association of Environmental Professionals ([AEP] 2016), the AEP recommended methods for evaluating construction emissions in CEQA documents. One such method is to amortize construction emissions over the operational lifetime of a project. Following this approach, total construction emissions for all years of construction are identified, divided by the total years for the operation of the project,

[1] Imperial County has a similar desert climate to the project location in Arizona, making it a suitable comparison for using CalEEMod. Although CalEEMod is specifically designed for projects in California, the emissions calculated are comparable to those for an identical project in Arizona.

and combined with operational annual emissions to make a single significance determination. This approach is utilized to allow construction to be compared to the annual thresholds established by the MDAQMD, with a presumed operational life of 30 years.

Operation

The Proposed Project components would be monitored 24/7 remotely by Horizon West Transmission (HWT)'s Lone Star Transmission team, with routine physical inspections by field staff. HWT will handle emergency repairs—like replacing damaged structures or re-stringing lines—prompted by storms, fires, or accidents. To accommodate this, HWT expects to add 1 to 2 full-time employees, integrating the project into its existing maintenance program. The Proposed Project would not generate SF_6 emissions, as it does not involve the installation of new SF_6 switchgears at the existing substations. Therefore, SF_6 emissions are excluded from this analysis. Operational emissions are discussed qualitatively in the Greenhouse Gas Impact Analysis.

5.8.4.1.2 Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Construction

Project Components in California

Less than Significant Impact. Approximately 80 miles of the new transmission line alignment are located within the jurisdiction of the ICAPCD. GHG emissions would be generated from the use of off-road construction equipment, on-road vehicles, and up to three helicopters.[2] The most common GHGs associated with fuel combustion are CO_2, CH_4, and N_2O. As shown in Table 5.8-1, construction of the Proposed Project would generate an estimated total of 17,687 MT CO_2e. Amortized over a 30-year period per AEP guidance (2016), construction of the Proposed Project would generate an estimated 590 MT CO_2e per year and would not exceed the 100,000 $MTCO_2e$ established by the MDAQMD for Proposed Project components in California. This threshold is appropriate as the MDAQMD GHG thresholds were formulated based on similar geography and climate patterns as found in Imperial County. Therefore, this impact would be less than significant.

[2] For modeling purposes, it was assumed that two light-duty helicopter would be used during cable/conductor installation and one medium-duty helicopter would be used for structure installation.

Table 5.8-1 Annual GHG Emissions from Proposed Project Components in California

Year	Greenhouse Gas Emissions ($MTCO_2e$)
2029	8,350
2030	9,337
Total	17,687
Amortized over 30 years	590
Total	**590**
MDAQMD Threshold	**100,000**
Exceeded?	**No**

$MTCO_2e$ = metric tons of carbon dioxide equivalent
Source: Appendix B for GHG emission calculations

Project Components in Arizona

Less than Significant Impact. Approximately 6 miles of the new transmission line alignment are located within the jurisdiction of the ADEQ. GHG emissions would be generated from the use of off-road construction equipment, on-road vehicles, and up to two helicopters.[3] The most common GHGs associated with fuel combustion are CO_2, CH_4, and N_2O. As shown in Table 5.8-2, construction of the Proposed Project would generate an estimated total of 1,331 MT CO_2e. Amortized over a 30-year period per AEP guidance (2016), construction of the Proposed Project would generate an estimated 44 MT CO_2e per year and would not exceed the 100,000 $MTCO_2e$ established by the MDAQMD for the Proposed Project components in Arizona. This threshold is appropriate as the MDAQMD GHG thresholds were formulated based on similar geography and climate patterns as found in Yuma County. Therefore, this impact would be less than significant.

Table 5.8-2 Annual GHG Emissions from the Proposed Project Components in Arizona

Year	Greenhouse Gas Emissions ($MTCO_2e$)
2029	628
2030	703
Total	1,331
Amortized over 30 years	44
Total	**44**
MDAQMD Threshold	**100,000**
Exceeded?	**No**

$MTCO_2e$ = metric tons of carbon dioxide equivalent
Source: Appendix B for GHG emission calculations

Overall Project

Less than Significant Impact. As summarized in Table 5.8-3, construction of the entire Proposed Project would result in 19,018 MT $MTCO_2e$ emissions. When construction emissions are amortized over 30 years, the Proposed Project emissions would be well below the 100,000 $MTCO_2e$ threshold of significance established by the MDAQMD. This threshold is appropriate as the MDAQMD GHG thresholds were formulated based on similar geography and climate patterns as found in the Proposed Project area. Therefore, this impact would be less than significant.

[3] For modeling purposes, it was assumed that one light-duty helicopter would be used during cable/conductor installation and one medium-duty helicopter would be used for structure installation.

Table 5.8-3 Annual GHG Emissions from All Proposed Project Components

Year	Greenhouse Gas Emissions ($MTCO_2e$)
2029	8,978
2030	10,040
Total	19,018
Amortized over 30 years	634
Total	**634**
MDAQMD Threshold	**100,000**
Exceeded?	**No**

$MTCO_2e$ = metric tons of carbon dioxide equivalent
Source: Appendix B for GHG emission calculations

Operation

Project Components in California

Less than Significant Impact. Project facilities managed by Horizon West Transmissions (HWT) would be monitored remotely 24/7 by the System Operations team at Lone Star Transmission, an HWT affiliate, in compliance with applicable regulations. The physical condition of facilities would be periodically inspected by field operations staff. HWT would conduct a wide variety of repair and maintenance activities in response to emergency situations such as damage resulting from high winds, storms, fires, and other natural disasters, and accidents. Such repairs could include replacement of downed structures or lines, or re-stringing conductors. Emergency repairs could be needed at any time. Ongoing O&M activities are necessary to ensure reliable service, as well as the safety of the utility worker and the general public, as mandated by the CPUC. HWT anticipates a small incremental increase in staffing of 1 to 2 employees to support the Proposed Project. The transmission lines would be maintained in a manner consistent with CPUC G.O. 95 and G.O. 128 as applicable, along with federal, state, and local regulations. These G.O.s contain the standards for the operation and maintenance of transmission lines in California. HWT inspects transmission overhead facilities in a manner consistent with CPUC G.O.165, which requires observation a minimum of once per year, but inspection typically occurs more frequently to ensure system reliability. Trips to the Proposed Project to perform O&M activities would be minimal and infrequent, estimated at up to 24 annual trips (1 per month for 2 employees). Helicopters may be used for various O&M activities, including the transportation of transmission line workers, delivery of equipment and materials to structure sites, structure placement, hardware installation, and conductor or optical ground wires stringing operations. Overall, the Proposed Project would involve O&M activities such as increased maintenance and inspection trips. However, GHG emissions associated with such activities would be minimal and would be below thresholds. This impact would be less than significant.

Project Components in Arizona

Less than Significant Impact. As described above under "Project Components in California," following construction of the Proposed Project, O&M activities would occur as needed and could include activities such as repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, replacing structures, tree trimming, brush and weed control, and access road maintenance. O&M would also include routine inspections and emergency repair throughout rights-of-way (ROWs), which would require the use of vehicles and equipment. Overall,

and associated GHG emissions associated with O&M activities would be minimal. Therefore, this impact would be less than significant.

Overall Project

Less than Significant Impact. O&M activities associated with the Proposed Project would include repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, repairing or replacing poles and towers, tree trimming, brush and weed control, and access road maintenance. O&M would also include routine inspections and emergency repair which would require the use of vehicles and equipment. Facilities managed by HWT would be monitored remotely 24/7 by the System Operations team at Lone Star Transmission, an HWT affiliate, in compliance with federal, state, and local regulations. Overall, GHG emissions associated with O&M activities such as maintenance and inspection trips would be minimal. Therefore, this impact would be less than significant.

5.8.4.1.3 Would the project conflict with an applicable plan, policy, or regulation adopted for the purposes of reducing the emissions of greenhouse gases?

Construction

Project Components in California

No Impact. Construction of the California components of the Proposed Project would be consistent with applicable policies, plans, and regulations for reducing GHG emissions. The Proposed Project would incorporate best management practices (BMPs), such as CARB's reducing the idle time of construction vehicles, that are consistent with the requirements and intentions of the applicable federal and state plans, polices, and regulations identified in Section 5.8.2. Construction activities would not be expected to consume a substantial amount of energy that would result in a conflict with policies that serve to reduce GHG emissions through a reduction in energy consumption. When amortized over a 30-year period, GHG construction emissions would be approximately 590 $MTCO_2e$ annually. These emissions would fall well below the MDAQMD numerical threshold of significance, which is an appropriate threshold as the MDAQMD GHG thresholds were formulated based on similar geography and climate patterns as found in Imperial County. Therefore, the Proposed Project would not conflict with any applicable plan, policy, or regulation, and no impact would occur.

Project Components in Arizona

No Impact. Construction of the Arizona components of the Proposed Project would be consistent with applicable policies, plans, and regulations for reducing GHG emissions. Similar to the construction activity in California, the Proposed Project's Arizona components would incorporate BMPs and other standard practices set forth by the ADEQ, such as limiting unnecessary idling of equipment and vehicles. Amortized construction GHG emissions over 30 years would average approximately 44 $MTCO_2e$ and would be well below the 100,000 $MTCO_2e$ threshold of significance established by MDAQMD, which is an appropriate numerical threshold as the MDAQMD GHG thresholds were formulated based on similar geography and climate patterns as found in Yuma County. Therefore, the Proposed Project would not conflict with any applicable plan, policy, or regulation, and no impact would occur.

Overall Project

No Impact. As shown above, the construction of the California and Arizona components of the Proposed Project would be consistent with applicable policies, plans, and regulations for reducing GHG emissions. The Proposed Project would incorporate BMPs and other standard practices set forth by CARB and ADEQ. Construction activities would not be expected to consume a substantial amount of energy that would conflict with policies that serve to reduce GHG emissions through a reduction in energy consumption. GHG emissions from construction activities, when amortized over a 30-year period, are estimated at approximately 634 $MTCO_2e$ per year. These emissions fall well below the numerical 100,000 $MTCO_2e$ threshold of significance established by MDAQMD, which is an appropriate numerical threshold as the MDAQMD GHG thresholds were formulated based on similar geography and climate patterns as found in the Proposed Project area. Therefore, the Proposed Project would not conflict with any applicable plan, policy, or regulation, and no impact would occur.

Operation

Project Components in California

Less than Significant Impact. The principal State plan to monitor and regulate GHGs is AB 32, the California Global Warming Solutions Act of 2006, which was followed by SB 32. The quantitative goal of AB 32 was to reduce GHG emissions to 1990 levels by 2020. According to CARB, California achieved its 2020 GHG emission reduction target in 2016. The goal of SB 32 is to reduce GHG emissions to 40 percent below 1990 levels by 2030. In 2022, the State passed AB 1279, which declares the State would achieve net-zero GHG emissions by 2045 and would reduce GHG emissions by 85 percent below 1990 levels by 2045. The latest iteration of the Scoping Plan is the 2022 Scoping Plan, which focuses on outcomes needed to achieve carbon neutrality by assessing paths for clean technology, energy deployment, natural and working lands, and others, and is designed to meet the State's long-term climate objectives and support a range of economic, environmental, energy security, environmental justice, and public health priorities.

The Proposed Project would reinforce system reliability to Southern California while benefitting customers directly in San Diego County and Imperial County. The Proposed Project along with other transmission projects included in CAISO's 2022-2023 Transmission Planning Process (Imperial Valley-North of SONGS, North of SONGS-Serrano, and Serrano-Delamo-Mesa transmission line projects) would help alleviate deliverability constraints and allow deliverability of electrical energy resources, which may include renewable energy, to San Diego and the Los Angeles Basin (Orange County, Los Angeles County) directly or indirectly through relief of other established pathways.

Additionally, the Proposed Project would not generate SF_6 emissions, as it does not involve the installation of new SF_6 switchgears at the existing substations. As previously described, O&M activities associated with the California components of the Proposed Project would include maintenance and inspection trips. Trips to the Proposed Project to perform O&M activities would be minimal and infrequent, estimated at up to 24 annual trips. The anticipated annual emissions from regular O&M activities within California would be minimal.

Because HWT complies with current regulations and because the Proposed Project's main objective is to reinforce system reliability and allow delivery of electrical energy, which may include renewable energy, to Southern California while benefitting customers directly in San Diego County and Imperial County, the Proposed Project would not conflict with the 2022 Scoping Plan and

applicable plan, policy, or regulation adopted for the purpose of reducing emissions of GHGs. As a result, there would be a less than significant impact.

Project Components in Arizona

Less than Significant Impact. As previously described, O&M activities associated with the Arizona components of the Proposed Project would include an estimated 24 annual maintenance and inspection trips. The anticipated annual emissions from regular O&M activities within Arizona would be minimal. As described above, the Arizona component of the Proposed Project would also reinforce system reliability and alleviate deliverability constraints.

Because HWT complies with current regulations and because the Proposed Project's main objective is to reinforce system reliability to the North Gila area while benefitting customers directly in Yuma County, the Proposed Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing emissions of GHGs. As a result, there would be a less than significant impact.

Overall Project

Less than Significant Impact. The Proposed Project involves O&M activities such as maintenance and inspection trips. However, the Proposed Project would reinforce system reliability to Southern California and Yuma County. This would help alleviate deliverability constraints and allow deliverability of electrical energy resources, which may include renewable energy, to San Diego and the Los Angeles Basin (Orange County, Los Angeles County) directly or indirectly through relief of other established pathways. On the eastern side of the Proposed Project, the Proposed Project would benefit the North Gila (Yuma, Arizona) area. Therefore, the Proposed Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing emissions of GHGs. As a result, there would be a less than significant impact.

5.8.4.2 GHG Emissions

A quantitative assessment of GHG emissions is presented previously in Section 5.8.4.2. The results of the quantitative assessment are presented in Appendix B; all calculations, presented in Microsoft Excel format, are provided to the CPUC under separate cover. A discussion of programs in place to reduced GHG emissions on a system-wide level is provided in Section 5.8.4.1.3.

5.8.5 CPUC Draft Environmental Measures

Attachment 4 of the CPUC's *Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and PEAs* includes CPUC Draft Environmental Measure 5.8, Greenhouse Gas Emissions Reduction During Construction. As described above, the Proposed Project would not result in any potentially significant impacts to GHG emissions, and no environmental measures are necessary to reduce impacts below a level of significance.

5.8.5.1 Applicant Proposed Measures

No potentially significant impacts related to GHG emissions would occur as a result of the Proposed Project. As such, there are no Applicant Proposed Measures.

5.9 Hazards, Hazardous Materials, and Public Safety

This section describes existing hazards and hazardous materials in the vicinity of the Ironwood Transmission Line Project (Proposed Project), as well as the potential impacts that may result from construction and operation of the Proposed Project.

Research for this analysis involved a review of the following resources:

- Arizona Department of Environmental Quality My Community database
- California Department of Toxic Substances Control (DTSC) EnviroStor database
- California State Water Resources Control Board (SWRCB) GeoTracker database
- Environmental Data Resources (EDR) Report
- United States Department of Transportation (USDOT) National Pipeline Mapping System (NPMS) map viewer
- United States Environmental Protection Agency (USEPA) Hazardous Waste publications
- Local agency planning documents
- Historical aerial photographs and topographic maps

5.9.1 Environmental Setting

The Proposed Project is located in Imperial County, California and Yuma County, Arizona on federal, state, municipal, and private land. These lands include unincorporated areas of Imperial and Yuma counties, the city of Calexico, California, and public lands under the jurisdiction or management of the U.S. Bureau of Land Management (BLM), U.S. Bureau of Reclamation, and the California Department of Parks and Recreation. The Proposed Project is located almost entirely within undeveloped open areas. This section describes the existing hazards, hazardous materials, and public safety conditions in the vicinity of the Proposed Project.

5.9.1.1 Hazardous Materials Report

A regulatory database search for known and potential release sites was completed by EDR, Inc. for the area within a 1-mile radius[1] of the Proposed Project alignment (Appendix F). State and federal databases were also reviewed to identify hazardous materials and hazardous waste facilities including federal Superfund sites, state response sites, voluntary cleanup sites, school cleanup sites, permitted operating sites, and corrective action sites within the vicinity of the Proposed Project. Based on review of the databases, no known release sites were reported within the Proposed Project alignment. Three release sites are located within 500 feet of the Proposed Project alignment, and ten known release sites were identified within 1 mile of the Proposed Project alignment, as listed in Table 5.9-1 and illustrated in Figure 5.9-1.

[1] A 1-mile radius search was utilized to provide coverage of the Proposed Project and adjacent areas. This search radius provides conservative database results in the event the Project alignment is modified during preparation of the Filing PEA.

Table 5.9-1 Known Release Sites Identified within 1 Mile of the Proposed Project

Map ID	Facility Name	Listed Databases	Status	Concerns	Soil Impacts	Soil Vapor Impacts	Groundwater Impacts	Approximate Distance to Proposed Project
56	2441 Scoroni Rd	CHMIRS	Closed	Sewage	Unknown	Unknown	Unknown	850 feet
H60, H61, H70, H74	Heber Binary Project	CHMIRS	Closed	Oil	Unknown	Unknown	Unknown	350 feet
S132, S133, DQ869, ED969	Harelson (Abandoned Service Station)	Cortese, Hist Cortese, LUST, UST Finder Release	Closed	Gasoline, lead	Yes	Unknown	Unknown	1,590 feet
Y187	895 Pitzer Rd	CHMIRS	Stopped/ Contained	Oil	Yes	Unknown	No	500 feet
AC243	Ormat Nevada Inc. DBA Second Imperial Geothermal Co.	CHMIRS	Stopped/ Contained	Brine	Unknown	Unknown	Unknown	350 feet
BO443	1078 Yourman Rd	CHMIRS	Not reported	Diesel	Yes	Unknown	Unknown	3,200 feet
CG684	301 Robinson St	HMIRS	Not reported	Resin solution	Unknown	Unknown	Unknown	3,180 feet
DB750	910 Nichols Rd, Phillips Cattle Ranch	CHMIRS	Stopped/ Contained	Liquid natural gas	No	No	No	4,100 feet
DU884, DU 889, DU890, DU892-DU895, DU898, DU900-DU903	2451 Portico Blvd	HMIRS	Not reported	Paint-related material, bisulfate aqueous solution, resin solution, paint, potassium hydroxide, phosphoric acid solution, corrosive liquid	Unknown	Unknown	Unknown	4,650 feet
EH995	Puregro	SEMS	Unknown	Unknown	Unknown	Unknown	Unknown	5,100 feet

Source: EDR 2025a (Appendix F)

Note: Facility names/addresses are as reported by EDR. Database descriptions are included in Appendix F.

CHMIRS – California Hazardous Materials Incident Reporting System

Hist Cortese – Historical Cortese

HMIRS – Hazardous Materials Incident Reporting System

LUST – Leaking Underground Storage Tank

SEMS – Superfund Enterprise Management System

UST – Underground Storage Tank

Figure 5.9-1 Known Release Sites within 1 Mile of the Proposed Project



Imagery provided by Esri and its licensors © 2025.
Additional data provided by EDR 2025.

25-17237 PEA EPS Figures
PEA Fig 5.9-1 Known Release Sites 8.5x11

Existing Building Materials

Lead-Based Paint/Roadway Paint Striping

Lead based paint (LBP) was banned for residential and consumer use in 1978, and lead solder used in plumbing was banned in 1988. Structures built before 1978 are likely to contain elevated concentrations of LBP and the use of LBP is still allowed for industrial purposes. Therefore, LBP may be present on or in buildings and structures in the vicinity of the Proposed Project. The risk of lead toxicity in LBP varies according to the condition of the paint and the year of its application. The types of structures of concern in the vicinity of the Proposed Project include residences painted prior to 1978, bridges, barns, sheds, commercial buildings, warehouses, industrial structures, equipment utility sheds, painted bridge surfaces, residue from yellow thermoplastic or yellow painted traffic stripes and pavement markings, and any other painted surfaces. Additionally, weathering and routine maintenance of paint on buildings may have contaminated nearby soils with lead.

Asbestos-Containing Materials

In December 1977, the U.S. Consumer Product Safety Commission restricted the use of asbestos-containing materials (ACM), including patching compounds and artificial fireplace ash products. In 1989, the USEPA restricted a number of other contaminated products, but this ruling was overturned in 1991. USEPA restrictions currently affect the ongoing use of asbestos in flooring felt, wallboard, certain types of papers, and any new uses of asbestos. Specifically, products can be made with asbestos if asbestos accounts for less than one percent of the product. Some asbestos-containing products that continue to be sold in the U.S. include brake pads, automobile clutches, roofing materials, vinyl tile, cement piping, corrugated sheeting, home insulation, and some potting soils. Therefore, although the use of asbestos in the manufacture of most building materials has not been fully prohibited by federal law, the use of asbestos in building materials has for the most part been discontinued since the late 1970s.

As such, many of the structures in the vicinity of the Proposed Project, including concrete bridge abutments, may have been built with materials that contain asbestos. It is likely that many structures in the vicinity of the Proposed Project were constructed prior to 1989. Therefore, ACM are likely present in many of the structures, including:

- Interior building materials could contain ACM in floor tiles and mastic; including wallboard and joint compound; wall, ceiling, and pipe insulation; and acoustic ceiling panels.
- Exterior building materials could contain ACM in stucco, siding, roofing materials, window sealants, patching material, concrete bridge construction materials, and pipe.

Several roadway and railroad over/undercrossing structures built prior to the 1980s also exist in the vicinity of the Proposed Project, which may contain ACM.

Polychlorinated Biphenyls

Polychlorinated biphenyls (PCBs) may be encountered in fluorescent lighting ballasts, transformers, elevators, electrical substations, vehicle service lifts, and other areas where hydraulic equipment was used historically. The types of equipment of concern in the vicinity of the Proposed Project include pad-mounted transformers, pole-mounted transformers, stationary hydraulic equipment, mobile hydraulic equipment, and fluorescent lighting.

Chemically Treated Wooden Utility Poles

Wooden utility poles have been treated with chemicals, including creosote, for preservation and durability since at least the early 1900s. Some parts of the creosote mixture can enter groundwater or change into other substances while other parts persist in treated wood products for decades. Creosote can volatilize into the air, especially during hot weather, and plant foliage in the vicinity of the treated wood may be damaged by the vapors. It can also leach into the soil near the treated wood causing soil, surface or groundwater contamination (State of Iowa Department of Natural Resources 2004). Preservation products can be applied to the wood via petroleum products (North American Wood Pole Council 2025). Wooden utility poles are present throughout the vicinity of the Proposed Project.

Highways – Aerially Deposited Lead

Aerially deposited lead (ADL) was historically generated by cars burning leaded gasoline and is often found in the soil adjacent to highways and roads. Elevated concentrations of ADL may be present along existing roadways, including those throughout the vicinity of the Proposed Project. Soil in the vicinity of the Proposed Project may contain concentrations of lead exceeding state regulatory thresholds, and any waste generated from the disturbance of soil in these locations could be regulated as hazardous waste, based on lead concentrations. Soil along the Proposed Project alignment may be contaminated with ADL due to the proximity of several highways within 0.5 mile of the Proposed Project:

- California State Route (SR) 111/North Imperial Avenue traverses the Proposed Project in a north-south direction.
- SR 7 traverses the Proposed Project in a north-south direction.
- SR 98 is located along or within 0.5 mile of the Proposed Project from Holdridge Road to the intersection of SR 98 and Interstate 8 (I-8).
- SR 98 traverses the Proposed Project in a northeast-southwest direction approximately 1 mile east of Holdridge Road, at the intersection of SR 98 and I-8.
- I-8 traverses the Proposed Project in an east-west direction at the intersection of SR 98 and I-8, and in an east-west direction approximately 1.1 miles east of the intersection of I-8 and Access Road.
- I-8 is located within 0.5 mile of the Proposed Project from approximately 1.2 miles west of the intersection of SR 98 and I-8 to approximately 0.7 mile east of the intersection of SR 98 and I-8.
- I-8 is located within 0.5 mile of the Proposed Project from approximately 1.9 miles west of the intersection of I-8 and Grays Wells Road to approximately 0.2 mile west of the intersection of I-8 and Imperial County Route S-34/Blythe Ogilby Road.
- Imperial County Route S-34/Blythe Ogilby Road traverses the Proposed Project in a north-south direction approximately 1.7 miles north of the intersection of I-8 and Imperial County Route S-34/Blythe Ogilby Road.

Common Railroad Corridor Contaminants

Contaminants that are common in railway corridors include petroleum hydrocarbons, pesticides/herbicides, polycyclic aromatic hydrocarbons, and heavy metals, including arsenic and lead. Unused/abandoned railroad ties/timbers may also remain onsite and may require special handling and disposal if encountered during construction and/or operations and maintenance (O&M) activities.

Several railways and railroad spurs are located within 1 mile of the Proposed Project as shown in Figure 5.9-2:

- One set of railroad tracks that traverses the Proposed Project alignment in a northwest-southeast direction approximately 0.08 mile south of the intersection of East Jasper Road and Pitzer Road.
- Two sets of railroad tracks that traverse the Proposed Project alignment in a northwest-southeast direction approximately 2.8 miles northeast of the intersection of I-8 and Imperial County Route S-34/Blythe Ogilby Road.

Common Agricultural Contaminants

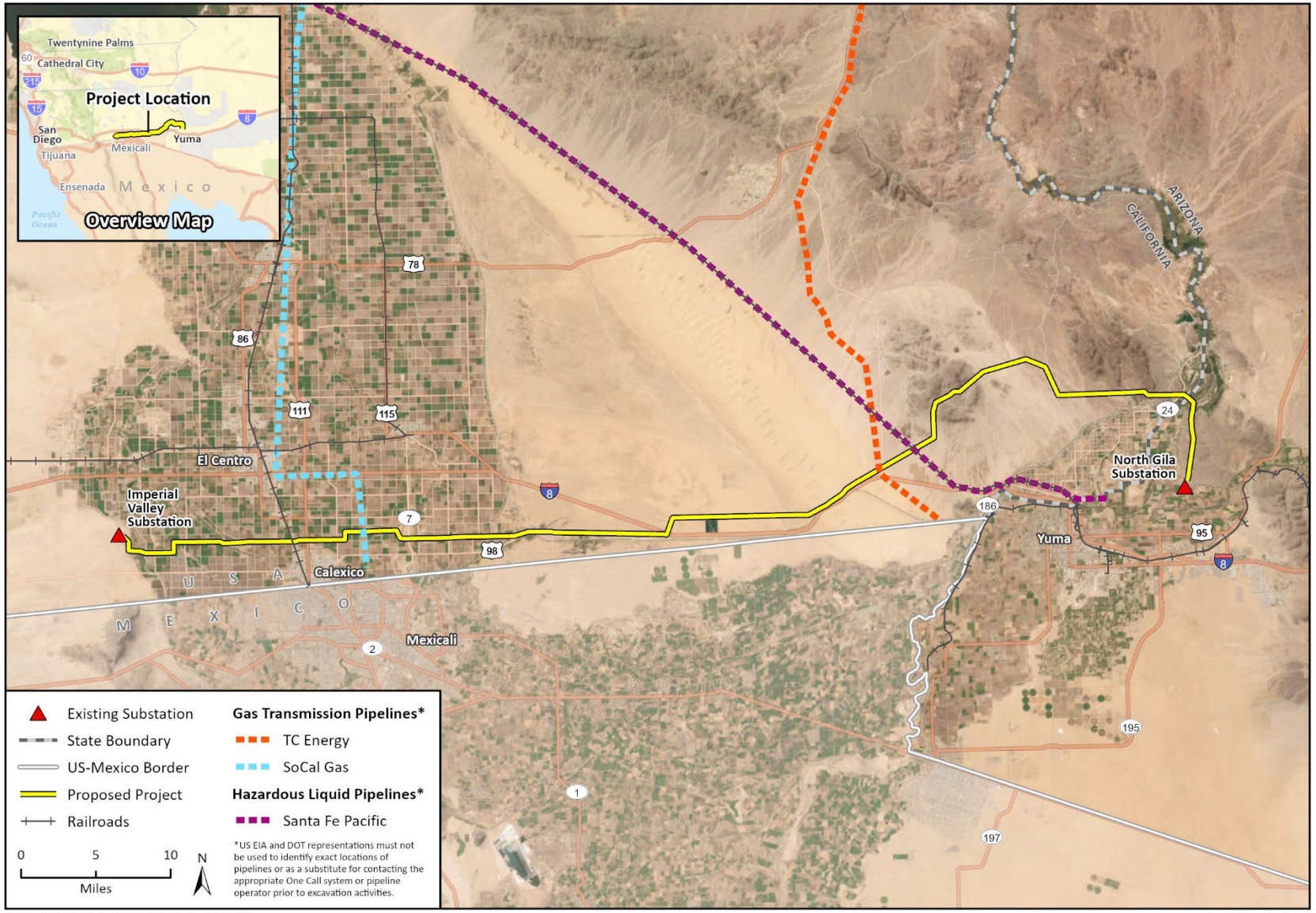
Agricultural land use is typically associated with the use of pesticides to control weeds or for pest or insect management. Contaminants that are common in agricultural properties include pesticides and metals. Soil along the Proposed Project alignment may be contaminated with pesticides and metals due to current and/or former agricultural land use within the Proposed Project alignment (EDR 2025b, 2025c). Areas crossed by the Proposed Project that are in active agricultural production are shown on Figures 5.2-3a, 5.2-3b, and 5.2-3c in Section 5.2, Agricultural and Forestry Resources.

Landfills

Municipal landfills have the potential to release methane gas that may present an explosion risk. Landfills located in the vicinity of the Proposed Project are shown in Figure 5.9-3. Two landfills identified in the EDR database report (Appendix F) are associated with a street address located within 2,000 feet[2] of the Proposed Project alignment, the Caltrans Midway Transfer Operation (8/98 Junction at Post Mile Marker 56.8, Midway Well, California) and the Heber Geothermal Facility (895 Pitzer Road, Heber, California). The location of both landfills is shown on Figure 5.9-3.

[2] This landfill search distance was utilized as there is a potential for landfill gases to accumulate in soil vapor within approximately 2,000 feet of a landfill (USEPA 2005).

Figure 5.9-2 Approximate Location of Hazardous Material Pipelines and Railroads in the Proposed Project Area



Imagery provided by Esri and its licensors © 2025.
Additional data provided by U.S. Energy Information Administration 2020, 2024; U.S. Department of Transportation, 2025.

25-17237 PEA EPS Figures
PEA Fig 5.9-4 Hazardous Material Pipelines and Railroads 8.5x11

Figure 5.9-3 Landfills within 2,000 feet of the Proposed Project



Imagery provided by Esri and its licensors © 2025.
Additional data provided by EDR 2025.

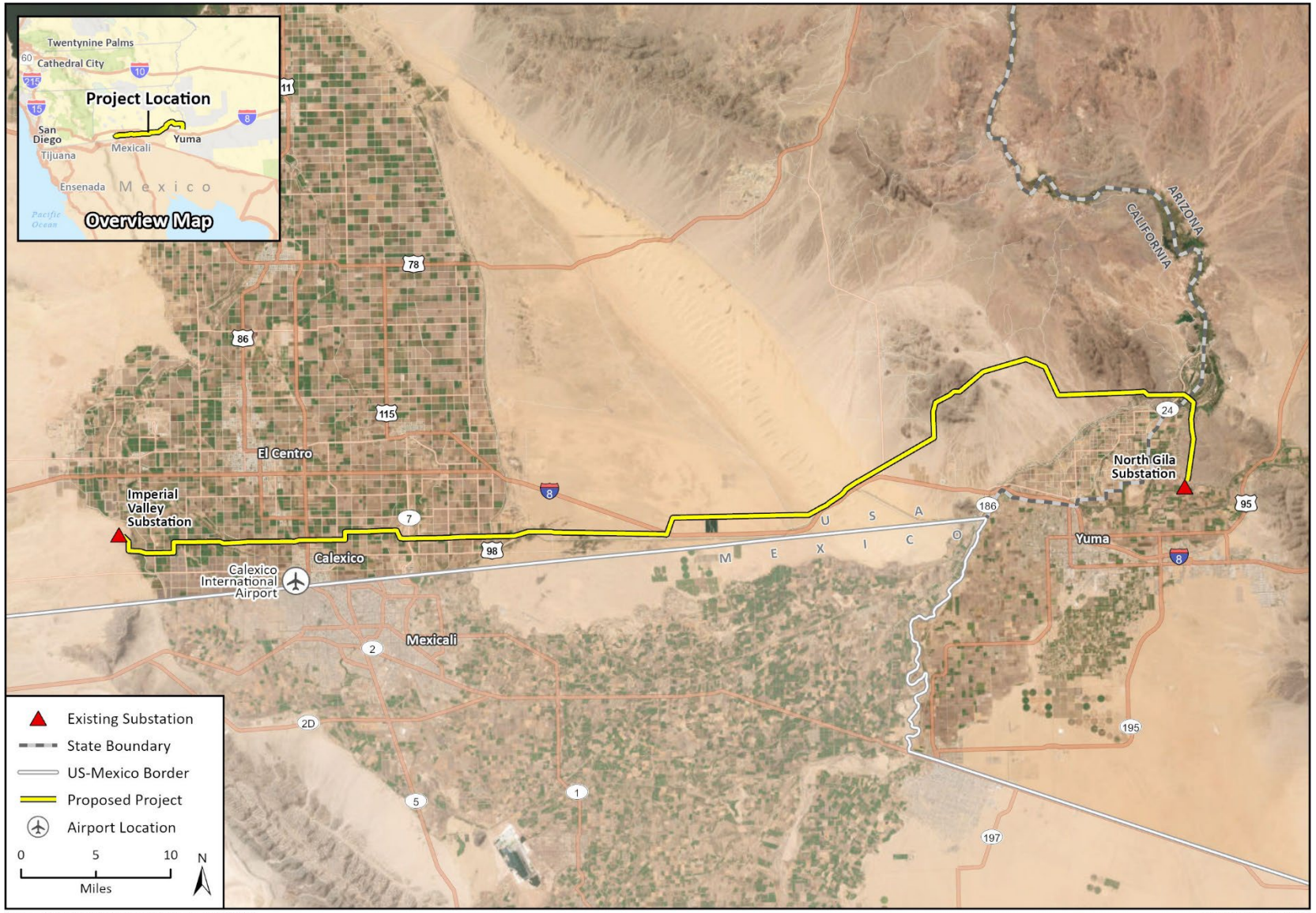
25-17237 PEA EPS Figures
PEA Fig 5.9-2 Landfills 8.5x11

The Caltrans Midway Transfer Operation is located approximately 360 feet south of the Proposed Project alignment. This facility is a limited capacity transfer station for solid waste. The Heber Geothermal Facility is located approximately 460 feet north of the Proposed Project alignment. This facility is a California Title 27 surface impoundment consisting of clay-lined mud sumps and basins used for stormwater discharge/evaporation. Because these landfills are not municipal landfills and no structures are proposed in the vicinity of these facilities, the Caltrans Midway Transfer Operation and the Herber Geothermal Facility would not pose a methane accumulation or explosion risk to the Proposed Project.

5.9.1.2 Airport Land Use Plan

Airports located within the Proposed Project area are shown in Figure 5.9-4. There is one airport located in proximity to the Proposed Project: the Calexico International Airport which is located approximately two miles south of the Proposed Project in Imperial County and primarily used for general aviation and facilitation of border crossing. The Calexico International Airport is a single runway airport on an approximately 257-acre site located at 801 W 2nd Street, 1 mile west of the City of Calexico. The runway is served by a full parallel 40-foot-wide taxiway and provides access to all aircraft service, parking, and hanger areas on the south side of the runway (City of Calexico 2019). Imperial County adopted the Imperial County Airport Land Use Compatibility Plan (ALUCP) in 1996, which guides the orderly development of each public use airport in the County.

Figure 5.9-4 Airports within 2 Miles of the Proposed Project



Imagery provided by Esri and its licensors © 2025.
Additional data provided by Caltrans 2024.

25-17237 PEA EPS Figures
PEA Fig 5.9-3 Airports 8.5x11

5.9.1.3 Fire Hazard

Wildfire hazards are discussed in Section 5.20, Wildfire, and summarized herein. Within California, fire hazard severity zones (FHSZs) are designated by the California Department of Forestry and Fire Protection (CAL FIRE). CAL FIRE uses a three-tiered ranking system to assess the threat to people based on fuel hazard, wildland fire potential, and housing density. FHSZs are administered by the federal, state, or local government that is financially responsible for preventing and suppressing wildfires in a given area and are categorized into the following three groups: Federal Responsibility Areas (FRA); State Responsibility Areas (SRA); and Local Responsibility Areas (LRA).

The lengths of the Proposed Project alignment that are within the FHSZs, and the designations of FRA, SRA, and LRA, are outlined in Table 5.20-1 in Section 5.20, Wildfire. The CPUC's High Fire-Threat District (HFTD) map shows areas where there is an elevated (Tier 2) or extreme (Tier 3) risk from wildfires associated with overhead utility power lines or overhead utility power line facilities also supporting communication facilities. The HFTD map also indicates areas (Zone 1) in direct proximity to communities, roads, and utility lines where there is a direct threat to public safety. The Proposed Project is not within Tier 2, Tier 3, or Zone 1 of the HFTD (CPUC 2024). As shown in Table 5.20-1 of Section 5.20, Wildfire, 29.8 miles of the California Project alignment are located in CAL FIRE LRA, and 50.8 miles are located in CAL FIRE FRA.

In Arizona, the Department of Forestry and Fire Management calculates Wildfire Threat based on the probability of an acre igniting (fire occurrence), the effectiveness of fire suppression resources, and the expected final fire size based on the rate of spread in four weather percentile categories. The Arizona Wildfire Risk Assessment Portal categorizes Wildfire Threat into nine levels, ranging from *Very Very Low* Threat to *Extreme* Threat. High Wildfire Threats (*High*, *Very High*, and *Extreme* Threat) are approximately 12 times greater than *Moderate* Wildfire Threats and 53 times greater than *Low* Wildfire Threats. Mileage of the Proposed Project through high fire risk areas is provided in Table 5.20-1 in Section 5.20, Wildfire. As shown in Table 5.20-1, 0.1 mile of the Arizona Project alignment has *High* wildfire threat; 1.2 miles have *Very High* wildfire threat; and 1.1 miles have *Extreme* wildfire threat.

5.9.1.4 Metallic Objects

Hazardous Material Pipelines

The USDOT Pipeline and Hazardous Materials Safety Administration online NPMS database was reviewed for buried hazardous material pipelines in the vicinity of the Proposed Project. Figure 5.9-2 shows the location of the following (USDOT 2025) hazardous material pipelines in the Proposed Project area, which traverse and are therefore within 25 feet of the Proposed Project:

- One active natural gas pipeline (Southern California Gas Company pipeline ID 559) traverses the Proposed Project in a north-south direction along Barbara Worth Road.
- One active natural gas pipeline (TC Energy pipeline ID 5307000-1) traverses the Proposed Project in a north-south direction along Imperial County Route S-34/Blythe Ogilby Road.
- One active hazardous liquid pipeline (Santa Fe Pacific pipeline ID 485111CLYU) traverses the Proposed Project in a northwest-southeast direction along the railroad tracks approximately 2.8 miles northeast of the intersection of I-8 and Imperial County Route S-34/Blythe Ogilby Road.

5.9.2 Regulatory Setting

Federal, state, and local regulations were reviewed for applicability to the Proposed Project and are described below.

5.9.2.1 Federal

Comprehensive Environmental Response, Compensation, and Liability Act (Superfund) of 1980 (42 U.S.C. § 9601 et seq.)

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) provides a federal Superfund to clean up uncontrolled or abandoned hazardous waste sites, as well as accidents, spills, and other emergency releases of pollutants and contaminants into the environment. Through CERCLA, the USEPA has the power to seek out those parties responsible for a release and ensure their cooperation in the cleanup.

The Superfund Amendments and Reauthorization Act of 1986 Title III (40 CFR § 68.110 et seq.)

The Superfund Amendments and Reauthorization Act (SARA) amended CERCLA, established a nationwide emergency planning and response program, and imposed reporting requirements for businesses that store, handle, or produce significant quantities of extremely hazardous materials. The SARA requires states to implement a comprehensive system to inform local agencies and the public when a significant quantity of such materials is stored or handled at a facility. Additionally, the SARA identifies requirements for planning, reporting, and notification concerning hazardous materials.

Clean Air Act (42 U.S.C. § 7401 et seq.)

The Clean Air Act (CAA) provides measures aimed at preventing the accidental release of hazardous materials into the atmosphere. Regulations implementing the CAA and governing hazardous materials emissions are provided in Title 40, Part 68 of the Code of Federal Regulations (CFR). Implementation of these regulations is intended to prevent the accidental release of hazardous materials into the environment.

Clean Water Act (33 U.S.C. § 1251 et seq.)

The Clean Water Act (CWA) is the principal federal statute protecting navigable waters and adjoining shorelines from pollution. The law was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the U.S. Since its enactment, the CWA has formed the foundation for regulations detailing specific requirements for pollution prevention and response measures. The USEPA and the U.S. Army Corps of Engineers implement provisions of the CWA through a variety of regulations, including the National Contingency Plan and the Oil Pollution and Prevention Regulations. Implementation of the CWA is the responsibility of each state.

Resource Conservation and Recovery Act (42 U.S.C. § 6901 et seq.)

The Resource Conservation and Recovery Act (RCRA) regulates hazardous waste from the time that waste is generated, through to its management, storage, transport, and treatment, until its final

disposal. The USEPA has authorized the DTSC in California and the Arizona Department of Environmental Quality in Arizona to administer their respective RCRA programs.

U.S. Department of Transportation

The USDOT has the regulatory responsibility for the safe transportation of hazardous materials under the Hazardous Materials Transportation Act, as amended and codified in 49 U.S.C. 5101 et seq.

Code of Federal Regulation Title 14

All airports and navigable airspace not administered by the Department of Defense are under the jurisdiction of the Federal Air Administration (FAA). The standards and required notification for objects affecting navigable airspace are established by 14 CFR Part 77. In general, construction projects exceeding 200 feet in height—or those extending at a ratio greater than 100 to 1 (horizontal to vertical) from a public or military airport runway more than 3,200 feet long, out to a horizontal distance of 20,000 feet—are considered potential obstructions and require FAA notification. In addition, construction projects extending at a ratio greater than 50 to 1 (horizontal to vertical) from a public or military airport runway measuring 3,200 feet or less, out to a horizontal distance of 10,000 feet, are considered potential obstructions and require FAA notification. Development of an operating plan in coordination with and approved by the local FAA Flight Standards District Office that has jurisdiction over helicopter use would be required under 14 CFR Part 133.

Occupational Safety and Health Administration (29 CFR 1900-1910)

Established under the Occupational Safety and Health Administration (OSHA) Act of 1970, OSHA regulates workplace safety and health. The agency's mission is to prevent work-related injuries, illnesses, and deaths.

Hazard Management and Resource Restoration Program

The Hazard Management and Resource Restoration (HMRR) program is administered by the BLM. Its mission is to protect lives, resources, and property and to improve the health of landscapes and watersheds by minimizing the environmental contamination on public lands, reducing and eliminating risk associated with physical and environmental hazards, restoring resources impacted by oil discharges and hazardous release, and administering CERCLA assessments.

Instruction Memorandum Number No. 2022-036

BLM Instruction Memorandum Number 2022-036 provides guidance on the incorporation of appropriate fire prevention and control stipulations, as required by 43 CFR 2805.12(a)(4), for electric transmission and distribution right-of-way (ROW) authorizations issued under Title V of the Federal Land Policy and Management Act (FLPMA). The fire prevention and control stipulations shall be incorporated as standard stipulations into new authorizations, renewals, amendments, and assignments. Instruction Memorandum Number 2022-036 applies to electric transmission and distribution ROWs issued under Title V of FLPMA and clarifies terms and conditions required to prevent and suppress wildfires within, or in the immediate vicinity of, the ROW boundary. The Memorandum states that incorporating fire prevention and control stipulations should be done in coordination with resource specialists (wildlife, fuels, cultural, National Environmental Protection

Agency specialists, etc.) who participate on interdisciplinary teams formed to work on electric transmission and distribution ROWs.

5.9.2.2 State of California

California Emergency Management Agency

The California Emergency Management Agency (Cal/EMA) was formed January 1, 2009, as the result of a merger between the California Governor's Office of Emergency Services (Cal OES) and the Office of Homeland Security (OHS). The Hazardous Materials Unit of the Cal/EMA is responsible for hazardous materials emergency planning and response, spill release and notification, and hazardous materials enforcement of the Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program).

California Environmental Protection Agency

The California Environmental Protection Agency (Cal/EPA) is the California state agency responsible for developing, implementing, and enforcing the state's environmental protection laws that ensure clean air, clean water, clean soil, safe pesticides, and waste recycling and reduction. The Cal/EPA oversees the DTSC and SWRCB. The Cal/EPA has implementation authority for the Unified Program per California Code of Regulations (CCR) Title 27, Division 1, Subdivision 4, Chapter 1.

California Department of Toxic Substances Control

Under Government Code section 65962.5(a), the DTSC is required to submit to the Secretary for Environmental Protection a list (the "Cortese List") of the following: all hazardous waste facilities subject to corrective action pursuant to section 25187.5 of the Health and Safety Code (HSC) and all land designated as hazardous waste property or border zone property pursuant to Article 11 (commencing with section 25220) of Chapter 6.5 of Division 20 of the HSC. DTSC is required to update this list as appropriate, but at least annually.

Certified Unified Program Agency

The Certified Unified Program Agency is the agency certified by the California DTSC to conduct the Unified Program. The program consists of hazardous waste generator and on-site treatment programs; aboveground and underground storage tank programs; Hazardous Materials Management, Business Plans, and Inventory Statements; and the Risk Management and Prevention Program.

California Division of Occupational Safety and Health, Department of Industrial Relations

The California Division of Occupational Safety and Health (Cal/OSHA) protects workers and the public from safety hazards, including asbestos and lead-based materials (CCR Title 8). Cal/OSHA assumes primary responsibility for developing and enforcing workplace safety regulations. These regulations concern the use of hazardous materials in the workplace, including requirements for employee safety training; availability of safety equipment; accident and illness prevention programs; hazardous-substance exposure warnings; and preparation of emergency action and fire prevention plans. Cal/OSHA also enforces hazard communication program regulations, including procedures for identifying and labeling hazardous substances, and requires that safety data sheets be available for employee information and training programs. Cal/OSHA standards are generally more stringent

than federal regulations. Construction workers and operational employees within the Proposed Project alignment would be subject to these requirements.

California State Hazard Mitigation Plan

The 2023 California State Hazard Mitigation Plan (SHMP) is the State's primary hazard mitigation guidance document. The 2023 SHMP builds upon the State's commitment to reduce or eliminate potential risks and impacts of natural and human-caused disasters. The 2023 SHMP includes an updated statewide risk assessment, disaster history, and statistics; recent mitigation progress, success stories, and best practices; updated state hazard mitigation goals, objectives, and strategies; and updated climate mitigation progress and adaptation strategies. The United States Federal Emergency Management Agency (FEMA) approved California's 2023 SHMP on August 30, 2023.

California State Water Resources Control Board

The SWRCB has jurisdiction throughout California. Created by the State Legislature in 1967, the SWRCB protects water quality by setting statewide policy and coordinating and supporting regional efforts. The Porter-Cologne Water Quality Control Act of 1970 organized the SWRCB into nine Regional Water Quality Control Boards (RWQCBs) that exercise rulemaking and regulatory activities by basins. Together with the RWQCBs, the SWRCB is authorized to implement the federal CWA in California.

California Public Utilities Commission General Order 95

CPUC General Order (G.O.) 95 contains requirements and specifications for overhead electrical line construction. These requirements are intended to ensure safety of workers engaged in the construction, O&M, and use of electrical facilities. The regulations are also intended to ensure the general reliability of the State's utility infrastructure and services. Rule 35 of G.O. 95 establishes minimum clearances between line conductors and nearby vegetation for fire prevention purposes. These minimum clearances must be maintained prior to construction and throughout O&M of utility facilities.

California Public Utilities Commission General Order 166

The purpose of the standards contained in CPUC G.O. 166 is to ensure that jurisdictional electric utilities are prepared for emergencies and disasters in order to minimize damage and inconvenience to the public which may occur as a result of electric system failures, major outages, or hazards posed by damage to electric distribution facilities. The standards require, among others, that each jurisdictional electric utility prepare an emergency response plan and update the plan annually, conduct annual emergency training and exercises using the utility's emergency response plan, and coordinate emergency plans with state and local public safety agencies.

Public Resources Code Sections 4292-4293

Public Resources Code (PRC) section 4292 requires a 10-foot clearance of any tree branches or ground vegetation from around the base of power poles carrying more than 110 kilovolts. The firebreak clearances required by PRC section 4292 are applicable within an imaginary cylindrical space surrounding each pole or tower on which a switch, fuse, transformer, or lightning arrester is attached and surrounding each dead end or corner pole. Section 4293 presents guidelines for line clearance including a minimum of 10 feet of vegetation clearance from any conductor operating at 110 kilovolt or higher.

Colorado River Basin Regional Water Quality Control Board

As a result of the Porter-Cologne Water Quality Control Act of 1970, the Colorado River Basin RWQCB is the regulatory oversight agency for hazardous material release cases that impact groundwater in Imperial County, which includes the Proposed Project.

California Public Utilities Commission Fire Safety Rulemaking Background

In October 2007, devastating wildfires driven by strong Santa Ana winds burned hundreds of square miles in Southern California. Several of the worst wildfires were reportedly ignited by overhead utility power lines and aerial communication facilities in close proximity to power lines. In response to these wildfires, the CPUC initiated Rulemaking (R.) 08-11-005 to consider and adopt regulations to protect the public from potential fire hazards associated with overhead powerline facilities and nearby aerial communication facilities.

Beginning in 2009, the CPUC issued several decisions in R.08-11-005 that together adopted dozens of new fire-safety regulations. Most of the adopted fire-safety regulations consisted of new or revised rules in G.O. 95. Several of the adopted fire-safety regulations apply only to areas, referred to as "high fire-threat areas," where there is an elevated risk for power line fires igniting and spreading rapidly. These high fire-threat areas are designated by several maps that were adopted on an interim basis. Each of the interim maps covers a different part of the state and uses its own methodology for identifying high fire-threat areas, presenting consistency and potential enforcement issues. To address these issues, the CPUC also commenced the development of a single statewide fire-threat map to designate areas where (1) there is an elevated risk for destructive power line fires, and (2) stricter fire-safety regulations should apply.

In May 2015, the CPUC closed R.08-11-005 and initiated successor rulemaking R.15-05-006 to complete the outstanding tasks in R.08-11-005. The general scope of R.15-05-006 was to address the following matters carried over from the scope of R.08-11-005: (1) develop and adopt a statewide fire-threat map that delineates the boundaries of a new HFTD where the previously adopted regulations will apply, (2) determine the need for additional fire-safety regulations in the HFTD, and (3) revise G.O. 95 to include a definition and maps of the HFTD, as well as any new fire-safety regulations. The scope and schedule for R.15-05-006 was divided into two parallel tracks. One track focused on the development and adoption of a statewide fire-threat map. The second track focused on the identification, evaluation, and adoption of fire-safety regulations in the HFTD.

On December 21, 2017, the CPUC issued Decision (D.) 17-12-024 adopting regulations to enhance fire safety in the HFTD, effectively completing the second track of R.15-05-006 described above. On January 19, 2018, the CPUC adopted, via Safety and Enforcement Division's (SED) disposition of a Tier 1 Advice Letter, the final CPUC Fire-Threat Map. The adopted CPUC Fire-Threat Map, together with the map of Tier 1 High Hazard Zones on the U.S. Forest Service (USFS)-CAL FIRE joint map of tree mortality High Hazard Zones, comprise the HFTD Map where stricter fire-safety regulations apply.

Public Resources Code Sections 4201-4204

PRC sections 4201-4204 require:

- The classification of lands within SRAs in accordance with the severity of fire hazard present for the purpose of identifying measures to be taken to retard the rate of spreading and to reduce the potential intensity of uncontrolled fires that threaten to destroy resources, life, or property.

- The classification of lands within SRAs into fire hazard severity zones. Each zone shall embrace relatively homogeneous lands and shall be based on fuel loading, slope, fire weather, and other relevant factors present, including areas where winds have been identified as a major cause of wildfire spread.
- The designation of fire hazard severity zones and assignation to each zone a rating reflecting the degree of severity of fire hazard that is expected to prevail in the zone.
- The periodic review of zones designated and rated pursuant to this article and, as necessary, the revision of zones or their ratings or repeal the designation of zones.

Red Flag Fire Warning and Weather Watches

Red-flag warnings and fire-weather watches aim to prevent fire events and reduce the potential for substantial damage. When extreme fire weather or behavior is present or predicted in an area, a red-flag warning or fire-weather watch may be issued to advise local fire agencies that these conditions are present. The National Weather Service issues Red Flag Warnings and Fire Weather Watches and the CAL FIRE and Arizona Department of Forestry and Fire Management provide safety recommendations for preventing fires, including clearing and removing vegetation and ensuring the proper use of equipment.

Senate Bill 901

Senate Bill 901, enacted in 2018, adopted new provisions of Public Utilities Code section 8386 requiring all electric utilities to prepare, submit and implement annual Wildfire Mitigation Plans (WMP) that describe the utilities' plans to construct, operate and maintain their electrical lines and equipment in a manner that will help minimize the risk of catastrophic wildfires associated with those electrical lines and equipment. Section 8386(c) lists 19 elements each WMP is required to include, plus any other information the CPUC may require.

Wildfire Mitigation Plan

A regulated entity, of which HWT is one, must submit a "Base WMP" at least once every three years, and subsequent annual submissions may constitute an update to the last approved Base WMP.[3] The CPUC approved HWT's initial WMP in Decision 19-05-041 on May 30, 2019. On that same day, the CPUC issued its Guidance Decision on 2019 Wildfire Mitigation Plans Submitted Pursuant to Senate Bill 901 (Decision 19-05-036), which interprets the requirements of Senate Bill 901, orders all electrical corporations to collect data and file reports on the WMPs, initiates a process to establish metrics by which the WMPs will be evaluated, and creates a process for submittal of future WMPs.

Effective July 1, 2021, pursuant to Government Code Section 15475, responsibility for oversight of the WMPs transitioned from the Wildfire Safety Division within the CPUC to the Office of Energy Infrastructure Safety (OEIS) in the California Natural Resources Agency. OEIS has all of the same duties, powers, and responsibilities as were previously granted to the Wildfire Safety Division within the CPUC, including oversight and approval of WMPs.

OEIS issued the 2023-2025 Wildfire Mitigation Plan Technical Guidelines on December 6, 2022, which set forth substantive and procedural requirements for electrical corporations to prepare and submit their 2023-2025 Base WMPs. OEIS approved HWT's 2023-2025 Base WMP on January 30,

[3] Public Utilities Code Section 8386(b); OEIS, 2023-2025 Wildfire Mitigation Plan Technical Guidelines (December 6, 2022).

2024. HWT's most recent WMP, its 2025 WMP Update, was approved by OEIS on December 11, 2024.[4] Both WMP's are included in Appendix H.

5.9.2.3 State of Arizona

Arizona Department of Emergency and Military Affairs

The Arizona Department of Emergency and Military Affairs was established to coordinate the state's emergency services and military affairs. The Division of Emergency Management within the Department of Emergency and Military Affairs is responsible for all-hazard emergency preparedness, response, recovery, and mitigation efforts to minimize the impact of disasters on people and property in Arizona. This division works under the authority of the Arizona Revised Statues Title 26 and the Arizona Administrative Code Title 8.

Arizona Department of Environmental Quality

The Arizona Department of Environmental Quality (ADEQ) is the state agency responsible for administering Arizona's environmental laws and delegated federal programs to prevent air, water and land pollution and ensure cleanup. Under the RCRA, along with Arizona Revised Statutes Title 49, Chapter 5 and Arizona Administrative Code Title 18, Chapter 8, the ADEQ has the authority to monitor and direct businesses that may generate, transport, or dispose of hazardous waste in Arizona. The Waste Programs Division implements state and federal hazardous waste laws pursuant to delegation from the USEPA. The division is responsible for effectively implementing standards for the safe generation, management, treatment, storage and disposal of hazardous waste. The ADEQ is also primarily responsible for implementing the CWA in Arizona, conducting water quality assessments, developing water quality standards, and overseeing programs to protect and improve the state's water resources.

Arizona Division of Occupational Safety and Health

The Arizona Division of Occupational Safety and Health (ADOSH), part of the Industrial Commission of Arizona, is responsible for protecting workers and the public from safety hazards in the workplace. ADOSH develops and enforces workplace safety regulations, ensuring compliance with both state and federal standards. Construction workers and operational employees in Arizona are subject to these requirements to maintain a safe working environment.

State of Arizona Hazard Mitigation Plan

The 2023 Arizona State Hazard Mitigation Plan is Arizona's primary guidance document for hazard mitigation. It aims to reduce or eliminate the risks and impacts of natural and human-caused disasters, enhancing community resilience and disaster preparedness. The 2023 SHMP includes an updated risk assessment and mitigation strategy, outlines local mitigation capabilities, and details the processes for monitoring and implementing the plan. The plan supports local, county, and tribal governments in their mitigation efforts, ensuring a coordinated and effective approach to disaster risk. The United States FEMA approved Arizona's 2023 SHMP, aligning it with federal standards and best practices.

[4] OEIS Decision, Horizon West Transmission, LLC 2025 Wildfire Mitigation Plan Update (December 2024), available at: https://energysafety.ca.gov/news/2024/12/11/energy-safety-approves-2025-wildfire-mitigation-plan-updates-for-horizon-west-transmission-and-trans-bay-cable/

Arizona Revised Statutes Section 40-360.41 - 40-360.45

Arizona Revised Statutes Sections 40-360.41 through 40-360.45 outline safety regulations for high voltage power lines to prevent accidents involving overhead electrical lines. These sections detail the safety measures and establish minimum clearance requirements necessary to protect workers and the public during the construction, operation, and maintenance of electrical facilities.

Arizona Corporation Commission

The Arizona Corporation Commission (ACC) oversees the safety and reliability of utility services, including electricity, and implements regulations to mitigate wildfire risks associated with utility infrastructure. In response to increasing wildfire risks, the ACC has taken proactive steps to enhance fire safety and mitigate wildfire hazards.

Starting in 2024, the ACC has mandated that electric utilities develop and implement comprehensive wildfire mitigation plans. These plans include measures such as vegetation management, regular inspections, infrastructure upgrades, and the use of advanced risk modeling tools. One significant initiative is the introduction of Public Safety Power Shutoffs, where utilities may preemptively shut off power in high-risk areas during extreme fire conditions to prevent potential ignition sources.

5.9.2.4 Local

The CPUC has sole and exclusive state jurisdiction over the siting and design of the Proposed Project in California. Pursuant to CPUC G.O. 131-E, Section XI.B:

> "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the Commission's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters."

Consequently, local agencies do not have jurisdiction over the Proposed Project, but public utilities must consult with local agencies and consider their regulations.

The ACC's Arizona Power Plant and Transmission Line Siting Committee has Arizona jurisdiction over the Proposed Project in Arizona. This committee may approve or deny a Certificate of Environmental Compatibility application and impose reasonable conditions. However, pursuant to Arizona Revised Statutes Section 40-360.06(D):

> "Any certificate granted by the committee shall be conditioned on compliance by the applicant with all applicable ordinances, master plans and regulations of the state, a county or an incorporated city or town, except that the committee may grant a certificate notwithstanding any such ordinance, master plan or regulation, exclusive of franchises, if the committee finds as a fact that compliance with such ordinance, master plan or regulation is unreasonably restrictive and compliance therewith is not feasible in view of technology available."

As this Proponent's Environmental Assessment (PEA) is being prepared for the CPUC, the following discussion of local land use regulations in California and Arizona is provided for informational purposes only.

Imperial County General Plan

The Seismic and Public Safety Element of the Imperial County General Plan aims to minimize risks associated with natural and human-made hazards. This element outlines goals and policies to reduce injuries and loss of life, mitigate property damage, minimize economic and social disruption, and reduce exposure to hazards. The County's goals and policies that are relevant to the Proposed Project are as follows (Imperial County 2022):

Goal 2: Avoid loss of life, injury, and property damage from seismic and geologic hazards.

Policy 2.7: Implement development restrictions and seismic study requirements around active faults pursuant to the Alquist-Priolo Act to ensure that potential impacts of seismic hazards are mitigated.

Goal 3: Minimize the risk of life and injury, damage to property, and economic and social dislocations resulting from flooding and inundation hazards.

Policy 3.9: Discourage development within the 100-year floodplain. Where not feasible or existing development is within the 100-year flood zone, require development to be consistent with FEMA floodplain regulations to minimize risks associated with flood hazards, including requiring structures for human occupancy and roadways to be constructed above the projected profile of a 100-year flood event.

Goal 4: Avoid the loss of life, injury, and minimize property damage from urban and wildland fires.

Policy 4.1: Enforce fire-safe development codes to use as standards and regulations for fire protection in accordance with the California Building Code, the California Fire Code, California Public Resources Code, and the County Municipal Code for building and landscaping, and the Imperial County Fire Department regulations for new development in State Responsibility Areas or Very High Fire Hazard Severity Zones that meet or exceed the statewide minimums in the State Responsibility Area Fire Safe Regulations.

Goal 6: Protect the public from exposure to hazardous wastes and materials.

Policy 5.10: Ensure that the use and disposal of hazardous materials in the county complies with local, state, and federal safety standards.

Imperial County Air Pollution Control District

The Imperial County Air Pollution Control District (APCD) is responsible for attaining and maintaining National and State Ambient Air Quality Standards and regulating stationary sources of air pollution in Imperial County. Under 40 CFR Part 61, Subpart M, air districts are delegated to enforce the National Emission Standards for Hazardous Air Pollutants (NESHAP) as it applies to asbestos removal and demolitions. The Imperial County APCD enforces the NESHAP for asbestos under District Rule 1001.

Imperial County Multi-Jurisdiction Hazard Mitigation Plan

Imperial County and several participating jurisdictions prepared a Comprehensive Update to the Multi-Jurisdiction Hazard Mitigation Plan in 2021, originally approved by FEMA in 2009 (Imperial County 2021). The purpose of this plan is to significantly reduce deaths, injuries, and other disaster losses caused by natural and human-caused hazards in Imperial County. The plan demonstrates the commitment of each participating jurisdiction to reducing risks from hazards and serves as a tool to help decision makers direct mitigation activities and resources.

Imperial County Airport Land Use Compatibility Plan

The Imperial County ALUCP (Imperial County 1996) contains goals, policies, and implementation measures that aim to avoid creating aviation hazards and protect the lives and property of nearby residents and other occupants. The Imperial County ALUCP includes airport hazard overlay districts for seven airports, including the Calexico International Airport. The Imperial County ALUCP also establishes safety-related land use restrictions in the environs of an airport.

Yuma County 2030 Comprehensive Plan

The Environmental Element of the Yuma County 2030 Comprehensive Plan assesses and outlines strategies to avoid, minimize, and mitigate anticipated effects on environmental resources. This element identifies policies and strategies to improve water quality and conservation, enhance air quality, mitigate noise and light pollution, manage solid and hazardous waste, and protect natural resources (Yuma County 2023).

The Safety Element of the Yuma County 2030 Comprehensive Plan aims to minimize risks associated with natural and human-made hazards. This element outlines detailed plan, policies, and ordinances regarding hazards to public safety that have been adopted by Yuma County (Yuma County 2024).

Yuma County Multi-Jurisdiction Hazard Mitigation Plan

Yuma County and several participating jurisdictions prepared a Comprehensive Update to the Multi-Jurisdiction Hazard Mitigation Plan in 2019, originally approved by FEMA in 2010 (Yuma County 2019). The purpose of this plan is to identify hazards that impact the various jurisdictions and Tribes located within Yuma County, assess the vulnerability and risk posed by those hazards to community-wide human and structural assets, develop strategies for mitigation of those identified hazards, present future maintenance procedures for the plan, and document the planning process. The plan demonstrates the commitment of each participating jurisdiction to reducing risks from hazards and serves as a tool to help decision makers direct mitigation activities and resources.

City of Calexico General Plan

The Safety Element of the City of Calexico General Plan includes an overview of existing conditions and hazard assessments that cover geologic hazards, flooding, fire hazards, and hazardous materials. The City's safety goals, objectives, and policies that are relevant to the Proposed Project are as follows (City of Calexico 2015):

Goal: Reduce the risk to the Calexico's day and night time populations from exposure to hazardous materials and waste.

Objective:	To ensure the health, safety, and welfare of residents and guests of Calexico through strict regulation and planning for the safe transport, storage and usage of hazardous materials in the Calexico area.
Policies:	Discourage the transport of hazardous materials through residential areas and critical facilities and limit transport through heavily developed areas as much as possible.
	Prohibit incompatible land uses near sites that use, store, or produce hazardous materials.

5.9.2.5 Touch Thresholds

This section identified applicable standards for protection of workers and the public from shock hazards.

California Division of Occupational Safety and Health

Cal/OSHA regulations on electrical safety require California employers to provide workers with a safe and healthful workplace. These regulations are contained in Title 8 of the California Code of Regulations. Most of the electrical health and safety regulations can be found in Chapter 4, Subchapter 5 in the Electrical Safety Orders, Sections 2299 through 2989. Cal/OSHA regulations on electrical safety are grouped by electrical voltage. Regulations for low voltage (0 to 600 V) are given in Sections 2299-2599 and the regulations for high voltage (above 600 V) are given in Sections 2700-2989. Regulations in Chapter 4, Subchapter 4 address Construction Safety Orders, and Section 1518 addresses the safety requirements for the protection of workers and others from electric shock in construction.

Arizona Division of Occupational Safety and Health

ADOSH regulations on electrical safety require Arizona employers to provide workers with a safe and healthful workplace. These regulations are contained in the Arizona Revised Statues, Title 23, Chapter 2, Article 10 and Arizona Administrative Code, Title 20, Chapter 5, Article 6.

5.9.3 Impact Questions

5.9.3.1 Impact Questions

The thresholds of significance for assessing impacts come from the California Environmental Quality Act (CEQA) Environmental Checklist. For hazards and hazardous materials, the CEQA Checklist asks, would the project:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

- Be located on a site that is included on a list of hazardous material sites, compiled pursuant to Government Code Section 65962.5, and as a result would create a significant hazard to the public or the environment?
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, the project would result in a safety hazard for people residing or working in the project area?
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?
- Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

5.9.3.2 Additional CEQA Impact Questions

The CPUC has identified additional CEQA significance criteria. These additional CEQA impact questions ask if a project would:

- Create a significant hazard to air traffic from the installation of new power lines and structures?
- Create a significant hazard to the public or environment through the transport of heavy materials using helicopters?
- Expose people to a significant risk of injury or death involving unexploded ordinance?
- Expose workers or the public to excessive shock hazards?

5.9.4 Impact Analysis

5.9.4.1 Hazards and Hazardous Materials Impact Analysis

5.9.4.1.1 Hazards and Hazardous Materials Methodology

Impacts from hazards and hazardous materials for the Proposed Project were determined using data from the EDR report, Cal OES databases and maps, Cal/EPA Cortese List databases, information from the Arizona Department of Emergency and Military Affairs, ADEQ databases and map, and Proposed Project information provided by Horizon West Transmission, LLC.

5.9.4.1.2 Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Construction

Project Components in California

Less than Significant Impact with Mitigation. No acutely hazardous materials (as defined in 22 CCR 66260.10) would be used or stored on location during construction of the Proposed Project. Construction of the Proposed Project would require the use of gasoline, diesel fuel, oil, solvents, and lubricants associated with vehicles and construction activities. The type, uses, and volumes of hazardous materials that would be used during construction are shown in Table 3-8 in Chapter 3, Proposed Project Description. If improperly used, transported, stored, or disposed of, such materials have the potential to create a significant hazard to the public or environment.

Management of these hazardous materials would include compliance with a Proposed Project-specific Storm Water Pollution Prevention Plan (SWPPP) and, if necessary (pursuant to CCR Title 19), a Spill Prevention Control and Countermeasure (SPCC) Plan, as well as implementation of Best Management Practices (BMPs). Specifically, as discussed in Chapter 3, Proposed Project Description, the Proposed Project would comply with BMP-NS-9, which would require monitoring of fueling of equipment to prevent groundwater contamination; BMP-WM-01, which would prevent, reduce, or eliminate the discharge of pollutants from material delivery and storage to the stormwater system or watercourses by minimizing the storage of hazardous materials on-site, storing materials in watertight containers and/or a completely enclosed designated area, installing secondary containment, conducting regular inspections, and training employees and subcontractors; BMP-WM-02, which would prevent or reduce the discharge of pollutants to the storm drain system or watercourses from material use by using alternative products, minimizing hazardous material use on-site, and training employees and subcontractors; BMP-WM-04, which would prevent or reduce the discharge of pollutants to drainage systems or watercourses from leaks and spills by reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training employees; BMP-WM-06, which would prevent or reduce the discharge of pollutants to stormwater from hazardous waste through proper material use, waste disposal, and training of employees and subcontractors; and BMP-WM-07, which would prevent or reduce the discharge of pollutants to stormwater from contaminated soil and highly acidic or alkaline soils by conducting pre-construction surveys, inspecting excavations regularly, and remediating contaminated soil promptly. All transport of hazardous materials would comply with applicable laws, rules, regulations, and would be conducted using applicable BMPs, including the acquisition of required shipping papers, package marking, labeling, transport vehicle placarding, training, and registrations. Furthermore, in accordance with Applicant Proposed Measure (APM)-HAZ-1, HWT crews and/or HWT's construction contractor would implement proper hazardous materials management activities, which would include preparation and implementation of a Waste and Hazardous Materials Business Plan (WHMBP) for the Proposed Project before field construction activities begin that would outline the proper procedures for the handling, use, storage, and disposal of hazardous materials.

In addition to the transport, use, and disposal of hazardous materials associated with vehicles and construction activities described above, construction of the Proposed Project could create a hazard to the public or environment if excavation or other ground-disturbing activities encounter contaminated soil from the following hazardous material concerns within the Proposed Project alignment:

- LBP/Roadway paint striping: Lead on or in buildings, bridges, and structures
- ACM: Asbestos in exterior and interior building materials, concrete, and roadway and railroad overcrossing structures
- PCBs: PCBs in transformers and other hydraulic equipment
- Wooden utility poles: Creosote
- ADL: Lead in soil in the vicinity of SR-111, SR-7, SR-98, SR-34, and I-8
- Railways and railroad spurs: Petroleum hydrocarbons, pesticides/herbicides, polycyclic aromatic hydrocarbons, and heavy metals, including arsenic and lead
- Agricultural land use: Pesticides and metals
- Crude oil and natural gas pipelines: Petroleum hydrocarbons and natural gas

The Proposed Project would implement BMP-WM-07 related to contaminated soil management, and require conduction of pre-construction surveys, inspection of excavations regularly, and remediation of contaminated soil promptly.

An inadvertent release could occur from the use of hazardous materials during construction within temporary storage or staging sites, while transporting hazardous materials—including impacted soil—to and from work areas, or during refueling and servicing of equipment. The potential for an inadvertent release would be reduced or eliminated through compliance with applicable laws, rules, and regulations related to the transport, use, and disposal of hazardous materials, BMPs described above, and implementation of APM HAZ-1.

All hazardous materials would be transported, used, and disposed of in accordance with applicable rules, regulations, and HWT standard protocols designed to protect the environment, workers, and the public. Therefore, the Proposed Project impacts from the transport, use, and disposal of hazardous materials during construction activities would be less than significant with implementation of APM HAZ-1.

Project Components in Arizona

Less than Significant Impact with Mitigation. Similar to the analysis above, construction activities in Arizona would require the use of gasoline, diesel fuel, oil, solvents, and lubricants associated with vehicles and construction activities. Nonetheless, as discussed above, all hazardous materials would be transported, used, and disposed of in accordance with applicable rules, regulations, and HWT standard protocols and BMPs designed to protect the environment, workers, and the public. With implementation of APM HAZ-1, this impact would be less than significant.

Overall Project

Less than Significant Impact with Mitigation. Similar to the analysis above, the Proposed Project would not create a significant hazard to the public or the environment during construction through the routine transport, use, or disposal of hazardous materials with implementation of APM HAZ-1.

Operation

Project Components in California

Less than Significant Impact. Operation and maintenance (O&M) activities associated with the Proposed Project would occur as needed and could include activities such as repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, replacing structures, tree trimming, brush and weed control, and access road maintenance. O&M would also include routine inspections and emergency repair throughout the right-of-way (ROW), which would require the use of vehicles and equipment. HWT inspects transmission overhead facilities in a manner consistent with CPUC G.O.165, which requires observation a minimum of once per year, but inspection typically occurs more frequently to ensure system reliability. O&M activities would not result in a substantial increase in the transport, use, or disposal of hazardous materials. Should hazardous materials such as gasoline, oil, solvents, or lubricants be needed for O&M, such materials would be transported, used, and disposed of in accordance with applicable rules, regulations, and HWT standard protocols designed to protect the environment, workers, and the public. Therefore, the Proposed Project impacts in California from the transport, use, and disposal of hazardous materials during operation would be less than significant.

Project Components in Arizona

Less than Significant Impact. O&M activities in Arizona would be similar to those discussed above, and hazardous materials would be transported, used, and disposed of in accordance with applicable rules, regulations, and HWT standard protocols designed to protect the environment, workers, and the public. Therefore, the Proposed Project impacts in Arizona from the transport, use, and disposal of hazardous materials during operation would be less than significant.

Overall Project

Less than Significant Impact. The Proposed Project would not create a significant hazard to the public or the environment during operation through the routine transport, use, or disposal of hazardous materials. This impact would be less than significant.

5.9.4.1.3 Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Construction

Project Components in California

Less than Significant Impact with Mitigation. As described above in Section 5.9.4.1.2, construction of the Proposed Project would require the limited use of hazardous materials, such as fuels, lubricants, and cleaning solvents, and could also involve disturbance of contaminated soil. As described in Chapter 3, Proposed Project Description, fuel storage and refueling of vehicles and helicopters may occur in designated areas during construction activities. A small volume of fuels, lubricants, and solvents with low toxicity are anticipated to be used during the construction of the Proposed Project. All hazardous materials would be stored, handled, and used in accordance with applicable regulations, and materials safety data sheets (MSDS) would be available for on-site construction crew at all times. The most likely incidents involving these hazardous materials are associated with minor spills or drips.

HWT would prepare a site-specific construction SWPPP to ensure quick response to minor spills and to minimize impacts to the environment. The SWPPP would identify the locations for storing hazardous materials during construction, as well as protective measures, notification, and cleanup requirements for any incidental spills or other potential releases of hazardous materials. In the event of a release of hazardous materials, such as minor spills and drips from construction equipment and refueling, HWT would use the SWPPP as guidance for implementing appropriate handling and response. Furthermore, the Proposed Project would comply with BMP-WM-04, which would prevent or reduce the discharge of pollutants to drainage systems or watercourses from leaks and spills by reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training employees; BMP-WM-06, which would prevent or reduce the discharge of pollutants to stormwater from hazardous waste through proper material use, waste disposal, and training of employees and subcontractors; and BMP-WM-07, which would prevent or reduce the discharge of pollutants to stormwater from contaminated soil and highly acidic or alkaline soils by conducting pre-construction surveys, inspecting excavations regularly, and remediating contaminated soil promptly. In addition, HWT would implement APM

HAZ-1 and prepare a WHMBP, which would further reduce or eliminate the risk of construction hazards to the public, workers, and environment to a less than significant level.

Project Components in Arizona

Less than Significant Impact with Mitigation. Similar to the analysis above, incidents involving hazardous materials could occur through minor spills or drips. The Proposed Project would be required to comply with a Hazardous Substance Control and Emergency Response Plan/Hazardous Waste and Spill Prevention Plan, a site-specific construction SWPPP, applicable BMPs, and APM HAZ-1, which would reduce or eliminate the risk of construction hazards to the public, workers, and environment to a less than significant level.

Overall Project

Less than Significant Impact with Mitigation. The Proposed Project would not create a significant hazard to the public or the environment during construction through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment with implementation of APM HAZ-1.

Operation

Project Components in California

Less than Significant Impact. Hazardous materials would be transported, used, and disposed of in accordance with applicable rules, regulations, and HWT standard protocols designed to protect the environment, workers, and the public which would reduce the risk of upset and accident conditions. Therefore, the Proposed Project impacts from upset or accident conditions during operation would be less than significant.

Project Components in Arizona

Less than Significant Impact. Similar to the analysis above, hazardous materials in Arizona would be transported, used, and disposed of in accordance with applicable rules, regulations, and HWT standard protocols designed to protect the environment, workers, and the public which would reduce the risk of upset and accident conditions.

Overall Project

Less than Significant Impact. The Proposed Project would not create a significant hazard to the public or the environment during operation through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

5.9.4.1.4 Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Construction

Project Components in California

No Impact. There are no schools in California located within 0.25 mile of the Proposed Project. Therefore, the Proposed Project would result in no impacts related to hazardous emissions or handling of hazardous materials during construction near a school.

Project Components in Arizona

No Impact. Similar to the analysis above, there are no schools in Arizona located within 0.25 mile of the Proposed Project. Therefore, no impact would occur.

Overall Project

No Impact. There are no schools located within 0.25 mile of the Proposed Project. Therefore, the Proposed Project would result in no impacts related to hazardous emissions or handling of hazardous materials during construction near a school.

Operation

Project Components in California

No Impact. There are no schools in California located within 0.25 mile of the Proposed Project. Therefore, the Proposed Project would result in no impacts related to hazardous emissions or handling of hazardous materials during operation near a school.

Project Components in Arizona

No Impact. There are no schools in Arizona located within 0.25 mile of the Proposed Project. Therefore, the Proposed Project would result in no impacts related to hazardous emissions or handling of hazardous materials during operation near a school.

Overall Project

No Impact. There are no schools located within 0.25 mile of the Proposed Project. Therefore, the Proposed Project would result in no impacts related to hazardous emissions or handling of hazardous materials during operation near a school.

5.9.4.1.5 Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Construction

Project Components in California

No Impact. No known release sites are included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (Cortese List) are located within the Proposed Project components in California. As discussed in Section 5.9.1.1, several known release sites are located within 1 mile of the Proposed Project components in California. The nearest release sites to the Proposed Project (less than 500 feet away) are a California Hazardous Material Incident Reporting System (CHMIRS) site located at the Heber Binary Project (839 Dogwood Road, Heber, California), a CHMIRS site located at 895 Pitzer Road, Heber, California, and a CHMIRS site located at the Ormat Nevada Inc. DBA Second Imperial Geotherm Co. (855 Dogwood Road, Heber, California). The CHMIRS database contains information on reported hazardous material incidents (accidental releases or spills) that are typically reported to the California Office of Emergency Services by the agency responsible for incident command (e.g., police or fire departments), with a focus on initial reporting and response, not necessarily long-term investigation or cleanup (EDR 2025a). These CHMIRS sites are associated with releases that were reportedly stopped, contained, and cleaned up. Based on the closed status and distance of the known release sites to the Proposed Project alignment (at least 350 feet away from the Proposed Project alignment), the Project would not create a significant hazard to the public or environment associated with this site. No impact during construction would occur.

Project Components in Arizona

No Impact. No known release sites are located within the Proposed Project components in Arizona. The Proposed Project would not create a significant hazard to the public or environment associated with a hazardous materials site. No impact during construction would occur.

Overall Project

No Impact. Several known release sites are located within 1 mile of the Proposed Project; however, none are located within the Proposed Project components. For the same reasons as described above, no impact during construction would occur.

Operation

Project Components in California

No Impact. As previously described, the Proposed Project would involve O&M activities, such as maintenance and inspection trips. However, as stated previously, based on the reported locations of the hazardous materials releases described above, these Cortese List sites are not associated with impacted soil or groundwater plumes beneath the Proposed Project alignment and are not a concern for the Proposed Project. Therefore, no impact during operation would occur.

Project Components in Arizona

No Impact. As previously described, the Proposed Project would involve O&M activities, such as maintenance and inspection trips. No Cortese List sites are located within the Proposed Project alignment. Therefore, no impact during operation would occur.

Overall Project

No Impact. The Proposed Project is not located on a hazardous materials site pursuant to Government Code Section 65962.5 (Cortese List). Therefore, there would be no operational impacts.

5.9.4.1.6 For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

Construction

Project Components in California

Less than Significant Impact. One public airport, Calexico International Airport (801 W 2nd Street, Calexico), is located approximately 2 miles south of the Proposed Project alignment. No portion of the Proposed Project is located within the planning boundary of the Calexico International Airport. The Proposed Project is not within the Calexico International Airport Compatibility Zones, as noted in the Imperial County Airport Land Use Compatibility Maps (Imperial County 2025).

HWT would file FAA notifications for Proposed Project structures, as required. With respect to Proposed Project structures, the FAA would conduct its own analysis and may recommend no changes to the design of the proposed structures or may request redesigning the proposed structures near the airports to reduce the height of such structures; or marking the structures, including the addition of aviation lighting; or placement of marker balls on wire spans. HWT would evaluate the FAA recommendations for reasonableness and feasibility, and in accordance with 14 CFR Part 77, HWT may petition the FAA for a discretionary review of its determination to address any issues with the FAA determination. FAA agency determinations for permanent structures typically are valid for 18 months, and therefore such notifications would be filed upon completion of final engineering and before construction commences. Construction activities would not be performed in proximity to the airport and would not create safety concerns to construction personnel. Therefore, the impact would be less than significant.

Project Components in Arizona

No Impact. There are no public airports within 2 miles of the Proposed Project alignment in Arizona. There would be no impact.

Overall Project

Less than Significant Impact. The Proposed Project would not result in a safety hazard for people residing or working in the vicinity of the Proposed Project. Construction impacts would be less than significant.

Operation

Project Components in California

No Impact. As previously described, the Proposed Project involve O&M activities such as maintenance and inspection trips. However, as described above, the Proposed Project is not located within the planning boundary of the Calexico International Airport or any compatibility zones for the airport. For these reasons, O&M activities would not result in a safety hazard related to airports. Therefore, no impact during operation would occur.

Project Components in Arizona

No Impact. There are no public airports within 2 miles of the Proposed Project alignment in Arizona. There would be no impact.

Overall Project

No Impact. The Proposed Project would not result in a safety hazard for people residing or working in the vicinity of the Proposed Project. There would be no operational impacts.

5.9.4.1.7 Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Construction

Project Components in California

Less than Significant Impact with Mitigation. As discussed in Section 5.17, Transportation, construction activities for the Proposed Project may require temporary road and/or lane closures on public roads in residential areas and would involve the movement of oversize vehicles that could affect emergency vehicle access to and along the Proposed Project alignment. Temporary activities across roadways could disrupt the operations of emergency service providers. However, HWT would prepare and implement required traffic control plans in accordance with any required encroachment permits. With encroachment permit implementation, potential hazards from road closures would be minimal and the Proposed Project would not impair or interfere with emergency response or evacuation. In addition, guard structures would be set up next to highway and road crossings and would not impede emergency access. If an emergency vehicle, or helicopter, approached during Proposed Project helicopter activities, the HWT helicopter would be able to quickly maneuver out of the way for safe passage of the emergency responders. Furthermore, the Proposed Project would not be expected to increase demands on the existing emergency response services during temporary construction activities. Moreover, the Proposed Project would implement APM TRA-1 as outlined in Section 5.17, Transportation, which would require HWT to implement appropriate traffic control measures during construction to ensure the safety of Proposed Project personnel and the general public. Therefore, the impacts associated with construction activities would be less than significant with mitigation.

Project Components in Arizona

Less than Significant Impact with Mitigation. Similar to the analysis above, construction activities could affect emergency vehicle access to and along the Proposed Project alignment in Arizona. HWT

would prepare and implement required traffic control plans in accordance with any required encroachment permit, ensuring that the Proposed Project would not impair or interfere with emergency response or evacuation. The Proposed Project would also implement APM TRA-1 as outlined in Section 5.17, Transportation, which would require HWT to implement appropriate traffic control measures during construction to ensure the safety of Proposed Project personnel and the general public. Therefore, the impacts associated with construction activities would be less than significant with mitigation.

Overall Project

Less than Significant Impact with Mitigation. The Proposed Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan during construction. This impact would be less than significant with mitigation.

Operation

Project Components in California

No Impact. The Proposed Project involves O&M activities such as maintenance and inspection trips. O&M vehicle trips associated with the Proposed Project are estimated at up to 24 trips annually (1 trip per month for 2 employees), and it is anticipated that maintenance and inspection trips would generally occur along existing or to-be-constructed HWT access roads. For these reasons, O&M activities would not impair implementation or physically interfere with an adopted emergency response plan or emergency evaluation plan. As a result, no impact would occur.

Project Components in Arizona

No Impact. Similar to the analysis above, the Proposed Project would involve O&M activities in Arizona such as increased maintenance and inspection trips. O&M activities would not impair implementation or physically interfere with an adopted emergency response plan or emergency evaluation plan. As a result, no impact would occur.

Overall Project

No Impact. The Proposed Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan during operation. There would be no impact.

5.9.4.1.8 Would the project expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Construction

Project Components in California

Less than Significant Impact with Mitigation. High heat or sparks from vehicles or equipment have the potential to ignite dry vegetation and cause fires. Construction personnel could be exposed to a wildland fire should one start during Project construction. However, as discussed in Section 5.20, Wildfire, of this PEA, the Proposed Project is not located within a very high wildfire hazard zone in

California. Proposed Project activities would generally be located within existing HWT owned and/or new ROWs where vegetation has been previously cleared or would be cleared or trimmed. Vehicles and equipment would primarily use existing roads. In addition, HWT would implement standard fire prevention protocols during construction activities and comply with applicable laws and regulations. With implementation of APM HAZ-2, contractors would be required to submit a Fire Prevention and Emergency Response Plan to HWT construction management for review and approval. Risk to personnel would most likely come from the inability to avoid or escape a wildland fire. Accordingly, as discussed in Section 5.17, Transportation, the Proposed Project would implement traffic control plans in accordance with required encroachment permits, which would address this potential scenario.

HWT participates with CAL FIRE, the Cal OES, and various city and county fire agencies in the Red Flag Fire Prevention Program and complies with PRC sections 4292 and 4293 related to vegetation management in transmission line corridors. If the National Weather Service issues a Red Flag Warning during construction of the Proposed Project, additional measures would be implemented to address smoking and fire rules, storage and parking areas, the use of gasoline-powered tools, the use of spark arresters on construction equipment, road closures, the use of a fire guard, fire suppression tools, fire suppression equipment, and training requirements. Work areas within the Proposed Project alignment would generally be cleared of vegetation and graded prior to the staging of equipment, minimizing the risk of construction vehicles starting a fire. Based on HWT's participation in the Red Flag Fire Prevention Program and compliance with applicable State and federal laws and regulations as well as APM HAZ-2 during construction, impacts resulting from wildland fire involving the risk of loss, injury, or death would be less than significant.

Project Components in Arizona

Less than Significant Impact with Mitigation. Similar to the analysis above, construction activities have the potential to ignite dry vegetation and cause fires, and expose construction personnel to wildfire risk. As shown in Figure 5.20-1 of Section 5.20, Wildfire, the Proposed Project alignment crosses 0.1 miles of High Fire Threat Index area, 1.2 miles of Very High Fire Threat Index area, and 1.1 miles of Extreme Fire Threat Index area within Arizona. The Project would be required to develop and implement comprehensive wildfire mitigation plans (included as APM WF-1) pursuant to Arizona Corporation Commission Mandates, which would include measures such as vegetation management, regular inspections, infrastructure upgrades, and the use of advanced risk modeling tools. The Project would also comply with the Public Safety Power Shutoffs and preemptively shut off power in high-risk areas during extreme fire conditions to prevent potential ignition sources. In addition, as discussed in Section 5.20, Wildfire, the Proposed Project would also implement the fire prevention practices outlined in CPUC Draft Environmental Measure WF-1. Adherence to CPUC Draft Environmental Measure WF-1 would ensure that, during a Red Flag Warning, additional measures would be implemented during construction to address smoking and fire rules, storage and parking areas, the use of gasoline-powered tools, the use of spark arresters on construction equipment, road closures, the use of a fire guard, fire suppression tools, fire suppression equipment, and training requirements. CPUC Draft Environmental Measure WF-1 would also implement BMPs for wildfire prevention during construction. Further, work areas within the Proposed Project alignment would generally be cleared of vegetation and graded prior to the staging of equipment, minimizing the risk of construction vehicles starting a fire. As discussed above, the Project would be required to prepare a Fire Prevention and Emergency Response Plan pursuant to APM HAZ-2, which would further reduce impacts resulting from wildland fire involving the risk of loss, injury, or death. Therefore, this impact would be less than significant with mitigation.

Overall Project

Less than Significant Impact with Mitigation. The Proposed Project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires during construction. This impact would be less than significant with implementation of APM HAZ-2.

Operation

Project Components in California

Less than Significant Impact with Mitigation. Operation of approximately 81 miles of new transmission line in California may pose a fire hazard if a conducting object comes near a line or when a live-phase conductor falls to the ground. During maintenance activities, there is a risk of fire danger from operating vehicles and other equipment off roadways during maintenance. Operation of the Proposed Project would be conducted in compliance with existing state and federal laws, rules, regulations, and CPUC standards discussed in the Regulatory Setting of Section 5.20, Wildfire, and the Proposed Project is not located in lands classified as SRA or very high FHSZ. To minimize the risk of accidental ignition of a wildland fire from the transmission lines, HWT would follow state vegetation and tree clearing requirements, including CPUC G.O. 95 and PRC section 4293, which require that certain vegetation management activities be performed and maintained for overhead conductors that traverse trees and vegetation to establish necessary and reasonable clearances measured between line conductors and vegetation under normal conditions.

The Proposed Project would involve O&M activities such as increased maintenance and inspection trips. High heat or sparks from vehicles or equipment during O&M have the potential to ignite dry vegetation and cause fires. However, Proposed Project O&M activities would be located within existing HWT owned and/or new ROWs where vegetation would be cleared or trimmed as part of regular O&M. Vehicles and equipment would primarily use existing and proposed roads. HWT would continue to implement its standard fire prevention protocols during O&M activities; comply with applicable laws and regulations; implement additional measures in the event of a Red Flag Warning during operation; implement APM HAZ-2; and participate with CAL FIRE and other city and county fire agencies in the Red Flag Fire Prevention Program (in compliance with PRC sections 4292 and 4293 relating to vegetation management in transmission line corridors). Therefore, this impact would be less than significant with mitigation.

Project Components in Arizona

Less than Significant Impact with Mitigation. Although the eastern boundary of the Proposed Project north of the North Gila Substation is identified as *Extreme* fire threat, similar to the analysis above, operation of the 6 miles of transmission line in Arizona would be conducted in compliance with existing State and federal laws, rules, regulations; Arizona Corporation Commission standards discussed in the Regulatory Setting of Section 5.20, Wildfire; and APM HAZ-2. Therefore, this impact would be less than significant with mitigation.

Overall Project

Less than Significant Impact with Mitigation. The Proposed Project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires during operation. This impact would be less than significant with implementation of APM HAZ-2.

5.9.4.1.9 Would the project create a significant hazard to air traffic from the installation of new power lines and structures?

Construction

Project Components in California

Less than Significant Impact with Mitigation. Prior to construction, HWT would submit the required Notice of Proposed Construction or Alteration to the FAA pursuant to 14 CFR 77.9. If the resultant FAA determination calls for the marking or lighting of construction equipment such as cranes, said determinations would be implemented by HWT. In addition, APM HAZ-3 requires coordination with the FAA regarding construction helicopter flight plans. HWT will coordinate with local airports regarding helicopter operations and flight plans during construction, and thus the Proposed Project would not result in a safety hazard to air traffic with implementation of APM HAZ-3.

Project Components in Arizona

Less than Significant Impact with Mitigation. Similar to the analysis above, with implementation of APM HAZ-3 which would require coordination with the FAA regarding construction helicopter flight plans in Arizona, impacts related to air traffic safety hazards would be less than significant.

Overall Project

Less than Significant Impact with Mitigation. The Proposed Project would not create a significant hazard to air traffic from the installation of new power lines and structures during construction with implementation of APM HAZ-3.

Operation

Project Components in California

No Impact. As previously described, O&M activities associated with the Proposed Project would be similar to those currently performed by HWT for existing substations and their associated lines and infrastructure. The Proposed Project would involve O&M activities such as increased maintenance and inspection trips. However, these activities would not result in a significant hazard to air traffic. As a result, no impact would occur.

Project Components in Arizona

Less than Significant Impact with Mitigation. Similar to the analysis above, O&M activities in Arizona would not result in a significant hazard to air traffic. No impact would occur.

Overall Project

Less than Significant Impact with Mitigation. The Proposed Project would not create a significant hazard to air traffic from the installation of new power lines and structures during operation. There would be no impact.

5.9.4.1.10 Would the project create a significant hazard to the public or environment through the transport of heavy materials using helicopters?

Construction

Project Components in California

Less than Significant Impact. Light- and heavy-duty helicopters would be used during construction of the Proposed Project, including installation of transmission structures. HWT would develop and implement a Helicopter Use and Safety Plan in accordance with 14 CFR Part 77, and in coordination with and to be approved by the FAA Flight Standards District Office. HWT would also obtain, as necessary, approval of a Congested Area Plan from the FAA Flight Standards District Office in San Diego, which has jurisdiction over the Proposed Project area. Through these activities and agency coordination, HWT would eliminate the potential for creating a significant hazard to the public or environment through the transport of heavy materials using helicopters, and this impact would be less than significant.

Project Components in Arizona

Less than Significant Impact. Similar to the analysis above, light- and heavy-duty helicopters would be used during construction of the Proposed Project in Arizona. The Proposed Project would develop and implement a Helicopter Use and Safety Plan and a Congested Area Plan for approval from the FAA Flight Standards District Office in Scottsdale, which would eliminate the potential for creating a significant hazard to the public or environment through the transport of heavy materials using helicopters. This impact would be less than significant.

Overall Project

Less than Significant Impact. The Proposed Project would not create a significant hazard to the public or environment through the transport of heavy materials using helicopters during construction. This impact would be less than significant.

Operation

Project Components in California

Less than Significant Impact. As discussed in Chapter 3, Proposed Project Description, light- and heavy-duty helicopters may be used during O&M activities. HWT would develop and implement a Helicopter Use and Safety Plan in accordance with 14 CFR Part 77, and in coordination with and to be approved by the FAA Flight Standards District Office in San Diego. HWT would also obtain, as necessary, approval of a Congested Area Plan from the FAA. Through these activities and agency coordination, HWT would eliminate the potential for creating a significant hazard to the public or environment through the transport of heavy materials using helicopters. This impact would be less than significant.

Project Components in Arizona

Less than Significant Impact. Similar to the analysis above, light- and heavy-duty helicopters may be used during O&M activities in Arizona. HWT would develop and implement a Helicopter Use and Safety Plan and a Congested Area Plan for approval from the FAA Flight Standards District Office in

Scottsdale, which would eliminate the potential for creating a significant hazard to the public or environment through the transport of heavy materials using helicopters. This impact would be less than significant.

Overall Project

Less than Significant Impact. The Proposed Project would not create a significant hazard to the public or environment through the transport of heavy materials using helicopters during operation. This impact would be less than significant.

5.9.4.1.11 Would the project expose people to a significant risk of injury or death involving unexploded ordinance?

Construction

Project Components in California

No Impact. A review of the EDR database report indicates that there are no Unexploded Ordnance (UXO) sites located within 1 mile of the Proposed Project alignment in California (EDR 2025a). There would be no impact.

Project Components in Arizona

No Impact. A review of the EDR database report indicates that there are no UXO sites located within 1 mile of the Proposed Project alignment in Arizona (EDR 2025a). There would be no impact.

Overall Project

No Impact. The Proposed Project would not expose people to a significant risk of injury or death involving UXO during construction. Therefore, no impact would occur.

Operation

Project Components in California

No impact. As previously described, the Proposed Project would involve O&M activities such as increased maintenance and inspection trips. O&M activities would occur on existing or new ROW in areas that were disturbed during construction and are unlikely to encounter UXO. Therefore, no impact would occur.

Project Components in Arizona

No impact. Similar to the analysis above for the Project in California, O&M activities would occur on existing or new ROW in areas that were disturbed during construction and are unlikely to encounter UXO. Therefore, no impact would occur.

Overall Project

No impact. The Proposed Project would not expose people to a significant risk of injury or death involving UXO. Therefore, no impact would occur.

5.9.4.1.12 Would the project expose workers or the public to excessive shock hazards?

Construction

Project Components in California

Less than Significant Impact. The design of Proposed Project components, and the construction of those components, would be compliant with all applicable federal and State regulations and standards. To reduce shock hazards and avoid electrocution of workers or the public, HWT would comply with the provisions found in Title 8 of the CCR, particularly the electrical health and safety regulations found in Chapter 4, Subchapter 5 in the Electrical Safety Orders, Sections 2700-2989, which are relevant to high voltage work. Therefore, impacts would be less than significant.

Project Components in Arizona

Less than Significant Impact. Similar to the analysis above, the design and construction of Proposed Project components in Arizona would be compliant with all applicable federal and State regulations and standards. HWT would comply with OSHA Standards 1926.960 which outlines requirements for working on or near high voltage and energized parts, and the provisions found in Arizona Revised Statutes Sections 40-360.41 through 45, which addresses high voltage power lines and safety restrictions. Therefore, impacts would be less than significant.

Overall Project

Less than Significant Impact. The Proposed Project would not expose workers or the public to excessive shock hazards during construction. Therefore, impacts would be less than significant.

Operation

Project Components in California

No Impact. The design of Proposed Project components, and the O&M of those components, would be compliant with all applicable federal and state regulations and standards. To reduce shock hazards and avoid electrocution of workers or the public, HWT would comply with the provisions found in Title 8 of the CCR, particularly the electrical health and safety regulations found in Chapter 4, Subchapter 5 in the Electrical Safety Orders, Sections 2700-2989, which are relevant to high voltage work. As a result, no impact would occur.

Project Components in Arizona

No Impact. Similar to the analysis above, the design and O&M of Proposed Project components in Arizona would be compliant with all applicable federal and State regulations and standards. HWT would comply with the provisions found in Title 8 of the CCR, particularly the electrical health and safety regulations found in Chapter 4, Subchapter 5 in the Electrical Safety Orders, Sections 2700-2989, which are relevant to high voltage work. There would be no impact.

Overall Project

No Impact. The Proposed Project would not expose workers or the public to excessive shock hazards during operation. There would be no impact.

5.9.4.2 Hazardous Materials

The hazardous materials (i.e., chemicals, solvents, lubricants, and fuels) that would be used during construction and operation of the Proposed Project, and an estimate of the quantity of each hazardous material that would be stored on site during construction, are presented in Table 3-8 in Chapter 3, Proposed Project Description.

5.9.4.3 Air Traffic Hazards

Discussions of how the Proposed Project would not conflict with height restrictions identified in the airport land use plan and how the Proposed Project would comply with any FAA or military requirements for the above ground facilities are presented above in Section 5.9.4.3.1.

5.9.4.4 Accident or Upset Conditions

A description of how the Proposed Project components would be designed, constructed, operated, and maintained to minimize potential hazard to the public from the failure of Proposed Project components as a result of accidents or natural catastrophes is presented above in Section 5.9.4.2.2.

5.9.4.5 Shock Hazard

There is no infrastructure along the Proposed Project alignment that may be susceptible to new induced current from the installation of components under the Proposed Project. Where infrastructure that may be susceptible to induced current from components of the Proposed Project is present, this infrastructure is generally crossed by the Proposed Project alignment, rather than running in parallel. The strategies that would be employed to reduce shock hazards and avoid electrocution of workers and the public are presented above in Section 5.9.4.3.4.

5.9.5 CPUC Draft Environmental Measures

There are no CPUC Draft Environmental Measures identified for Hazards, Hazardous Materials, and Public Safety.

5.9.5.1 Applicant Proposed Measures

The following APMs would be implemented to reduce hazards or hazardous materials impacts associated with the Proposed Project:

- **HAZ-1:** HWT would prepare and implement a Waste and Hazardous Materials Business Plan (WHMBP) for use during Proposed Project construction. The WHMBP would outline proper hazardous materials handling, use, storage and disposal requirements, as well as hazardous waste management procedures. This plan would be developed to ensure that all hazardous materials and wastes would be handled and disposed of according to applicable rules and regulations and would be submitted to the relevant emergency management agencies prior to construction.
- **HAZ-2**: HWT would prepare a Fire Prevention and Emergency Response Plan to ensure the health and safety or Proposed Project personnel, agency staff, and the public during construction and operations. The plan would describe the purpose of the plan; applicable jurisdictions for each element; roles and responsibilities; training methods; fire prevention equipment and methods; equipment and methods for fighting incipient-stage fires; Emergency Response Plan; communication plan; evacuation routes and nearest hospitals; and reporting.

- **HAZ-3:** Prior to construction, HWT would consult with the FAA regarding helicopter flight plans that will take place during construction. This consultation would include, but not be limited to:
  - Providing locations of helicopter construction staging and work areas;
  - Establishing designated flight corridors between staging and work areas;
  - Means to ensure external load operations avoid occupied structures and roadways;
  - Locations of traffic control where external load operations will cross public roadways;
  - Locations where Congested Area Plans may be required for filing with the FAA; and
  - Identifying any flight restrictions recommended/required by the FAA.

The results of this coordination will be provided to the CPUC.

5.9.5.1.1 Cross-Referenced Applicant Proposed Measures

The following APMs from Section 5.17, Transportation, and Section 5.20, Wildfire, would be implemented to reduce hazards or hazardous materials impacts associated with the Proposed Project:

- **TRA-1:** Prior to construction, HWT would cooperate with the relevant siting authorities (e.g., Bureau of Land Management), regulatory agencies (e.g., Federal Aviation Administration,, Department of Defense, etc.), and local governments to implement appropriate traffic control measures during construction. These traffic control measures would also include requirements set by the encroachment permits granted by the California Department of Transportation and the Arizona Department of Transportation for the Proposed Project. The intent of the traffic control measures would be to ensure the safety of the Proposed Project personnel and the general public. Measures may include notifications to the public on the locations and timing of construction activities, traffic management such as signage and lane closures on public roads, the use of traffic cones and traffic personnel to further direct traffic, limitations on helicopter use in certain areas or at certain times, and daily work hours consistent with local ordinances. Traffic control measures would be implemented through the creation of a transportation plan that would be drafted and reviewed by the relevant siting authorities mentioned above prior to project construction.
- **WF-1: Project-Specific Wildfire Mitigation Plan.** HWT would prepare and implement a Project-specific Wildfire Mitigation Plan (WMP) throughout construction, operation, and maintenance. A draft copy of the WMP would be provided to the CPUC and state and local fire agencies at least 90 days before the start of any construction activities in areas designated as Very High or High Fire Hazard Severity Zones in California or High, Very High, or Extreme fire threat in Arizona. Plan reviewers would also include federal, state, or local agencies with jurisdiction over areas where the project is located. The final Plan shall be approved by the CPUC at least 30 days prior to the initiation of construction activities. The Plan would be fully implemented throughout the construction, operation, and maintenance period and include the following at a minimum:
  - The purpose and applicability of the Plan
  - Responsibilities and duties
  - Overview of service territory to include:
    - Description of electrical infrastructure

  - Environmental setting (e.g. fire history, topography)
  - Community values at risk
- Vegetation management and inspections
- Monitoring and detection systems
- Procedures for fire reporting, response, and prevention that include:
  - Identification of daily site-specific risk conditions
  - The tools and equipment needed on vehicles and to be on hand at sites
  - Reiteration of fire prevention and safety considerations during tailboard meetings
  - Daily monitoring of the red-flag warning system with appropriate restrictions on types and levels of permissible activity
- Coordination procedures with federal and local fire officials
- Crew training, including fire safety practices and restrictions as well as preparedness drills
- Method(s) for verifying that all Plan protocols and requirements are being followed

A project Fire Marshal or similar qualified position would be established to enforce all provisions of the Wildfire Mitigation Plan as well as perform other duties related to fire detection, prevention, and suppression for the project. Project construction, operations, and maintenance activities would be monitored to ensure implementation and effectiveness of the WMP.

This page left intentionally blank.

5.10 Hydrology and Water Quality

This section describes existing hydrology and water quality in the vicinity of the Ironwood Transmission Line Project (Proposed Project), as well as the potential impacts from construction and operation of the Proposed Project.

Research for this analysis involved desktop review of numerous resources referenced herein, which include but are not limited to:

- Publicly available materials published by the United States Geological Survey (USGS), State Water Resources Control Board (SWRCB), and Colorado River Basin Regional Water Quality Control Board (RWQCB)
- Aerial imagery
- Local agency planning documents

5.10.1 Environmental Setting

The Proposed Project is located in Imperial County, California and Yuma County, Arizona on federal, state, municipal, and private land. These lands include unincorporated areas of Imperial and Yuma counties, the city of Calexico, California, and public lands under the jurisdiction or management of the U.S. Bureau of Land Management (BLM), U.S. Bureau of Reclamation (USBR), and the California Department of Parks and Recreation.

The Proposed Project is within the Mojave Desert and Colorado Geomorphic Province (CGS 2002) within the USGS-defined hydrologic unit code (HUC) zone 181002 (USGS 2024). The Proposed Project ranges in elevation from approximately 89 feet below sea level in the Imperial Valley area to approximately 2,129 feet above sea level in the Cargo Muchacho Mountains. However, the majority of the Proposed Project lies near 300 feet above sea level; the mean elevation is 166 feet above sea level.

In the California portion of the Proposed Project, Imperial County is within the jurisdiction of the Colorado River Basin RWQCB. According to the Colorado River Basin Water Quality Control Plan ("Basin Plan"), this region has the driest climate in California, with mild winters and hot summers. Temperature variations can range from below freezing to over 120°F. Higher elevations outside of the Proposed Project in the upper San Jacinto and San Bernardino Mountains receive an average of 30 to 40 inches of seasonal snowfall. Lower elevations get minimal rainfall, averaging about four inches along the Colorado River, mainly from late summer thunderstorms originating in Mexico. The desert valleys average 3.2 to 3.6 inches of seasonal precipitation. Most precipitation occurs between November and April, and August through September, though it is often sporadic. Local thunderstorms can deliver the entire average seasonal precipitation in one event, or some areas may record only a trace of precipitation for the entire season (Colorado River Basin RWQCB 2024).

In the Arizona portion of the Proposed Project, Yuma County has an average of 350 sunny days per year and supports agriculture through irrigation (Online Ethics Center 2018). Average annual rainfall in Yuma County is less than three inches in its most populated regions. The Colorado River is the primary water supply source for both Imperial County and Yuma County, being the only significant surface water resource in the region. In Imperial County, agricultural growers are allocated nearly 80 percent of California's 4.4 million acre-feet-per-year allocation of Colorado River water (CalMatters 2023). In Yuma County, the Colorado River provides nearly all water used for agricultural irrigation,

as well as the drinking water for 72 percent of the county's residents, including more than half of those living in unincorporated areas (Yuma County 2023).

5.10.1.1 Waterbodies

Various surface water bodies occur throughout the Proposed Project alignment, including ephemeral drainages, canals, tributaries, reservoirs, and the Colorado River. Figure 5.10-1a, Figure 5.10-1b, and Figure 5.10-1c on the following pages provide an overview of surface water features along the Proposed Project.

Within the western Imperial County portion of the Proposed Project, surface water features typically occur as agricultural drainages, ditches, culverts, and stormwater control channels characteristic of relatively flat topography and historic and ongoing agricultural practices. This area is within the Imperial Valley Planning Area defined in the Basin Plan for the Colorado River Basin Region. Surface waters in this Planning Area predominantly drain toward the Salton Sea. The New River and Alamo River are primary conveyance channels for agricultural irrigation drainage, surface runoff, and treated municipal and industrial wastewater from the Imperial Valley. Additionally, the New River receives agricultural drainage, treated and untreated sewage, and industrial waste discharges from Mexicali, Mexico (Colorado River Basin RWQCB 2024).

The central portion of the Proposed Project is generally characterized by a lack of defined surface water features, with the exception of the Coachella Canal, which is used to convey Colorado River water from the All-American Canal to irrigation users in the Coachella Valley and north of the Salton Sea.

The eastern portion of the Proposed Project in California is within the East Colorado River Planning Area as defined in the Basin Plan for the Colorado River Basin Region. Surface water drainages in this Planning Area generally flow into the Colorado River, to the east. Some surface waters drain to the Colorado River Aqueduct, which is owned and operated by the Metropolitan Water District of Southern California ("Metropolitan") to convey Colorado River water to Southern California entitlement holders.

In Arizona and the eastern-most portion of the Proposed Project, surface water features are defined by the Colorado River, as well as tributaries and reservoirs along the Colorado River, and the All-American Canal, which conveys Colorado River water to Imperial Irrigation District (IID) and Yuma County entitlement holders, including the City of Yuma. The Colorado River is approximately 1,400 miles long, initiating along the Continental Divide in Rocky Mountain National Park, Colorado, and terminating at the Gulf of California in Mexico. Seven states within the Colorado River basin depend upon the river as a critical water supply source, as well as critical hydropower production, fish and wildlife habitat, recreation, and other benefits; these states include Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming.

Figure 5.10-1a Surface Water Along the Proposed Project Alignment

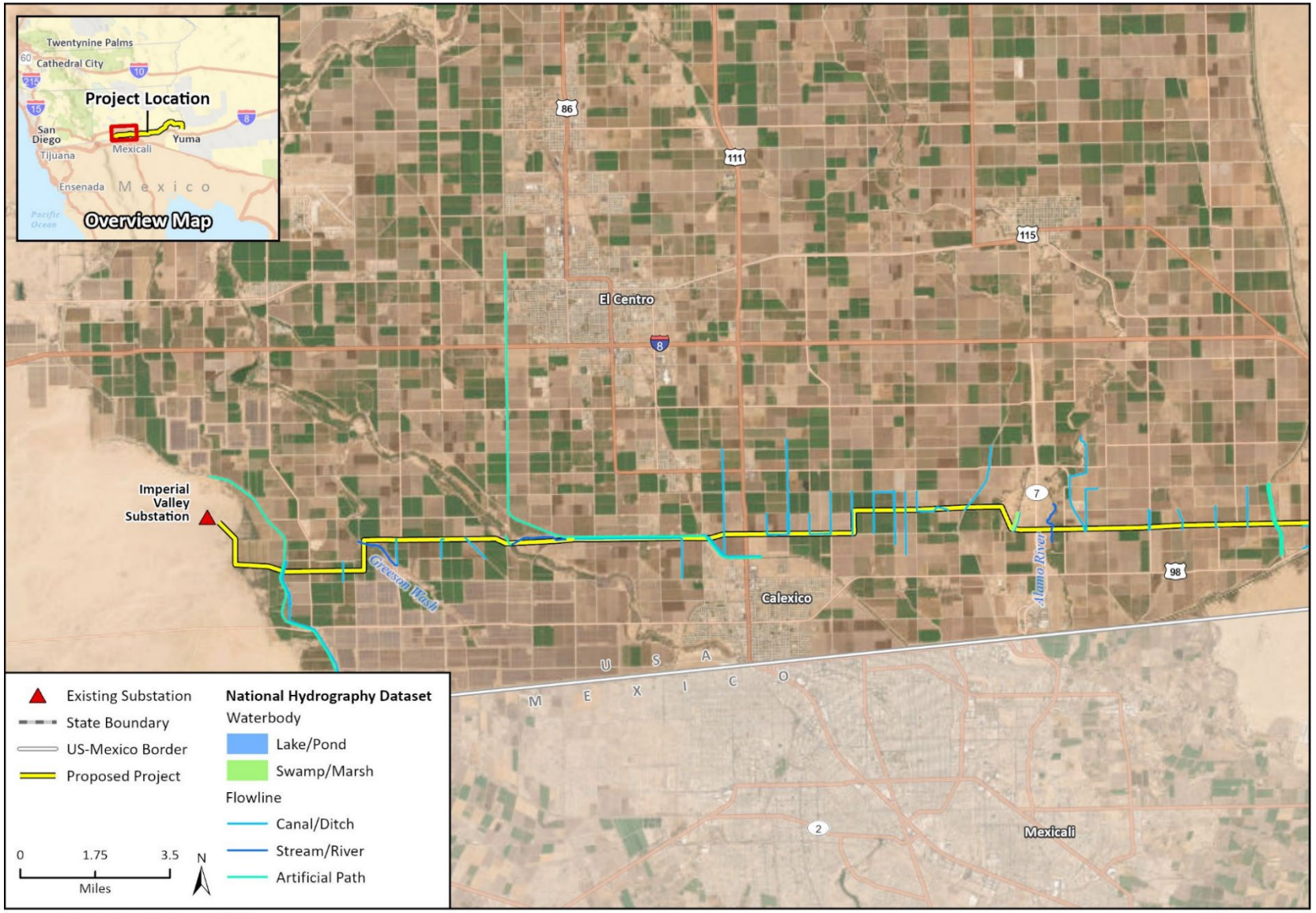
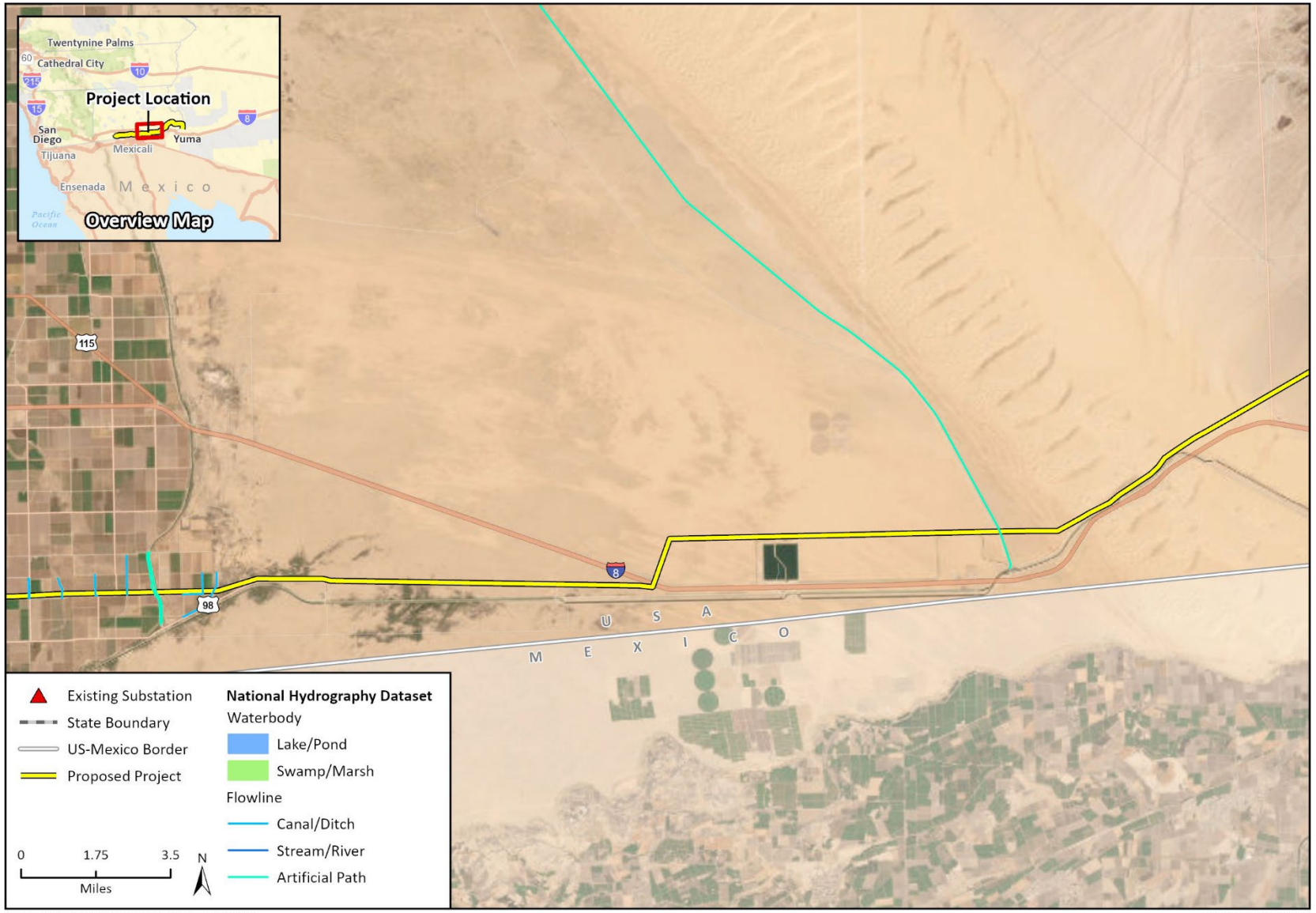


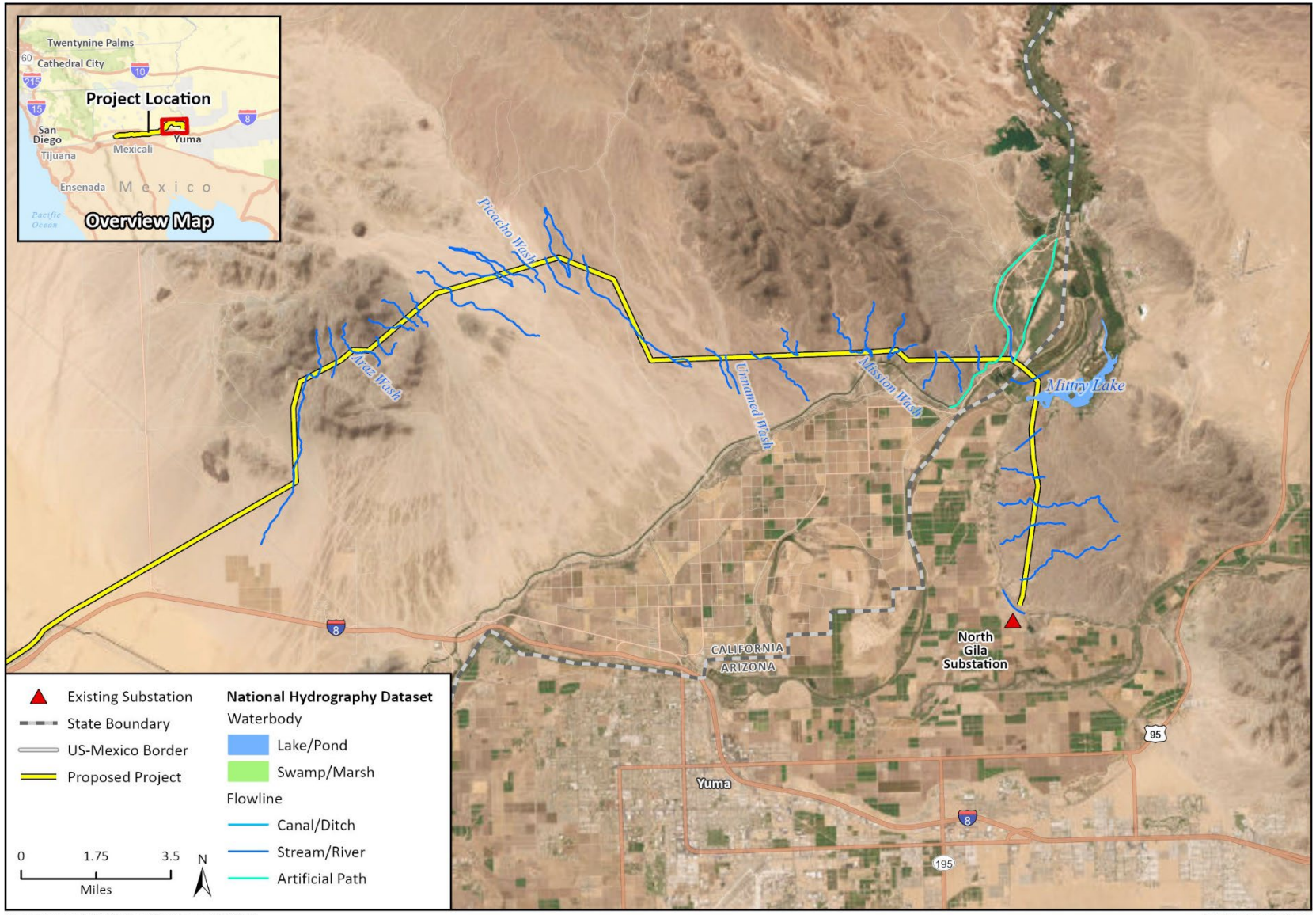
Figure 5.10-1b Surface Water in the Vicinity of the Proposed Project



Imagery provided by Esri and its licensors © 2025.
Additional data provided by USGS, 2025.

25-17237 PEA BIO Figures
5.10-1 Surface Waters Map Series 8.5x11

Figure 5.10-1c Surface Water in Vicinity of the Proposed Project



Imagery provided by Esri and its licensors © 2025.
Additional data provided by USGS, 2025.

25-17237 PEA BIO Figures
5.10-1 Surface Waters Map Series 8.5x11

The USBR operates and maintains the Colorado River for water supply, diverting water in the form of snowmelt from its headwaters in the Rocky Mountains in Colorado and Wyoming, along with portions of Utah, Nevada, New Mexico, and Arizona. USBR conveys Colorado River water to entitlement holders in the Upper Basin and Lower Basin of the Colorado River Watershed, including adjacent areas outside of the hydrologic basin. Legal apportionments of Colorado River water were established by Congress in the Boulder Canyon Project Act (BCPA) of 1928 and are fulfilled by the Secretary's water delivery contracts under the BCPA. The Colorado River is operated under the "Law of the River," which refers to a complex suite of legal actions and agreements related to Colorado River water and its distribution across the Upper and Lower Basins. The U.S. also has a delivery obligation to Mexico for some of the Colorado River waters pursuant to a 1944 Treaty with Mexico (USBR 2008).

The Colorado River flows through several significant reservoirs and dams that regulate its flow and provide water storage, flood control, and hydroelectric power. Key structures include Hoover Dam, which creates Lake Mead, one of the largest reservoirs in the U.S.; Davis Dam, which forms Lake Mohave and regulates water releases from Lake Mead; Parker Dam, which creates Lake Havasu and is crucial for water supply and recreation; and Imperial Dam, which diverts water into the All-American Canal, supplying water to the Imperial Valley (Colorado River Basin RWQCB 2024).

5.10.1.2 Water Quality

Water quality management in the Imperial County portion of the Proposed Project is directed by the California SWRCB via the Colorado River Basin RWQCB through implementation of the Basin Plan for the Colorado River Basin Region. The predominant beneficial use of surface water in the Colorado River Basin Region is for agriculture, with the major irrigated acreage located in the Coachella, Imperial, and Palo Verde Valleys. Municipal and industrial purposes are the second most predominant beneficial uses, with the third being recreational use of surface waters (Colorado River Basin RWQCB 2024).

Table 5.10-1 provides an overview of beneficial uses for surface water features in the vicinity of the Proposed Project. The Basin Plan defines water quality objectives for surface waters based upon their designated or potential beneficial uses, and issues water quality permits under the federal Clean Water Act with pollutant discharge limitations according to the respective water quality objectives.

Table 5.10-1 Beneficial Uses for Surface Waters in the Vicinity of the Proposed Project

Surface Water Feature	MUN	AGR	AQUA	FRSH	IND	GWR	REC I	REC II	WARM	COLD	WILD	POW	RARE
Colorado River and associated lakes and reservoirs	X	X	X		X	X	X	X	X	X[2]	X	X	X
All-American Canal System	X	X	X	X[3]	X	X	X[4]	X[4]	X		X	X	X[5]
Coachella Canal	P	X				X	X[4]	X[4]	X		X		X[5]
Alamo River				X			X[6]	X	X		X	P	X[5]
New River				X	P		X[7]	X	X		X		X[5]
Imperial Valley Drains				X			X[4,6]	X[4]	X		X		X[5]
Unlisted perennial and intermittent streams	P[8]					I, X	I, P, X	I, X	I, X		I, X		n/a[9]
Ephemeral streams (washes)						I		I	n/a[10]		I		

[1] Beneficial Uses are indicated by "X" for existing uses, "P" for potential uses, and "I" for intermittent uses. MUN = Municipal; AGR = Agricultural Supply; AQUA = Aquaculture; FRSH = Freshwater Replenishment; IND = Industrial Service Supply; GWR = Groundwater Recharge; REC I = Water Contact Recreation; REC II = Non-contact Water Recreation; WARM = Warm Freshwater Habitat; COLD = Cold Freshwater Habitat; WILD = Wildlife Habitat; POW = Hydropower Generation; RARE = Preservation of Rare, Threatened, or Endangered Species

[2] Limited to the reach from Parker Dam to Nevada State Line.

[3] Some very limited spillage of canal water occurs providing freshwater replenishment to Salton Sea.

[4] Unauthorized uses.

[5] Rare, endangered, or threatened wildlife exists in or utilizes some of these waterway(s). If the RARE beneficial use may be affected by a water quality control decision, responsibility for substantiation of the existence of rare, endangered, or threatened species on a case-by-case basis is upon the California Department of Fish and Wildlife (CDFW) on its own initiative and/or at the request of the Colorado River Basin Region Regional Water Quality Control Board (RWQCB).

[6] The only REC I usage that is known to occur is from infrequent fishing activity.

[7] Although some fishing occurs in the downstream reaches, the presently contaminated water in the river makes it unfit for any recreational use. An advisory has been issued by the Imperial County Health Department warning against the consumption of any fish caught from the river and the river has been posted with advisories against body contact with the water.

[8] Potential use designation will be determined on a case-by-case basis in accordance with the "Sources of Drinking Water Policy".

[9] Rare, endangered, or threatened wildlife may exist in or utilize some of these waterways. If the RARE beneficial use may be affected by a water quality control decision, responsibility for substantiation of the existence of rare, endangered, or threatened species on a case-by-case basis is upon the CDFW on its own initiative and/or at the request of the Colorado River RWQCB; and such substantiation must be provided within a reasonable time frame as approved by the Colorado River RWQCB.

[10] Use, if any, to be determined on a case-by-case basis.

Source: Colorado River RWQCB 2024 (Tables 2-2 and 2-3)

Impaired Waterbodies

In accordance with Section 303(d) of the federal Clean Water Act, California and Arizona both assess water quality data to determine if waters contain pollutants at levels that exceed protective water quality criteria and standards defined by each relevant Basin Plan or planning area. The Colorado River Basin RWQCB and the Arizona Department of Environmental Quality (ADEQ) have listed five impaired waterbodies or sections of waters in the vicinity of the Proposed Project. The impaired waterbodies include Colorado River and associated lakes and reservoirs (Imperial Reservoir to the California-Mexico Border), the All-American Canal system, the Alamo River, the New River, and Imperial Valley Drains. Table 5.10-2, below, provides an overview of the pollutants affecting each waterbody.

Table 5.10-2 Water Quality-Impaired Surface Waters in the Vicinity of the Proposed Project

Surface Water Feature	Pollutants Listed
Colorado River and associated lakes and reservoirs (Imperial Reservoir to California-Mexico Border)	Manganese; Turbidity
All-American Canal System	Chlordane; DDT; PCBs
Alamo River	Ammonia; Chlordane; Chloride; Chlorpyrifos; Cyhalothrin, Lambda; Cypermethrin; DDD; DDE; DDT; Diazinon; Dieldrin; Enterococcus; E. coli; Malathion; PCBs; Pyrethroids; Sedimentation/Siltation; Selenium; Toxaphene; Toxicity
New River	Ammonia; Bifenthrin; Chlordane; Chloride; Chlorpyrifos; Cyhalothrin, Lambda; Cypermethrin; DDD; DDE; DDT; Diazinon; Dieldrin; Disulfoton; HCB; Imidacloprid; Indicator Bacteria; Malathion; Mercury; Naphthalene; Nutrients; Organic Enrichment/Low Dissolved Oxygen; PCBs; Pyrethroids; Sediment; Selenium; Toxaphene; Toxicity; Trash
Imperial Valley Drains	Ammonia; Chlordane; Chlorpyrifos; DDE; DDT; Dieldrin; Disulfoton; Imidacloprid; PCBs; Sedimentation/Siltation; Selenium; Toxaphene; Toxicity

DDT = Dichlorodiphenyltrichloroethane; DDD = Dichlorodiphenyldichloroethane; DDE = Dichlorodiphenyldichloroethylene; E. coli = Escherichia coli; PCBs = Polychlorinated biphenyls; HCB = Hexachlorobenzene

Sources: Colorado River Basin RWQCB 2020a, 2020b, 2020c, 2020d, 2020e, 2020f; ADEQ 2024a

Impaired waterbodies are assigned a Total Maximum Daily Load (TMDL) for each pollutant, where the TMDL is the maximum amount of the respective pollutant allowed to enter the given waterbody in order to meet water quality objectives based upon the designated beneficial uses.

5.10.1.3 Groundwater Basins

The United States Environmental Protection Agency (EPA) defines a sole source aquifer (SSA) as one where: the aquifer supplies at least 50 percent of the drinking water for its service area; and where there are no reasonably available alternative drinking water sources should the aquifer become contaminated. The EPA designates SSAs, as authorized by Section 1424(e) of the Safe Drinking Water Act of 1974. Projects occurring within the area overlying an EPA designated SSA are subject to additional EPA review in order to prevent any potential for groundwater contamination (EPA 2024a). No EPA designated SSA review areas occur within or adjacent to the boundaries of the Proposed Project, as shown in Figure 5.10-2 (USEPA 2025a).

The Proposed Project overlies the Imperial Valley Groundwater Basin, the Ogilby Valley Groundwater Basin, and the Yuma Valley Groundwater Basin as shown on Figure 5.10-3. All three of these groundwater basins are designated by the California Department of Water Resources (DWR) as “Very Low Priority” (DWR 2024a, DWR 2024b, DWR 2024c).

Figure 5.10-3 provides an overview of the DWR-defined groundwater basin boundaries in the vicinity of the Proposed Project, followed by a brief overview of each basin.

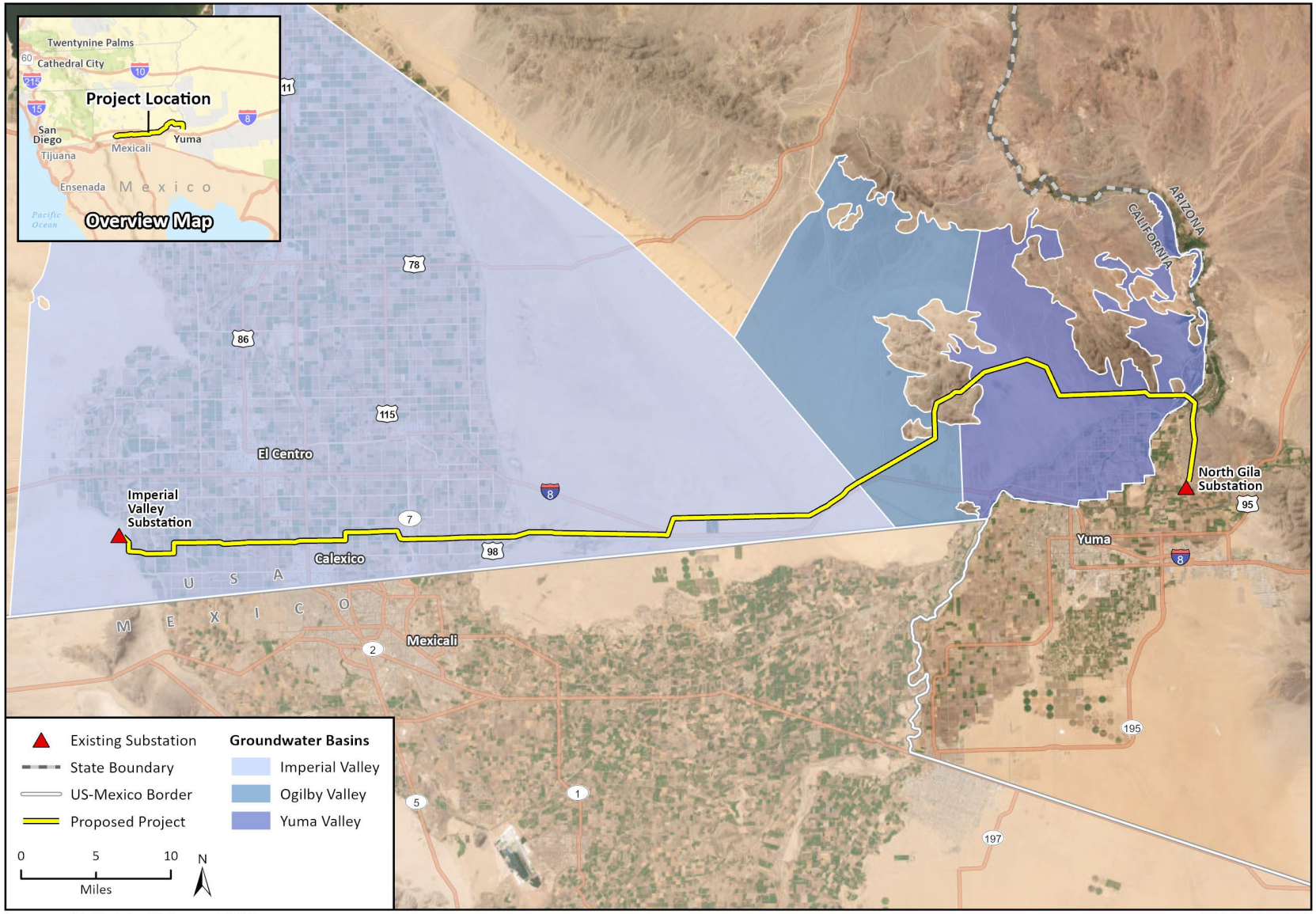
Figure 5.10-2 Sole Source Aquifers in the Vicinity of the Proposed Project



Imagery provided by Esri and its licensors © 2025.
Additional data provided by the US Environmental Protection Agency, 2025.

25-17237 PEA BIO Figures
5.10-3 Sole Source Aquifer

Figure 5.10-3 Groundwater Basins in the Vicinity of the Proposed Project



Imagery provided by Esri and its licensors © 2025.
Additional data provided by California Department of Water Resources, 2025.

25-17237 PEA BIO Figures
5.10-2 State Designated Groundwater Basins

As shown in Figure 5.10-3, the Proposed Project is underlain by three DWR-defined groundwater basins, including the Imperial Valley Groundwater Basin, the Ogilby Valley Groundwater Basin, and the Yuma Valley Groundwater Basin. A brief overview of each groundwater basin in the vicinity of the Proposed Project is provided below.

Imperial Valley Groundwater Basin

In Imperial County, a majority of the western portion of the Proposed Project overlies the Imperial Valley Groundwater Basin, which covers approximately 1,200,000 acres (1,870 square miles). This basin is bounded by the Sand Hills to the east, the Fish Creek and Coyote Mountains to the west, and the Salton Sea to the north, and is influenced by the San Andreas, Algodones, and Imperial fault zones. It contains significant alluvial deposits from the late Tertiary and Quaternary periods, with a total groundwater storage capacity estimated at 14,000,000 acre-feet (DWR 2004a).

Few wells have been drilled in the Imperial Valley Groundwater Basin for production purposes due to the yield being low and of poor quality. Groundwater quality varies, with Total Dissolved Solids (TDS) ranging from 498 to 7,280 milligrams per liter (mg/L). Some areas have high levels of fluoride and boron, affecting the basin's suitability for domestic and irrigation purposes without treatment (DWR 2004a).

Ogilby Valley Groundwater Basin

A small portion of the eastern Proposed Project overlies the Ogilby Valley Basin, which covers approximately 134,000 acres (209 square miles). It is bounded by the Peter Kane Mountains to the north, the Cargo Muchacho Mountains and Pilot Knob to the east, and the San Andreas fault to the southwest. The basin contains Quaternary age alluvium, predominantly unconsolidated gravel, sand, silt, and clay, with an estimated groundwater storage capacity of 2,900,000 acre-feet. Groundwater quality varies, with high concentrations of TDS. Recharge primarily occurs as percolation of runoff from the surrounding mountains (DWR 2004b).

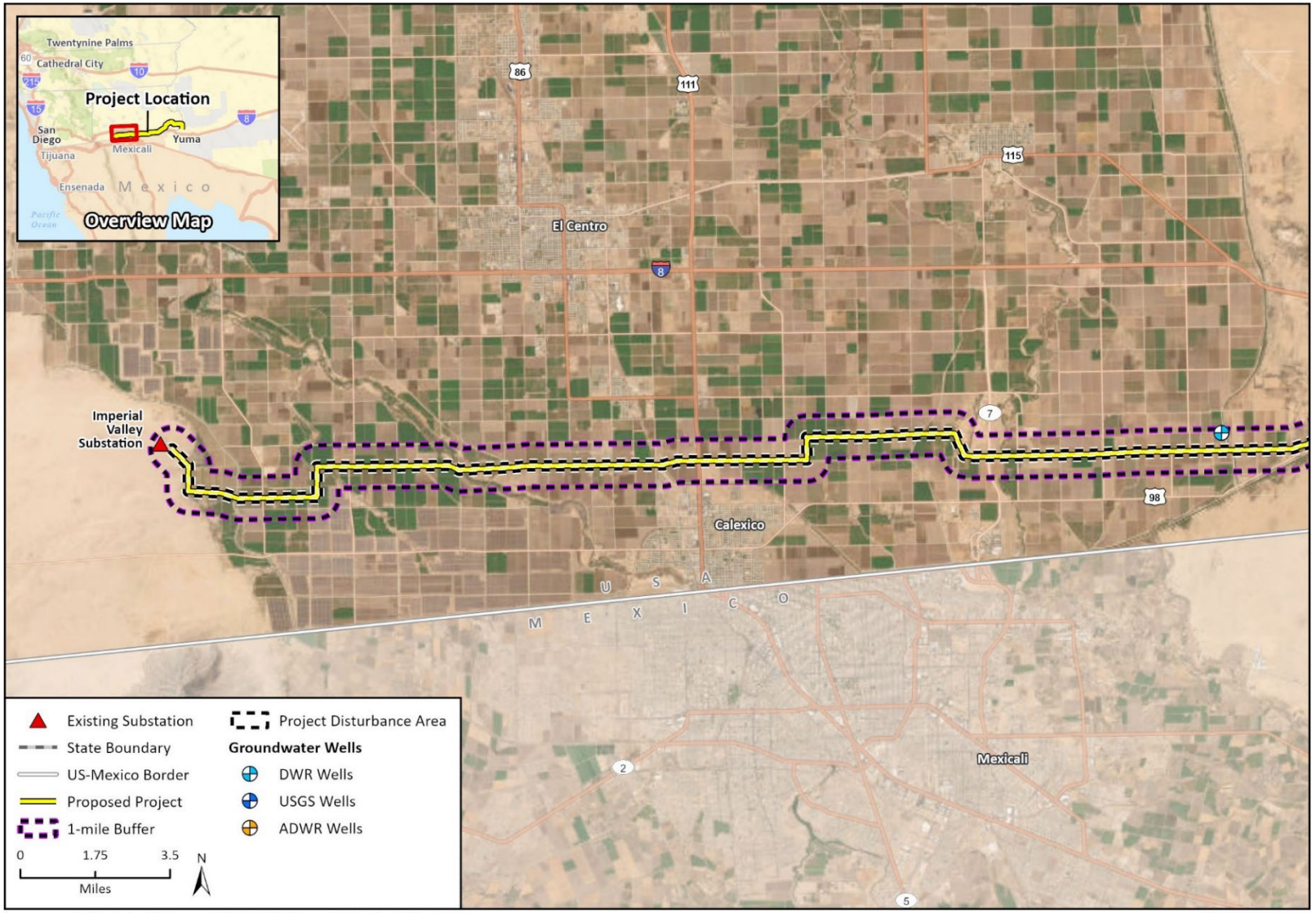
Yuma Valley Groundwater Basin

The easternmost portion of the Proposed Project overlies the Yuma Valley Basin, which covers approximately 3,780 acres (5.9 square miles). It is bounded by the Cargo Muchacho Mountains to the west, the Chocolate and Picacho Mountains to the north and northeast, and the Colorado River to the south and east. The basin contains unconsolidated younger Quaternary alluvial deposits and underlying unconsolidated to semi-consolidated older Tertiary to Quaternary alluvial deposits, with an estimated groundwater storage capacity of 4,600,000 acre-feet. Groundwater quality varies with typically high TDS levels ranging from about 600 mg/L up to 14,700 mg/L. The principal sources of recharge are subsurface inflow from the Ogilby Groundwater Basin and infiltration of surface runoff (DWR 2004c).

5.10.1.4 Groundwater Wells and Springs

According to the USGS National Water Information System, no active or inactive springs exist along the Proposed Project alignment (USGS 2013a). There are numerous wells along the Proposed Project alignment, as shown below in Figure 5.10-4a, Figure 5.10-4b and Figure 5.10-4c. Many existing wells are currently inactive due to decreased reliance on local groundwater, with imported Colorado River water serving as the primary water supply source in this area, as discussed further in Section 5.19, Utilities and Service Systems.

Figure 5.10-4a Groundwater Wells in the Vicinity of the Proposed Project



Imagery provided by Esri and its licensors © 2025. Well data provided by the California State Water Resources Control Board, 2025 and Arizona Department of Water Resources, 2025.

25-17237 PEA BIO Figures
5.10-4 Groundwater Supply Wells Map Series 8.5x11

Figure 5.10-4b Groundwater Wells in the Vicinity of the Proposed Project

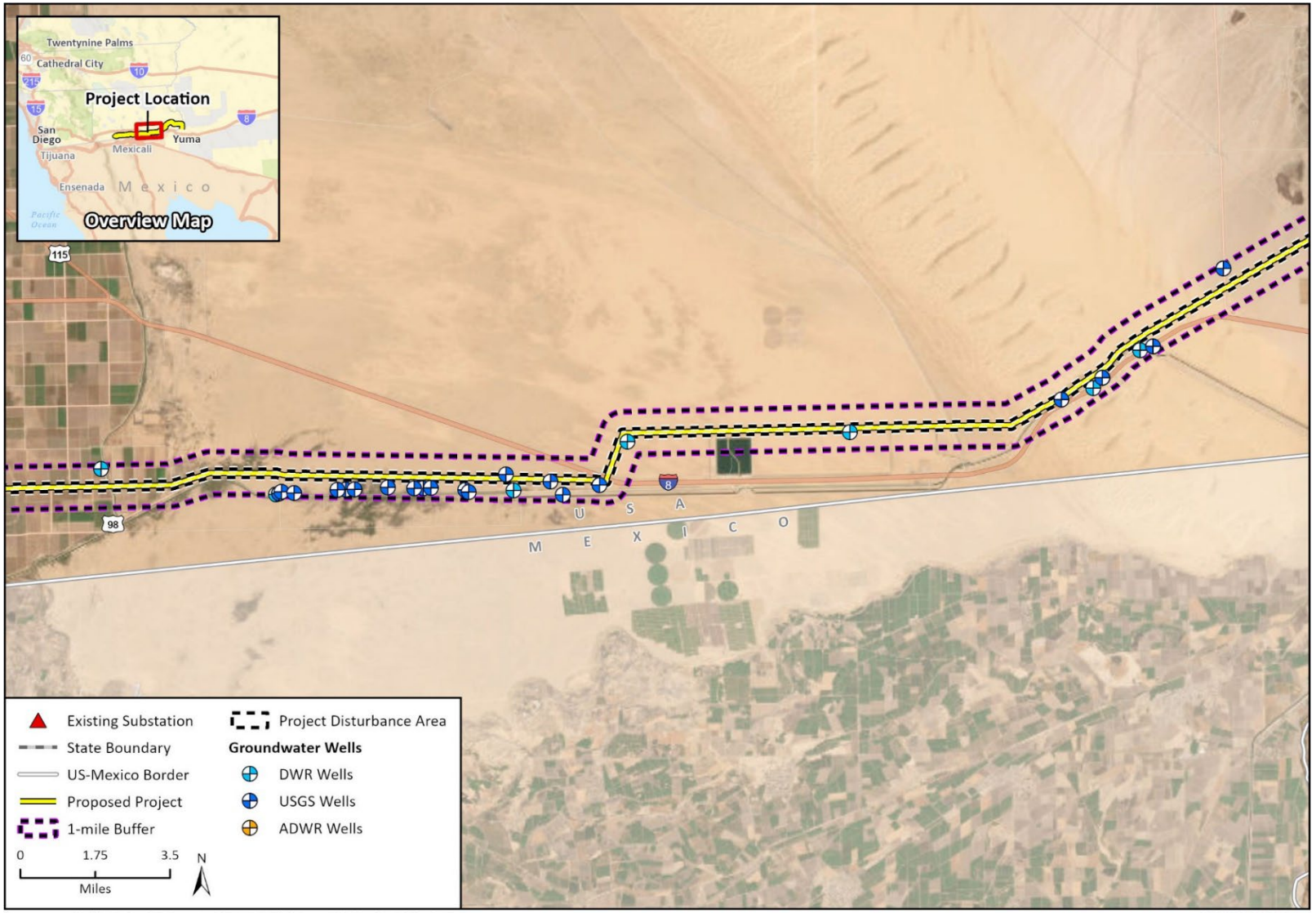
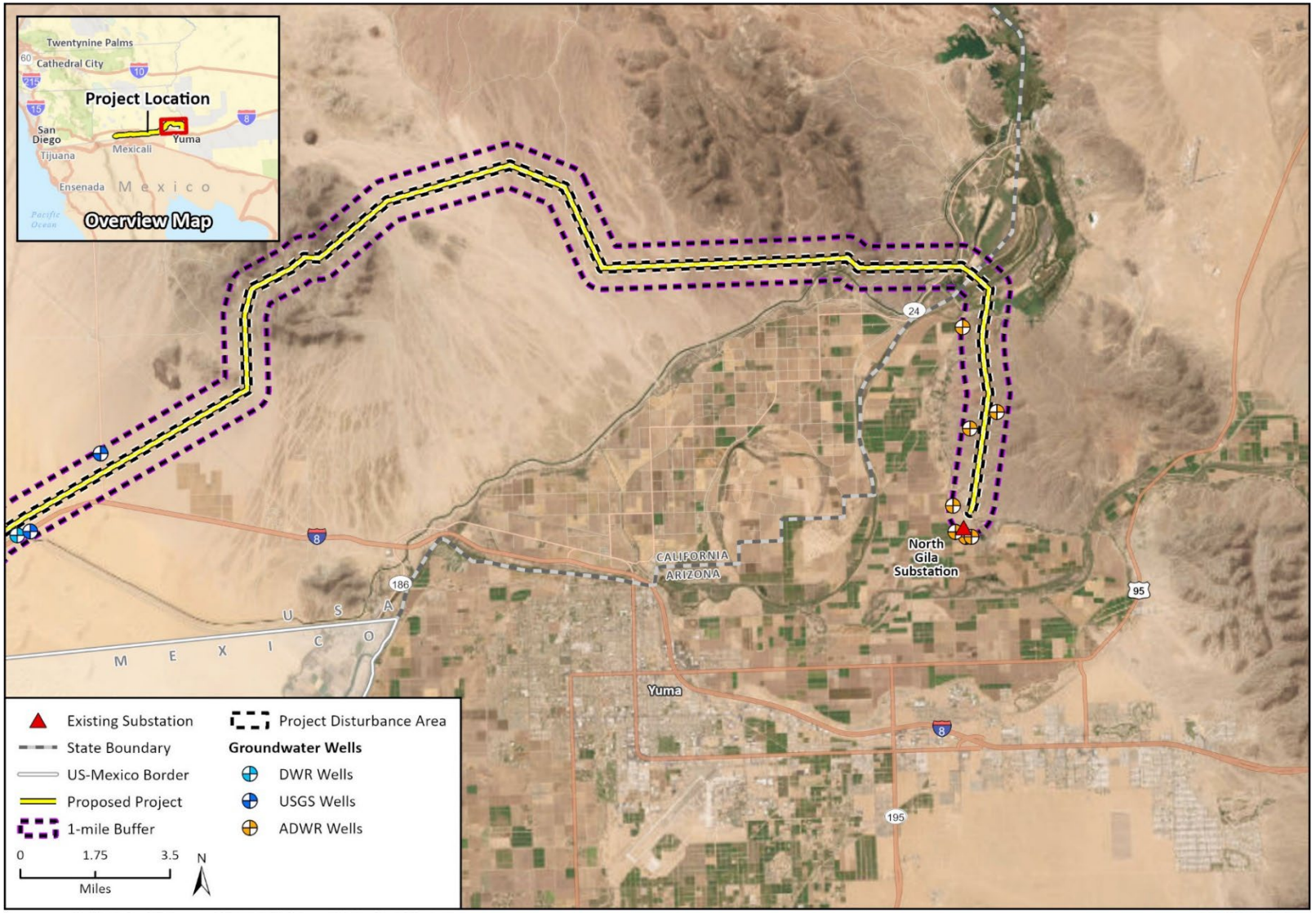


Figure 5.10-4c Groundwater Wells in the Vicinity of the Proposed Project



Imagery provided by Esri and its licensors © 2025. Well data provided by the California State Water Resources Control Board, 2025 and Arizona Department of Water Resources, 2025.

25-17237 PEA BIO Figures
5.10-4 Groundwater Supply Wells Map Series 8.5x11

5.10.1.5 Groundwater Management

Groundwater management in California is directed by the Sustainable Groundwater Management Act (SGMA), which requires that groundwater basins designated by DWR as "Medium Priority" or "High Priority" are managed under a Groundwater Sustainability Plan (GSP) implemented by DWR-approved Groundwater Sustainability Agencies (GSAs). GSPs are designed to reverse undesirable conditions, including overdraft, declining groundwater levels, and water quality degradation, and to provide sustainable (balanced) groundwater conditions over a 20-year planning horizon. Low- or very-low priority basins are not subject to SGMA but are encouraged to form GSAs and GSPs, update existing groundwater management plans, and coordinate with adjacent basins to develop a new groundwater management plan (DWR 2018). The technical process determining Basin Prioritization is based on eight components that are identified in the California Water Code Section 10933(b) (DWR 2025). As mentioned in Section 5.10.1.3, all groundwater basins in the vicinity of the Proposed Project are designated by DWR as Very Low Priority and are therefore not subject to SMGA. No GSPs pursuant to the SGMA have been adopted for the basins underlying the Proposed Project.

Groundwater management in California is also conducted through adjudication, a legal process through which a court issues an Adjudication Judgement that identifies all parties with rights to pump from the adjudicated area. An adjudicated area may include an entire basin or portions of one or more basin(s). An Adjudication Judgement sets limits on the quantities of groundwater allowed to be pumped by each party and designates a Watermaster responsible for implementing the Adjudication Judgement. There are no adjudicated groundwater basins in the vicinity of the Proposed Project, as seen in SMGA's Adjudicated Basin Annual Reporting tool (SGMA 2016).

In 2015, Imperial County assumed the role of GSA to undertake sustainable groundwater management within the county boundaries. This includes all groundwater basins and sub-basins underlying the county, and therefore all basins underlying the Proposed Project (Imperial County 2015). Also in 2015, IID elected to operate as a co-GSA for several basins including the Imperial Valley Basin and Ogilby Valley Basin (Imperial County GSA; IID 2016). Though the basins underlying the Proposed Project are not subject to SMGA, Imperial County serves as the GSA for the Yuma Valley Basin, while Imperial County and the IID jointly manage the Imperial Valley Basin and the Ogilby Valley Basin (Imperial County; IID 2015). As such, groundwater usage related to the Proposed Project would be governed by a variety of applicable groundwater plans, including the IID 2020 Service Area Plan.

Water from the groundwater basins identified in Section 5.10.1.3 above may be used for the Proposed Project in minimal quantities and only if obtained from dewatering activities. Due to the varying water quality of described basins, treatment is typically necessary for their use (DWR 2004a, 2004b, 2004c). Surface water is preferred in the region and would be the primary water source for the Proposed Project.

An overview of groundwater management for each DWR-defined groundwater basin underlying the Proposed Project is provided below.

Imperial Valley Groundwater Basin

The water quality of the Imperial Valley Groundwater Basin varies throughout the basin and generally requires treatment for domestic and irrigation purposes (DWR 2004a).

Ogilby Valley Groundwater Basin

The groundwater quality in the Ogilby Valley Groundwater Basin varies by location, with deep aquifers in the central and southwestern parts characterized by sodium chloride, and those in the southeastern part by calcium bicarbonate; treatment is generally required to address the elevated levels of TDS and chloride (DWR 2004b).

Yuma Valley Groundwater Basin

The groundwater quality in the Yuma Valley Groundwater Basin also has historically been characterized by high levels of TDS, chloride, sulfate, and sodium, requiring treatment prior to use for domestic and irrigation purposes (DWR 2004c).

5.10.1.6 Floodplains

The Federal Emergency Management Agency (FEMA) defines flood hazard zones on Flood Insurance Rate Maps (FIRMs), which portray areas that would be inundated as a result of the 100-year and 500-year storms. Figure 5.10-5a, Figure 5.10-5b, Figure 5.10-5c shows an overview of flood hazard areas in the vicinity of the Proposed Project. As shown, in the western portion of the Proposed Project, there are limited areas designated as within the 100-year floodplain, or the area with a one percent chance of inundation each year; these areas are associated with the New River and existing drainage ditches. There are no designated flood hazard areas in the central portion of the Proposed Project, where topography is relatively flat and undeveloped. Stormwater flows occur as sheet flow in these areas and do not form inundation areas that meet FEMA criteria as flood hazard areas. In the eastern portion of the Proposed Project, substantial areas in and surrounding Yuma are designated as being within the 100-year floodplain and the 500-year floodplain, or the area with a 1 and 0.2 percent chance of inundation each year, respectively.

Figure 5.10-5a Flood Hazard Zones in the Vicinity of the Proposed Project

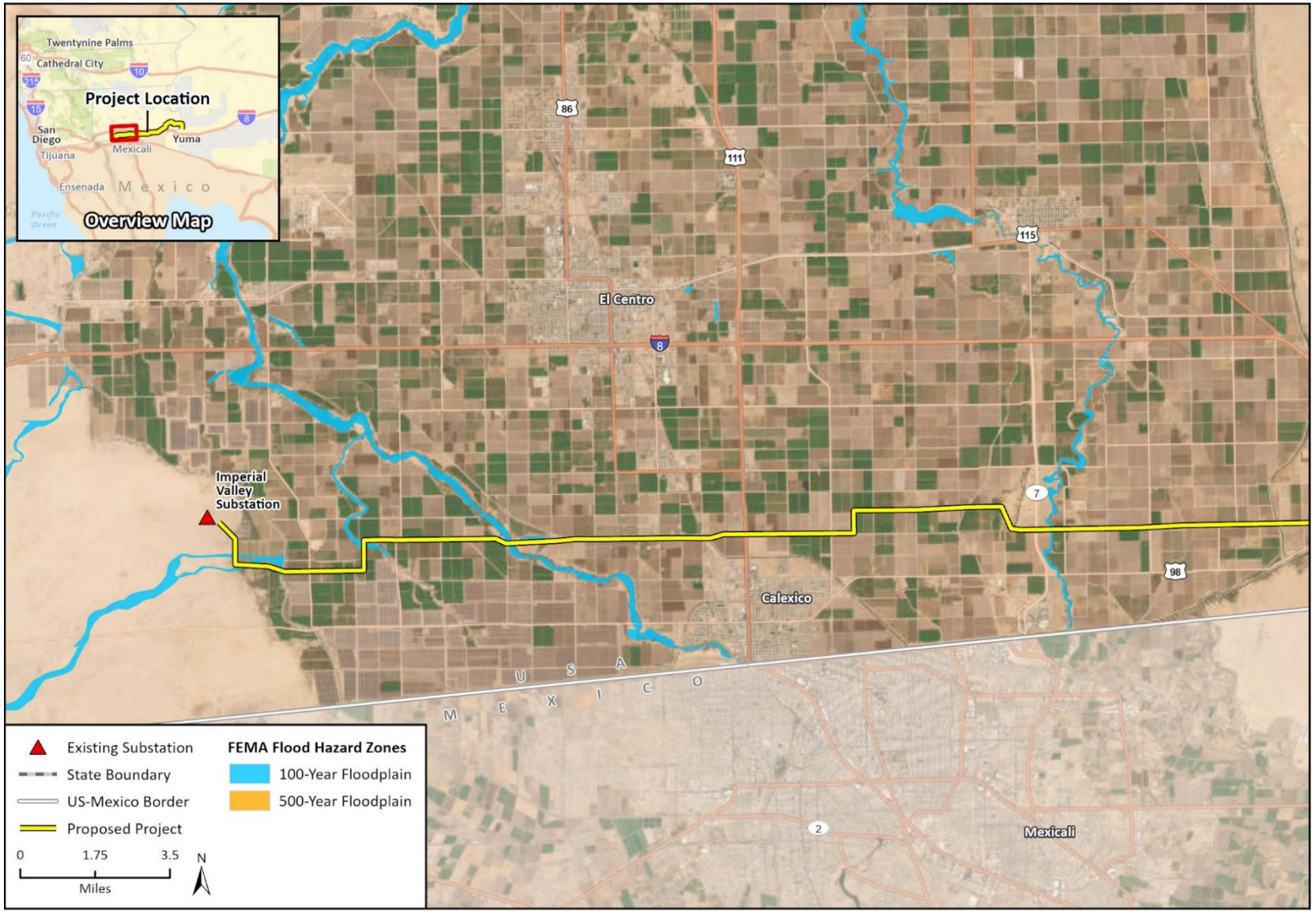
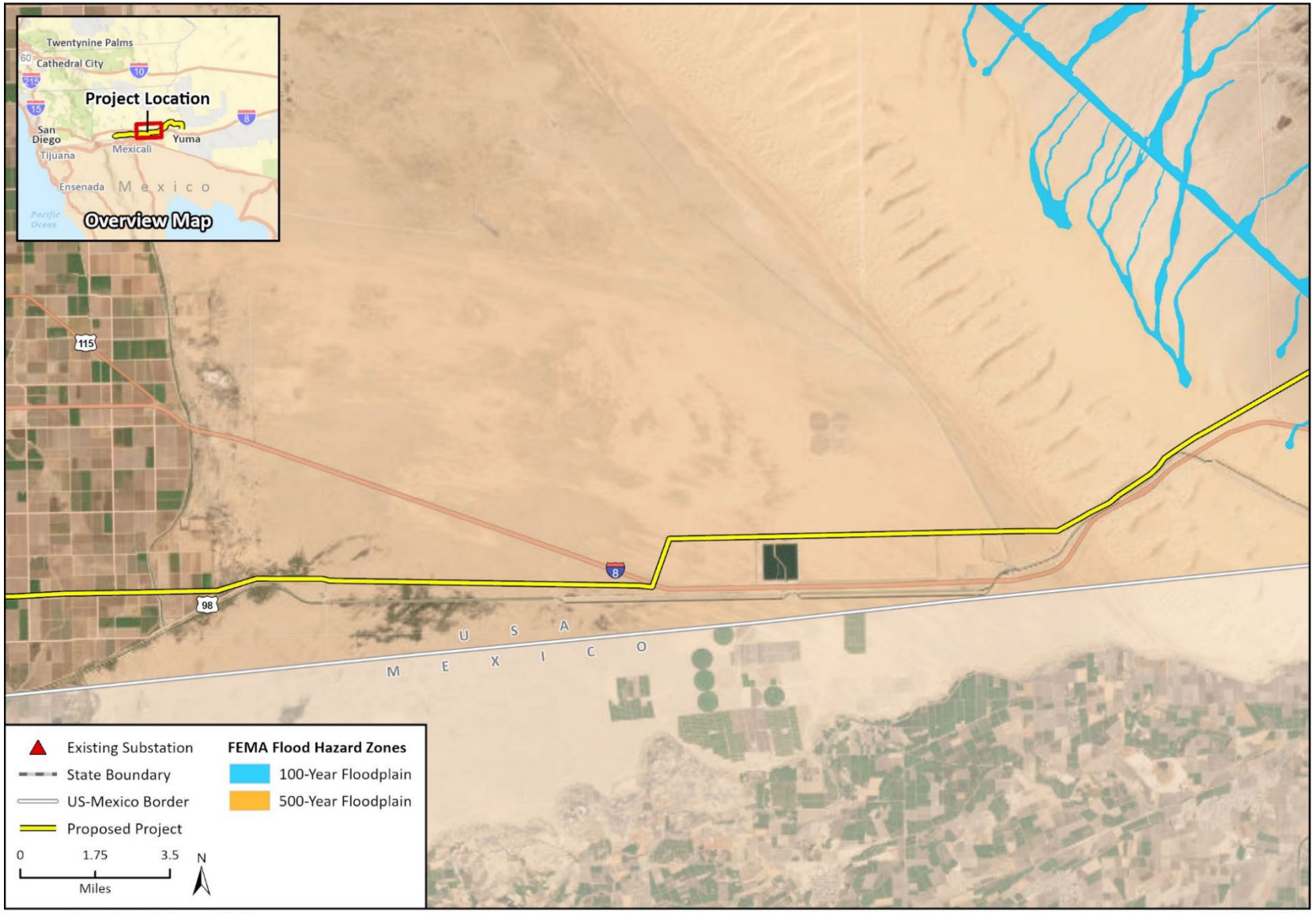


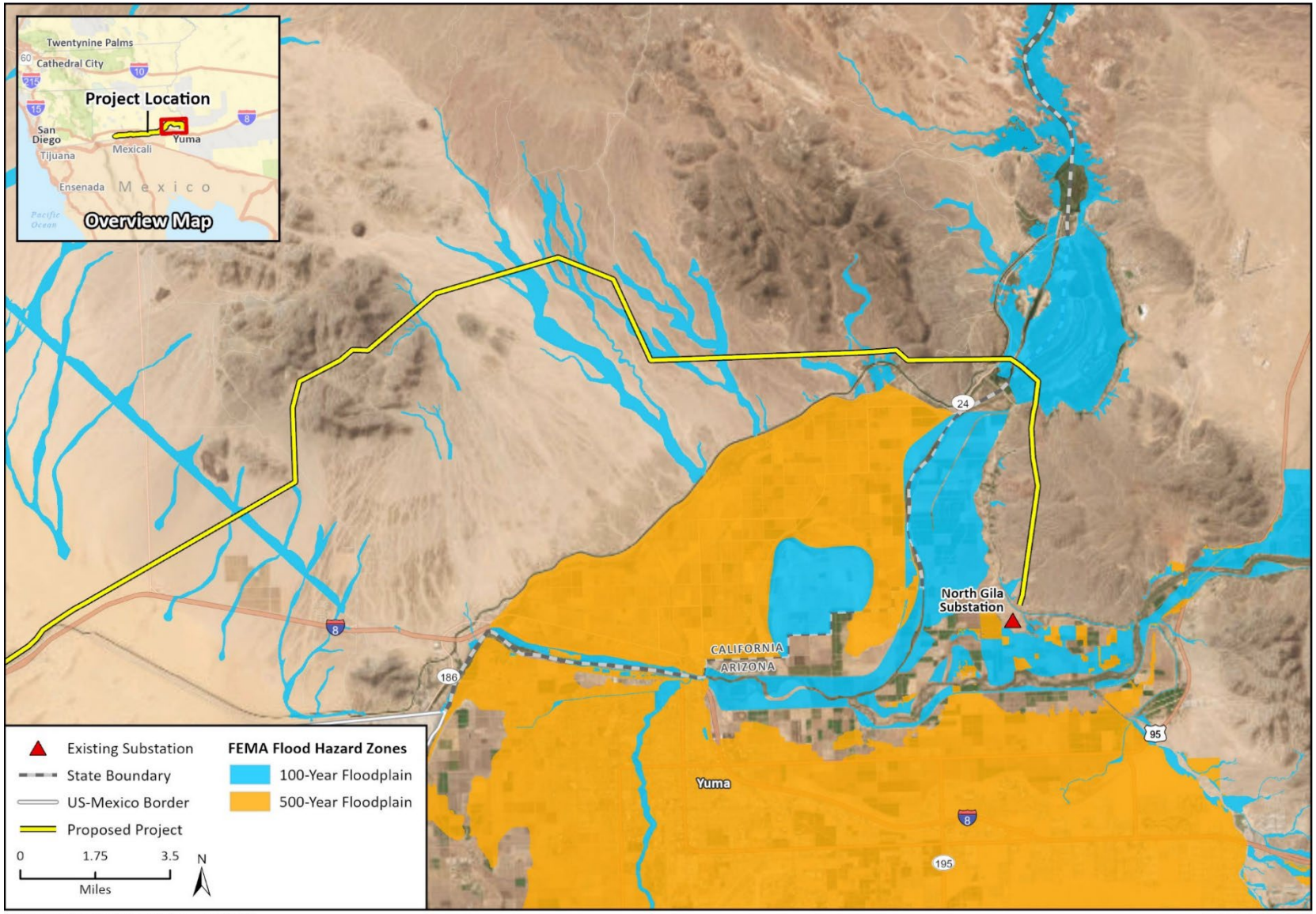
Figure 5.10-5b Flood Hazard Zones in the Vicinity of the Proposed Project



Imagery provided by Esri and its licensors © 2025.
Additional data provided by FEMA, 2025.

25-17237 PEA BIO Figures
5.10-5 Flood Hazard Areas Map Series 8.5x11

Figure 5.10-5c Flood Hazard Zones in the Vicinity of the Proposed Project



5.10.2 Regulatory Setting

Federal, state, and local regulations were reviewed for applicability to the Proposed Project, as presented below.

5.10.2.1 Federal

Clean Water Act

Enacted in 1972, the federal Clean Water Act (CWA) (33 United States Code [U.S.C.] § 1251 *et seq*.) and subsequent amendments outline the basic protocol for regulating discharges of pollutants to waters of the U.S. It is the primary federal law applicable to water quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. Enforced by the U.S. Environmental Protection Agency (USEPA), it was enacted "… to restore and maintain the chemical, physical, and biological integrity of the Nation's waters" (USEPA 2025b). The CWA authorizes states to adopt water quality standards and includes programs addressing both point and non-point pollution sources. The CWA also established the National Pollutant Discharge Elimination System (NPDES) and provides the USEPA the authority to implement pollution control programs, such as setting wastewater standards for industry and water quality standards for surface waters (see below for a discussion of the NPDES program).

In California, programs and regulatory authority under the CWA have been delegated by USEPA to the SWRCB and its nine RWQCBs. In Arizona, the ADEQ is responsible for administering the CWA and developing water quality management plans in coordination with local agencies and stakeholders.

Section 303(d), Impaired Waterbodies and TMDLs

Section 303(d) of the CWA requires states to identify waters where adopted water quality standards and beneficial uses are still unattained. These lists of prioritized impaired waterbodies, known as the "303(d) lists," are submitted to the USEPA every two years.

The law requires the development of TMDL criteria to improve water quality of impaired waterbodies. TMDLs are the quantities of pollutants that can be assimilated by a waterbody without violating water quality standards. States develop TMDLs for impaired waterbodies to maintain beneficial uses, achieve water quality objectives, and reduce the potential for future water quality degradation. A TMDL must account for point and non-point sources as well as background (natural) sources and is implemented by allocating the total allowable pollutant loading among dischargers. The USEPA defines point source pollution as any contaminant that enters the environment from an easily identified location, such as a discharge pipe or drainage ditch. A non-point source is a diffuse source of pollution that occurs over a wider area or when a specific location of a discharge or release of a contaminant cannot be identified, such as through storm runoff.

Section 404, Placement of Dredge or Fill Material into Waters of the U.S., including Wetlands

The U.S. Army Corps of Engineers (USACE) is responsible for issuing permits under CWA Section 404 for the placement of dredge or fill material into waters of the U.S. Section 404 of the CWA prohibits the discharge of dredged or fill material into "waters of the United States" (WOTUS) without a permit from USACE. The Code of Federal Regulations (33 CFR 328.3[a]; 40 CFR 230.3[o]) defines "waters of the United States" to include waters used in interstate or foreign commerce, interstate

waters, territorial seas, impoundments, tributaries, adjacent waters, and waters with a significant nexus to other WOTUS. However, certain features like ditches with ephemeral or intermittent flow, water-filled depressions created in dry land, and stormwater control features constructed in dry land are not considered "waters of the United States." The USEPA also has authority over wetlands and can override a USACE permit. Under California's policy of no net loss of wetlands, the SWRCB and RWQCBs require mitigation for dredge and fill impacts to wetlands and waterways (see Section 5.4, Biological Resources). Dredge and fill activities in wetlands and waterways that impact waters of the U.S. require a CWA Section 404 permit from the USACE. Significant impacts to wetlands may require an individual permit, while minimal impacts might be covered by Nationwide Permits. Additionally, a Water Quality Certification or waiver under Section 401 of the CWA is required for Section 404 permit actions.

Section 401, Water Quality Certification

Section 401 of the CWA specifies that the SWRCB or applicable RWQCB must certify that any federal action meets with state water quality standards (23 California Code of Regulations § 3830, et seq.). Dredge and fill activities in wetlands and waterways that impact waters of the U.S. require a CWA Section 404 permit from the USACE, as discussed above. A CWA Section 401 water quality certification must be obtained from the affected state prior to issuance of a Section 404 permit, certifying that the dredge or fill operations will meet state water quality standards for CWA compliance.

Section 402, National Pollution Discharge Elimination System

The SWRCB and the RWQCBs implement and enforce the federal NPDES program in California. In Arizona, the ADEQ is authorized to implement and enforce Section 402 through the Arizona Pollutant Discharge Elimination System (AZPDES) permit program (ADEQ 2024b).

Established in 1972, the NPDES regulations initially focused on municipal and industrial wastewater discharges, with stormwater discharge regulations introduced in 1990. NPDES permits provide two levels of control: technology-based limits and water quality-based limits. Technology-based limits are based on the ability of dischargers to treat wastewater, while water quality-based limits are required if technology-based limits are not sufficient to protect the waterbody. NPDES program stormwater permitting for construction site discharges is implemented through the Construction Stormwater General Permit, administered by the SWRCB. As discussed in detail below under California state regulations (see "Porter-Cologne Water Quality Control Act"), Construction Stormwater General Permit coverage (for NPDES program coverage) requires that projects proposing to disturb more than one acre of land must implement a Stormwater Pollution Prevention Plan (SWPPP) with site-specific best management practices (BMPs) to manage stormwater flows and avoid or minimize potentially adverse effects associated with disturbed soils, erosion, and hazardous or potentially hazardous materials that could affect the quality of surface water or groundwater.

California Toxics Rule

Pursuant to section 303(c)(2)(B) of the Clean Water Act, states must adopt numeric criteria for the priority toxic pollutants listed under section 307(a) if those pollutants could be reasonably expected to interfere with the designated uses of States' waters. On May 18, 2000, the EPA promulgated numeric water quality criteria for priority toxic pollutants and other provisions for water quality standards to be applied to waters in the state of California. This rule, also known as the California

Toxics Rule (CTR), is based on the Administrator's determination that the numeric criteria are necessary in California to protect human health and the environment (USEPA 2024b). The numeric water quality criteria contained in the CTR are identical to EPA's recommended Clean Water Act section 304(a) criteria for these pollutants published in December 1998. The Clean Water Act requires the State to implement the criteria by ensuring that NPDES permits result in discharges that will meet the criteria (USEPA 2000). With promulgation of the CTR, these federal water quality criteria are legally applicable in California to inland surface waters, enclosed bays, and estuaries for all purposes and programs under the CWA. NPDES permits must also incorporate TMDL waste load allocations when they are developed by the corresponding regional permitting authority (SWRCB and RWQCB in California and ADEQ in Arizona).

National Flood Insurance Program

The National Flood Insurance Act of 1968 establishes the National Flood Insurance Program (NFIP), which insures private company flood insurance by the federal government. The NFIP relies on the national mapping system known as the Flood Insurance Rate Map (FIRM), which denotes special hazard areas associated with 100- and 500-year flood events. Lower rates are provided through the program for communities that encourage mitigation of flood hazards. FEMA has primary authority for preparation, response, and mitigation of natural hazards, including coastal and inland floods. FEMA provides financial and technical support to local agencies in the drafting and implementation of hazard mitigation plans. CFR Title 44, Part 60 provides criteria for communities participating in the NFIP to adopt flood plain management regulations consistent with federal criteria for lands within areas prone to floods, mudslides (i.e., mudflow), or flood-related erosion.

BLM Resource Management Plans

The entirety of the Proposed Project in California is located within BLM-managed California Desert Conservation Area (CDCA) and is covered by the California Desert Conservation Area Plan, Desert Renewable Energy Conservation Plan (DRECP), Imperial Sand Dunes Recreation Area Management Plan (Imperial Sand Dunes RAMP), and Northern and Eastern Colorado Desert Coordinated Management Plan. A portion of the Proposed Project within Arizona is managed under the Yuma Field Office Resource Management Plan.

The DRECP Land Use Plan Amendment identifies a comprehensive suite of required conservation management actions to avoid, minimize, and/or mitigate adverse impacts on water quality. Additionally, the Imperial Sand Dunes RAMP includes goals, objectives, and management actions related to water quality.

5.10.2.2 State of California

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act), established by California Water Code (CWC) Section 13000 et seq., is the principal law governing water quality regulation in California. The Porter-Cologne Act established the SWRCB and divided California into nine regions, each overseen by a RWQCB. The SWRCB is the primary state agency responsible for protecting the quality of the state's surface and groundwater supplies and has delegated primary implementation authority to the nine RWQCBs. The Proposed Project is located within the jurisdiction of the Colorado River Region RWQCB.

The Porter-Cologne Act assigns responsibility to the SWRCB and the nine RWQCBs for implementing portions of the CWA, including Sections 401 through 402 (see above). The RWQCBs also implement CWA Section 303(d), under which the RWQCBs identify streams and waters that have "Water Quality Limited Segments," or portions that do not meet water quality standards even after point sources of pollution have installed the minimum required levels of pollution control technology. Pursuant to the CWA, the SWRCB establishes priority rankings for waters on the lists and develops TMDL criteria (i.e., the maximum quantity of a particular contaminant that a waterbody can assimilate without experiencing adverse effects) to improve water quality.

Under the Porter-Cologne Act (CWC Section 13000) and the NPDES program (CWA Section 402), the SWRCB administers California's stormwater permitting program. This program requires construction projects that will disturb more than one acre of land to obtain NPDES program coverage under the "Construction Stormwater General Permit," which refers to the *General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities*, Order No. 2022-0057-DWQ, NPDES No. CAS000002. The Construction Stormwater General Permit authorizes the discharge of stormwater to surface waters from construction activities and requires all developers of land where construction activities will occur over more than one acre to do the following:

- Complete a Risk Assessment to determine pollution prevention requirements pursuant to the three risk levels established in the Construction Stormwater General Permit;
- Eliminate or reduce non-stormwater discharges to storm sewer systems and other waters of the United States;
- Develop and implement a SWPPP that specifies construction BMPs that will reduce pollution in stormwater discharges to the Best Available Technology / Economically Achievable / Best Conventional Pollutant Control Technology standards;
- Perform inspections and maintenance of all BMPs; and
- Conduct stormwater sampling, if required based on risk level.

Typical BMPs contained in SWPPPs are designed to minimize erosion during construction, stabilize construction areas, control sediment, control discharges from groundwater dewatering, and control pollutants from construction materials. The SWPPP must also include a discussion of the program to inspect and maintain all BMPs. The Construction Stormwater General Permit also contains post-construction requirements for projects not covered under a Municipal Separate Storm Sewer System (MS4) Permit. For non-MS4 projects, the Construction Stormwater General Permit requires operational BMPs and low impact development features to reduce runoff and pollutants in stormwater discharge.

In addition, the Construction Stormwater General Permit includes groundwater dewatering requirements. The dewatering requirements mandate dischargers to implement BMPs to control the volume and velocity of dewatering discharges. The Construction Stormwater General Permit also requires testing and treatment, if necessary, of groundwater discharge to verify the discharge meets or exceeds the effluent limitations specified in the permit.

The SWRCB and the RWQCBs are responsible for regulating dredge and fill impacts to wetlands and waterways in California to support the state goal of no net loss of wetlands. The SWRCB and the RWQCBs are responsible for issuing CWA Section 401 water quality certifications for federal actions that result in dredge and fill activities in federally jurisdictional wetlands and waterways prior to issuance of a CWA Section 404 permit for such activities. Dredge and fill activities in non-federally

jurisdictional wetlands and waterways must be authorized under a waste discharge requirement (WDR) issued by the SWRCB through the applicable RWQCB.

In April 2019, the SWRCB adopted the State Wetland Definition and Procedures for Discharges for Dredged or Fill Materials to Waters of the State (Procedures), which expanded the definition of "wetlands" subject to dredge or fill regulations to include all waters of the state. Waters of the state are defined by Water Code section 13050(e) as "any surface water or groundwater, including saline waters, within the boundaries of the state," whereas the CWA defines WOTUS as bodies of water that could affect interstate or foreign commerce, including but not limited to navigable waters, lakes, ponds, and wetlands. The Procedures apply to both waters of the state and WOTUS, providing similar protections to wetlands.

The Porter-Cologne Act requires the development and periodic review of Basin Plans that designate beneficial uses of California's major rivers and groundwater basins and establish narrative and numerical water quality objectives for those waters, provide the technical basis for determining WDRs, identify enforcement actions, and evaluate clean water grant proposals. The Basin Plans are updated every three years.

Colorado River Basin Regional Water Quality Control Plan

The Proposed Project encompasses parts of both California and Arizona. Only the California portion is under the jurisdiction of the Colorado River Basin RWQCB, which does not cover Arizona. The Colorado River Basin Plan aims to protect and enhance water quality through comprehensive measures. It sets narrative and numerical objectives to safeguard beneficial uses of water, regulates waste discharges, and controls sedimentation and erosion, particularly from agricultural activities. The plan addresses non-point source pollution, promotes best management practices, and ensures balanced water allocation. Implementation programs include monitoring, public participation, and coordination with other agencies. The plan is dynamic, subject to periodic review and updates to incorporate new information and technologies, ensuring ongoing effectiveness in water quality protection (Colorado River Basin RWQCB 2024).

California Fish and Game Code § 1600-1617

California Fish and Game Code section 1600 *et seq*. sets forth guidelines for the protection and conservation of fish and wildlife, including habitat. The law requires any person, state or local governmental agency, or public utility to provide written notification to CDFW before beginning an activity that would substantially modify the bank or bed of a river, stream, or lake (i.e., prior to causing any potential hydrological impacts), and enter into a Lake or Streambed Alteration Agreement with CDFW that includes measures to protect fish and wildlife resources. Refer to Section 5.4, Biological Resources, for additional information.

5.10.2.3 State of Arizona

Arizona Department of Water Resources

The Arizona Department of Water Resources (ADWR) is responsible for the regulation and management of Arizona's water resources and administers all state water laws except for those related to water quality, which are administered by the ADEQ. The ADWR was created in 1980 to assume the responsibilities of the Arizona Water Commission and the State Water Engineer relating to surface water and groundwater. The Director of ADWR has general control and supervision of

surface water and groundwater and is authorized to act on behalf of the state on issues related to the Colorado River (ADWR 2024).

Arizona Department of Environmental Quality

The ADEQ is tasked with safeguarding and improving the state's environment, including water quality. Since its inception in 1986, ADEQ has been enforcing environmental laws and regulations to protect public health and the environment. The agency's mission focuses on ensuring clean air, water, and land throughout Arizona. ADEQ's duties encompass regulating air and water quality, managing waste, and overseeing the remediation of contaminated sites. In 2021, the ADEQ was granted additional authority by the Arizona Legislature and Governor Doug Ducey to establish the Surface Water Protection Program (SWPP) in response to federal changes in the definition of WOTUS; see below for further discussion of the SWPP. This program underscores local control over the quality of Arizona's crucial water resources, ensuring their protection irrespective of federal regulatory changes (ADEQ 2023a).

Arizona Water Quality Standards and Surface Water Protection Program

The ADEQ establishes and enforces water quality standards, managing the implementation of the SWPP. Title 18, Chapter 11 of the Arizona Administrative Code outlines standards for both surface waters and non-WOTUS protected waters. These regulations aim to safeguard public health and the environment by controlling pollutant levels, and ensuring water bodies are safe for drinking, recreation, and aquatic life. Article One of Chapter 11 specifies standards for surface waters, detailing designated uses and pollutant criteria, which are crucial for maintaining water quality for various uses. Article Two addresses standards for non-WOTUS waters, ensuring they receive adequate protection to preserve their ecological health and water quality (ADEQ 2023b, ADEQ 2024c).

The SWPP is a comprehensive initiative designed to protect Arizona's surface waters, aiming to maintain and enhance water quality, protect public health, and preserve aquatic ecosystems. It covers both WOTUS and non-WOTUS waters, ensuring statewide protection. ADEQ implements the SWPP through permitting, monitoring, and enforcement activities, issuing permits for discharges to surface waters, conducting inspections, and monitoring water quality to ensure compliance with state standards. Enforcement actions are taken against facilities that violate permit conditions or fail to meet water quality standards. The SWPP rules, effective from February 20, 2023, ensure that all discharges comply with regulatory requirements and that facilities adopt best management practices to minimize pollution (ADEQ 2023b, ADEQ 2024c).

Arizona Protected Surface Water List (Arizona Revised Statues (A.R.S.) § 49-221)

Arizona Revised Statutes § 49-221 outlines the legal framework for the state's water quality standards and the creation of the Protected Surface Waters List (PSWL). This statute empowers ADEQ to establish and uphold water quality standards and to identify waters needing additional protection. The PSWL is intended to safeguard specific water bodies in Arizona that hold significant ecological, recreational, or public health value. Waters on the PSWL are subject to stricter regulatory controls to ensure their protection, with criteria for listing including ecological importance, recreational use, and potential threats to water quality (ADEQ 2023c).

The PSWL complements the SWPP and overall water quality standards by adding an extra layer of protection for listed waters. These waters undergo enhanced regulatory scrutiny and must meet higher standards to ensure their preservation. This integrated approach helps maintain the quality and ecological health of Arizona's surface waters, aligning with the goals of the SWPP and the state's water quality standards. By upholding high water quality standards and implementing effective regulatory programs, ADEQ helps protect Arizona's water resources for current and future generations (ADEQ 2023c).

Arizona Pollutant Discharge Elimination System

The Water Quality Division of ADEQ implements and enforces the NPDES program (CWA Section 402) through the Arizona Pollutant Discharge Elimination System (AZPDES). Construction of the Proposed Project in the state of Arizona would be covered under ADEQ's *Construction Activity General Permit for Stormwater* (CGP) under permit AZG2020-001 as made effective on July 1, 2020. The CGP introduces effluent limitations, surface water quality standards, general maintenance requirements, erosion and sediment control requirements, and a variety of BMPs and guidelines for development projects in the state of Arizona.

Any construction project that has stormwater discharges associated with construction activity, in accordance with 40 CFR Part 122.26(b)(14)(x) and (15), is eligible for coverage under the 2020 CGP. The CGP applies to a variety of activities, including but not limited to:

- Clearing, grading, or excavating, activities resulting in one or more acres of land being disturbed;
- Clearing, grading, or excavating activities that will disturb less than one acre of land, but the entire project will ultimately disturb one or more acres;
- On-site and off-site activities directly supporting the construction project;
- On-site and off-site industrial activities directly related to the construction process;
- Construction activities on federal lands and federal projects (excluding Indian Country lands); or
- Construction activities that disturb less than one acre, or meet other potential exemptions in this permit, may be "designated" and required to obtain permit coverage based on the potential for contribution to a violation of a water quality standard or for significant contribution of pollutants to protected surface waters.

Because the Proposed Project would ultimately disturb greater than one acre of land, it would be required to apply to coverage by the CGP under permit AZG2020-001. Typically, to obtain authorization to discharge under an AZPDES general permit, an operator submits to ADEQ a Notice of Intent (NOI) to be covered under the general permit (ADEQ 2021, ADEQ 2020).

5.10.2.4 Local Regulations

The California Public Utilities Commission (CPUC) has sole and exclusive state jurisdiction over the siting and design of the Proposed Project in California. Pursuant to CPUC General Order (G.O.) 131-E, Section XI.B:

> "[L]ocal jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the Commission's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters."

Consequently, local agencies do not have jurisdiction over the Proposed Project, but public utilities must consult with local agencies and consider their regulations.

As this Proponent's Environmental Assessment (PEA) is being prepared for the CPUC, the following discussion of local land use regulations in California is provided for informational purposes only.

The Arizona Corporation Commission's Arizona Power Plant and Transmission Line Siting Committee has state jurisdiction over the Proposed Project in Arizona. This committee may approve or deny a Certificate of Environmental Compatibility application and impose reasonable conditions. However, pursuant to Arizona Revised Statutes Section 40-360.06(D):

> "Any certificate granted by the committee shall be conditioned on compliance by the applicant with all applicable ordinances, master plans and regulations of the state, a county or an incorporated city or town, except that the committee may grant a certificate notwithstanding any such ordinance, master plan or regulation, exclusive of franchises, if the committee finds as a fact that compliance with such ordinance, master plan or regulation is unreasonably restrictive and compliance therewith is not feasible in view of technology available."

As this PEA is being prepared for the CPUC, the following discussion of local land use regulations in Arizona is provided for informational purposes only.

Integrated Regional Water Management Plan

The California legislature passed the Integrated Regional Water Management Planning Act (Senate Bill 1672) in 2002 to encourage local agencies to work cooperatively to manage local and imported water supplies, and to improve water quality, quantity, and reliability. The Imperial County Integrated Regional Water Management Plan (IRWMP) was approved by the DWR in December 2012. The boundaries for the Imperial Region were defined in the Imperial IRWMP Regional Acceptance Process document in April 2009. The Imperial Region IRWMP aims to develop cost-effective water management strategies that support economic growth and ensure a reliable water supply for new municipal, commercial, and industrial demands. The plan guides resource management actions and projects by participating agencies and stakeholders to meet regional water goals. Additionally, it helps the Imperial Region identify long-term water infrastructure needs and secure state and federal funding, ensuring compliance with standards set by the California Department of Water Resources (IID 2024; IID 2012a).

Imperial County General Plan

The Water Element of the Imperial County General Plan outlines comprehensive goals and policies aimed at managing water resources effectively to encourage efficient water use and provide sufficient water demands for long-term availability (Imperial County 2024). The goals and objectives have been developed to reflect the County's values, aims, and aspirations for water management. Relevant goals and objectives include:

Goal 2: Long-term viability of the Salton Sea, Colorado River, and other surface waters in the County will be protected for sustaining wildlife and a broad range of ecological communities.

Objective 2.1: The continued viability of the agricultural sector as an important source of surface water for the maintenance of valuable wildlife and recreational resources in the County.

Objective 2.2: A balanced ecology associated with the riparian and ruderal biological communities important as breeding and foraging habitats for native and migratory birds and animals occurring within the County.

Objective 2.3: Preservation of riparian and ruderal habitats as important biological filters as breeding and foraging habitats for native and migratory birds and animals.

Goal 5: Water Resources shall be managed effectively and efficiently through interagency and inter-jurisdictional coordination and cooperation.

Objective 5.1: Encourage and provide for the management and wise use of water resources for contact and non-contact recreation, groundwater recharge, hydroelectric energy production, and wildlife habitat as well as for domestic and irrigation use.

Objective 5.2: Aid in the protection and enhancement of limited water resources so as to provide for the indefinite use and maximum enjoyment.

The policies and programs of the Water Element implement the goals and objectives and set specific performance objectives. Relevant policies and programs include:

Policy 2: Preservation of riparian and ruderal habitats as important biological filters, and as breeding and foraging habitats for native and migratory birds and animals.

Program 2.1: The County of Imperial shall take an active role in soliciting the support of State and Federal agencies, particularly the California Water Quality Control Board and the U.S. Environmental Protection Agency, in the cleanup of the New River at the International Border.

Program 2.2: The County of Imperial Health Department, Parks and Recreation Department, and other responsible agencies shall maintain programs and regulations to assure safe and healthful water resources for sport, recreation, and wildlife uses.

Program 2.3: The County of Imperial, also with the Imperial Irrigation District, the California Department of Fish & Game, and the U.S. Fish & Wildlife Service, shall cooperate and coordinate the use of water resources to protect and enhance valuable wildlife communities and habitats of the region.

Program 2.4: The County of Imperial shall take an active role in encouraging the development of infrastructure and a regulatory environment in the Republic of Mexico which addresses the chronic pollution of the New River and Alamo River from agricultural, industrial, and urban development.

Program 2.5: The County Health Department shall report annually to the Board of Supervisors on the conditions of the New River at the International Border and within the County, and the progress made by State and Federal agencies in reducing the level of contaminants being carried to the Salton Sea.

Program 2.6: As part of the effort to protect and enhance wildlife and their habitat, the County of Imperial shall actively pursue the preservation, maintenance of breeding and foraging habitat for native and migratory birds and animals, preserving these biological systems as indicators of environmental integrity, and as a source of sport and recreation.

Program 2.7: The County of Imperial shall monitor, coordinate, and cooperate with State and Federal agencies to assure the protection of the Colorado River resource from over utilization and excessive export to protect urban and agricultural interests and to assure the health of the various biological habitats of the Colorado River.

Policy 4: Adoption and implementation of ordinances, policies, and guidelines which assure the safety of County ground and surface waters from toxic or hazardous materials and/or wastes.

Program 4.1: The County of Imperial shall make every reasonable effort to limit or preclude the contamination or degradation of all groundwater and surface water resources in the County.

Program 4.2: All development proposals brought before the County of Imperial shall be reviewed for potential adverse effects on water quality and quantity, and shall be required to implement appropriate mitigation measures for any significant impacts.

Program 4.3: The County of Imperial shall coordinate with the California Regional Water Quality Control Board and incorporated cities to assure that discharge from community wastewater treatment plants meet or exceed applicable State and Federal standards.

Program 4.4: The County of Imperial shall play an active role in assuring the advance planning necessary to provide community and/or industrial wastewater treatment facilities which keep pace with continued urbanization in the County.

Program 4.5: The County of Imperial shall support the investigation of innovative methods of wastewater treatment which reduces discharge of contaminants into County surface waters, while enhancing the ruderal and riparian habitats of the County.

Program 4.6: The County of Imperial shall direct staff of the County Health Department, Planning/Building Department, and other appropriate departments, as well as the County Agricultural Commissioner, to review existing ordinances, policies, and guidelines and determine their adequacy in protecting groundwater and surface water from contamination by hazardous materials and/or waste.

Program 4.7: The Imperial County Health Department, as the Local Enforcement Agency, shall continue monitoring operations at the various landfills across the County and shall periodically report on the impacts or potential impacts of these landfills on ground and surface water resources in the County.

Program 4.8: The County of Imperial shall confer and coordinate with the California Department of Health, Regional Water Quality Control Board, and the U.S. Environmental Protection Agency to assure that these agencies are taking active steps to protect and reclaim groundwater and surface waters from contamination.

City of Calexico General Plan

The City of Calexico's General Plan establishes key goals, objectives, policies, and implementation measures designed to guide land use and development decisions. The Public Facilities/Services Element includes the following goals and objectives related to storm drain facilities (City of Calexico 2015a):

Goal: Achieve adequate storm drain facilities in the existing community and as new development occurs within the City.

Objective: Ensure the storm drain facilities and system satisfy all local, regional and state standards.

Policies:

- All future development shall be required to construct future storm drain facilities and pay Sub-Regional basin fees, to the extent applicable, in accordance with the design standards of the Public Works/Engineering Department and the IID.
- All future development shall ensure compliance with all state and federal rules and regulations related to the discharge of storm water.
- All development shall provide improvements constructed pursuant to best management practices as referenced in the California Storm Water Best Management Practices Handbook.
- All drainage retention basins shall be constructed with landscaping and an irrigation system in accordance with the City's Park and Recreation design standards and requirements. The requirement of the basin is not a substitute or a combined use of the park and/or fee requirement for parks.
- All new developments will incorporate and/or process a Community Facilities District (CFD) for off-site drainage system requirements as the City is developing a Sub-Regional Retention Basin Concept.
- Work with appropriate agencies to develop adequate arrangements for the discharge of storm water into the New River.

The Safety Element of the City of Calexico's General Plan includes the following goals, objectives, and policies related to flooding and the New River (City of Calexico 2015b):

Goal: Reduce the risk of flood damage in Calexico.

Objective: Promote policies and programs that reduce the risk to the daytime and nighttime population from flood hazards.

Policies:

- Identify flood hazard areas and provide appropriate land use regulations for areas subject to flooding.

- Require detention basins as a flood control measure where applicable to reduce the risk from flood hazards.
- Promote programs and actions that educate the public about flood hazards and reduce the risk of flood losses.
- Review all new proposed development to ensure that it will not aggravate poor drainage conditions and will, to the extent possible, improve poor drainage conditions.

Goal: Reduce the risk posed by the current conditions of the New River.

Objective: Protect residents from the potential hazards associated with the New River, including restricting access.

Policies:

- Cooperate with international, federal, state, and regional responsible agencies in projects aimed at cleaning up the New River through the implementation of the New River Improvement Project Strategic Plan.
- Continue to restrict access to the river and maintain bilingual signs that warn of the dangers of contact with the water.
- Continue to seek county, state, or federal funds to cover costs incurred by the City for work done to restrict public access to the river or any other measure associated with the river due to its pollution or risk to public safety.
- Prohibit land development near the New River in order to reduce exposure of people to the potential contact with the water, odors, and airborne foam.
- Adopt design set-back of a distance of 50 feet outside the shaded 500-year flood zone areas delineated on the FEMA maps for the New River.

Yuma County General Plan

The Yuma County General Plan Water Resources Element establishes key policies and actions designed to ensure an adequate supply of safe drinking water for the county residents (Yuma County 2023).

Policy WRP.1: No new development or policy should degrade the water resources of existing water users and development.

Policy WRP.2: Maintaining Yuma County's existing allocations of Colorado River water is a top priority.

Policy WRP.4: All Yuma County residents should have access to high quality and reliably accessible drinking water.

Policy WRP.7: Land use adjacent to and in the immediate vicinity of major canals that supply irrigation and drinking water should not imperil the quality of water in these canals.

Action WRA.1: Yuma County will continue to prohibit the platting of any new subdivision that has not first obtained a determination of an adequate water supply from the Arizona Department of Water Resources or obtained written commitment of water service from a city, town or private water company that has been designated by the Arizona Department of Water Resources as having an adequate supply of water.

Action WRA.2: Yuma County will work to continue to identify community water systems that need capital improvements to improve the quality of water that they deliver and will then work to get these needed projects funded through programs such as the Water Infrastructure Finance Authority's Drinking Water State Revolving fund or any other applicable program.

City of Calexico Municipal Code

The City of Calexico's 1995 Municipal Code was most recently updated in 2025. As contained within the Code, the City of Calexico implements the requirements of Section 402(p)(3) of the Clean Water Act, 33 U.S.C. Section 1342, and the Porter-Cologne Water Quality Control Act, Water Code Section 13000 et seq., as embodied in the city's current NPDES permit. Municipal Code Chapter 13.50, Urban Stormwater Quality Management and Discharge Control, sets forth regulations and standards governing stormwater discharge within the city. This includes regulations on construction related stormwater discharge.

Construction activities occurring within the boundaries of the City of Calexico are subject to requirements consistent with the California Stormwater Quality Association (CASQA) Construction Best Management Practice Manual, in the version adopted by resolution of the city council, and requirements for erosion and sediment controls, dewatering, source controls, pollution prevention measures and illicit discharges. Additionally, every development project that disturbs one acre or more of soil is subject to the Construction General Permit. The director may require, as a condition of issuing a grading or building permit, the implementation of BMPs to ensure that the discharge of pollutants from a construction site will be effectively prohibited and will not cause or contribute to pollution or to an exceedance of water quality standards. The code specifically prohibits discharge to areas of special biological significance except in compliance with all applicable NPDES permits, waivers, orders and other regulatory controls.

5.10.3 Impact Questions

5.10.3.1 Hydrology and Water Quality Impact Questions

The thresholds of significance for assessing impacts come from the California Environmental Quality Act (CEQA) Environmental Checklist. For hydrology and water quality, the CEQA Checklist asks, would the project:

- Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?
- Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on-site or off-site; substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or impede or redirect flood flows?
- Be located in flood hazard, tsunami, or seiche zones, or risk release of pollutants due to project inundation?

- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

5.10.3.2 Additional CEQA Impact Questions

There are no CPUC-identified additional CEQA impact questions.

5.10.4 Impact Analysis

5.10.4.1 Hydrology and Water Quality Analysis

5.10.4.1.1 Hydrology and Water Quality Methodology

Hydrology and water quality data for the Proposed Project vicinity was obtained from multiple federal, state, and local sources. The Proposed Project components were overlain with collected data and aerial imagery to determine the potential impacts to these resources.

5.10.4.1.2 Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

Construction

Project Components in California

Less than Significant Impact with Mitigation. As discussed in Section 5.10.1.1, Waterbodies, and shown in Figure 5.10-1a, Figure 5.10-1b and Figure 5.10-1c, the Proposed Project would involve a number of water crossings in California. Named surface waters in the California portion of the Proposed Project alignment include Picacho Wash, Mission Wash, Araz Wash, Alamo River, and Greeson Wash, All American Canal, New River, and the Colorado River. There is also an extensive network of agricultural canals, referred to as the "Imperial Drains," throughout the agricultural region of the Imperial Valley generally surrounding Calexico. These canals form a grid-like pattern between agricultural fields and cross the Proposed Project alignment in a number of locations throughout Imperial Valley. The canals generally parallel existing roads and agricultural plot lines. Of the existing regional surface waters in California mentioned above, five water bodies are listed on the 303(d) list of impaired water bodies, the Imperial Valley Drains, Alamo River, New River in Imperial County, All American Canal, and the Imperial Reservoir segment of the Colorado River. The Proposed Project would be required to comply with EPA established TMDLs where the Project crosses 303(d) listed waters or waterbodies leading to downstream 303(d) listed waters.

Water quality degradation could occur during construction if Project-related ground disturbance causes soil erosion and disturbed soils are allowed to migrate into surface water or groundwater through wind or stormwater runoff, or if there is an accidental spill or leak of potentially hazardous materials that are similarly allowed to migrate into receiving waters. Construction of the Proposed Project in California would include ground-disturbing activities during site preparation and installation of Project components. As discussed in Chapter 3, Proposed Project Description, Section 3.5.2.2, Staging Area Preparation, topsoil would be preserved for reuse during restoration, protecting the stockpiles with perimeter control BMPs. Stockpiles would be located away from drainage paths and kept clear of the work area. Staging and material yards would be graded to a near flat grade to ensure safe operations. In addition, as discussed in Section 3.5.4.5, Work Area

Stabilization, sites, including structure locations, laydown areas, staging areas, and operations and maintenance (O&M) structure pads, would be graded such that water would run toward the direction of the natural drainage. In addition, drainage would be designed to prevent ponding and erosive water flows that could cause damage to the structure foundations.

Materials that would be used during Project construction in California include potentially hazardous substances associated with the operation of construction vehicles, equipment, and machinery. These materials include diesel fuel, hydraulic fluid, oils, and grease, which would be handled and used appropriately to avoid spills or leaks. The appropriate handling, storage, and disposal of potentially hazardous materials is discussed in Section 5.9, Hazards, Hazardous Materials, and Public Safety, and would be conducted during all aspects of Project construction to minimize risk of degradation of surface or groundwater.

Work within waterways would be avoided unless necessary to accommodate placement of Project components and appurtenances. In California, water crossings may require issuance of WDRs from the Colorado River Basin RWQCB for compliance with Section 401 of the Clean Water Act (see Section 5.10.2, Regulatory Environment) and/or a 1602 Lake or Streambed Alteration Agreement (LSAA) from CDFW (see Section 5.4, Biological Resources). Obtaining permits for dredge and fill activities and compliance with the terms and conditions in these authorizations would ensure that these activities would not violate any water quality standards and would not otherwise substantially degrade surface or groundwater quality. All watercourse crossings would be permitted for compliance with applicable regulations, including but not limited to the Clean Water Act and California Fish and Game Code, as applicable.

The Proposed Project would include the construction of new transmission structures. This would result in an increase of impervious surfaces in the area. Based on the Proposed Project plans, the footprint from transmission structures (based on pole diameters) would result in an additional approximately 0.8 acre of impervious surface in California, estimated conservatively. As discussed above, these new impervious surfaces, minimal in scale compared to the size of underlying basins, would not result in degradation of surface or groundwater quality.

Construction activities would disturb more than one acre of land in California; therefore, as introduced in Section 5.10.2, Regulatory Setting, under “Clean Water Act - Section 402, National Pollutant Discharge Elimination System” and under “Porter-Cologne Water Quality Control Act,” the Proposed Project is required to comply with the NPDES program. In California, NPDES compliance would be achieved through coverage under the Construction Stormwater General Permit, which is administered by the SWRCB and provided through implementation of a SWPPP with site-specific BMPs to manage stormwater runoff and erosion. Such BMPs may consist of those presented below and in Section 3.5.11, Dust, Erosion, and Runoff Control. These may include but would not be limited to the use of silt fencing, straw wattles, and detention basins to prevent stormwater from leaving a construction area, slope and sediment stabilization to prevent erosion, management of materials and non-stormwater discharges, and good site housekeeping to prevent the accidental spill or release of a potentially hazardous substance during construction. BMPs to control dust, erosion, and runoff during construction would be implemented as part of the Project, and may include those listed below, which are presented in detail in Section 3.5.11, Dust, Erosion, and Runoff Controls:

- BMP WE-1: Wind Erosion Control
- BMP EC-1: Scheduling
- BMP EC-2: Preservation of Existing Vegetation

- BMP EC-3: Hydraulic Mulch
- BMP EC-4, Hydroseed
- BMP EC-5, Soil Binders
- BMP EC-6, Straw Mulch
- BMP EC-7, Geotextiles and Mats
- BMP EC-8, Wood Mulching
- BMP EC-15, Soil Preparation-Roughening
- BMP EC-16, Non-Vegetated Stabilization
- BMP SE-4, Check Dams
- BMP SE-5, Fiber Rolls
- BMP SE-6, Gravel Bag Berm
- BMP SE-7, Street Sweeping
- BMP SE-10, Storm Drain Inlet Protection
- BMP TC-1, Stabilized Construction Entrance and Exit
- BMP TC-2, Stabilized Construction Roadway
- BMP WM-3, Stockpile Management

BMPs to address hazardous materials management would be implemented as part of the Project, and may include those listed below, which are presented in detail in Section 3.5.13.2, Hazardous Materials Management:

- BMP NS-9: Vehicle and Equipment Fueling
- BMP WM-01: Material Delivery and Storage
- BMP WM-02, Material Use
- BMP WM-04, Spill Prevention and Control
- BMP WM-06, Hazardous Waste Management
- BMP WM-07, Contaminated Soil Management

In addition to BMPs in the Project's SWPPP, Applicant Proposed Measures (APM) would also be implemented as part of the Proposed Project design to help minimize or avoid potentially adverse impacts. The APMs listed below are designed to prevent water quality degradation and protect the quality of surface water and groundwater.

- **HAZ-1** requires a Waste and Hazardous Materials Business Plan (WHMBP) to be implemented during Project construction, with proper hazardous materials handling, use, storage and disposal requirements, as well as hazardous waste management procedures.
- **WTR-1** requires the preparation of a jurisdictional delineation to inform Project design and facilitate the avoidance of disturbance to jurisdictional waters, wetlands, and riparian habitat to the extent possible, and to incorporate BMPs such as silt fencing, straw wattles, secondary containment, and designated fueling areas to protect water quality and avoid degradation. BMPs would be installed according to their installation details and inspected and repaired, if needed, as required per the SWPPP.

- **WEA-1** ensures that all workers attend a Worker's Environmental Awareness Program (WEAP) training on resource protection and avoidance measures, including all BMP and regulatory compliance requirements applicable to Project construction, including related to the protection of water quality.

Project BMPs and APMs would be implemented as applicable throughout Proposed Project construction. With adherence to all applicable regulations, permitting requirements, and project specific BMPs and APMs, the Proposed Project would not violate any water quality standards or waste discharge requirements in California, nor would it otherwise substantially degrade surface water or groundwater quality. This impact would be less than significant with mitigation incorporated.

Project Components in Arizona

Less than Significant Impact with Mitigation. Within Arizona, Project-related ground disturbance would occur at the proposed construction material yard and wire set up site at the eastern terminus of the Proposed Project in addition to at all proposed structure sitings. Because ground disturbance associated with the Proposed Project would exceed one acre, construction activities are subject to the federal NPDES program as implemented by ADEQ in Arizona. As discussed in Section 5.10.2, Regulatory Setting, NPDES compliance would be achieved through coverage under the ADEQ's *Construction Activity General Permit for Stormwater* under permit AZG2020-001 as effective July 1, 2020, for project components within Arizona (ADEQ 2025). This is a five-year permit that has been administratively continued, with NOIs obtained under the 2020 permit valid through August 3, 2025, and coverage under the 2025 CGP anticipated to be available on August 4, 2025 (ADEQ 2025).

The ASG2020-001 permit and anticipated 2025 permit require adherence to specific measures to prevent or minimize stormwater related impacts, including but not limited to the implementation of a project-specific SWPPP and Discharge Monitoring Report (DMR). The permit (AZG2020-001) also details guidelines on erosion and sediment controls, site stabilization control, dewatering requirements, pollution prevention measures, and surface outlets. Additionally, project-specific BMPs and APMs, as described above, would be implemented throughout Proposed Project construction, including throughout the segment in Arizona.

The Proposed Project would include the construction of new transmission structures. This would result in an increase of impervious surfaces in the area. Based on the Proposed Project plans, the footprint from transmission structures (based on pole diameters) would result in approximately 0.2 acre of impervious surface in Arizona, estimated conservatively. As discussed above, these new impervious surfaces, minimal in scale compared to the size of the underlying basin, would not result in degradation of surface or groundwater quality.

As shown in Figure 5.10-1c, named water bodies in the vicinity of the Arizona portion of the Proposed Project include the Gila Gravity Canal, Colorado River tributaries, and Mittry Lake. Otherwise, the Proposed Project in Arizona crosses a total of six perceptible unnamed ephemeral streams in Arizona. One water body crossed by the Proposed Project in Arizona, the Colorado River, is listed on the 303(d) list of impaired water bodies. Construction of the Proposed Project would comply with EPA established total maximum daily loads (TMDLs) where the Project crosses 303(d) listed waters or waterbodies leading to downstream 303(d) listed waters.

In addition, project-specific APMs would be implemented including APM WTR-1, APM HAZ-1, and APM WEA-1. These APMs would minimize or avoid potential for construction activities to affect surface or groundwater quality. The Project would be conducted in compliance with all applicable

water quality standards or waste discharge requirements. For these reasons, the Proposed Project in Arizona would not violate any water quality standards or waste discharge requirements, nor would it otherwise substantially degrade surface water or groundwater quality. This impact would be less than significant with mitigation incorporated.

Overall Project

Less than Significant Impact with Mitigation. As discussed above, construction of the Proposed Project in both California and Arizona would include ground-disturbing activities requiring compliance with the federal NPDES program. This would be achieved through coverage under Construction General Stormwater Permits in California (2022-0057-DWQ) and Arizona (AZG2020-001); as noted above, the Arizona permit has been administratively continued with coverage under the anticipated 2025 permit available August 4, 2025. Both states require preparation of a Project-specific SWPPP including ongoing stormwater discharge monitoring and site-specific BMPs to minimize or avoid potential impacts to water quality.

The Proposed Project would be implemented in compliance with all applicable permits and authorizations in California and Arizona prior to the initiation of Project construction in either state, including through the implementation of a Project-specific SWPPP with BMPs to prevent erosion and sedimentation, thereby protecting water quality during construction. In addition, project-specific APMs include APM WTR-1, APM HAZ-1, and APM WEA-1, as described above. These AMPs would require avoidance of jurisdictional waters and riparian habitat, implementation of appropriate BMPs, mitigation of permanent impacts, restoration for temporary impacts, implementation of a WHMBP during Project construction, and would require that all workers attend a WEAP training on resource protection and avoidance measures. As discussed above, the Proposed Project would not violate any water quality standards or waste discharge requirements and would not otherwise substantially degrade surface or groundwater quality.

The Proposed Project would include the construction of new transmission structures. This would result in an increase of impervious surfaces in the area. Based on the Proposed Project plans, the total footprint from transmission structures (based on the pole diameters) would result in an additional approximately 1.0 acre of impervious surface, estimated conservatively, across both the California and Arizona portions of the Proposed Project. As discussed above, these new impervious surfaces, minimal in scale compared to the size of underlying basins, would not result in degradation of surface or groundwater quality.

With adherence to all applicable regulations, permitting requirements, and project specific BMPs and APMs, overall implementation of the Proposed Project would not result in substantial water quality degradation and would not violate any water quality standards or waste discharge requirements. This impact would be less than significant with mitigation incorporated.

Operation

Project Components in California

Less than Significant Impact. Water quality degradation could occur during operation if the Proposed Project were to generate or allow for polluted discharge or runoff which could migrate into receiving waters. Operation of the Proposed Project would not generate wastewater and is not expected to result in increased stormwater discharge. Drainage would be designed to prevent ponding and erosive water flows that could cause damage to the structure foundations. While no hazardous wastes are expected to be generated by or associated with operational activities, the

appropriate handling, storage, and disposal of potentially hazardous materials is discussed in Section 5.9, Hazards, Hazardous Materials, and Public Safety, and would be conducted during all aspects of Proposed Project construction to minimize risk of degradation of surface or groundwater. As is true of the construction phase, operation of the Proposed Project would be required to comply with EPA established TMDLs where the Project crosses 303(d) listed waters or waterbodies leading to downstream 303(d) listed waters.

O&M activities would include but are not limited to repairing conductors, washing and replacing insulators, repairing and replacing other hardware components and poles, tree trimming, brush and weed control, and access road maintenance. O&M would also include routine inspections, equipment testing and maintenance, and emergency repairs throughout ROWs, which would require the use of vehicles and equipment. All dust, erosion, and runoff controls listed in Section 3.11 would be implemented during O&M activities; these BMPs would minimize or avoid the potential for water quality degradation during O&M.

The introduction of new impervious surfaces would have the potential to impair surface and groundwater quality by allowing for an increase in polluted runoff and siltation to reach these waters. Project components in California include approximately 81 miles of new transmission line on new towers with impervious foundations, as well as associated facilities and access roads. Based on the Proposed Project plans, the total footprint from transmission structures (based on the pole diameters) would result in an additional approximately 0.8 acre of impervious surface, estimated conservatively. New impervious surfaces would result only from the foundations of new transmission structures. Permanent new and improved access roads and staging areas would be gravel and would remain pervious despite surface disturbances. New impervious surfaces would be located within designated utility ROWs and would be minimal in scale compared to the size of the three basins underlying the Proposed Project. Due to the small and generally diffuse nature of new impervious surfaces within the portion of the Study Area in California, surface runoff patterns would not be substantially affected such that degradation of surface or groundwater quality would occur.

With adherence to all applicable regulations, permitting requirements, and project specific BMPs and APMs, operation of the Proposed Project would not violate any water quality standards or waste discharge requirements in California, nor would it otherwise substantially degrade surface water or groundwater quality. This impact would be less than significant.

Project Components in Arizona

Less than Significant Impact. As shown in Figure 5.10-1, named water bodies surrounding the Arizona portion of the Proposed Project include the Gila Gravity Canal, Colorado River tributaries, and Mittry Lake. Otherwise, the Proposed Project crosses a total of six perceptible unnamed ephemeral streams in Arizona. The Colorado River is crossed by the Proposed Project in Arizona and is listed on the 303(d) list of impaired water bodies. While operation of the Proposed Project would not generate wastewater and is not expected to result in increased stormwater discharge, operation of the Proposed Project would comply with EPA established TMDLs where the Project crosses 303(d) listed waters or waterbodies leading to downstream 303(d) listed waters.

Project components in Arizona include approximately 6 miles of new transmission line on new towers with impervious foundations, as well as associated facilities and access roads. Based on the Proposed Project plans, the total footprint from transmission structures (based on the pole diameters) would result in an additional approximately 0.2 acre of impervious surface, estimated conservatively. The creation of impervious surfaces has the potential to impair surface water and groundwater quality but increasing runoff and thus the transport of potential contaminants. The

new impervious surfaces created as project components in Arizona would be minimal in scale compared to the size of underlying basins and would not result in degradation of surface or groundwater quality. Additionally, the Proposed Project does not include any planned or routine discharges of water pollutants.

O&M would also include routine inspections, equipment testing and maintenance, and emergency repairs throughout ROWs, which would require the use of vehicles and equipment. All dust, erosion, and runoff controls listed in Section 3.11 would be implemented during O&M activities; these BMPs would minimize or avoid the potential for water quality degradation during O&M.

For these reasons, the Proposed Project in Arizona would not violate any water quality standards or waste discharge requirements, nor would it otherwise substantially degrade surface water or groundwater quality. This impact would be less than significant.

Overall Project

Less than Significant Impact. As discussed above, operation of the Proposed Project would not generate wastewater and is not expected to result in increased stormwater discharge. The Proposed Project would not violate any water quality standards or waste discharge requirements and would not otherwise substantially degrade surface or groundwater quality.

The Proposed Project would include the implementation of new transmission structures. This would result in an increase of impervious surfaces in the area. Based on the Proposed Project plans, the total footprint from transmission structures (based on the pole diameters) would result in an additional approximately 1.0 acre of impervious surface, estimated conservatively. As discussed above, these new impervious surfaces, minimal in scale compared to the size of underlying basins, would not result in degradation of surface or groundwater quality.

Further, O&M activities, such as equipment testing and maintenance, and emergency repairs throughout ROWs, would not degrade water quality. All dust, erosion, and runoff controls listed in Section 3.11 would be implemented during O&M activities; these BMPs would minimize or avoid the potential for water quality degradation during O&M.

With adherence to all applicable regulations, permitting requirements, and project specific BMPs and APMs, overall implementation of the Proposed Project would not result in substantial water quality degradation and would not violate any water quality standards or waste discharge requirements. This impact would be less than significant.

5.10.4.1.3 Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Construction

Project Components in California

Less than Significant Impact. As described in Chapter 3, Proposed Project Description, construction of the Proposed Project is estimated to require approximately 30 to 50 million gallons of water over the approximately 19-month construction period; this water would be used for dust control, ground compaction, restoration activities, and in the construction of foundations. Water supply availability and reliability for the Proposed Project is assessed in Section 5.19, Utilities and Service Systems. As

discussed therein, water supply for Project construction would be obtained from local purveyors or irrigation water users with surplus supply available and would be sourced from the Colorado River through IID in California. IID has jurisdiction over water supply in a large portion of the land underlying the Proposed Project as a wholesaler of Colorado River water and elective GSA for groundwater in the Imperial Valley and Ogilby Valley basins which underly the Proposed Project in California (IID 2025a, IID 2025b). Groundwater in the Imperial Valley is of poor quality and is generally unsuitable for domestic or irrigation purposes. As detailed in Section 5.19, Utilities and Service Systems, IID does not produce any local groundwater as part of its water supply portfolio. Groundwater extracted by IID consists of Colorado River water that is stored in well fields for use as needed. Groundwater is not proposed as a water supply source for the Project, except as obtained from dewatering activities, and the Project would not introduce any new groundwater extraction wells. Therefore, the Proposed Project would not decrease groundwater supplies as a result of construction water demands in California.

During installation of poles and underground facilities, shallow groundwater may be encountered. In these instances, excavations would be dewatered and either discharged on-site to land or stored in Baker tanks or similar equipment prior to disposal off-site. This water may also supplement other water supplies for dust control, as permitted. Groundwater dewatered from excavations and discharged to land or used for dust control would infiltrate into the existing groundwater system; during this process some groundwater would be lost to evapotranspiration, but this loss would not deplete groundwater supplies.

All three basins underlying the Proposed Project in California are designated Very Low Priority and are therefore not subject to the SGMA. None of these basins are managed by GSPs. Consequently, operation of the Proposed Project would not substantially deplete groundwater supplies or interfere with groundwater recharge such that it would impede sustainable groundwater management of the underlying basins. This impact would be less than significant.

Project Components in Arizona

Less than Significant Impact. During Project construction in Arizona, water would be obtained from the Yuma Project, which conveys Colorado River water to entitlement holders throughout the Yuma Project's Valley Division, where the Proposed Project is located on unincorporated county lands. Groundwater in the Yuma Valley Groundwater Basin which underlies the Arizona portion of the Proposed Project is low quality and therefore does not contribute to Yuma's water supply portfolio, as detailed in Section 5.19, Utilities and Service Systems. Therefore, the Proposed Project would not decrease groundwater supply as a result of construction water demands in Arizona.

The Yuma Valley Basin, underlying the Proposed Project in Arizona, is designated Very Low Priority. The basin is not managed by a GSP. Consequently, operation of the Proposed Project would not substantially deplete groundwater supplies or interfere with groundwater recharge such that it would impede sustainable groundwater management of the underlying basins. This impact would be less than significant.

Overall Project

Less than Significant Impact. Construction water demands and uses would not result in substantial decreases to local groundwater. As detailed in Section 5.19, Utilities and Service Systems, sufficient water supply is available in the region surrounding the Proposed Project to meet the Project's construction water demands. In addition, drainage patterns would be maintained to the extent practicable such that new impervious areas would not substantially alter groundwater recharge.

Project construction would not deplete groundwater or interfere with sustainable groundwater management of any of the three basins underlying the Proposed Project. This impact would be less than significant.

Operation

Project Components in California

Less than Significant Impact. Operation and maintenance of the Proposed Project would involve periodic washing of insulators and other components which would generate operational water demand. The demand would be periodic and minimal. As discussed herein, as well as in Section 5.19, Utilities and Service Systems, water supply for the Proposed Project would be obtained from local purveyors or irrigation water users with surplus supply available and would be sourced from the Colorado River through IID in California. IID does not produce any local groundwater as part of its water supply portfolio. Groundwater is not proposed as a water supply source for the Project, and the Project would not introduce any new groundwater extraction wells. These activities would occur within the designated ROWs and would not extract groundwater or otherwise affect groundwater recharge or supplies. Sufficient water supply is available for operation of the Proposed Project and the operational water demands would not deplete groundwater supply availability.

Additionally, existing drainage patterns would be maintained to the extent practicable. As described under Section 5.10.4.2.1 above, the Proposed Project would introduce less than one acre of new impervious surface in California, when estimated conservatively. This represents only a fraction of a percent of the combined 1,337,750-acre surface area of the three SWRCB managed groundwater basins underlying in the Proposed Project. The new impervious surfaces created and potential changes to drainage patterns would therefore not interfere with the rate or patterns of regional groundwater recharge.

All three basins underlying the Proposed Project in California are designated Very Low Priority and are therefore not subject to the SGMA. None of these basins are managed by GSPs. Consequently, operation of the Proposed Project would not substantially deplete groundwater supplies or interfere with groundwater recharge such that it would impede sustainable groundwater management of the underlying basins. This impact would be less than significant.

Project Components in Arizona

Less than Significant Impact. In Arizona, water required for periodic O&M activities would be obtained from the Yuma Project, which conveys Colorado River water, as previously discussed. As previously mentioned, groundwater in the Yuma Valley Groundwater Basin which underlies the Arizona portion of the Proposed Project is low quality and therefore does not contribute to Yuma's water supply portfolio. Therefore, the Proposed Project would not decrease groundwater supply as a result of operational water demands in Arizona.

Transmission structures implemented in Arizona would create new impervious surfaces. Though, as described below, this would be minimal in comparison to the total land area of the basins underlying the Proposed Project and existing drainage patterns would be maintained to the extent practicable. New impervious surfaces would not substantially interfere with groundwater recharge such that sustainable management of the groundwater would be impeded.

The Yuma Valley Basin, underlying the Proposed Project in Arizona, is designated Very Low Priority. The basin is not managed by a GSP. Consequently, operation of the Proposed Project would not substantially deplete groundwater supplies or interfere with groundwater recharge such that it would impede sustainable groundwater management of the underlying basins. This impact would be less than significant.

Overall Project

Less than Significant Impact. Overall, operational water demands and uses would not result in substantial decreases to local groundwater. As detailed in Section 5.19, Utilities and Service Systems, sufficient water supply is available in the region surrounding the Proposed Project to meet the Project's construction water demands. In addition, drainage patterns would be maintained to the extent practicable such that new impervious areas would not substantially alter groundwater recharge.

The Proposed Project would result in a nominal increase in regional utility scale O&M activities, such as increased maintenance and inspection trips. O&M activities would require limited amounts of water for periodic washing of insulators. This water would likely be procured from local sources and would not extract groundwater or otherwise affect groundwater recharge or supplies.

Due to the size of the basins in relation to the amount of impervious surface that would be added as a result of the Proposed Project, the additional impervious surface is unlikely to negatively affect groundwater recharge capacity in the vicinity because opportunity for additional recharge exists in the extensive remaining undeveloped area across the three groundwater basins underlying the Proposed Project. Consequently, operation of the Proposed Project would not substantially deplete groundwater supplies or interfere with groundwater recharge such that it would impede sustainable groundwater management of the underlying basins. This impact would be less than significant.

5.10.4.1.4 Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

- *result in substantial erosion or siltation on-site or off-site;*
- *substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;*
- *create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems;*
- *provide substantial additional sources of polluted runoff; or*
- *impede or redirect flood flows?*

Construction

Project Components in California

Less than Significant Impact. Construction of the Proposed Project in California would not directly alter the course of a stream or river, although certain construction activities, including grading of construction work areas, new access roads, rehabilitation of existing access roads and spur roads, and construction of TSP foundations, could alter drainage patterns and contribute to minor

increases of polluted runoff, erosion and/or siltation. These activities would be temporary, and site-specific SWPPPs would be prepared that would identify BMPs to reduce runoff, which would minimize the potential for on- and off-site erosion, sedimentation, flooding, and pollution. As discussed in Section 5.10.4.2.1, BMPs would be implemented as part of the Proposed Project for all components in California and would serve to minimize or avoid potential impacts associated with drainage pattern alterations by maintaining existing drainage patterns to the extent practicable and by protecting disturbed areas from being damaged or eroded by wind or surface water runoff. HWT would obtain all necessary state permits for potential impacts to jurisdictional features in California associated with the Proposed Project, as discussed in Section 5.10.2.2 above, and Proposed Project components would be constructed in compliance with such permit requirements.

Therefore, while the Proposed Project would alter drainage patterns, it would not result in increased on- or off-site polluted runoff, erosion or siltation, flooding, or exceed the capacity of existing or planned stormwater facilities due to the incorporation of drainage and water quality improvements in Proposed Project design. This impact would be less than significant.

Project Components in Arizona

Less than Significant Impact. Construction activities in Arizona, including grading of construction work areas, new access roads, rehabilitation of existing access roads and spur roads, and construction of TSP foundations, could result in changes to drainage patterns and contribute to minor increases of polluted runoff, erosion and/or siltation during construction. As stated above and detailed in Section 5.10.4.2.1, BMPs would be implemented for all components, including those in Arizona, and would serve to minimize or avoid potential impacts associated with drainage pattern alterations by maintaining existing drainage patterns to the extent practicable and by protecting disturbed areas from being damaged or eroded by wind or surface water runoff. HWT would obtain all necessary state permits for potential impacts to jurisdictional features in Arizona associated with the Proposed Project, as discussed in Section 5.10.2.3 above, and Proposed Project components would be constructed in compliance with such permit requirements.

Therefore, while the Proposed Project would alter drainage patterns, it would not result in increased on- or off-site polluted runoff, erosion or siltation, flooding, or exceed the capacity of existing or planned stormwater facilities due to the incorporation of drainage and water quality improvements in Proposed Project design. This impact would be less than significant.

Overall Project

Less than Significant Impact. Grading of Proposed Project work and staging areas could result in temporary impacts to stream or drainage channels during construction and the Proposed Project would result in changes to drainage patterns. Construction activities, including grading of construction work areas, new access roads, rehabilitation of existing access roads and spur roads, and construction of TSP foundations, could contribute to minor increases of polluted runoff, erosion and/or siltation during construction.

Any temporarily impacted jurisdictional features would be returned to near pre-construction topography and grade following construction of the Proposed Project. Construction activities would be temporary, and site-specific SWPPPs would be prepared that would identify BMPs to reduce runoff, which would minimize the potential for on- and off-site erosion, sedimentation, flooding, and pollution. Work within streams or rivers would be avoided to the extent feasible. However, where work within drainages is required, HWT would obtain and comply with necessary permits, implement appropriate BMPs, mitigate for permanent impacts, and perform restoration for

temporary impacts in order to minimize the extent to which existing streams, rivers, and drainages are altered in the area.

New and existing access roads would generally preserve the direction of flow within drainages, and given the size of individual transmission structures, placement of individual structures would not substantially impede flow within drainages. HWT would obtain all necessary permits for impacts to jurisdictional features associated with the Proposed Project and Proposed Project components would be constructed in compliance with such permit requirements.

As described above, the Proposed Project would only minimally increase impervious surface cover due to the construction of new structures and associated foundations. Given the small scale and diffuse nature of transmission structure locations, the increases in impervious surfaces related to implementation of the Proposed Project are unlikely to substantially alter drainage patterns in a way that would result in increased on- or off-site polluted runoff, flooding, or erosion or siltation.

Portions of the Proposed Project alignment are located in areas designated as 100-year floodplains. Proposed Project features would be appropriately designed and constructed to withstand the pressures of flood flows along the Project alignment. Permanent infrastructure associated with the Project would not redirect flood flows. Therefore, while the Proposed Project would result in site-specific drainage pattern alterations, it would not result in increased on- or off-site polluted runoff, erosion or siltation, flooding, or exceed the capacity of existing or planned stormwater facilities due to the incorporation of drainage and water quality improvements in Proposed Project design. This impact would be less than significant.

Operation

Project Components in California

Less than Significant Impact. The Proposed Project would result in a nominal increase in O&M activities, such as increased maintenance, periodic washing, and inspection trips. However, O&M activities for Proposed Project components in California would be performed within designated ROWs and would not alter drainage patterns. In total, the Proposed Project would result in approximately 0.8 acre of new impervious surface related to features implemented in California. This minimal increase in impervious surface would not alter drainage patterns in a way that would result in increased on- or off-site polluted runoff, flooding, or erosion or siltation. New and existing access roads would generally preserve the direction of flow within drainages, and given the size of individual transmission structures, placement of individual structures would not substantially impede flow within drainages. Though the Proposed Project crosses 100-year flood hazard areas throughout its alignment in California, structures proposed by the project would be of minimal footprint compared to the expansive open space in the surrounding area and are unlikely to redirect any potential flood flows.

As discussed in Section 5.10.4.2.1, BMPs would be implemented as part of the design of the Proposed Project for all components in California and would serve to minimize or avoid potential impacts associated with drainage pattern alterations by maintaining existing drainage patterns to the extent practicable and by protecting disturbed areas from being damaged or eroded by wind or surface water runoff.

The Proposed Project would not substantially alter drainage patterns, and any minor alterations would not result in increased on- or off-site polluted runoff, erosion or siltation, flooding, or exceed the capacity of existing or planned stormwater facilities due to the incorporation of drainage and water quality improvements in Proposed Project design. This impact would be less than significant.

Project Components in Arizona

Less than Significant Impact. The Proposed Project would result in a nominal increase in O&M activities, such as increased maintenance, periodic washing, and inspection trips. However, as with the portions of the Proposed Project in California, O&M activities to occur in Arizona would not substantially alter drainage patterns. New and existing access roads would generally preserve the direction of flow within drainages, and given the size of individual transmission structures, placement of individual structures would not substantially impede flow within drainages.

The Proposed Project would result in approximately 0.2 acre of new impervious surface related to features implemented in Arizona. This minimal increase in impervious surfaces is unlikely to substantially alter drainage patterns in a way that would result in increased on- or off-site polluted runoff, flooding, erosion or siltation. Though the Proposed Project crosses 100-year flood hazard areas throughout its alignment in Arizona, structures proposed by the project would be of minimal footprint compared to the expansive open space in the surrounding area and are unlikely to redirect any potential flood flows. BMPs would be implemented for all components, including those in Arizona, and would serve to minimize or avoid potential impacts associated with drainage pattern alterations.

The Proposed Project would not substantially alter drainage patterns, and any minor alterations would not result in increased on- or off-site polluted runoff, erosion or siltation, flooding, or exceed the capacity of existing or planned stormwater facilities due to the incorporation of drainage and water quality improvements in Proposed Project design. This impact would be less than significant.

Overall Project

Less than Significant Impact. As previously described, O&M activities associated with the Proposed Project would be similar to those currently performed by HWT and other transmission owning utilities for existing facilities. The Proposed Project would result in a nominal increase in O&M activities, such as increased maintenance, periodic washing, and inspection trips. However, O&M activities would be performed within designated ROWs and would not substantially alter drainage patterns.

New and existing access roads would generally preserve the direction of flow within drainages, and given the size of individual transmission structures, placement of individual structures would not substantially impede flow within drainages. HWT would obtain all necessary permits for impacts to jurisdictional features associated with the Proposed Project and Proposed Project components would be constructed in compliance with such permit requirements.

As described above, the Proposed Project would only minimally increase impervious surface cover due to the construction of new structures and associated foundations. Given the small scale and diffuse nature of transmission structure locations, the increases in impervious surfaces related to implementation of the Proposed Project are unlikely to substantially alter drainage patterns in a way that would result in increased on- or off-site polluted runoff, flooding, or erosion or siltation.

Portions of the Proposed Project alignment are located in areas designated as 100-year floodplains. Proposed Project features would be appropriately designed and constructed to withstand the pressures of flood flows along the Proposed Project alignment. Permanent infrastructure associated with the Proposed Project would not redirect flood flows. Therefore, the Proposed Project would not substantially alter drainage patterns and would not result in increased on- or off-site polluted runoff, erosion or siltation, flooding, or exceed the capacity of existing or planned stormwater facilities due to the incorporation of drainage and water quality improvements in Proposed Project design. This impact would be less than significant.

5.10.4.1.5 Would the project, in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

Construction

Project Components in California

Less than Significant Impact with Mitigation. The Proposed Project in California is not located within a tsunami zone and there are no large bodies of water that could result in a seiche within the vicinity of the alignment. In California, the Proposed Project alignment crosses 100-year floodplains, particularly surrounding tributaries and streams of the Salton Sea in Imperial Valley. Therefore, some proposed structure sites and related construction areas may be within areas subject to inundation.

A low potential exists for contaminated soil or groundwater to be encountered during excavation or other ground-disturbing activities. Construction activities, including grading of construction work areas, rehabilitation of access roads and spur roads, and construction of TSP foundations, could contribute to minor increases of polluted runoff, erosion and/or siltation during construction. Only minimal volumes of hazardous waste are anticipated to be generated during construction of the Proposed Project. These hazardous wastes would generally include empty fuel, lubricants, or cleaning solvent containers and materials contaminated with fuels, lubricants, or cleaning solvents (e.g., rags, drip pans). Hazardous materials and pollutants may be stored on-site temporarily during construction, which could potentially increase the risk of release of pollutants in the event of inundation. As discussed in Section 5.10.4.2.1, construction of the Project would not result in significant impacts to water quality and would not violate water quality permits or waste discharge requirements. Proposed Project-specific BMPs provided in the SWPPPs and APM HAZ-1 and APM WTR-1 would reduce or minimize potential construction impacts related to the potential release of pollutants due to Project inundation.

As stated, portions of the Proposed Project alignment in California cross 100-year floodplains and therefore are subject to risk of inundation. However, the Proposed Project would not substantially increase risk of pollutant release. This impact would be less than significant with mitigation incorporated.

Project Components in Arizona

Less than Significant Impact with Mitigation. While the Proposed Project alignment is not located within a tsunami zone and there are no large bodies of water that could result in a seiche within the vicinity of the alignment, portions of the Proposed Project alignment are located in areas designated as 100-year floodplains. Many of the flood hazard areas underlying the Proposed Project in Arizona are related to the Colorado River, which the Proposed Project crosses in the region. Therefore, some proposed structure sites may be within areas subject to inundation. During construction, hazardous materials and pollutants may be stored on-site temporarily which could potentially increase the risk of release of pollutants in the event of inundation, though only minimal volumes of hazardous waste are anticipated to be generated during construction of the Proposed Project, as discussed below under the analysis for the Overall Project under this impact area. A low potential exists for contaminated soil or groundwater to be encountered during excavation or other ground-disturbing activities. Hazardous waste would be stored, handled, and used in accordance with applicable regulations.

Construction activities, including grading of construction work areas, rehabilitation of access roads and spur roads, and construction of TSP foundations, could contribute to minor increases of polluted runoff, erosion and/or siltation during construction, as discussed in more detail below. As discussed in Section 5.10.4.2.1, construction of the Project would not result in significant impacts to water quality and would not violate water quality permits or waste discharge requirements. Proposed Project BMPs provided in the SWPPPs and APM HAZ-1 and APM WTR-1 would minimize or avoid potential construction impacts related to the release of pollutants due to Project inundation.

While the Proposed Project alignment is not located within a tsunami zone and there are no large bodies of water that could result in a seiche within the vicinity of the alignment, portions of the Proposed Project alignment are located in areas designated as 100-year floodplains. Many of the flood hazard areas underlying the Proposed Project in Arizona are related to the Colorado River, which the Proposed Project crosses in the region. However, the Proposed Project would not substantially increase risk of pollutant release. The impact would be less than significant with mitigation incorporated.

Overall Project

Less than Significant Impact with Mitigation. As mentioned above, while not occurring within a tsunami or seiche zone, portions of the Proposed Project occur within 100-year flood zones, as designated by FEMA. Construction would generate limited hazardous waste and may involve the presence of hazardous materials at the site.

Site-specific SWPPPs would be prepared that would identify BMPs to reduce runoff, which would minimize the potential for on- and off-site erosion, sedimentation, flooding, and pollution. In addition, HWT would implement additional measures contained in APM HAZ-1 and APM WTR-1, which would reduce the possibility of materials entering waterbodies and affecting water quality by implementing proper hazardous materials management activities and avoid and/or minimize impacts to all state jurisdictional waters, wetlands, and riparian habitat that occur along the Proposed Project and implement appropriate BMPs. This impact would be less than significant with mitigation incorporated.

Operation

Project Components in California

Less than Significant Impact. As described above, the Proposed Project in California is not located within a tsunami zone and there are no large bodies of water that could result in a seiche within the vicinity of the alignment. However, in California, the Proposed Project alignment crosses 100-year floodplains, particularly surrounding tributaries and streams of the Salton Sea in Imperial Valley. Therefore, some proposed new transmission structures may be installed within areas subject to inundation. Nonetheless, the Proposed Project would not substantially increase risk of pollutant release, as no hazardous wastes are expected to be generated by or associated with operational activities. Adherence to hazardous material management BMPs, as described above would further minimize risk of pollutant release. HWT would comply with all applicable regulations pertaining to storage and secondary containment of chemicals associated with operations and maintenance.

As stated, portions of the Proposed Project alignment in California cross 100-year floodplains and therefore are subject to risk of inundation. However, the Proposed Project would not substantially increase risk of pollutant release due to project inundation, and hazardous wastes are not expected to occur at the site during operation. This impact would be less than significant.

Project Components in Arizona

Less than Significant Impact. As described above, while the Proposed Project alignment in Arizona is not located within a tsunami zone and there are no large bodies of water that could result in a seiche within the vicinity of the alignment, portions of the Proposed Project alignment are located in areas designated as 100-year floodplains. Many of the flood hazard areas underlying the Proposed Project in Arizona are related to the Colorado River, which the Proposed Project crosses in the region. Therefore, some proposed new transmission structures may be installed within areas subject to inundation.

As with the portions of the Proposed Project in California, no hazardous wastes are expected to be generated by or associated with operational activities in Arizona. HWT would comply with all applicable regulations pertaining to storage and secondary containment of chemicals associated with operations and maintenance. The Proposed Project would not substantially increase the risk of pollutant release due to project inundation, as hazardous materials are not expected to occur on site during operation. The impact would be less than significant.

Overall Project

Less than Significant Impact. As previously described, while the Proposed Project alignment is not located within a tsunami zone and there are no large bodies of water that could result in a seiche within the vicinity of the alignment, portions of the Proposed Project alignment are located in a 100-year floodplain. However, the Proposed Project would not substantially increase risk of pollutant release, as no hazardous wastes are expected to be generated by or associated with operational activities. Adherence to hazardous material management BMPs, as described above would further minimize risk of pollutant release. HWT would comply with all applicable regulations pertaining to storage and secondary containment of chemicals at O&M facilities. This impact would be less than significant.

5.10.4.1.6 Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Construction

Project Components in California

Less than Significant Impact. Section 5.10.4.2.1 addresses potential water quality impacts associated with the construction of the Proposed Project, and Section 5.10.4.2.2 addresses potential impacts associated with groundwater supply and management. The groundwater basins underlying the Proposed Project are not managed by GSPs. The Proposed Project would not involve construction of any new groundwater extraction wells and would not adversely impact groundwater resources, as discussed in Section 5.10.4.2.2.

As described in the aforementioned sections, construction of the Proposed Project would not result in water quality degradation or the violation of a water quality standard or waste discharge requirement, and the Project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management. The Proposed Project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. Therefore, this impact would be less than significant.

Project Components in Arizona

Less than Significant Impact. As described in the aforementioned Sections 5.10.4.2.1 and 5.10.4.2.2, the Proposed Project would not result in water quality degradation or the violation of a water quality standard or waste discharge requirement, and the Project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management. The Proposed Project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. Therefore, this impact would be less than significant.

Overall Project

Less than Significant Impact. Potential construction impacts associated with water quality and groundwater management are fully captured in Sections 5.10.4.2.1 and 5.10.4.2.2, respectively. The Proposed Project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. Therefore, this impact would be less than significant. Construction of the Proposed Project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. Therefore, this impact would be less than significant.

Operation

Project Components in California

Less than Significant Impact. Section 5.10.4.2.2 addresses potential impacts associated with groundwater supply and management. The groundwater basins underlying the Proposed Project are not managed by GSPs. The Proposed Project would not involve operation of any new groundwater extraction wells and would not adversely impact groundwater resources, as discussed in Section 5.10.4.2.2.

As described in the aforementioned sections, operation of the Proposed Project would not result in water quality degradation or the violation of a water quality standard or waste discharge requirement, and the Project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management. The Proposed Project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. Therefore, this impact would be less than significant.

Project Components in Arizona

Less than Significant Impact. As described in the aforementioned Sections 5.10.4.2.2, operation of the Proposed Project would not result in water quality degradation or the violation of a water quality standard or waste discharge requirement, and the Project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management. The Proposed Project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. Therefore, this impact would be less than significant.

Overall Project

Less than Significant Impact. Potential operational impacts associated with water quality and groundwater management are fully captured in Section 5.10.4.2.2. The Proposed Project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. Therefore, this impact would be less than significant. Operation of the Proposed Project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. Therefore, this impact would be less than significant.

5.10.4.2 Hydrostatic Testing

Hydrostatic testing is not included as part of the Proposed Project.

5.10.4.3 Water Quality Impacts

Potential water quality impacts associated with the Proposed Project are addressed in the impact analysis above, under Section 5.10.4.2.1.

5.10.4.4 Impermeable Surfaces

Impacts related to impermeable surfaces associated with the Proposed Project are addressed in the impact analysis above, under Sections 5.10.4.2.1, 5.10.4.2.2, and 5.10.4.2.3.

5.10.4.5 Waterbody Crossings

The Proposed Project crosses seven named waterbodies: Picacho Wash, Mission Wash, Araz Wash, Alamo River, Greeson Wash, the Colorado River, and Mittry Lake. The Colorado River and Alamo River are listed as impaired for any contaminants pursuant to the most current 303(d) list. Based on current design, the Proposed Project would include about 2.4 acres of temporary and permanent impacts within the Colorado River, including vegetation clearing, wire setup sites, and transmission structures and approximately 0.35 acres of clearing-related disturbance within Mittry Lake. The five remaining named water bodies crossed by the proposed route, Picacho Wash, Mission Wash, Araz Wash, Alamo River, and Greeson Wash, would not be affected by Project-related temporary or permanent disturbance areas. Limited temporary and permanent disturbances related to clearing, structure sites, and associated work areas would affect various intermittent stream beds along the eastern portion of the alignment as well as unnamed canals where the Proposed Project would traverse agricultural areas in Imperial County. Appendix A further depicts waterbody crossings. While placement of work areas, staging areas, access roads, and pole structures would avoid waterbodies to the degree feasible, the Colorado River is not avoidable because the proposed alignment runs east to west, and the Colorado River in this location runs generally north to south. Road rehabilitation that may be required could include the installation of new, or repair of existing, drainage structures such as wet crossings, water bars, overside drains, and pipe culverts to allow for construction traffic usage, as well as to prevent road damage due to uncontrolled water flow. Structure work areas would be located near the Proposed Project crossing of the Colorado River; however, structure work areas have been designed to be located outside of the waterbody, where feasible. No water diversions at the Colorado River would be required during construction because it would be crossed such that the direction or flow of the watercourse would not be altered.

5.10.4.6 Groundwater Impacts

As stated under impact Section 5.10.4.2.2, no GSPs pursuant to SGMA have been adopted for the basins that underlie the Proposed Project alignment. The Proposed Project is not anticipated to generate substantial operational water demand. Construction water demand is estimated at approximately 30 to 50 million gallons for dust control, ground compaction, restoration activities, and in the construction of foundations. As described under Section 5.10.4.2.2, construction water demand would not result in depletion of groundwater supplies or interfere with sustainable groundwater management of any of the underlying groundwater basins. As a result, impacts would be less than significant.

5.10.5 CPUC Draft Environmental Measures

There are no Draft Environmental Measures identified for the Hydrology and Water Quality resource area.

5.10.5.1 Applicant Proposed Measures

5.10.5.1.1 Hydrology and Water Quality APMs

The following APM would be implemented to reduce hydrology and water quality specific impacts associated with the Proposed Project:

- **WTR-1:** Prior to construction, HWT would conduct a jurisdictional (i.e., aquatic resources) delineation to identify state and federally jurisdictional waters, wetlands, and riparian habitats that occur within the vicinity of the Proposed Project. Through the design phase, HWT would avoid and minimize impacts to such resources to the maximum extent feasible. Where impacts are unavoidable, HWT would obtain the necessary regulatory permits and comply with the conditions. Appropriate erosion control best management practices (e.g., silt fencing, straw wattles, secondary containment, avoiding fueling in close proximity to waters) would be utilized to ensure that indirect and indirect impacts water quality are avoided or minimized to the maximum extent feasible.

5.10.5.1.2 Cross-Referenced APMs

The following APMs, initially defined in other sections of this PEA, would be implemented to reduce hydrology and water quality impacts associated with the Proposed Project:

- **HAZ-1**: HWT would prepare and implement a Waste and Hazardous Materials Business Plan (WHMBP) for use during Proposed Project construction. The WHMBP would outline proper hazardous materials handling, use, storage and disposal requirements, as well as hazardous waste management procedures. This plan would be developed to ensure that all hazardous materials and wastes would be handled and disposed of according to applicable rules and regulations and would be submitted to the relevant emergency management agencies prior to construction.
- **WEA-1**: All workers on the Proposed Project site would be required to attend a Worker's Environmental Awareness Program (WEAP) training. The training would inform all construction personnel of the resource protection and avoidance measures as well as procedures to be followed upon the discovery of environmental resources. The WEAP training would include, at a minimum, the following topics so crews would understand their obligations: 1) roles and responsibilities of Proposed Project personnel, including the stop work authority of biological,

cultural, paleontological, and tribal monitors; 2) avoidance area boundaries; 3) good housekeeping practices; 4) Proposed Project mitigation measures and permit conditions; 5) communication protocol; 6) legal protections for sensitive resources and for noncompliance; and 7) notification and reporting requirements.

5.11 Land Use and Planning

This section describes land uses in the vicinity of the Ironwood Transmission Project (Proposed Project), details the land use and planning regulations that are applicable to the Proposed Project, and evaluates the potential land use-related impacts from construction and operation of the Proposed Project.

Research for this analysis involved reviewing the following resources:

- Bureau of Land Management (BLM) Desert Renewable Energy Conservation Plan (DRECP), California Desert Conservation Area Plan (CDCA), Northern and Eastern Colorado Desert Coordinated Management Plan (NECO CMP), Imperial Sand Dunes Recreation Area Management Plan (RAMP), and Yuma Resource Management Plan (YRMP)
- County General Plans
- Local agency planning documents

5.11.1 Environmental Setting

The Proposed Project is located in Imperial County, California and Yuma County, Arizona on federal, state, municipal, and private land. These lands include unincorporated areas of Imperial and Yuma Counties, the city of Calexico, California, and public lands under the jurisdiction or management of the BLM, United States (U.S.) Bureau of Reclamation (USBR), and California Department of Parks and Recreation (DPR). The Proposed Project area includes mostly undeveloped open areas with some developed areas in unincorporated Imperial County and Yuma County. The following subsections describe land uses in the Proposed Project area.

5.11.1.1 Land Use

More than 95 percent of the Proposed Project is located within undeveloped open areas, with the remaining less than five percent located within developed areas (including the city of Calexico). Imperial County, the city of Calexico, and Yuma County have lands within the Proposed Project area designated as either Residential, Agricultural, Industrial, Commercial, Open Space, Government, Mixed Use, Business Park, Public/Quasi-Public, Resort, or Recreation.

Definitions of the specific land use designations crossed by the Proposed Project are included in Table 5.11-1 and definitions of the zoning designations crossed by the Proposed Project are included in Table 5.11-2. Figure 5.11-1a, Figure 5.11-1b, and Figure 5.11-1c depict the land use designations within 0.5 mile of each side of the Proposed Project. Figure 5.11-2a, Figure 5.11-2b, and Figure 5.11-2c depict the zoning designations within 0.5 mile of each side of the Proposed Project.

Table 5.11-1 Definitions of Land Use Designations Crossed By the Proposed Project

Land Use Designation	General Plan Land Use Designation	Land Use Code Definition
Imperial County		
Agriculture	LA	Light Agriculture - Agricultural crop production such as field, forage, tree groves, vines, and other plant crops intended to provide food or fiber, as well as flowers and field or container plants including ornamental, landscape, agricultural, and native plants. Animal keeping, including aquaculture (fish farms), would not be a primary use, but may be allowed as a secondary or incidental use to be regulated by implementing zoning as to types of animals, numbers of animals per acre, minimum lot size for animal keeping, or setbacks from property lines for animal enclosures.
	MA	Medium Agriculture - Includes all agricultural crop production described above and permits animal keeping, including aquaculture, as a primary use. Implementing zoning may regulate types of animals, numbers of animals per acre, minimum lot size for animal keeping, or setbacks from property lines for animal enclosures. Incidental uses such as produce stands or on-site packing and processing of agricultural crops, may be permitted with limitations by implementing zoning.
	HA	Heavy Agriculture - Includes all agricultural crop production and animal keeping, including aquaculture, dairies, feed lots, and animal sales yards as a primary use. Implementing zoning may regulate numbers of animals per acre, minimum lot size for animal keeping, or setbacks from property lines for animal enclosures. Incidental uses such as produce stands may be permitted with limitations by implementing zoning. On-site packing and processing of agricultural crops and livestock, and farm labor camps, may be permitted with limitations by implementing zoning.
Recreation /Open Space	ROS	Recreation/Open Space - Land uses within this category consists of environmentally sensitive areas, parks, fault zones, floodways and floodplains, agricultural lands, and areas designated for the managed production of mineral resources.
Specific Plan Area	SPA	Specific Plan Area - Land uses within this category are where a Specific Plan has been approved or must be approved prior to development. Land within this category usually has environmental constraints or unique land use concerns or opportunities which require special land use and/or design control. Suitable areas may also include lands proposed for large-scale urban development, for natural resource protection or historic preservation, or other use requiring more detailed planning than would typically be required by the County Zoning or Subdivision Ordinances.
Urban	UR	Urban – Urban land uses include areas surrounding the seven incorporated cities; Brawley, El Centro, Westmorland, Holtville, Calipatria, Imperial and Calexico. Urban Areas also include the unincorporated communities of Niland, Heber, Seeley, Winterhaven and West Shores/Salton City. These areas are characterized by a full level of urban services, in particular public water and sewer systems, and contain or propose a broad range of residential, commercial, and industrial uses
City of Calexico		
Industrial	IND	Industrial - This designation is intended to locate industrial uses and developments within the city but with minimal negative impacts to existing and future residents. Thus, industrial uses are located around three key areas of the city: the airport for uses which take advantage of the airport for part of their business, near major truck routes such as Heber Road which has direct access to State Route (SR)-7 and the East Port of Entry, or near the railroad tracks for uses that need rail access.

Land Use Designation	General Plan Land Use Designation	Land Use Code Definition
Yuma County		
Agriculture/ Rural Residential	A-RR	▪ A designation that supports resource conservation districts and reserves with emphasis on preserving farm communities and character. ▪ Recognizing land with potential to be divided into rural lots that are compatible with continued agricultural use on surrounding parcels. ▪ Acknowledge residential character and allow for division into rural lots. ▪ Minimum parcel size of 10 acres.
Open Space & Recreational Resources	OS/RR	▪ A designation that supports undeveloped areas providing visual and psychological relief from man-made development. ▪ Resort commercial development (such as but not necessarily limited to the following: ▫ Resorts, hotels, theme parks, tennis or golf resorts or camps, water parks and slides, conference centers, golf courses, exotic animal parks, parks, zoos or amphitheaters; ▫ Areas available for public visitation and recreation with or without developed facilities and associated businesses, such as dude ranches, off-road vehicle parks or trails, horse riding academies, horse stables and campgrounds; ▪ Very low density residential (5-acre homesites); ▪ Continued agricultural use.

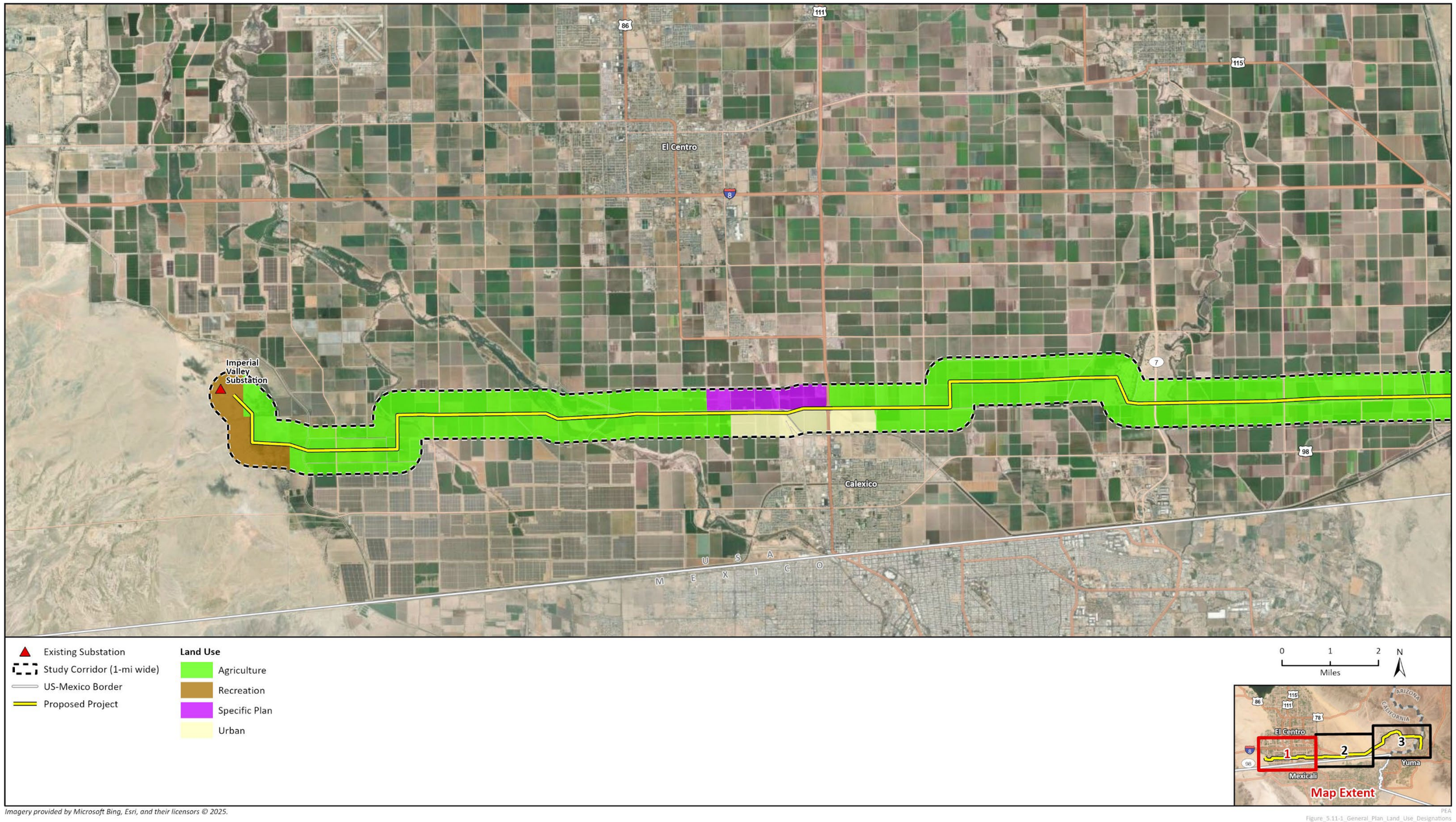
Sources: Imperial County 1993, Yuma County 2023, City of Calexico 2015.

Table 5.11-2 Definitions of Zoning Designations Crossed By the Proposed Project

Zoning Designation	Zoning Code	Zoning Code Definition
Imperial County		
Agriculture	A-1	Limited Agriculture
	A-2	General Agriculture
	A-3	Heavy Agriculture
Industrial	M-1	Light Industrial
	M-2	Medium Industrial
	M-3	Heavy Industrial
Open Space and Public Lands	S-1	Open Space Recreational
	S-2	Open Space Preservation
City of Calexico		
Agricultural	A-2	Medium Agriculture
High Density Commercial	CH	Commercial Highway
Industrial	IND	Industrial
	IR	Industrial Rail Served
Suburban Residential	R1	Residential Single Family
Urban Residential	RA	Residential Apartment
	RC	Residential Condominium
Yuma County		
Agriculture	RVP	Recreational Vehicle Park
	SSB-2	Suburban Site Built - 2-acre minimum parcels
	SSB-4	Suburban Site Built - 4-acre minimum parcels
	RA-20	Rural Area - 20-acre minimum parcels
Suburban Residential	SR-1	Suburban Ranch - 1-acre minimum parcels

Sources: Imperial County 2025, Yuma County 2006, City of Calexico 2021.

Figure 5.11-1a General Plan Land Use Designations within 0.5 Mile of the Proposed Project



Imagery provided by Microsoft Bing, Esri, and their licensors © 2025.

PEA
Figure_5.11-1_General_Plan_Land_Use_Designations

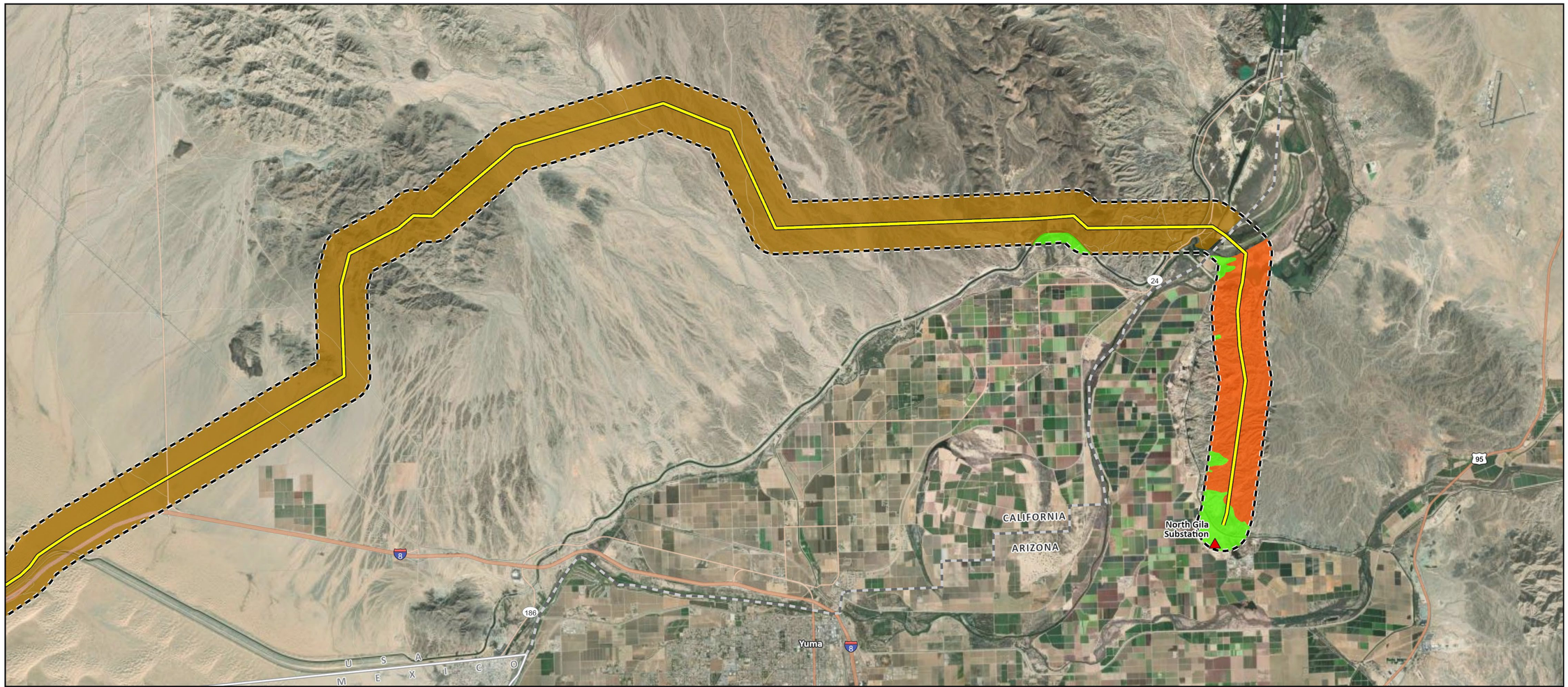
Figure 5.11-1b General Plan Land Use Designations within 0.5 Mile of the Proposed Project



Imagery provided by Microsoft Bing, Esri, and their licensors © 2025.

PEA
Figure_5.11-1_General_Plan_Land_Use_Designations

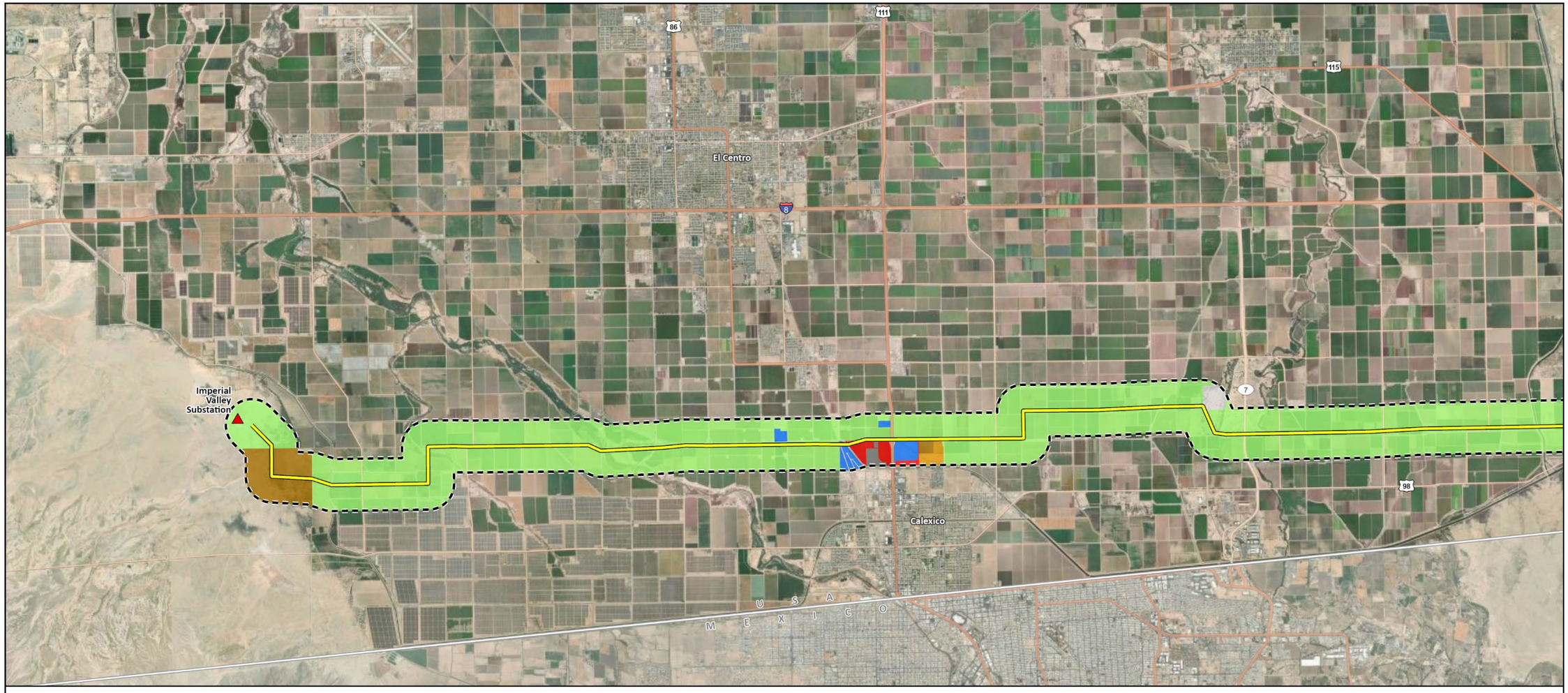
Figure 5.11-1c General Plan Land Use Designations within 0.5 Mile of the Proposed Project



Imagery provided by Microsoft Bing, Esri, and their licensors © 2025.

PEA
Figure_5.11-1_General_Plan_Land_Use_Designations

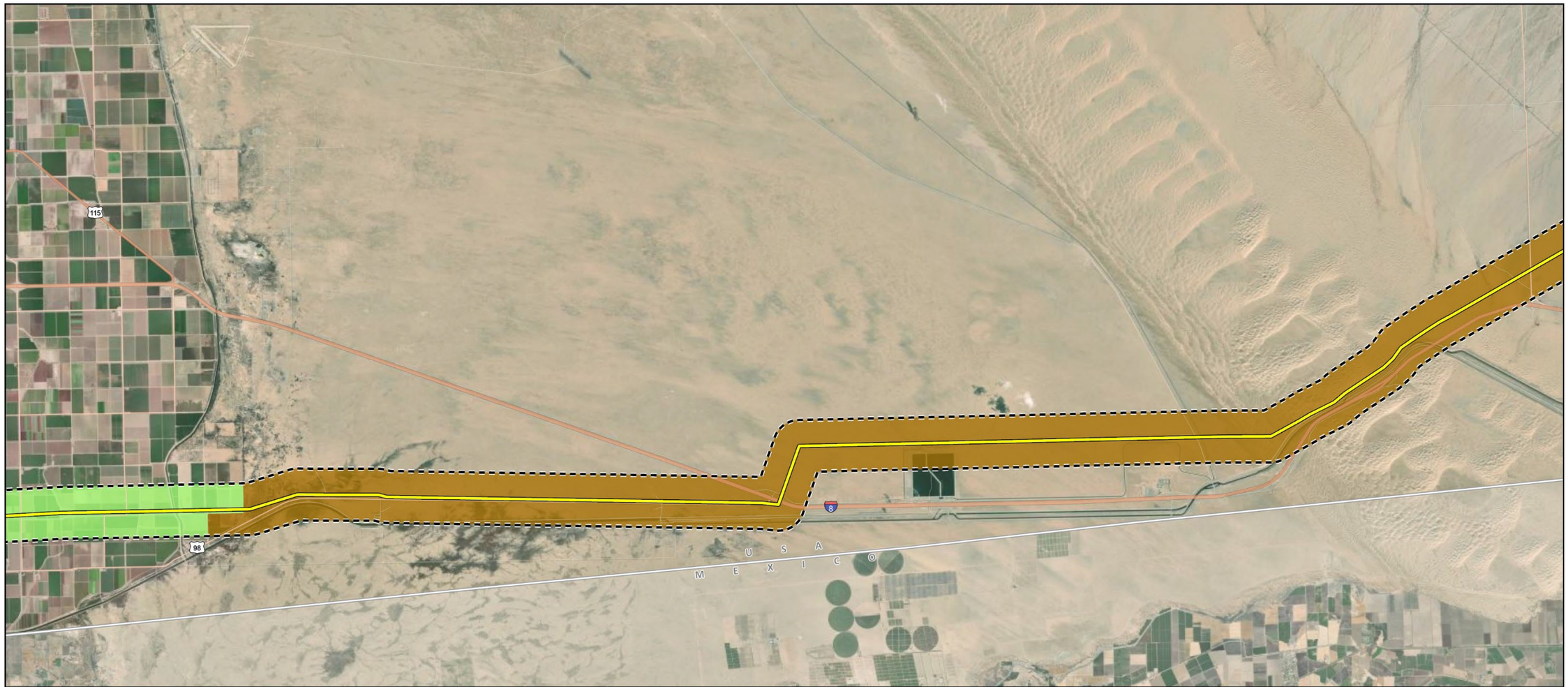
Figure 5.11-2a Zoning Designations within 0.5 Mile of the Proposed Project



Imagery provided by Microsoft Bing, Esri, and their licensors © 2025.

PEA
Figure_5.11-2_Zoning_Designations_MB

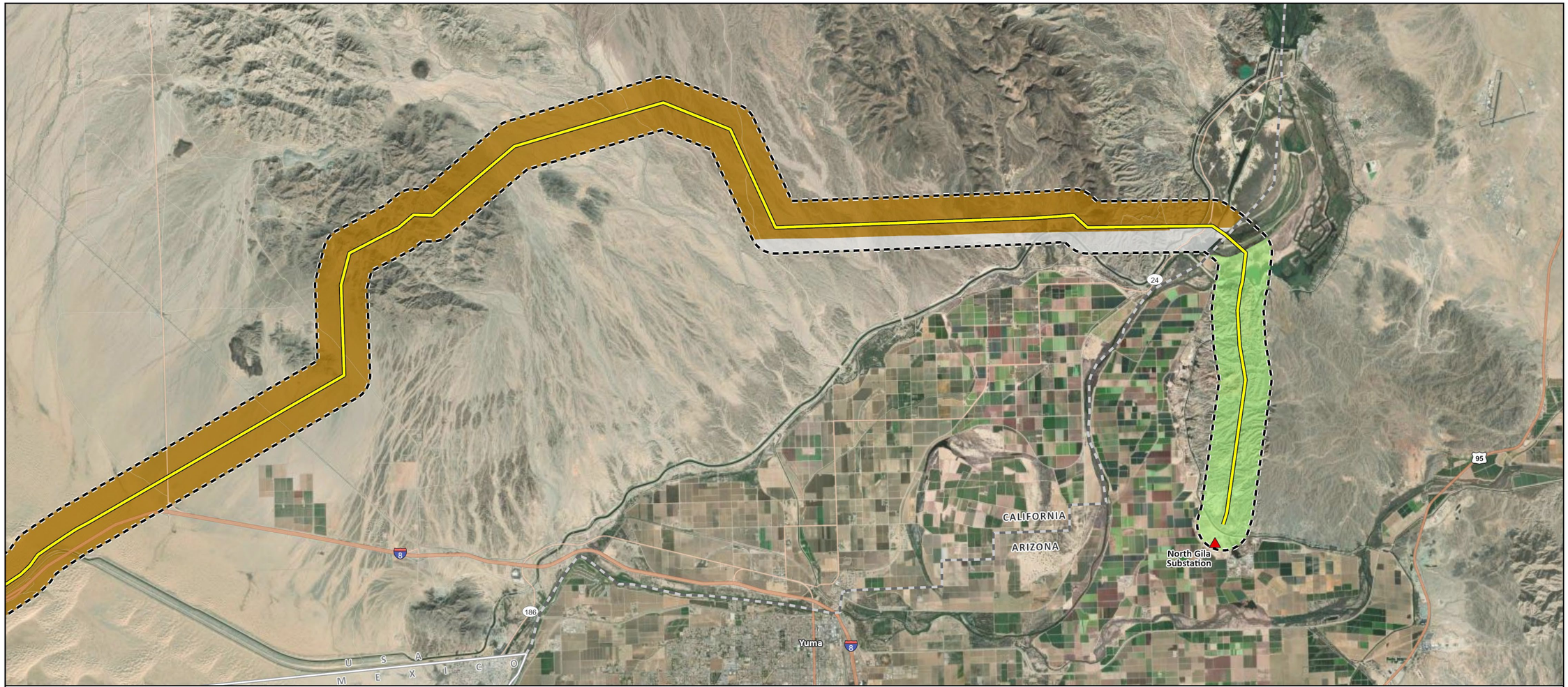
Figure 5.11-2b Zoning Designations within 0.5 Mile of the Proposed Project



Imagery provided by Microsoft Bing, Esri, and their licensors © 2025.

PEA
Figure_5.11-2_Zoning_Designations_MB

Figure 5.11-2c Zoning Designations within 0.5 Mile of the Proposed Project



Imagery provided by Microsoft Bing, Esri, and their licensors © 2025.

PEA
Figure_5.11-2_Zoning_Designations_MB

Table 5.11-3 summarizes the approximate distance crossed by the Proposed Project alignment for each land use designation. Table 5.11-4 summarizes the approximate distance crossed by the Proposed Project alignment for each zoning designation. Table 5.11-5 summarizes the approximate distance of federal lands crossed by the Proposed Project alignment.

Table 5.11-3 General Plan Land Use Designations Approximate Distance Crossed by the Proposed Project

County/City	Land Use Designation[1]	Approximate Distance Crossed by the Proposed Project (Miles)
Imperial County	Agriculture	26.0
	Open Space and Recreation	50.1
	Specific Plan	0.5
	Urban	1.0
	No Designation	2.4
City of Calexico	Industrial	0.4
Yuma County	Agriculture	0.4
	Recreation	4.9
	No Designation	0.5

Sources: Imperial County 1993, Yuma County 2023, City of Calexico 2015.

[1] These designations have been consolidated from those reported in each county and city general plan. Table 5.11-1 lists the specific land use designations from the general plans.

Table 5.11-4 Zoning Designations Approximate Distance Crossed by the Proposed Project

Zoning Designation[1]	Approximate Distance Crossed by Proposed Project (Miles)
Agriculture	32.0
Industrial	0.1
Open Space and Public Lands	53.1
Other – Not Determined	0.3

Sources: Imperial County 1993, Yuma County 2023, City of Calexico 2015.

[1] These zoning designations have been consolidated from those reported in each county and city. Table 5.11-2 lists the specific zoning designations.

Table 5.11-5 Federal Land Use Designations Approximate Distance Crossed by the Proposed Project

Owner/Manager	Specific Plan or Document	Approximate Distance Crossed by Proposed Project (Miles)
U.S. Bureau of Land Management[1]	California Desert Conservation Area	79.4
	Desert Renewable Energy Conservation Plan	80.5
	Northern and Eastern Colorado Desert Coordinated Management Plan	24.3
	Imperial Sand Dunes Recreation Area Management Plan	9.7
	Yuma Resource Management Plan	6.9
	Western Colorado Resource Management Plan	55.1

Sources: BLM 1980, 2002, 2010, 2013, 2015, 2016.

[1] These Specific Plans or Documents include lands managed by BLM but owned by USBR.

Utility Land Uses

Figure 5.11-3 shows existing transmission lines in the vicinity of the Proposed Project. The Proposed Project would be the second 500-kV transmission line between the North Gila Substation and the Imperial Valley Substation; the existing transmission line is commonly referred to as the Southwest Powerlink (SWPL) constructed in the 1980s by San Diego Gas & Electric Company (SDG&E). The Proposed Project roughly parallels the SWPL between these two substations, as shown in Figure 5.11-3. For approximately 37.6 miles, the Proposed Project is within 0.5 miles of the SWPL; for approximately 15.6 miles, the Proposed Project is within 0.5 and 1.0 miles from the SWPL.

The BLM has designated 5,000 miles of energy corridors, known as 368 Corridors, to locate oil, natural gas and hydrogen pipelines, and electricity transmission and distribution infrastructure. The location of these energy corridors in the vicinity of and in relation to the Proposed Project is shown in Figure 5.11-3. As preferred locations for energy transport rights-of-way on BLM-managed public lands, these corridors are intended to facilitate long-distance movement of oil, gas, or hydrogen via pipeline, and transmission and distribution of high-voltage electric power. The BLM has also identified utility corridors in the California Desert District, referred to as BLM Designated Corridors (BLM 2022).

5.11.1.2 Special Land Uses

Lands Administered by Federal, State, or Local Agencies

The Proposed Project area includes lands administered by BLM, USBR, DPR, and private parties. Figure 5.11-4a, Figure 5.11-4b, and Figure 5.11-4c depict federal, state, and local land ownership in the vicinity of the Proposed Project. The land use designation for each area crossed is discussed in the subsections that follow.

Bureau of Land Management

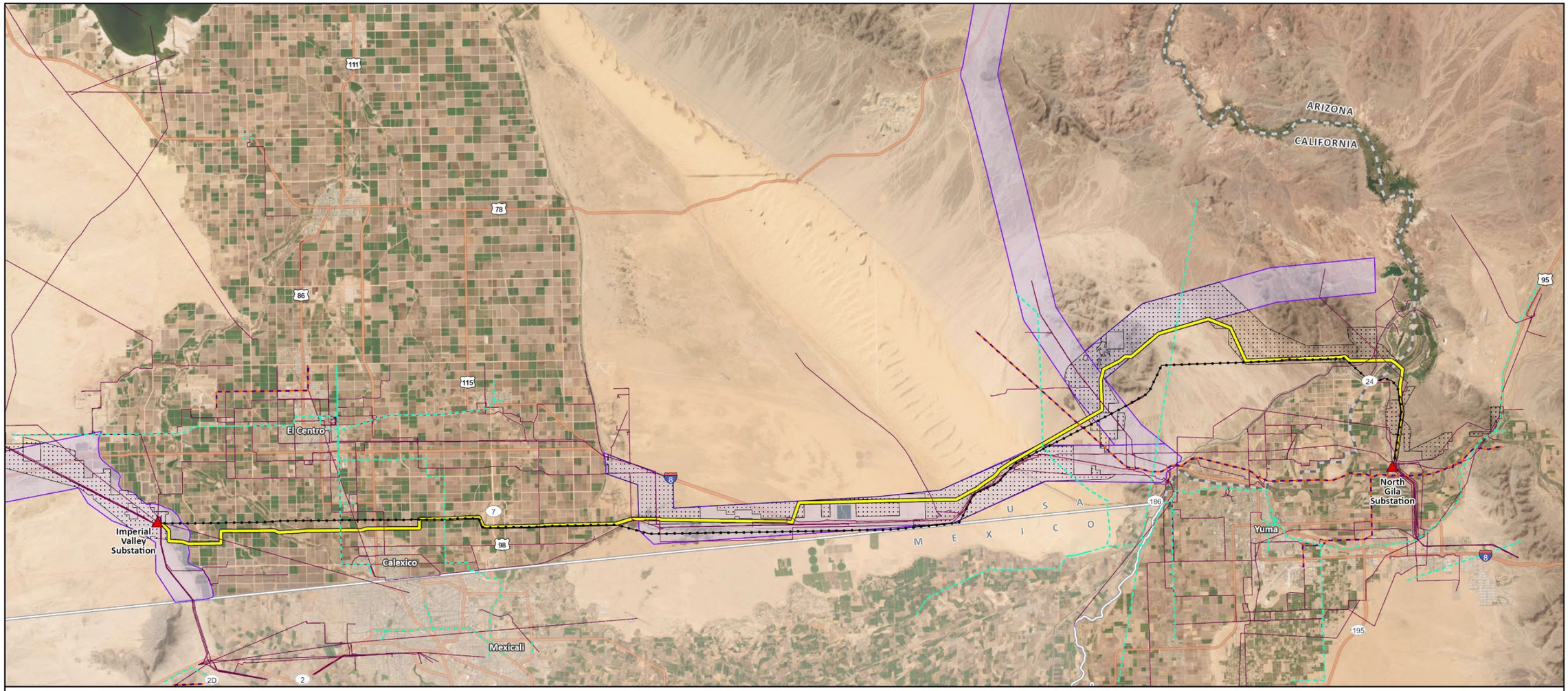
The BLM oversees management of the National Landscape Conservation System, which contains federally recognized conservation lands, such as National monuments, National conservation areas, Wilderness areas, Wilderness study areas, Wild and scenic rivers, National scenic and historic trails, and Conservation lands of the California desert. In addition, the BLM designates Areas of Critical Environmental Concern (ACECs) as special management areas to protect significant resources.

Areas of Critical Environmental Concern

The location of the ACECs discussed below is shown on Figure 5.11-4a through Figure 5.11-4c.

Plank Road ACEC. The Plank Road ACEC is located in Imperial County and is managed by the El Centro Field Office of the BLM. The Plank Road ACEC covers approximately 416 acres. Plank Road, the only wooden automobile road in existence in the United States, was the east-west route over the Algodones Dunes that connected Yuma and Southern California from 1915 to 1926 when the California Highway Commission constructed the paved Highway 80 (BLM 2015). At its closest, the proposed transmission line alignment is within approximately 400 feet but does not cross this ACEC. However, an existing access road that would be improved for the Proposed Project crosses the Plank Road ACEC for approximately 225 feet.

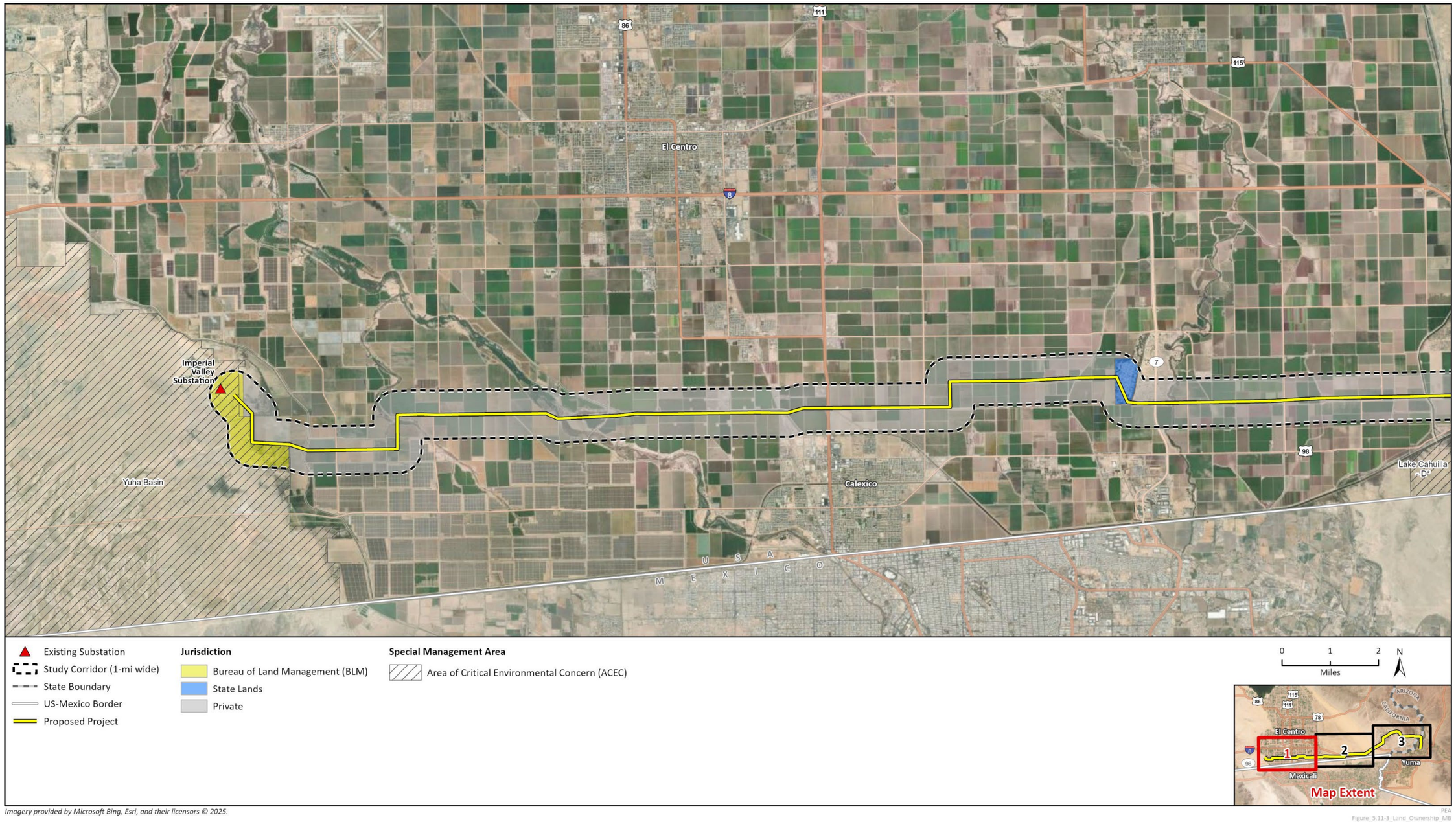
Figure 5.11-3 Utility Corridors and Existing 500 kV Transmission Line in the Vicinity of the Proposed Project



Imagery provided by Esri and its licensors © 2025. Additional data provided by BLM 2025, HIFLD 2025, POWER Engineers 2025. Disclaimer: Pipeline representations must not be used to identify exact locations of pipelines or as a substitute for contacting the appropriate One Call system or pipeline operator prior to excavation activities.

25-17237 Working PR
PEA Figure X Existing Infrastructure

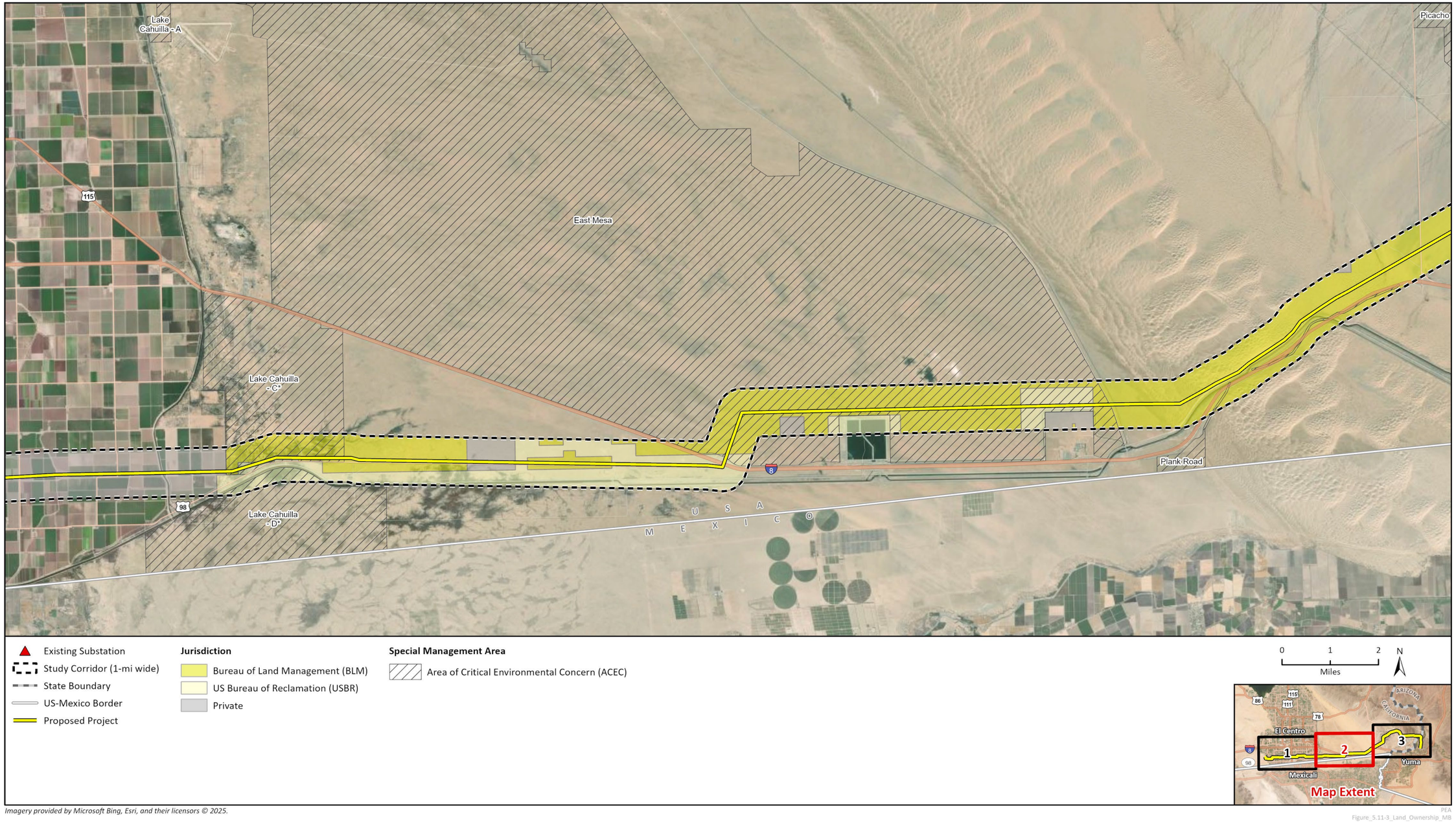
Figure 5.11-4a Land Ownership within 0.5 Mile of the Proposed Project



Imagery provided by Microsoft Bing, Esri, and their licensors © 2025.

PEA
Figure_5.11-3_Land_Ownership_MB

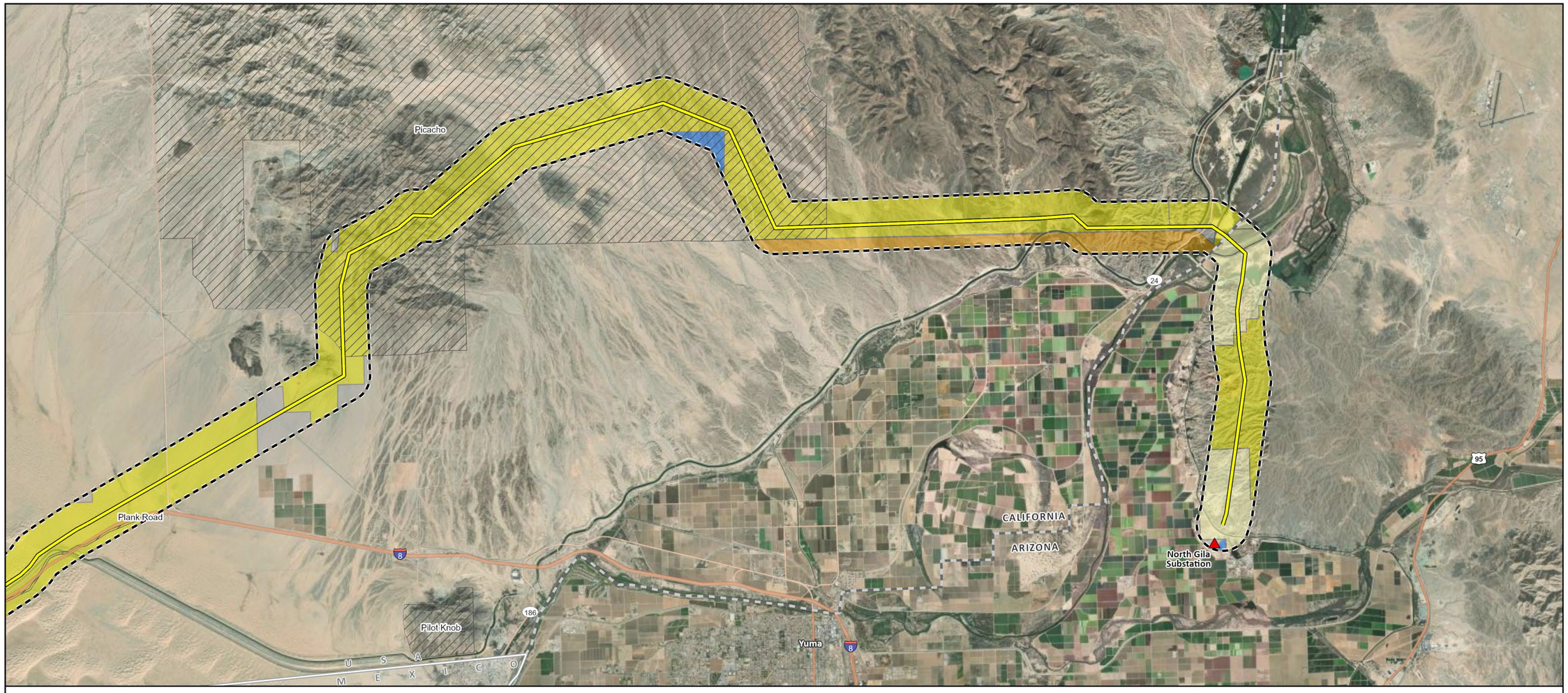
Figure 5.11-4b Land Ownership within 0.5 Mile of the Proposed Project



Imagery provided by Microsoft Bing, Esri, and their licensors © 2025.

PEA
Figure_5.11-3_Land_Ownership_MB

Figure 5.11-4c Land Ownership within 0.5 Mile of the Proposed Project



Imagery provided by Microsoft Bing, Esri, and their licensors © 2025.

PEA
Figure_5.11-3_Land_Ownership_MB

East Mesa ACEC. The East Mesa ACEC is located in Imperial County and is managed by the El Centro Field Office of the BLM. The East Mesa ACEC covers approximately 88,479 acres. This ACEC contains significant prehistoric archaeological sites including habitation, possible cremations, trails systems/segments, habitation sites, and areas of traditional and sacred values to Native American tribes. Additionally, the lands contain some of the largest contiguous range for the flat-tailed horned lizards (a federally listed Sensitive Species) and includes multiple sections of high population densities (BLM 2015). The Proposed Project route crosses approximately 8.3 miles of this ACEC.

Picacho ACEC. The Picacho ACEC is located in Imperial County and is managed by the El Centro Field Office of the BLM. The Picacho ACEC covers approximately 184,500 acres. This ACEC contains important prehistoric and historic cultural resources, including the Tumco historic gold mining district and provides habitat for desert tortoise. The Proposed Project route crosses approximately 13.2 miles of this ACEC.

Lake Cahuilla ACEC. The Lake Cahuilla ACEC is located in Imperial County and is managed by the El Centro Field Office of the BLM. The Lake Cahuilla ACEC covers approximately 14,695 acres. This ACEC contains prehistoric archaeological sites, including rock art, trails systems/segments, and trail shrines. The largest collection of etched designs inscribed onto cobbles in southeast California is contained within this area. These etched cobbles are a particularly unique and rare type of rock art and are highly significant to the local Native American tribes (BLM 2015). The Proposed Project route crosses approximately 2.4 miles of this ACEC.

Yuha Basin ACEC. The Yuha Basin ACEC is located in Imperial County and is managed by the El Centro Field Office of the BLM. The Yuha Basin ACEC covers approximately 77,303 acres. This ACEC contains important cultural resources ranging from archaic sites to resources related to the ancestors of living Kumeyaay, Quechan, and Cocopah Indians, including intaglios, rock alignments, temporary camps, lithic scatters, cremation loci, pottery loci, trails, and shrines. Additionally, the ACEC provides a contiguous protected landscape connecting the Yuha Basin, Jacumba Wilderness, and Anza-Borrego Desert State Park and habitat for the flat-tailed horned lizard and habitat for the Federally Endangered Peninsular Bighorn Sheep (BLM 2015). The Proposed Project route crosses approximately 0.25 miles of this ACEC.

U.S. Bureau of Reclamation

USBR manages, develops, and protects water and related resources in an environmentally and economically sound manner in the interest of the American public. USBR develops strategies to manage and deliver water more efficiently and effectively to our customers in order to help satisfy the many needs of irrigation, municipalities, power and the environment and serves as a technical resource for water users and planners. Reclamation works in partnership with states, Tribes, water and power customers, and others to seek creative and collaborative solutions to Western water issues (Reclamation 2025). The Proposed Project crosses the USBR-owned, Imperial Irrigation District-operated All-American Canal just west of Mittry Lake and runs within 0.25 miles of this canal along I-8 near the Buttercup Campground and again from the eastern origin of SR-98 to the eastern edge of the Imperial Valley agricultural fields.

California Desert Conservation Area, Land Management Plan

The California segment of the Proposed Project is located within the CDCA. The CDCA Conservation Plan establishes actions and methodologies for utility development activities within protected areas of the California Desert in order to meet the growing needs of the California population while

protecting natural resources. Additional information about the CDCA is provided in Section 5.11.2, California Desert Conservation Area Plan. Further clarification on actions and methodologies for utility development activities on BLM-administered land in the CDCA is updated in the DRECP Land Use Plan Amendment (LUPA), which is described in the following subsection.

Desert Renewable Energy Conservation Plan, Land Use Plan Amendment

The California segment of the Proposed Project is located on lands managed under the DRECP. The DRECP LUPA (BLM 2016) establishes Conservation and Management Actions (CMAs) that designate allowable and non-allowable actions for siting, design, pre-construction, construction, maintenance, implementation, operation, and decommissioning activities on BLM-managed land. The DRECP is an amendment to the CDCA adopted in 2015 and the associated LUPA was adopted in 2016. Additional details regarding the DRECP LUPA are provided in Section 5.11.2, Desert Renewable Energy Conservation Plan, and Section 5.11.2, Bureau of Land Management Land Use Plan Amendment.

Northern and Eastern Colorado Desert Coordinated Management Plan

A portion of the California segment of the Proposed Project is located on lands managed under the NECO CMP. Within the Proposed Project area, these lands include BLM Utility Corridors, the Pilot Knob ACEC (discussed below), other BLM lands, and private lands. Additional information about the NECO CMP is provided in Section 5.11.2, Northern and Eastern Colorado Desert Coordinated Management Plan. This plan is managed by the BLM Palm Springs and South Coast Field Office (BLM 2002).

Imperial Sand Dunes Recreation Area Management Plan

A portion of the California segment of the Proposed Project is located on lands managed under the Imperial Sand Dunes RAMP. Within the Proposed Project area, these lands include the Imperial Sand Dunes Recreation Area, North Algodones Dunes Wilderness, and Plank Road ACEC (discussed below). Additional information about the Imperial Sand Dunes RAMP is provided in Section 5.11.2 - Imperial Sand Dunes Recreation Area Management Plan. This plan is managed by the BLM El Centro Field Office (BLM 2013).

Yuma Resource Management Plan

A portion of the Arizona segment of the Proposed Project is located on lands managed under the YRMP. This plan establishes 1.3 million acres of BLM administered lands in southwestern Arizona and southeastern California. Within the Proposed Project area, these lands include Betty's Kitchen National Recreation Trail and the Mittry Lake Wildlife Area. Additional information about the YRMP is provided in Section 5.11.2, Yuma Resource Management Plan. These properties are managed by the BLM Yuma Field Office (BLM 2010).

California Department of Parks and Recreation

The DPR oversees 280 state park units, 970 miles of lake and river frontage, 15,000 campsites, 5,200 miles of trails, 3,195 historic buildings, and more than 11,000 known prehistoric and historic archaeological sites. Within the Proposed Project area, the DPR manages the 343-acre Heber Dunes State Vehicular Recreation Area (SVRA) located three miles north of the Mexican border crossing at SR-7 in Imperial County. The Proposed Project route crosses approximately 1.55 miles of this SVRA.

Designated Coastal Zone Management Areas

No portion of the Proposed Project is located in a designated coastal zone management area.

Designated or Proposed Candidate National or State Wild and Scenic Rivers

No portion of the Proposed Project crosses or is proximate to a designated or proposed candidate national or state wild and scenic river.

National Landmarks

The Proposed Project includes a portion of the proposed 390,000-acre Kw'tsán National Monument.

5.11.1.3 Habitat Conservation Plan

The Proposed Project does not cross any areas covered by a habitat conservation plan.

5.11.2 Regulatory Setting

5.11.2.1 Federal, state, and local regulations were reviewed for applicability to the Proposed Project. All applicable regulations have been listed and described in the following subsections. Federal

The Proposed Project is located within the CDCA managed by the BLM. Applicable federal land use policies or regulations are included in the following subsections. In addition to compliance with the federal regulations described in the following subsections, Project construction would require a Right-of-Way (ROW) Grant and Notice to Proceed from BLM.

Energy Policy Act of 2005

Pursuant to the Section 368(a) of the Energy Policy Act, the BLM has designated 5,000 miles of energy corridors, known as 368 Corridors, to locate oil, natural gas and hydrogen pipelines, and electricity transmission and distribution infrastructure. As preferred locations for energy transport rights-of-way on BLM-managed public lands, these corridors are intended to facilitate long-distance movement of oil, gas, or hydrogen via pipeline, and transmission and distribution of high-voltage electric power.

Federal Land Policy and Management Act

The Federal Land Policy and Management Act (FLPMA) provides a regulatory framework for the management of BLM land and its use of resources. An important aspect of the FLPMA is that it supports multiple uses on public lands. The BLM also regulates ROWs for electrical power generation, transmission and distribution systems, systems for the transmission and reception of electronic signals and other means of communication, pipelines (other than oil and gas), railroads, highways, and other facilities or systems developed in the interest of the public under the FLPMA.

California Desert Conservation Area Plan

The CDCA is an expanse of land covering approximately 26 million acres in Southern California that was designated by Congress in 1976 through the FLPMA, of which approximately 10.4 million acres are administered by the BLM. The CDCA Plan is a comprehensive, long-range plan for the

management, use, development, and protection of lands within the CDCA; it is required as part of the FLPMA and implemented by the BLM. The BLM adopted the DRECP LUPA, which amended the CDCA Plan in September 2016. The DRECP and the BLM LUPA are discussed in the following sections.

Desert Renewable Energy Conservation Plan

The DRECP is a multi-phase collaborative planning effort between the California Energy Commission, BLM, and the U.S. Fish and Wildlife Service developed under the California Natural Community Conservation Planning Act (NCCPA) that is meant to accomplish the following:

- Advance federal and state natural resource conservation goals and other federal land management goals.
- Meet the requirements of the federal Endangered Species Act, California Endangered Species Act, NCCPA, and FLPMA.
- Facilitate the timely and streamlined permitting of renewable energy projects in the Mojave and Colorado/Sonoran desert regions of Southern California.

The DRECP adopts existing utility corridors in the CDCA and defines CMAs, which restrict siting and construction activities for power transmission to existing utility corridors to minimize resource impacts by reducing the need for new, unplanned transmission infrastructure. The DRECP covers approximately 22.5 million acres in the desert regions of Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino, and San Diego Counties.

Bureau of Land Management Land Use Plan Amendment

The BLM LUPA establishes management decisions for the permitting of renewable energy and transmission development on approximately 10 million acres of BLM-managed lands in the DRECP area. The LUPA Decision Area includes conservation designations and recreation designations throughout the CDCA, including California Desert National Conservation Lands, ACECs, and Wildlife Allocations.

Northern and Eastern Colorado Desert Coordinated Management Plan

The NECO CMP provides a comprehensive framework for ecosystem management and a single landscape basis for ecosystem management for three Federal land administering agencies withing the planning area of 5.5 million acres of BLM administered lands in southeastern California. The plan is managed by BLM Field Offices in Needles, Palm Springs and South Coast, and El Centro. This plan provides reserve management for the desert tortoise, integrated ecosystem management for special status species and natural communities for all federal lands, and regional standards and guidelines for public land health for BLM lands (BLM 2002).

Imperial Sand Dunes Recreation Area Management Plan

The Imperial Sand Dunes RAMP establishes management decisions for visual, ACEC, recreation, camping, land tenure, and OHV and other motorized use resources within the BLM administered ISD Recreation Area in southeastern Imperial County, California (BLM 2013).

Yuma Resource Management Plan

The YRMP establishes management decisions for 1.3 million acres of BLM administered lands in southwestern Arizona and southeastern California. The plan, managed by the BLM Yuma Field Office, provides an optimal balance between authorized resource uses, including recreational activities, and the protection and long-term sustainability of sensitive resource values within the planning area (BLM 2010).

5.11.2.2 State of California

California Public Utilities Commission, General Order 131-E

Pursuant to General Order (G.O.) 131-E, the California Public Utilities Commission (CPUC) has sole and exclusive jurisdiction over the siting and design of electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities in California. Under the California Environmental Quality Act (CEQA), the CPUC is the lead agency with respect to such Proposed Project elements within California.

5.11.2.3 State of Arizona

Through the Arizona Power Plant and Transmission Line Siting Committee, the Arizona Corporation Commission (ACC) has jurisdiction over proposed above-ground transmission lines designed for 115kV or higher. Utilities proposing such transmission lines are required to file an application for a Certificate of Environmental Compatibility (CEC) with the ACC. The Siting Committee reviews the application, conducts public hearings, and evaluates evidence to determine if technical feasibility and environmental impact factors are met. Based on this, they make a recommendation to the ACC regarding the CEC.

5.11.2.4 Local

The CPUC has sole and exclusive state jurisdiction over the siting and design of the Proposed Project in California. Pursuant to CPUC G.O. 131-E, Section XI.B:

> "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the Commission's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters."

Consequently, local agencies do not have jurisdiction over the Proposed Project, but public utilities must consult with local agencies and consider their regulations.

The Arizona Corporation Commission's Arizona Power Plant and Transmission Line Siting Committee has state jurisdiction over the Proposed Project in Arizona. This committee may approve or deny a Certificate of Environmental Compatibility application and impose reasonable conditions. However, pursuant to Arizona Revised Statutes Section 40-360.06(D):

> "Any certificate granted by the committee shall be conditioned on compliance by the applicant with all applicable ordinances, master plans and regulations of the state, a county or an incorporated city or town, except that the committee may grant a certificate notwithstanding any such ordinance, master plan or regulation, exclusive of franchises, if the committee finds as a fact that compliance with such ordinance, master plan or regulation is unreasonably restrictive and compliance therewith is not feasible in view of technology available."

As this Proponent's Environmental Assessment is being prepared for the CPUC, the following discussion of local land use regulations in California and Arizona is provided for informational purposes only.

Imperial County General Plan

The Renewable Energy and Transmission, Land Use, Conservation and Open Space, and Environmental Justice Elements of the Imperial County General Plan (1993) provides for a variety of land uses for future economic growth while also assuring the conservation of Imperial County's agricultural, scenic highways, open space, and parks attributes.

The following goals and objectives from the Imperial County General Plan are applicable to portions of segments that traverse the planning area:

Goal 2: Encourage development of electrical transmission lines along routes which minimize potential environmental effects.

Objective 2.1: To the extent practicable, maximize utilization of Imperial Irrigation District's transmission capacity in existing easements or ROWS. Encourage the location of all major transmission lines within designated corridors, easements, and ROWs.

Objective 2.2: Where practicable and cost-effective, design transmission lines to minimize impacts on agricultural, natural, and cultural resources, urban areas, military operation areas, and recreational activities.

Imperial County Zoning Ordinance

The Imperial County Zoning Ordinance regulates land uses throughout the unincorporated areas of the county and outlines allowable development within each zoning designation. Pursuant to Section 90515.01, transmission lines and supporting towers and poles for electricity, owned and operated by a public utility company under the jurisdiction of the CPUC in California, are a permitted use throughout the county in the M-1 zone.

Yuma County Comprehensive Plan

The Energy, Land Use, Open Space, and Environment Elements of the Yuma County 2030 Comprehensive Plan (Yuma County 2023) provides for a variety of land uses in the face of dropping growth rates over the previous decade to facilitate future demographic changes, increased ethnic and cultural diversity, land use densities, land costs, traffic, and a need to preserve the natural environment.

The following policy statements from the Yuma County 2030 Comprehensive Plan are applicable to portions of segments that traverse the planning area:

Energy Element - Section 10.5 Energy Policies and Priorities

EPP.1: Support the provision of adequate energy for the future while protecting the natural environment and resources.

Energy Element - Section 10.6 Energy Actions

EA.1: Work with utility providers through the planning process to identify appropriate locations and buffering for future energy generation and transmission projects.

EA.2: Keep current information and review development proposals from utility providers to ensure an understanding of where facilities may be and to keep citizens and businesses informed.

EA.3: Work closely with utility providers during planning and evaluation of development plans to access cumulative, county-wide impacts on energy availability and reliability.

Yuma County Zoning Ordinance

The Yuma County Zoning Ordinance regulates land uses throughout the unincorporated areas of the county and outlines allowable development within each zoning designation with a natural slope of less than 15 percent (Yuma County 2006).

The following policy statements from the Yuma County Zoning Ordinance are applicable to portions of segments that traverse the planning area:

Utility Lines and Facilities

1. All new electrical power distribution lines, telephone lines, gas distribution lines, cable television lines, and appurtenant facilities shall be installed underground unless the applicant demonstrates, and the County determines on the basis of substantial evidence, that the installation of any of the foregoing lines and facilities above ground would better protect scenic qualities and environmental conditions.
2. The following types of lines and facilities may be excepted from the requirements above:
   - Poles without overhead lines and used exclusively for fire or law enforcement alarm boxes, lighting purposes, or traffic control.
   - Overhead wires attached to the exterior surface of a building by means of a bracket or other fixtures and extending from one location on the building to another location on the same building.
   - Equipment appurtenant to underground facilities, such as surface mounted transformers, pedestal mounted terminal boxes and meter cabinets and concealed ducts, provided that such facilities shall be located and designed so as to harmonize with the area and shall be appropriately screened and landscaped.
   - Transmission lines, external distribution lines and existing distribution lines are not the owner(s) responsibility to underground if located offsite; under grounding lines onsite would be required, where feasible.
3. The location, design, installation and maintenance of electric power distribution lines, telephone lines, gas lines, cable television lines and appurtenant facilities shall be completed with the minimum soil and site disturbance as is feasible for economy and maintenance. Such lines shall be located within the street ROW whenever possible.

City of Calexico General Plan

The Public Facilities and Services of the City of Calexico General Plan, Section 4.4.1.12 indicates that the City would coordinate with the Imperial Irrigation District for the provision of adequate land within new developments and throughout the city for electrical substations and transmission facilities (City of Calexico 2015).

5.11.3 Impact Questions

5.11.3.1 Impact Questions

The thresholds of significance for assessing impacts come from the CEQA Environmental Checklist. For land use and planning, the CEQA Checklist asks if the project would:

- Physically divide an established community?
- Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

5.11.3.2 Additional CEQA Impact Questions

There are no CPUC-identified additional CEQA impact questions.

5.11.4 Impact Analysis

5.11.4.1 Land Use and Planning Impact Analysis

5.11.4.1.1 Land Use and Planning Methodology

Land use and planning data in the vicinity of the Proposed Project were obtained from multiple federal, state, and local sources. The data were collected in or converted to a GIS-compatible format and the Proposed Project alignment was overlain to determine the potential impacts associated with land use and planning. Aerial photographs were also utilized to assist with this analysis.

5.11.4.1.2 Would the project physically divide an established community?

Construction

Project Components in California

Less than Significant Impact with Mitigation. The Proposed Project would be located primarily in undeveloped rural areas. Access to businesses and other uses in the area surrounding the Proposed Project would be maintained during construction, with the majority of construction occurring within the ROW. Any sidewalk, lane, road, trail, path, or driveway closures would be temporary and short-term. Disruption of public access within and across the ROW would be mitigated by flaggers and other traffic controls, as described in Section 5.17, Transportation, Applicant Proposed Measure (APM) TRA-1. The flaggers and other traffic controls will ensure that any sidewalk, lane, road, trail, path, or driveway closures will not create a physical division between area land uses or within the larger community as limited passage would remain available through these measures where feasible and alternative routes would be available. There are no established communities within one mile of the Proposed Project. The City of Calexico is very close to the Proposed Project but is not impacted. Therefore, less than significant impacts with mitigation would occur as a result of construction of the Proposed Project.

Project Components in Arizona

Less than Significant Impact with Mitigation. The Proposed Project would be located primarily in undeveloped rural areas. The main Yuma County land use designations along the Proposed Project is open space and recreational resources. Access to businesses and other uses in the area

surrounding the Proposed Project would be maintained during construction, with the majority of construction occurring within the ROW. Additionally, any sidewalk, lane, road, trail, path, or driveway closures would be temporary and short-term. Disruption of public access within and across the ROW would be mitigated by flaggers and other traffic controls, as resulting in plans described in Section 5.17, Transportation, APM TRA-1. The flaggers and other traffic controls will ensure that any sidewalk, lane, road, trail, path, or driveway closures will not create a physical division between area land uses or within the larger community as limited passage would remain available through these measures where feasible and alternative routes would be available. There are no established communities within one mile of the Proposed Project. Therefore, a less than significant impact with mitigation would occur as a result of construction of the Proposed Project.

Overall Project

Less than Significant Impact with Mitigation. The Proposed Project would be located primarily in undeveloped rural areas. The main Imperial County land use designations along the Proposed Project are agriculture and recreation/open space, while for Yuma County it is open space and recreational resources. Access to businesses and other uses in the area surrounding the Proposed Project would be maintained during construction, with the majority of construction occurring within the ROW. Additionally, any sidewalk, lane, road, trail, path, or driveway closures would be temporary and short-term. Disruption of public access within and across the ROW would be mitigated by flaggers and other traffic controls, as resulting in plans described in Section 5.17, Transportation, APM TRA-1. The flaggers and other traffic controls will ensure that any sidewalk, lane, road, trail, path, or driveway closures will not create a physical division between area land uses or within the larger community as limited passage would remain available through these measures where feasible and alternative routes would be available. There are no established communities within one mile of the Proposed Project. The City of Calexico is very close to the Proposed Project but is not impacted. Therefore, less than significant impact with mitigation would occur as a result of construction of the Proposed Project.

Operation

Project Components in California

No Impact. Operation and maintenance (O&M) activities associated with the Proposed Project would include, but is not limited to, repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, repairing or replacing poles and towers, brush and weed control, and access road maintenance. O&M would also include routine inspections and emergency repair within substation and throughout ROWs, which would require the use of vehicles and equipment. HWT inspects transmission line in a manner consistent with CPUC G.O. 165, which requires observation a minimum of once per year, although inspection typically occurs more frequently to ensure system reliability. Following construction of the Proposed Project, O&M activities would consist of monthly and annual inspections, as well as equipment testing and maintenance for new and expanded facilities. O&M activities do not currently divide an established community, nor would they be anticipated to do so as a result of the Proposed Project.

The new ROW associated with the Proposed Project would not divide an established community. The Proposed Project generally parallels an existing 500 kV transmission line located north of the City of Calexico and there are no established communities near the Proposed Project in California that could be divided by the new ROW. Therefore, no impact would occur from operation of the Proposed Project.

Project Components in Arizona

No Impact. There are no established communities within the right-of-way of the Proposed Project. O&M activities associated with the Proposed Project would include, but not limited to, repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, repairing or replacing poles and towers, tree trimming, brush and weed control, and access road maintenance. O&M would also include routine inspections and emergency repair within substation and throughout ROWs, which would require the use of vehicles and equipment. HWT inspects transmission lines which requires observation a minimum of once per year, although inspection typically occurs more frequently to ensure system reliability. Following construction of the Proposed Project, O&M activities would consist of monthly and annual inspections, as well as equipment testing and maintenance for new and expanded facilities. Overall, the Proposed Project would result in a nominal increase in O&M activities, such as increased maintenance and inspection trips. Such activities do not currently divide an established community, nor would they be anticipated to do so as a result of the Proposed Project.

The new ROW associated with the Proposed Project would not divide an established community. The Proposed Project generally parallels an existing 500 kV transmission line and there are no established communities near the Proposed Project in Arizona that could be divided by the new ROW. Therefore, no impact would occur from operation of the Proposed Project.

Overall Project

No Impact. O&M activities associated with the Proposed Project would include, but not be limited to, repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, repairing or replacing poles and towers, tree trimming, brush and weed control, and access road maintenance. O&M would also include routine inspections and emergency repair within substation and throughout ROWs, which would require the use of vehicles and equipment. HWT inspects transmission line in a manner consistent with CPUC G.O. 165, which requires observation a minimum of once per year, although inspection typically occurs more frequently to ensure system reliability. Following construction of the Proposed Project, O&M activities would consist of monthly and annual inspections, as well as equipment testing and maintenance for new and expanded facilities. Overall, the Proposed Project would result in a nominal increase in O&M activities, such as increased maintenance and inspection trips. Such activities do not currently divide an established community, nor would they be anticipated to do so as a result of the Proposed Project.

The new ROW associated with the Proposed Project would not divide an established community. The Proposed Project generally parallels an existing 500 kV transmission line and there are no established communities near the Proposed Project in California or Arizona that could be divided by the new ROW. Therefore, no impact would occur from operation of the Proposed Project.

5.11.4.1.3 Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Construction

Project Components in California

Less than Significant. The Proposed Project in California would be constructed in a new 250-feet ROW located on federal, state, and private lands within Imperial County and city of Calexico.

Table 5.11-6 and the discussion that follows the table includes a discussion of the potential for the Proposed Project to conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

FEDERAL

The Proposed Project would require approximately 80 miles of new or modified rights-of-way (ROWs) in California to connect the North Gila and Imperial Valley Substations. The western approximately 30 miles of the Proposed Project located primarily on private land is aligned predominantly adjacent and parallel to existing utility ROWs with limited route deviations where aligning with existing ROWs would not be feasible. The eastern extent of the Proposed Project in California is aligned entirely within BLM 368 Utility Corridors and BLM Designated Corridors. The DRECP allows for the application for and the acquisition of additional land rights for electric and natural gas facilities to meet the growing energy need throughout the state. The BLM would evaluate the applicability of new land acquisition applications on a case-by-case basis, and in situations where the BLM retains authority to require design features or mitigation, the BLM would apply DRECP LUPA decisions to the extent authorized by the relevant statues and regulations. The Proposed Project would comply with all conditions and measures included in federal authorizations for the purposes of avoiding or mitigating an environmental effect.

While the Proposed Project would be located within ACECs, development in these locations would occur within existing BLM 368 Utility Corridors that almost entirely overlay the ACECs. Further, as a transmission facility, the Proposed Project is an allowable use in the Picacho ACEC, East Mesa ACEC, Lake Cahuilla ACEC, Yuha Basin ACEC, and Plank Road ACEC.

Portions of the Proposed Project and/or its associated workspaces would be located within the Imperial Sand Dunes Recreation Area. The Imperial Sand Dunes Recreation Area Management Plan implements the CDCA which is consistent with this Proposed Project, as shown in Table 5.11-6.

Table 5.11-6 Relevant Land Use Plans and Policies Consistency Analysis Table

Plan/Policy	Consistent	Explanation
California Desert Conservation Area Plan (1980, as amended)		
Decision Criteria 1: Minimize the number of separate rights-of-way by utilizing existing rights-of-way as a basis for planning corridors	Yes	The Proposed Project would require approximately 86.6 miles of new or modified rights-of-way (ROWs) in order to connect the North Gila and Imperial Valley Substations. The eastern approximately 56.5 miles of the Proposed Project is aligned entirely within BLM 368 Utility Corridors, BLM Designated Corridors, or adjacent and parallel to existing Utility ROWs. The western approximately 30.1 miles of the Proposed Project is aligned predominantly adjacent and parallel to existing Utility ROWs with limited route deviations where aligning with existing ROWs would not be feasible. Therefore, the Proposed Project would be consistent with this policy.
Decision Criteria 2: Encourage joint use of corridors for transmission lines, canals, pipelines, and cables	Yes	The Proposed Project would align within BLM 368 Utility Corridors, BLM Designated Corridors, or be adjacent and parallel to existing Utility ROWs with limited route deviations where aligning with existing ROWs would not be feasible. Therefore, the Proposed Project would be consistent with this policy.
Decision Criteria 3: Provide alternative corridors to be considered during processing of applications	Yes	Chapter 4, Description of Alternatives, of the Proponent's Environmental Assessment (PEA) provides a discussion of alternatives to the Proposed Project and the selection process, including alternative corridors considered for the Proposed Project. Therefore, the Proposed Project would be consistent with this policy.
Decision Criteria 4: Avoid sensitive resources wherever possible	Yes	The Proposed Project would be constructed within modified and/or new ROWs within the CDCA and DRECP lands under the jurisdiction of the BLM, including portions within existing BLM 368 Utility Corridors and BLM Designated Corridors within the eastern approximately 56.5 miles of the Proposed Project alignment. As discussed in Chapter 6, Comparison of Alternatives of the PEA, alternatives to the Proposed Project were considered but were determined to impact more sensitive resources than the Proposed Project. The Proposed Project would be constructed to avoid sensitive resources to the extent feasible. Therefore, the Proposed Project would be consistent with this policy.
Decision Criteria 5: Conform to local plans whenever possible	Yes	As discussed in Section 5.11, Land Use and Planning of the PEA in Section 5.11.4, Impact Analysis, construction of the Proposed Project would not conflict with an applicable land use plan, policy, or regulation of a local agency with jurisdiction over the Proposed Project area. Therefore, the Proposed Project is consistent with this policy.

Plan/Policy	Consistent	Explanation
Decision Criteria 7: Complete the delivery-systems network	Yes	The CDCA adopted decision criteria from the California Energy Commission to ensure the development standards for the necessary utility infrastructure remained consistent throughout the state in order to meet the needs of the growing population while protecting California's natural resources. The California Energy Commission and the California Public Utilities Commission promote the scoping and design of a project that provides additional infrastructure to complete or add to an existing utility delivery network. The Proposed Project is needed to meet the CAISO's policy-driven need for the project to support mitigation of the East of Miguel deliverability constraint[1], which the CAISO found presently results in zero deliverability for resources in the CPUC's base portfolio (3,080 MW) and sensitivity portfolio (10,398 MW) of renewable resources (CAISO 2022-2023 Transmission Plan). Further, the Proposed Project, as part of the Southern Area Reinforcement[2], supports the cost-effective, common upgrade mitigation of identified transmission constraints on the Devers-Red Bluff 500 kV, East of Miguel, Bay Boulevard-Silvergate, Encina-San Luis Rey, Sycamore area, San Luis Rey-San Onofre, and Silvergate-Old Town lines. Therefore, the Proposed Project would be consistent with this policy.
Decision Criteria 8: Consider ongoing projects for which decisions have been made, for example, the Intermountain Power Project	Yes	In order to meet the energy demand for the surrounding areas, the Proposed Project would expand the capacity between the Imperial Valley substation (within the CDCA) and the North Gila substation (approximately 2 miles east of the CDCA) which would support mitigation of the East of Miguel deliverability constraint, support the Southern Area Reinforcement, and provide an expanded and reliable energy network for customers within the southwestern U.S. Ongoing projects for which decisions have been made will not achieve the same end and are not suitable alternatives to the Proposed Project. Therefore, the Proposed Project is consistent with this policy.
Decision Criteria 9: Consider corridor networks which take into account power needs and alternative fuel resources	Yes	The Energy Production and Utility Corridor Element of the CDCA Plan establishes a network of joint use planning corridors intended to meet the projected utility service needs at the time the plan was written. These corridors provide pre-approved utility avenues throughout the CDCA. The Proposed Project would be located within existing corridor networks under the CDCA DRECP in southeastern California and southwestern Arizona. Therefore, the Proposed Project would be consistent with this policy.

[1] As described in CAISO's 2022-2023 Transmission Plan, deliverability of portfolio resources east of the existing San Diego Gas & Electric Company's Miguel Substation is limited by thermal overloading of existing lines and transformers (referred to as the "East of Miguel Constraint").
[2] The Southern Area Reinforcement is a set of transmission projects in Southern California that are designed to address grid constraints and improve reliability and were identified in CAISO's 2022-2023 Transmission Plan.

Plan/Policy	Consistent	Explanation
Desert Renewable Energy Conservation Plan		
Apply limitations to the development of large-scale ROWs in areas identified for conservation (conservation areas and SRMAs).	Yes	While the Proposed Project would be located within Areas of Critical Environmental Concern (ACECs), development in these locations would generally be located along existing disturbed roadways or within existing utility corridors. The Proposed Project is anticipated to result in approximately 1,148.8 acres of temporary disturbance and approximately 242.5 acres of permanent disturbance to lands owned or managed by the BLM within the Plank Road ACEC, Picacho ACEC, East Mesa ACEC, Lake Cahuilla ACEC, and Yuha Basin ACEC. Within the Plank Road ACEC, the proposed project would result in approximately 0.1 acres of permanent disturbance to lands owned or managed by the BLM. Within the Picacho ACEC, the Proposed Project would result in approximately 280.1 acres of temporary disturbance and approximately 165.1 acres of permanent disturbance to lands owned or managed by the BLM. Within the East Mesa ACEC, the Proposed Project would result in approximately 662.9 acres of temporary disturbance and approximately 53.0 acres of permanent disturbance to lands owned or managed by the BLM. Within the Lake Cahuilla ACEC, the Proposed Project would result in approximately 36.1 acres of temporary disturbance and approximately 16.6 acres of permanent disturbance to lands owned or managed by the BLM. Within the Yuha Basin ACEC, the Proposed Project would result in approximately 169.7 acres of temporary disturbance and approximately 7.7 acres of permanent disturbance to lands owned or managed by the BLM. The Plank Road, Picacho, East Mesa, and Yuha Basin ACECs have 1.0 percent disturbance caps. The Lake Cahuilla ACEC does not have a disturbance cap. The BLM determines the acreage available left within each applicable disturbance cap and determines project consistency with the disturbance cap as part of the NEPA review process. Given the amount of disturbance on BLM-owned land within each ACEC and that such disturbance would generally be concentrated along previously disturbed roadway and utility corridors, it is not anticipated that the Proposed Project would cause these ACECs to exceed their respective disturbance caps. Should the BLM determine that disturbance within these ACECs exceed the applicable caps, ground disturbance mitigation would be applied, as prescribed in Section II.2.1 of the DRECP Land Use Plan Amendment. The Proposed Project would not be located within any SRMAs. Therefore, the Proposed Project would be consistent with this policy.

Plan/Policy	Consistent	Explanation
LUPA-LANDS-8: The CDCA Plan requirement that new transmission lines of 161kV or above, pipelines with diameters greater than 12 inches, coaxial cables for interstate communications, and major aqueducts or canals for interbasin transfers of water will be located in designated utility corridors, or considered through the plan amendment process outside of designated utility corridors, remains unchanged. The only exception is that transmission facilities may be located outside of designated corridors within DFAs without a plan amendment. This CMA does not apply the Bishop and Bakersfield RMPs.	Yes	The Proposed Project would be constructed on land managed by the BLM within existing 368 Utility corridors or Designated Corridors. No new pipelines, coaxial communication cables, or water resource infrastructure would be constructed. Therefore, the Proposed Project would be consistent with this policy.
ACEC-DIST-1: Development in Areas of Critical Environmental Concern (ACECs) is limited by specified ground disturbance caps which are the total ground disturbance (existing [past and present] plus future). The specific ACEC ground disturbance caps are delineated in each of the individual ACEC Special Unit Management Plans (Appendix B). The ground disturbance caps will be used, managed and implemented following the methodology for California Desert National Conservation Lands and ACECs identified in Section II.2 and repeated in CMAs NLCS-DIST- 2, and ACEC-DIST-2.	Yes	The majority of the Proposed Project's land disturbance would be temporary. HWT would clean up all areas that would be temporarily disturbed by construction of the Proposed Project (e.g., material staging yards, construction setup areas, and stringing sites) to as close to pre-construction conditions as feasible. If restoration and/or revegetation occurs within sensitive habitats, a habitat restoration and/or revegetation plan(s) would be developed by HWT with the appropriate resource agencies and implemented after construction is complete. Proposed construction activities would result in long-term disturbances within the approximately 184,500-acre Picacho ACEC, the approximately 88,479-acre East Mesa ACEC, the approximately 14,695-acre Lake Cahuilla ACEC, the approximately 77,303-acre Yuha Basin ACEC, and the approximately 416-acre Plank Road ACEC. As described previously, the Proposed Project would contribute toward ground disturbance caps within these ACECs but is not expected to cause an exceedance of these caps because long-term disturbance on BLM-owned land within each ACEC would be minimal and generally concentrated along previously disturbed roadway and utility corridors. Should the BLM determine that disturbance within either ACEC exceeds the applicable cap, ground disturbance mitigation would be applied, as prescribed in Section II.2.1 of the DRECP Land Use Plan Amendment. Therefore, the Proposed Project would be consistent with this policy.

Plan/Policy	Consistent	Explanation
ACEC-LANDS-1: Renewable energy activities are not allowed. ACECs are right-of-way avoidance areas for all other land use authorizations, except when identified as right-of-way exclusion areas in the individual unit's Special Management Plan (Appendix B). Transmission is allowed. Re-powering of an existing wind facility is allowed if the re-power project remains within the existing approved wind energy ROW and reduces environmental impacts.	Yes	The Proposed Project is considered a transmission facility. As a result, its construction within the Picacho ACEC, East Mesa ACEC, Lake Cahuilla ACEC, Yuha Basin ACEC, and Plank Road ACEC is allowed. No other energy activities are proposed within the Picacho ACEC, East Mesa ACEC, Lake Cahuilla ACEC, Yuha Basin ACEC, and Plank Road ACEC. Therefore, the Proposed Project would be consistent with this policy.
WILD-LANDS-2: Applications for use authorizations that provide a benefit to the management area or serve public interests may be allowed, unless prohibited by statute.	Yes	The Proposed Project would not be located within designated wild lands. Therefore, the Proposed Project would be consistent with this policy.
DFA-LANDS-7: Transmission facilities are an allowable use and will not require a plan amendment within DFAs.	Yes	The Proposed Project's new 500 kV transmission line is considered a transmission facility; therefore, it would be consistent with this policy.
Yuma Resource Management Plan		
LR-031: To the extent possible, locate new ROWs within or parallel to existing ROWs or ROW Corridors to minimize resource impacts. Locate new major ROWs and utility facilities in designated ROW Corridors, unless an evaluation of the project demonstrates location outside of a designated corridor is the only practicable alternative.	Yes	The segment of the Proposed Project within the YRMA would be entirely within a BLM 368 Utility Corridor or adjacent to existing transmission line ROWs.
LR-038: New utility facilities within ROW Corridors will avoid impacts to natural and cultural resources within SCRMAs to the greatest extent possible. If impacts cannot be avoided, mitigation will be required.	Yes	The Proposed Project ROW would be large enough to avoid natural and cultural resources to the greatest extent possible through micro-siting of project components outside these areas.

Plan/Policy	Consistent	Explanation
Arizona Administrative Code Title 14 Chapter 2		
Section R14-2-2606	Yes	The Proposed Project would utilize an existing BLM 368 Utility corridor, where available, to accommodate Interconnection. Therefore, the Proposed Project would be consistent with this policy.
Imperial County General Plan		
Goal 2, Objectives 2.1 and 2.2	Yes	The Proposed Project alignment minimizes potential environmental effects by locating within existing designated utility corridors, easements, and ROWs to minimize impacts to agricultural, natural, and cultural resources, urban areas, military operation areas, and recreational activities. Therefore, the Proposed Project would be consistent with this policy.
Yuma County 2030 Comprehensive Plan		
Section 10.5 Energy Policies and Priorities, EPP.1	Yes	The Proposed Project supports the provision of adequate energy for the future while protecting the natural environment and resources. Therefore, the Proposed Project would be consistent with this policy.
Section 10.6 Energy Actions, EA.1, EA.2, and EA.3	Yes	The Proposed Project is appropriately located and buffered for future transmission projects, numerous public meetings have been held to keep citizens and businesses informed, and the Proposed Project is being designed to enhance energy availability and reliability. Therefore, the Proposed Project would be consistent with this policy.
City of Calexico General Plan		
2.1.6.3 Land Use Compatibility Objective 2: Land use distribution should create a pattern which organizes land uses in order to maximize compatibility with adjacent land uses.	Yes	The Proposed Project is aligned on lands with the same current land use as those for the existing transmission lines 0.5 mile to the north in unincorporated Imperial County. This alignment avoids residential, school, and park land uses that may not be found compatible with transmission lines. Therefore, the Proposed Project would be consistent with this policy.

Sources: BLM 1980, BLM 2015, Imperial County 1993, Yuma County 2023, City of Calexico 2015.

STATE AND LOCAL

As discussed in Section 5.11.2, Regulatory Setting, the CPUC's jurisdiction over electric power line projects and substations preempt local jurisdictions from regulating the Proposed Project. However, HWT considers local and state land use plans and polices as part of its routing and siting process, and has performed a consistency review of federal, state, and local plans and policies.

As presented in Section 5.11.2, the construction of electric infrastructure as included in the Proposed Project is not prohibited in the land use designations in the Imperial County General Plan and City of Calexico General Plan, and there are no policies in place for the Heber Sand Dunes that would be impacted.

Based on the above discussion, the Proposed Project alignment in California would be consistent with federal, state, and local policies and land use goals and impacts would be less than significant.

Project Components in Arizona

Less than Significant. The Proposed Project would be constructed in a new 250-feet ROW located on federal and private lands within Yuma County. A discussion of the potential for the Proposed Project to conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect is provided below and presented in Table 5.11-6.

FEDERAL

The Proposed Project in Arizona is aligned primarily within BLM 368 Utility Corridors or BLM Designated Corridors where they exist or otherwise adjacent and parallel to existing utility ROWs, including the 500 kV SWPL. The segment of the Proposed Project within the YRMP would be entirely within a BLM 368 Utility Corridor or adjacent to existing transmission line ROWs and the Proposed Project would comply with transmission line measures in the YRMP. Additionally, as described above for California, the Proposed Project would comply with all conditions and measures included in federal authorizations for the purposes of avoiding or mitigating an environmental effect.

LOCAL

As presented in Section 5.11.2, Regulatory Setting, the construction of electric infrastructure as included in the Proposed Project is not prohibited in the land use designated in the Yuma County Comprehensive Plan and zoning ordinance. Therefore, construction of the Proposed Project would be consistent with applicable local land use policies.

Based on the above discussion, the Proposed Project alignment in Arizona would be consistent with federal, state, and local policies and land use goals and impacts would be less than significant.

Overall Project

Less than Significant. As discussed in Section 5.11.2, the CPUC's jurisdiction over electric power line projects and substations preempt local jurisdictions from regulating the Proposed Project in California while the Arizona Corporation Commission has jurisdiction over the facilities in Arizona. However, HWT considers local and state land use plans and polices as part of its routing and siting process, and has performed a consistency review of federal, state, and local plans and policies.

The Proposed Project is aligned predominantly with BLM 358 Energy Corridors and BLM Designated Corridors and adjacent and parallel to existing utility ROWs. The western approximately 30.1 miles of the Proposed Project is aligned predominantly adjacent and parallel to existing utility ROWs with limited route deviations where aligning with existing ROWs would not be feasible. The eastern

approximately 56.5 miles of the Proposed Project is aligned entirely within BLM 368 Utility Corridors, BLM Designated Corridors, or adjacent and parallel to existing utility ROWs.

The DRECP allows for the application for and the acquisition of additional land rights for electric and natural gas facilities to meet the growing energy need throughout the state. The BLM would evaluate the applicability of new land acquisition applications on a case-by-case basis, and in situations where the BLM retains authority to require design features or mitigation, the BLM would apply DRECP LUPA decisions to the extent authorized by the relevant statues and regulations. The Proposed Project would comply with all conditions and measures included in federal authorizations for the purpose of avoiding or mitigating an environmental effect. Portions of the Proposed Project and/or its associated workspaces would be located within the Imperial Sand Dunes Recreation Area. The Imperial Sand Dunes Recreation Area Management Plan implements the CDCA which is consistent with the Proposed Project.

As presented in Section 5.11.2, Regulatory Setting, the construction of electric infrastructure as included in the Proposed Project is not prohibited in the land use designations in the Imperial County General Plan, Yuma County Comprehensive Plan, and City of Calexico General Plan. Portions of the Proposed Project and/or its associated workspaces would be located within the Heber Sand Dunes, but there are no policies in place for the Heber Sand Dunes that would be impacted. The Proposed Project would be consistent with federal, state, and local policies and land use goals.

Operation

Project Components in California

No Impact. O&M activities associated with the Proposed Project would include, but not limited to, repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, repairing or replacing poles and towers, tree trimming, brush and weed control, and access road maintenance. O&M would also include routine inspections and emergency repairs within substation and throughout ROWs, which would require the use of vehicles and equipment. HWT inspects transmission line in a manner consistent with CPUC G.O. 165, which requires observation a minimum of once per year, although inspection typically occurs more frequently to ensure system reliability. Following construction of the Proposed Project, O&M activities would consist of monthly and annual inspections, as well as equipment testing and maintenance for new and expanded facilities. Overall, the Proposed Project would result in a nominal increase in O&M activities, such as increased maintenance and inspection trips. No environmental impact due to a conflict with a land use plan, policy, or regulation adopted for the purpose of avoiding or mitigation an environmental effect would occur from operation of the Proposed Project.

Project Components in Arizona

No Impact. As previously described, O&M activities associated with the Proposed Project would include, but not limited to, repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, repairing or replacing poles and towers, tree trimming, brush and weed control, and access road maintenance. O&M would also include routine inspections and emergency repairs within substation and throughout ROWs, which would require the use of vehicles and equipment. HWT inspects transmission line in a manner consistent with CPUC G.O. 165, which requires observation a minimum of once per year, although inspection typically occurs more frequently to ensure system reliability. Following construction of the Proposed Project, O&M activities would consist of monthly and annual inspections, as well as equipment testing and

maintenance for new and expanded facilities. Overall, the Proposed Project would result in a nominal increase in O&M activities, such as increased maintenance and inspection trips. No environmental impact due to a conflict with a land use plan, policy, or regulation adopted for the purpose of avoiding or mitigation an environmental effect would occur from operation of the Proposed Project.

Overall Project

No Impact. As previously described, O&M activities associated with the Proposed Project would include, but not be limited to, repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, repairing or replacing poles and towers, tree trimming, brush and weed control, and access road maintenance. O&M would also include routine inspections and emergency repairs within substation and throughout ROWs, which would require the use of vehicles and equipment. HWT inspects transmission line in a manner consistent with CPUC G.O. 165, which requires observation a minimum of once per year, although inspection typically occurs more frequently to ensure system reliability. Following construction of the Proposed Project, O&M activities would consist of monthly and annual inspections, as well as equipment testing and maintenance for new and expanded facilities. Overall, the Proposed Project would result in a nominal increase in O&M activities, such as increased maintenance and inspection trips. No environmental impact due to a conflict with a land use plan, policy, or regulation adopted for the purpose of avoiding or mitigation an environmental effect would occur from operation of the Proposed Project.

5.11.5 CPUC Draft Environmental Measures

There are no CPUC Draft Environmental Measures identified for the land use and planning resource area.

5.11.5.1 Applicant Proposed Measures

There are no Applicant Proposed Measures specific to land use and planning.

5.11.5.1.1 Cross-Referenced Applicant Proposed Measures

The following Applicant Proposed Measure described in Section 5.17, Transportation, would minimize disruption of public access within and across the ROW:

- **TRA-1:** Prior to construction, HWT would cooperate with the relevant siting authorities (e.g., Bureau of Land Management), regulatory agencies (e.g., Federal Aviation Administration, Department of Defense, etc.), and local governments to implement appropriate traffic control measures during construction. These traffic control measures would also include requirements set by the encroachment permits granted by the California Department of Transportation and the Arizona Department of Transportation for the Proposed Project. The intent of the traffic control measures would be to ensure the safety of the Proposed Project personnel and the general public. Measures may include notifications to the public on the locations and timing of construction activities, traffic management such as signage and lane closures on public roads, the use of traffic cones and traffic personnel to further direct traffic, limitations on helicopter use in certain areas or at certain times, and daily work hours consistent with local ordinances. Traffic control measures would be implemented through the creation of a transportation plan that would be drafted and reviewed by the relevant siting authorities mentioned above prior to project construction.

5.12 Mineral Resources

This section describes the mineral resources in the vicinity of the Ironwood Transmission Line Project (Proposed Project), as well as impacts that may result from construction and operation of the Proposed Project.

According to the United States (U.S.) Bureau of Mines and U.S. Geological Survey (USGS) (1976), a mineral resource is defined as a concentration of naturally occurring solid, liquid, or gaseous materials in or on the earth's crust in such a form and quantity, and of such a grade or quality, that it has reasonable prospects for economic extraction, either currently or in the future. Mineral resources include oil, natural gas, geothermal energy, and metallic and non-metallic deposits. Mineral resources data for the Proposed Project were obtained from the following sources:

- USGS Mineral Resource Data System (MRDS)
- California Department of Conservation (DOC)
- California Geological Survey (CGS)
- Arizona Oil and Gas Conservation Commission (AZOGCC)
- Arizona Geological Survey (AZGS)
- Local agency planning documents
- Bureau of Land Management (BLM) Mineral and Land Records System
- BLM Desert Renewable Energy Conservation Plan

5.12.1 Environmental Setting

The Proposed Project is located in Imperial County, California and Yuma County, Arizona on federal, state, municipal, and private land. These lands include unincorporated areas of Imperial and Yuma counties, the city of Calexico, California, and public lands under the jurisdiction or management of the BLM, U.S. Bureau of Reclamation, and the California Department of Parks and Recreation. This section describes mineral resources within 0.5 mile of the Proposed Project. Figure 5.12-1a, Figure 5.12-1b, and Figure 5.12-1c illustrates mineral producers, past producers, and prospects within 0.5 mile of the Proposed Project.

5.12.1.1 Mineral Resources

The Proposed Project is located within the Colorado Desert and Mojave Desert Geomorphic Provinces (CGS 2002). These regions have historically produced mineral resources such as gold, silver, copper, and zinc (California Division of Mines and Geology 1977).

California's primary mining products are sand, gravel, and rock (DOC 2016). Mineral resources such as aggregates (sand, gravel, and building stones), and metals (including copper, gold, and silver) are among the primary materials extracted in Arizona, contributing to economic growth. As a result, Arizona consistently ranks as one of the top non-fuel mineral producers in the U.S. (AZGS 2019).

Figure 5.12-1a Mineral Resource Producers, Past Producers, and Prospects within 0.5 Mile of the Proposed Project

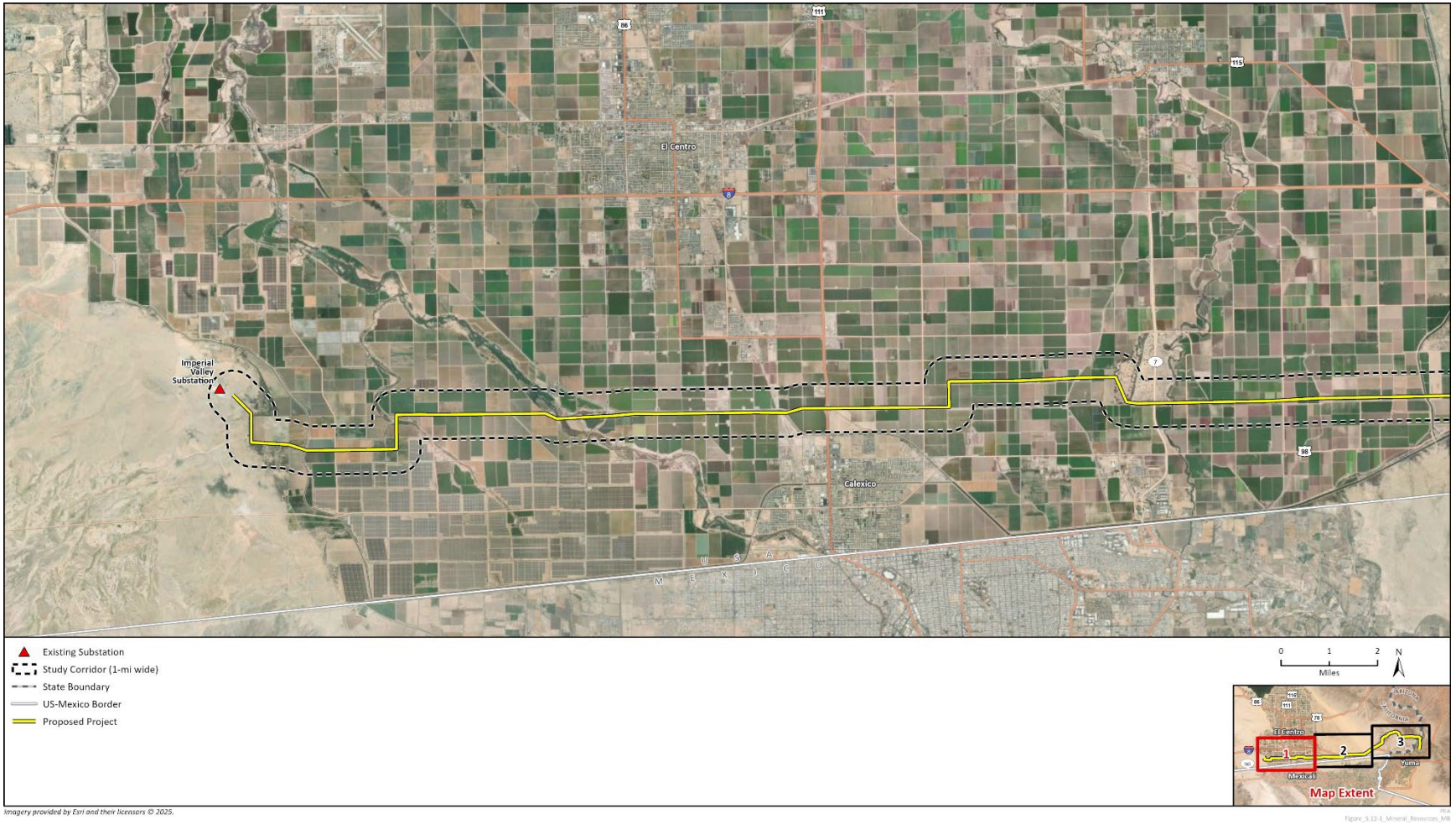


Figure 5.12-1b Mineral Resource Producers, Past Producers, and Prospects within 0.5 Mile of the Proposed Project

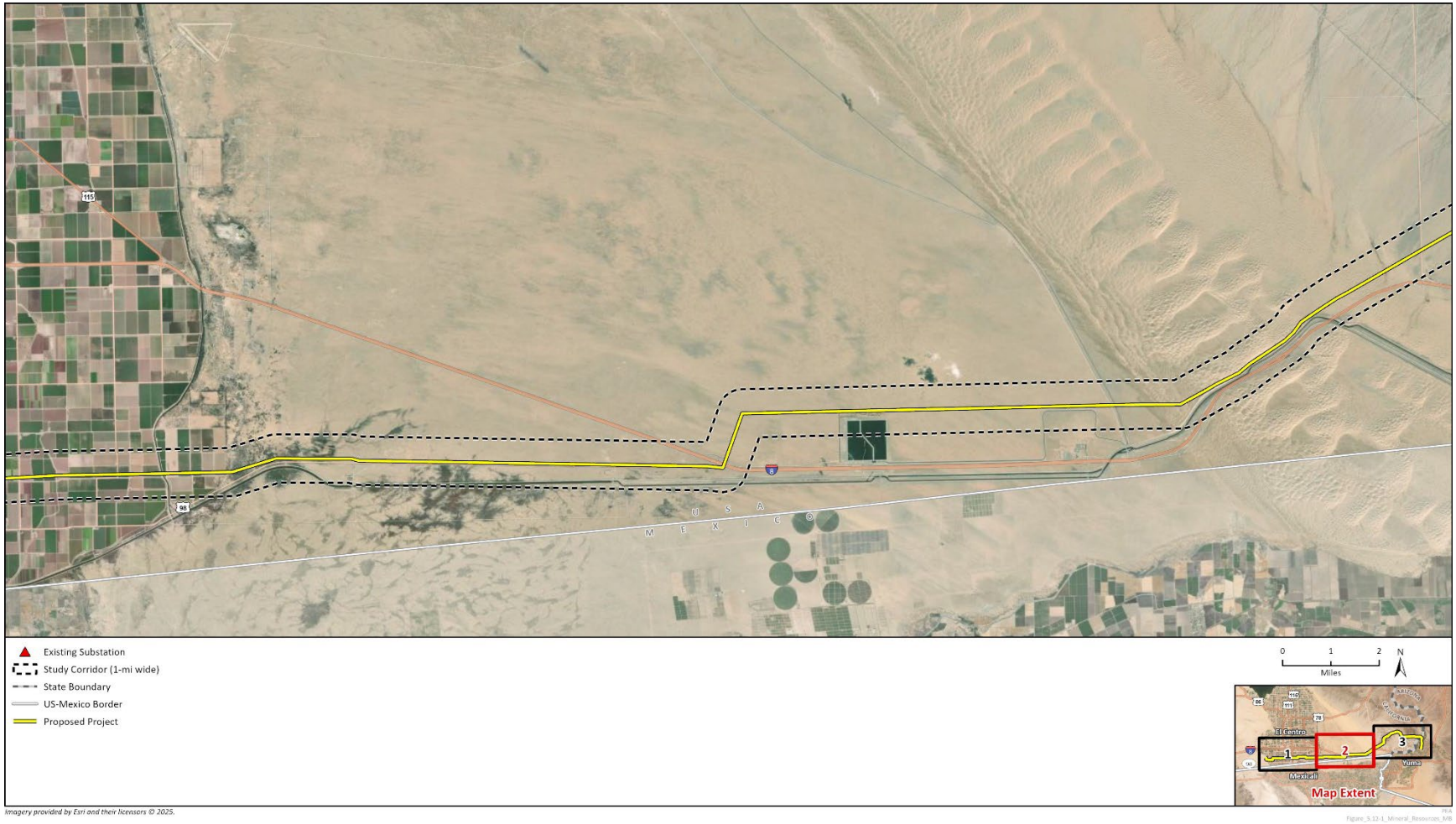
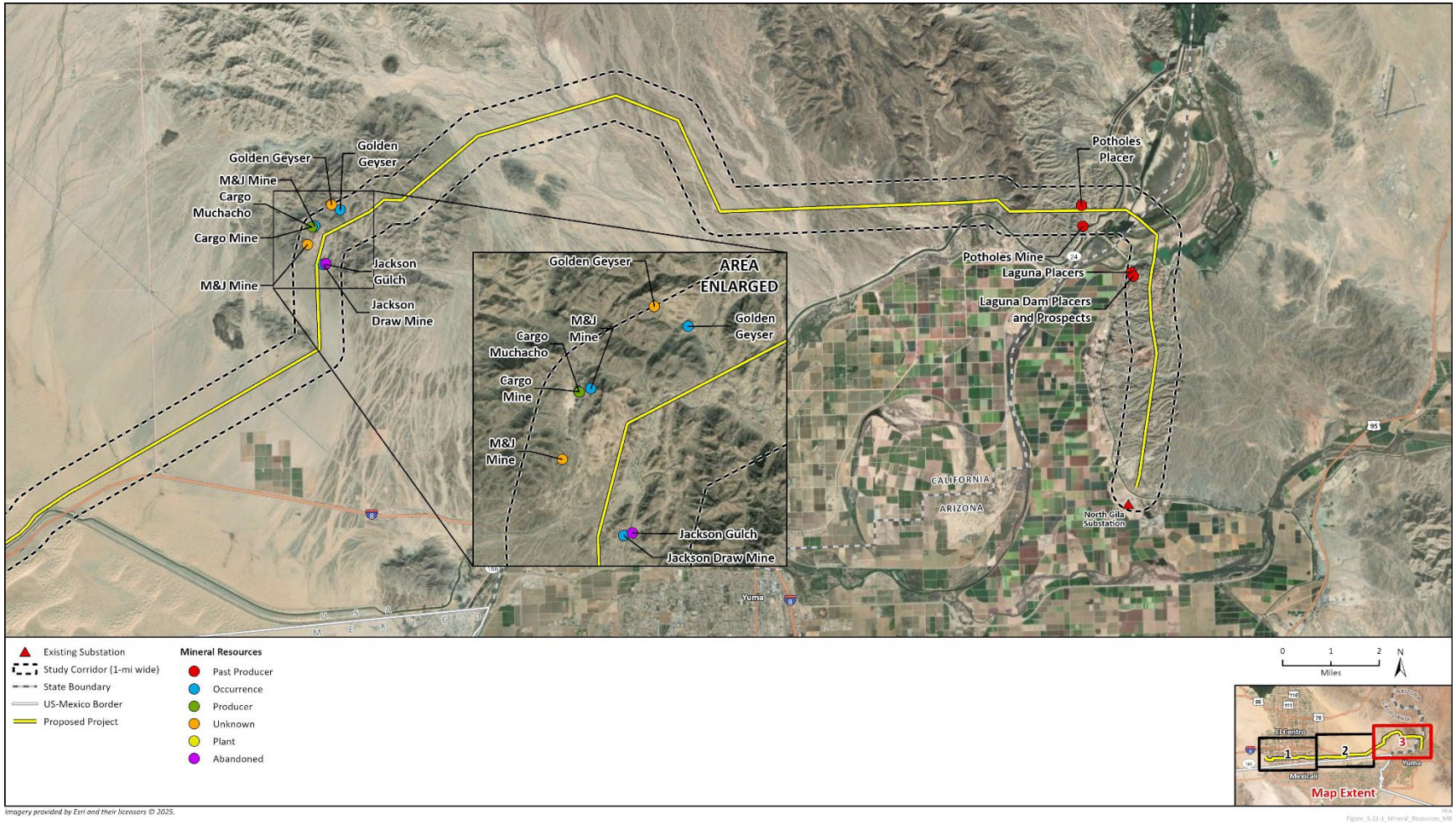


Figure 5.12-1c Mineral Resource Producers, Past Producers, and Prospects within 0.5 Mile of the Proposed Project



5.12.1.1.1 Known Mineral Resources

Imperial County

Mineral resources being extracted in Imperial County include gold, gypsum, sand, gravel, lime, clay, stone, kyanite, limestone, sericite, mica, tuff, salt, potash, and manganese. Due to the locations of the geologic deposition and the potential for environmental impacts, extraction of mineral resources is limited to a relatively small number of sites throughout the county (Imperial County 2016). There are no mapped Mineral Resource Zones (MRZs) within Imperial County (DOC 2025; see Section 5.12.2.2).

The California Geologic Energy Management Division (CalGEM) oversees the drilling, operation, maintenance, and plugging and abandonment of oil, natural gas, and geothermal wells in California. It also tracks known oil and gas wells. No oil and gas wells are located within 0.5 mile of the Proposed Project in Imperial County (CalGEM 2025).

There are nine known geothermal resources areas in Imperial County. Four of the nine known geothermal resource areas are located within Imperial County designated Geothermal Overlay Zones. These areas would provide opportunities for geothermal energy generation. The Proposed Project crosses the Heber and East Mesa known geothermal resource areas but is not located within any Geothermal Overlay Zones (Imperial County 2015).

Yuma County

Known mineral resources in Yuma County include primarily aggregate and crushed stone, sand, and gravel. However, there are no active mining operations within 0.5 mile of the Proposed Project in Yuma County (AZGS 2025; Yuma County 2023).

The AZOGCC oversees the drilling, operation, maintenance, and plugging and abandonment of oil, natural gas, and geothermal wells in Arizona. It also tracks known oil and gas wells. There are no known oil and gas wells or geothermal resources within 0.5 mile of the Proposed Project in Yuma County (AZOGCC 2025).

5.12.1.1.2 Mining Claims

Several mining claims are located within 0.5 mile of the Proposed Project and are presented in Table 5.12-1. It is unknown if these mining claims are currently active.

Table 5.12-1 Mining Claims within 0.5 Mile of the Proposed Project

Case Name	Commodity[1]	Recorded Acres	Date Filed	State
Golden Wren	Placer Claim	20	7/1/2022	AZ
Rock Bottom	Placer Claim	20	5/3/2021	AZ
Big Horn 2	Placer Claim	20	2/9/2018	AZ
2ND Chance	Placer Claim	20	1/10/2020	AZ
A&H	Placer Claim	20	12/15/2020	AZ
CO-OP 1	Placer Claim	80	9/14/2020	AZ
Ram Hole	Placer Claim	20	10/2/2024	AZ
SPMA Potholes East	Placer Claim	140	3/1/2004	CA
SPMA Potholes West	Placer Claim	80	11/17/1997	CA

Case Name	Commodity[1]	Recorded Acres	Date Filed	State
SPMA New RP	Placer Claim	80	11/18/2013	CA
S. P. M .A. ARAZ #1	Placer Claim	160	2/17/2009	CA
Jackson 5	Placer Claim	160	9/25/2002	CA
Jackson 4	Placer Claim	160	9/25/2002	CA
OC 116	Lode Claim	20.66	1/3/2011	CA
Jackson 1	Placer Claim	160	9/25/2002	CA
IVGC Cargo 6	Placer Claim	160	7/31/2014	CA
TSS Cargo 5	Placer Claim	160	5/16/2011	CA
Jackson 2	Placer Claim	160	9/25/2002	CA
TSS Cargo 1	Placer Claim	160	5/16/2011	CA
Jackson 8	Placer Claim	160	9/25/2002	CA

Source: BLM 2025.
[1] Lode claims include veins or lodes having well-defined boundaries and also include other rock in-place bearing valuable mineral deposits such as quartz and metallic mineral deposits. Placer claims cover all those deposits not subject to lode claims such as gypsum and high-calcium limestone.

5.12.1.1.3 Mines

The DOC's Office of Mine Reclamation provides oversight for local governments as it administers the California Surface Mining and Reclamation Act (SMARA) within each local government jurisdiction. The Arizona State Mine Inspector's Office provides oversight of the Arizona Mined Land Reclamation Act to determine compliance. Mines located within 0.5 mile of the Proposed Project are provided in Table 5.12-2 and on Figure 5.12-1a, Figure 5.12-1b, and Figure 5.12-1c.

Table 5.12-2 Mineral Resources Sites within 0.5 Mile of the Proposed Project

Mineral Prospects, Producers, and Past Mining Activity	Status[1]	Commodity	Approximate Distance to Proposed Project (miles)
Cargo Mine	Plant	Gold (primary) Silver (secondary)	0.3
Cargo Muchacho	Producer	Gold	0.3
Golden Geyser	Occurrence	Gold	0.3
Golden Geyser	Producer	Gold	0.5
Jackson Draw Mine	Occurrence	Gold	0.1
Jackson Gulch	Abandoned	Placer Gold	0.2
Laguna Dam Placers and Prospects	Past Producer	Gold (primary) Silver (secondary)	0.4
Laguna Placers	Past Producer	Gold (primary) Silver (secondary)	0.4
M&J Mine	Occurrence	Gold	0.3
M&J Mine	Unknown	Gold	0.3
Potholes Mine	Past Producer	Gold	0.3

Mineral Prospects, Producers, and Past Mining Activity	Status[1]	Commodity	Approximate Distance to Proposed Project (miles)
Potholes Placer	Past Producer	Gold	0.1

Source: USGS 2022.

[1] Mineral Prospect/Past Mining Activity status is determined by the USGS and reported in its MRDS. This data system describes metallic and non-metallic mineral resource deposits and their status at the time the data was added to the MRDS database. The status terms include:

- Occurrence: Ore mineralization found in outcrop, shallow pits, or isolated drill hole. Grade, tonnage, and extent of mineralization are unknown. No production and little or no activity since discovery other than routine claim maintenance.
- Prospect: Development beyond the occurrence stage (e.g., surface trenching, adits, shafts, drill holes, geophysics, geochemistry, or geological mapping) where enough data has been gathered to estimate grade and tonnage.
- Producer: A mine that was in production at the time the data was entered, including intermittent and seasonal producers.
- Past Producer: A former producer that was closed at the time of data entry with no known plans to re-open.
- Plant: A mineral processing plant such as a smelter, refiner, or beneficiation plant that is active or inactive.
- Unknown: The grade, tonnage, and extent of the mineralization are unknown and there has been no production and little or no activity since discovery (other than routine claim maintenance).

5.12.1.1.4 Resource Recovery Sites

There are 12 mineral resource sites located within 0.5 mile of the Proposed Project, including two with status of "Past Producer" and several others with "Occurrence," "Unknown," or "Abandoned" status. While these sites may indicate potential mineral extraction activities, none are currently designated as mineral resource recovery sites in local land use plans.

5.12.2 Regulatory Setting

This section describes the review of federal, state, and local regulations for applicability to the Proposed Project.

5.12.2.1 Federal

Surface Mining Control and Reclamation Act of 1977

The Surface Mining Control and Reclamation Act of 1977 (30 U.S.C. Section 1201-1328) established a program for regulating surface coal mining and reclamation activities. It also established mandatory, uniform standards for these activities on state and federal lands, including a requirement that adverse impacts on fish, wildlife, and related environmental values be minimized. The Act created the Abandoned Mine Reclamation Fund for use in reclaiming and restoring land and water resources adversely affected by mining practices.

5.12.2.2 State of California

California Surface Mining and Reclamation Act

The protection of regionally significant mineral resource deposits is one of the main emphases of the Surface Mining and Reclamation Act (SMARA) (Public Resources Code Section 2710 et. seq.). The law specifically mandates a two-phased process, commonly referred to as classification and designation, for mineral resources. The CGS is responsible under SMARA for carrying out the clarification phase of the process.

SMARA requires the State Geologist to classify lands into MRZs based on the known or inferred mineral resource potential of that land. The classification process is based solely on geology,

without regard to land use or ownership. The primary goal of mineral land classification is to help ensure that the mineral resource potential of land is recognized and considered in the land use planning process. MRZ definitions are provided below:

- **MRZ-1:** An area where adequate information indicates that no significant mineral deposits are present or where it is judged that little likelihood exists for their presence.
- **MRZ-2a:** An area where adequate information indicates that significant measured or indicated mineral reserves are present.
- **MRZ-2b:** An area where geologic information indicates that significant inferred resources or demonstrated subeconomic resources are present.
- **MRZ-3a:** An area likely to contain undiscovered mineral deposits similar to known deposits in the same producing district or region (hypothetical resources).
- **MRZ-3b:** An area judged to be a favorable geologic environment for mineral resource occurrences, but where mineral discoveries have not been made in the region (speculative resources).
- **MRZ-4:** An area where geologic information does not rule out either the presence or absence of mineral resources.

The Proposed Project is not located within any designated MRZs (DOC 2025).

5.12.2.3 State of Arizona

Arizona Aggregate Protection Act (Senate Bill 1598)

Arizona's Aggregate Protection Act is designed to safeguard the State's aggregate resources, such as sand, gravel, and crushed stone, which are essential for construction and infrastructure projects. The Aggregate Protection Act requires that city and county General Plans be revised or updated to identify active aggregate operations in their planning areas and that planners develop meaningful policies to protect these aggregates for future use by avoiding incompatible land uses.

5.12.2.4 Local

The California Public Utilities Commission (CPUC) has state jurisdiction over the siting and design of the Proposed Project in California. Pursuant to CPUC General Order 131-E, Section XI.B:

> "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the Commission's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters."

Consequently, local agencies in California do not have jurisdiction over the Proposed Project, but public utilities must consult with local agencies and consider their regulations.

Arizona Corporation Commission's Arizona Power Plant and Transmission Line Siting Committee has jurisdiction over the Proposed Project in Arizona. This committee may approve or deny a Certificate of Environmental Compatibility application and impose reasonable conditions. However, pursuant to Arizona Revised Statutes Section 40-360.06(D):

> "Any certificate granted by the committee shall be conditioned on compliance by the applicant with all applicable ordinances, master plans and regulations of the state, a county or an incorporated city or town, except that the committee may grant a certificate notwithstanding any such ordinance, master plan or regulation, exclusive of franchises, if the committee finds as a fact that compliance with such ordinance, master plan or regulation is unreasonably restrictive and compliance therewith is not feasible in view of technology available."

Consequently, local agencies in Arizona do not have jurisdiction over the Proposed Project, but public utilities must consult with local agencies and consider their regulations. Accordingly, the following discussion of local land use regulations is provided for informational purposes only.

Imperial County General Plan

The Conservation and Open Space Element of the Imperial County General Plan contains the following goal, policy, and program related to mineral resources (Imperial County 2016):

Goal 4: The County will identify and protect geologic, soil, aggregate, and mineral resources for extraction while minimizing the effect of mining on surrounding land uses and other environmental resources.

Objective 4.2: Require that mineral extraction and reclamation operations be performed in a way that is compatible with surrounding land uses and minimize adverse effects on the environment.

Objective 4.3: Safeguard the use and full development of all mineral deposits.

Objective 4.4: Regulate the development adjacent to or near all mineral deposits and geothermal operations due to the potential for land subsidence.

Mineral Resources Conservation Policy: Control the extraction of mineral resources to assure minimal disturbance to the environment, conservation of significant mineral deposits, and to protect mining operations from encroachment by incompatible land use.

Mineral Resources Conservation Program: The County shall protect known mineral deposits and mining operations from the encroachment of incompatible urban land uses. All protected areas shall be reevaluated in light of future State reports identifying areas of regional and statewide mineral significance.

Yuma County 2030 Comprehensive Plan

The Environmental Element of the Yuma County 2030 Comprehensive plan contains the following environmental action related to mineral resources (Yuma County 2023):

EA.4: Develop a natural resource impact checklist to assess potential negative and positive impacts from development and recommend mitigation measures.

City of Calexico General Plan

The Conservation/Open Space Element of the City of Calexico General Plan acknowledges that mineral resources, such as gold, gypsum, sand, gravel, lime, clay, and stone, have been identified throughout Imperial County. The County, which includes the City of Calexico, does not have a SMARA classification, which protects mineral resources from urban expansion or other irreversible land uses that preclude mineral extraction. However, the DOC mapped two principal mineral-

producing localities where clay, sand, and gravel are mined, located in proximity to, but not within, the City of Calexico. The Conservation/Open Space Element does not contain goals, objectives, and policies related to minerals that are relevant to the Proposed Project (City of Calexico 2015).

5.12.3 Impact Questions

5.12.3.1 Mineral Resources Impact Questions

The thresholds of significance for assessing impacts come from the California Environmental Quality Act (CEQA) Environmental Checklist. For mineral resources, the CEQA Checklist asks, would the project:

- Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?
- Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

5.12.3.2 Additional CEQA Impact Questions

There are no CPUC-identified additional CEQA impact questions.

5.12.4 Impact Analysis

5.12.4.1 Mineral Resources Impact Analysis

5.12.4.1.1 Mineral Resources Methodology

Mineral resources data in the vicinity of the Proposed Project were obtained from multiple federal, state, and local sources. The data were collected in or converted to a GIS-compatible format and the Proposed Project components were overlain to determine the potential impacts to these resources. Aerial photographs were also utilized to assist with this analysis.

5.12.4.1.2 Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

Construction

Project Components in California

No Impact. As shown on Figure 5.12-1a, Figure 5.12-1b, and Figure 5.12-1c, there are several mines within 0.5 mile of the Proposed Project in California. Cargo Muchacho is labeled a “Producer” and as of 2022 was likely active. In addition, there are 20 mining claims within 0.5 mile of the Proposed Project. Construction of the Proposed Project would occur in the new right-of-way and on access roads, and would not block access or otherwise interfere with mining activities. Because the Proposed Project would not be located within existing mine boundaries, construction would not result in the loss of availability of these resources and no impacts to the mines would occur. The Proposed Project would not be located within any mapped MRZs or Geothermal Overlay Zones; therefore, it would not cross any known mineral resources that would be of value to the region and the residents of the state. No impact would occur.

Project Components in Arizona

No Impact. As shown on Figure 5.12-1a, Figure 5.12-1b, and Figure 5.12-1c, while there are a few mines within 0.5 mile of the Proposed Project in Arizona, they are not active. There are seven mining claims within 0.5 mile of the Proposed Project. Because the Proposed Project would not be located within existing mine boundaries, construction would not result in the loss of availability of these resources and no impacts to the mines would occur. The Proposed Project does not cross any known mineral resources that would be of value to the region and the residents of the state. No impact would occur.

Overall Project

No Impact. There are several mines and mining claims within 0.5 mile of the Proposed Project, although only one mine is likely active. Construction of the Proposed Project would occur in the new right-of-way and on access roads and would not block access or otherwise interfere with mining activities. Because the Proposed Project would not be located within existing mine boundaries, construction would not result in the loss of availability of these resources and no impacts to the mines would occur. The Proposed Project would not be located within any mapped MRZs or Geothermal Overlay Zones in California or cross any known mineral resources in Arizona; therefore, it would not cross any known mineral resources that would be of value to the region and the residents of the state. No impact would occur.

5.12.4.1.3 Operation

Project Components in California

No Impact. Following construction of the Proposed Project, operation and maintenance activities would generally consist of annual or more frequent inspections as well as hardware maintenance and repairs and insulator washing. These activities would be conducted within the ROW or access roads and would not block access or otherwise interfere with mining activities. Because the Proposed Project would not be located within existing mine boundaries, operation and maintenance activities would not result in the loss of availability of these resources and no impacts to the mines would occur. The Proposed Project would not be located within any mapped MRZs or Geothermal Overlay Zones in California; therefore, it would not cross any known mineral resources that would be of value to the region and the residents of the state. No impact would occur.

Project Components in Arizona

No Impact. As discussed above, operation and maintenance activities would be conducted within the ROW or access roads and would not block access or otherwise interfere with mining activities. There are no active mines within 0.5 mile of the Proposed Project; therefore, operation and maintenance activities would not result in the loss of availability of these resources and no impact would occur. The Proposed Project does not cross any known mineral resources that would be of value to the region and the residents of the state. No impact would occur.

Overall Project

No Impact. Operation and maintenance activities would be conducted within the ROW or access roads and would not block access or otherwise interfere with mining activities. Because the Proposed Project would not be located within existing mine boundaries, operation and maintenance activities would not result in the loss of availability of these resources and no impact to mines would

occur. The Proposed Project would not be located within any mapped MRZs or Geothermal Overlay Zones in California or cross any known mineral resources in Arizona; therefore, it would not cross any known mineral resources that would be of value to the region and the residents of the state. No impact would occur.

5.12.4.1.4 Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

Construction

Project Components in California

No Impact. The Proposed Project is not located within a mapped MRZ or in proximity to a mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. However, as shown in Table 5.12-1 and on Figure 5.12-1a, Figure 5.12-1b, and Figure 5.12-1c, the Proposed Project would be located within 0.5 mile of mineral resource sites, as mapped by the USGS MRDS. The Proposed Project would not cross these sites. As a result, construction activities would not affect the availability of a locally important mineral resource recovery site and no impact would occur.

Project Components in Arizona

No Impact. The Proposed Project is not located in proximity to a mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. However, as shown in Table 5.12-1 and on Figure 5.12-1a, Figure 5.12-1b, and Figure 5.12-1c, the Proposed Project would be located within 0.5 mile of mineral resource sites, as mapped by the USGS MRDS. The Proposed Project would not cross these sites. As a result, construction activities would not affect the availability of a locally important mineral resource recovery site and no impact would occur.

Overall Project

No Impact. The Proposed Project is not located within a mapped MRZ in California or in proximity to a mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. As a result, construction activities would not affect the availability of a locally important mineral resource recovery site and no impact would occur.

5.12.4.1.5 Operation

Project Components in California

No Impact. As previously described, operation and maintenance activities would be conducted within the ROW or access roads. The Proposed Project is not located within a mapped MRZ or in proximity to a mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. As a result, operation and maintenance activities would not affect the availability of a locally important mineral resource recovery site and no impact would occur.

Project Components in Arizona

No Impact. The Proposed Project is not located in proximity to a mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. As a result, operation and

maintenance activities would not affect the availability of a locally important mineral resource recovery site and no impact would occur.

Overall Project

No Impact. The Proposed Project is not located within a mapped MRZ in California or in proximity to a mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. As a result, operation and maintenance activities would not affect the availability of a locally important mineral resource recovery site and no impact would occur.

5.12.5 CPUC Draft Environmental Measures

There are no CPUC Draft Environmental Measures identified for Mineral Resources.

5.12.5.1 Applicant Proposed Measures

No impacts to mineral resources would occur as a result of the Proposed Project. Therefore, there are no Applicant Proposed Measures.

This page left intentionally blank.

5.13 Noise

This section describes existing noise-sensitive land uses in the Proposed Project area, applicable noise regulations, and potential impacts related to noise and vibration from construction and operation of the Proposed Project. Research for this analysis involved a review of the following resources:

- The Federal Transit Administration (FTA) *Transit Noise and Vibration Impact Assessment Manual*
- Aerial imagery
- Local agency planning documents
- Noise monitoring survey

5.13.1 Environmental Setting

The Proposed Project is located in Imperial County, California and Yuma County, Arizona on federal, state, municipal, and private land. These lands include unincorporated areas of Imperial and Yuma counties, the city of Calexico, California, and public lands under the jurisdiction or management of the U.S. Bureau of Land Management (BLM), U.S. Bureau of Reclamation, and the California Department of Parks and Recreation. The Proposed Project is located almost entirely within undeveloped open areas. The following describes the noise and vibration setting for the Proposed Project area.

5.13.1.1 Noise-Sensitive Land Uses

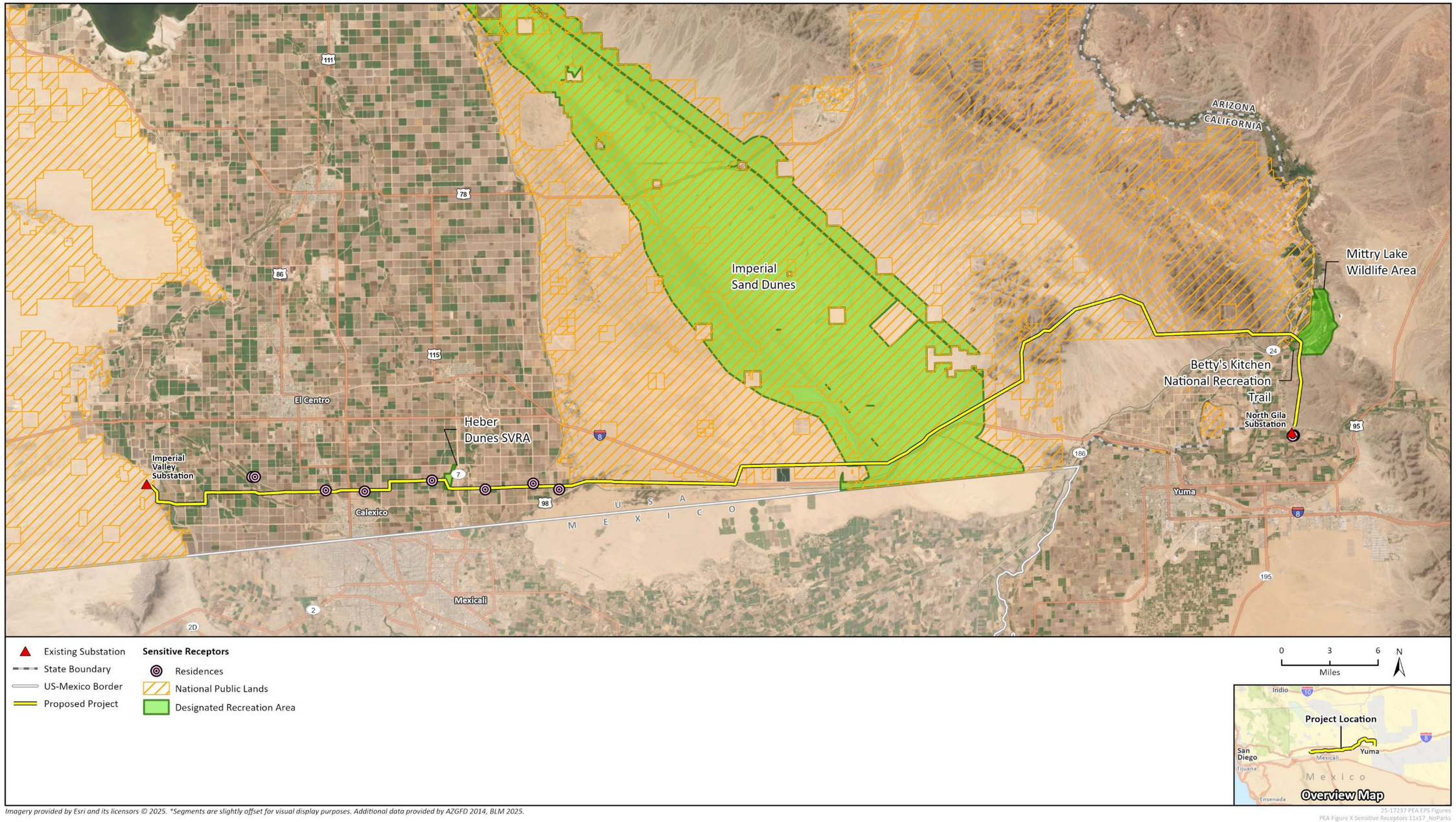
The definition of a sensitive receptor varies by jurisdiction. For the purposes of this analysis, the defined sensitive receptors and noise-sensitive land uses contained in the Imperial County General Plan (Imperial County 2015) and Yuma County 2030 Comprehensive Plan (Yuma County 2023) are used. The Imperial County General Plan defines noise-sensitive receptors as areas of habitation where the intrusion of noise has the potential to impact adversely the occupancy, use, or enjoyment of the environment. Noise-sensitive receptors identified in the Imperial County General Plan and Yuma County 2030 Comprehensive Plan include:

- residences
- schools
- libraries
- hospitals and assisted living facilities
- parks and recreational areas
- office buildings

In addition to human receptors, the BLM Desert Renewable Energy Conservation Plan (DRECP) includes wildlife as sensitive receptors. High noise levels can adversely affect wildlife activities. Wildlife resources, including noise-sensitive species, are discussed further in Chapter 5.4, Biological Resources.

Construction and operation activities associated with the Proposed Project are expected to occur mainly along existing roadways and open space areas; however, some activities may be conducted in the vicinity of residences in unincorporated areas of Imperial County and Yuma County, as well as the City of Calexico. Existing noise sources in proximity to these potentially noise-sensitive receptors include community noise, roadway and highway noise, industrial noise, and airport noise. There are currently 12 noise-sensitive receptors in the vicinity of the Proposed Project, consisting of single-family residential uses and open space/recreation areas. Noise-sensitive receptors located within 1,000 feet of the Proposed Project are identified on Figure 5.13-1.

Figure 5.13-1 Noise-Sensitive Receptors Located Within 1,000 Feet of the Proposed Project



*Imagery provided by Esri and its licensors © 2025. *Segments are slightly offset for visual display purposes. Additional data provided by AZGFD 2014, BLM 2025.*

25-17237 PEA EPS Figures
PEA Figure X Sensitive Receptors 11x17_NoParks

5.13.1.2 Noise Setting

Overview of Noise

Sound is a vibration that transmits through a medium (such as a gas, liquid, or solid) created by a moving or vibrating source, which is capable of being detected by the hearing organs. Noise is defined as sound that is loud, unpleasant, unexpected, or undesired, and may therefore be classified as a more specific group of sounds. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance, and, in the extreme, hearing impairment (California Department of Transportation [Caltrans] 2013).

Noise levels are commonly measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound pressure levels so that they are consistent with the human hearing response, which is most sensitive to frequencies around 4,000 hertz (Hz) and less sensitive to frequencies around and below 100 Hz (Kinsler et al. 1999). Decibels are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale used to measure earthquake magnitudes. A doubling of the energy of a noise source, such as the doubling of vehicle traffic volumes, results in a noise level increase of 3 dB, whereas dividing the energy in half results in a 3 dB decrease (Crocker 2007).

Human perception of noise has no simple correlation with sound energy (i.e., the perception of sound is not linear in terms of dBA or in terms of sound energy). Two sources, each containing the same sound energy, do not "sound twice as loud" as one source. It is widely accepted that the average healthy human ear can detect changes (either increases or decreases) of 3 dBA, which is recognized as being barely perceptible to most people. Similarly, a change of 5 dBA is readily perceptible and a change of 10 dBA sounds twice (or half) as loud (Crocker 2007).

The level and frequency content of sound changes as it travels from the source to a receiver. The most obvious change is the decrease in level as the distance from the source increases. The manner by which sound is reduced with distance depends on factors, such as the type of source (e.g., a point or line source), the path the sound travels, site conditions, and the presence of intervening structures or other obstacles. Noise from a point source (e.g., construction equipment, industrial machinery, ventilation units) typically is reduced at a rate of 6 dBA per each doubling of distance away from the source. Noise from a line source (e.g., roadway, pipeline, railroad) typically is reduced at a rate of 3 dBA per each doubling of distance away from the source (Caltrans 2013). The propagation of noise is also affected by the absorption characteristics of the ground: a hard site, such as a parking lot or smooth body of water, provides no absorption/attenuation and the changes in noise levels with distance result simply from the geometric spreading of the source (i.e., 3 or 6 dBA reduction per doubling of distance for a point source or line source, respectively). Conversely, a soft site, such as soft dirt, grass, or scattered bushes and trees, may provide additional absorption/attenuation, potentially reducing noise levels an additional 1.5 dBA per doubling of distance away from the source (Caltrans 2013). Noise levels may also be reduced by intervening structures. The amount of reduction provided by the "shielding" of these features depends on the size of the structure/s, the location of the structure/s relative to the noise source and receivers, and the frequency content of the noise levels. Natural terrain features, such as hills and dense woods, and man-made features, such as buildings and walls, can significantly alter noise levels. Generally, any large structure blocking the line of sight between a noise source and receiver will provide at least a 5-dBA reduction in source noise levels at the receiver (Federal Highway Administration [FHWA] 2011). The presence of building structures can substantially reduce noise levels from the

exterior to the interior as well. The FHWA's guidelines indicate that modern building construction generally provides an exterior-to-interior noise level reduction of 20 to 35 dBA with closed windows.

The impact of noise is not a function of loudness alone. The time of day at which noise occurs and the duration of the noise are also important factors when considering potential noise impacts. Most noise that lasts for more than a few seconds is variable in its amplitude (i.e., the noise level continuously fluctuates over time). Consequently, a variety of noise descriptors have been developed. One of the most frequently used noise metrics is the equivalent continuous sound level (L_{eq}), which considers both duration and the sound power level of the source. L_{eq} is defined as the single steady A-weighted level equivalent to the same amount of energy as that contained in the actual fluctuating levels over time. The extent of sound level fluctuations over a period of time is characterized by the minimum (L_{min}) and maximum (L_{max}) sound pressure levels, which represent the lowest and highest sound pressure levels measured during a given period, respectively.

The sound level that is exceeded "n" percent of time during a given sample period in the percentile noise level is represented as L_n. For example, the L_{50} level is the statistical indicator of the time-varying noise signal that is exceeded 50 percent of the time (during each sampling period); that is, half of the sampling time, the changing noise levels are above this value and half of the time they are below it. This is called the "median sound level." The L_{10} level, likewise, is the value that is exceeded 10 percent of the time (i.e., near the maximum), and this is often known as the "intrusive sound level." The L_{90} is the sound level exceeded 90 percent of the time and is often considered the "effective background level" or "residual noise level."

Noise that occurs at night tends to be more disturbing than noise that occurs during the day. Community noise is usually measured using the Day-Night Average Level (L_{dn}), which is the 24-hour average noise level with a +10 dBA penalty for noise occurring during nighttime hours (10:00 p.m. to 7:00 a.m.) hours. It is also measured using the Community Noise Equivalent Level (CNEL), which is the 24-hour average noise level with a +5 dBA penalty for noise occurring during evening hours (7:00 p.m. to 10:00 p.m.) and a +10 dBA penalty for noise occurring during nighttime hours (10:00 p.m. to 7:00 a.m.) (Caltrans 2013). Noise levels described by the L_{dn} and CNEL usually differ by about 1 dBA. The relationship between the peak-hour L_{eq} value and the L_{dn}/CNEL depends on the distribution of traffic during the day, evening, and night.

Existing Noise Levels

The Proposed Project alignment is generally located in uninhabited areas with few stationary anthropogenic noise sources. The primary existing sources of noise in the Proposed Project area include vehicular traffic on highways and local streets (primarily Interstate 8 and California State Routes [SR] 7, 86, 98, and 111), train pass-bys on nearby portions of the Calexico and Yuma subdivisions of the Union Pacific Railroad, and general agriculture noise in rural areas near the Proposed Project alignment.

To characterize existing ambient noise levels in the vicinity of noise-sensitive receptors near portions of the Proposed Project alignment, short-term (15 minute) noise monitoring was conducted at the following five locations, as depicted in Figure 5.13-2 through Figure 5.13-4 and summarized in Table 5.13-1:

- ST1: Near Yuma Proving Ground along Laguna Dam Road, taken approximately 75 feet east of the centerline of this roadway.

- ST2: Near existing single-family residences along Sidewinder Road North, taken approximately 25 feet east of the centerline of this roadway and approximately 1,700 feet north of where the Yuma subdivision of the Union Pacific Railroad crosses this roadway.
- ST3: Near existing single-family residences south of SR 98, taken approximately 1,700 feet south of the centerline of this roadway.
- ST4: Near existing single-family residences along Orchard Road/King Road, taken approximately 30 feet west of the centerline of this roadway and approximately 200 feet west of the southbound lane of County Highway 32.
- ST5: Near existing single-family residences located near the intersection of Nichols Road and West Wahl Road, taken approximately 20 feet southeast of the centerline of Nichols Road.

Additionally, long-term (24 hour) noise monitoring was conducted at the following four locations as depicted in Figure 5.13-2 through Figure 5.13-4 and summarized in Table 5.13-2, Table 5-13-3, Table 5.13-4, and Table 5.13-5:

- LT1: Near the existing single-family residences along East County 6th Street, taken approximately 850 feet southeast of the North Gila Substation.
- LT2: Near the existing single-family residence along Evan Hewes Highway, taken approximately 460 feet north of the edge of the I-8 westbound lane.
- LT3: Near the existing single-family residence along County Highway S33, taken approximately 25 feet east of the centerline of this roadway.
- LT4: Near the existing single-family residences and Heber Dogwood Elementary School along County Highway S31, taken approximately 85 feet east of the centerline of this roadway.

All noise monitoring was conducted using SoftdB Piccolo-II, American National Standards Institute (ANSI) Type 2 integrating sound level meters. The sound level meters were set to "slow" response and "A" weighting (dBA). All measurements were made at least five feet above the ground and away from reflective surfaces. At the time of the measurements, the ambient air temperature ranged between 60 and 86 degrees Fahrenheit (°F), cloud cover ranged between 20 and 80 percent, and wind speed ranged between 2 and 6 miles per hour (0.9 and 2.7 meters per second). All meters were equipped with windscreens. The sound level meters were field-calibrated before and after the monitoring periods.

Table 5.13-1 Short-Term Noise Monitoring Results

Monitoring Location	Sample Times[1]	L_{eq} (dBA)	L_{min} (dBA)	L_{max} (dBA)	L_{10} (dBA)	L_{50} (dBA)	L_{90} (dBA)
ST1	10:41 – 10:56 a.m.	59.1	33.0	80.8	54.6	42.6	37.4
ST2	11:44 – 11:59 a.m.	55.1	35.8	73.6	58.9	45.9	38.1
ST3	12:35 – 12:50 p.m.	45.2	38.4	61.4	47.8	42.2	40.2
ST4	1:10 – 1:25 p.m.	56.8	41.0	76.0	59.3	51.6	44.5
ST5	1:48 – 2:03 p.m.	58.5	34.8	78.6	53.1	43.0	39.4

dBA = A-weighted decibel; L_{eq} = equivalent continuous sound level; L_{min} = minimum sound level; L_{max} = maximum sound level; L_{10} = sound level exceeded for 10% of the monitoring period; L_{50} = sound level exceeded for 50% of the monitoring period; L_{90} = sound level exceeded for 90% of the monitoring period.

[1] All short-term monitoring was conducted on May 14, 2025.

Approximate short-term monitoring locations are shown on Figure 5.13-2a, Figure 5.13-2b, and Figure 5.13-2c. See Appendix I for noise measurement data.

Table 5.13-2 Long-Term Noise Monitoring Results (LT1)

Sample Time	dBA L_{eq}	Sample Time	dBA L_{eq}
LT-1 – 850 feet southeast of Gila Substation, May 14–15, 2025			
10:00 a.m.	68.3	10:00 p.m.	56.2
11:00 a.m.	63.9	11:00 p.m.	52.5
12:00 p.m.	60.2	12:00 a.m.	55.6
1:00 p.m.	63.6	1:00 a.m.	54.5
2:00 p.m.	61.1	2:00 a.m.	52.1
3:00 p.m.	61.6	3:00 a.m.	47.1
4:00 p.m.	61.7	4:00 a.m.	58.7
5:00 p.m.	59.0	5:00 a.m.	64.1
6:00 p.m.	59.2	6:00 a.m.	61.5
7:00 p.m.	60.6	7:00 a.m.	60.2
8:00 p.m.	61.2	8:00 a.m.	58.4
9:00 p.m.	52.8	9:00 a.m.	59.0
		24-Hour L_{eq} (dBA)	**60.9**
		Daytime[1] L_{eq} (dBA)	**62.0**
		Nighttime[2] L_{eq} (dBA)	**58.4**
		L_{dn} (dBA)	**65.3**
		L_{min} (dBA)	**29.0**
		L_{max} (dBA)	**97.6**

dBA = A-weighted decibel; L_{dn} = day-night average sound level; L_{eq} = equivalent continuous sound level; L_{min} = minimum sound level; L_{max} = maximum sound level

[1] Daytime period is from 7:00 a.m. to 10:00 p.m.

[2] Nighttime period is from 10:00 p.m. to 7:00 a.m.

Approximate long-term monitoring location shown on Figure 5.13-2a, Figure 5.13-2b, and Figure 5.13-2c. See Appendix I for noise measurement data.

Table 5-13-3 Long-Term Noise Monitoring Results (LT2)

Sample Time	dBA L_{eq}	Sample Time	dBA L_{eq}
LT2 – 460 feet north of edge of I-8 westbound lane, May 14–15, 2025			
10:00 a.m.	55.8	10:00 p.m.	56.5
11:00 a.m.	52.9	11:00 p.m.	53.2
12:00 p.m.	51.8	12:00 a.m.	55.5
1:00 p.m.	53.0	1:00 a.m.	55.3
2:00 p.m.	50.2	2:00 a.m.	56.2
3:00 p.m.	53.8	3:00 a.m.	57.5
4:00 p.m.	54.4	4:00 a.m.	59.0
5:00 p.m.	55.6	5:00 a.m.	56.3
6:00 p.m.	54.1	6:00 a.m.	53.4
7:00 p.m.	58.4	7:00 a.m.	53.6
8:00 p.m.	62.5	8:00 a.m.	55.6
9:00 p.m.	59.1	9:00 a.m.	57.5
		24-Hour L_{eq} (dBA)	**56.4**
		Daytime[1] L_{eq} (dBA)	**56.4**
		Nighttime[2] L_{eq} (dBA)	**56.2**
		L_{dn} (dBA)	**62.2**
		L_{min} (dBA)	**33.5**
		L_{max} (dBA)	**90.2**

dBA = A-weighted decibel; L_{dn} = day-night average sound level; L_{eq} = equivalent continuous sound level; L_{min} = minimum sound level; L_{max} = maximum sound level

[1] Daytime period is from 7:00 a.m. to 10:00 p.m.

[2] Nighttime period is from 10:00 p.m. to 7:00 a.m.

Approximate long-term monitoring location shown on Figure 5.13-2a, Figure 5.13-2b, and Figure 5.13-2c. See Appendix I for noise measurement data.

Table 5.13-4 Long-Term Noise Monitoring Results (LT3)

Sample Time	dBA L_{eq}	Sample Time	dBA L_{eq}
LT3 – 25 feet east of centerline of County Highway S33, May 14–15, 2025			
9:00 a.m.	52.7	9:00 p.m.	48.8
10:00 a.m.	47.7	10:00 p.m.	41.4
11:00 a.m.	53.2	11:00 p.m.	41.0
12:00 p.m.	44.4	12:00 a.m.	43.1
1:00 p.m.	50.0	1:00 a.m.	48.0
2:00 p.m.	48.2	2:00 a.m.	49.1
3:00 p.m.	44.4	3:00 a.m.	48.3
4:00 p.m.	41.0	4:00 a.m.	53.1
5:00 p.m.	41.0	5:00 a.m.	56.7
6:00 p.m.	42.1	6:00 a.m.	50.6
7:00 p.m.	52.5	7:00 a.m.	52.7
8:00 p.m.	62.0	8:00 a.m.	49.8
		24-Hour L_{eq} (dBA)	**52.1**
		Daytime[1] L_{eq} (dBA)	**52.8**
		Nighttime[2] L_{eq} (dBA)	**50.7**
		L_{dn} (dBA)	**57.4**
		L_{min} (dBA)	**31.1**
		L_{max} (dBA)	**84.2**

dBA = A-weighted decibel; L_{dn} = day-night average sound level; L_{eq} = equivalent continuous sound level; L_{min} = minimum sound level; L_{max} = maximum sound level

[1] Daytime period is from 7:00 a.m. to 10:00 p.m.

[2] Nighttime period is from 10:00 p.m. to 7:00 a.m.

Approximate long-term monitoring location shown on Figure 5.13-2a, Figure 5.13-2b, and Figure 5.13-2c.See Appendix I for noise measurement data.

Table 5.13-5 Long-Term Noise Monitoring Results (LT4)

Sample Time	dBA L_{eq}	Sample Time	dBA L_{eq}
LT4 – 85 feet east of centerline of County Highway S31, May 14–15, 2025			
8:00 a.m.	68.2	8:00 p.m.	65.6
9:00 a.m.	67.1	9:00 p.m.	67.5
10:00 a.m.	67.8	10:00 p.m.	62.2
11:00 a.m.	66.8	11:00 p.m.	61.2
12:00 p.m.	66.3	12:00 a.m.	59.2
1:00 p.m.	67.1	1:00 a.m.	55.7
2:00 p.m.	68.9	2:00 a.m.	58.1
3:00 p.m.	67.0	3:00 a.m.	58.6
4:00 p.m.	69.0	4:00 a.m.	63.4
5:00 p.m.	67.2	5:00 a.m.	67.1
6:00 p.m.	66.7	6:00 a.m.	67.2
7:00 p.m.	66.0	7:00 a.m.	69.7
		24-Hour L_{eq} (dBA)	**66.3**
		Daytime[1] L_{eq} (dBA)	**67.5**
		Nighttime[2] L_{eq} (dBA)	**63.0**
		L_{dn} (dBA)	**70.2**
		L_{min} (dBA)	**33.2**
		L_{max} (dBA)	**95.8**

dBA = A-weighted decibel; L_{dn} = day-night average sound level; L_{eq} = equivalent continuous sound level; L_{min} = minimum sound level; L_{max} = maximum sound level

[1] Daytime period is from 7:00 a.m. to 10:00 p.m.

[2] Nighttime period is from 10:00 p.m. to 7:00 a.m.

Approximate long-term monitoring location shown on Figure 5.13-2a, Figure 5.13-2b, and Figure 5.13-2c.. See Appendix I for noise measurement data.

Figure 5.13-2 Approximate Noise Monitoring Locations (ST4, ST5, LT3, and LT4)

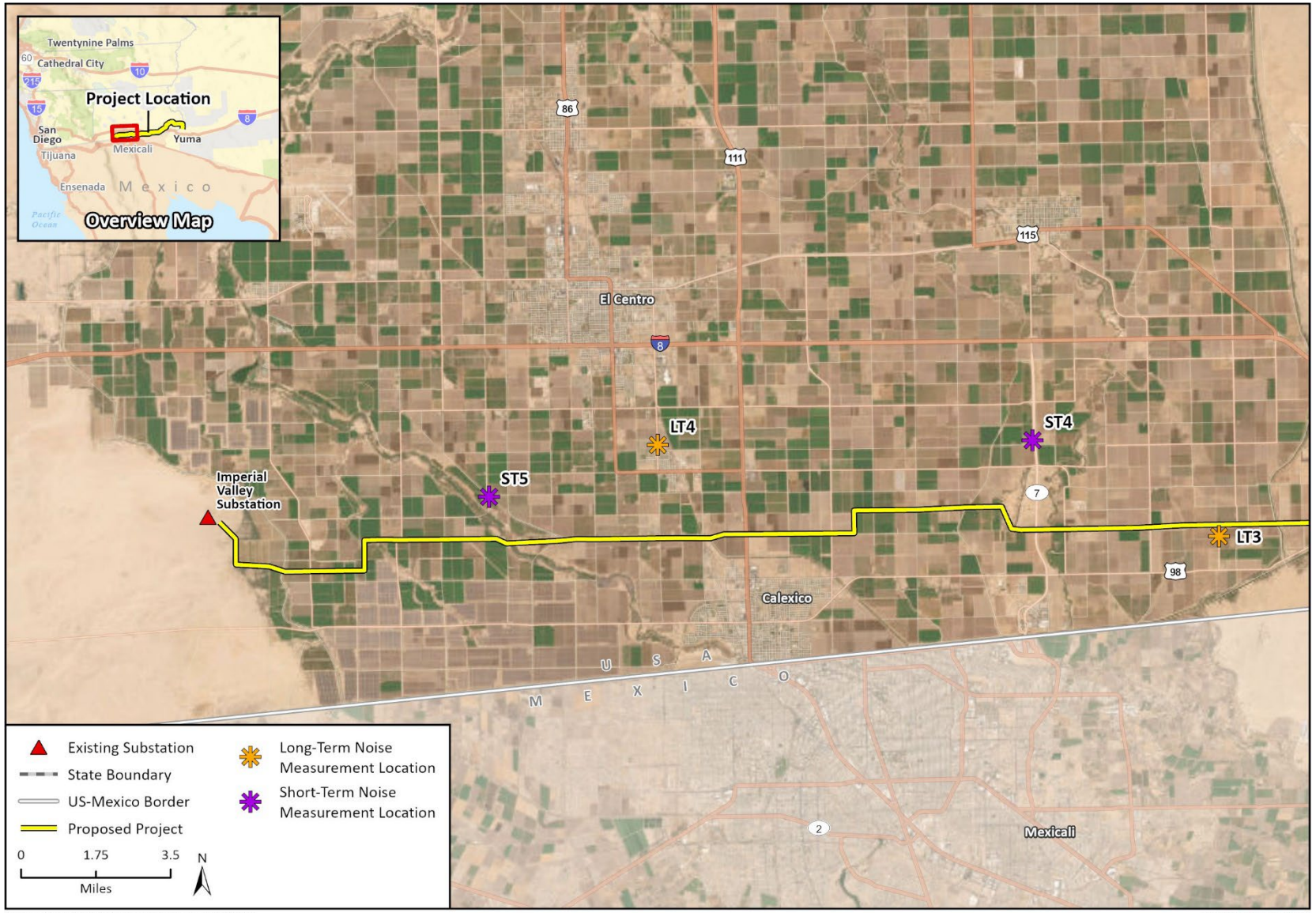


Figure 5.13-3 Approximate Noise Monitoring Locations (ST3, LT2, and LT3)

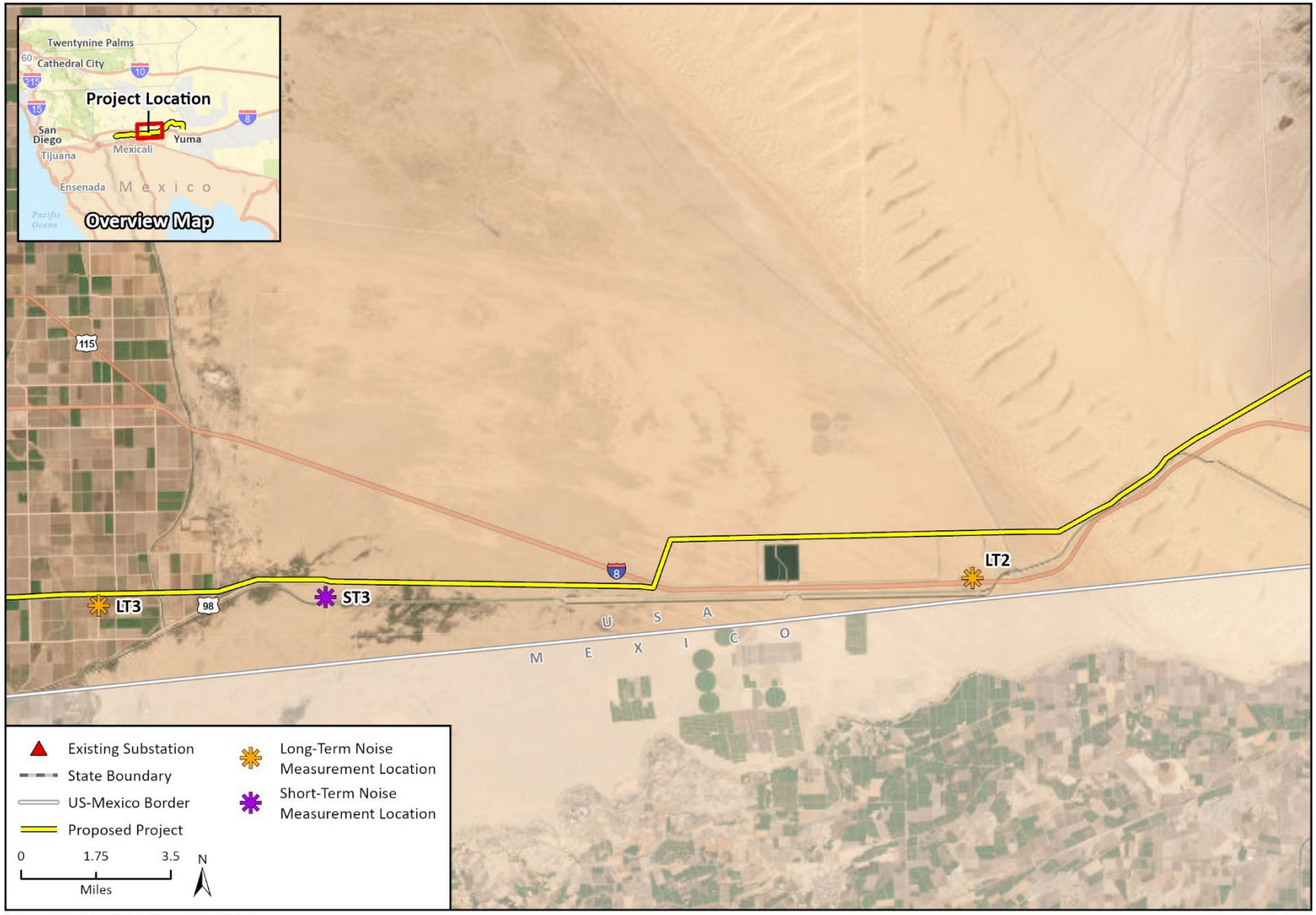
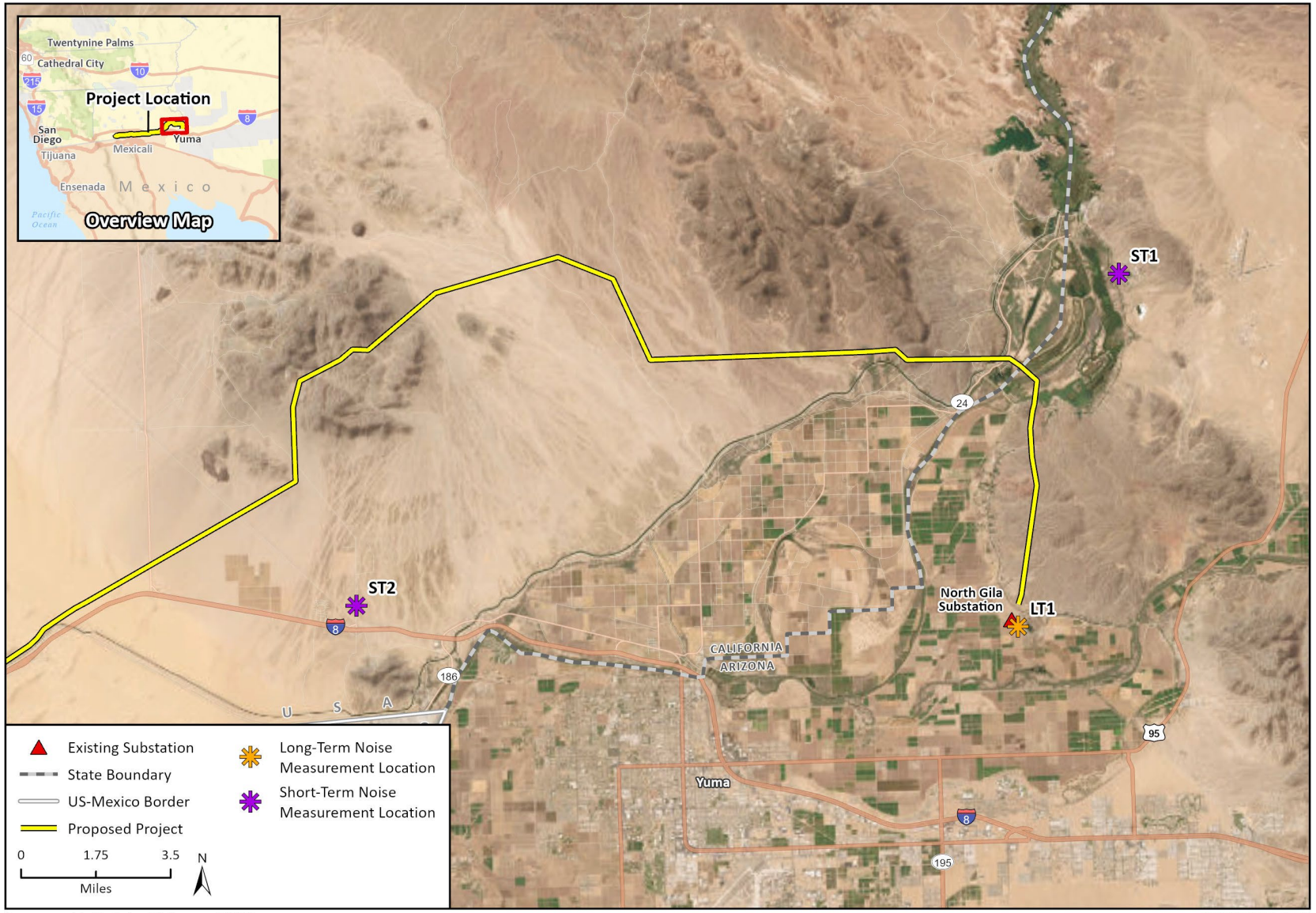


Figure 5.13-4 Approximate Noise Monitoring Locations (ST1, ST2, and LT1)



5.13.2 Regulatory Setting

Federal, state, and local regulations were reviewed for applicability to the Proposed Project.

5.13.2.1 Federal

Environmental Protection Agency

The U.S. Environmental Protection Agency (USEPA) has developed and published criteria for environmental noise levels with a directive to protect public health and welfare with an adequate margin of safety (USEPA 1974). The *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety* was developed to be used as an acceptable guideline when no other local, county, or state standard has been established. However, the USEPA criterion is not meant to substitute for agency regulations or standards in cases where states and localities have developed criteria according to their individual needs and situations.

Federal Transit Administration

The FTA has developed reasonable vibration impact thresholds for buildings of various construction types, shown in Table 5.13-6. The thresholds shown in Table 5.13-6 represent the limits at which minor architectural (i.e., non-structural) damage may occur to these building types.

Table 5.13-6 FTA Criteria for Vibration Damage Potential

Building Category	Vibration Threshold (in/sec PPV)
I. Reinforced concrete, steel, or timber (no plaster)	0.5
II. Engineered concrete and masonry (no plaster)	0.3
III. Nonengineered timber and masonry buildings	0.2
IV. Buildings extremely susceptible to vibration damage	0.12

in/sec = inches per second; PPV = peak particle velocity

Source: FTA 2018

International Society of Explosives Engineers

The International Society of Explosives Engineers (ISEE) Blasters' Handbook (ISEE 2011) establishes air overpressure[1] and vibration criteria for assessing damage resulting from blasting activity. These air overpressure and vibration criteria are shown below in Table 5.13-7 and Table 5.13-8, respectively.

[1] Overpressure is the air pressure caused by a shock wave resulting from a sonic boom or explosion.

Table 5.13-7 ISEE Criteria for Blasting Air Overpressure Damage

	Air Overpressure Level		
Potential Damage	**kPa**	**psi**	**dB**
Structural damage possible	20.7	3.0	180
General window breakage	6.9	1.0	171
Occasional window breakage	0.69	0.1	151
Damage threshold at high frequencies	0.2	0.029	140
No damage at low frequencies[1]	0.010	0.0145	134

kPa = kilopascals; psi = pound per square inch; dB = decibels

1 Note that the ISEE Blasters' Handbook prescribes a limit of 133 dB at the location of any building and notes that "the limit of 133 decibels is primarily based on perception and has no potential to cause damage to buildings."

Source: ISEE 2011.

Table 5.13-8 ISEE Criteria for Blasting Vibration Damage

Vibration Level[1]	Range of Common Residential Criteria and Effects
12.7 mm/s (0.5 in/sec)	Threshold of damage in plaster-on-lath construction for low frequency vibrations.
19.1 mm/s (0.75 in/sec)	Threshold of damage in sheetrock construction for low frequency vibrations.
50.8 mm/s (2.0 in/sec)	Threshold of damage in sheetrock construction for high frequency vibrations near construction and quarry blasting.
137 mm/s (5.4 in/sec)	Threshold of minor damage to typical residential structures at high frequency sites, including concrete masonry units.
183 mm/s (7.2 in/sec)	Threshold of major damage to typical residential structures at high frequency sites.
229 mm/s (9 in/sec)	About 90% probability of minor damage from construction or quarry blasting. Structural damage to some houses. Depends on vibration source, character of the vibrations and the house.
508 mm/s (20 in/sec)	For close-in construction blasting, minor damage to nearly all houses, structural damage to some. For low frequency vibrations, structural damage to most houses.
>2540 mm/s (>100 in/sec)	Threshold for damage to concrete pads, driveways, and walkways.

mm/s = millimeters per second; in/sec = inches per second

[1] Note that the vibration levels shown are for frequencies of approximately 3 Hz and above. Also note these criteria are generally conservative and are "designed to prevent threshold damage (extensions of existing hairline cracks) to residential structures."

Source: ISEE 2011.

5.13.2.2 State of California

California Noise Control Act

The California Noise Control Act states that excessive noise is a serious hazard to public health and welfare and that exposure to certain levels of noise can result in physiological, psychological, and economic damage. It also recognizes that continuous and increasing bombardment of noise exists in urban, suburban, and rural areas. This act declares that the State of California has the responsibility to protect the health and welfare of its citizens by the control, prevention, and abatement of noise. The Office of Noise Control in the Department of Health Services provides assistance to local communities developing local noise control programs and works with the Governor's Office of Planning and Research to provide guidance for the preparation of the required noise elements in city and county general plans.

5.13.2.3 State of Arizona

There are no applicable State of Arizona regulations.

5.13.2.4 Local

The California Public Utilities Commission (CPUC) has sole and exclusive state jurisdiction over the siting and design of the Proposed Project in California. Pursuant to CPUC General Order 131-E, Section XI.B:

> "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the Commission's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters."

Consequently, local agencies do not have jurisdiction over the Proposed Project, but public utilities must consult with local agencies and consider their regulations.

The Arizona Corporation Commission's Arizona Power Plant and Transmission Line Siting Committee has jurisdiction over the Proposed Project in Arizona. This committee may approve or deny a Certificate of Environmental Compatibility application and impose reasonable conditions. However, pursuant to Arizona Revised Statutes Section 40-360.06(D):

> "Any certificate granted by the committee shall be conditioned on compliance by the applicant with all applicable ordinances, master plans and regulations of the state, a county or an incorporated city or town, except that the committee may grant a certificate notwithstanding any such ordinance, master plan or regulation, exclusive of franchises, if the committee finds as a fact that compliance with such ordinance, master plan or regulation is unreasonably restrictive and compliance therewith is not feasible in view of technology available."

As this PEA is being prepared for the CPUC, the following discussion of local land use regulations in California and Arizona is provided for informational purposes only.

Imperial County General Plan

The major purpose of the Noise Element of the Imperial County General Plan is to provide a program for incorporating noise issues into the land use planning process, with a goal of minimizing adverse noise impacts to receptors which are sensitive to noise. Section 2.C of the Noise Element identifies residences, schools, hospitals, parks, and office buildings as sensitive noise receptors.

The Noise Element also establishes standards for construction activities. Construction noise, from a single piece of equipment or a combination of equipment, shall not exceed 75 dB L_{eq} when averaged over an eight-hour period and measured at the nearest sensitive receptor. In cases of extended construction times, the standard may be tightened so as not to exceed 75 dB L_{eq} when averaged over a 1-hour period. Construction equipment operation shall be limited to 7:00 a.m. to 7:00 p.m., Monday through Friday, and 9:00 a.m. to 5:00 p.m. Saturday. No commercial construction operations are permitted on Sunday or holidays (Imperial County 2015).

Imperial County Code

Division 7 of the Imperial County Code contains regulations pertaining to noise generated within unincorporated areas of the County. Chapter 2, Section 90702.00(A) establishes noise limits for various land uses zones and times of day that are not to be exceeded at or beyond the boundaries of the property on which the noise is produced. These noise limits are presented in Table 5.13-9.

Table 5.13-9 Imperial County Code Noise Limits

Land Use Zone		Time of Day	One-Hour Average Sound Level (decibels)
Residential	All R-1	7:00 a.m. to 10:00 p.m.	50
		10:00 p.m. to 7:00 a.m.	45
	All R-2	7:00 a.m. to 10:00 p.m.	55
		10:00 p.m. to 7:00 a.m.	50
	R-3, R-4, and all other residential	7:00 a.m. to 10:00 p.m.	55
		10:00 p.m. to 7:00 a.m.	50
Commercial		7:00 a.m. to 10:00 p.m.	60
		10:00 p.m. to 7:00 a.m.	55
Manufacturing, all other industrial, including agricultural and extraction industry		Anytime	70
General industrial		Anytime	75

Source: Imperial County Code, Title 9, Division 7, Chapter 2, Section 90702.00(A).

Yuma County 2030 Comprehensive Plan

The Environmental Element of the Yuma County 2030 Comprehensive Plan identifies residential areas, schools, libraries, hospitals, assisted living facilities, and recreational areas as noise sensitive areas (Yuma County 2023).

The Environmental Element also contains the following policies focused on reducing noise to a level consistent with health and quality-of-life goals:

EPP.16: Encourage the coordination of noise and nuisance control programs and standards with local, state and federal agencies.

EPP.17: Consider noise impacts from roadways, rail corridors and industry for new residential development.

City of Calexico General Plan

The Noise Element of the City of Calexico's General Plan identifies residential areas, transitional lodging areas, schools, libraries, churches, hospitals, nursing homes, and recreational areas as noise sensitive areas. The Noise Element establishes key goals, objectives, policies, and implementation measures designed to guide noise-compatible land uses. The Noise Element includes the following goals and objectives related to noise (City of Calexico 2015):

Goal: Maintain the quiet rural residential nature of the community through the use of sensitive land use practices and appropriate noise mitigation measures.

Objective 4: Noise studies shall be required for certain projects which have the potential to increase ambient noise levels or the potential to expose sensitive receptors to unacceptable noise levels.

Policy 4:

- A noise study which determines that a project will result in an increase in noise exposure levels of 3 dBA CNEL or less (with or without the implementation of noise attenuation measures) shall not be considered in violation of the acceptable noise levels set forth in Policy 1, as such an increase is indistinguishable to the human ear.

Objective 5: Noise attenuation measures shall be required to reduce noise levels to an acceptable level.

Policy 5:

- Where feasible, setbacks should be used to mitigate adverse noise conditions, to ensure an acceptable noise exposure level.
- Noise barriers and berms shall be required where other noise attenuation measures fail to reduce the adverse levels, or will significantly increase the costs of continuation of land improvements.

City of Calexico Municipal Code

Title 8, Chapter 8.46 of the City of Calexico Municipal Code contains noise regulations intended to reduce noise in the community and prohibit unnecessary, excessive, and annoying noises. Section 8.46.031 establishes noise limits for various zones based on time of day that are not to be exceeded by 5 dBA or more at any point on the property line of a property receiving the noise. These noise limits are the actual measured ambient noise level or the limits presented in Table 5.13-10.

Table 5.13-10 City of Calexico Noise Level Limits

Zone	Time of Day	dBA L_{eq} (assumed)[1]
Residential (Low Density)	7:00 a.m. to 10:00 p.m.	50
	10:00 p.m. to 7:00 a.m.	40
Residential (High Density)	7:00 a.m. to 10:00 p.m.	60
	10:00 p.m. to 7:00 a.m.	50
Commercial	7:00 a.m. to 10:00 p.m.	60
	10:00 p.m. to 7:00 a.m.	50
Industrial	7:00 a.m. to 10:00 p.m.	70
	10:00 p.m. to 7:00 a.m.	55

[1] If the measurement location is on a boundary between two different zones, the noise level limit applicable to the lower noise zone plus 5 dBA shall apply.

Source: City of Calexico Municipal Code, Title 8, Chapter 8.46, Section 8.46.031(B).

Section 8.46.032 of the City's Municipal Code allows for the noise limits established in Table 5.13-10 to be further adjusted based on the duration of the noise produced. These adjustments are presented in Table 5.13-11.

Table 5.13-11 City of Calexico Noise Limit Corrections

Duration of Sound	dBA Allowance
Up to 30 minutes per hour (L50)	+3
Up to 15 minutes per hour (L25)	+6
Up to 10 minutes per hour (L17)	+8
Up to 5 minutes per hour (L8.3)	+11
Up to 2 minutes per hour (L3.3)	+15
Up to 1 minute per hour (L1.7)	+18
Up to 30 seconds per hour (L0.8)	+21
Up to 15 seconds per hour (L0.4)	+24

Source: City of Calexico Municipal Code, Title 8, Chapter 8.46, Section 8.46.032.

Section 8.46.042 of the City's Municipal Code regulates construction noise, stating that it is unlawful for any person within the City to operate construction tools or equipment in the performance of any outside construction or repair work on buildings and/or structures, between the hours of 5:00 p.m. of each day and 8:00 a.m. of the next day if the noise or other sound produced by such work is of such intensity or quality that it disturbs the peace and quiet of any other person of normal sensitivity.

5.13.3 Impact Questions

5.13.3.1 Noise Impact Questions

The significance criteria for assessing the impacts from noise are determined by the California Environmental Quality Act (CEQA) Environmental Checklist. For noise, the CEQA Checklist asks, would the project result in:

- Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?
- Generation of excessive groundborne vibration or groundborne noise levels?
- For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

5.13.3.2 Additional CEQA Impact Questions

There are no CPUC-identified additional CEQA impact questions.

5.13.4 Impact Analysis

5.13.4.1 Noise Impact Analysis

5.13.4.1.1 Noise Methodology

Potential noise levels from Proposed Project construction were evaluated by calculating the average L_{eq} for each phase of construction and comparing them to applicable thresholds. The results of these

calculations are presented in Section 5.13.4.1.2 and detailed further in Appendix I. Existing literature was reviewed and calculations were made to determine vibration levels associated with construction equipment use. Aerial imagery was reviewed to identify potential noise-sensitive receptors.

5.13.4.1.2 Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

No local land use plans, policies, or regulations requiring discretionary approval would apply to the Proposed Project because, pursuant to G.O. 131-E, the CPUC has sole and exclusive jurisdiction over the siting and design of such facilities. As a result, the following local noise policy and ordinance consistency analysis is provided for informational purposes only.

Construction

Project Components in California

GENERAL CONSTRUCTION ACTIVITIES

Less than Significant Impact with Mitigation. Construction activities would require the temporary use of various types of noise-generating construction equipment; Table 5.13-12 provides a list of the typical construction equipment expected to be used during construction of the Proposed Project and associated reference noise levels based on the construction equipment information provided for the Proposed Project. In addition, light-duty and heavy-duty helicopters[2] would be used in some locations to assist with transportation of construction workers, delivery of equipment and materials to work areas, hardware installation, wire pulling, marker ball installation (if applicable), conductor and cable stringing operations, installation of poles and structures, and removal of existing structures. Helicopter operations could be expected to generate noise levels of up to approximately 88 dBA at a distance of 150 feet (U.S. Forest Service [USFS] 2008).

Table 5.13-12 Typical Construction Equipment Noise Levels

Equipment	Noise Level (dBA L_{eq}) at 50 feet
Auger Drill Rig	78
Backhoe	76
Crane	77
Dozer	81
Drill Rig Truck	77
Excavator	81
Flat Bed Truck	80
Generator	79
Grader	81
Man lift	78

[2] For modeling purposes, it was assumed that one heavy-duty helicopter would be used for conductor and wires installation and structure installation activities.

Equipment	Noise Level (dBA L_{eq}) at 50 feet
Loader	76
Pickup Truck	51
Puller	82
Roller	78
Tensioner	82

dBA = A-weighted decibel; L_{eq} = equivalent continuous sound level

Source: Federal Highway Administration (FHWA) 2006

Construction noise levels were estimated at the nearest sensitive receptors along the Proposed Project alignment using the Federal Highway Administration's (FHWA) Roadway Construction Noise Model (RCNM) (FWHA 2006). In estimating construction noise impacts, up to the ten loudest pieces of equipment for each phase were assumed to be operating simultaneously in the same area over the course of a workday. This is a conservative assumption as construction activities would be mobile and in practice would be dispersed along the Project alignment. Detailed construction noise modeling outputs from RCNM for each phase of construction are provided in Appendix I. Distances to various noise contours for each phase of construction are presented in Table 5.13-13. Construction noise levels calculated at the nearest sensitive receptors to construction activity are presented by phase in Table 5.13-13. For a detailed breakdown of construction equipment quantities and durations of each phase, please refer to Table 5.13-17.

Table 5.13-13 Summary of Construction Activity Noise Contours by Phase

	Distance to Noise Contour (feet)				
Construction Phase	75 dBA L_{eq}	70 dBA L_{eq}	65 dBA L_{eq}	60 dBA L_{eq}	55 dBA L_{eq}
Staging Areas	140	245	435	770	1,380
Civil Crew (Road Work, Foundations, Ducts) – Flat Land Crew	160	280	500	885	1,580
Civil Crew (Road Work, Foundations, Ducts) – Regular Crew	160	280	500	885	1,580
Civil Crew (Road Work, Foundations, Ducts) – Foundation Crew	180	315	560	995	1,765
Civil Crew (Road Maintenance, BMPs, Gates)	115	205	365	645	1,140
Structure Installation (Lattice – Guyed V Framing)	225	395	705	1,250	2,225
Structure Installation (Lattice – Guyed V Setting)	250	445	790	1,415	2,495
Structure Installation (Lattice – 4-Legged)	230	410	730	1,295	2,300
Spotting	95	170	300	535	950
Conductor and Wires Installation	355	630	1,115	1,980	3,520
Civil Crew (Clean Up)	145	250	445	790	1,415

dBA = A-weighted decibel; L_{eq} = equivalent continuous sound level

Refer to Table 5.13-17 for a detailed breakdown of equipment quantities and duration for each phase of construction.

To the extent feasible, construction activities would generally occur between 7:00 a.m. and 7:00 p.m. on Mondays through Saturdays. The anticipated work schedule may also vary in winter months when construction activities are generally concluded prior to sunset. However, at limited times,

some construction along the Proposed Project alignment may be required or completed outside these hours.

As described in Section 5.13.2, Imperial County has established allowable construction hours of between 7:00 a.m. and 7:00 p.m. on Mondays through Fridays and between 9:00 a.m. and 5:00 p.m. on Saturdays. Additionally, Section IV.C.3 of the County's General Plan Noise Element establishes a threshold of 75 dBA L_{eq} (when averaged over an eight-hour period) for noise generated during construction activities (County of Imperial 2015). As indicated above, construction would generally occur within the County's allowable hours; however, construction may occasionally be conducted outside of these allowable days and times depending on the work to be carried out. In these instances, HWT would notify the appropriate local agency or agencies and inform them of the description of the work, location, and anticipated construction hours as described in Applicant Proposed Measure (APM) NOI-1 in Section 5.13.5.1. The dates and locations of such work have not been determined at this time. In addition, APM NOI-1 would require that construction equipment and vehicle idling would be minimized when not in use, stationary equipment would be shielded when located near sensitive receptors, and construction traffic (including helicopter use) would be routed to avoid sensitive receptors to the extent that is safe and feasible.

Even with these restrictions in place, construction activities may exceed applicable standards at nearby sensitive receptors depending on the location of planned construction activities. As shown on Table 5.13-13, sensitive receptors within 95 to 355 feet of construction activities could be subject to noise levels above 75 dBA $L_{eq.}$ Existing single-family residences are situated as close as approximately 70 feet from proposed construction activity areas. At this distance, construction noise associated with the Proposed Project would reach up to approximately 83 dBA L_{eq} (8-hour), which would exceed the County's construction noise threshold of 75 dBA L_{eq} (8-hour).

Therefore, HWT would implement APM NOI-2, which would require installation of mufflers. Implementation of APM NOI-2 would reduce construction noise levels by 10 dBA or more (FHWA 2017), reducing noise generated during construction of the Proposed Project to below the County's construction noise threshold of 75 dBA L_{eq} (8-hour) at nearby sensitive receptors. Estimated construction noise levels, which account for the noise reduction provided by installation of mufflers on equipment, are presented in Table 5.13-17. As shown in Table 5.13-17, construction noise levels associated with the Proposed Project would be maintained at 75 dBA L_{eq} (8-hour) and below at sensitive receptors located near the Proposed Project and would comply with the Imperial County construction noise threshold. As mentioned above, pursuant to G.O. 131-E, the CPUC has sole and exclusive jurisdiction over the siting and design of such facilities and consistency with local regulations is provided for informational purposes. Temporary noise impacts associated with construction of the Proposed Project would be less than significant with mitigation.

BLASTING

Less than Significant Impact. Construction of Project components in California would also include drill and blast methods for construction of pad sites, access roads, and other work areas where traditional excavation methods would be ineffective. Blasting would be conducted at various points (i.e., blasting sites) along the Project footprint. At each blasting site, a pattern of three-inch diameter holes would be drilled, each loaded with one-third (0.33) pound of explosives. One individual blast would be conducted at each site but may require up to several successive blasts to

adequately break the rock. Blasting activities would generate energy in the form of air overpressure[3] at nearby sensitive receptors due to explosives detonating at blast sites.

The Caltrans *Transportation and Construction Vibration Guidance Manual* (Caltrans 2020) provides methods for predicting air overpressure levels from blasting. For prediction of air overpressure levels, the following equation is used:

$$P = K(D_S)^{-1.2}$$

Where:

P = Peak Air Overpressure in pounds per square inch (lb/in^2 [psi])

K = K factor

D_s = cube-root scaled distance (distance to receiver in feet divided by cube root of charge weight in pounds)

Using the above equation, the peak air overpressure resulting from blasting was estimated at the nearest sensitive receptor using the assumptions described above (i.e., distance to receiver of 3,070 feet and charge weight of 0.33 pound).

Per Caltrans' guidance, the K factor of most confined charges is between 2.5 and 0.78 (Caltrans 2020); therefore, a K factor of 2.5 is conservatively used, as this results in higher predicted air overpressure levels. Once the peak air overpressure is calculated in terms of psi, the following equation is used to convert peak air overpressure to decibels:

$$dB = 20 * \log\left(\frac{P}{2.9 * 10^{-9}}\right)$$

Where:

P = Peak Air Overpressure (psi)

Peak air overpressure levels resulting from blasting are estimated to be approximately 91 dBA (0.000105 psi) at the exterior of the nearest sensitive receptor located to the south, which would not exceed the ISEE criteria of 134 dB and up for damage related to air overpressure (shown in Table 5.13-7). Air overpressure levels would continue to decrease at farther receptors as the distance between the blast sites and farther receptors increases. Noise impacts related to air overpressure levels resulting from blasting of Proposed Project components within California would be less than significant.

Project Components in Arizona

GENERAL CONSTRUCTION ACTIVITIES

Less than Significant Impact. Based on the Blasting Plan for the Proposed Project (Appendix M), the nearest blasting site in California would be located approximately 3,070 feet (0.58 miles) from the nearest sensitive receptor (i.e., the Salamander RV Park located to the south at 906 Mehring Road). Following the methodology discussed in the section above, construction noise levels were calculated sensitive receptors located nearest to Proposed Project components in Arizona. Yuma County has not adopted quantitative thresholds for evaluating construction noise impacts;

[3] Overpressure is the air pressure caused by a shock wave resulting from a sonic boom or explosion.

therefore, the Imperial County, California construction noise threshold of 75 dBA L_{eq} (8-hour) is used for consistency with the rest of the analysis.

Based on Proposed Project information, the nearest sensitive receptors to construction activities within Arizona would be the existing single-family residences located along East County 6th Street, near the North Gila Substation. Access road work may be conducted in this area as close as 250 feet from the nearest existing single-family residence. The loudest phase of construction in this area would be work associated with the foundation crew work as part of road work, foundations, and ducts, which would generate a noise level of 86.0 dBA L_{eq} (8-hour) at 50 feet away. At a distance of 250 feet, this phase of construction would generate noise levels up to 72 dBA L_{eq} (8-hour) at the nearest sensitive receptor along East County 6th Street, which would not exceed the Imperial County construction noise threshold of 75 dBA L_{eq} (8-hour). Temporary noise impacts associated with construction of Proposed Project components within Arizona would be less than significant.

BLASTING

Less than Significant Impact. Based on the Blasting Plan for the Proposed Project (Appendix M), the nearest blasting site in Arizona would be located approximately 2,800 feet from the nearest sensitive receptor (i.e., the nearest single-family residence to the south located along East County 6th Street). Following the blasting methodology discussed above, noise levels associated with blasting conducted in Arizona were estimated at the nearest sensitive receptor using the following assumptions: distance to receiver of 2,800 feet, charge weight of 0.33 pound, and K factor of 2.5.

Peak air overpressure levels resulting from blasting conducted in Arizona are estimated to be approximately 92 dBA (0.000118 psi) at the exterior of the nearest sensitive receptor located to the south, which would not exceed the ISEE criteria of 134 dB and up for damage related to air overpressure (shown in Table 5.13-7). Air overpressure levels would continue to decrease at farther receptors as the distance between the blast sites and farther receptors increases. Noise impacts related to air overpressure levels resulting from blasting of Proposed Project components within Arizona would be less than significant.

Overall Project

Less than Significant Impact with Mitigation. As described above, the Proposed Project would generate temporary noise during construction. Noise generated by construction of the Proposed Project at nearby sensitive receptors may exceed applicable noise thresholds depending on the specific phase of construction and location along the Project alignment; however, construction noise impacts would be reduced to below applicable thresholds with implementation of APMs NOI-1 and NOI-2. Therefore, temporary noise impacts associated with construction of the Proposed Project would be less than significant with mitigation.

Operation

Project Components in California

Less than Significant Impact. During operation, Project facilities managed by HWT would be remotely monitored 24 hours a day and 7 days a week by the Systems Operations team at Lone Star Transmission in compliance with Federal Energy Regulatory Commission regulations. Operation and maintenance (O&M) activities associated with the Proposed Project would occur as needed and could include activities such as repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, replacing poles, tree trimming, brush and weed control, and

access road maintenance. O&M activities would also include emergency repair of Project facilities and periodic inspections. Emergency repair activities may include replacement of downed structures or lines or restringing of conductors due to damage resulting from high winds, storms, fires, other natural disasters, and accidents. Visual inspections of transmission line components would be carried out annually, or more frequently if warranted, and be conducted in a manner consistent with CPUC G.O. 165, which requires observation a minimum of once per year. The noise generated by vehicles associated with O&M activities along the Project route would be infrequent and consistent with existing traffic along public roadways. As a result, these activities would not contribute significantly to existing ambient noise levels and would be consistent with local standards.

The primary source of operational noise associated with the Proposed Project would be corona discharge from the energized transmission lines. The sound of corona is a phenomenon associated with all energized overhead electric power lines and is characteristic of an audible hum or crackling sound. Modern power lines are designed, constructed, and maintained so that, during dry conditions, they operate below the corona-inception voltage and generate a minimum of corona-related noise. Corona levels (and audible noise levels) are highest during heavy rain, when the conductors are wet, but the noise generated by the rainfall is usually greater than the noise generated by corona discharge. Based on noise data published by The Electric Power Research Institute (EPRI) for audible noise resulting from corona discharges of transmission lines, a 500-kV transmission line produces approximately 45 dBA at 15 meters (50 feet) laterally from the positive pole (Electric Power Research Institute [EPRI] 2010).

The portion of the Proposed Project nearest to existing sensitive receptors within California would be the transmission line segment running between Anderholt Road and Claverie Road (located approximately 105 feet north of the existing single-family residence situated 2,430 feet southeast of the intersection of Anderholt Road and East Fawcett Road). This sensitive receptor is located in the Imperial County limits, therefore the noise levels presented in Table 5.13-9 above would apply. Corona discharge noise may occur during both daytime and nighttime hours during operation of the Proposed Project; therefore the stricter nighttime noise threshold of 45 dBA was applied as compliance with the nighttime noise threshold would also result in compliance with the higher daytime noise threshold. At a distance of 105 feet, corona discharge noise would attenuate to approximately 39 dBA at this sensitive receptor, which would not exceed the County's nighttime noise threshold of 45 dBA. Corona discharge noise associated with the Proposed Project would continue to decrease with distance from the transmission line and would be even lower at sensitive receptors located farther away. Operation of the Proposed Project components located in California would not result in the exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or the applicable standards of other agencies. As a result, operation of the Proposed Project would be consistent with all local standards and operational noise impacts would be less than significant.

Project Components in Arizona

Less than Significant Impact. As discussed above, noise levels generated by O&M activities would be infrequent and would not generate substantial noise levels. Therefore, the primary source of noise associated with operation of the Proposed Project would be corona discharge noise. As discussed above, a 500-kV transmission line produces corona discharge noise of 45 dBA at a distance of 15 meters (50 feet) (Electric Power Research Institute [EPRI] 2010).

The portion of the Proposed Project nearest to existing sensitive receptors within Arizona would be the transmission line segment near the North Gila Substation (located approximately 1,900 feet north of existing single-family residences along East County 6th Street). These sensitive receptors are located within unincorporated areas of Yuma County, which does not provide quantitative thresholds for evaluating noise impacts. Therefore, operational noise impacts upon these receptors were evaluated using a noise threshold of 3 dBA, which is the minimum change in noise level perceptible to the average human ear (Crocker 2007). As presented in Section 5.13.1.2, existing daytime and nighttime noise levels at LT1 (the location nearest to these sensitive receptors) were measured to be approximately 62 and 58 dBA L_{eq}, respectively. At a distance of 1,900 feet, corona discharge noise would attenuate to approximately 13 dBA at the nearest residence along East County 6th Street, which would not exceed the existing daytime or nighttime ambient noise levels at these receptors and would thus not increase the ambient noise level at these receptors. Therefore, corona discharge noise levels associated with the Proposed Project's transmission lines would not increase ambient noise levels by 3 dBA or more at the nearest sensitive receptors to the Project alignment within Arizona. Corona discharge noise associated with the Proposed Project would continue to decrease with distance from the transmission line and would be even lower at sensitive receptors located farther away. Operation of the Proposed Project components located in Arizona would not result in the exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or the applicable standards of other agencies. As a result, operation of the Proposed Project would be consistent with all local standards and operational noise impacts would be less than significant.

Overall Project

Less than Significant Impact. As described above, the Proposed Project would generate long-term noise during operation. Noise generated during operation of the Proposed Project would primarily be due to corona discharge from the transmission lines and O&M activities. However, operational noise associated with the Proposed Project would not exceed applicable thresholds at nearby sensitive receptors. Therefore, long-term noise impacts associated with operation of the Proposed Project would be less than significant.

5.13.4.1.3 Would the project generate excessive groundborne vibration or groundborne noise levels?

Construction

Project Components in California

GENERAL CONSTRUCTION ACTIVITIES

Less than Significant Impact. There are no standards related to construction-generated groundborne vibration or groundborne noise levels in Imperial County or Yuma County. Therefore, vibration thresholds are based on limits recommended by the FTA for potential minor architectural damage to nearby structures (shown in Table 5.13-6). Based on the values shown in Table 5.13-6, vibration impacts would be considered significant if vibration levels generated by construction activity were to exceed 0.2 in/sec PPV at any nearby residential structures.

Heavy-duty equipment associated with construction of the Proposed Project that would generate the highest vibration levels would include large earthmoving equipment (such as graders, dozers, excavators, etc.), drills, rollers, and heavy trucks. Typical vibration levels associated with these

equipment types are presented in Table 5.13-14. Vibration levels at the nearest sensitive receptors were calculated[4] using the reference vibration levels presented in Table 5.13-14 and the distances that these equipment types would be used relative to sensitive receptors.

Table 5.13-14 Typical Vibration Levels Produced by Various Construction Equipment

Equipment	Reference Vibration Level at 25 feet (in/sec PPV)
Vibratory Roller	0.210
Large[1] Earthmoving Equipment (Dozer, Grader, Excavator, etc.)	0.089
Caisson Drilling	0.089
Loaded Trucks	0.076

in/sec = inches per second; PPV = peak particle velocity

[1] "Large" in this context refers to equipment rated at 100 horsepower (hp) or greater.

Source: FTA 2018

Construction activities within California would occur as close as approximately 70 feet from the nearest single-family residence located along Bonesteele Road (situated approximately 1,240 feet south of the intersection of Bonesteele Road and Kumberg Road. Vibration levels associated with the above equipment types at the nearest sensitive receptor are presented in Table 5.13-15. As shown in Table 5.13-15, a vibratory roller would generate vibration levels up to 0.045 in/sec PPV, large earthmoving equipment and caisson drilling equipment would generate vibration levels up to 0.019 in/sec PPV, and heavy trucks would generate vibration levels up to 0.016 in/sec PPV. None of these equipment types would generate vibration levels exceeding the FTA's recommended threshold of 0.2 in/sec PPV at the nearest sensitive receptor; therefore, temporary vibration levels generated during construction of the Proposed Project within California would be below applicable thresholds and vibration impacts during construction would be less than significant.

Table 5.13-15 Construction Vibration Levels at Nearest Sensitive Receptor (Project Components in California)

Equipment	Distance to Nearest Sensitive Receptor (feet)	Vibration Level at Nearest Sensitive Receptor (in/sec PPV)
Vibratory Roller	70	0.045
Large[1] Earthmoving Equipment (Dozer, Grader, Excavator, etc.)		0.019
Caisson Drilling		0.019
Loaded Trucks		0.016

in/sec = inches per second; PPV = peak particle velocity

[1] "Large" in this context refers to equipment rated at 100 horsepower (hp) or greater.

See Appendix I for vibration modeling outputs.

[4] The following equation estimates the vibration level (in terms of peak particle velocity) at any distance: $PPV_{Equipment} = PPV_{Ref} (25/D)^n$ (in/sec), where PPV_{Ref} = reference vibration level (in/sec PPV) at 25 feet, D = distance in feet ,and n = 1.1

BLASTING

Less than Significant Impact. In addition to air overpressure, blasting would also generate energy in the form of vibration at nearby sensitive receptors due to explosives detonating at blast sites. The Caltrans *Transportation and Construction Vibration Guidance Manual* (Caltrans 2020) provides methods for predicting vibration levels from blasting. For prediction of blast vibration, the following equation is used:

$$PPV = K(D_S)^{-1.6}$$

Where:

PPV = peak particle velocity (in/sec)

K = K factor, a variable subject to many factors[5]

D_s = square-root scaled distance (distance to receiver in feet divided by square root of charge weight in pounds)

Based on the Blasting Plan for the Proposed Project (Appendix M), the nearest blasting site in California would be located approximately 3,070 feet from the nearest sensitive receptor (i.e., the Salamander RV Park located south of the Proposed Project at 906 Mehring Road). Using the above equation, blast vibration levels were predicted at the nearest sensitive receptor located approximately 3,070 feet from the nearest blasting site assuming a charge weight of 0.33 pound (as discussed above). Per Caltrans' guidance, the K factor of most conventional blasts will fall between 242 and 24 (Caltrans 2020); therefore, a K factor of 242 is conservatively used, as this results in higher predicted vibration levels.

Blasting vibration levels are estimated to be less than 0.001 in/sec PPV at the nearest sensitive receptor located to the south, which would not exceed ISEE vibration thresholds of 0.5 in/sec PPV and up for blasting vibration damage (shown in Table 5.13-8). Blasting vibration levels would continue to decrease at farther receptors as the distance between the blast sites and farther receptors increases. Furthermore, per the Blasting Plan (Appendix M), all detonations will be monitored using seismographs to ensure that blasts do not exceed set PPV thresholds. Vibration impacts resulting from blasting of Proposed Project components within California would be less than significant.

Project Components in Arizona

GENERAL CONSTRUCTION ACTIVITIES

Less than Significant Impact. Using the same methodology described in the previous section, vibration levels were estimated at the nearest sensitive receptors located within Arizona. Based on Proposed Project information, the nearest sensitive receptors located near vibration-generating construction activities would be existing single-family residences located along East County 6th Street. Construction activities near the North Gila Substation may occur approximately 250 feet from the nearest residence in this area. Vibration levels associated with the above equipment types at the nearest sensitive receptor are presented in Table 5.13-16. As shown in Table 5.13-16, a vibratory roller, large earthmoving equipment, caisson drilling equipment, and heavy trucks would generate vibration levels below 0.01 in/sec PPV at this sensitive receptor. None of these equipment

[5] The K factor (and resulting PPV) decreases with decreased confinement of energy, decreased elastic moduli of the rock, increased spatial distribution of the energy sources, increased time of energy release or timing scatter, and decreased coupling of the energy sources.

types would generate vibration levels exceeding the FTA's recommended threshold of 0.2 in/sec PPV at the nearest sensitive receptor; therefore, temporary vibration levels generated during construction of the Proposed Project within Arizona would be below applicable thresholds and vibration impacts during construction would be less than significant.

Table 5.13-16 Construction Vibration Levels at Nearest Sensitive Receptor (Project Components in Arizona)

Equipment	Distance to Nearest Sensitive Receptor (feet)	Vibration Level at Nearest Sensitive Receptor (in/sec PPV)
Vibratory Roller	250	0.007
Large[1] Earthmoving Equipment (Dozer, Grader, Excavator, etc.)		0.003
Caisson Drilling		0.003
Loaded Trucks		0.002

in/sec = inches per second; PPV = peak particle velocity

[1] "Large" in this context refers to equipment rated at 100 horsepower (hp) or greater.

See Appendix I for vibration modeling outputs.

BLASTING

Less than Significant Impact. Based on the Blasting Plan for the Proposed Project, the nearest blasting site in Arizona would be located approximately 2,800 feet from the nearest sensitive receptor (i.e., the nearest single-family residence to the south located along East County 6th Street). Following the methodology for prediction of blast vibration discussed above, vibration levels associated with blasting conducted in Arizona were estimated at the nearest sensitive receptor using the following assumptions: distance to receiver of 2,800 feet, charge weight of 0.33 pound, and K factor of 242.

Blasting vibration levels are estimated to be less than 0.001 in/sec PPV at the nearest sensitive receptor located to the south, which would not exceed ISEE vibration thresholds of 0.5 in/sec PPV and up for blasting vibration damage (shown in Table 5.13-8). Blasting vibration levels would continue to decrease at farther receptors as the distance between the blast sites and farther receptors increases. Furthermore, per the Blasting Plan, all detonations will be monitored using seismographs to ensure that blasts do not exceed set PPV thresholds. Vibration impacts resulting from blasting of Proposed Project components within Arizona would be less than significant.

Overall Project

Less than Significant Impact. The Proposed Project would generate temporary levels of vibration during construction due to use of heavy-duty equipment. However, due to the large distances between proposed construction activity areas and sensitive receptors, vibration levels would not exceed applicable thresholds for minor architectural damage at the nearest structures near construction areas. Therefore, temporary vibration impacts associated with construction of the Proposed Project would be less than significant.

Operation

Project Components in California

Less than Significant Impact. O&M activities associated with the Proposed Project would occur as needed and could include activities such as inspection trips, washing or replacing insulators, repairing or replacing other hardware components, replacing poles, tree trimming, brush and weed control, and access road maintenance. Inspection trips and repair work would not generate substantial sources of vibration; therefore, operational vibration impacts would be less than significant.

Project Components in Arizona

Less than Significant Impact. Proposed Project components within Arizona would not include substantial sources of vibration associated with operation (such as industrial or rail operations); therefore, operational vibration impacts would be less than significant.

Overall Project

Less than Significant Impact. Operation of the Proposed Project would primarily consist of transmission lines and O&M activities described above. However, these operational activities would not generate any substantial levels of vibration at nearby sensitive receptors. Therefore, long-term vibration impacts associated with operation of the Proposed Project would be less than significant.

5.13.4.1.4 For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

Construction

Project Components in California

No Impact. Airports near the Proposed Project in California include the Calexico International Airport (located approximately 2.75 miles south of the Project alignment) and the Imperial County Airport (located approximately 8 miles north of the Project alignment). The Project alignment is not located within the noise contours of the Calexico International Airport (City of Calexico 2015) or the Compatibility Zones of Imperial County Airport (County of Imperial 2015). As a result, construction crews working on Proposed Project components within California would not be exposed to excessive airport-related noise levels and no impact would occur.

Project Components in Arizona

No Impact. The airport nearest to the Proposed Project in Arizona is the Yuma International Airport (located approximately 8.5 miles southwest of the easternmost edge of the Project alignment). The Project alignment is not located within the noise contours of this airport (Yuma County Airport Authority 2022). As a result, construction crews working on Proposed Project components within Arizona would not be exposed to excessive airport-related noise levels and no impact would occur.

Overall Project

No Impact. The Proposed Project is not located within the noise contours of any of the nearest airports; therefore, construction crews working on the Proposed Project would not be exposed to excessive airport-related noise levels and no impact would occur.

Operation

Project Components in California

No Impact. The Proposed Project would involve O&M activities such as increased maintenance and inspection trips. As described previously, Proposed Project components within California would be located outside of the noise contours and Compatibility Zones of the nearest airports. As a result, workers performing O&M activities would not be exposed to excessive airport-related noise levels. Furthermore, the nearest existing residences in the Proposed Project area are located over 2 miles from the noise impact area of the Calexico International Airport and over 6 miles from the noise impact area of the Imperial County Airport; therefore, people residing in the Proposed Project area would not be exposed to excessive airport-related noise levels and no impact would occur.

Project Components in Arizona

No Impact. The Proposed Project would involve O&M activities such as increased maintenance and inspection trips. As described previously, Proposed Project components within Arizona would be located outside of the noise contours of the nearest airport. As a result, workers performing O&M activities would not be exposed to excessive airport-related noise levels. Furthermore, the nearest existing residences in the Proposed Project area are located over 5 miles from the nearest noise contours of the Yuma International Airport; therefore, people residing in the Proposed Project area would not be exposed to excessive airport-related noise levels and no impact would occur.

Overall Project

No Impact. The Proposed Project is not located within the noise contours of any of the nearest airports; therefore, workers performing O&M activities would not be exposed to excessive airport-related noise levels and no impact would occur.

5.13.4.2 Noise Levels

Noise Levels for Each Piece of Equipment

Table 5.13-17 identifies each phase of construction, the equipment used during each construction phase, and the length of each phase at any single location.

Estimated Cumulative Equipment Noise Levels

Estimated cumulative equipment noise levels, including the installation of mufflers per APM NOI-2, are presented in Table 5.13-17.

Table 5.13-17 Construction Noise Levels at Nearest Sensitive Receptors by Phase

Equipment Modeled (Quantity)	Equipment Noise Level at 50 feet (dBA)	Combined Noise Level at 50 feet (dBA L_{eq} [8-hour])	Phase Duration (Days)	Nearest Noise-Sensitive Receptor	Noise Level at Nearest Receptor (dBA L_{eq} [8-hour])	Exceeds Noise Standard at Nearest Noise-Sensitive Receptor?[1]	Distance to Not Exceed Standard (Feet)
Staging Areas							
Pickup Truck (1)	51.0	83.8	101	Single-family residences located directly west of Meadows Road, situated approximately 1,400 feet from center of staging area located northeast of intersection of Meadows Road and East Cole Boulevard	54.9	No	N/A
Front-End Loader (4)	82.0						
Generator (1)	79.0						
Civil Crew (Road Work, Foundations, Ducts)							
Flat Land Crew							
Pickup Truck (1)	41.0	75.0[2]	366	Residence located approximately 1,240 feet south of intersection of Bonesteele Road and Kumberg Road, situated approximately 70 feet from phase work	72.1	No	N/A
Grader (1)	71.0						
Dozer (1)	71.0						
Roller (1)	68.0						
Regular Crew							
Pickup Truck (1)	41.0	75.0[2]	366	Residence located approximately 1,240 feet south of intersection of Bonesteele Road and Kumberg Road, situated approximately 70 feet from phase work	72.1	No	N/A
Excavator (1)	71.0						
Dozer (1)	71.0						
Roller (1)	68.0						
Foundation Crew							
Auger Drill Rig (1)	68.0	76.0[2]	287	Residence located approximately 1,240 feet south of intersection of Bonesteele Road and Kumberg Road, situated approximately 70 feet from phase work	73.1	No	N/A
Drill Rig Truck (1)	67.0						
Backhoe (2)	69.0						
Crane (2)	70.1						
Front-End Loader (1)	66.0						
Man Lift (1)	68.0						

Equipment Modeled (Quantity)	Equipment Noise Level at 50 feet (dBA)	Combined Noise Level at 50 feet (dBA L_{eq} [8-hour])	Phase Duration (Days)	Nearest Noise-Sensitive Receptor	Noise Level at Nearest Receptor (dBA L_{eq} [8-hour])	Exceeds Noise Standard at Nearest Noise-Sensitive Receptor?[1]	Distance to Not Exceed Standard (Feet)
Civil Crew (Road Maintenance, BMPs, Gates)							
Grader (1)	71.0	72.2[2]	514	Residence located approximately 1,240 feet south of intersection of Bonesteele Road and Kumberg Road, situated approximately 70 feet from phase work	69.3	No	N/A
Front-End Loader (1)	66.0						
Pickup Truck (4)	47.0						
Lattice – Guyed V Framing							
Man Lift (1)	85.0	80.8	288	Residence located approximately 2,430 feet southeast of intersection of Anderholt Road and East Fawcett Road, situated approximately 105 feet from phase work	74.4	No	N/A
Helicopter (1)	97.5						
Lattice – Guyed V Setting							
Excavator (1)	71.0	79.0[2]	288	Residence located approximately 2,430 feet southeast of intersection of Anderholt Road and East Fawcett Road, situated approximately 105 feet from phase work	72.6	No	N/A
Crane (1)	67.0						
Man Lift (1)	68.0						
Helicopter (1)	97.5						
Lattice – 4-Legged							
Man Lift (1)	68.0	78.3[2]	288	Residence located approximately 2,430 feet southeast of intersection of Anderholt Road and East Fawcett Road, situated approximately 105 feet from phase work	71.9	No	N/A
Crane (1)	67.0						
Pickup Truck (4)	47.0						
Helicopter (1)	97.5						
Spotting							
Man Lift (1)	78.0	80.6	288	Residence located approximately 2,430 feet southeast of intersection of Anderholt Road and East Fawcett Road, situated approximately 105 feet from phase work	74.2	No	N/A
Crane (1)	77.0						

Equipment Modeled (Quantity)	Equipment Noise Level at 50 feet (dBA)	Combined Noise Level at 50 feet (dBA L_{eq} [8-hour])	Phase Duration (Days)	Nearest Noise-Sensitive Receptor	Noise Level at Nearest Receptor (dBA L_{eq} [8-hour])	Exceeds Noise Standard at Nearest Noise-Sensitive Receptor?[1]	Distance to Not Exceed Standard (Feet)
Conductor and Wires Installation							
Flat Bed Truck (2)	73.0	81.5	290	Residence located approximately 2,430 feet southeast of intersection of Anderholt Road and East Fawcett Road, situated approximately 105 feet from phase work	75.0	No	N/A
Dozer (2)	74.0						
Puller (2)	75.0						
Tensioner (1)	72.0						
Crane (2)	70.1						
Helicopter (1)	97.5						
Civil Crew (Clean-Up)							
Pickup Truck (2)	44.0	74.0	210	Residence located approximately 1,240 feet south of intersection of Bonesteele Road and Kumberg Road, situated approximately 70 feet from phase work	71.1	No	N/A
Excavator (1)	71.0						
Dozer (1)	71.0						

dBA = A-weighted decibel; L_{eq} = equivalent continuous sound level

[1] Pursuant to the Noise Element of the Imperial County General Plan, the construction noise threshold is 75 dBA L_{eq} (8-hour) at noise-sensitive receptors.

[2] This combined noise level was calculated assuming that all equipment in this phase (except for helicopters) would have properly installed and operating muffler systems, which is estimated to provide an additional 10 dBA of noise reduction.

Note: Construction noise modeling results are included in Appendix I.

Phases of Operation

As discussed in Section 5.13.4.1.2, the corona associated with the operation of the lines would be below the noise level criteria applicable to residential or other noise-sensitive land uses in the Proposed Project area.

Manufacturer's Specifications for Equipment

The specific models of construction equipment to be used during construction and operation of the Proposed Project are not known at this time; therefore, the manufacturer's specifications for such equipment cannot be provided. Equipment will be operated using manufacturer-installed noise-control devices. If requested by the CPUC, HWT would provide the manufacturer's specifications for specific models of construction equipment at the time such construction equipment is identified.

Approaches to Reduce Impacts from Noise

HWT has designed and incorporated APM NOI-1 and APM NOI-2 into the Proposed Project to minimize potential impacts to noise-sensitive receptors.

5.13.5 CPUC Draft Environmental Measures

There are no CPUC Draft Environmental Measures identified for the Noise resource area.

5.13.5.1 Applicant-Proposed Measures

The following APMS are proposed to reduce impacts associated with noise and vibration.

- **NOI-1:** To the extent feasible, HWT would limit construction activities to the daytime, weekday, and weekend hours established by the relevant local jurisdictions. If additional work hours are required, HWT would coordinate with the local jurisdictions. Construction equipment and vehicle idling would be minimized when not in use. Stationary noise sources, such as generators and pumps, would be shielded when near sensitive receptors. Construction traffic, including helicopter use, would be routed to avoid sensitive receptors to the extent which is safe and feasible.
- **NOI-2:** Installation of Mufflers on All Construction Equipment. The following noise control measures would be implemented to reduce construction noise impacts upon sensitive receptors located within California to the extent feasible:
  - All construction equipment, stationary and mobile, shall be equipped with properly operating and maintained mufflers, air-inlet silencers where appropriate, and any other shrouds, shields, or other noise-reducing features that meet or exceed original factory specifications.
  - Construction equipment shall be equipped with shrouds and noise-control features that are supplied as standard accessories from the original equipment manufacturer.
  - Routine field inspection of mufflers to ensure proper function shall be performed by the construction manager.

5.14 Population and Housing

This section describes population and housing in the area of the Ironwood Transmission Line Project (Proposed Project), as well as impacts that may result from construction and operation of the Proposed Project.

Research for this analysis involved a review of the following resources:

- California Department of Finance population projections
- Arizona Office of Economic Opportunity population projections
- United States (U.S.) Census Bureau population and housing data
- Local agency planning documents

5.14.1 Environmental Setting

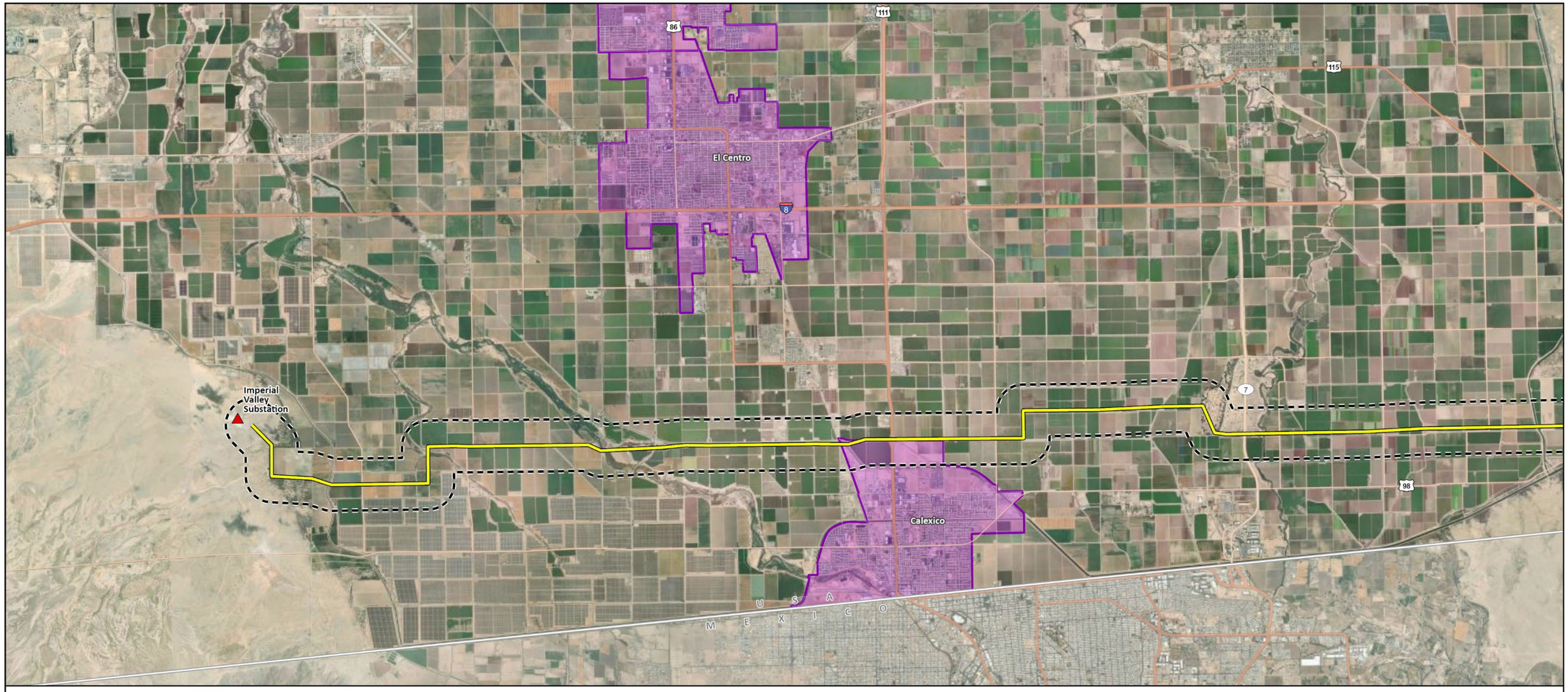
The Proposed Project is located in Imperial County, California and Yuma County, Arizona on federal, state, municipal, and private land. These lands include unincorporated areas of Imperial and Yuma counties, the City of Calexico, California, and public lands under the jurisdiction or management of the U.S. Bureau of Land Management, U.S. Bureau of Reclamation, and California Department of Parks and Recreation.

For this section, the Proposed Project area includes the closest cities to the Proposed Project where construction workers may find temporary lodging. As illustrated on Figure 5.14-1a, Figure 5.14-1b, and Figure 5.14-1c, the closest cities to the Proposed Project include the Cities of Calexico and El Centro in California and the City of Yuma in Arizona. This section presents population and housing data for the Proposed Project area that were obtained from the U.S. Census Bureau, California Department of Finance, and Arizona Office of Economic Opportunity.

5.14.1.1 Population Estimates

Historical and projected population data (where available) are presented in Table 5.14-1. According to the U.S. Census Bureau (2020), from 2010 to 2020, the population of Imperial County grew by approximately 3.0 percent and the population of Yuma County grew by approximately 4.2 percent. From 2010 to 2020, the population of the City of Calexico grew by approximately 0.2 percent, the population of the City of El Centro grew by 5.5 percent, and the population of the City of Yuma grew by approximately 2.7 percent (U.S. Census Bureau 2020). The California Department of Finance (2024) projects that the population of Imperial County will increase by approximately 5.6 percent by 2030. The Arizona Office of Economic Opportunity (2022) projects that the population of Yuma County will increase by approximately 14.3 percent by 2030, and the population of the City of Yuma will increase by approximately 17.8 percent.

Figure 5.14-1a Cities Near the Proposed Project



Imagery provided by Microsoft Bing, Esri, and their licensors © 2025.

PEA
Figure_5.14-1_Cities_and_Census_Designated_Places_MB

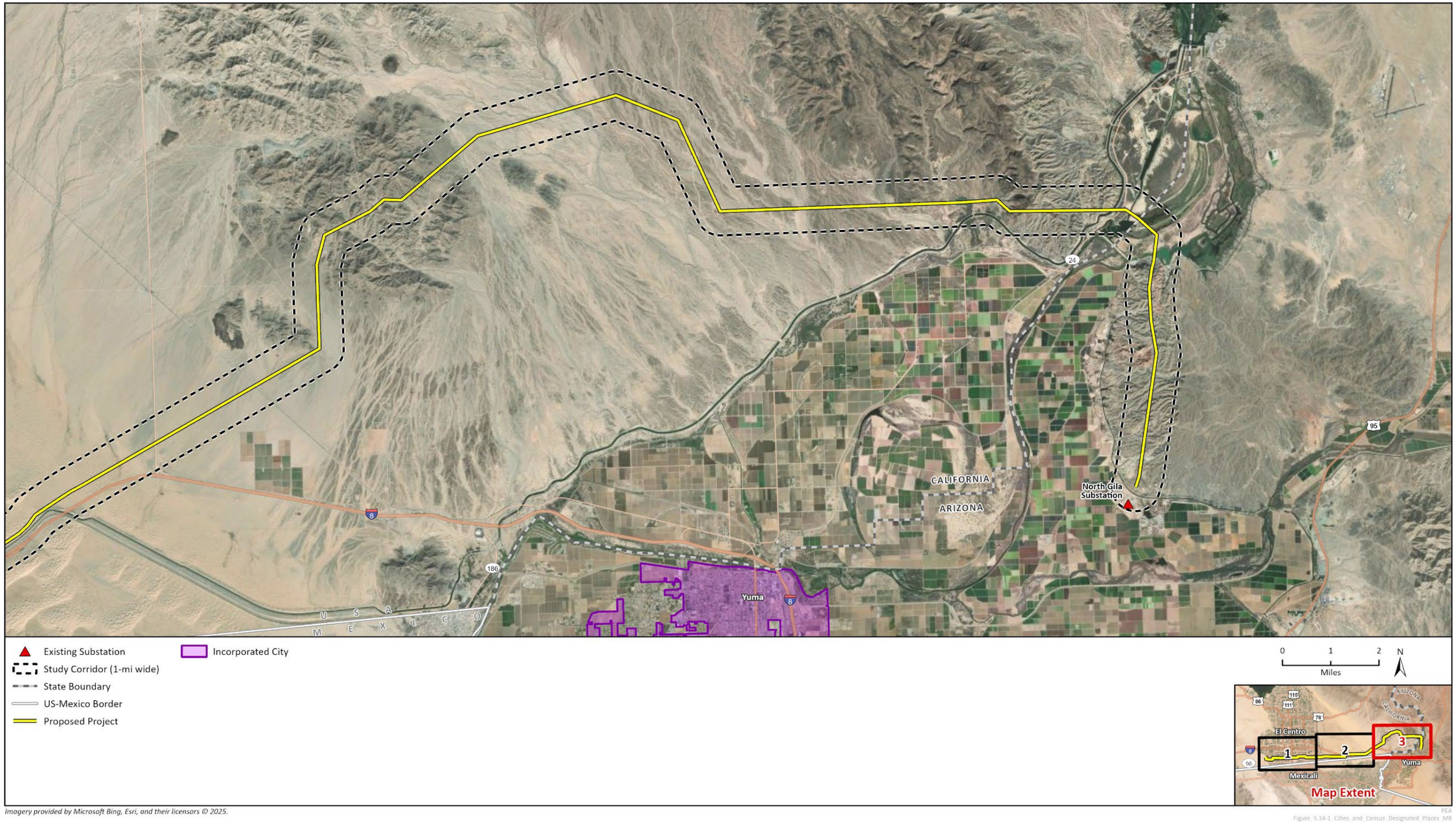
Figure 5.14-1b Cities Near the Proposed Project



Imagery provided by Microsoft Bing, Esri, and their licensors © 2025.

PEA
Figure_5.14-1_Cities_and_Census_Designated_Places_MB

Figure 5.14-1c Cities Near the Proposed Project



Imagery provided by Microsoft Bing, Esri, and their licensors © 2025.

PEA
Figure_5.14-1_Cities_and_Census_Designated_Places_MB

Table 5.14-1 Historical and Projected Population Data in the Proposed Project Area

Year	Imperial County[1,2]	Yuma County[1,3]	City of Calexico[4]	City of El Centro	City of Yuma
2000	142,361	160,026	27,042	37,801	77,545
2010	174,528	195,751	38,572	41,581	93,064
2020	179,702	203,881	38,633	43,881	95,548
2030	189,817	233,060	66,912	Information Not Available	112,533
2040	200,998	259,032	90,860	60,993	126,993

Sources: Arizona Office of Economic Opportunity (2022), California Department of Finance (2024), City of Calexico (2018), City of El Centro (2015), U.S. Census Bureau (2020).

[1] The Arizona Office of Economic Opportunity and the California Department of Finance provide projected population data for Arizona and California counties, respectively.

[2] The historical and projected population data for Imperial County is inclusive of all incorporated and unincorporated areas. As such, population data for the Cities of Calexico and El Centro are included within the Imperial County population, as well as separately.

[3] The historical and projected population data for Yuma County is inclusive of all incorporated and unincorporated areas. As such, population data for the City of Yuma is included within the Yuma County population, as well as separately.

[4] The projected population data for the City of Calexico takes into account approved and active development, and not just the historic growth rate.

5.14.1.2 Housing Estimates

Housing data and vacancy rates for the Proposed Project area are presented in Table 5.14-2. While vacancy rates in the Proposed Project area have declined in the past 10 years, these rates are greater than the nationwide average vacancy rate of 6 percent, except for the City of El Centro, which has the same vacancy rate as the nationwide average (6 percent).

Table 5.14-2 Housing Data in the Proposed Project Area

Type	Imperial County	Yuma County	City of Calexico	City of El Centro	City of Yuma
2010					
Total Units	56,067	87,850	10,651	14,476	38,626
Vacant Units	6,941	23,083	535	1,368	7,912
Vacancy Rate	12.4%	26.3%	5.0%	9.5%	20.5%
2020					
Total Units	56,625	92,048	10,815	15,041	41,496
Vacant Units	4,575	22,459	347	904	7,914
Vacancy Rate	8.1%	24.4%	3.2%	6.0%	19.1%

Source: U.S. Census Bureau (2020).

5.14.1.3 Approved Housing Development

As shown in Table 7-1 and Figure 7-1 in Chapter 7, Cumulative Impacts, there are no recently approved housing projects or housing projects that may be approved around the PEA and application filing dates within 1 mile of the Proposed Project.

5.14.2 Regulatory Setting

Federal, state, and local regulations were reviewed for applicability to the Proposed Project.

5.14.2.1 Federal

There are no federal regulations related to population and housing that are relevant to the Proposed Project. However, federal authorizations would be required because portions of the land within the Proposed Project area are under the jurisdictions of the U.S. Bureau of Land Management and U.S. Bureau of Reclamation.

5.14.2.2 State

There are no state regulations related to population and housing that are relevant to the Proposed Project.

5.14.2.3 Local

The California Public Utilities Commission (CPUC) has sole and exclusive state jurisdiction over the siting and design of the Proposed Project in California. Pursuant to CPUC General Order 131-E, Section XI.B:

> "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the Commission's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters."

Consequently, local agencies in California do not have jurisdiction over the Proposed Project, but public utilities must consult with local agencies and consider their regulations.

The Arizona Corporation Commission's Arizona Power Plant and Transmission Line Siting Committee has jurisdiction over the Proposed Project in Arizona. This committee may approve or deny a Certificate of Environmental Compatibility application and impose reasonable conditions. However, pursuant to Arizona Revised Statutes Section 40-360.06(D):

> "Any certificate granted by the committee shall be conditioned on compliance by the applicant with all applicable ordinances, master plans and regulations of the state, a county or an incorporated city or town, except that the committee may grant a certificate notwithstanding any such ordinance, master plan or regulation, exclusive of franchises, if the committee finds as a fact that compliance with such ordinance, master plan or regulation is unreasonably restrictive and compliance therewith is not feasible in view of technology available."

Consequently, local agencies in Arizona do not have jurisdiction over the Proposed Project, but public utilities must consult with local agencies and consider their regulations. Accordingly, the following discussion of local land use regulations is provided for informational purposes only.

Imperial County General Plan

The 2021-2029 Housing Element Update of the Imperial County General Plan sets forth planning strategies to support the development of adequate housing for all income segments. The Housing Element provides context regarding the needs and constraints for housing in Imperial County and establishes goals, policies, and programs related to housing needs (Imperial County 2022). This element of the Imperial County General Plan does not contain specific goals or policies that are relevant to the Proposed Project.

Yuma County 2030 Comprehensive Plan

The City of Yuma, Arizona Housing Market Assessment, which represents the Housing Element of the Yuma County 2030 Comprehensive Plan, provides an overview of the Yuma County demographic and economic environment, including population levels and trends, household diversity, and economic indicators (Yuma County 2023). In addition, the Housing Market Assessment examines housing supply and availability, development trends, affordability of rental and ownership housing, and housing demand (City of Yuma 2021). This element does not contain specific goals or policies that are relevant to the Proposed Project.

City of Calexico Housing Element Update (2021-2029)

The City of Calexico Housing Element Update (2021-2029) provides an overview of the City's demographic and economic environment, including population levels and trends, household diversity, and economic indicators. In addition, the Housing Element examines housing supply and availability, development trends, housing affordability, housing demand, and infrastructure and environmental constraints for housing. This element contains the City's housing policy program for 2021-2029. Specific goals or policies that are relevant to the Proposed Project are as follows (City of Calexico 2022):

Goal 1: Preservation, conservation, and enhancement of existing housing stock and residential neighborhoods in Calexico.

Policy H-1.5: Preserve unique natural features in the community, including hillsides, canyons, and other environmental amenities, with minimal disruption.

City of Yuma General Plan

The City of Yuma General Plan provides an overview of the City's housing market and conditions and demographic and economic environment, including population levels and trends, household diversity, and economic indicators. In addition, the Housing section examines housing supply and availability, development trends, housing affordability, housing demand, and market and governmental constraints. Specific goals or policies that are relevant to the Proposed Project are as follows (City of Yuma 2022):

Goal 1.0: Encourage the provision of safe, decent, sanitary, and affordable housing for all residents.

Objective 1.4: Encourage a residential environment that ensures energy conservation, noise attenuation, open space, and compatible appearance.

Policy 1.4.3: The City shall consistently enforce ordinances that pertain to energy conservation, noise attenuation, open space, and compatible appearance.

5.14.3 Impact Questions

5.14.3.1 Population and Housing Impact Questions

The thresholds of significance for assessing impacts come from the California Environmental Quality Act (CEQA) Environmental Checklist. For population and housing, the CEQA Checklist asks, would the project:

- Induce substantial unplanned population growth in the area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through the extension of new roads or other infrastructure)?
- Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

5.14.3.2 Additional CEQA Impact Questions

There are no CPUC-identified additional CEQA impact questions.

5.14.4 Impact Analysis

5.14.4.1 Population and Housing Impact Analysis

5.14.4.1.1 Population and Housing Methodology

Impacts to population and housing within the Proposed Project area were determined using data from the U.S. Census Bureau in combination with housing plans available from the Imperial County General Plan (2022) and Yuma County 2030 Comprehensive Plan (City of Yuma 2021).

5.14.4.1.2 Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Construction

Project Components in California

No Impact. As stated in Section 3.6.1.1, in Chapter 3, Proposed Project Description, it is anticipated that approximately 6 to 154 construction personnel would be working on any given day and it is conservatively estimated that the entire workforce would come from outside the local area. Construction would be temporary and would last approximately 19 months. While the population of Imperial County may increase slightly during construction, the increase would be temporary and would not cause a substantial increase in population that would require construction of new homes, businesses, or infrastructure. Construction of the Proposed Project would not directly or indirectly induce substantial population growth; therefore, no impact would occur.

Project Components in Arizona

No Impact. It is anticipated that approximately 6 to 154 construction personnel would be working on any given day and it is conservatively estimated that the entire workforce would come from outside the local area. Construction would be temporary and would last approximately 19 months. While the population of Yuma County may increase slightly during construction, the increase would be temporary and would not cause a substantial increase in population that would require construction of new homes, businesses, or infrastructure. Construction of the Proposed Project would not directly or indirectly induce substantial population growth; therefore, no impact would occur.

Overall Project

No Impact. While the populations of Imperial County and Yuma County may increase slightly during construction, the increase would be temporary and would not cause a substantial increase in population. The Proposed Project would not directly or indirectly induce substantial population growth that would require construction of any new homes, businesses, or other infrastructure. Therefore, there would be no impact.

Operation

Project Components in California

No Impact. Following construction of the Proposed Project, operation and maintenance (O&M) activities would generally consist of annual or more frequent inspections as well as hardware maintenance and repairs and insulator washing. HWT anticipates an increase of one to two permanent employees for O&M of the Proposed Project who would likely be from the local area. These additional staffing needs are nominal and would not induce population growth in the area either directly or indirectly. There would be no impact.

Project Components in Arizona

No Impact. Following construction of the Proposed Project, O&M activities would generally consist of annual or more frequent visual inspections as well as hardware maintenance and repairs and insulator washing. HWT anticipates an increase of one to two permanent employees for O&M of the Proposed Project who would likely be from the local area. These additional staffing needs are nominal and would not induce population growth in the area either directly or indirectly. There would be no impact.

Overall Project

No Impact. HWT anticipates an increase of one to two permanent employees for O&M who would likely be from the local area. These additional staffing needs are nominal and would not induce population growth in the area either directly or indirectly. There would be no impact.

5.14.4.1.3 Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

Construction

Project Components in California

No Impact. Proposed Project construction would occur primarily within new right-of-way (ROW) and within existing and new access roads. The Proposed Project ROW, access roads, and temporary construction areas were designed and routed to avoid existing housing. One trailer home is located approximately 106 feet south of the Proposed Project. The landowner has verbally agreed to move the trailer to the northern portion of the property, outside the Proposed Project footprint. No other housing is located within the Proposed Project footprint. Displacement of existing people could also occur if construction workers procured housing needed for residents. However, adequate lodging options would be available for the temporary workforce in the cities of Calexico and El Centro. Given the small number of workers required for construction of the Proposed Project, the short

construction duration, and the lodging options available in the surrounding area, construction of the Proposed Project would not displace substantial numbers of existing people or housing units and no replacement housing would be constructed. No impact would occur.

Project Components in Arizona

No Impact. Proposed Project construction would occur primarily within new ROW and within existing and new access roads. The Proposed Project ROW, access roads, and temporary construction areas were designed and routed to avoid existing housing. No housing is located within the Proposed Project footprint. Displacement of existing people could also occur if construction workers procured housing needed for residents. However, adequate lodging options would be available for the temporary workforce in the City of Yuma. Given the small number of workers required for construction of the Proposed Project, the short construction duration, and the lodging options available in the surrounding area, construction of the Proposed Project would not displace existing people or housing units and no replacement housing would be constructed. No impact would occur.

Overall Project

No Impact. Proposed Project facilities and temporary construction areas would be sited to avoid crossing existing housing during the development phase of the Proposed Project. In Imperial County, one trailer home is located approximately 106 feet south of the Proposed Project, but the landowner has verbally agreed to move it. No other housing is located within the Proposed Project footprint. Displacement of existing people could also occur if construction workers took housing needed for residents. However, adequate lodging options would be available for the temporary workforce in the surrounding area, including in the cities of Calexico and El Centro in California and Yuma in Arizona. Construction of the Proposed Project would not require displacement of existing people or housing units and no replacement housing would be constructed. No impact would occur.

Operation

Project Components in California

No Impact. Following construction of the Proposed Project, O&M activities would generally consist of annual or more frequent inspections as well as hardware maintenance and repairs and insulator washing. These activities would occur within the ROW and on permanent access roads. As mentioned previously, Proposed Project facilities were designed and routed to avoid existing housing and no housing would be located within the Proposed Project footprint. Therefore, no existing people or housing units would be displaced and no replacement housing would be constructed as a result of operation and maintenance of the Proposed Project. No impact would occur.

Project Components in Arizona

No Impact. Following construction of the Proposed Project, O&M activities would generally consist of annual or more frequent inspections as well as hardware maintenance and repairs and insulator washing. These activities would occur within the ROW and on permanent access roads. As mentioned previously, Proposed Project facilities were designed to avoid existing housing and no housing would be located within the Proposed Project footprint. Therefore, no existing people or

housing units would be displaced and no replacement housing would be constructed as a result of O&M. No impact would occur.

Overall Project

No Impact. O&M activities would occur within the ROW and on permanent access roads. Proposed Project facilities were designed to avoid existing housing and no housing would be located within the Proposed Project footprint. Therefore, no existing people or housing units would be displaced and no replacement housing would be constructed as a result of O&M. No impact would occur.

5.14.4.2 Impacts to Housing

As described previously, Proposed Project construction and O&M activities would occur primarily within new ROW and within access roads. The Proposed Project ROW, access roads, and temporary construction areas were designed and routed to avoid existing housing. One trailer home is located approximately 106 feet south of the Proposed Project. The landowner has verbally agreed to move the trailer to the northern portion of the property, outside the Proposed Project footprint. No other housing is located within the Proposed Project footprint.

Given the small number of workers required for construction of the Proposed Project and the short term of the construction period, adequate lodging options would be available for the temporary workforce in the surrounding area, and no new or replacement housing would need to be built. Therefore, no impact to housing would occur.

5.14.4.3 Workforce Impacts

As described previously, it is anticipated that approximately 6 to 154 construction personnel would be working on any given day. Construction would be temporary and would last approximately 19 months. Adequate lodging options would be available for the temporary workforce in the surrounding area. HWT anticipates an increase of one to two permanent employees for O&M. These additional staffing needs are nominal; therefore, no impacts would occur.

5.14.4.4 Population Growth Inducing

As described previously, given the small number of workers required for construction of the Proposed Project and the short term of the construction period, construction of the Proposed Project would not induce substantial population growth. HWT anticipates an increase of one to two permanent employees for O&M. These additional staffing needs are nominal and would not induce population growth. Therefore, the Proposed Project would not induce population growth, and there would be no impact.

5.14.5 CPUC Draft Environmental Measures

There are no CPUC Draft Environmental Measures identified for Population and Housing.

5.14.5.1 Applicant Proposed Measures

No impacts to population or housing would occur as a result of the Proposed Project. Therefore, there are no Applicant Proposed Measures.

This page left intentionally blank.

5.15 Public Services

This section describes public services in the vicinity of the Ironwood Transmission Line Project (Proposed Project), as well as impacts that may result from construction and operation of the Proposed Project.

Information in this section is organized by the public service type and the providers of those services in each jurisdiction within the Proposed Project area. Research for this analysis involved a review of the following resources:

- Local agency planning documents
- County and city police and fire department websites
- School district websites
- Aerial imagery

5.15.1 Environmental Setting

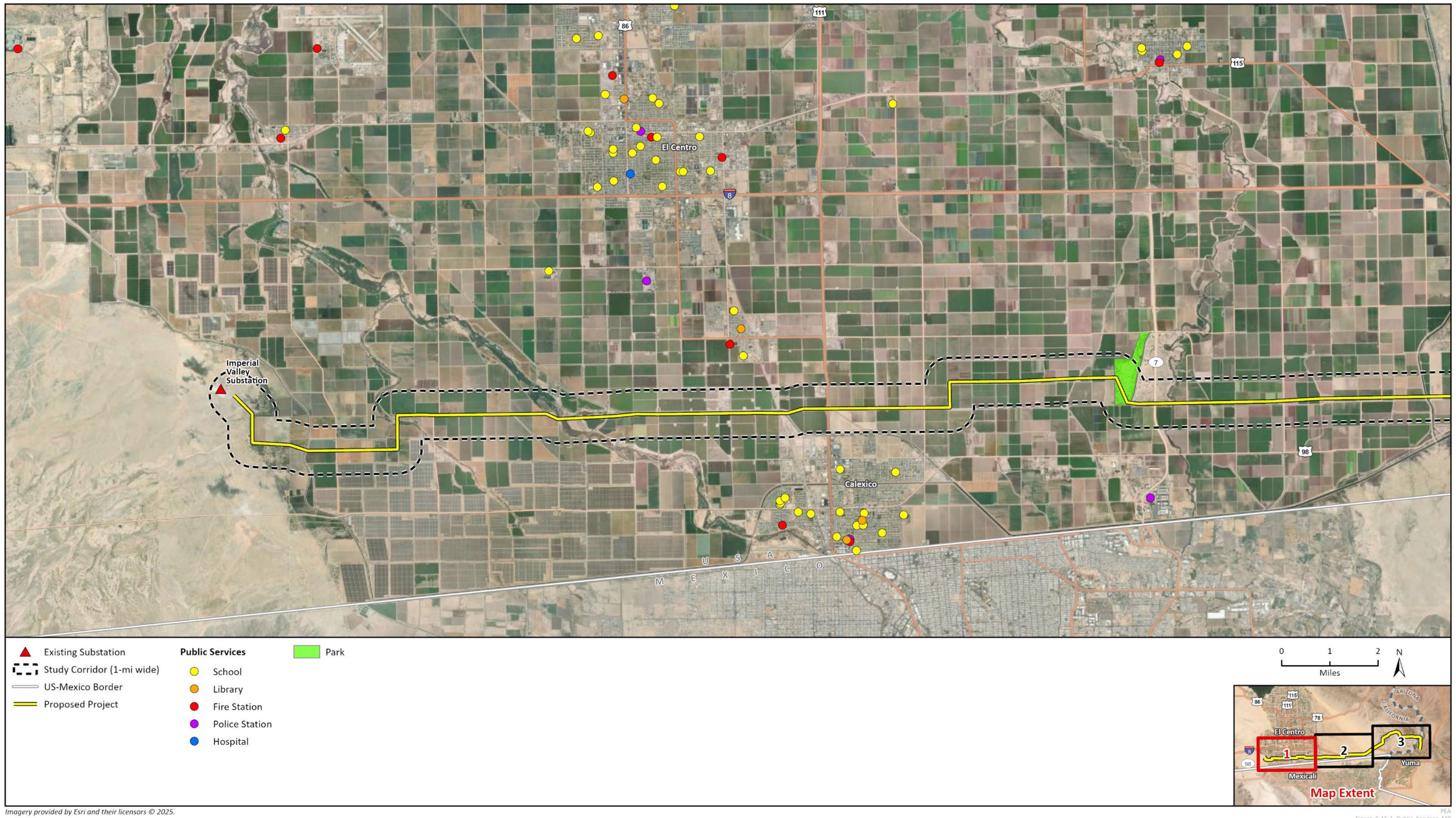
The Proposed Project is located in Imperial County, California and Yuma County, Arizona on federal, state, municipal, and private land. These lands include unincorporated areas of Imperial and Yuma counties, the City of Calexico, California, and public lands under the jurisdiction or management of the United States (U.S.) Bureau of Land Management (BLM), U.S. Bureau of Reclamation, and California Department of Parks and Recreation.

For this section, the Proposed Project area includes the closest cities to the Proposed Project where public services are generally located. This section describes the existing public services near the Proposed Project, as illustrated on Figure 5.15-1a, Figure 5.15-1b, and Figure 5.15-1c.

5.15.1.1 Police

Law enforcement in the vicinity of the Proposed Project is provided by a number of different agencies. The Proposed Project runs along State Highway 98 and Interstate 8, where the California Highway Patrol and Arizona Highway Patrol provide law enforcement services. The closest California Highway Patrol office is approximately 1.7 miles south of the Proposed Project in unincorporated Imperial County approximately 4 miles west of the city limits of Calexico, California, and the closest Arizona Highway Patrol office is approximately 7.1 miles southwest of the Proposed Project in Yuma, Arizona. The Yuma County Sheriff's Office provides law enforcement services for all other portions of the Proposed Project alignment within Yuma County and the closest office is approximately 7.3 miles southeast of the Proposed Project in Yuma, Arizona. The Imperial County Sheriff's Office provides law enforcement services in the unincorporated areas of the county and the closest police station is approximately 2.7 miles north of the Proposed Project in unincorporated Imperial County approximately 0.1 mile west of the city limits of El Centro, California. The Calexico Police Department provides law enforcement services for portions of the Proposed Project alignment within city limits. The closest Calexico Police Department location is approximately 2.7 miles south of the Proposed Project in Calexico, California. Police stations are shown on Figure 5.15-1a, Figure 5.15-1b, and Figure 5.15-1c.

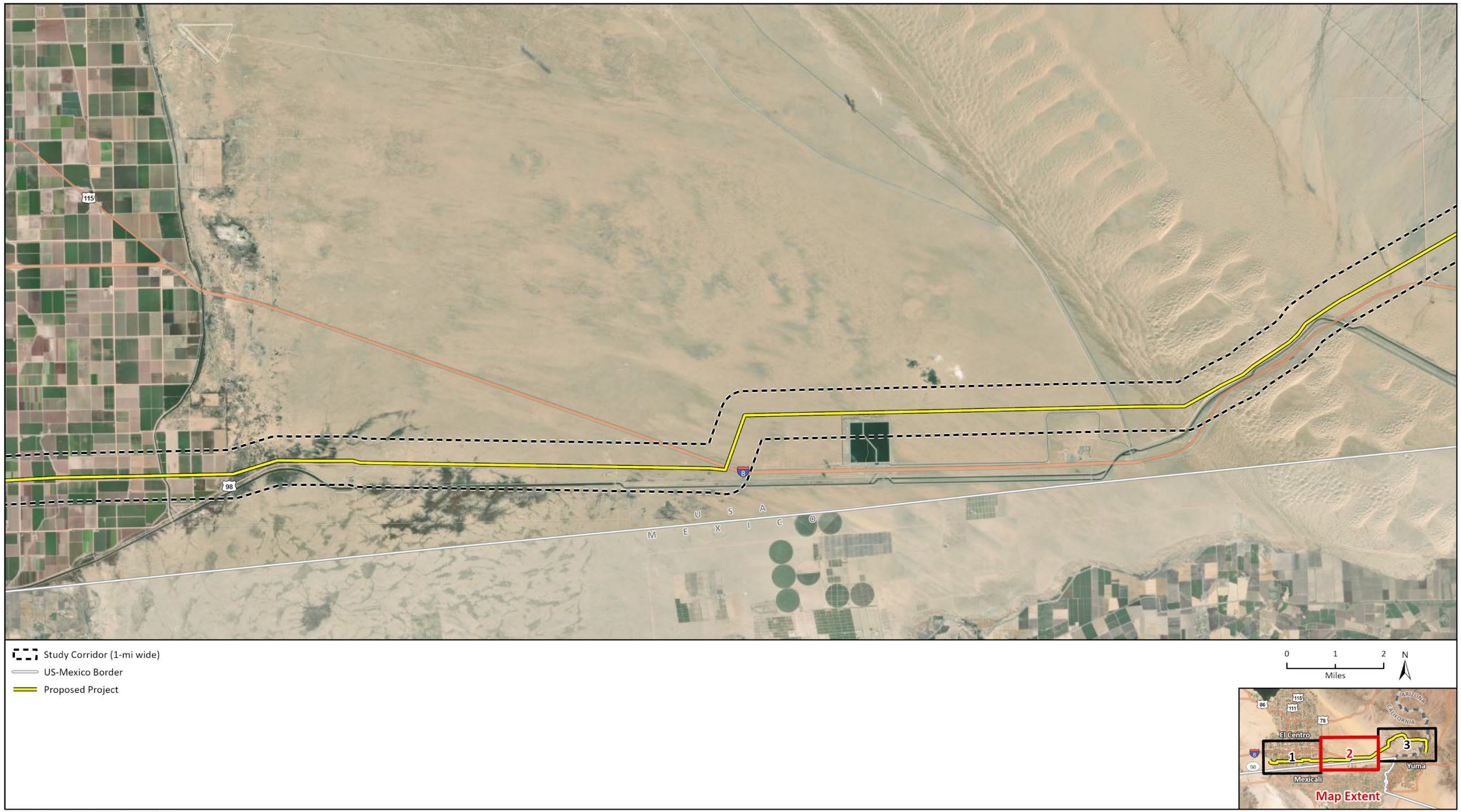
Figure 5.15-1a Public Services Near the Proposed Project



Imagery provided by Esri and their licensors © 2025.

PEA
Figure_5.15-1_Public_Services_MB

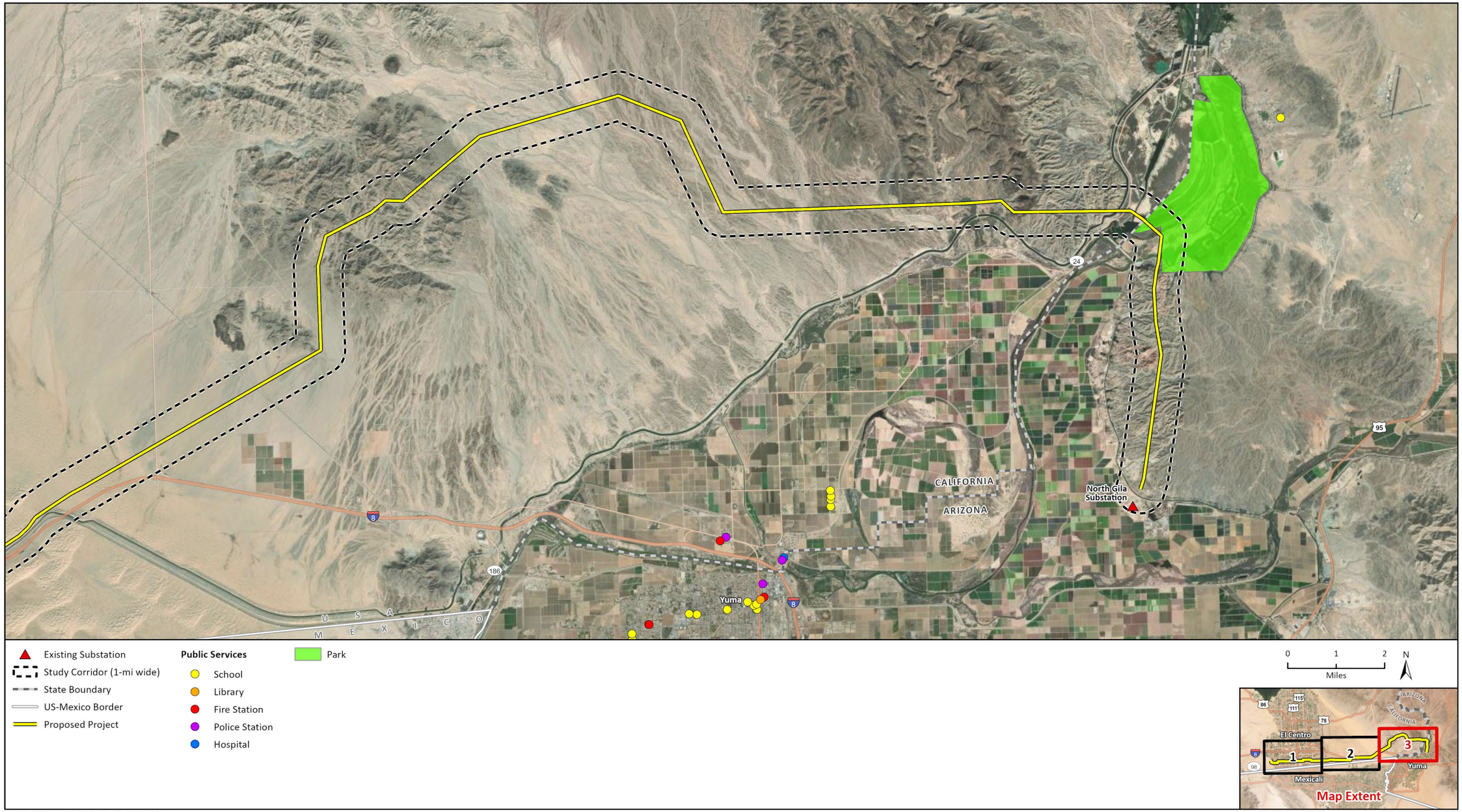
Figure 5.15-1b Public Services Near the Proposed Project



Imagery provided by Esri and their licensors © 2025.

PEA
Figure_5.15-1_Public_Services_MB

Figure 5.15-1c Public Services Near the Proposed Project



Imagery provided by Esri and their licensors © 2025.

PEA
Figure_5.15-1_Public_Services_MB

5.15.1.2 Fire Protection

Fire protection in the vicinity of the Proposed Project is provided by a number of agencies, including both federal and local fire protection providers. Imperial County Fire Department and BLM Fire provide fire protection services in Imperial County. The Imperial County Fire Department consists of eight stations and four contracting agencies, and the closest Imperial County Fire Department is approximately 1.4 miles north of the Proposed Project in the community of Heber (Imperial County 2022a). The Calexico Fire Department provides emergency services from two stations within city limits of the City of Calexico (City of Calexico 2020) and the closest is approximately 2.33 miles south of the Proposed Project. BLM Fire provides fire protection services on BLM-managed lands.

BLM Fire and the Rural/Metro Corporation provide fire protection services in the Proposed Project area in Yuma County. The Rural/Metro Corporation is a private fire protection service in unincorporated Yuma County funded by property owners and businesses through an annual subscription. Rural/Metro has seven stations that respond to fire and emergency medical calls and the closest station is approximately 4 miles southwest of the Proposed Project (Yuma County 2023). Fire stations in the vicinity of the Proposed Project are shown on Figure 5.15-1a, Figure 5.15-1b, and Figure 5.15-1c.

5.15.1.3 Schools

School districts crossed by the Proposed Project include the Imperial Unified School District, Calexico Unified School District, Holtville Unified, San Pasqual Valley Unified, and Yuma Elementary School District Number One. The closest school to the Proposed Project, in the Calexico Unified School District, is approximately 1.3 miles south of the Proposed Project. In Yuma County, the closest school, in the Yuma Elementary School District, is approximately 4.3 miles southwest of the Proposed Project. Schools in the vicinity of the Proposed Project are shown on Figure 5.15-1a, Figure 5.15-1b, and Figure 5.15-1c.

5.15.1.4 Parks

The Proposed Project crosses parks including Heber Dunes State Vehicular Recreation Area in California and the Mittry Lake Wildlife Area in Arizona. Section 5.16, Recreation, provides additional information on the parks and recreational facilities in the vicinity of the Proposed Project. Parks in the vicinity of the Proposed Project are shown on Figure 5.15-1a, Figure 5.15-1b, and Figure 5.15-1c.

5.15.1.5 Hospitals

The closest major hospitals and other health care facilities to the Proposed Project are in the cities of Calexico and Yuma as well as in the community of Heber. The closest hospital is approximately 1.4 miles north of the Proposed Project in the community of Heber. The closest hospital in Calexico is approximately 2.0 miles south of the Proposed Project, and the closest hospital in the City of Yuma is approximately 5.0 miles southwest of the Proposed Project. Hospitals in the vicinity of the Proposed Project are shown on Figure 5.15-1a, Figure 5.15-1b, and Figure 5.15-1c.

5.15.1.6 Other Public Facilities

The closest libraries to the Proposed Project are in the cities of Calexico and Yuma, and the community of Heber. The closest library is approximately 1.74 miles north of the Proposed Project in the community of Heber. The closest library in the City of Calexico is approximately 2.3 miles south of the Proposed Project, and the closest library in the City of Yuma is approximately 8.0 miles

southwest of the Proposed Project. Libraries in the vicinity of the Proposed Project are shown on Figure 5.15-1a, Figure 5.15-1b, and Figure 5.15-1c.

5.15.1.7 Documented Performance Objectives and Data

The average emergency response time for the Calexico Fire Department is approximately four minutes 57 seconds, with 91 percent of responses occurring in under eight minutes, and their internal benchmark targets maintaining an average response time under eight minutes for emergency calls (email from Juan Contreras, Fire Chief, to Alison Adams of Rincon Consultants, Inc., November 3, 2025). The average emergency response times for the Calexico Police Department can vary from 15 to 30 minutes depending on traffic and officer availability, with a goal of ten minutes for general calls (Veronica Valenzuela, Dispatch Supervisor, phone call with Alison Adams of Rincon Consultants, Inc., October 30, 2025). The average emergency response time for the Imperial County Fire Department is two to nine minutes (Assistant Chief, phone call with Autumn TeBeest of POWER Engineers, Inc., June 16, 2025). The emergency response time for the Yuma County Sheriff's Office ranges from five to 15 minutes for locations close to their office, to 45 minutes to one hour for calls in remote areas, due to the rural nature of the county (Lieutenant Hixon, phone call with Alison Adams of Rincon Consultants, Inc., October 30, 2025). The wildfire suppression emergency response times for BLM Fire can range from 30 minutes to several hours depending on the remoteness of the wildfire between wildland urban interface and wilderness areas (email from James Newman, BLM Fire Management Specialist, to Alison Adams of Rincon Consultants, Inc., November 18, 2025). The California Highway Patrol, Arizona Highway Patrol, Imperial County Sheriff's Office, Yuma Police Department, and Yuma Fire Department were contacted and information on performance objectives and emergency response times were requested on May 14, June 16, October 30-31, and November 15, 2025. As of the date of this report, no responses have been received.

5.15.2 Regulatory Setting

Federal, state, and local regulations were reviewed for applicability to the Proposed Project and are described below.

5.15.2.1 Federal

A review of the Code of Federal Regulations, Federal Emergency Management Agency, U.S. Department of Health and Human Services, and U.S. Department of Education websites revealed that there are no federal regulations or policies related to public services that are relevant to the Proposed Project. However, federal authorizations would be required because the Proposed Project would traverse land under the jurisdiction or management of the BLM and Bureau of Reclamation.

5.15.2.2 State of California

California Public Utilities Commission, General Order 95, Section 35

Section 35 of California Public Utilities Commission (CPUC) General Order (G.O.) 95 covers all aspects of design, construction, and operation of electrical power lines as well as fire safety hazards.

California Code of Regulations, Title 14, Sections 1250 to 1258

Title 14, Sections 1250 to 1258 of the California Code of Regulations (CCR) provide specific clearance standards to be maintained by utility companies between electric power lines and all vegetation.

California Fire Code

24 CCR Part 9 is known as the California Fire Code. This code provides provisions for planning, precautions, and preparations for fire safety and fire protection during various activities, including construction and demolition, as well as requirements for buildings and guidelines for working with flammable chemicals and materials. As such, the California Fire Code was reviewed for this analysis.

California Public Resources Code Sections 4292 and 4293

California Public Resources Code (PRC) section 4292 states:

> "[A]ny person that owns, controls, operates, or maintains any electrical transmission or distribution line…shall, during such times and in such areas as are determined to be necessary by the director or the agency which has primary responsibility for fire protection of such areas, maintain around and adjacent to any pole or tower which supports a switch, fuse, transformer, lightening arrester, line junction, or dead end or corner pole, a firebreak which consists of a clearing of not less than 10 feet in each direction from the outer circumference of such a pole or tower."

PRC section 4293 states:

> "[A]ny person that owns, controls, operates, or maintains any electrical transmission or distribution line upon any mountainous land, or in forest-covered land, or grass-covered land shall, during such times and in such areas as are determined to be necessary by the director or the agency which has primary responsibility for the fire protection of such area, maintain a clearance of the respective distances which are specified in this section in all directions between all vegetation and all conductors which are carrying electric current:
>
> (a) For any line which is operating at 2,400 or more volts, but less than 72,000 volts, four feet
>
> (b) For any line which is operating at 72,000 or more volts, but less than 110,000 volts, six feet
>
> (c) For any line which is operating at 110,000 or more volts, 10 feet
>
> In every case, such distance shall be sufficiently great to furnish the required clearance at any position of the wire, or conductor when the adjacent air temperature is 120 degrees Fahrenheit, or less. Dead trees, old decadent or rotten trees, trees weakened by decay or disease and trees or portions thereof that are leaning toward the line which may contact the line from the side or may fall on the line shall be felled, cut, or trimmed so as to remove such hazard."

Red Flag Fire Prevention Program

Like PRC sections 4292 and 4293, red-flag warnings and fire-weather watches, issued by the National Weather Service, aim to prevent fire events and reduce the potential for substantial damage. When extreme fire weather or behavior is present or predicted in an area, a red-flag warning or fire-weather watch may be issued to advise local fire agencies that these conditions are present.

5.15.2.3 State of Arizona

Arizona Administrative Code Title 14, Chapter 2

The public safety aspect of Article 2 in the Arizona Administrative Code Title 14, Chapter 2, includes several key provisions to ensure the safety and reliability of electric utility services. Utilities are required to report any accidents resulting in death, serious injury, or significant property damage (over $5,000) to the Arizona Corporation Commission by the end of the next working day. Additionally, utilities must maintain high standards of service quality and reliability to prevent outages and ensure continuous service to customers. They are also mandated to have plans and procedures in place for responding to emergencies, including natural disasters and other incidents that could disrupt service. Regular inspections and maintenance of equipment and infrastructure are required to prevent accidents and ensure the safe operation of utility systems. These measures are designed to protect both the public and utility workers, ensuring that electric services are provided safely and reliably.

Arizona Fire Code

2018 International Fire Code is known as the Arizona Fire Code. This code provides provisions for planning, precautions, and preparations for fire safety and fire protection during various activities, including construction and demolition, as well as requirements for buildings and guidelines for working with flammable chemicals and materials. As such, the Arizona Fire Code was reviewed for this analysis.

5.15.2.4 Local

The CPUC has sole and exclusive state jurisdiction over the siting and design of the Proposed Project in California. However, pursuant to CPUC G.O. 131-E, Section XI.B:

> "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the Commission's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters."

Consequently, local agencies in California do not have jurisdiction over the Proposed Project, but public utilities must consult with local agencies and consider their regulations.

The Arizona Corporation Commission's Arizona Power Plant and Transmission Line Siting Committee has state jurisdiction over the Proposed Project in Arizona. This committee may approve or deny a Certificate of Environmental Compatibility application and impose reasonable conditions. However, pursuant to Arizona Revised Statutes Section 40-360.06(D):

> "Any certificate granted by the committee shall be conditioned on compliance by the applicant with all applicable ordinances, master plans and regulations of the state, a county or an incorporated city or town, except that the committee may grant a certificate notwithstanding any such ordinance, master plan or regulation, exclusive of franchises, if the committee finds as a fact that compliance with such ordinance, master plan or regulation is unreasonably restrictive and compliance therewith is not feasible in view of technology available."

Consequently, local agencies in Arizona do not have jurisdiction over the Proposed Project, but public utilities must consult with local agencies and consider their regulations. Accordingly, the following discussion of local land use regulations are provided for informational purposes only.

Imperial County General Plan

The Public Safety element in the Imperial County General Plan states:

> "The Sheriff's Department is responsible for enforcement of State laws and County ordinances, operation of jail detention facilities, prevention of crime, and apprehension of criminals in unincorporated areas. The adult detention facilities include the County jail and minimum security facility. Sheriff substations are located in the communities of Brawley, Salton City, and Winterhaven, with resident deputies located in the unincorporated communities of Ocotillo, Bombay Beach, Niland and Palo Verde. All other areas are patrolled by the main patrol division. Additional public safety is provided by the County Fire Department/Office of Emergency Services in cooperation with the incorporated cities and volunteer units in the unincorporated communities. The County Fire Department's main facility is located at the County Airport in Imperial" (Imperial County 2022b).

Imperial County Multi-Jurisdictional Hazard Mitigation Plan

The Imperial County Multi-Jurisdictional Hazard Mitigation Plan describes the past and current hazard mitigation activities and outlines goals, strategies, and actions for reducing future disaster lost (Imperial County Fire Department 2021).

Yuma County 2030 Comprehensive Plan

The Safety Element in the Yuma County 2030 Comprehensive Plan contains a detailed set of maps that illustrate the areas most at risk from a variety of disasters and where disasters have occurred in the past. It also describes that law enforcement in unincorporated Yuma County is managed by the Yuma County Sheriff's Office, with deputies assigned to specific areas, including the Foothills and Wellton substations. Fire and emergency medical services west of the Gila Mountains are provided by Rural/Metro Corporation, while the Tacna Fire Department and Tri-Valley Ambulance Service handle services east of the mountains. Additional firefighting resources come from various municipal departments, federal and state agencies, and military facilities, ensuring coverage across diverse areas within the county (Yuma County 2023).

Yuma County Hazard Mitigation Plan

The Yuma County Hazard Mitigation Plan is to be consistent with the 2013 State of Arizona Hazard Mitigation Plan which consist of community descriptions, planning process, risk assessment, mitigation strategy, and plan maintenance strategy. The purpose of the plan is to identify hazards that impact the various jurisdictions and Tribes within Yuma County, assess the vulnerability and risk posed by those hazards to community-wide human and structural assets, develop strategies for mitigation of those identified hazards, present future maintenance procedures for the plan, and document the planning process (Yuma County 2019).

City of Calexico General Plan

The Public Facilities/Services Element of the City of Calexico General Plan describes public services facilities provided by the City, which include sewer, water, library, fire department, police department, school district, and health care. The public facilities/services goals, objectives, and policies contained in the City of Calexico's General Plan are not relevant to the Proposed Project (City of Calexico 2015).

5.15.3 Impact Questions

5.15.3.1 Public Services Impact Questions

The thresholds of significance for assessing impacts come from the California Environmental Quality Act (CEQA) Environmental Checklist. For public services, the CEQA Checklist asks, would the project:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities—the construction of which could cause significant environmental impacts—in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:
  - Fire protection
  - Police protection
  - Schools
  - Parks
  - Other public facilities

Impacts related to wildfire hazards are discussed in Section 5.20, Wildfire.

5.15.3.2 Additional CEQA Impact Questions

There are no CPUC-identified additional CEQA impact questions.

5.15.4 Impact Analysis

5.15.4.1 Public Services Impact Analysis

5.15.4.1.1 Public Services Methodology

The potential for the Proposed Project to result in the need for increased or new public services was evaluated by examining the existing levels of service and potential changes associated with the Proposed Project.

5.15.4.1.2 Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection?

Construction

Project Components in California

No Impact.

Emergency Providers. The Proposed Project would not require the expansion of fire protection, police, and emergency services. Work areas would be cleared of vegetation before staging construction equipment, minimizing the probability of a fire during construction. HWT would implement standard fire prevention protocols during construction activities and comply with applicable laws and regulations and the provisions of HWT's approved Wildfire Mitigation Plan.

Although the need for police services may arise during construction, such a need would not exceed the capacity of the existing providers in the vicinity of the Proposed Project and would not require the provision of service beyond existing capacities. Depending on the security needs, staging areas could be fenced, illuminated, or use security cameras. Security personnel could also be used to patrol the staging areas periodically or stationed at staging areas.

Road closures may be required during construction near the Proposed Project area. These road closures would be temporary and coordinated through local agencies and emergency providers to ensure all permits and required traffic control plans are in place. The traffic control plans would include measures to ensure that potential changes to service ratios are minimized. As a result, acceptable response times would be maintained. The Proposed Project would not require the provision of any new or alteration of existing emergency provider facilities to maintain acceptable service ratios or response times, and no impact would occur.

Schools. As discussed in Section 5.14, Population and Housing, it is anticipated that approximately 6 to 154 construction personnel would be working at any given time. Given the small number of workers required for construction of the Proposed Project and the short term of the construction period, construction of the Proposed Project would not result in a substantial temporary increase in the area's population. Therefore, the Proposed Project would not require the provision of any new or alteration of existing schools. No impact would occur.

Other Public Facilities. As discussed in Section 5.14, Population and Housing, the Proposed Project would not result in substantial population grown in the area. HWT anticipates approximately 6 to 154 construction personnel working on the Proposed Project on any given day. During construction, construction workers may choose to visit parks and recreational facilities or libraries during non-work periods. However, any influx to the use of existing parks and recreational areas would be temporary during the 19-month construction period. Therefore, the Proposed Project would not require the provision of any new or alteration of existing public facilities, including parks, hospitals, and libraries. No impact would occur.

Project Components in Arizona

No Impact.

Emergency Providers. The Proposed Project would not require the expansion of fire protection, police, and emergency services. Work areas would be cleared of vegetation before staging construction equipment, minimizing the probability of a fire during construction. HWT would implement standard fire prevention protocols during construction activities and comply with applicable laws and regulations and the provisions of HWT's approved Wildfire Mitigation Plan.

Although the need for police services may arise during construction, such a need would not exceed the capacity of the existing providers in the vicinity of the Proposed Project and would not require the provision of service beyond existing capacities. Depending on the security needs, staging areas could be fenced, illuminated, or use security cameras. Security personnel could also be used to patrol the staging areas periodically or stationed at staging areas.

Road closures may be required during construction near the Proposed Project area. These road closures would be temporary and coordinated through local agencies and emergency providers to ensure all permits and required traffic control plans are in place. The traffic control plan would include measures to ensure that potential changes to service ratios are minimized. As a result, acceptable response times would be maintained. The Proposed Project would not require the provision of any new or alteration of existing emergency provider facilities, and no impact would occur.

Schools. As discussed in Section 5.14, Population and Housing, it is anticipated that approximately 6 to 154 construction personnel would be working on any given day. Given the small number of workers required for construction of the Proposed Project and the short term of the construction period, construction of the Proposed Project would not result in a substantial temporary increase in the area's population. Therefore, the Proposed Project would not require the provision of any new or alteration of existing schools. No impact would occur.

Other Public Facilities. As discussed in Section 5.14, Population and Housing, it is anticipated that approximately 6 to 154 construction personnel would be working on any particular day. During construction, construction workers may choose to visit parks and recreational facilities or libraries during non-work periods. However, any influx to the use of existing parks and recreational areas would be temporary during the 19-month construction period. Therefore, the Proposed Project would not require the provision of any new or alteration of existing public facilities, including parks, hospitals, and libraries. No impact would occur.

Overall Project

No Impact.

Emergency Providers. The Proposed Project would not require the expansion of fire protection, police, and emergency services. HWT would implement standard fire prevention protocols during construction activities and comply with applicable laws and regulations and the provisions of HWT's approved Wildfire Mitigation Plan. Although the need for police services may arise during construction, such a need would not exceed the capacity of the existing providers in the vicinity of the Proposed Project and would not require the provision of service beyond existing capacities.

Any road closures required during construction would be temporary and coordinated through local agencies and emergency providers. The traffic control plan would include measures to ensure that potential changes to service ratios are minimized. As a result, acceptable response times would be

maintained. The Proposed Project would not require the provision of any new or alteration of existing emergency provider facilities, and no impact would occur.

Schools. As discussed previously, given the small number of workers required for construction of the Proposed Project and the short term of the construction period, construction of the Proposed Project would not result in a substantial temporary increase in the area's population. Therefore, the Proposed Project would not require the provision of any new or alteration of existing schools. No impact would occur.

Other Public Facilities. As discussed previously, workers may choose to visit parks and recreational facilities or libraries during non-work periods during construction. However, given the small number of workers required for construction of the Proposed Project and the short term of the construction period, the Proposed Project would not require the provision of any new or alteration of existing public facilities, including parks, hospitals, and libraries. No impact would occur.

Operation

Project Components in California

No Impact. Following construction of the Proposed Project, operation and maintenance (O&M) activities would generally consist of inspections, hardware maintenance and repairs, and insulator washing and would result in a nominal increase in O&M activities. HWT anticipates an increase of one to two permanent employees for O&M of the Proposed Project who would likely be from the local area. These additional staffing needs are nominal and would not cause an increase in the use of existing service providers, schools, or other public services. Therefore, the Proposed Project would not require the provision of any new or alteration of existing government facilities and no impact would occur.

Project Components in Arizona

No Impact. Following construction of the Proposed Project, O&M activities would generally consist of inspections, hardware maintenance and repairs, and insulator washing and would result in a nominal increase in O&M activities. HWT anticipates an increase of one to two permanent employees for O&M of the Proposed Project who would likely be from the local area. These additional staffing needs are nominal and would not cause an increase in the use of existing service providers, schools, or other public services. Therefore, the Proposed Project would not require the provision of any new or alteration of existing government facilities and no impact would occur.

Overall Project

No Impact. Following construction of the Proposed Project, O&M activities would generally consist of inspections, hardware maintenance and repairs, and insulator washing and would result in a nominal increase in O&M activities. HWT anticipates an increase of one to two permanent employees for O&M of the Proposed Project who would likely be from the local area. These additional staffing needs are nominal and would not cause an increase in the use of existing service providers, schools, or other public services. Therefore, the Proposed Project would not require the provision of any new or alteration of existing government facilities and no impact would occur.

5.15.4.2 Emergency Response Times

The Proposed Project would not typically impede ingress and egress of emergency vehicles during construction or operation. The Proposed Project involves only routine construction activities; much of the Proposed Project alignment traverses lands that are remote and rural, and the population density along the Proposed Project alignment is very low and generally non-urbanized. Ongoing operations and maintenance activities, including periodic inspections, would be necessary to ensure reliable service, as well as the safety of utility workers and the general public; while emergency repairs and maintenance could be needed at any time, they are expected to be minimal. Any temporary lane or road closures associated with work over or adjacent to public roadways would be coordinated with local jurisdictions through the encroachment permit process, as applicable. In addition, all traffic control measures required by these authorizations would be implemented as well as the Applicant Proposed Measure TRA-1 discussed in Section 5.17, Transportation. The Proposed Project would not require the provision of any new or alteration of existing emergency provider facilities to maintain acceptable service ratios or response times, and no impact would occur; please refer to Section 5.15.1.7 for a discussion of documented performance objectives and emergency response time data for public service providers surrounding the Proposed Project area. As shown in Section 5.15.1.7, average emergency response times for local service providers are highly variable depending on the remoteness of the emergency; due to the nature of the project, there would be a negligible effect on emergency response times. Therefore, the Proposed Project would not impact emergency providers' ability to maintain acceptable emergency response times during construction or O&M, and no impact would occur.

5.15.4.3 Displaced Population

As presented in Section 5.14, Population and Housing, Proposed Project construction and O&M would occur primarily within new right-of-way and access roads. The Proposed Project ROW, access roads, and temporary construction areas were designed and routed to avoid existing housing. Displacement of existing people could also occur if construction workers or new permanent employees procured housing needed for residents. Adequate lodging options would be available for the temporary workforce in nearby cities. HWT anticipates an increase of one to two permanent employees for O&M of the Proposed Project, which is a nominal increase. Proposed Project would not displace substantial numbers of existing people or housing units. Therefore, the provision of new public services to serve displaced populations would not be required.

5.15.5 CPUC Draft Environmental Measures

There are no CPUC Draft Environmental Measures identified for Public Services.

5.15.6 Applicant Proposed Measures

No impacts to public services would occur as a result of the Proposed Project. Therefore, there are no Applicant Proposed Measures for public services.

5.16 Recreation

This section describes recreation resources in the area of the Ironwood Transmission Line Project (Proposed Project), as well as the potential impacts to recreation that could result from construction and operation of the Proposed Project.

Research for this analysis involved a review of the following resources:

- Federal, state, and local agency planning documents
- Aerial imagery

5.16.1 Environmental Setting

The Proposed Project is located in Imperial County, California and Yuma County, Arizona on federal, state, municipal, and private land. These lands include unincorporated areas of Imperial and Yuma counties, the city of Calexico, California and public lands under the jurisdiction or management of the U.S. Bureau of Land Management (BLM), U.S. Bureau of Reclamation (USBR), and the California Department of Parks and Recreation (DPR). The following subsections describe the existing recreation resources in the vicinity of the Proposed Project.

5.16.1.1 Recreational Setting

Generally, dispersed recreation on public lands is the primary recreational opportunity available in the vicinity of the Proposed Project. Parks and recreation facilities within 0.5 miles of the Proposed Project are discussed by jurisdiction in the following subsections, are listed in Table 5.16-1, and are shown on Figure 5.16-1a, Figure 5.16-1b, and Figure 5.16-1c.

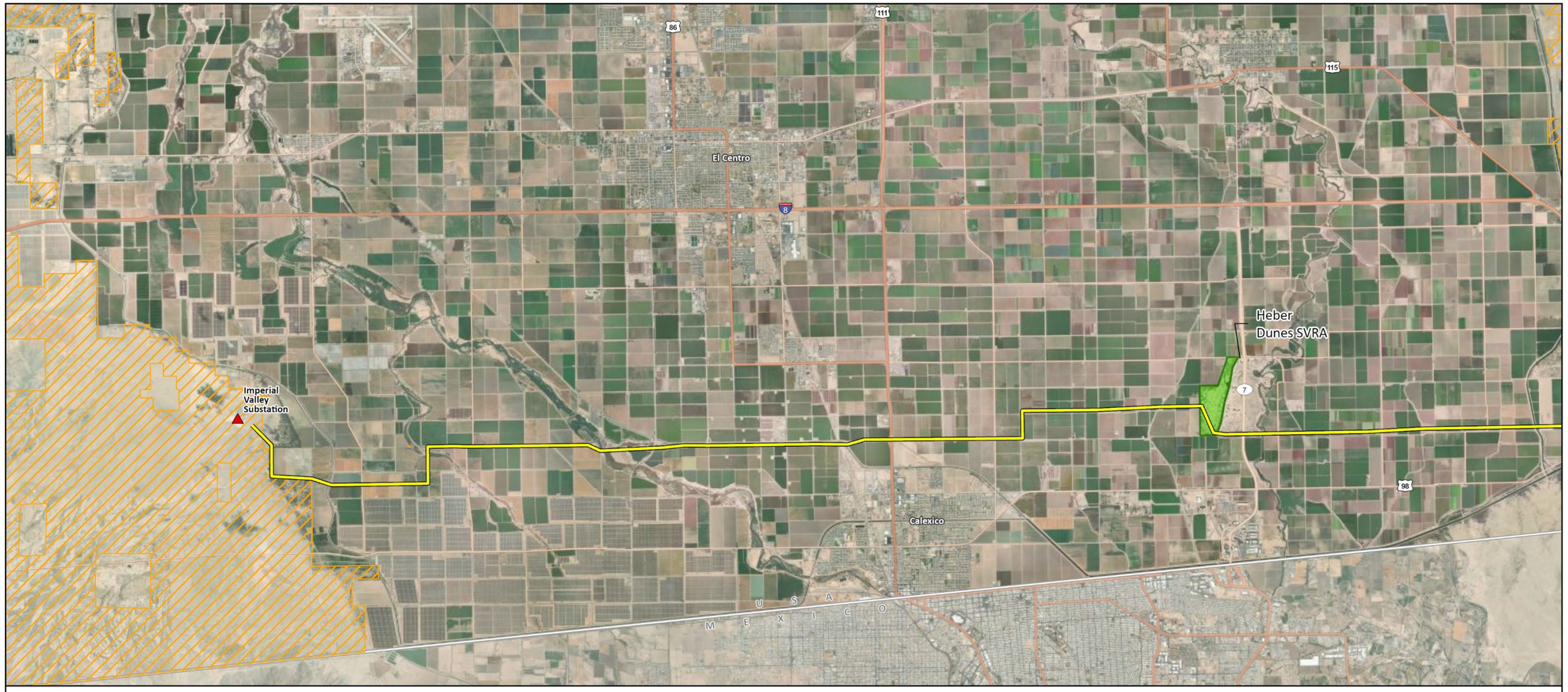
Table 5.16-1 Parks and Recreational Facilities Within 0.5 Mile of the Proposed Project

Park	Jurisdiction	State	Annual Visitation
National Public Land	Bureau of Land Management	Arizona, California	NA
Imperial Sand Dunes Special Recreation Management Areas	Bureau of Land Management	California	1,000,000+
Mittry Lake Wildlife Area	Bureau of Land Management, Bureau of Reclamation	Arizona	NA
Betty's Kitchen National Recreation Trail	Bureau of Land Management	Arizona	NA
Heber Dunes State Vehicular Recreation Area (SVRA)	California Department of Parks and Recreation	California	35,000

NA = not available

Source: BLM 2025a, California Department of Parks and Recreation 2025, BLM 2013

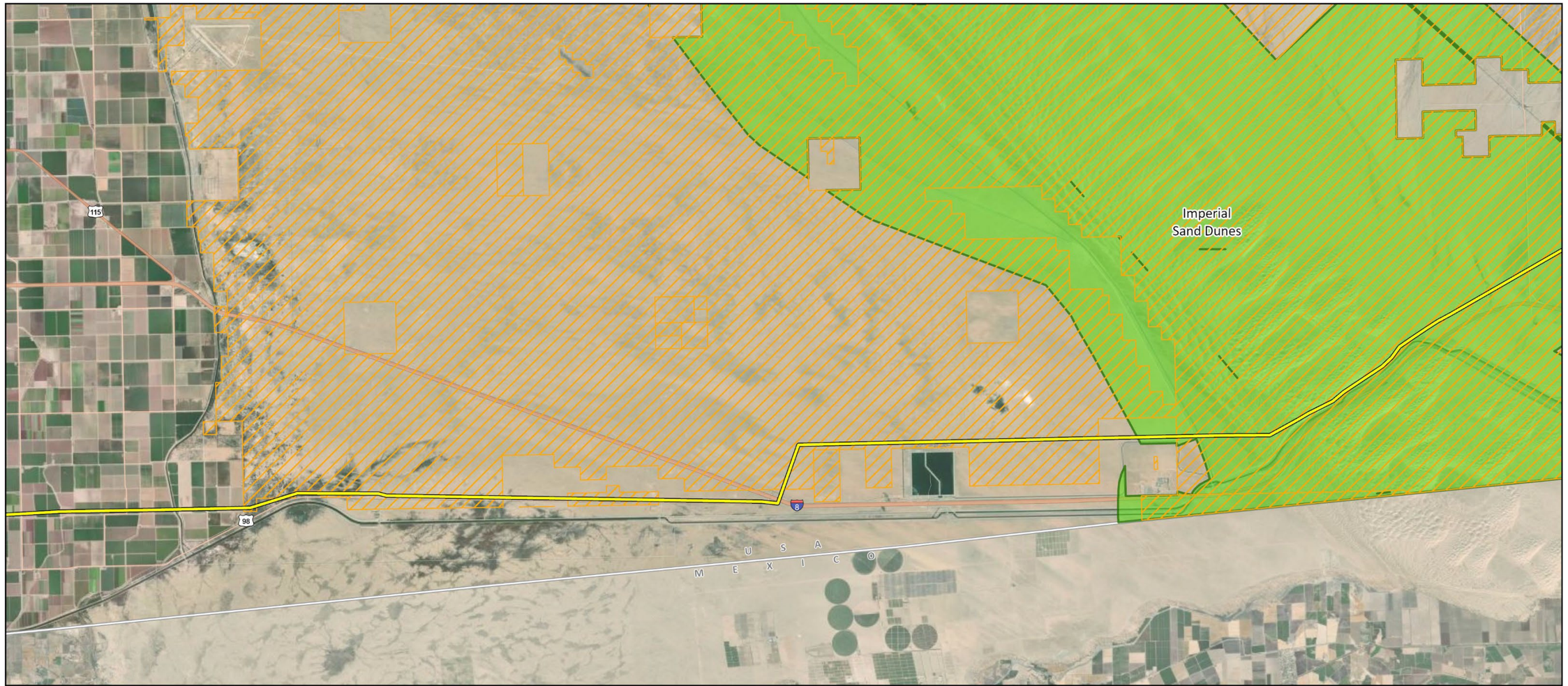
Figure 5.16-1a Parks and Recreational Facilities in the Vicinity of the Proposed Project



Imagery provided by Esri and its licensors © 2025. Additional data provided by AZGFD 2014, BLM 2025.

25-17237 PEA EPS Figures
PEA Figure X Recreation Areas 11x17

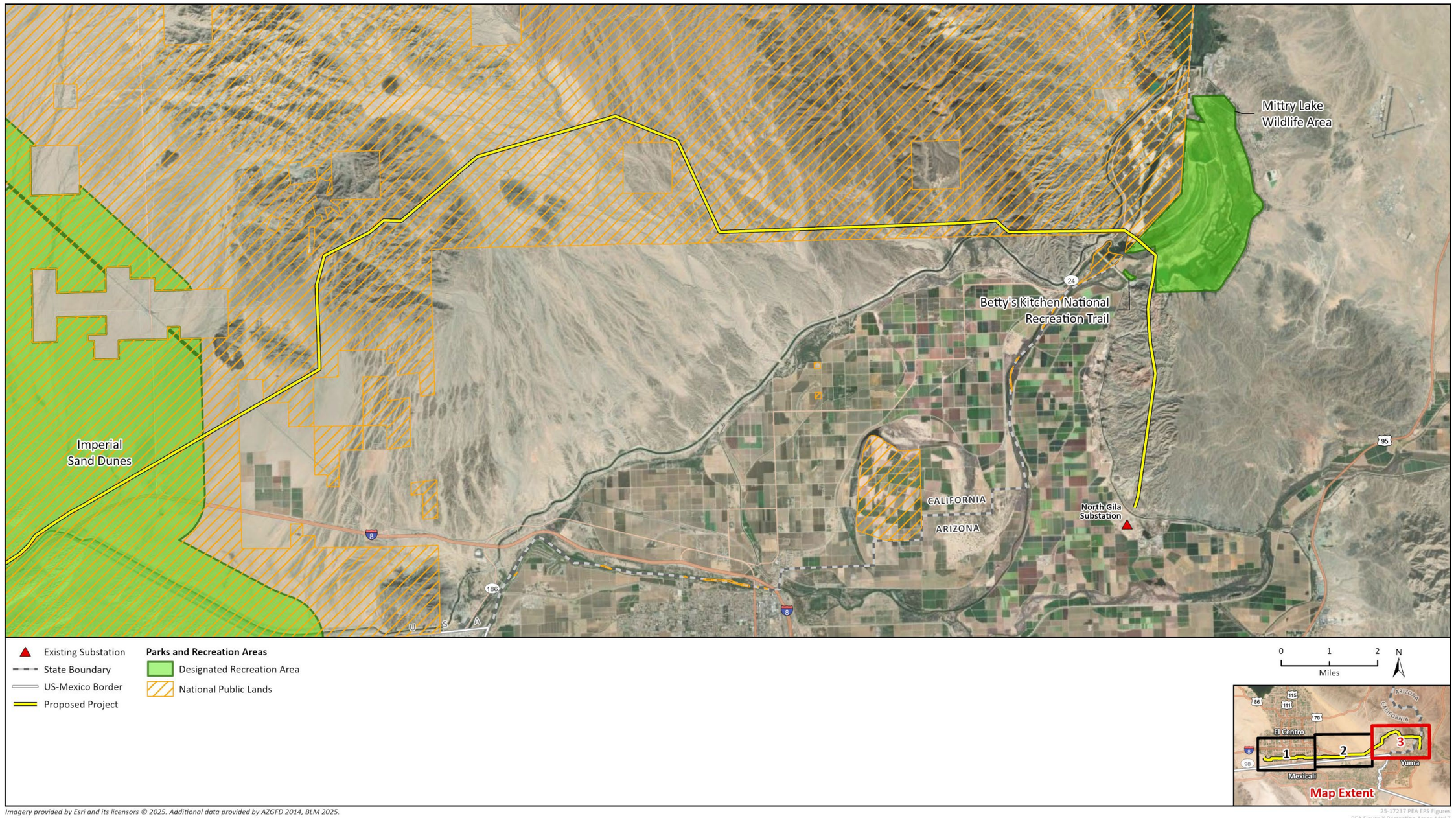
Figure 5.16-1b Parks and Recreational Facilities in the Vicinity of the Proposed Project



Imagery provided by Esri and its licensors © 2025. Additional data provided by AZGFD 2014, BLM 2025.

25-17237 PEA EPS Figures
PEA Figure X Recreation Areas 11x17

Figure 5.16-1c Parks and Recreational Facilities in the Vicinity of the Proposed Project



Imagery provided by Esri and its licensors © 2025. Additional data provided by AZGFD 2014, BLM 2025.

25-17237 PEA EPS Figures
PEA Figure X Recreation Areas 11x17

Federal Lands

Bureau of Land Management

Federal lands used for recreation in the vicinity of the Proposed Project consist of lands administered by the BLM's El Centro and Yuma field offices. Recreation on these lands is generally dispersed and not associated with developed infrastructure.

The Proposed Project crosses sections of National Public Lands administered by BLM as shown in Figure 5.16-1a, Figure 5.16-1b, and Figure 5.16-1c .The California portion of the Proposed Project is within the California Desert Conservation Area (CDCA), which is managed by the California Desert District, El Centro Field Office, of the BLM. Recreational activities in the CDCA include hiking, hunting, camping, land sailing, sightseeing, and the use of recreational Off-Highway Vehicles (OHV).

Special Recreation Management Areas (SRMA) are high-priority areas for outdoor recreation opportunities defined in the BLM Land Use Planning Handbook (BLM 2005). SRMAs help the BLM direct recreation program priorities toward areas with high resource values, high levels of public concern, or significant amounts of recreational activity. As shown in Figure 5.16-1 a, Figure 5.16-1b, and Figure 5.16-1c and Table 5.16-1, the California portion of the Proposed Project crosses the Imperial Sand Dunes (ISD) SRMA for approximately 8 miles. This SMRA is approximately 164,000 acres and includes OHV recreation areas and other amenities. Within the ISD SRMA, the Proposed Project would include new transmission structures, development of new access road(s), improvement to existing roads, and temporary pull/tension sites. Access to the ISD SRMA is from Highway 78, located approximately 22 miles north of the Proposed Project alignment, and which is not proposed for use as a Project access road. Informal and formal trails are located throughout the ISD SMRA. Facilities within the ISD SMRA include day use sites, campgrounds, bathrooms, and information center sites, the nearest of which is a day use site located approximately 235 feet north of the Proposed Project alignment.

The Arizona portion of the Proposed Project crosses the Mittry Lake Wildlife Area, which is an approximately 3,000-acre wildlife area with approximately 600 acres of water surface. Recreational uses for this area include wildlife observation, picnicking, fishing, and boating. The Mittry Lake Wildlife Area is administered by BLM, USBR, and Arizona Game and Fish Department (BLM 2025b). Access to Mittry Lake Wildlife Area is from Laguna Dam Road to Mittry Lake Road, which the Proposed Project alignment would span. Within Mittry Lake Wildlife Area, the Proposed Project would include new transmission structures, improvements to existing roads, vegetation removal, temporary guard sites, and temporary pull/tension sites. The Proposed Project would use the existing Laguna Dam Road and Mittry Lake Road as Project access roads. The nearest Mittry Lake recreational trail is located more than 0.5 miles east of the Proposed Project alignment. Facilities within Mittry Lake Wildlife Area include a boat launch ramp, a campground, and day use sites, the nearest of which is a campground located 0.3 miles west of the Proposed Project alignment.

The Proposed Project alignment is approximately 0.45-mile east of Betty's Kitchen Watchable Wildlife Viewing Area and National Recreation Trail (Betty's Kitchen), a wildlife interpretive area with a 0.5-mile fully-accessible interpretive trail and fishing pier located along the Colorado River. Recreational uses at this site include hiking, wildlife observation, picnicking, and fishing. This facility is managed by BLM (BLM 2025c). The Proposed Project alignment does not cross Betty's Kitchen and the Proposed Project would not include construction work areas or permanent structures within Betty's Kitchen. Access to Betty's Kitchen is from an unnamed road off of Avenue

7E/Laguna Dam Road, located east of Laguna Dam and approximately 0.3-mile west of the Proposed Project alignment. The Proposed Project would use the existing Laguna Dam Road and the unnamed access road to Betty's Kitchen as Project access roads. Facilities within Betty's Kitchen include an interpretive trail and fishing pier, the nearest of which is the interpretive trail located 0.4-mile west of the Proposed Project alignment.

State Lands

As shown in Figure 5.16-1 and Table 5.16-1, the Project area includes the Heber Dunes State Vehicle Recreation Area (SVRA). The Heber Dunes SVRA is a 343-acre OHV park managed by DPR. It offers winding trails through sand dunes and a dry lake bed and includes shaded picnic tables with restrooms and coin-operated showers (California State Parks 2025). Within Heber Dunes SVRA, the Proposed Project would include new transmission structures, development of new access road(s), temporary pull/tension sites, and vegetation removal. Access to the Heber Dunes SVRA is from West Heber Road, located approximately 1 mile north of the Proposed Project alignment, and which is not proposed for use as a Project access road. Informal and formal trails are located throughout the Heber Dunes SVRA. Facilities within Heber Dunes SVRA include a ranger station, restrooms, showers, shade ramadas with picnic tables and cooking pits, the nearest of which is a shade ramada located approximately 0.3 miles northeast of the Proposed Project alignment.

Local

There are no parks or recreational facilities managed by local jurisdictions within 0.5 miles of the Proposed Project.

5.16.2 Regulatory Setting

Federal, state, and local regulations were reviewed for applicability to the Proposed Project.

5.16.2.1 Federal

Federal Land Policy and Management Act

Under the Federal Land Policy and Management Act (FLPMA) of 1976 (43 United States Code [USC] § 1701 et seq.), land management agencies are required to manage federally owned public lands in a manner that protects the quality of resources, and the FLPMA supports multiple uses on public lands. The FLPMA designated the approximately 26 million-acre CDCA in Southern California, of which approximately 10.4 million acres are managed by the BLM. The FLPMA provides a framework for the BLM to manage resources in perpetuity and led to the development of the CDCA Plan (BLM 1999), and associated amendments, and the Yuma Resource Management Plan (BLM 2010), which act as the BLM's land use guide for the management of public lands and resources.

BLM California Desert Conservation Area

The CDCA Plan, which was adopted in 1980 and has since been amended, is a comprehensive, long-range plan for the management, use, development, and protection of lands within the CDCA that is required as part of the FLPMA and implemented by the BLM. The CDCA Plan contains a Recreation Element, which guides the management of recreation areas to support all desert users. In addition, the CDCA plan also includes a Motorized-Vehicle Access Element, in which the BLM encourages the

designation and management of routes for motorized vehicle access to minimize harm to the desert resources and users.

Desert Renewable Energy Conservation Plan

The Desert Renewable Energy Conservation Plan (DRECP) is a collaborative effort between the California Energy Commission, California Department of Fish and Wildlife, BLM, and U.S. Fish and Wildlife Service (USFWS) to:

- Advance federal and state natural resource conservation goals and other federal land management goals.
- Meet the requirements of the federal Endangered Species Act, California Endangered Species Act, Natural Community Conservation Planning Act, and FLPMA
- Facilitate the timely and streamlined permitting of renewable energy projects in the Mojave and Colorado/Sonoran Desert regions of Southern California

The DRECP covers approximately 22.5 million acres in the desert regions of Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino, and San Diego Counties. The DRECP includes two types of recreation designations: SRMAs and Extensive Recreation Management Areas. The Proposed Project is located entirely within the DRECP Plan Area and within and adjacent to one SRMA (the ISD SRMA), as described in Section 5.16.1.1.1, Federal Lands (BLM 2015).

The Wilderness Act of 1964

The Wilderness Act of 1964 (Wilderness Act; 16 USC Ch. 23) defines "wilderness" as an area where "the earth, and its community of life, are untrammeled by man and where man himself is a visitor who does not remain." This act also established the National Wilderness Preservation System (NWPS) that coordinates the wilderness activities of four federal agencies: the U.S. Forest Service, BLM, National Park Service, and USFWS. The NWPS provides a system by which land is evaluated and can be added to the list of wilderness areas. With some exceptions (e.g., existing private rights), the Wilderness Act prohibits motorized equipment or mechanized transport in designated wilderness areas, timber harvest, or development. The Proposed Project does not cross a wilderness area.

Northern and Eastern Colorado Desert Coordinated Management Plan

The Northern and Eastern Colorado Desert Coordinated Management Plan provides a comprehensive framework for ecosystem management and a single landscape basis for ecosystem management for three Federal land administering agencies within the planning area of 5.5 million acres of BLM administered lands in southeastern California. The plan is managed by BLM Field Offices in Needles, Palm Springs and South Coast, and El Centro. Within the Proposed Project area, these lands include several vehicle routes designated as open maintained dirt or unmaintained dirt that provide connectivity to the ISD SRMA. This plan provides reserve management for the desert tortoise, integrated ecosystem management for special status species and natural communities for all federal lands, and regional standards and guidelines for public land health for BLM lands (BLM 2002).

ISD Recreation Area Management Plan

The ISD Recreation Area Management Plan establishes management decisions for visual resources, areas of critical environmental concern, recreation, camping, land tenure, and off highway vehicles and other motorized use resources within the BLM administered ISD SRMA in southeastern Imperial County, California (BLM 2013).

Yuma Resource Management Plan

The Yuma Resource Management Plan establishes management decisions for 1.3 million acres of BLM administered lands in southwestern Arizona and southeastern California. Within the Proposed Project area, these lands include Betty's Kitchen National Recreation Trail and the Mittry Lake Wildlife Area. These properties are managed by the BLM Yuma Field Office. The plan provides an optimal balance between authorized resource uses, including recreational activities, and the protection and long-term sustainability of sensitive resource values within the planning area (BLM 2013).

5.16.2.2 State of California

California Department of Parks and Recreation

The mission of DPR is to provide for the health, inspiration, and education of the people of California by helping to preserve the state's biological diversity, protecting natural and cultural resources, and creating opportunities for high-quality outdoor recreation. DPR manages 280 state parks, including the Heber Dunes SVRA in the Proposed Project area.

5.16.2.3 State of Arizona

Arizona Game and Fish Department

The Arizona Game and Fish Department is an Arizona state agency with a mission to conserve Arizona's wildlife resources and manage for safe, compatible outdoor recreation opportunities (Arizona Fish and Game Department 2025). The Mittry Lake Wildlife Area is administered by BLM, USBR, and Arizona Game and Fish Department.

5.16.2.4 Local

The California Public Utilities Commission (CPUC) has sole and exclusive state jurisdiction over the siting and design of the Proposed Project in California. Pursuant to CPUC General Order 131-E, Section XI.B:

> "[L]ocal jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the Commission's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters."

Consequently, local agencies do not have jurisdiction over the Proposed Project, but public utilities must consult with local agencies and consider their regulations.

The Arizona Corporation Commission's Arizona Power Plant and Transmission Line Siting Committee has state jurisdiction over the Proposed Project in Arizona. This committee may approve or deny a

Certificate of Environmental Compatibility application and impose reasonable conditions. However, pursuant to Arizona Revised Statutes Section 40-360.06(D):

> "Any certificate granted by the committee shall be conditioned on compliance by the applicant with all applicable ordinances, master plans and regulations of the state, a county or an incorporated city or town, except that the committee may grant a certificate notwithstanding any such ordinance, master plan or regulation, exclusive of franchises, if the committee finds as a fact that compliance with such ordinance, master plan or regulation is unreasonably restrictive and compliance therewith is not feasible in view of technology available."

As this Proponent's Environmental Assessment is being prepared for the CPUC, the following discussion of local land use regulations in California and Arizona is provided for informational purposes only.

Imperial County General Plan

The Parks and Recreation Element of the Imperial County General Plan (Imperial County 1993) establishes a framework for the stewardship of county parks and other recreational amenities that enhance the quality of life of county residents and visitors. Pertinent factors, such as existing park conditions, funding sources, and anticipated recreational needs, are identified within this document. In response to these factors, goals, and policies, an implementation plan has been established to guide the development and long-term maintenance of a park system within the county.

Yuma County 2030 Comprehensive Plan

The Recreational Resources Element of the Yuma County 2030 Comprehensive Plan posits that recreation whether in its passive or active form, is essential to the maintenance of the human body in a physical, emotional, educational and spiritual sense (Yuma County 2023). This element states that it is essential that Yuma County commit to prioritizing the maintenance of existing recreational facilities and the development of new ones as time passes and as Yuma County continues to grow in population. Yuma County seeks to maintain, enhance, and develop recreation opportunities through these policies and priorities:

RRPP.3: Adopt policies and regulations that encourage the development of parks and recreational facilities.

RRPP.6: Yuma County will work at partnering with Marine Corps Air Station-Yuma, Bureau of Reclamation, BLM, Arizona State Land Department, Cocopah Indian Nation, irrigation districts, school districts and other governmental entities in promoting the maintenance of existing parks and the establishment of new parks.

RRPP.8: Yuma County will work to identify ideal locations for parks, recreational facilities, and trails.

RRPP.9: Encourage and work with all relevant parties to complete specific parks and recreational projects that have been suggested by and identified as highly desirable by Yuma County citizens.

RRPP.18: Work with the Marine Corps Air Station to keep the authorized recreational trails on the Barry M. Goldwater Range open to the general public in such a way as to protect the natural environment.

RRPP.19: Keep the northern Mohawk Mountains open.

RRPP.21: Work with local Native American nations to better identify culturally sensitive lands.

RRPP.22: Protect culturally sensitive historical sites.

RRPP.28: Designate government owned property along the Colorado River Open Space and Recreational Resources or as Sensitive Areas and Resource Lands.

City of Calexico General Plan

The Parks and Recreation Element of the City of Calexico General Plan establishes a vision for community parks and recreation that will ensure their adequate development in a way that reflects the needs of the residents of the city (City of Calexico 2015). Project-relevant parts of this vision include:

- Ensuring an appropriate balance of new development and associated services.
- Enhancing the overall quality of the city and therefore increases the city's desirability as a place to invest, possibly strengthening the local economy.
- Fostering inter-governmental agency partnerships and cooperation, especially with the local school district.

5.16.3 Impact Questions

5.16.3.1 Recreation Impact Questions

The thresholds of significance for assessing impacts come from the California Environmental Quality Act (CEQA) Environmental Checklist. For recreation resources, the CEQA Checklist asks, would the project:

- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?
- Include recreational facilities, or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

5.16.3.2 Additional CEQA Impact Questions

The CPUC has identified additional CEQA significance criteria. These additional CEQA significance criteria ask, would the project:

- Reduce or prevent access to a designated recreation facility or area?
- Substantially change the character of a recreational area by reducing the scenic, biological, cultural, geologic, or other important characteristics that contribute to the value of recreational facilities or areas?
- Damage recreational trails or facilities?

5.16.4 Impact Analysis

5.16.4.1 Recreation Impact Analysis

5.16.4.1.1 Recreation Methodology

Parks and recreation areas within or adjacent to the Proposed Project were identified by reviewing general plans and other documents developed by the Imperial County, city of Calexico, and Yuma

County, along with BLM and DPR land management documents. The Proposed Project and 0.5-mile buffer was overlain on these resources to identify potential impacts from the construction and operation of the Proposed Project.

5.16.4.1.2 Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Construction

Project Components in California

No Impact. Typically, the use of parks and recreational facilities is tied to population. As population increases, so does the use of such facilities. As discussed in Section 5.14, Population and Housing, the Proposed Project would not directly or indirectly induce substantial population growth. As discussed in Chapter 3, Proposed Project Description, HWT anticipates between approximately 6 to 154 construction personnel working on the Proposed Project on any particular day. During construction, construction workers may choose to visit parks and recreational facilities during non-work periods. However, any influx in the use of existing parks and recreational areas would be temporary during the 19-month construction period. Construction of the Proposed Project would have no substantive impact on the use of existing parks or other recreational facilities and would therefore not contribute to accelerated physical deterioration of the recreational facility. No impact would occur.

Project Components in Arizona

No Impact. For the same reasons as described under "Project Components in California," construction of the Proposed Project would have no substantive impacts on the use of existing parks and recreational facilities and would therefore not contribute to accelerated physical deterioration of the facility. Any influx in the use of existing neighborhood and regional parks and recreational areas would be temporary and only last the duration of construction of the Proposed Project which would not be long enough to cause physical deterioration or accelerate any existing deterioration. No impact would occur.

Overall Project

No Impact. Construction of the Proposed Project would have no substantive impact on the use of existing neighborhood and regional parks and recreational facilities and would therefore not contribute to accelerated physical deterioration of the facility. Any influx in the use of existing neighborhood and regional parks and recreational areas would be temporary and only last the duration of construction of the Proposed Project which would not be long enough to cause physical deterioration or accelerate any existing deterioration. Upon the completion of construction, the surrounding area would be restored to preconstruction conditions. Therefore, no impact would occur.

Operation

Project Components in California

Less than Significant Impact. Following construction of the Proposed Project, Project operation would involve operation and maintenance (O&M) activities such as monthly and annual inspections, equipment testing, repair work, brush and weed control, and access road maintenance. O&M work would not be growth inducing and would not directly increase demand for parks or recreational facilities.

Operation of the Proposed Project could have minor impacts on park visitation by creating additional unauthorized access to recreation areas via access roads and clearing vegetation within the Proposed Project right-of-way (ROW). While this type of access is prohibited there is precedent for this kind of behavior, especially in areas where off-highway vehicles are more common. While this may provide more access points to recreation areas, it is not likely that this would have a significant impact on facility deterioration. Although there would be a permanent right-of-way (ROW) left after construction for the transmission line, the remaining workspace area would be restored to preconstruction conditions. The amount of land that would be required to maintain the new ROW would not impact the current conditions of the existing parks and recreational areas, including public lands, Imperial Sand Dunes SRMA, or Heber Dunes SVRA. This impact would be less than significant.

Project Components in Arizona

Less than Significant Impact. Similar to operation in California, operation of the Proposed Project in Arizona would not directly increase use of existing neighborhood and regional parks and recreational areas and would therefore not contribute to accelerated physical deterioration of the associated facilities. Although there would be a permanent ROW left after construction for the transmission line, the remaining workspace area would be restored to preconstruction conditions. The amount of land that would be required to maintain the new ROW would not impact existing neighborhood and regional parks and recreational areas. Less than significant impacts would occur to public lands, Mittry Lake Wildlife Area, and Betty's Kitchen.

Overall Project

Less than Significant Impact. Operation of the Proposed Project would have no substantive impacts on the use of existing neighborhood and regional parks and recreational areas and would therefore not contribute to accelerated physical deterioration of the facility. Although there would be a permanent ROW left after construction for the transmission line, the remaining workspace area would be restored to preconstruction conditions. While the presence of new ROW may provide more access points to recreation areas, it is not likely that this would have a significant impact on facility deterioration, and this impact would be less than significant.

5.16.4.1.3 Would the project include recreational facilities, or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

Construction

Project Components in California

No Impact. As described in the discussion under Section 5.16.4.1.2, construction of the Proposed Project would not result in a population increase. Because use of recreational facilities is generally proportional to population, the Proposed Project would not require the construction or expansion of recreational facilities. Therefore, there would be no adverse physical effect on the environment from the construction or expansion of recreational facilities. No impact would occur.

Project Components in Arizona

No Impact. Construction of the Proposed Project would not result in a population increase and would not require the construction or expansion of recreational facilities. Therefore, there would be no adverse physical effect on the environment from the construction or expansion of recreational facilities. No impact would occur.

Overall Project

No Impact. Construction of the Proposed Project would not result in a population increase and would not require the construction or expansion of recreational facilities. Therefore, there would be no adverse physical effect on the environment from the construction or expansion of recreational facilities. No impact would occur.

Operation

Project Components in California

No Impact. As described in the discussion under Section 5.16.4.1.2, operation of the Proposed Project would involve increased maintenance activities and trips but would not result in a population increase. Because use of recreational facilities is generally proportional to population, the Proposed Project would not require the construction or expansion of recreational facilities. Therefore, there would be no adverse physical effect on the environment from the construction or expansion of recreational facilities. No impact would occur.

Project Components in Arizona

No Impact. Operation of the Proposed Project would not result in a population increase and would not require the construction or expansion of recreational facilities. Therefore, there would be no adverse physical effect on the environment from the construction or expansion of recreational facilities. No impact would occur.

Overall Project

No Impact. Operation of the Proposed Project would not result in a population increase and would not require the construction or expansion of recreational facilities. Therefore, there would be no adverse physical effect on the environment from the construction or expansion of recreational facilities. No impact would occur.

5.16.4.1.4 Would the project reduce or prevent access to a designated recreation facility or area?

Construction

Project Components in California

Less than Significant Impact with Mitigation. As discussed in Chapter 3, construction of the Proposed Project includes the use of access roads that also provide access to public lands throughout the Proposed Project area. Additionally, overhead conductor/cable installation activities could require temporary road closures, including roads used to access recreational areas in California such as the Heber Dunes SVRA or the Imperial Sand Dunes SRMA.

However, given that construction in any one location would occur for a short time and not for the entire 19-month construction duration, any access restrictions and closures would be temporary and localized in the area of construction work. While construction activities may temporarily limit access to recreation areas in these locations, the recreation areas themselves would not require closure. Similarly, the Proposed Project may involve construction activities in or near OHV parks or in the vicinity of dirt roads that are used by OHVs. Access to these areas may be temporarily restricted in the vicinity of active construction due to the use of temporary construction workspaces and installation of permanent access roads. To reduce the potential impacts associated with access restrictions to these recreation areas and facilities, HWT would implement Applicant Proposed Measure (APM) REC-1. APM REC-1 would require HWT to coordinate with recreation facility managers prior to any temporary access restrictions to ensure that recreational users are aware of upcoming restrictions and can still access the recreational area through the use of alternative roads. Any access restrictions on roads to designated recreation facilities or areas would be temporary and alternative access options would be communicated to the public. The Proposed Project does not involve permanent road closures or project features that would permanently prevent or reduce access to a recreational area. This impact would be less than significant with mitigation.

Project Components in Arizona

Less than Significant Impact with Mitigation. As discussed above for Project Components in California, construction activities for project components in Arizona could require temporary closures of roads, including roads used to access recreational areas in Arizona such as public lands, Mittry Lake Wildlife Area, or Betty's Kitchen. However, with implementation of APM REC-1, this impact would be less than significant with mitigation.

Overall Project

Less than Significant Impact with Mitigation. As discussed in Chapter 3, Proposed Project Description, construction activities could require temporary road closures of roads, including roads used to access recreational areas. While construction activities may temporarily limit access to recreation areas in these locations, the recreation areas themselves would not require closure. As part of APM REC-1, HWT would coordinate with facility managers and alternative options for accessing recreational areas or facilities would be communicated to the public. The Proposed Project would not involve permanent road closures or project features that would permanently prevent or reduce access to a recreational area. This impact would be less than significant with mitigation.

Operation

Project Components in California

Less than Significant Impact. The portion of the Proposed Project in California would result in a nominal increase in O&M activities, such as increased maintenance and inspection trips. It is unlikely that O&M activities for the Proposed Project would result in access restrictions and/or road closures as the Project would largely be accessed by the Proposed Project's access roads. Should O&M activities for the Proposed Project require access restrictions and/or road closures to allow for O&M work to occur safely, these closures would be temporary and localized in the area of active O&M work. Therefore, access impacts during O&M associated with recreational facilities in California including public lands, Imperial Sand Dunes SRMA, or Heber Dunes SVRA would be less than significant.

Project Components in Arizona

Less than Significant Impact. The portion of the Proposed Project in Arizona would result in a nominal increase in O&M activities, such as increased maintenance and inspection trips. It is unlikely that O&M activities for the Proposed Project would result in access restrictions and/or road closures as the Project would largely be accessed by the Proposed Project's access roads. Should O&M activities for the Proposed Project require access restrictions and/or road closures to allow for O&M work to occur safely, these closures would be temporary and localized in the area of active O&M work. Therefore, access impacts during O&M associated with recreational facilities in Arizona, including public lands, Mittry Lake, or Betty's Kitchen would be less than significant.

Overall Project

Less than Significant Impact. The Proposed Project would result in a nominal increase in O&M activities, such as increased maintenance and inspection trips. It is unlikely that O&M activities for the Proposed Project would result in access restrictions and/or road closures as the Project would largely be accessed by the Proposed Project's access roads. Should O&M activities for the Proposed Project require access restrictions and/or road closures to allow for O&M work to occur safely, these closures would be temporary and localized in the area of active O&M work. Operation of the Proposed Project would have a less than significant impact associated with access to recreational facilities.

5.16.4.1.5 Would the project substantially change the character of a recreational area by reducing the scenic, biological, cultural, geologic, or other important characteristics that contribute to the value of recreational facilities or areas?

Construction

Project Components in California

Less than Significant Impact with Mitigation. The portion of the Proposed Project in California crosses recreational lands including Heber Dunes SVRA, Imperial Sand Dunes SMRA, and other public lands managed by the BLM that are or may be used for recreation. Within these recreational areas, the Proposed Project would include new transmission structures, development of new access road(s), improvement to existing roads, vegetation removal, and temporary pull/tension sites. The

potential effects of Project construction on scenic, biological, cultural, geologic, or other important characteristics are presented in detail in Section 5.1, Aesthetics; Section 5.4, Biological Resources; Section 5.5, Cultural Resources; and Section 5.7, Geology, Soils, and Paleontological Resources.

As determined in Section 5.1, Aesthetics, construction activity would be noticeable from local, dispersed residents, motorists, and recreation site users. Construction-related visual impacts resulting from the temporary presence of equipment, materials, and work crews along the Project alignment, staging and work areas, and stringing sites would not substantially degrade the existing visual character of the landscape because these would be located in areas that are previously disturbed or developed and impacts would be short in duration. While overall construction activities would be visible for a period of many months, individual activities would be considerably shorter in duration at any one location. Because construction impacts are temporary, of short duration in any one area, and generally located away from sensitive viewers, impacts will be less than significant.

As discussed in Section 5.4, Biological Resources, Project construction would have the potential to impact biological resources along the Proposed Project route, including in areas where the route traverses areas used for recreation activities. As determined in Section 5.4, all potential impacts to biological resources would be reduced to a less than significant level with adherence to APMs BIO-1 through BIO-12, including but not limited to adherence to biological survey and monitoring requirements, provision of a Worker's Environmental Awareness Training Program, and implementation of various species-specific measures.

As identified in Section 5.5, Cultural Resources, construction activities requiring ground disturbance could potentially disturb buried cultural deposits or archaeological sites. Any resources with potential to be affected are currently undiscovered and do not contribute to the existing recreational setting. Additionally, adherence to APM CUL-1 and APM CUL-2 would minimize potential impacts to cultural and historical resources in the region through regulatory compliance and implementation of responsible resource management practices.

Similarly, as identified in Section 5.7, Geology, Soils, and Paleontological Resources, direct impacts to paleontological resources could result from ground-disturbing activities (i.e., grading, excavating, trenching) in undisturbed sediments or geologic units with paleontological sensitivity. Any resources with potential to be impacted are currently undiscovered and do not contribute to the existing recreational setting. Further, as discussed in Section 5.7, impacts to paleontological resources would be reduced to a less-than-significant level with incorporation of APM PAL-1 through APM PAL-4.

The construction activities associated with the Proposed Project would not substantially change the character of nearby recreational areas. With adherence to required project specific APMs and mitigation measures, as introduced in Section 5.1, Aesthetics; Section 5.4, Biological Resources; Section 5.5, Cultural Resources; and Section 5.7, Geology, Soils, and Paleontological Resources, impacts with the potential to occur during construction activities would be less than significant.

Project Components in Arizona

Less than Significant Impact with Mitigation. The portion of the Proposed Project in Arizona crosses recreational lands, including Mittry Lake and other public lands managed by both BLM and USBR. Within these recreational areas, the Proposed Project would include new transmission structures, improvements to existing roads, vegetation removal, temporary guard sites, and temporary pull/tension sites. As presented in Section 5.1, Aesthetics; Section 5.4, Biological Resources; Section 5.5, Cultural Resources; and Section 5.7, Geology, Soils, and Paleontological Resources, the Proposed Project would not substantially change the character of any recreational area as no

significant and unavoidable impacts to these resource areas have been identified at this time. With adherence to the Project specific APMs and mitigation measures described above, construction activities associated with the Proposed Project would not substantially change the character of nearby recreational areas. Impacts related to Project construction in Arizona would be less than significant.

Overall Project

Less than Significant Impact with Mitigation. The Proposed Project is located within and adjacent to lands managed by the BLM, USBR, and other public agencies that are or may be used for recreation. As presented in Section 5.1, Aesthetics; Section 5.4, Biological Resources; Section 5.5, Cultural Resources; and Section 5.7, Geology, Soils, and Paleontological Resources, the Proposed Project would not substantially change the character of any recreational area as no significant and unavoidable impacts to these resource areas have been identified at this time. With adherence to the Projectspecific APMs and mitigation measures described above, construction activities associated with the Proposed Project would not substantially change the character of nearby recreational areas. Impacts related to overall Project construction would be less than significant.

Operation

Project Components in California

Significant and Unavoidable Impact. The portion of the Proposed Project in California would result in a nominal increase in O&M activities, such as increased maintenance and inspection trips as well as permanently introducing structures associated with a 500 kV transmission line to the landscape. Important environmental characteristics that contribute to the value of recreational facilities or areas, and potential impacts to these resources, are described in Section 5.1, Aesthetics; Section 5.4, Biological Resources; Section 5.5, Cultural Resources; and Section 5.7, Geology, Soils, and Paleontological Resources.

As identified in Section 5.4, Biological Resources, no significant and unavoidable operational impacts to biology have been identified at this time. O&M activities would be minimal and infrequent and HWT would implement existing Best Management Practices (BMPs). As such, no additional mitigation would be required during Project operation. Operational impacts to biology, including within established recreational areas along the Proposed Project route, would be less than significant.

As determined in Section 5.7, Geology, Soils, and Paleontological Resources, O&M activities would not involve substantial ground disturbance or installation of new features that would result in damage to unique paleontological resources or sites. There would be no operational impact to geologic or paleontological characteristics that contribute to the value of recreational facilities or areas.

As identified in Section 5.5, Cultural Resources, O&M activities may impact archaeological resources if O&M activities take place in undisturbed areas, areas that were not included in the field surveys, or in areas with undiscovered archaeological resources. As with potential construction impacts, any resources with potential to be affected by operation are currently undiscovered and do not contribute to the existing recreational setting. Additionally, adherence to APM CUL-1 and APM CUL-2 would minimize potential impacts to cultural and historical resources in the region through regulatory compliance and implementation of responsible resource management practices.

As discussed in Section 5.1, Aesthetics, implementation of the Project would have significant and unavoidable impacts to the existing visual character or quality of public views in various locations along the Proposed Project route. These impacts would occur in areas where immediate foreground and foreground views of moderate to strong contrasts would be non-compliant with the BLM's established Visual Resource Management (VRM) system guidelines. Impacts related to increases in visual contrast could affect views from recreational sites in and around the Imperial Sand Dunes, from the Tamarisk Long Term Visitor Area, and from Heber Dunes SVRA and designated recreational travel corridors in California. The implementation of APM AES-1, AES-3, AES-4, and AES-5 would reduce impacts from some portions of the line, including in the Heber Dunes SVRA, but strong Project contrasts as seen in the immediate foreground would result in significant and unavoidable impacts around the Imperial Sand Dunes and from the Tamarisk Long Term Visitor Area.

As described above, implementation of the Proposed Project would introduce strong visual contrast along the Proposed Project route, including within established recreational areas. Though Project operation would not result in significant impacts to biological, cultural, geologic, or other important characteristics that contribute to the value of recreational facilities or areas, significant scenic impacts would result in a significant and unavoidable impact at recreational resources including Imperial Sand Dunes and from the Tamarisk Long Term Visitor Area.

Project Components in Arizona

Significant and Unavoidable Impact. The portion of the Proposed Project in Arizona would result in a nominal increase in O&M activities, such as increased maintenance and inspection trips as well as permanently introducing structures associated with a 500 kV transmission line to the landscape. Important environmental characteristics that contribute to the value of recreational facilities or areas, and potential impacts to these resources, are described in Section 5.1, Aesthetics; Section 5.4, Biological Resources; Section 5.5, Cultural Resources; and Section 5.7, Geology, Soils, and Paleontological Resources.

As presented in Section 5.4, Biological Resources; Section 5.5, Cultural Resources; and Section 5.7, Geology, Soils, and Paleontological Resources, operation of Project components in Arizona, similar to those in California, discussed above, would not substantially alter the existing biological, cultural, geologic, or other important characteristics that contribute to the value of recreational facilities or areas as no significant and unavoidable impacts to these resource areas have been identified at this time. Impacts related to these resources in Arizona would be less than significant.

As discussed in Section 5.1, Aesthetics, and above, implementation of the Project would have significant and unavoidable impacts to the existing visual character or quality of public views in various locations along the Proposed Project route. In Arizona, views from recreational sites in and around Mittry Lake would generally be from the middleground and background, and under some conditions, partially or fully screened by topography and/or vegetation. The implementation of APM-AES-1, AES-3, AES-4, and AES- would reduce impacts from some portions of the line. Implementation of the Proposed Project in Arizona would introduce significant and unavoidable visual impacts from certain identified viewpoints, including certain views from recreational sites in and around Mittry Lake. Implementation of APM-AES-1, AES-3, AES-4, and AES-5 would reduce impacts from some portions of the line, but VRM Class II objectives would not be met and strong visual contrasts as seen in the immediate foreground would result in significant unavoidable impacts at Mittry Lake.

As described above, implementation of the Proposed Project would introduce strong visual contrast along the Proposed Project route, including within established recreational areas. Though Project operation would not result in significant impacts to biological, cultural, geologic, or other important characteristics that contribute to the value of recreational facilities or areas, significant scenic impacts would result in a significant and unavoidable impact at recreational resources including Mittry Lake.

Overall Project

Significant and Unavoidable Impact. The Proposed Project would result in a nominal increase in O&M activities, such as increased maintenance and inspection trips as well as permanently introducing structures associated with a 500 kV transmission line to the landscape. As discussed in Section 5.4, Biological Resources; Section 5.5, Cultural Resources; and Section 5.7, Geology, Soils, and Paleontological Resources, while the Proposed Project would require additional O&M work, these activities would not substantially change the character biological, cultural, geologic, or other important characteristics that contribute to the value of recreational facilities or of any given recreational area as no significant and unavoidable impacts to these resource areas have been identified at this time.

As described above, the Proposed Project route crosses VRM Class II and Class III areas where immediate foreground and foreground views of moderate to strong contrasts would occur and the Project would be non-compliant with the VRM designations. The implementation of APMs AES-1, AES-3, AES-4, and AES-5 mitigation would reduce the impact of the Project, but VRM Class II objectives would not be met, and scenic characteristics that contribute to the value of recreational facilities or areas would be impacted. Significant and unavoidable impacts would occur at recreational resources including Imperial Sand Dunes, the Tamarisk Long Term Visitor Area, and Mittry Lake. .

5.16.4.1.6 Would the project damage recreational trails or facilities?

Construction

Project Components in California

Less than Significant Impact. The portion of the Proposed Project in California crosses recreational lands including Heber Dunes SVRA, Imperial Sand Dunes SMRA, and other public lands. Within these recreational areas, the Proposed Project would include new transmission structures, development of new access road(s), improvement to existing roads, vegetation removal, and temporary pull/tension sites. Proposed Project construction activities would have the potential to temporarily disturb recreational trails, including formal and informal OHV routes on public lands. Proposed Project construction would not directly damage any recreational facilities, such as bathrooms, picnic areas, or information centers. The nearest recreational facilities to the project alignment in the Imperial Sand Dunes SMRA is a day use site located 235 feet (0.04 mile) to the north and the nearest recreational facilities within the Heber Dunes SVRA is a shade ramada located 1,372 feet (0.26 mile) northeast of the Proposed Project alignment.

For any trails impacted by the Project, as discussed in Chapter 3, Proposed Project Description, the Project would restore the impacted area to its preconstruction condition by reseeding to restore vegetation and by repairing any infrastructure, such as roads or trails, damaged during construction.

Construction of the Proposed Project would not permanently damage recreational trails or facilities and impacts would be less than significant.

Project Components in Arizona

Less than Significant Impact. The portion of the Proposed Project in Arizona crosses recreational lands, including Mittry Lake and other public lands. Within these recreational areas, the Proposed Project would include new transmission structures, improvements to existing roads, vegetation removal, temporary guard sites, and temporary pull/tension sites. The Proposed Project would not damage recreational trails, as the nearest is located more than 0.5-mile east of the Proposed Project alignment, nor would the Proposed Project damage facilities, as the nearest (a campground) is located approximately 0.3 miles west of the Proposed Project alignment. This impact would be less than significant.

Overall Project

Less than Significant Impact. As detailed above, the Proposed Project would not permanently damage recreational trail or facilities. Therefore, this impact would be less than significant.

Operation

Project Components in California

No Impact. The Proposed Project's O&M activities would occur within the Project ROW or access roads and would not result in damage to recreational trails or facilities. Therefore, there would be no adverse physical effect on the environment, and no impact would occur.

Project Components in Arizona

No Impact. The Proposed Project's O&M activities would occur within the Project ROW or access roads and would not result in damage to recreational trails or facilities. Therefore, there would be no adverse physical effect on the environment, and no impact would occur.

Overall Project

No Impact. The Proposed Project's O&M activities would occur within the Project ROW or access roads and would not result in damage to recreational trails or facilities. Therefore, there would be no adverse physical effect on the environment, and no impact would occur.

5.16.4.2 Impact Details

As described above, the portion of the Proposed Project in California crosses recreational lands including Heber Dunes SVRA, Imperial Sand Dunes SMRA, and other public lands. The portion of the Proposed Project in Arizona crosses recreational lands, including Mittry Lake and other public lands. Within these recreational areas, the Proposed Project would include new transmission structures, improvements to existing roads, vegetation removal, temporary guard sites, and temporary pull/tension sites.

The Proposed Project would have no substantive impacts on the use of existing neighborhood and regional parks and recreational areas which would contribute to accelerated physical deterioration of the facility, would not result in a population increase which would require the construction or expansion of recreational facilities, and would not involve permanent road closures or project features that would permanently prevent or reduce access to a recreational area.

While the Proposed Project would not permanently damage recreational trail or facilities, it would introduce new moderate and strong visual contrasts, as visible from in and around existing recreational areas. In particular, in certain areas where the Proposed Project route crosses designated BLM VRM areas, immediate foreground and foreground views of moderate to strong contrasts would occur and the Project would be non-compliant with the VRM designations. Impacts related to increases in visual contrast could affect views from recreational sites in and around the Imperial Sand Dunes, from the Tamarisk Long Term Visitor Area, and from Heber Dunes SVRA and designated recreational travel corridors in California and views from recreational sites in and around Mittry Lake in Arizona. The implementation of APMs AES-1, AES-3, AES-4, and AES-5 would reduce the impact of the Project, including at the Heber Dune SVRA, but VRM objectives would not be met, and scenic characteristics that contribute to the value of recreational facilities or areas would be impacted. Significant and unavoidable impacts would occur, impacting the scenic quality of existing recreational resources along the Proposed Project route at Imperial Sand Dunes, the Tamarisk Long Term Visitor Area, and Mittry Lake.

5.16.5 CPUC Draft Environmental Measures

No additional CPUC Draft Mitigation Measures are proposed for recreation.

5.16.5.1 Applicant Proposed Measures

The following APM would be implemented to reduce recreation impacts associated with the Proposed Project:

- **REC-1:** HWT would coordinate closures of recreational facilities, trails, or access roads to recreational facilities with the facility owners/managers if closures are required during construction.

5.16.5.1.1 Cross Referenced Applicant Proposed Measures

The following APMs from Section 5.1, Aesthetics, 5.4, Biological Resources, and 5.5, Cultural Resources, would be implemented to reduce recreation impacts associated with the Proposed Project:

- **AES-1:** Vegetation removal would be minimized to the greatest extent feasible to allow for the safe construction and operation of the facilities and to minimize potentially significant visual impacts resulting from land scars.
- **AES-3:** Non-specular conductors would be used to reduce visual impacts.
- **AES-4:** “Dulled” galvanized steel or self-weathering finish structures would be used to reduce visual impacts.
- **AES-5:** Match Spans - Standard tower design would be modified to correspond with spacing of existing transmission line structures where feasible, and within limits of standard tower design. The typical span would be modified to correspond with existing structures, but not necessarily at every location. This would reduce visual contrast and/or potential operational conflicts.

- **BIO-1: Worker's Environmental Awareness Training Program (WEAP)**

  All workers on the Proposed Project site shall be required to attend a Worker's Environmental Awareness Training Program (WEAP). Training shall inform all construction personnel of the resource protection and avoidance measures as well as procedures to be followed upon the discovery of environmental resources. The WEAP training shall include, at a minimum, the following topics so crews will understand their obligations:

  - ESA boundaries
  - Housekeeping (Trash and equipment cleaning)
  - Safety
  - Work stoppage
  - Communication Protocol
  - Consequences of non-compliance

- **BIO-2: Pre-construction Biological Clearance Surveys and Monitoring**

  Pre-construction clearance surveys shall be performed by a qualified biologist (i.e., a biologist with the requisite education and experience to address specific resources), to avoid or minimize impacts on special-status plants and wildlife species, habitat, nesting birds and other sensitive biological resources in areas with the potential for resources to be present. Sensitive resources identified during the clearance survey shall be either:

  - flagged for avoidance;
  - moved to outside impact areas;
  - avoided by implementing procedures to avoid impacts to individuals while impacting habitat (e.g., burrows, dens, etc.);
  - or documented based on permit authorizations.

  Specific details on the pre-construction survey requirements may be found within measures for each individual species. The construction area shall be flagged and staked, and vegetation to be avoided within the construction area shall be flagged to minimize impacts, where feasible.

  Where special-status species (e.g., reptiles, birds, mammals, and bat roosts) or unique resources (defined by regulations and local conservation plans) are known to occur and there is a potential for significant impacts, qualified biologists shall monitor construction activities to ensure that impacts to special-status species, sensitive vegetation types, wildlife habitat, and unique resources are avoided and minimized.

- **BIO-3: Nesting Bird Management Plan**

  HWT shall prepare a Nesting Bird Management Plan (NBMP) in coordination with the CPUC, Bureau of Land Management (BLM), CDFW, and USFWS. The NBMP shall describe methods to minimize potential Proposed Project effects to nesting birds and avoid any potential for unauthorized take. Proposed Project-related disturbance including construction and pre-construction activities shall not proceed within buffer distances of active nests as specified by a qualified biologist until approval of the NBMP by the CPUC and BLM in consultation with the CDFW and USFWS.

NBMP Content. The NBMP shall include: (1) definitions of default nest avoidance buffers for each species or group of species, depending on characteristics and conservation status for each species; (2) a notification procedure for buffer distance reductions should they become necessary; (3) a rigorous monitoring protocol, including qualifications of monitors, monitoring schedule, and field methods, to ensure that any Proposed Project-related effects to nesting birds shall be minimized; and (4) a protocol for documenting and reporting any inadvertent contact or effects to birds or nests. The paragraphs below describe the NBMP requirements in further detail.

Background. The NBMP shall include the following:

1. A summary of applicable state and federal laws and regulations, including definition of what constitutes a nest or active nest under state and federal law.
2. A procedure for amendment of the NBMP, should there be changes in applicable state or federal regulations.
3. A list of bird species potentially nesting on or near the ROW or other work areas, indicating approximate nesting seasons, nesting habitat, typical nest locations (e.g., ground, vegetation, structures, etc.), tolerance to disturbance (if known) and any conservation status for each species. This section shall also note any species that do not require avoidance measures (e.g., rock pigeons).
4. A list of the types of Proposed Project construction activities that may occur during nesting season, with a short description of the noise and physical disturbance resulting from each activity.
5. Clearing of any vegetation, site preparation in open or barren areas, or other Proposed Project-related activities that may adversely affect breeding birds shall be scheduled outside the nesting season, as feasible.

Pre-construction Nest Surveys. Pre-construction nest surveys shall be conducted prior to any construction activities scheduled during the breeding period. For the Proposed Project, the breeding period shall be defined as January 1 through August 31. The NBMP shall describe the proposed field methods, survey timing, and qualifications of field biologists. Field biologist qualifications shall be subject to review by the CPUC and BLM. The avian biologists conducting the surveys shall be experienced bird surveyors and familiar with standard nest-locating techniques such as those described in Martin and Guepel (1993). Nest surveys shall focus on visual searches for nest locations and observations of bird activities and movement to detect nesting activity (e.g., carrying nest materials or food, territorial displays, courtship behavior). Surveys shall be conducted in accordance with the following guidelines.

1. Surveys shall cover all potential nesting habitat within the ROW or other work areas within 500 feet of these areas for raptors and 300 feet for non-raptors.
2. Pre-construction surveys shall be conducted for each work area, no longer than 10 days prior to the start of construction activity. On the first day of construction at any given site, a qualified Avian Biologist shall perform a pre-construction “sweep” to identify any bird nests or other resources that may have appeared since the 10-day survey.
3. HWT shall provide the CPUC and BLM a report describing the findings of the pre-construction nest surveys, including the time, date, and duration of the survey; identity of the surveyor(s); a list of species observed; and electronic data identifying nest locations and the boundaries of buffer zones. The electronic data set will be updated following each

preconstruction nest survey throughout the nesting season. The format and contents of this report shall be described in the draft NBMP and will be subject to review and approval by the CPUC and BLM.

Nest Buffers and Acceptable Activities. The NBMP shall specify measures to delineate buffers on the work site, to consist of clearly visible marking and signage. Buffer locations shall be communicated to the construction contractor and shall remain in effect until formally discontinued (when each nest is no longer active). In addition, the NBMP shall specify measures to ensure the buffers are observed, including a direct communication and decision protocol to stop work within buffer areas. In some cases, active nests may be found while work is underway. Therefore, the NBMP shall include a protocol for stopping ongoing work within the buffer area, securing the work site, and removing personnel and equipment from the buffer.

The NBMP shall describe proposed measures to avoid take or adverse effects to nests, such as buffer distances from active nests. These measures shall be based on the specific nature of the bird species and conservation status, and other pertinent factors. The NBMP shall identify bird species (or groups of species) that are relatively tolerant or intolerant of human activities and specify smaller or larger buffer distances as appropriate for each species. If no information is available to specify a buffer distance for a species, then the NBMP shall specify 300 feet as a standard buffer distance, and 500 feet for raptors and special-status species. Nest management for listed threatened or endangered species shall be prescribed in a USFWS Biological Opinion, CDFW Incidental Take Permit, or both. All applicable avoidance measures, including buffer distances, must be continued until nest monitoring (below) confirms that the nestlings have fledged and dispersed, or the nest is no longer active. For each special-status species potentially nesting within or near Proposed Project work areas, the NBMP shall specify applicable buffers and any additional nest protection measures, specialty monitoring, or restrictions on work activities, if needed.

The NBMP shall identify acceptable work activities within nest buffers (e.g., pedestrian access for inspection or BMP repair) including conditions and restrictions, and any monitoring required. The NBMP shall include pictorial representation showing buffer distances for ground buffers, vertical helicopter buffers, and horizontal helicopter buffers for nests near the ground and nests in towers.

Nest Buffer Modification or Reduction. At times, HWT or its contractor may propose buffer distances different from those approved in the NBMP. Buffer adjustments shall be reviewed and recommended by a qualified avian biologist, who has been approved by the CPUC and BLM in consultation with the CDFW and USFWS. The NBMP shall provide a procedure and timing requirements for notifying the CPUC, BLM, CDFW, and USFWS of any planned adjustments to nest buffers. Separate and distinct procedures shall be provided for special-status birds. The NBMP shall list the information to be included in buffer reduction notifications in a standardized format.

Nest Deterrents. The NBMP shall describe any proposed measures or deterrents to prevent or reduce bird nesting activity on Proposed Project equipment or facilities, such as buoys, visual or auditory hazing devices, bird repellents, securing of materials, and netting of materials, vehicles, and equipment. It shall also include timing for installation of nest deterrents and field confirmation to prevent effects to any active nest; guidance for the contractor to install, maintain, and remove nest deterrents according to product specifications; and periodic monitoring of nest deterrents to ensure proper installation and functioning and prevent injury

or entrapment of birds or other animals. In the event that an active nest is located on Proposed Project facilities, materials or equipment, HWT shall avoid disturbance or use of the facilities, materials or equipment (e.g., by red-tag) until the nest is no longer active.

Communication. The NBMP shall specify the responsibilities of construction monitors regarding nests and nest issues and specify a direct communication protocol to ensure that nest information and potential adverse impacts to nesting birds can be promptly communicated from nest monitors to construction monitors, so that any needed actions can be taken immediately.

The NBMP shall specify a procedure to be implemented following accidental disturbance of nests, including wildlife rehabilitation options. It also will describe any proposed measures, and applicable circumstances, to prevent take of precocial young of ground-nesting birds such as killdeer or quail. For example, chick fences may be used to prevent them from entering work areas and access roads. Finally, the NBMP shall specify a procedure for removal of inactive nests, including verification that the nest is inactive and a notification/approval and approval process prior to removal.

Monitoring. HWT shall be responsible for monitoring the implementation, conformance, and efficacy of the avoidance measures (above). The NBMP shall include specific monitoring measures to track any active bird nest within or adjacent to Proposed Project work areas, bird nesting activity, Proposed Project-related disturbance, and outcome of each nest. For nests with reduced buffers, HWT shall monitor each nest until nestlings have fledged and dispersed or until the nest becomes inactive. Nests with default buffers do not require further monitoring once construction work is completed in the area. New nests discovered after work completion in an area shall not require monitoring. In addition, monitoring shall include pre-construction surveys, daily sweeps of work areas and equipment, and any special monitoring requirements for particular activities (tree trimming, vegetation removal, etc.) or particular species (noise monitoring, etc.). Nest monitoring shall continue throughout the breeding season during each year of the Proposed Project's construction activities.

Reporting. Throughout the construction phase of the Proposed Project, nest locations, Proposed Project activities in the vicinity of nests (including helicopter traces), and any adjustments to buffer areas shall be updated and available to CPUC monitors on a daily basis. All buffer reduction notifications and prompt notifications of nest-related non-compliance and corrective actions shall be made via email to CPUC monitors. In addition, the NBMP shall specify the format and content of nest data to be provided in regular monitoring and compliance reports. At the end of each year's nest season, HWT shall submit an annual NBMP report to the CPUC, BLM, CDFW, and USFWS.

- **BIO-4: Burrowing Owl**

  Pre-construction survey. A pre-construction, focused burrowing owl survey shall be conducted no more than 30 days prior to initial start of construction within habitat to determine if any occupied burrows are present. If occupied burrows are found, adequate buffers shall be established around burrows. Adequate buffers shall be determined by a Project Avian Biologist based upon field conditions and resource agency guidelines for wintering burrows and breeding season burrows.

Conduct Surveys and Avoidance for Burrowing Owl. Burrowing owl surveys shall be conducted in accordance with the most current CDFW guidelines (CDFG, 2012; or updated guidelines as they become available). HWT shall take measures to avoid impacts to any active burrowing owl burrow within or adjacent to a work area. The default buffer for a burrowing owl burrow is 656 feet for ground construction, and 656 feet horizontal and 200 feet vertical for helicopter construction. Binocular surveys may be substituted for protocol field surveys on private lands adjacent to the Proposed Project site only when HWT has made reasonable attempts to obtain permission to enter the property for survey work but was unable to obtain such permission.

If active burrowing owl burrows are located within Proposed Project work areas that cannot be avoided, HWT shall work with CDFW to acquire an Incidental Take Permit (ITP).

- **BIO-5: Desert Tortoise**

Pre-construction Surveys/Construction Monitoring. Prior to initial ground-disturbing activities, a biological monitor under the supervision of a USFWS- or CDFW-approved biologist—with experience monitoring and handling desert tortoise—shall conduct a pre-activity survey in all work areas within potential desert tortoise habitat, plus an approximately 100-foot buffer. All desert tortoise burrows within the pre-activity survey area (including desert tortoise pallets) shall be prominently flagged at that time so that they may be avoided during work activities.

An approved biologist shall be onsite to monitor vegetation removal and grading and provide regular inspections of all other construction activities within desert tortoise habitat. The approved biologist shall have the authority to halt all non-emergency actions (as soon as safely possible) that may result in harm to the desert tortoise and shall assist in the overall implementation of APMs for desert tortoise.

In the event a desert tortoise is encountered in the work area, all work shall cease, and the approved biologist shall be contacted. Work will not commence until the animal has voluntarily moved to a safe distance away from the work area. If it does not move on its own within 15 minutes, an authorized biologist may remove and relocate the animal to a safe location if authorized under existing permit conditions. No tortoise shall be handled except under authorization from the USFWS and CDFW. Encounters with desert tortoise shall be documented and provided to the appropriate wildlife resource agencies. In the event a dead or injured desert tortoise is observed, the approved biologist will be responsible for notifying HWT's Herpetologist and reporting the incident to the wildlife resource agencies.

Avoid and Minimize Impacts. All Proposed Project activities located within areas identified as desert tortoise habitat shall implement the following avoidance and minimization measures:

1. **Under Vehicle Checks.** Desert tortoises commonly seek shade during the hottest times of the day. Employees working within the geographic range of this species will be required to check under their equipment or vehicles before they are moved. If desert tortoises are encountered, the vehicle shall not be moved until the tortoise has voluntarily moved away from the equipment or vehicle.
2. **Disposal of Trash.** Trash and food items shall be contained in closed containers and removed daily to reduce attractiveness to opportunistic predators, such as common ravens (*Corvus corax*), coyotes (*Canis latrans*), and feral dogs (*Canis lupus familiaris*).
3. **Pets Prohibited.** Employees shall not bring pets or other animals to the Proposed Project area, unless the animal is ADA compliant.

4. **Vehicle Travel.** During construction-related activities, motor vehicles shall be limited to maintained roads, designated routes, and areas identified as being permanently or temporarily affected by construction within the Proposed Project footprint. Motor vehicle speeds shall not exceed 15 miles per hour on Proposed Project-specific construction routes and temporary work areas within habitat for desert tortoise.
5. **Trapped Animal Prevention.** All auger holes, trenches, pits, or other steep-sided excavations that may pose a hazard to desert tortoise shall be either constructed with escape ramps (earthen or wooden) or securely covered when unattended to prevent entrapping animals. At the start and end of each workday, and just before backfilling, all excavations shall be inspected for trapped animals. If found, trapped animals shall be removed by the qualified biologist and relocated to outside the Proposed Project footprint, as required in all applicable permits or habitat conservation plans.

Coordinate with Agencies and Mitigation. HWT shall obtain take coverage and consult with the USFWS, CDFW, and/or land management agencies. In addition to obtaining the necessary permits and authorizations, which may include conducting protocol surveys as required by the agencies, the Proposed Project shall mitigate for temporary and permanent impacts. Mitigation ratios shall be determined based on the results of protocol surveys/habitat assessment, incorporating quality of habitat, population density, and land classification (i.e. BLM Areas of Critical Environmental Concern) into final mitigation ratios.

- **BIO-6: Develop and Implement Habitat Restoration Plan (HRP)**

  HWT shall develop and implement a Habitat Restoration Plan (HRP). Temporary impacts to regulated species' habitats, plant species, and vegetation communities shall be restored. Regulated species and vegetation communities include all species designated as threatened, endangered or rare, sensitive, or of concern by resource or land agencies. Species and vegetation communities that require restoration shall be determined by the resource agencies through the permitting process.

  HWT shall consult with appropriate agencies during development of the HRP and implement the HRP in conjunction with applicable permit conditions and mitigation measures. The HRP shall be submitted to the CPUC and BLM for review and approval prior to the start of construction. Invasive plant management shall be performed in conjunction with the HRP per the Invasive Plant Management Plan (BIO-7).

  Habitat Restoration Plan. For all restoration sites, the HRP shall include:

  1. Restoration goals and objectives based on vegetation type and jurisdictional status of each site.
  2. Quantitative restoration success criteria.
  3. Implementation details as applicable. Details may include topsoil stockpiling and handling, postconstruction site preparation, soil decompaction and recontouring, planting and seeding palettes to include only native, locally sourced materials with confirmed ability to produce from suppliers, fall or other suitable season-season planting or seeding dates.
  4. Maintenance details, which may include weeding, irrigation, or hand-watering schedule and equipment, and erosion control.

5. Monitoring and Reporting, specifying monitoring schedule and data collection methods throughout establishment of vegetation with key indicators of successful or unsuccessful progress, and quantitative criteria values to objectively determine success or failure at the conclusion of the monitoring period.
6. Adaptive management procedures such as reseeding, re-planting, drainage repairs, adjustments to irrigation schedule, and repair or remediation of sites to meet success criteria on schedule.

For species and vegetation communities with permit requirements including wetlands and riparian habitats, the goal of the HRP shall be to restore plant species, habitat values, or vegetation communities. For restoration sites, the goals, objectives, and success criteria specified in the HRP shall include native species cover and species richness compatible with the specific vegetation and habitat type.

If an unforeseen catastrophic event (e.g., flood, fire, or other event beyond HWT control) damages a restoration site within the monitoring period, HWT shall assess adjacent areas to adjust maintenance activities and success standards in coordination with the agencies. In all areas, seed and/or potted nursery stock of locally native species shall be used. The list of plants observed during botanical surveys of the Proposed Project area shall be used as a guide to site-specific plant selection, additional appropriate species may be included.

Monitoring of the restoration sites shall continue annually until HRP success criteria are achieved. HWT shall be responsible for implementing adaptive management as needed.

For all restoration areas, HWT shall provide annual reports to the CPUC and BLM to verify the total vegetation acreage subject to restoration, areas that have been completed, and areas still outstanding. The annual reports shall also include a summary of the restoration and adaptive management activities for the previous year, success criteria progress and completion, and any adjustments to planned activities, for the upcoming year.

- **BIO-7: Develop and Implement Invasive Plant Management Plan.**

  HWT shall prepare and implement an Invasive Plant Management Plan (IPMP). This plan shall include measures designed to avoid the introduction and spread of new nonnative invasive plant species (invasive plants) and minimize the spread of existing invasive plants resulting from Proposed Project activities. The IPMP must meet the BLM's requirements for NEPA disclosure and analysis if herbicide use is proposed for the Proposed Project. The IPMP shall be submitted to the CPUC and BLM for review and approval prior to the start of construction.

  For the purpose of the IPMP, invasive plants shall include plants that (1) are invasive and rated high or moderate for negative ecological impact in the California Invasive Plant Inventory Database (Cal-IPC 2025), or (2) aid and promote the spread of wildfires such as *Bromus tectorum* (cheatgrass), *Brassica tournefortii* (Sahara mustard), and Bromus *madritensis* spp. *rubens* (red brome)) or (3) are identified by the BLM as special concern. The IPMP shall be implemented throughout Proposed Project pre-construction, construction, and restoration phases.

  Invasive Plant Management Plan. The IPMP shall include the information defined in the following sections:

1. **Assessment.** An assessment of the Proposed Project's potential to cause spread or the introduction of invasive plants into new areas, or to introduce new invasive plants into the ROW. This section shall list known and potential invasive plants occurring on the ROW and in the Proposed Project region and identify threat rankings and potential for Proposed Project-related occurrence or spread for each species. This section shall identify control goals (e.g., eradication, suppression, or containment) for invasive plants of concern with potential to occur on the ROW.
2. **Pre-construction Invasive Plant Inventory.** HWT shall inventory all invasive plants of concern in areas (both within and outside the ROW) subject to Proposed Project-related vegetation removal/disturbance, "drive and crush," and ground-disturbing activity. The invasive plants inventory area shall also include vehicle and equipment access routes within the ROW and all Proposed Project staging and storage yards. Invasive plants of concern shall be mapped by area of occurrence and percent cover. The map shall be updated with new occurrences at least once a year.
3. **Pre-construction Invasive Plants Treatment.** Invasive plant infestations identified in the pre-construction invasive plants inventory shall be evaluated to identify potential for Proposed Project-related spread and potential benefits (if any) of pre-construction treatment. Pre-construction treatment shall consider the specific invasive plants, potential seed banks, or other issues. The IPMP shall identify any infestations to be controlled or eradicated prior to Proposed Project construction. Control and follow-up monitoring of pre-construction invasive plants treatment sites shall follow methods identified in appropriate sections of the IPMP.
4. **Prevention.** The IPMP shall specify methods to minimize potential transport of new invasive plant seeds onto the ROW, or from one section of the ROW to another. The ROW may be divided into "weed zones," based on invasive plants of concern in the ROW. The IPMP shall specify inspection procedures for construction equipment entering the Proposed Project area. Vehicles and equipment may be inspected and cleaned at entry points to specified sections of the ROW, and before leaving work sites where invasive plants of concern must be contained locally. Off road construction equipment shall be inspected to ensure it is free of any dirt or mud that could contain invasive plant seeds, roots, or rhizomes, and the tracks, outriggers, tires, and undercarriage shall be carefully washed, with special attention being paid to axles, frame, cross members, motor mounts, underneath steps, running boards, and front bumper/brush guard assemblies. Other construction vehicles (e.g., pick-up trucks) that shall be frequently entering and exiting the site shall be inspected and washed on an as-needed basis. Tools such as chainsaws, hand clippers, pruners, etc., shall be cleaned of dirt and mud before entering Proposed Project work areas.

   All vehicles shall be washed off-site when possible. If off-site washing is infeasible, on-site cleaning stations (including air washing) shall be set up at specified locations to clean equipment before it enters the work area. Wash stations shall be located away from native habitat or special-status species occurrences. Wastewater from cleaning stations shall not be allowed to run off the cleaning station site. When vehicles and equipment are washed, a daily log must be kept stating the location, date and time, types of equipment, methods used, and personnel present. The log shall contain the signature of the responsible crewmember. Written or electronic logs shall be available to the BLM and CPUC monitors on request.

Erosion control materials (e.g., straw bales) must be certified free of invasive plant seed ("weed-free") before they are brought onto the site. The IPMP must prohibit on-site storage or disposal of mulch or green waste that may contain invasive plant material. Mulch or green waste shall be removed from the site in a covered vehicle to prevent seed dispersal and transported to a licensed landfill or composting facility.

The IPMP shall specify guidelines for any soil, gravel, mulch, or fill material to be imported into the Proposed Project area, transported from site to site within the Proposed Project area, or transported from the Proposed Project area to an off-site location, to prevent the introduction or spread of invasive plants to or from the Proposed Project area.

5. **Monitoring.** The IPMP shall specify methods to survey for invasive plants of concern during pre-construction, construction, and restoration phases; and shall specify qualifications of specialists responsible for invasive plant monitoring and identification. It must include a monitoring schedule to ensure timely detection and immediate control of new invasive plant infestations to prevent further spread. Surveying and monitoring for invasive plant infestations shall occur at least two times per year, to coincide with the early detection period for early season and late season invasive plants. The monitoring section shall also describe methods for post-eradication monitoring to evaluate success of control efforts and any need for follow-up control.
6. **Control.** The IPMP must specify manual and chemical invasive plant control methods to be employed. The IPMP shall include only invasive plant control measures with a demonstrated record of success for target invasive plants, based on the best available information. The plan shall describe proposed methods for promptly scheduling and implementing control activity when any Proposed Project-related invasive plant infestation is located (e.g., located on a Proposed Project disturbance site), to ensure effective and timely invasive plant control. Invasive plant infestations must be controlled or eradicated as soon as possible upon discovery, and before they go to seed, or when appropriate with the goal to prevent further spread. All proposed invasive plant control methods must minimize disturbance to native vegetation, limit ingress and egress to defined routes, and avoid damage to any environmentally sensitive areas (ESAs) identified within or adjacent to the ROW. New infestations by invasive plants of concern shall be treated at a minimum of once annually until eradication, suppression, or containment goals are met. Invasive plant occurrences can be considered eradicated when no new seedlings or resprouts are observed for three consecutive years, or a single season where new seedlings or resprouts are observed in reference populations but not at the control site. Invasive plant control efforts may cease when eradication is complete.

   Manual control shall specify well-timed removal of invasive plants or their seed heads with hand tools; seed heads and plants must be disposed of in accordance with guidelines from the Imperial County and Yuma County Agricultural Commissioners if such guidelines are available.

   The chemical control section must include specific and detailed plans for any herbicide use. It must indicate where herbicides will be used, which herbicides shall be used, and specify techniques to be used to avoid drift or residual toxicity to native vegetation or special-status plants, consistent with BLM's Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States (BLM, 2007) and National Invasive Species Management Plan (NISC, 2008). All herbicide applications shall follow U.S. Environmental Protection Agency label instructions and shall be in accordance with federal, state, and local laws and regulations.

Only state and BLM-approved herbicides may be used. Herbicide treatment shall be implemented by a Licensed Qualified Applicator. Herbicides shall be applied in accordance with product labels and applicator licenses. Herbicides shall not be applied during or within 24 hours of high confidence predicted rain. Only water-safe herbicides shall be used in riparian areas or within channels (engineered or not) where they could run off into downstream areas. Herbicides shall not be applied in high wind conditions.

7. **Reporting schedule and contents.** The IPMP shall specify the reporting schedule and contents of each report.

- **BIO-8: Special-status Herbaceous Plants**

  HWT shall avoid, minimize or mitigate impacts to any state or federally listed or California Rare Plant Rank (CRPR) 1 or 2 herbaceous plants that may be located on the Proposed Project disturbance areas or surrounding buffer areas.

  Pre-construction survey. Pre-construction clearance surveys in areas where special-status plant species potentially occur shall be performed by a qualified biologist (i.e., a biologist with the requisite education and experience to address specific resources), which may be chosen from a previously approved CPUC approved biologist, to avoid or minimize impacts on special-status plants. Disturbance free buffers for special-status herbaceous species shall be 25-ft from the individual and/or occurrence boundary. These buffers shall be established from the previously conducted focused surveys and preconstruction survey results. If a smaller buffer is required, HWT shall develop and implement site-specific monitoring plan to minimize direct impacts to the species. The plan shall be submitted to the CPUC for review and approval.

  In the event of a discovery of previously undescribed species, the boundary of the occurrence (defined by CNDDB as all individuals within a ¼ mile of each other) shall be flagged, avoided, and monitored as discussed above and the CPUC, CDFW, and/or USFWS shall be notified.

  Focused Survey. For construction areas where special-status plant species potentially occur and focused surveys have not occurred, focused surveys shall take place prior to construction. Focused surveys shall be conducted consistent with methodology described in *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (CDFW 2018).

  Restoration and Mitigation. HWT shall implement the following activities; other conflicting permit conditions shall supersede the activities below.

  1. **Coordinate with Agencies.** Agencies shall approve any impacts to special-status plants. Impacts in excess of 10 percent of any occurrence, or other percentage required by agency regulations on lands under their jurisdiction, shall be restored or mitigated.
  2. **Habitat Restoration and Revegetation.** A Habitat Restoration Plan (HRP) shall address topsoil, plant or propagules salvage, and restoration. A Habitat Mitigation and Management Plan (HMMP) shall address mitigation. Approval of the HRP by appropriate agencies is required before impacts to special-status plant occurrences are allowed. A draft HMMP shall be submitted to the appropriate agencies prior to impacts to special-status plants. For more information see APM BIO-6.
  3. **Salvage.** If required by agency regulations on lands under their jurisdiction, HWT shall consult with a qualified restoration ecologist or horticulturist regarding the feasibility and likely success of salvage efforts for each species. If salvage is feasible, based on prior success with similar species, HWT shall include salvage methods in the HRP. For special-status

plants, the goal shall be to preserve existing populations or establish new populations. The HRP shall include at minimum: (a) species and locations of plants identified for salvage; (b) criteria for determining whether a species is appropriate for salvage; (c) the appropriate season for salvage; (d) equipment and methods for collection, transport, and re-planting plants or propagules, to retain intact soil conditions and maximize success; (e) details regarding storage of plants or propagules for each species; (f) location of the proposed recipient site, and detailed site preparation and plant introduction techniques, as applicable; (g) a description of the irrigation, and other maintenance activities, as applicable; (h) success criteria, including specific timeframe for survivorship of each species; and (i) a detailed monitoring program, commensurate with the HRP goals. Invasive plant control for special-status plants shall be addressed in the Invasive Plant Management Plan (IPMP, APM BIO-7).

4. **Off-site compensation.** Where restoration is not feasible, HWT shall provide compensation lands consisting of habitat occupied by the impacted CRPR 1 or 2 ranked plant occurrences at a 1:1 ratio of acreage for any occupied habitat affected by the Proposed Project. Occupied habitat shall be calculated on the Proposed Project site and on the compensation lands as including each special-status plant occurrence. If compensation is selected as a means of mitigating special-status plant impacts, it may be accomplished by purchasing credit in an established mitigation bank, acquiring conservation easements, or direct purchase and preservation of compensation lands. Compensation for these impacts may be "nested" or "layered" with compensation for habitat loss.

Agency Coordination. Annual construction monitoring reports shall be submitted to the CPUC and BLM. Reports shall include, but not be limited to, number of plants impacted, details of plants or propagules salvaged, stored, and transplanted (salvage and transplanting locations, species, number, size, condition, etc.); adaptive management efforts implemented (date, location, type of treatment, results, etc.); and evaluation of success of transplantation. After construction, salvage status shall be described in the HRP annual report.

In the event of an unexpected discovery of a new species or previously undocumented occurrence, the same steps shall be used as discussed above. In addition, when there is an unexpected discovery of a new species, the CPUC and CDFW and/or BLM shall be notified.

- **BIO-9: Special-status Perennial Plants and Other Species**

  HWT shall avoid, minimize or mitigate impacts and other special-status perennial plants.

  Pre-construction survey. Pre-construction surveys shall be conducted by a qualified specialist to identify any saguaro or other special-status perennial plants in the Proposed Project area. Where saguaro are known to occur, all work shall occur outside an appropriate buffer to avoid individual saguaro cactus, seeds, and seedbank as agreed to by CDFW. Where other special-status perennial species are known to occur, all work shall occur outside an appropriate buffer to avoid individual plants or groupings as agreed to by CDFW. If impacts that would result in take cannot be avoided, HWT shall obtain a Section 2081(b) ITP from CDFW if the species is CESA listed or a candidate for listing, and shall implement additional measures pursuant to the ITP. Buffer reductions may occur with the implementation of appropriate ITP measures. A qualified botanist/arborist monitor, with the authority to halt work, shall be present whenever work occurs within reduced buffers for special-status perennial species as required by CDFW.

Compensatory Restoration. If an ITP for saguaro and/or other special-status perennial plant species is obtained, then compensation for impacts shall be addressed through the permit conditions.

- **BIO-10: Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats.**

  The Proposed Project shall avoid and/or minimize impacts to all state jurisdictional waters, wetlands, and riparian habitat that occur within the Proposed Project area where feasible. All grading, fill, staging of equipment, infrastructure construction or removal, and all other construction activities shall be designed, sited, and conducted outside of state and federally jurisdictional waters, wetlands, and riparian habitat.

  The implementation of appropriate Best Management Practices (BMPs) (e.g., silt fencing, straw wattles, secondary containment, avoiding fueling within 100 feet of jurisdictional waters, etc.) shall be utilized to ensure that indirect impacts to jurisdictional waters, wetlands, and riparian areas are avoided or minimized. BMPs are also necessary to reduce the risk of an unintended release of sediment or other material into jurisdictional waters. New and upgraded roadways shall use at-grade type stream crossings unless installation or repair of culverts is required. Stockpiled and bermed sediment shall be redistributed or removed from the site so as not to alter flows. New poles shall be sited outside stream channels.

  If permanent impacts to waters, wetlands, and riparian habitats are unavoidable, they shall be mitigated at a minimum of a 1:1 ratio, or at a ratio determined by the applicable Resource Agencies (i.e., U.S. Army Corps of Engineers, the State Water Resources Control Board/Regional Water Quality Control Boards, and California Department of Fish and Wildlife). Temporary impacts to jurisdictional waters shall be returned to pre-existing contours upon completion of the work.

- **BIO-11: Avoid Impacts to Desert Bighorn Sheep.**

  Determination of Desert Bighorn Sheep Habitat: CDFW shall determine desert bighorn sheep habitat within the Project area based on data gathered by CDFW Wildlife Biologists. HWT, in conjunction with a Designated Biologist(s), shall coordinate with CDFW to obtain information on desert bighorn sheep habitat, including lambing habitat and water sources, within the Project area in advance of Project activities, and HWT shall implement appropriate avoidance and minimization measures to avoid impacts to desert bighorn sheep in these areas. Avoidance and minimization measures should be in place prior to the start of construction and any ground-disturbing activities.

  Limited Operating Period: If feasible, activities within occupied desert bighorn sheep habitat shall be avoided during the peak lambing period (December 1 through June 30, or earlier, if data are available to demonstrate to the satisfaction of CDFW that six weeks have elapsed from the last date of lambing). Furthermore, no sudden, loud noises (e.g., from heavy machinery, pile driving, or blasting) shall occur within 1 km of lambing habitat, and no low-elevation helicopter flights shall occur within 1 km of lambing habitat.

  Construction Noise: Sound pressure levels shall not exceed 85 dB measured at 50 ft from the noise. Sudden, loud noises (e.g., heavy machinery, blasting, pile driving, low-elevation helicopter flights) that may startle bighorn sheep shall be avoided within 1 km of desert bighorn sheep habitat.

Pre-construction Surveys and Ongoing Monitoring: When work is being implemented in or within 1- km of desert bighorn sheep habitat, a Designated Biologist(s) shall assess presence of bighorn sheep in the vicinity of work areas and helicopter flight paths. The Designated Biologist shall coordinate directly with CDFW Wildlife Biologists for guidance with specific questions as situations arise. If ewes or lambs are present within 1 km of the work area, work shall be suspended in that area. The 1-km buffer may be reduced in coordination with CDFW if it is determined that bighorn sheep are not at risk. Factors such as distance of the activities from the sheep, nature of construction activities, duration of activities, topography, work area located in trees or other natural features that attenuate the sound, etc. should be taken into consideration. The Designated Biologist shall be present at the work site(s) to monitor for bighorn sheep during all activities in bighorn sheep habitat. The Designated Biologist shall work with project personnel to cease or defer activities when bighorn sheep are close enough to be disturbed by the activities.

Helicopter Use: Helicopter flight paths and landings shall be delineated prior to implementation in coordination with the CDFW Wildlife Biologist to ensure protection of desert bighorn sheep habitat by incorporating appropriate species-specific vertical and horizontal buffers and Limited Operating Periods.

Reporting of Mortality or Injury: HWT shall immediately report any bighorn sheep mortalities, whatever the cause, to CDFW as soon as possible after the observation. The bighorn sheep carcass shall be covered and left in place until the CDFW biologist can examine it and determine the proper disposal method.

Disease Prevention: A boot disinfection station shall be set up at the staging area. If workers have any potential contact with grounds occupied by sheep or goats (for example, at home, visiting a farm, attending a County fair, going to a petting zoo, etc.), they shall disinfect their boots before going to the work site. Workers shall also ensure that their vehicles/equipment are washed at either a project wash station or a commercial wash if there is a chance that the tires or interior may be contaminated. Alternatively, personnel can be required to change their footwear so that contaminated footwear is not used in work vehicles or on the Project site.

Water Sources: In the event that bighorn sheep abandon the use of one or more water sources as a result of disturbance associated with the Project, HWT shall create additional water sources after consulting with appropriate agency personnel (CDFW and USFWS) to select location(s) and provide assistance in establishing additional water sources(s).

- **BIO-12: Habitat Compensation Plan.**

  Habitat Compensation Plan: HWT shall prepare a Habitat Compensation Plan for CDFW review and approval prior to implementation. The Habitat Compensation Plan shall include compensatory mitigation for CESA-listed and other special-status species expected to be impacted by Project activities.

  Compensatory Mitigation for Desert Tortoise and Burrowing Owl: Offsite compensatory mitigation shall occur at no less than a 5:1 ratio for impacts to critical desert tortoise habitat and no less than a 3:1 ratio for impacts to non-critical suitable desert tortoise habitat. Offsite compensatory mitigation shall occur at no less than a 3:1 ratio for impacts to Burrowing Owl. Compensatory mitigation for these CESA- listed species shall be fulfilled through (1) the purchase of CDFW-approved mitigation bank credits or (2) acquisition and transfer of fee title of lands, protection in perpetuity through recordation of a conservation easement with a legally appropriate entity acting as grantee, land management in perpetuity, and funding of

management activities through the calculation and deposit of an endowment fund. Compensatory mitigation shall be fulfilled prior to start of Project activities unless a security is provided to ensure funding for CDFW to complete these activities.

Desert Kit Fox and American Badger: If desert kit fox or American badger are proposed to be relocated from an active burrow or an active burrow shall be impacted, HWT shall have a Qualified Biologist prepare and implement an exclusion plan to be performed outside of breeding/pupping season and after juvenile dispersal. HWT shall implement compensatory mitigation such that the habitat acreage and number of dens (desert kit fox and American badger) and individuals impacted (American badger) are replaced at no less than a 2:1 ratio.

Flat-tailed Horned Lizard and Colorado Desert fringe-toed lizard: If impacts to Flat-tailed Horned Lizard or Colorado Desert fringe-toed lizard and their habitats are expected, HWT shall provide compensatory mitigation such that the habitat acreage and lizards impacted are replaced at no less than a 2:1 ratio, in advance of impacts.

Burrowing Owl: If impacts are expected to occur to an occupied burrow, HWT shall obtain an Incidental Take Permit (ITP) under CA Fish and Game Code 2081 to authorize the take and provide compensatory mitigation. Mitigation shall be implemented consistent with the requirements within the ITP.

Bats: If impacts are expected to occur to bat roosting habitat, HWT shall provide compensatory mitigation sufficient to replace the total area of roosting habitat at no less than a 2:1 ratio, in advance of impacts.

Sensitive Vegetation Communities. HWT shall compensate for anticipated impacts to Fremont cottonwood forest and woodland, hardstem and California Bulrush marshes, iodine bush scrub, mesquite thickets, Mojave-Sonoaran desert dunes, American bulrush marsh (common three-square marsh), arrow weed thickets, blue palo verde – ironwood woodland, bush seepweed scrub, and California joint fir – longleaf joint fir scrub through onsite restoration (BIO- 6) and land acquisition and/or preservation at a minimum ratio of 2:1.

- **CUL-1:** Prior to construction, HWT would conduct a survey to identify historic resources within the resource study corridor for the Proposed Project. The survey area would include the Area of Potential Effects, the area in which potential direct and indirect effects to historic resources may occur. The Area of Potential Effects would be developed in coordination with the appropriate agencies. The methods and results of the surveys would be compiled into a Class III Inventory Report subject to review by the appropriate agencies. To the extent feasible, the Proposed Project would be designed to avoid resources eligible for the National Register of Historic Places and California Register of Historic Resources, in cooperation with the appropriate agencies.
- **CUL-2:** Management of cultural/historical resources would follow applicable federal and state standards and guidelines. HWT would prepare and implement a Post-Review Discovery Management Plan addressing the post-review discovery of cultural resources during construction. The Proposed Project Archaeologist or their representative would be responsible for responding to unanticipated discoveries, implementing appropriate buffers and/or stopping work, and communicating with the appropriate agencies in accordance with the plan. Human remains would be treated in accordance with applicable federal and state laws.

- **PAL-1:** Following completion of field surveys and prior to construction, a Paleontological Resources Monitoring and Mitigation Plan (PRMMP) shall be prepared by a Qualified Paleontologist retained by HWT. The Qualified Paleontologist shall be an individual meeting Society of Vertebrate Paleontology (SVP) standards for a Qualified Professional Paleontologist and approved as a Principal Investigator on active BLM Paleontological Resource Use Permits in California and Arizona. The PRMMP shall guide all paleontological resource monitoring and mitigation efforts during construction and shall conform with SVP and BLM policies and procedures, and best practices in paleontology mitigation. It shall include specifications for a pre-construction workers environmental awareness training program focused on the types of paleontological resources that could be encountered during construction, detailed procedures for construction monitoring and fossil and data recovery, a table and maps specifying monitoring locations and levels of effort, an unanticipated discovery plan for implementation in the event of fossil discoveries made by construction personnel in the absence of a paleontological monitor, and project-specific notification procedures for both non-significant and significant fossil discoveries made by paleontological monitors. The PRMMP shall be approved by the lead and cooperating agencies prior to construction.
- **PAL-2:** Paleontological monitoring shall take place in areas underlain by Potential Fossil Yield Classification (PFYC) 3, 4, 5, or U geologic units. Typically, full-time monitoring shall be required in PFYC 4, 5, and U geologic units whereas part-time monitoring (spot-checking) shall be required in PFYC 3 geologic units and monitoring shall not be required in PFYC 1 and 2 geologic units, except where excavations in PFYC 2 geologic units reach depths at which they are considered to have a higher PFYC rating. All paleontological monitors must be approved and listed on the BLM Paleontological Resource Use Permits as Field Monitors and be directly supervised by an approved Field Agent and/or Principal Investigator. Monitors and Field Agents shall be responsible for inspecting excavated areas, graded surfaces, and spoils piles for the presence of paleontological resources. When fossils are unearthed during construction, the construction equipment operator and foreman shall be notified, work in the immediate vicinity shall be temporarily diverted, and the discovery site shall be cordoned off until the fossil discovery can be explored and its scientific significance evaluated. Non-significant fossil localities shall typically be left in place whereas significant fossil discoveries shall salvaged. All fossil discoveries shall be fully documented regardless of their scientific significance.
- **PAL-3:** Scientifically significant fossil discoveries and associated data shall be recovered by BLM-approved Field Monitors under the supervision of a Field Agent and/or a Principal Investigator according to accepted professional paleontological standards. All recovered fossils shall be removed from the construction site as soon as possible and transported to a secure paleontological laboratory facility for preparation, inventory, identification, and transfer to a paleontological repository for curation and permanent storage. For this project, the repository for California fossils is the San Diego Natural History Museum and the repository for Arizona fossils is the New Mexico Museum of Natural History and Science.
- **PAL-4:** The results of the paleontological monitoring program shall be compiled in a paleontological resource construction monitoring report prepared according to BLM standards (BLM H-8270-1 and BLM 2009-011). The monitoring report shall be submitted to the BLM along with a repository receipt listing all curated fossils within 60 days from the end of project construction.

5.17 Transportation

This section describes the existing transportation system in the Ironwood Transmission Project (Proposed Project) area, as well as the potential impacts to transportation from construction and operation of the Proposed Project. Research for this analysis involved a review of the following resources:

- California Department of Transportation (Caltrans) vehicle traffic volume counts
- Arizona Department of Transportation (ADOT) website
- Regional planning agency transit websites
- Local agency planning documents

5.17.1 Environmental Setting

The Proposed Project is located in Imperial County, California and Yuma County, Arizona on federal, state, municipal, and private land. These lands include unincorporated areas of Imperial and Yuma counties, the city of Calexico, California and public lands under the jurisdiction or management of the U.S. Bureau of Land Management, U.S. Bureau of Reclamation, and the California Department of Parks and Recreation. The Proposed Project is located almost entirely within undeveloped open areas. The Proposed Project is located within Caltrans District 11 and ADOT Southwest District. This section describes the regional and local transportation systems in the Project area.

5.17.1.1 Circulation System

The Proposed Project's regional transportation system is comprised of highways and county and local roads. Major highways that are within the Proposed Project area include State Route 111, State Route 7, and State Route 98, E. Evan Hewes Highway, and Interstate 8. The annual average daily traffic volume (AADT) for these roadways is provided in Table 5.17-1.

5.17.1.2 Existing Roadways and Circulation

The existing named roadways that may be used to access the Proposed Project alignment and to transport materials during construction (or that are otherwise crossed by the Proposed Project alignment) are provided in Table 5.17-1. Figure 5.17-1a, Figure 5.17-1b, and Figure 5.17-1c show these roadways and the Proposed Project alignment.

Table 5.17-1 Existing Roadways

Roadway	Jurisdiction/Ownership	Number of Lanes	Traffic Volume (Annual Average Daily Traffic [AADT])	Distance to Proposed Project (Miles)[1]
I-8 East	State of Arizona	2	2850	0
I-8 West	State of California	2	2850	0
CA-7 North	State of California	2	7850	0
CA-7 South	State of California	2	7850	0
CA-98 East	State of California	2	21400	0
CA-98 West	State of California	2	21400	0
CA-111 North	State of California	4	27750	0
CA-111 South	State of California	2	27750	0

Roadway	Jurisdiction/Ownership	Number of Lanes	Traffic Volume (Annual Average Daily Traffic [AADT])	Distance to Proposed Project (Miles)[1]
East Evan Hewes Highway	Imperial County	2	5100	0
Coachella Canal Road	Imperial County	2	N/A	0
Ogilby Road	Imperial County	2	N/A	0
Willoughby Road	Imperial County	2	N/A	0.02
Sidewinder Road	Imperial County	2	N/A	0
Rockwood Road	Imperial County	2	N/A	0
Preston Road	Imperial County	2	N/A	0.01
Pitzer Road	Imperial County	2	N/A	0.08
Picacho Road	Imperial County	2	N/A	0
Meadows Road	Imperial County	2	N/A	0
Mandrapa Road	Imperial County	2	N/A	0
Kumberg Road	Imperial County	2	N/A	0.07
Jasper Road	Imperial County/ City of Calexico	2	N/A	0.06
Holdridge Road	Imperial County	2	N/A	0
George Road	Imperial County	2	N/A	0
Eady Road	Imperial County	2	N/A	0
East Jasper Road	Imperial County/ City of Calexico	2	N/A	0
Corda Road	Imperial County	2	N/A	0.01
Bornt Road	Imperial County	2	N/A	0
Barney Oldfield Road	Imperial County	2	N/A	0
S. Dogwood Road	Imperial County	2	N/A	0
Drew Road	Imperial County	2	N/A	0
Clark Road	Imperial County	2	N/A	0
Brockman Road	Imperial County	2	N/A	0
Ware Road	Imperial County	2	N/A	0.07
Miller Road	Yuma County	2	N/A	0
Kloke Road	Imperial Couty	2	N/A	0
Bowker Road	Imperial County/ City of Calexico	2	N/A	0
Bonesteele Road	Imperial County	2	N/A	0.07
Bonds Corner Road	Imperial County	2	N/A	0
South La Brucherie Road	Imperial County	2	N/A	0.16
Ferrell Road	Yuma County	2	N/A	0
Barbara Worth Road	Imperial County	2	N/A	0
Vencill Road	Imperial County	2	N/A	0
Pulliam Road	Imperial County	2	N/A	0
Laguna Dam Road	Yuma County	2	N/A	0
Keefer Road	Imperial County	2	N/A	0
Claverie Road	Imperial County	2	N/A	0
Anderholt Road	Imperial County	2	N/A	0

Roadway	Jurisdiction/Ownership	Number of Lanes	Traffic Volume (Annual Average Daily Traffic [AADT])	Distance to Proposed Project (Miles)[1]
Yourman Road	Imperial County/ City of Calexico	2	N/A	0
Scaroni Avenue	Imperial County/ City of Calexico	2	N/A	0
Preston Road	Imperial County	2	N/A	0
Town Center Parkway	City of Calexico	2	N/A	0.17

Source: Esri 2025, Caltrans 2021.

N/A = not available

Note: Roadways with two jurisdictions listed have different segments that fall under the jurisdiction of each of the entities listed.

[1:] Indicates distance from nearest Proposed Project component.

5.17.1.3 Transit and Rail Services

Public transportation in Imperial County consists of bus lines provided by Imperial Valley Transit. Yuma County Area Transit is run by Yuma County Intergovernmental Public Transportation Authority and has routes that go between El Centro, California into Arizona. Flixbus/Greyhound buses provide transit between California and Arizona. Figure 5.17-3a through Figure 5.17-3c show bus routes near the Proposed Project alignment. There are no transit stops within 0.5 miles of the Proposed Project alignment.

The Pacific Imperial Railroad operates near the Proposed Project on a route called the Desert Line. It does not provide passenger services.

The Calexico International Airport, which would be used for helicopters associated with Proposed Project construction, is located approximately 2 miles from the Proposed Project. The Calexico International Airport is a single runway public-use airport owned and operated by the City of Calexico (City of Calexico 2025).

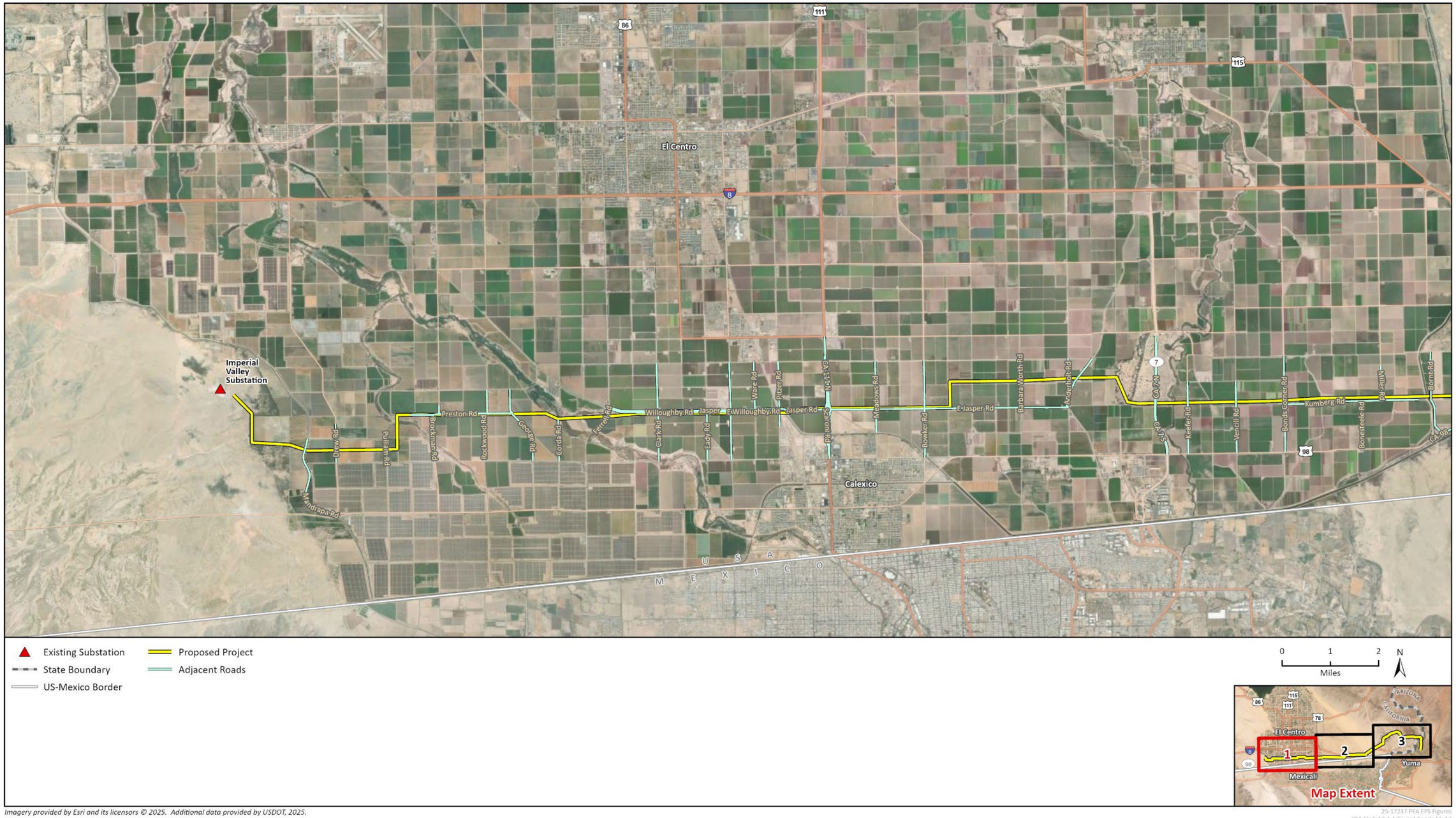
5.17.1.4 Bicycle Facilities

There are county-designated bikeways within the Proposed Project area (Southern California Association of Governments 2023; Yuma County 2023; Yuma Metropolitan Planning Organization (YMPO) 2021b). Bikeways that would be crossed by the Proposed Project alignment are shown on Figure 5.17-2a, Figure 5.17-2b, and Figure 5.17-2c.

5.17.1.5 Pedestrian Facilities

Due to the rural nature of the Proposed Project alignment, there are minimal pedestrian facilities along roadways adjacent to or intersecting the Proposed Project. There are some sidewalk improvements proposed for CA-111 North (Imperial County 2011); however, most surface roads near the Proposed Project alignment do not have sidewalks or any other existing pedestrian facilities.

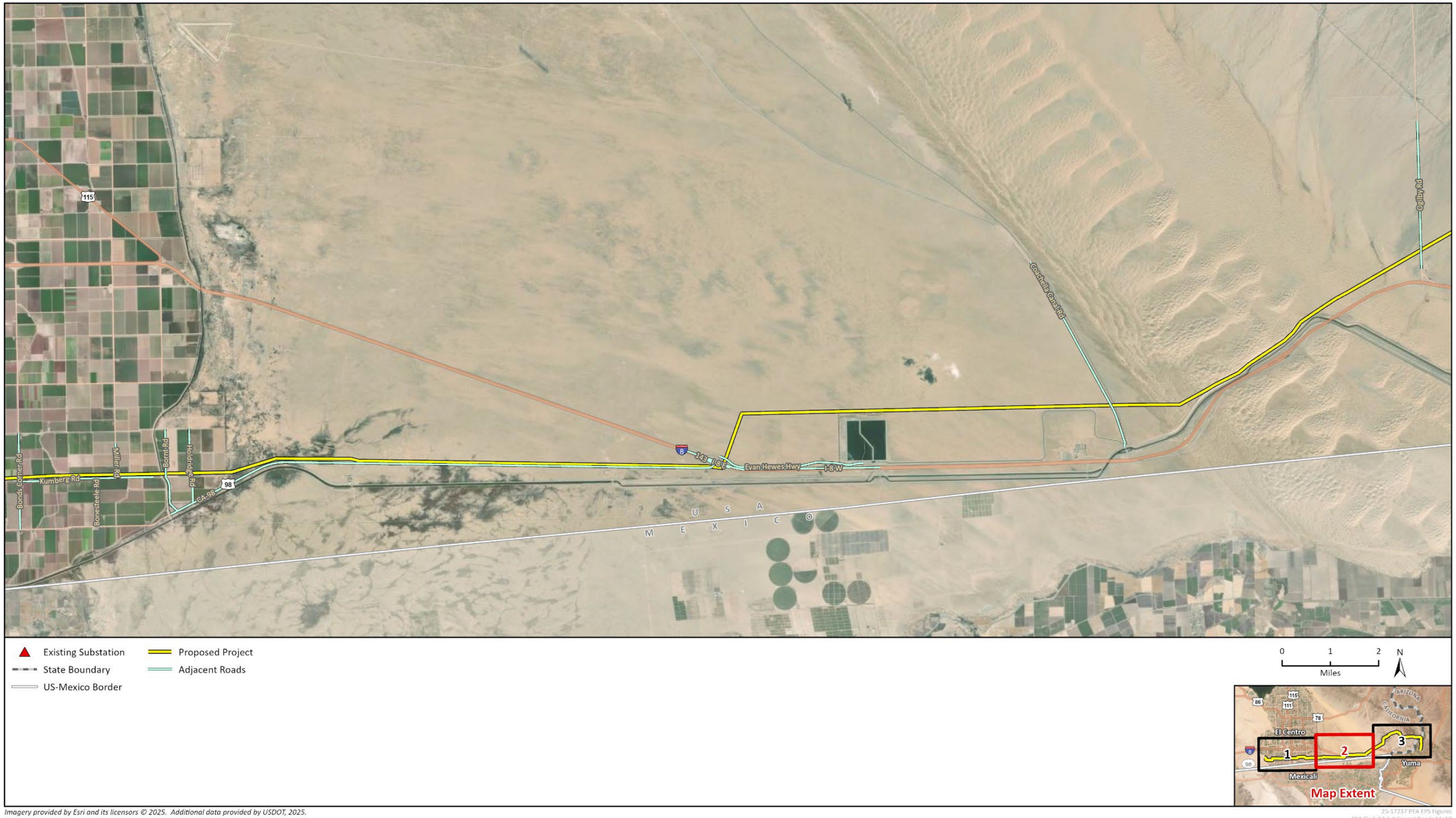
Figure 5.17-1a Roadways Adjacent to or Crossed by the Proposed Project



Imagery provided by Esri and its licensors © 2025. Additional data provided by USDOT, 2025.

25-17237 PEA EPS Figures
PEA Fig 5.17-1 Adjacent Roads 11x17

Figure 5.17-1b Roadways Adjacent to or Crossed by the Proposed Project



Imagery provided by Esri and its licensors © 2025. Additional data provided by USDOT, 2025.

25-17237 PEA EPS Figures
PEA Fig 5.17-1 Adjacent Roads 11x17

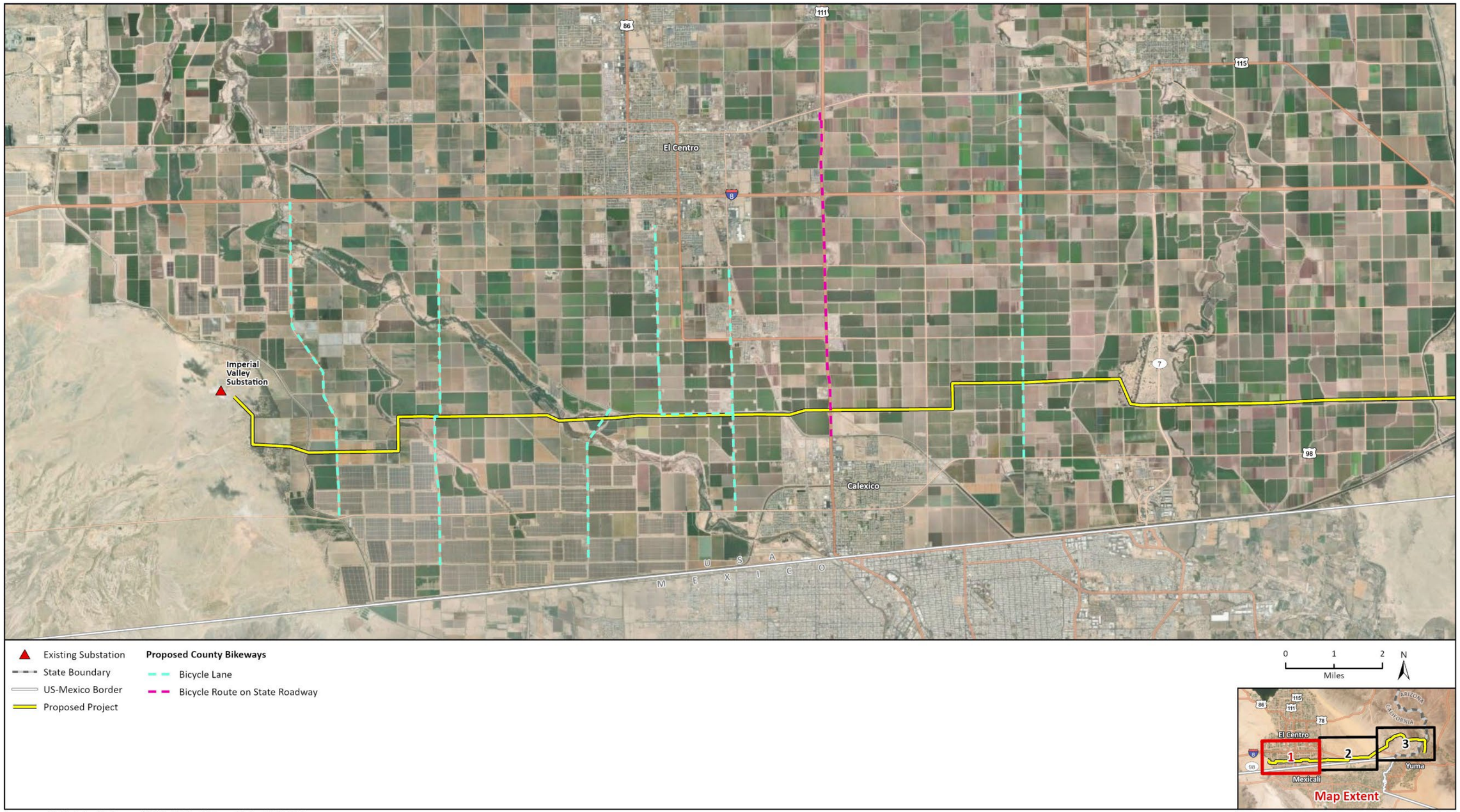
Figure 5.17-1c Roadways Adjacent to or Crossed by the Proposed Project



Imagery provided by Esri and its licensors © 2025. Additional data provided by USDOT, 2025.

25-17237 PEA EPS Figures
PEA Fig 5.17-1 Adjacent Roads 11x17

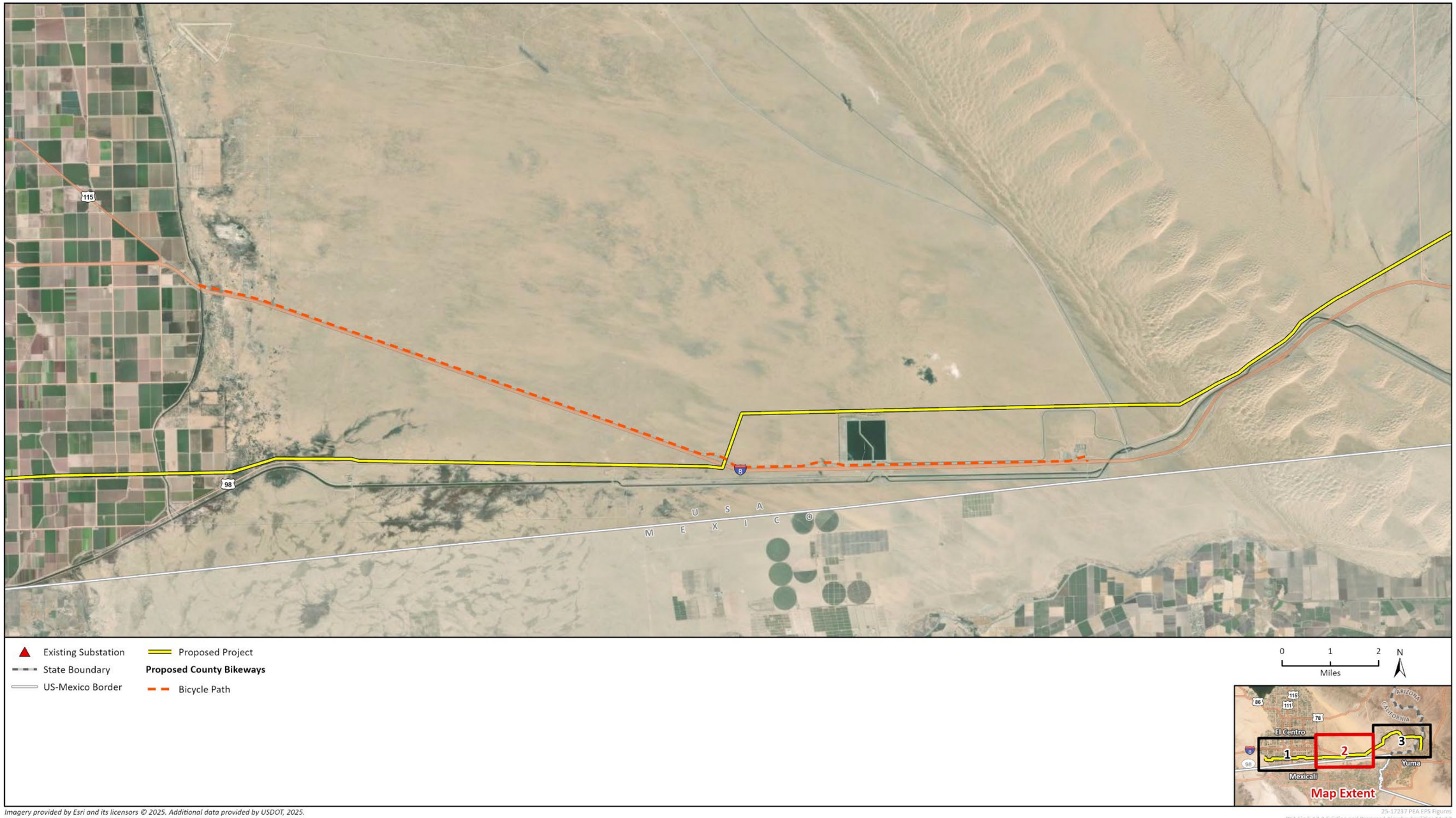
Figure 5.17-2a Bicycle Facilities in the Proposed Project Area



Imagery provided by Esri and its licensors © 2025. Additional data provided by USDOT, 2025.

25-17237 PEA EPS Figures
PEA Fig 5.17-2 Existing and Proposed Bicycle Facilities 11x17

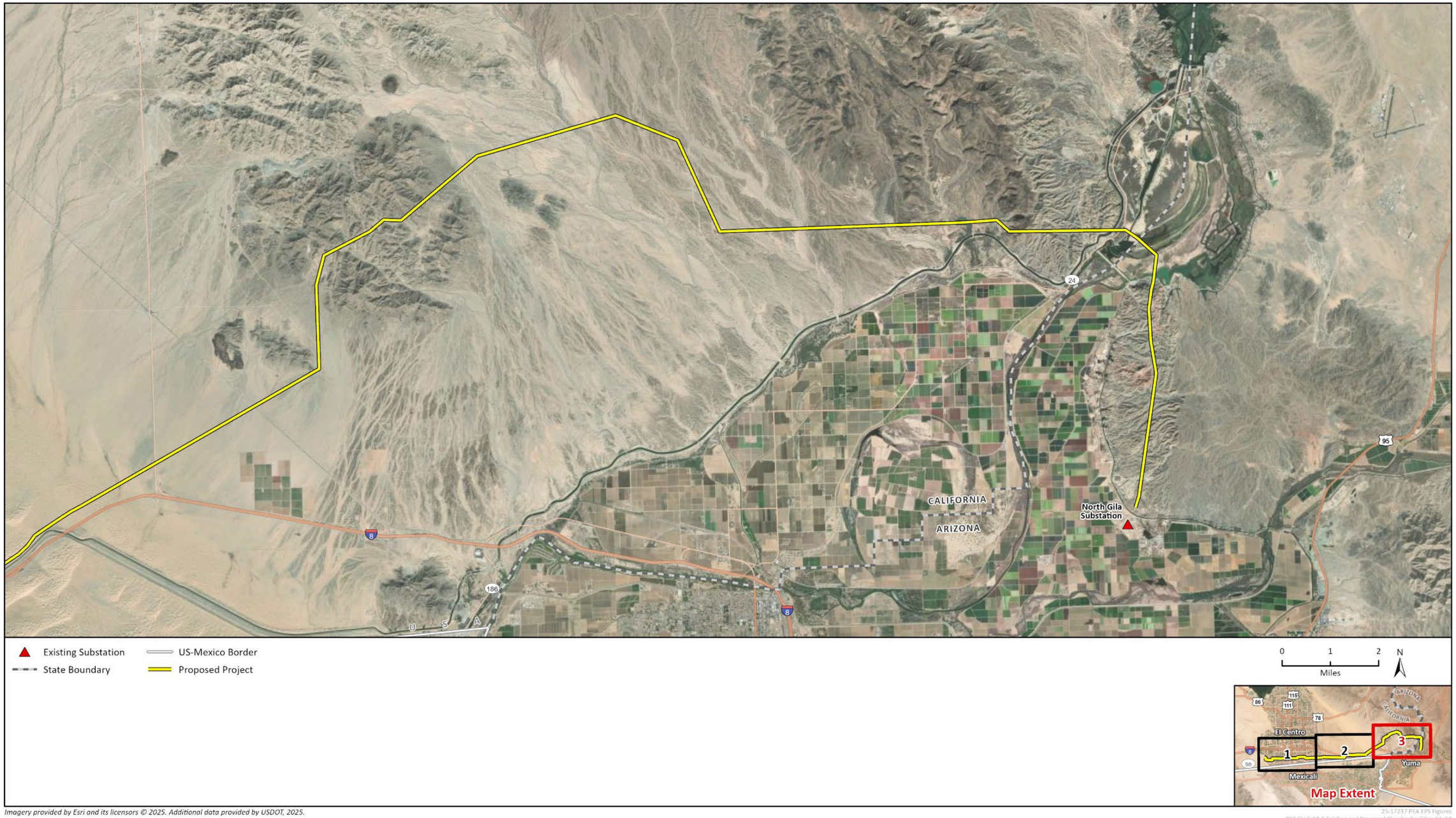
Figure 5.17-2b Bicycle Facilities in the Proposed Project Area



Imagery provided by Esri and its licensors © 2025. Additional data provided by USDOT, 2025.

25-17237 PEA EPS Figures
PEA Fig 5.17-2 Existing and Proposed Bicycle Facilities 11x17

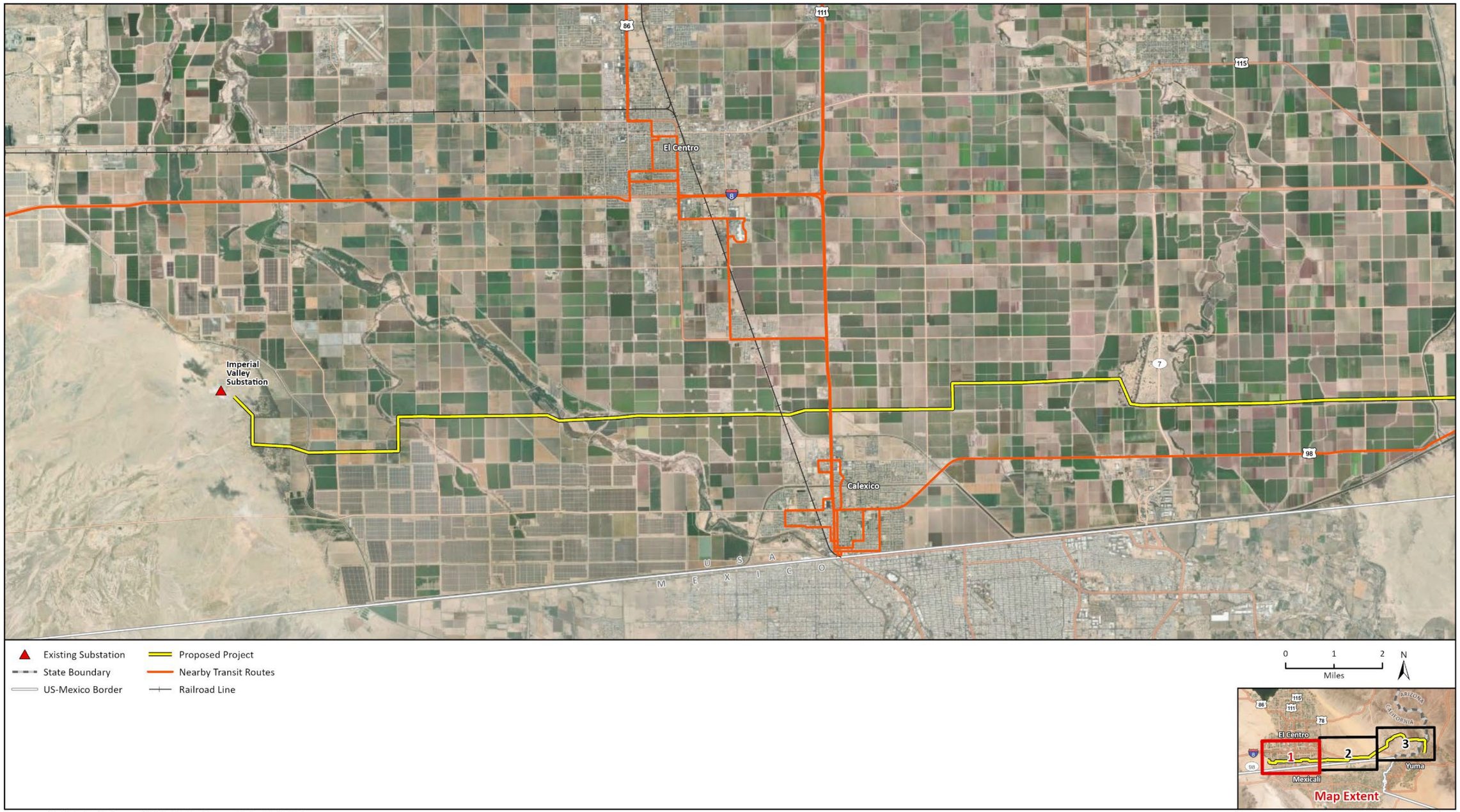
Figure 5.17-2c Bicycle Facilities in the Proposed Project Area



Imagery provided by Esri and its licensors © 2025. Additional data provided by USDOT, 2025.

25-17237 PEA EPS Figures
PEA Fig 5.17-2 Existing and Proposed Bicycle Facilities 11x17

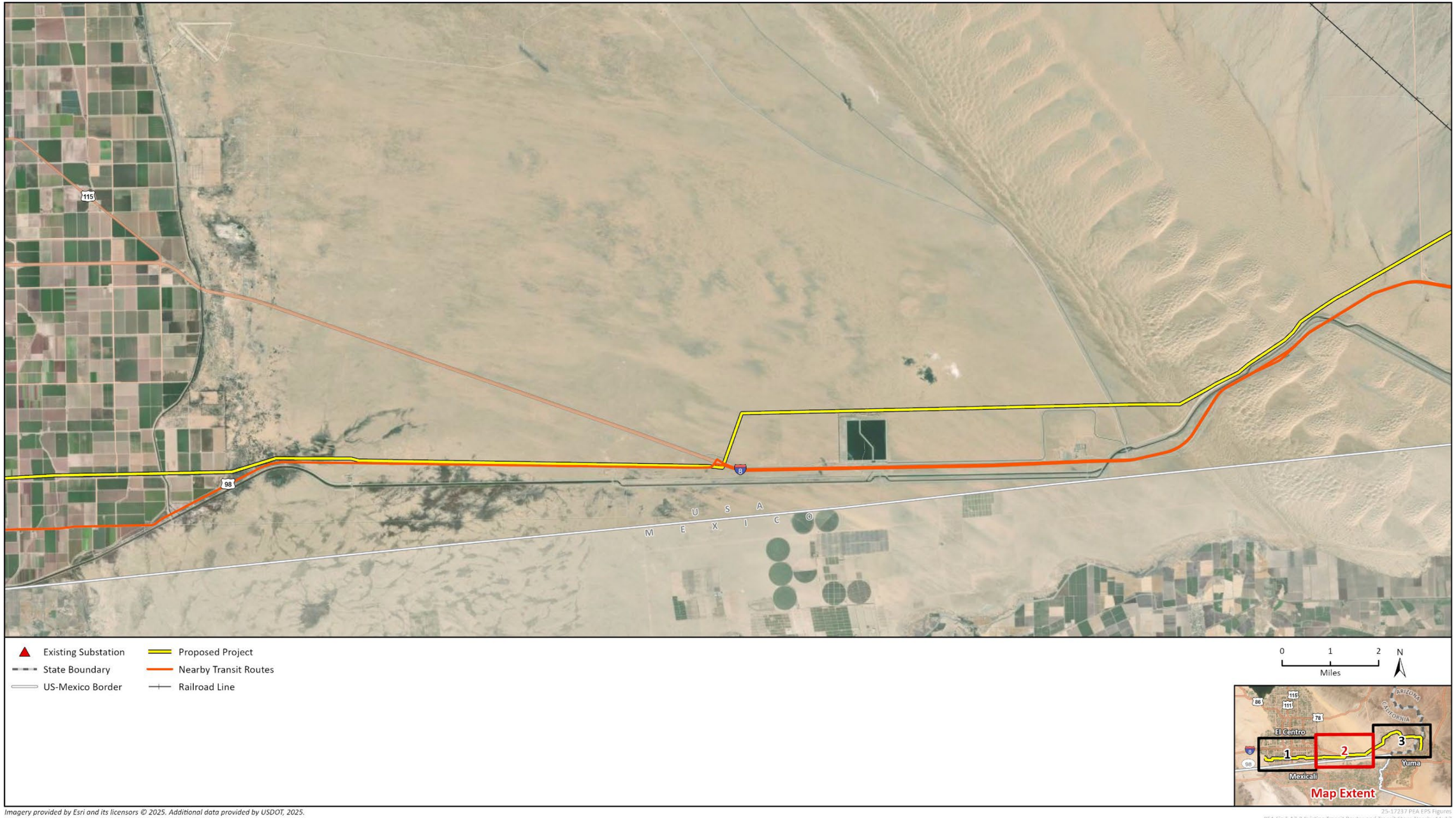
Figure 5.17-3a Transit Routes and Transit Stops in the Proposed Project Area



Imagery provided by Esri and its licensors © 2025. Additional data provided by USDOT, 2025.

25-17237 PEA EPS Figures
PEA Fig 5.17-3 Existing Transit Routes and Transit Stops Nearby 11x17

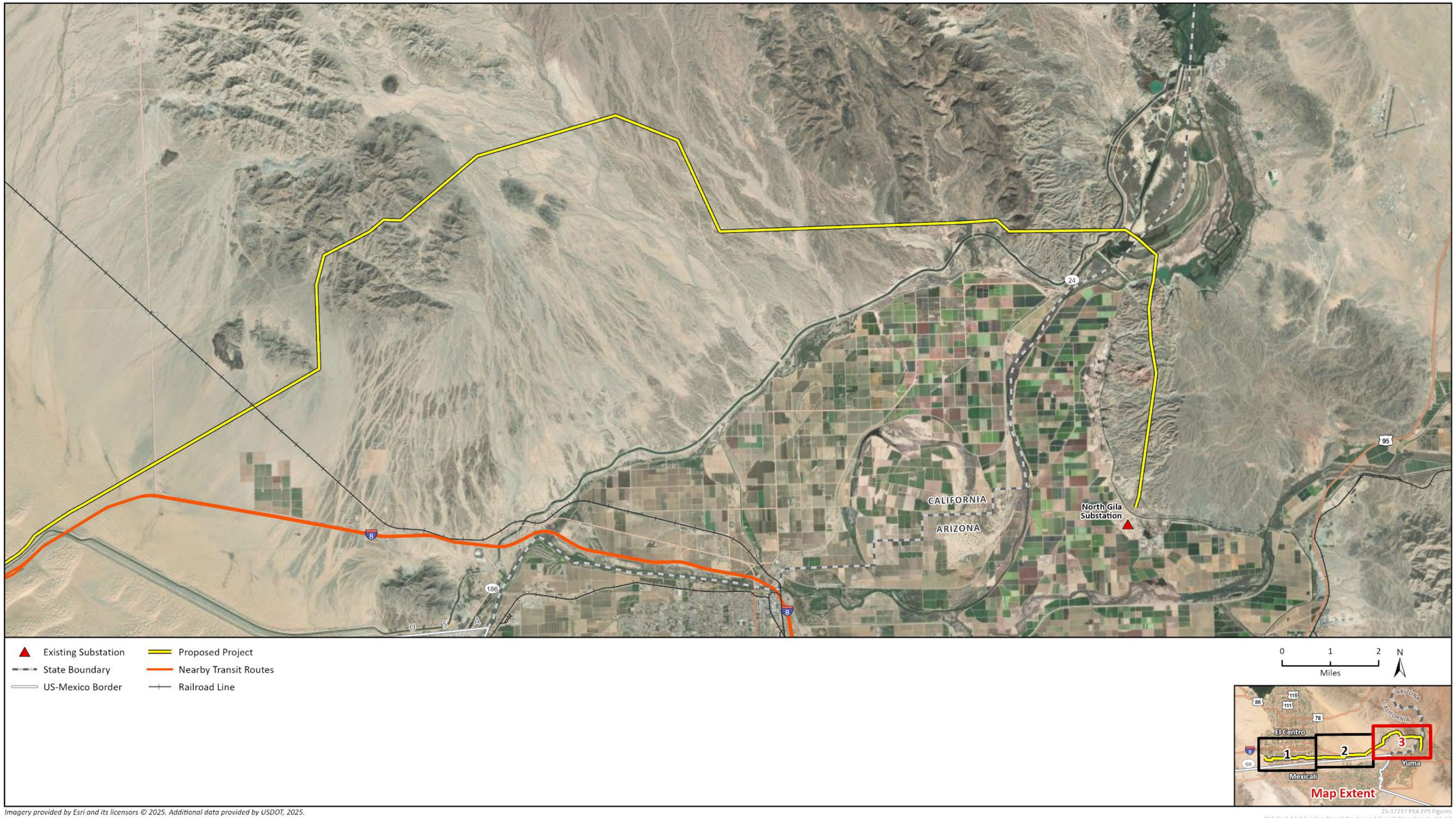
Figure 5.17-3b Transit Routes and Transit Stops in the Proposed Project Area



Imagery provided by Esri and its licensors © 2025. Additional data provided by USDOT, 2025.

25-17237 PEA EPS Figures
PEA Fig 5.17-3 Existing Transit Routes and Transit Stops Nearby 11x17

Figure 5.17-3c Transit Routes and Transit Stops in the Proposed Project Area



Imagery provided by Esri and its licensors © 2025. Additional data provided by USDOT, 2025.

25-17237 PEA EPS Figures
PEA Fig 5.17-3 Existing Transit Routes and Transit Stops Nearby 11x17

5.17.1.6 Vehicle Miles Traveled

Table 5.17-2 presents a summary of the average daily vehicle miles traveled (VMT) in 2020 in the City of Calexico, Imperial County, and Yuma County.

Table 5.17-2 Daily Vehicle Miles Traveled for Jurisdictions in Proposed Project Area

Jurisdiction	Average Daily Vehicle Miles Traveled in 2020	Average Daily Vehicle Miles Traveled per Capita in 2020
City of Calexico	195,840	4.8
Imperial County	5,794,010	35.5
Yuma County	6,499,036	31.8

Source: Caltrans 2021, YMPO 2020.

5.17.2 Regulatory Setting

Federal, state, and local regulations were reviewed for applicability to the Proposed Project.

5.17.2.1 Federal

Code of Federal Regulations

Code of Federal Regulations (CFR) Title 49, Subtitle B includes procedures and regulations pertaining to interstate and intrastate transport (including hazardous materials program procedures) and provides safety measures for motor carriers and motor vehicles that operate on public highways.

Hazardous Materials Transportation Act of 1974

The Hazardous Materials Transportation Act of 1974 directs the U.S. Department of Transportation (DOT) to establish criteria and regulations regarding safe storage and transportation of hazardous materials. The DOT would primarily deal with the transportation of hazardous materials on roadways in the Proposed Project area. Section 5.9, Hazards, Hazardous Materials, and Public Safety, addresses the transportation of hazardous materials, types of materials defined as hazardous, and the treatment of hazardous materials associated with the Proposed Project.

5.17.2.2 State of California

California Environmental Quality Act Guidelines, Section 15064.3, Determining the Significance of Transportation Impacts

In response to Senate Bill 743 (Steinberg 2013), Section 15064.3 of the California Environmental Quality Act (CEQA) guidelines established VMT as the most appropriate measure of transportation impacts in the CEQA process. For transportation impacts under CEQA, VMT refers to the amount and distance of automobile travel attributable to a project. Other relevant considerations may include the effects of the project on transit and nonmotorized travel. Except for roadway capacity projects, a project's effect on automobile delay would not constitute a significant environmental impact under CEQA. Where existing models or methods are not available to estimate the VMT for the particular project being considered, a lead agency may analyze the project's VMT qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to

other destinations, etc. For many projects, a qualitative analysis of construction traffic may be appropriate [14 CCR 15064.3(b)(3)].

In December 2018, the Governor's Office of Planning and Research (OPR) released a technical advisory titled Technical Advisory on Evaluating Transportation Impacts in CEQA (OPR guidelines), which contains recommendations regarding the assessment of VMT and thresholds of significance. As noted in the OPR guidelines, lead agencies are directed to choose metrics and thresholds that are appropriate for their jurisdiction to evaluate the potential impacts of a project.

The OPR guidelines indicate that projects that generate or attract fewer than 110 trips per day generally may be presumed to cause a less-than-significant transportation impact. Section 15064.3(a) of the CEQA Guidelines define VMT as the "amount and distance of automobile travel attributable to a project." The OPR guidelines further state, "[h]ere, the term 'automobile' refers to on-road passenger vehicles, specifically cars and light trucks." Heavy duty truck trips (such as those completed during construction to move large pieces of equipment) are generally excluded from the transportation analysis and VMT requirements of CEQA. Furthermore, the OPR guidelines focus almost exclusively on permanent residential, office, and retail projects as primarily responsible for increasing VMT in the state.

California Streets and Highways Code

Caltrans manages state highways in California. The use of California state highways for reasons other than normal transportation purposes may require written authorization or an encroachment permit from Caltrans. Caltrans has jurisdiction over the state's highway system and is responsible for protecting the public and infrastructure. Section 660 of the California Streets and Highways Code allows Caltrans to issue encroachment permits authorizing activities related to the placement of encroachments within, under, or over state highway rights-of-way (ROW). Caltrans reviews all requests from utility companies that plan to conduct activities within state highway ROWs. Caltrans' encroachment permits may include conditions or restrictions that limit when construction activities can occur within or above roadways that are under the jurisdiction of Caltrans. The California Streets and Highways Code also includes regulations for the care and protection of state and county highways and requires permits for any load that exceeds Caltrans's weight, length, or width standards for public roadways. Sections 700 through 711 provide provisions that are specific to utility providers. Additionally, the California Streets and Highways Code outlines directions for cooperation with local agencies, guidelines for permits, and general provisions relating to state highways and Caltrans's jurisdiction.

The Caltrans document *Guide for the Preparation of Traffic Studies* describes when a traffic impact study is needed. The intent of this guide is to provide a consistent basis upon which Caltrans evaluates traffic impacts to state highway facilities. The applicability of the guide for local streets and roads (non-state highways) is at the discretion of the affected jurisdiction.

California Transportation Commission

The California Transportation Commission (CTC) was established in 1978 out of a growing desire for a single, unified California transportation policy. The CTC is responsible for programming and allocating funds for the construction of highway, passenger rail, active transportation, aeronautics, and transit improvements throughout California. The CTC advises and assists the Secretary of the California State Transportation Agency and the state legislature in formulating and evaluating state policies and plans for California's transportation programs. The CTC is also an active participant in

the initiation and development of state and federal legislation that seeks to secure financial stability for the state's transportation needs.

California Joint Utility Traffic Control Manual

The California Joint Utility Traffic Control Manual provides guidelines for ensuring that the needs of all road users (e.g., motorists, bicyclists, and pedestrians) are met through the establishment of a temporary traffic control zone during highway construction, utility work, and maintenance operations. For any Proposed Project construction activities within a local public ROW, the use of a traffic control service and the implementation of any lane closures would be conducted in accordance with applicable laws and permit conditions. These traffic control measures would be consistent with those published in the California Joint Utility Traffic Control Manual.

California Vehicle Code

The California Vehicle Code includes regulations pertaining to licensing, size, weight, and load of vehicles operated on highways, safe operation of vehicles, and the transportation of hazardous materials.

5.17.2.3 State of Arizona

Arizona Title 28 - Transportation

Title 28 of the Arizona Revised Statutes (2022) outlines regulations for the use and maintenance of streets and highways in the state. In addition, it includes regulations pertaining to licensing, size, weight, and load of vehicles operated on highways, safe operation of vehicles, and the transportation of hazardous materials. Utility companies must obtain permits from the ADOT before any installation, relocation, or maintenance work within highway rights-of-way. This process ensures compliance with state regulations and standards. Utilities must be placed in specific locations to minimize disruption and ensure safety, with guidelines for both overhead and underground installation. Maintenance of these utilities is the responsibility of the utility companies, who must coordinate with ADOT for access to highways, especially for emergency maintenance. The code emphasizes protecting the structural integrity of highways during utility work, ensuring that installations and maintenance do not damage the road surface or underlying structures. These regulations help balance the need for essential utility services with the safety and efficiency of Arizona's transportation infrastructure.

Arizona State Transportation Board

The Arizona State Transportation Board is responsible for establishing and maintaining a comprehensive system of state highway routes. Its key objectives include awarding construction contracts, monitoring the status of transportation projects, and issuing revenue bonds for transportation financing (Arizona State Transportation Board 2025). The Board manages utility installations along or across highways for safety and efficiency. Utility companies must coordinate with the ADOT to obtain necessary permits for installing, relocating, or maintaining utility lines within highway rights-of-way. This coordination helps protect the structural integrity of highways and ensures that utility work does not disrupt transportation infrastructure.

Temporary Traffic Control Design Guidelines

The ADOT provides the Temporary Traffic Control Design Guidelines, which include provisions for utility operations (ADOT 2019). These guidelines cover the design and implementation of temporary traffic control measures to ensure safety during construction, maintenance, and utility work on state highways.

The guidelines address various aspects such as speed limits within work zones, the use of signs and barriers, and the placement of temporary pavement markings. They ensure that utility work does not disrupt traffic flow or compromise safety on the highways.

5.17.2.4 Local

The California Public Utilities Commission (CPUC) has sole and exclusive jurisdiction over the siting and design of the Proposed Project. Pursuant to CPUC General Order (G.O.) 131-E, Section XI.B:

> "[L]ocal jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the Commission's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters."

Consequently, local agencies do not have jurisdiction over the Proposed Project, but public utilities must consult with local agencies and consider their regulations.

Arizona Corporation Commission's Arizona Power Plant and Transmission Line Siting Committee has jurisdiction over the Proposed Project in Arizona. This committee may approve or deny a Certificate of Environmental Compatibility application and impose reasonable conditions. However, pursuant to Arizona Revised Statutes Section 40-360.06(D):

> "Any certificate granted by the committee shall be conditioned on compliance by the applicant with all applicable ordinances, master plans and regulations of the state, a county or an incorporated city or town, except that the committee may grant a certificate notwithstanding any such ordinance, master plan or regulation, exclusive of franchises, if the committee finds as a fact that compliance with such ordinance, master plan or regulation is unreasonably restrictive and compliance therewith is not feasible in view of technology available."

As this Proponent's Environmental Assessment is being prepared for the CPUC, the following discussion of local land use regulations in California and Arizona is provided for informational purposes only.

Imperial County Regional Transportation Plan

The Imperial County Transportation Plan aims to significantly enhance the region's transportation infrastructure by focusing on public transit, active transportation, and overall mobility improvements (Imperial County 2024). Key aspects of the plan include enhancing fixed-route services and providing curb-to-curb transportation for individuals with disabilities, promoting biking and walking to reduce fossil fuel use and improve public health, and strengthening interregional connections to support economic development and equitable mobility. Utility companies play a crucial role in this plan by ensuring that transportation projects do not disrupt essential services. Utility companies must coordinate with transportation authorities to ensure that infrastructure projects do not disrupt essential services.

Yuma Metropolitan Planning Organization

The FY 2022-2026 Yuma Metropolitan Planning Organization (YMPO) Transportation Improvement Program (TIP) outlines a comprehensive plan for enhancing transportation infrastructure in the Yuma region (YMPO 2021a). Utility projects should collaborate with YMPO so installation does not disrupt essential services.

City of Calexico General Plan

The Circulation Element of the City of Calexico General Plan includes an overview of the City's roadways, public transit, bikeway plan, and trails along with traffic studies and design standards for highways, freeways, and roadways (City of Calexico 2007). The transportation goals, objectives, and policies contained in the Circulation Element are not applicable to the Proposed Project.

5.17.3 Impact Questions

5.17.3.1 Transportation Impact Questions

The significance criteria for assessing the impacts to transportation and traffic come from the CEQA Environmental Checklist. For transportation, the CEQA Checklist asks, would the project:

- Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?
- Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?
- Result in inadequate emergency access?

5.17.3.2 Additional CEQA Impact Questions

The CPUC has identified additional CEQA significance criteria. These additional CEQA significance criteria ask:

- Would the project create potentially hazardous conditions for people walking, bicycling, or driving or for public transit operations?
- Would the project interfere with walking or bicycling accessibility?
- Would the project substantially delay public transit?

5.17.4 Impact Analysis

5.17.4.1 Transportation Impact Analysis

5.17.4.1.1 Transportation Methodology

The methodology that was used to evaluate transportation-related impacts included a review of the Proposed Project alignment and the existing circulation system, including roadways in the vicinity of the Proposed Project, and pedestrian facilities, bicycle facilities, transit facilities, and rail facilities within a 1,000-foot buffer from the Proposed Project. Construction and operation activities for the Proposed Project were then evaluated to determine what, if any, effect they would have on the existing circulation system.

5.17.4.1.2 Would the project conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

Construction

Project Components in California

Less than Significant Impact. The Proposed Project would result in temporary construction traffic during the 19 months of project construction. Figure 5.17-1a through Figure 5.17-1c show the existing roadways in the vicinity of the Proposed Project. Figure 5.17-2a through Figure 5.17-2c shows the existing and proposed bike lanes in the vicinity of the Proposed Project. Figure 5.17-3a through Figure 5.17-3c show the existing transit routes in the vicinity of the Proposed Project. Construction activities would include the transportation of construction equipment and personnel along public roadways, some of which have existing transit routes or planned pedestrian and bicycle facilities. Construction equipment would often be left along the Proposed Project alignment overnight and on off-days to minimize the number of trips required to transport equipment.

Light and heavy-duty helicopters would be used to transport construction personnel to certain locations along the Proposed Project alignment. Helicopters associated with construction would utilize staging areas and landing zones constructed near the Proposed Project alignment. Additionally, helicopters may use existing or proposed access roads, pull-and-tension sites, structure pads, and temporary work areas to land, or they may land within the right-of-way as needed. Helicopters associated with project construction would not utilize any public roadways and therefore would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. In areas where helicopter fly yards are adjacent to or intersect with public roadways, such construction spaces would be designed to ensure no conflicts with public access.

Although construction activities may disrupt traffic along a small number of roadways that have existing and proposed pedestrian and bicycle routes on them within the Proposed Project area, this disruption would be temporary and not substantial due to the largely undeveloped nature of the Proposed Project area. Because construction impacts would be temporary, construction of the Proposed Project components in California would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. Therefore, impacts during construction in California would be less than significant.

Project Components in Arizona

Less than Significant Impact. Construction activities in Arizona would utilize public roadways. As shown on Figure 5.17-2c and Figure 5.17-3c, there are no existing or proposed bicycle facilities nor are there any transit routes on roadways within 1,000 feet of the Proposed Project in Arizona. As discussed above under *Project Components in California*, construction activities would be temporary in nature and additional construction traffic would not be substantial due to the largely undeveloped nature of the Proposed Project area. Therefore, similar to construction components in California, construction of the Proposed Project components in Arizona would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. Impacts during construction in Arizona would be less than significant.

Overall Project

Less than Significant Impact. The Proposed Project would result in temporary traffic impacts as a result of construction activities. Due to the largely undeveloped nature of the Proposed Project area and the temporary nature of Project construction, construction of the Proposed Project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. Therefore, impacts would be less than significant.

Operation

Project Components in California

No Impact. As presented in Chapter 3, Proposed Project Description, operations and maintenance (O&M) activities associated with the Proposed Project would be similar to those currently performed by utility providers in the Proposed Project area. Among other things, O&M activities would include routine inspections and emergency repair within substations and throughout rights-of-way, which would require the use of vehicles and equipment. HWT would inspect transmission overhead facilities in a manner consistent with CPUC G.O. 95, G.O. 128, and G.O. 165.

Overall, it is estimated an additional 1 to 2 full-time employees would be hired to support this work, but maintenance of the Proposed Project would ultimately be integrated into HWT's existing O&M program currently executed by HWT and supported by external specialized contractors. The Project would be monitored remotely 24/7 by the System Operations team at Lone Star Transmission, an HWT affiliate. Trips to the Proposed Project area to perform O&M activities would be minimal and infrequent, estimated at up to 24 annual trips (1 per month for 2 employees).

Most regular O&M activities of overhead facilities would be performed from existing access roads with no surface disturbance. Helicopters may be used for various O&M activities, including the transportation of transmission line workers, delivery of equipment and materials to structure sites, structure placement, hardware installation, and conductor or optical ground wires stringing operations. Helicopter landing areas may be located in places where access by road is infeasible. In addition, helicopters may land within the Project ROW, which could include landing on access roads. Overall, the Proposed Project would result in a nominal increase in O&M activities in California, such as increased maintenance and inspection trips. Consequently, the Proposed Project would not conflict with any program, plan, policy, or ordinance addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities, and there would be no impact.

Project Components in Arizona

No Impact. O&M activities for the Proposed Project would be the same across both California and Arizona. Similarly to the discussion above in *Project Components in California*, the Proposed Project would result in a nominal increase in O&M activities in Arizona, such as increased maintenance and inspection trips. Consequently, the Proposed Project would not conflict with any program, plan, policy, or ordinance addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. Therefore, there would be no impact.

Overall Project

No Impact. The Proposed Project would result in minimal traffic impacts associated with O&M activities. Due to the infrequent nature of O&M activities and the small number of personnel that would need to visit the Project to perform these duties, impacts would be nominal overall.

Consequently, the Proposed Project would not conflict with any program, plan, policy, or ordinance addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. Therefore, there would be no impact.

5.17.4.1.3 Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

Construction

Project Components in California

Less than Significant Impact. As described in Section 5.17.2.2.1, CEQA Guidelines section 15064.3 states that VMT is the most appropriate measure of transportation impacts.

As presented in Chapter 3, Proposed Project Description, construction of the Proposed Project would take approximately 19 months, and that up to 154 workers could be working along the Proposed Project alignment on any given day.

Construction would generally take place between the hours of 7:00 a.m. to 7:00 p.m. Monday through Saturday or in accordance with local ordinances, where feasible. The types of vehicles used may include, but are not limited to, 0.75- and 1-ton trucks, semi-trucks, water trucks, 7-ton army bunk trucks, bucket trucks, and mechanic trucks. Construction of the Proposed Project would result in a temporary increase in VMT from employee and truck trips during the approximately 19-month construction period. The CEQA Guidelines state that VMT refers to the amount and distance of automobile travel attributable to a project. The OPR guidelines state that for many projects, a qualitative analysis of construction traffic may be appropriate. The guidelines further state, "[h]ere, the term 'automobile' refers to on-road passenger vehicles, specifically cars and light trucks." Construction VMT would be temporary, would cease upon completion of construction, and would not contribute to permanent per capita VMT. Therefore, Proposed Project construction activities in California would result in a less than significant impact.

Project Components in Arizona

Less than Significant Impact. Construction activities in Arizona would utilize the same types of equipment, the same maximum number of workers, and the same construction hours as activities in California which are described above under *Project Components in California*. As such, similar to construction activities in California, construction in Arizona would result in a temporary increase in VMT from employee and truck trips during the approximately 19-month construction period. Construction VMT would be temporary, would cease upon completion of construction, and would not contribute to permanent per capita VMT. Therefore, Proposed Project construction activities in Arizona would result in a less than significant impact.

Overall Project

Less than Significant Impact. The Proposed Project would result in a temporary increase in VMT associated with employee vehicle and truck trips during the 19- month construction period. Construction VMT would be temporary in nature, would cease upon completion of construction, and would not contribute to permanent per capita VMT. Therefore, overall project impacts would be less than significant.

Operation

Project Components in California

Less than Significant Impact. As presented in Chapter 3, Proposed Project Description, O&M activities associated with the Proposed Project would be similar to those currently performed by utility providers in the Proposed Project area, including the maintenance of access roads and vegetation management. Trips to the Project site to perform O&M activities would be minimal and infrequent. Increased O&M vehicle trips associated with the Proposed Project are estimated to be up to 24 trips annually (1 trip per month for 2 employees). Additionally, the Proposed Project does not include any new infrastructure (such as publicly accessible roads) that could induce population growth during operations. As such, the Proposed Project would result in a nominal increase in VMT associated with O&M activities.

The OPR guidelines indicate that projects that generate or attract fewer than 110 trips per day generally may be presumed to cause a less-than-significant transportation impact. Because the operation of the Proposed Project infrastructure in California would not exceed the 110-permanent trip increase threshold, the Proposed Project would not conflict or be inconsistent with CEQA Guidelines section 15074.3(b), and impacts would be less than significant.

Project Components in Arizona

Less than Significant Impact. O&M activities in Arizona would utilize the same number of workers as O&M activities in California, which is described above under *Project Components in California*. As such, similar to O&M activities in California, O&M activities in Arizona would result in an estimated 24 annual trips, which would be a nominal increase in VMT in the Arizona portion of the project from infrequent employee trips. Similar to California, the project does not include any new infrastructure (such as publicly accessible roads) that could induce population growth during operations. Because the operation of the Proposed Project in Arizona would not include infrastructure that could induce population growth and the Proposed Project would introduce fewer than 110 average daily vehicle trips during O&M activities, impacts would be less than significant.

Overall Project

Less than Significant Impact. The Proposed Project would result in a nominal increase in VMT associated with infrequent employee trips the Proposed Project alignment in both California and Arizona to perform O&M activities. Due to the low number of employees needed to perform this work (1 to 2 full time employees) the integration of the project's O&M activities into HWT's existing O&M program, and because the project would not include any infrastructure which could induce population growth, impacts would be less than significant.

5.17.4.1.4 Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Construction

Project Components in California

Less than Significant Impact with Mitigation Incorporated. The Proposed Project does not include design features that would increase hazards or incompatible uses during construction. Existing

access roads would be used to the extent feasible during construction and new permanent access roads would be created. Construction activities would be compatible with the intended use of the existing transportation facilities, but the movement of heavy trucks and equipment on roadways providing access to Proposed Project work areas could damage road surfaces, shoulders, and curbs. To minimize the potential impact of hazards related to inadvertent damage, roads utilized for construction would be improved as needed.

As previously discussed, temporary road closures may be necessary during construction of the Proposed Project. Temporary road closures and encroachment into public roadways could increase hazards if appropriate safety measures are not in place. This could result in a significant impact on public roadways. However, Applicant Proposed Measure (APM) TRA-1 would be implemented in order to reduce impacts to public roadways. This measure would require HWT to implement appropriate traffic control measures during construction to ensure the safety of Proposed Project personnel and the general public. This would include things like signage and notifications to the public on the locations and timing of construction activities and limitations on helicopter usage in certain areas or at certain times. Implementation of APM TRA-1 would reduce impacts associated with incompatible uses, such as helicopters, near public roadways and would reduce roadways hazards resulting from temporary closure of public roadways due to project construction.

Additionally, in California HWT would be subject to Caltrans encroachment permit conditions which would further limit potential hazards resulting from closure of public roadways. Furthermore, construction activities would be conducted primarily from private access roads maintained by HWT. Ingress and egress points between public roadways and these HWT-maintained access roads would be designed and constructed in accordance with all applicable standards. As a result, the Proposed Project would not introduce any hazards in the form of geometric design features or incompatible uses during construction and impacts would be less than significant with mitigation incorporated.

Project Components in Arizona

Less than Significant Impact with Mitigation Incorporated. Similar to construction in California, construction in Arizona would primarily use private access roads maintained by HWT. Construction activities would be compatible with the intended use of the existing transportation facilities, but the movement of heavy trucks and equipment on roadways providing access to Proposed Project work areas could damage road surfaces, shoulders, and curbs. To minimize the potential impact of hazards related to inadvertent damage, roads utilized for construction would be improved as needed.

As previously discussed, temporary road closures may be necessary during construction of the Proposed Project which could result in a significant impact on public roadways. However, APM TRA-1 would be implemented in order to reduce impacts to public roadways. This measure would require HWT to implement appropriate traffic control measures during construction to ensure the safety of Proposed Project personnel and the general public. This would include things like signage and notifications to the public on the locations and timing of construction activities and limitations on helicopter usage in certain areas or at certain times. Implementation of APM TRA-1 would reduce impacts associated with incompatible uses, such as helicopters, near public roadways and would reduce roadways hazards resulting from temporary closure of public roadways due to project construction.

Additionally, in Arizona HWT would be subject to ADOT encroachment permit conditions, which would further limit potential hazards resulting from closure of public roadways. Furthermore, construction activities would be conducted primarily from private access roads maintained by HWT.

Ingress and egress points between public roadways and these HWT-maintained access roads would be designed and constructed in accordance with all applicable standards. As a result, the Proposed Project would not introduce any hazards in the form of geometric design features or incompatible uses during construction and impacts would be less than significant with mitigation incorporated.

Overall Project

Less than Significant Impact with Mitigation Incorporated. The Proposed Project would primarily utilize private access roads for construction activities; however, some public roadways may be used which could result in road closures. This could introduce hazardous conditions on public roadways in both California and Arizona. APM TRA-1 would be implemented to reduce these impacts by requiring HWT to implement appropriate traffic control measures during construction to ensure the safety of Proposed Project personnel and the general public. This would include things like signage and notifications to the public on the locations and timing of construction activities and limitations on helicopter usage in certain areas or at certain times. Additionally, the Proposed Project would be required to comply with existing regulations including conditions of the encroachment permits issued by Caltrans in California and ADOT in Arizona. Implementation of APM TRA-1 and compliance with existing regulations would reduce impacts associated with hazardous conditions or incompatible uses to less than significant levels.

Operation

Project Components in California

No Impact. The Proposed Project does not include geometric design features that would increase hazards or incompatible uses during operation. As previously described, O&M activities associated with the Proposed Project would be similar to those currently performed by HWT for existing associated lines and infrastructure. The Proposed Project would result in a nominal increase in O&M activities, such as increased maintenance and inspection trips. This work, including work that requires the use of helicopters, would utilize existing and proposed private access roads to complete O&M activities. It is not anticipated that O&M activities would require any public road closures. Therefore, O&M activities in California would not include the introduction of any new geometric design features, nor would they include incompatible uses; therefore, no impact would occur.

Project Components in Arizona

No Impact. O&M activities in Arizona would be similar in nature to O&M activities in California which are described above under *Project Components in California*. As such, similar to O&M activities in California, O&M activities in Arizona would result in a nominal increase in maintenance and inspection trips. All O&M activities in Arizona would utilize existing and proposed private access roads, and it is not anticipated that any public roadways would be closed as a result of O&M activities. Therefore, O&M activities in Arizona would not include the introduction of any new geometric design features, nor would they include incompatible uses; therefore, no impact would occur.

Overall Project

No Impact. The Proposed Project would result in a nominal increase in O&M activities including inspections and maintenance. The employees performing these activities would utilize existing and proposed private access roads and it is not anticipated that any O&M activities would require

closure of public roadways in California or Arizona. Therefore, O&M activities associated with the Proposed Project would not include the introduction of any new geometric design features, nor would they include incompatible uses; therefore, no impact would occur.

5.17.4.1.5 Would the project result in inadequate emergency access?

Construction

Project Components in California

Less than Significant Impact with Mitigation Incorporated. Construction activities may require temporary road and/or lane closures on public roads and would involve the movement of oversize vehicles that could affect emergency vehicle access to and along the Proposed Project alignment. Temporary activities across roadways could disrupt the operations of emergency service providers. During planning for and construction of the Proposed Project, road and/or lane closures, limitations on the direction of travel, and vehicle movements along and use of public roads and access roads would be communicated to and coordinated with the appropriate agencies and landowners, as necessary. As discussed in Section 5.17.4.2.3, above, construction activities in California would be subject to APM TRA-1 and encroachment permit conditions set by Caltrans. Compliance with these regulations would reduce potential hazards associated with road closures and facilitate cooperation between HWT and the relevant emergency response agencies. Coordinating with emergency responders in advance, implementing traffic control measures, and adhering to Caltrans encroachment permit conditions would reduce impacts to emergency access. Overall, impacts would be less than significant with mitigation.

Project Components in Arizona

Less than Significant Impact with Mitigation Incorporated. Similar to construction activities in California, construction activities in Arizona may require temporary road and/or lane closures on public roads and would involve the movement of oversize vehicles that could affect emergency vehicle access to and along the Proposed Project alignment. Temporary activities across roadways could disrupt the operations of emergency service providers. As discussed above, construction activities in Arizona would be subject to APM TRA-1 and encroachment permit conditions set by ADOT. Compliance with these regulations would reduce potential hazards associated with road closures and facilitate cooperation between HWT and the relevant emergency response agencies. Coordinating with emergency responders in advance, implementing traffic control measures, and adhering to ADOT encroachment permit conditions would reduce impacts to emergency access. Overall, impacts would be less than significant with mitigation.

Overall Project

Less than Significant Impact with Mitigation Incorporated. The Proposed Project may require temporary road and/or lane closures on public roads in both California and Arizona and would involve the movement of oversize vehicles that could affect emergency vehicle access to and along the Proposed Project alignment. Temporary activities across roadways could disrupt the operations of emergency service providers. During planning for and construction of the Proposed Project, road and/or lane closures, limitations on the direction of travel, and vehicle movements along and use of public roads and access roads would be communicated to and coordinated with the appropriate agencies and landowners, as necessary. Construction activities for the Proposed Project would be subject to APM TRA-1 and encroachment permit conditions set by Caltrans and ADOT. Compliance

with these regulations would reduce potential hazards associated with road closures and facilitate cooperation between HWT and the relevant emergency response agencies. Coordinating with emergency responders in advance, implementing traffic control measures, and adhering to Caltrans and ADOT encroachment permit conditions would reduce impacts to emergency access. Overall, impacts would be less than significant with mitigation.

Operation

Project Components in California

No Impact. As previously described, O&M activities associated with the Proposed Project in California would be similar to those currently performed by HWT and their associated lines and infrastructure. The Proposed Project would result in a nominal increase in O&M activities, such as increased maintenance and inspection trips. These activities would utilize existing and proposed private access roads. It is not anticipated that O&M activities would require any public road closures. Finally, no new features would be constructed as part of the Proposed Project that would restrict emergency access. Therefore, O&M activities in California would not inhibit emergency access; therefore, no impact would occur.

Project Components in Arizona

No Impact. O&M activities in Arizona would be similar in nature to O&M activities in California which are described above under *Project Components in California*. As such, O&M activities in Arizona would utilize existing and proposed private access roads. It is not anticipated that O&M activities would require any public road closures. Finally, no new features would be constructed as part of the Proposed Project that would restrict emergency access. Therefore, O&M activities in Arizona would not inhibit emergency access; therefore, no impact would occur.

Overall Project

No Impact. The Proposed Project would result in a nominal increase in O&M activities including inspections and maintenance. The employees performing these activities would utilize existing and proposed private access roads and it is not anticipated that any O&M activities would require closure of public roadways in California or Arizona. Additionally, no new features would be constructed as part of the Proposed Project that would restrict emergency access. Therefore, O&M activities associated with the Proposed Project as a whole would not inhibit emergency access; no impact would occur.

5.17.4.1.6 Would the project create potentially hazardous conditions for people walking, bicycling, or driving or for public transit operations?

Construction

Project Components in California

Less than Significant Impact with Mitigation Incorporated. Construction activities would primarily use private access roads maintained by HWT that do not serve bicyclists, pedestrians, or public transit. Figure 5.17-2a through Figure 5.17-2c shows the existing and proposed bike lanes within 1,000 of the Proposed Project alignment. Figure 5.17-3a through Figure 5.17-3c show the existing

transit routes in the vicinity of the Proposed Project. As described in Section 5.17.1, Environmental Setting, there are no transit stops within 0.5 miles from the Proposed Project alignment.

As discussed throughout this chapter, some activities may result in temporary lane and/or road closures on public roadways in California which could create hazardous conditions for bicyclists, pedestrians, and vehicles if appropriate safety measures are not in place (e.g., proper signage, orange cones, and flaggers). However, APM TRA-1 would be implemented in order to reduce impacts to public roadways. This measure would require HWT to implement appropriate traffic control measures during construction to ensure the safety of Proposed Project personnel and the general public. This would include things like signage and notifications to the public on the locations and timing of construction activities and limitations on helicopter usage in certain areas or at certain times. Implementation of APM TRA-1 would reduce roadways hazards resulting from temporary closure of public roadways due to Proposed Project construction. Additionally, in California HWT would be subject to Caltrans encroachment permit conditions which would further limit potential hazards resulting from closure of public roadways. Compliance with existing regulations and implementation of APM TRA-1 would reduce impacts to less than significant levels.

Project Components in Arizona

Less than Significant Impact with Mitigation Incorporated. Similar to construction in California, construction activities in Arizona would primarily use private access roads maintained by HWT that do not serve bicyclists, pedestrians, or public transit. Additionally, as shown on Figure 5.17-2c and Figure 5.17-3c, there are no existing or proposed bicycle facilities nor are there any transit routes within 1,000 feet of the Proposed Project alignment in Arizona. Some activities may result in temporary lane and/or road closures on public roadways in California which could create hazardous conditions for vehicles if appropriate safety measures are not in place (e.g., proper signage, orange cones, and flaggers). However, APM TRA-1 would be implemented in order to reduce impacts to public roadways. This measure would require HWT to implement appropriate traffic control measures during construction to ensure the safety of Proposed Project personnel and the general public. This would include things like signage and notifications to the public on the locations and timing of construction activities and limitations on helicopter usage in certain areas or at certain times. Implementation of APM TRA-1 would reduce roadways hazards resulting from temporary closure of public roadways due to Proposed Project construction. Additionally, in Arizona HWT would be subject to ADOT encroachment permit conditions which would further limit potential hazards resulting from closure of public roadways. Compliance with existing regulations and implementation of APM TRA-1 would reduce impacts to less than significant levels.

Overall Project

Less than Significant Impact with Mitigation Incorporated. Construction activities associated with the Proposed Project would primarily use private access roads maintained by HWT that do not serve bicyclists, pedestrians, or public transit. However, as discussed throughout this chapter, some activities may result in temporary lane and/or road closures on public roadways which could create hazardous conditions for bicyclists, pedestrians., and vehicles if appropriate safety measures are not in place (e.g., proper signage, orange cones, and flaggers). However, APM TRA-1 would be implemented in order to reduce impacts to public roadways in California and Arizona. This measure would require HWT to implement appropriate traffic control measures during construction to ensure the safety of Proposed Project personnel and the general public. This would include things like signage and notifications to the public on the locations and timing of construction activities and limitations on helicopter usage in certain areas or at certain times. Implementation of APM TRA-1

would reduce roadways hazards resulting from temporary closure of public roadways due to Proposed Project construction. Additionally, the Proposed Project would be subject to the conditions of the encroachment permits issued by Caltrans and ADOT which would further limit potential hazards resulting from closure of public roadways. Compliance with existing regulations and implementation of APM TRA-1 would reduce impacts to less than significant levels.

Operation

Project Components in California

No Impact. As previously described, O&M activities associated with the Proposed Project would be similar to those currently performed by HWT and their associated lines and infrastructure. The Proposed Project would result in a nominal increase in O&M activities, such as increased maintenance and inspection trips. These activities would be conducted from existing and proposed private access roads. It is not anticipated that O&M activities would require public road closures. Because O&M activities in California would be conducted on the Proposed Project site utilizing private roadways, they would not affect people walking, bicycling, driving, or utilizing public transit; therefore, no impact would occur.

Project Components in Arizona

No Impact. O&M activities in Arizona would be similar in nature to O&M activities in California, which are described above under *Project Components in California*. As such, O&M activities in Arizona would be conducted on the Proposed Project site and would utilize existing and proposed private access roads. It is not anticipated that O&M activities would require any public road closures. Because O&M activities in Arizona would be conducted on the Proposed Project site utilizing private roadways, they would not affect people walking, bicycling, driving, or utilizing public transit; therefore, no impact would occur.

Overall Project

No Impact. The Proposed Project would result in a nominal increase in O&M activities including inspections and maintenance. The employees performing these activities would utilize existing and proposed private access roads and it is not anticipated that any O&M activities would require closure of public roadways in California or Arizona. Because O&M activities associated with the Proposed Project would be conducted on the Proposed Project site utilizing private roadways, they would not affect people walking, bicycling, driving, or utilizing public transit; therefore, no impact would occur.

5.17.4.1.7 Would the project interfere with walking or bicycling accessibility?

Construction

Project Components in California

Less than Significant Impact. As described in Section 5.17.1.4, and shown on Figure 5.17-2a through Figure 5.17-2c, limited pedestrian sidewalks and bicycle trails or lanes exist in the Proposed Project area due to its remote location. Use of these facilities could be temporarily interrupted when construction occurs adjacent and/or over these facilities. However, interruptions of use would be temporary and short-term, lasting only a few days in any one location. Furthermore, notices of

closures would be provided in accordance with APM TRA-1. Thus, impacts associated with walking and bicycling accessibility in California would be less than significant.

Project Components in Arizona

No Impact. As shown on Figure 5.17-3c, the Proposed Project area in Arizona does not have any existing or proposed bicycle facilities due to its remote location. Additionally, there are no pedestrian facilities in the vicinity of the Proposed Project alignment in Arizona. Therefore, there would be no impact.

Overall Project

Less than Significant Impact. Use of the limited walking or bicycle facilities near the Proposed Project site in California could be temporarily interrupted when construction occurs adjacent and/or over these facilities. However, interruptions of use would be temporary and short-term, lasting only a few days in any one location. Further, notices of closures would be provided in accordance with APM TRA-1. Thus, impacts associated with walking and bicycling accessibility would be less than significant.

Operation

Project Components in California

No Impact. As previously described, O&M activities associated with the Proposed Project would be similar to those currently performed by HWT for existing substations and their associated lines and infrastructure. The Proposed Project would result in a nominal increase in O&M activities, such as increased maintenance and inspection trips. O&M activities would primarily use existing private access roads and would not require any closures of public roadways. Therefore, there would be no impact to bicycle and pedestrian facilities in California.

Project Components in Arizona

No Impact. O&M activities in Arizona would be similar in nature to O&M activities in California which are described above under *Project Components in California*. As such, O&M activities would primarily use existing private access roads and would not require any closures of public roadways. Therefore, there would be no impact to bicycle and pedestrian facilities in Arizona.

Overall Project

No Impact. The Proposed Project would result in a nominal increase in O&M activities including inspections and maintenance. These activities would primarily utilize private access roads and would not result in the closure of any public roadways. Therefore, bicycle and pedestrian facilities would not be impacted by O&M activities associated with the Proposed Project.

5.17.4.1.8 Would the project substantially delay public transit?

Construction

Project Components in California

Less than Significant Impact. Figure 5.17-3a through Figure 5.17-3c show the transit routes near the Proposed Project area in California. As described in Section 5.17.1, Environmental Setting, there are

no transit stops within 0.5 miles from the Proposed Project alignment. Construction of the proposed project could result in temporary lane and road closures, which could impact transit providers that utilize roadways near the Proposed Project site. However, APM TRA-1 would be implemented in order to reduce impacts to public roadways. This measure would require HWT to implement appropriate traffic control measures during construction to ensure the safety of Proposed Project personnel and the general public. This would include things like signage and notifications to the public on the locations and timing of construction activities and limitations on helicopter usage in certain areas or at certain times. Implementation of APM TRA-1 would reduce impacts to public transit during Proposed Project construction. Impacts would be less than significant.

Project Components in Arizona

No Impact. As shown in Figure 5.17-3c, there are no transit routes or transit stops within 1,000 feet of the Proposed Project alignment in Arizona. As described in Section 5.17.1, Environmental setting, there are no transit stops within 0.5 miles from the Proposed Project. As such there would be no impact to transit facilities in Arizona.

Overall Project

Less than Significant Impact. Figure 5.17-3a through Figure 5.17-3c show the transit routes near the Proposed Project area in California. There are no transit routes in the vicinity of the Proposed Project in Arizona. Construction of the Proposed Project could result in temporary lane and road closures which could impact transit that utilize these roadways. However, APM TRA-1 would be implemented to reduce impacts to public roadways. This measure would require HWT to implement appropriate traffic control measures during construction to ensure the safety of Proposed Project personnel and the general public. This would include things like signage and notifications to the public on the locations and timing of construction activities and limitations on helicopter usage in certain areas or at certain times. Implementation of APM TRA-1 would reduce impacts to public transit during Proposed Project construction. Impacts would be less than significant.

Operation

Project Components in California

No Impact. As previously described, O&M activities associated with the Proposed Project would be similar to those currently performed by HWT and their associated lines and infrastructure. The Proposed Project would result in a nominal increase in O&M activities, such as increased maintenance and inspection trips. O&M activities would primarily use existing private access roads and would not require any closures of public roadways. Therefore, there would be no impact to transit services in California.

Project Components in Arizona

No Impact. O&M activities in Arizona would be similar in nature to O&M activities in California which are described above under *Project Components in California*. As such, O&M activities would primarily use existing private access roads and would not require any closures of public roadways. Therefore, there would be no impact to transit services in Arizona.

Overall Project

No Impact. The Proposed Project would result in a nominal increase in O&M activities including inspections and maintenance. These activities would primarily utilize private access roads and would not result in the closure of any public roadways. Therefore, transit services would not be impacted by O&M activities associated with the Proposed Project.

5.17.4.2 Vehicle Miles Traveled

The Proposed Project is not located within 0.5 mile of a major transit stop or a high-quality transit corridor. The VMT generated by the Proposed Project during construction is discussed in detail in Section 5.3, Air Quality, and summarized in Table 5.17-3. As shown, the Proposed Project would result in an estimated daily construction VMT of 594.

Table 5.17-4 shows the Proposed Project's operational VMT. Assuming there would be 24 O&M trips per year (1 per month for two employees) traveling 160 miles round trip, the project would involve a maximum daily VMT of 320 and an average daily VMT of 11.

Table 5.17-3 Construction VMT

2029 Annual VMT	2030 Annual VMT	2031 Annual VMT	Estimated Daily VMT[1]
216,536	19,011	19,011	594

See Appendix B for the Proposed Project's annual construction VMT, broken out by phase, for each construction year.

[1] Estimated Daily VMT calculated by dividing maximum annual VMT (which occurs in year 2029) by 365 days.

Table 5.17-4 Operational VMT

	Number of Trips	Estimated Average Trip Length	Estimated Annual VMT	Estimated Average Daily VMT[1]
Operations and Maintenance Activities	24[1]	160 miles[2]	3,840[3]	11[4]

[1] Assumes 1 trip per month for two workers

[2] Assumes an 80-mile one-way trip for a total of 160 miles round trip

[3] Calculated by multiplying the number of trips (24) by the total trip length (160 miles)

[4] Calculated by dividing 3,840 annual VMT by 365 days

Table 5.17-5 shows construction and operational VMT compared to the existing average VMT for jurisdictions within the Proposed Project area. When compared to the average daily VMT in all the jurisdictions in the Proposed Project area, the Proposed Project would result in an increase in daily VMT of less than one percent across all jurisdictions for both construction and operation.

Table 5.17-5 Construction and Operational VMT Compared to Existing VMT in the Proposed Project Area

Jurisdiction	Existing Average Daily Vehicle Miles Traveled in 2020[1]	Percent Increase with Proposed Project Construction VMT	Percent Increase with Proposed Project O&M VMT
City of Calexico	195,840	+0.30 percent	+0.005 percent
Imperial County	5,794,010	+0.01 percent	+0.0002 percent
Yuma County	6,499,036	+0.009 percent	+0.0002 percent

[1] See Table 5.17-2, Daily Vehicle Miles Traveled for Jurisdictions in Proposed Project Area

The increase in VMT would be distributed across the breadth of the Proposed Project; therefore, the increases in VMT from construction and O&M would not likely be realized entirely within one single jurisdiction within the Proposed Project area.

5.17.4.3 Traffic Impact Analysis

A traffic impact study has not been prepared for the Proposed Project. The Proposed Project would not result in any noticeable long-term or permanent increases in traffic, would not generally result in an increase in peak hour trips given the typical work hours of construction crews, is not a development project, and would not result in any land use changes.

5.17.4.4 Hazards

Neither the construction phase nor the O&M phase of the Proposed Project would generate any permanent traffic hazards. Temporary road and/or lane closures may occur along roadways crossed or adjacent to construction, as listed in Table 5.17-1. In accordance with APM TRA-1, HWT would implement traffic control measures and would comply with the conditions of encroachment permits issued by Caltrans and ADOT. This would reduce the potential for hazardous conditions to occur on public roadways.

5.17.4.5 Accessibility

Existing and proposed bike lanes within 1,000 feet of the Proposed Project are shown in Figure 5.17-2a through Figure 5.17-2c. As discussed in Section 5.17.4.2.6, the Proposed Project would result in less than significant impacts to bicycle and pedestrian facilities.

5.17.4.6 Transit Delay

Existing bus routes are shown in Figure 5.17-3a through Figure 5.17-3c. As described in Section 5.17.1, Environmental Setting, there are no transit stops within 0.5 miles from the Proposed Project. As described in Section 5.17.4.2.7, implementation of APM TRA-1 would reduce impacts to transit services to less than significant levels.

5.17.5 CPUC Draft Environmental Measures

There are no CPUC Draft Environmental Measures identified for transportation.

5.17.5.1 Applicant Proposed Measures

The following Applicant Proposed Measure would be required to reduce impacts associated with roadways hazards to less than significant levels:

- **TRA-1:** Prior to construction, HWT would cooperate with the relevant siting authorities (e.g., Bureau of Land Management), regulatory agencies (e.g., Federal Aviation Administration, Department of Defense, etc.), and local governments to implement appropriate traffic control measures during construction. These traffic control measures would also include requirements set by the encroachment permits granted by the California Department of Transportation and the Arizona Department of Transportation for the Proposed Project. The intent of the traffic control measures would be to ensure the safety of the Proposed Project personnel and the general public. Measures may include notifications to the public on the locations and timing of construction activities, traffic management such as signage and lane closures on public roads, the use of traffic cones and traffic personnel to further direct traffic, limitations on helicopter

use in certain areas or at certain times, and daily work hours consistent with local ordinances. Traffic control measures would be implemented through the creation of a transportation plan that would be drafted and reviewed by the relevant siting authorities mentioned above prior to project construction.

5.18 Tribal Cultural Resources

This section describes the tribal cultural resources potentially of importance to Native American tribes with ancestral ties in the vicinity of the Ironwood Transmission Line Project (Proposed Project), as well as the potential impacts that may result from construction and operation of the Proposed Project. See Section 5.5, Cultural Resources, for a discussion of cultural resources more broadly, including archaeological and built environment resources.

Assembly Bill (AB) 52 (Gatto; Stats. 2014, Ch. 532), which was enacted in September 2014, sets forth both procedural and substantive requirements for the analysis of tribal cultural resources, as defined in Public Resources Code (PRC) section 21074, and consultation with California Native American tribes.

Under the National Historic Preservation Act, tribal consultation is a process that ensures federally recognized tribes have an opportunity to participate in the identification and evaluation of historic properties which may hold cultural significance to the tribe.

This section is based on information primarily obtained through a review of applicable regulations and an Ethnographic Literature Review prepared by Rincon Consultants, Inc. (Rincon) in support of the Proposed Project (Rincon 2025a).

5.18.1 Environmental Setting

The Proposed Project is located in western Yuma County, Arizona and Imperial County, California, crossing predominantly unincorporated lands as well as federal, state, municipal, and private land. These lands include unincorporated areas of Imperial and Yuma counties, the city of Calexico, California, and public lands under the jurisdiction or management of the United States (U.S.) Bureau of Land Management (BLM), U.S. Bureau of Reclamation, and the California Department of Parks and Recreation. The following describes the tribal cultural resources setting in the vicinity of the Proposed Project. Additional setting information is provided in Section 5.5, Cultural Resources.

5.18.1.1 Ethnographic Background

Cahuilla

Territory traditionally claimed by the Cahuilla was topographically complex, including mountain ranges, passes, canyons, valleys, and desert. Bean (1978) described it as, “from the summit of the San Bernardino Mountains in the north to Borrego Springs and the Chocolate Mountains in the south, a portion of the Colorado Desert west of Orocopia Mountain to the east, and the San Jacinto Plain near Riverside and the eastern slopes of Palomar Mountain to the west.”

The Cahuilla, like their neighbors the Luiseño and Juaneño to the west and the Cupeño to the south, are speakers of a Cupan language. Cupan languages are part of the Takic linguistic subfamily of the Uto-Aztecan language family. It is thought that the Cahuilla migrated to southern California approximately 2,000 to 3,000 years ago, most likely from the southern Sierra Nevada Mountain ranges of east-central California with other Takic speaking social groups (Moratto 1984).

Cahuilla villages were usually located in canyons or on alluvial fans near water and food patches (Bean 1978). The area immediately around a village was owned in common by a lineage. A large village could extend over a 3-to-5-mile area with each house spaced 30 to 60 feet apart (Bean 1974).

Other lands were divided into tracts owned by clans, families, and individuals. Numerous sacred sites with rock art were associated with each village. Villages were connected by trail networks used for hunting, trading, and social visiting. Trading was a prevalent economic activity. Some Cahuilla were trading specialists. The Cahuilla went as far west as the Channel Islands and east to the Gila River to trade.

The Cahuilla had access to an immense variety of plant resources present within a diverse suite of habitats. Several hundred plant species were used for food, manufacture, and medicine. Acorns, mesquite and screw beans, pinyon nuts, and cactus fruits were the most important plant foods, supplemented by a host of seeds, tubers, roots, bulbs, fruits and berries, and greens. Cultivated crops included corn, beans, squash, and melons. The Cahuilla used more than 200 species of plants as medicines. Tools for processing and preparing plants and animals included mortars and pestles, manos and metates used in conjunction with pottery and baskets (Bean 1978, Kroeber 1908).

Pottery vessels were made by the Cahuilla and also traded from the Yuman-speaking groups across the Colorado River and to the south (Kroeber 1908). The Cahuilla were known for their ornate basketry and were made of grass (*Epicampes rigens*) for the warp, a reed grass (*Juncus robustus*) or sumac (*Rhus trilobata*) for the weft (Bean 1978, Kroeber 1908). Dyes were made from elder or suede for black, and yellow, red, brown, and green colors were made from the stem of the *Juncus*.

Structures varied in type and size and included brush structures, dome-shaped or rectangular houses 15 to 20 feet long, and ceremonial houses (Bean 1974, Kroeber 1908). The chief's house was usually the largest. Used for many social, ceremonial, and religious functions, it was located near a reliable water source. It generally was next to the ceremonial house, which was used for rituals, curing, and recreational activities. Other structures included a communal men's sweathouse and granaries.

Currently, there are approximately 3,000 enrolled members in nine federally recognized Cahuilla tribes (Augustine Band of Cahuilla Indians 2024). The federally-recognized Cahuilla bands include: Agua Caliente Band of Cahuilla Indians of the Agua Caliente Indian Reservation; Augustine Band of Cahuilla Indians; Cabazon Band of Cahuilla Indians; Cahuilla Band of Indians; Los Coyotes Band of Cahuilla and Cupeño Indians; Morongo Band of Mission Indians; Ramona Band of Cahuilla; Santa Rosa Band of Cahuilla Indians; and Torres Martinez Desert Cahuilla Indians. A tenth group, the Mission Creek Tribe, is not currently a federally recognized tribe and does not currently have a reservation. All federally recognized Cahuilla tribes have reservations in Southern California within Imperial, Riverside, and San Diego counties.

Cocopah

The Proposed Project is within the territory of the Cocopah. The Cocopah, also known as the River People, lived for centuries between the confluence of the Colorado and Gila rivers and the Colorado River Delta in Mexico (Cocopah Indian Tribe 2025). The Cocopah are descended from the Yuman-speaking people who arrived in what is now Arizona approximately 3,000 years ago (Feathers 2004). Cocopah language originates from the Yuman-linguistic family of the Hokan-derived languages, which is one of the ancient languages of the Pacific Coast region (Feathers 2004).

As river people, the Cocopah traveled the waterways on rafts. Rafts were built in the form of a basket that resembled a bird's nest made of willow and cottonwood roots. For longer journeys, a log raft with a clay floor to keep a fire was used (Feathers 2004). Log rafts also carried a metate for food processing. The Cocopah would travel on rafts down to the mouth of the Colorado River to fish and harvest abalone and other shellfish and collect wild wheat and rice (Feathers 2004, Inter Tribal

Council of Arizona 2025). Cocopah fishing technology included gill nets, dip nets, and arrows. In the estuary, certain species of fish could be captured by digging them out of soft mud (Kelly 1977).

The Cocopah people were skilled floodplain farmers. Seeds were planted along the river in July when the water began to recede (Kelly 1977, Feathers 2004). Agricultural crops harvested by the Cocopah included pumpkin, watermelon, muskmelons, maize, beans, heshmicha, and sugar cane (Kelly 1977, Feathers 2004). When the river flooded excessively, the Cocopah would relocate to nearby mountains and hunted small game or gathered legumes, grains, and fruits from native vegetation. The Cocopah gathered or grew 37 seed varieties, 16 types of greens, 16 varieties of berries and cactus fruits, and seven types of roots and tubers (Feathers 2004).

A permanent, traditional Cocopah house was a rectangular or square earth-covered structure with rounded corners, a flat roof, and an excavated floor (Kelly 1977). The family house was approximately 15 feet square and measured six feet in height. The houses would have a ramada or shade projecting out from the front of the house and always faced east (Kelly 1977). The Cocopah also frequently used temporary shelters in conjunction with the main Cocopah house. Small brush shelters were built outside and apart from the main house and used as sleeping quarters for extended family (Kelly 1977). The roofs and ramadas of Cocopah homes were frequently used as storage platforms, which elevated food away from moisture, children, dogs, and large animals (Kelly 1977).

Cocopah artistry and craftmanship included pottery, gourd making, and beading (Feathers 2004). Pottery was made from hard clay collected from the west side of the Colorado River. Clay coils were formed with a mushroom shaped anvil and wooden paddle. No slip was applied to the pots, and the pots were fired in holes lined with mesquite logs. Pottery designs were made from a red hematite pigment applied prior to firing, and a black boiled concoction of mesquite sap and arrow weed plants was applied after firing while the pot was still hot. Native gourds were grown to use as dippers, containers, and decorated ceremonial rattles. In the nineteenth century, Cocopah men employed in the steamboat business were paid in glass beads, which were then used to create intricate collar yolks for ceremonial purposes (Feathers 2004).

The political geography changed with the coming of European settlers in the sixteenth century, and the Cocopah were divided between the United States and Mexico. Federal policy to develop the Colorado River's water for agricultural production and to promote settlement of the region has contributed to the profound transformation of this landscape (Morton 2023). The Colorado River was dammed in 1950, and water was slowly taken from the river until it became a dry riverbed from Morelos Dam to the sea for approximately 69 miles through Cocopah territory (Ten Tribes Partnership 2025). The land set aside for the tribe by the United States government occupies only a small portion of their original lands, which had transformed from a lush river corridor into a desiccated desert environment (Morton 2023).

The Cocopah Indian Reservation was established by Executive Order No. 2711 in 1917 (Feathers 2004, Inter Tribal Council of Arizona 2025). The reservation is located in the low lying desert approximately 13 miles south of Yuma and bounded by the Colorado River (Feathers 2004, Inter Tribal Council of Arizona 2025). Located 5 miles north of San Luis, Mexico, it is situated 180 miles east of San Diego and 180 miles west of Phoenix. In the late 1970s and 1980s, the tribe began acquiring additional land, constructing homes, installing utilities, developing an infrastructure system and initiating economic development (Ten Tribes Partnership 2025). Cocopah tribal members reside within either the East Cocopah, West Cocopah, or North Cocopah reservations (Feathers 2004). The three reservations comprise approximately 6,500 acres, and approximately

1,000 enrolled Cocopah Indian Tribe members currently live and work on or near the three reservations (Ten Tribe Partnership 2025).

Kamia or Desert Kumeyaay

The Proposed Project is in the traditional use area of the Kamia or Desert Kumeyaay, which includes the region along the Pacific coast from central San Diego County southward into Baja California and eastward into Imperial County (Gamble and Zepeda 2002). European settlers to the area referred to them as the Diegueño or Diegueno due to the nearby Mission San Diego de Alcala (Gifford 1931). The umbrella term "Kumeyaay" refers to both the Ipai and Tipai groups. Linguistic studies support the division of the Kumeyaay people into northern (Ipai) and southern (Tipai) dialect groups (Gifford 1931; Luomala 1978). Ipai territory includes the area north of La Jolla to Agua Hedionda Lagoon with tremendous environmental variation and resource zones. The Tipai territory includes the Pacific coast from La Jolla south to below Ensenada and Todos Santos Bay in Baja California, Mexico. The Kamia, or Desert Kumeyaay, are Tipai located in parts of eastern San Diego County, portions of northeastern Baja California, and the majority of the western portion of Imperial County (Gifford 1931; Luomala 1978). Neighboring groups included the Luiseño and Cupeño to the northwest, the Cahuilla to the northeast, the Quechan to the east, and the Paipai to the south (Kroeber 1925).

Kumeyaay bands typically controlled 10–30 linear miles within a drainage system. Within each band's territory was a primary village and a number of secondary homesteads located along tributary creeks (Shipek 1982: 297). Each band was composed of 5 to 15 kinship groups (sibs or shiimul), some of which were divided among more than one band (Kroeber 1925: 719). Approximately 50 to 75 named kinship groups were located throughout the entire Kumeyaay territory. Political organization varied between bands. Basic structure included a patrilineal band leader, or a Kwaaypaay, and at least one assistant who acted as a messenger (Luomala 1978: 597, Shipek 1982). The primary roles of the Kwaaypaay were to direct ceremonies, act as a disciplinary head, advise on marriages and family differences, make war decisions, and organize hunting and foraging expeditions.

The Kwaaypaay counseled with shaman on many important decisions. Ceremonies among the Kumeyaay are similar to those of other Southern California Native groups (Kroeber 1925: 712-717). The ceremonial leader was an inherited religious position. Rituals conducted by ceremonial leaders included puberty rites, marriage, naming ceremonies, cremation of the dead, and the annual mourning ceremony (keruk) for all those of the sib who had died the previous year. Kumeyaay groups shared religious mythologies and belief in a higher creator-god (Shipek 1985). Kuuchama, or Tecate Peak, was the most sacred landmark designated by the Kumeyaay god as the location for acquiring power for good, healing, and peace. Other holy places recognized by all Kumeyaay include Wee'ishpa or Signal Mountain, Jacumba Peak, Mt. Woodson, Viejas Mountain, and other mountains near the Colorado River in the Desert Kumeyaay region (Shipek 1985, 1987: 14).

Entire bands moved to winter villages in sheltered valleys near known sources of water. Dwellings in the relatively permanent winter villages were semi-subterranean and roughly circular, with a wooden pole framework covered with brush thatch, and a mat covering. They faced east to keep out the wind and ensure privacy (Luomala 1978: 597). Other structures in the village consisted of family-owned platform granaries, a village-owned brush ceremonial enclosure, and sweat lodges. A semi-circular enclosure was used for the keruk mourning ceremony, and rock walls sometimes surrounded ceremonial and dance areas. At summer camps, ramadas and windbreaks were common and built into trees or rock shelters. Granaries and more permanent housing would

sometimes be constructed within frequently visited oak groves in the hills and in the mountains of Kumeyaay territory.

A primary source of protein came from rabbits, woodrats, and other small game living along the mesas and foothills. Small mammals were caught using throwing sticks, the bow and arrow, or in nets on community drives. Hunting large game such as deer and mountain sheep was the role of expert hunters trained in specialized hunting folklore (Luomala 1978: 601). Land resources generally belonged to the bands with only a few areas considered "tribal" land and open to anyone (Shipek 1982: 301). Water and stored foods were communally available to all band members on a reciprocal basis (Luomala 1978).

Production of baskets, nets, and pottery were primarily female occupations. Their main use was tied to food procurement, production, and processing (Wallace 1978). High-quality baskets with a weave similar to other Southern California groups were unique on local and regional levels. The regional unity in basketry traditions is linked to the prominence of acorn processing (Jordan and Shennan 2003). Beyond baskets, carrying nets and sacks were also used for food collection. Regularly manufactured ceramic vessels were used as water jars, for cooking and storage, and as cremation urns (Kroeber 1925: 722).

Men and children wore utilitarian belt sashes and pouches designed to hold tools and small game. Women wore a one or two-piece apron made of shredded bark, and a round, twined cap. Robes of rabbit fur, willow bark, or deerskin were worn in the winter and also served as bedding. For long distance travel, sandals woven from agave fibers protected their feet (Luomala 1978: 599). Special ceremonial costumes and adornment were worn during ceremonies. With the exception of boys and mourners, hair was worn long with bangs cut at the forehead.

Accounts by Spanish missionaries and Kumeyaay elders suggest that status differentiation was established during the Late Holocene but could possibly have been earlier (Shipek 1982). Socio-political structure was drastically disrupted by the introduction of Spanish, Mexican, and American policies and the subsequent depopulation from disease and drought (Shipek 1982).

Today, the Kumeyaay nation is currently comprised of 13 reservations scattered across San Diego County and four in northern Baja California (Imperial Valley Desert Museum 2025). In 2016, the total population of Kumeyaay descendants in San Diego County totaled to 4,250 (Hough 2016).

Quechan

The Proposed Project is also within the traditional territory of the Quechan. Quechan is a variation on the names Kwichyan or Kuchiana, but this group is also commonly known as the Yuma; today they refer to themselves as Kw'tsan or Kwatsaan. The name Quechan is an anglicized spelling of Kw'tsaan, which means "those who descended" and refers to descent from the sacred mountain of *Avi Kwa Ame* (Bryant and Miller 2013, Wright and Hopkins 2016). Kw'tsan is also a shortened version of *Xaam Kwaatsaan*, which can be translated as either "those who descended a different way" or "those who descended by means of water" (Bryant and Miller 2013, Wright and Hopkins 2016). The reference of descending in a different way focuses on the notion that the Quechan were guided by their creator to descend *Avi Kwa Ame* independently from other tribes (Wright and Hopkins 2016). Moreover, the reference of descending by means of water describes how the Quechan followed the Colorado River south to their traditional lanes around its confluence with the Gila River (Wright and Hopkins 2016).

The Quechan are among the Yuman-speaking tribes who occupied areas along the lower Colorado River on the boundary between California and Arizona. The territory traditionally associated with the Quechan is centered around the confluence of the Colorado and the Gila rivers, extending several miles north and south along the Colorado and east along the Gila. According to Kroeber (1925: 782), the Quechan and their neighbors to the north have very similar agriculture, manufacturing techniques, clothing, hairstyles, houses, warfare, and sense of tribal unity.

The ethnographic territory traditionally associated with the Quechan, now divided between the states of California and Arizona, is centered around the confluence of the Colorado and the Gila rivers, extending several miles north and south along the Colorado and east along the Gila. The Colorado River, known in the Quechan language as *Xá Áxwétta*, is considered the lifeblood of the land that provides physical nourishment and spiritual sustenance (Everwine 2024). The Quechan believe that protecting the purity and flow of the river is essential to maintaining the harmony between the tribe and their environment (Everwine 2024). Quechan legend tells of a southward migration of their ancestors from a sacred mountain; however, it is not known when the ancestors of the Quechan first settled near the confluence (Bee 1983: 86). No group of this name was mentioned in the account of Hernando de Alarcón when he passed through the area during an expedition in 1540, and the first reference to this group did not appear in Spanish documents until the late seventeenth century, at which time they were settled around the river confluence area (Bee 1983: 86).

Quechan tribal settlements consisted of extended family groups that were widely dispersed along the riverbanks. The Quechan were a patrilocal society, and households would consist of extended families of related males, their wives and children, and other relatives (Wright and Hopkins 2016). Settlements shifted throughout the year, dispersing into smaller groups along the bottomlands during the spring and summer farming seasons and reconvening into larger groups on higher ground, away from the river, during the winter and spring flood periods (Bee 1983: 87–88). The warm climate and scant precipitation made substantial housing unnecessary for most of the year, so most people made use of ramadas or dome-shaped arrow weed shelters.

In an environment otherwise surrounded by dry desert terrain, the subsistence economy of the Quechan focused on riverine agriculture, which was one of the main sources of food for the Tribe. Crops cultivated in the richly silted river bottomlands following the recession of the spring floods provided a relatively high yield in exchange for relatively low labor output (Bee 1983: 86–87). Major crops included maize, squash, pumpkin, watermelon, and wheat (Russell et al. 2002). Given the low incidence of game or fish available in the area, hunting and fishing played a minor role in the overall subsistence economy (Bee 1983: 86). Quechan hunters would travel east of the Colorado River to hunt deer, antelope, and mountain sheep in the Dome Rock and Castle Dome mountains (Wright and Hopkins 2016). The Quechan also relied on the gathering of wild foods, such as honey mesquite. Honey mesquite is sacred to the Quechan and an important food source (Bee 1983: 87, Suzuki 2024). The mesquite trees produce beans that were ground into flour, and the tree branches were also used to build traditional shelters (Suzuki 2024).

Clothing in the hot desert environment consisted of two-piece aprons made of willow bark for Quechan women, while Quechan men would often wear no clothing (Bee 1981). In cooler weather, the Quechan would keep warm using rabbit skin robes and blankets obtained through trade with the Hopi (Bee 1981). Both Quechan men and women would keep their hair long except during periods of mourning the loss of a loved one, in which hair was cut short as an act of profound sacrifice (Bee 1981). Quechan men would use mesquite sap to style their hair into thin rolls, and reddish mud was also often used to cover their hair (Bee 1981).

The Quechan Tribe is federally recognized, and its governmental office is in Winterhaven, Arizona. The United States government established the Fort Yuma-Quechan Reservation on the California side of the Colorado River in 1884, although Euro-American settlers appropriated much of the land. Reservation lands were further broken up by allotment to individual Quechan members in 1912. The Quechan Tribe ratified a constitution and elected a seven-person Tribal Council in 1936. In 1978, the government restored 25,000 acres of their land (Bee 1983).

Today, the Quechan Tribe's reservation spans the Arizona-California border at the Colorado River near the confluence with the Gila River and encompasses 45,000 acres. The Quechan population currently totals over 4,000 members (Fort Yuma Quechan Indian Tribe 2024).

5.18.1.2 Outreach to Tribes

5.18.1.2.1 Sacred Lands File Search

PRC section 5097.91 established the Native American Heritage Commission (NAHC), the duties of which include taking inventory of places of religious or social significance to Native Americans and identifying known graves and cemeteries of Native Americans on private lands. PRC section 5097.98 specifies a protocol to follow when the NAHC is notified of a discovery of Native American human remains from a county coroner.

The NAHC was contacted on March 4, 2025, requesting a search of its Sacred Lands File (SLF) for the Proposed Project area. A search of the SLF was completed for the Proposed Project on April 16, 2025. The results were positive and the NAHC provided a Native American Contact list with 29 contacts. This contact list is provided in Appendix E.

5.18.1.2.2 Tribal Participation Plan

Rincon prepared a Tribal Participation Plan (TPP) to identify procedures for tribal participation during the Project planning and construction process (Rincon Consultants 2025b). The TPP outlines the roles and responsibilities of all parties in the program, specifies terms, expectations, training, communication protocols, and reporting during the Class III pedestrian surveys to be completed in support of the Proposed Project. The TPP is currently under review by the BLM.

5.18.1.3 Tribal Cultural Resources

The location of the Proposed Project and background is discussed in detail in Section 5.5.1, Cultural Resources Environmental Setting. As discussed in Section 5.5, Cultural Resources, Rincon Consultants, Inc. conducted a Class I Information Inventory which includes a search of the California Historical Resources Information System (CHRIS) and the Arizona Site Database (AZ Site), a Sacred Lands File search, development of the natural and cultural contexts, and geoarchaeological review. At the time of this writing, the Class I Inventory is under review by the BLM. The results of the records search and survey as part of this report would identify archaeological resources in the vicinity of the Proposed Project.

Outreach to tribes that will be conducted in accordance with the requirements outlined in the guidelines established by the California Public Utilities Commission (CPUC) and AB 52, will identify tribal cultural resources in the vicinity of the Proposed Project.

5.18.1.4 Ethnographic Study

The Ethnographic Literature Review conducted in support of this Project identifies archaeological resources in the vicinity of the Proposed Project. The Ethnographic Literature Review provides a review of CHRIS and AZ Site records search, additional background review, historical topographic map and aerial imagery review, and ethnographic literature review. The Ethnographic Literature Review is currently under review by the BLM.

5.18.1.4.1 Ethnographic Study Area

A Cultural Resources Study Area was developed for the Proposed Project to identify the geographic limits for the cultural resources investigation. The Study Area includes nine route alternatives with 250-foot-wide right-of-way (ROW) that would include elements currently proposed for construction by the Proposed Project. The Study Area additionally includes a 50-foot buffer on either side of the ROW, to ensure that potential effects to historic resources located adjacent to or intersecting with the route alternatives are considered. The Study Area also considers the vertical limits of the Proposed Project. The maximum depth of construction associated with the Proposed Project is expected to reach 40 feet below ground surface (bgs) to accommodate the construction of transmission tower foundations. The Proposed Project's maximum height is expected to be up to 180 feet. Therefore, the Study Area spans from 40 feet bgs to 180 feet above grade.

5.18.1.4.2 Ethnographic Study Methods and Results

The CHRIS and AZ Site records search identified 126 archaeological resources within the Study Area, three of which were previously recommended eligible for listing in the NRHP. The archaeological resource types identified include artifact scatters, ceramic scatters, habitation sites, lithic reduction sites, prehistoric trails, sleeping circles, geoglyphs, petroglyphs, Native American heritage value, refuse deposits, historic roads and trails, military activities, and mining sites and complexes. Additionally, the Sacred Lands File search conducted by the Native American Heritage Commission yielded positive results, indicating the presence of sacred lands within or in close proximity to the Study Area.

The Ethnographic Literature Review identifies specific places or resources that have documented significance to Native American tribes and are located within or near the Study Area. Review of ethnographic literature identified thirteen places of cultural and religious significance within or near the Study Area. These include the Pacific to Rio Grande Trail Landscape, the *Keruk Xam Kwatcan* Trail System/Earth Figures Landscape/Dream Trail, *Axa Kwadexor* (Quechan rancheria), *Avi Kwalal* (Pilot Knob), *Avi Kwa Suen* (Cargo Muchacho Mountains), *E-ce-mon* (Cactus Lake), the Imperial (Algodones) Sand Dunes, *Akwaka.isi* (Deer Peak), Ancient Lake Cahuilla, *Xachupai* (Tipai village), *Wikwinil* (Kamia village), Yuha Basin, and Ocotillo. The findings highlight the importance of the Study Area to the Native American tribes, who have and continue to live on these lands. This inventory is limited to resources that have been discussed in available literature and may not include the perspectives of all tribes. Additionally, the places discussed are unlikely to include all places considered significant to the tribes from this region.

The Project Study Area encompasses the traditional territories of several Tribes including the Cahuilla, Cocopah, Kamia/Desert Kumeyaay, and Quechan. For a discussion of these Tribes, refer to Section 5.5.1.2.3, Cultural Resources Summary—Ethnographic Background.

5.18.2 Regulatory Setting

The primary federal and state laws, regulations, and policies that pertain to the Proposed Project are summarized in Section 5.5, Cultural Resources. Tribal cultural resources include sites, features, places, cultural landscapes, and sacred places or objects that have cultural value or significance to a tribe. A tribal cultural resource is one that is either: (1) listed on, or eligible for listing on the California Register of Historical Resources (CRHR) or local register of historical resources (see Section 5.5, for more information about the CRHR); or (2) a resource that the California Environmental Quality Act (CEQA) lead agency, at its discretion and supported by substantial evidence, determines is significant pursuant to the criteria in PRC section 5024.1, subdivision (c) (see PRC section 21074). Further, because tribes traditionally and culturally affiliated with a geographic area may have specific expertise concerning their tribal cultural resources, AB 52 sets forth requirements for notification and invitation to government-to-government consultation between the CEQA lead agency and geographically affiliated tribes (PRC section 21080.3.1[a]). Under AB 52, lead agencies must avoid damaging effects to tribal cultural resources, when feasible, regardless of whether consultation occurred or is required. PRC section 21074 states:

(a) "Tribal cultural resources" are either of the following:

1. Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
   - Included or determined to be eligible for inclusion in the CRHR.
   - Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

2. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.
   - A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.
   - A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "nonunique archaeological resource" as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms with the criteria of subdivision (a).

Section 7050.5 of the California Health and Safety Code states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the remains are discovered has determined if the remains are subject to the coroner's authority. If the human remains are of Native American origin, the coroner must notify the NAHC within 24 hours of this identification.

Section 5097.98 of the PRC states that the NAHC, upon notification of the discovery of Native American human remains pursuant to Health and Safety Code section 7050.5, shall immediately notify those persons (i.e., the Most Likely Descendant [MLD]) that it believes to be descended from the deceased. With permission of the landowner or a designated representative, the MLD may

inspect the remains and any associated cultural materials and make recommendations for treatment or disposition of the remains and associated grave goods. The MLD shall provide recommendations or preferences for treatment of the remains and associated cultural materials within 48 hours of being granted access to the site.

5.18.3 Impact Questions

5.18.3.1 Tribal Cultural Resources Impact Questions

The thresholds of significance for assessing impacts come from the CEQA Environmental Checklist. For tribal cultural resources, the CEQA Checklist asks, would the Proposed Project:

- Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:
  - Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?
  - A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?

5.18.3.2 Additional CEQA Impact Questions

There are no CPUC-identified additional CEQA impact questions.

5.18.4 Impact Analysis

5.18.4.1 Tribal Cultural Resources Impact Analysis

5.18.4.1.1 Tribal Cultural Resources Methodology

The methodology for identifying Tribal Cultural Resources involves requesting an SLF through the NAHC and completion of an Ethnographic Literature Review and TPP, both of which are currently under review by the BLM (see 5.18.1.2 through 5.18.1.5). Additionally, ongoing tribal consultation will facilitate government-to-government communication with California and Arizona Native American tribes in order to support identification of tribal cultural resources which may be present within the vicinity of the Proposed Project.

5.18.4.1.2 Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?

Construction

Project Components in California

No Determination. The CPUC will consult with eligible tribes under PRC section 21080.3.1 once the Application is complete. Impacts on tribal cultural resources are not addressed in this Proponent's Environmental Assessment (PEA) because under AB 52, the CPUC must identify these resources during consultation. Therefore, no tribal cultural resources have been identified, and the impacts associated with tribal cultural resources have not been determined.

A potential impact would occur if a tribal cultural resource is located within an area subject to disturbance. HWT would avoid impacts to known tribal cultural resources to the greatest extent possible through implementation of Applicant Proposed Measure (APM) TCR-1 and APM TCR-2. APM TCR-1 consists of the preparation and implementation of a TPP that outlines the involvement of Native American tribes in the surveys for cultural resources and APM TCR-2 consisted of preparation of a TPP that outlines the monitoring of ground-disturbing activities occurring during construction. These plans would include points of contact, any rotation schedule for participating tribes, communication protocols, roles and responsibilities of all parties, reporting requirements, and how HWT would continue to engage and coordinate with Native American tribes throughout construction of the Proposed Project. The TPPs would be submitted to the BLM for review and approval. Further, as outlined in Section 5.5, Cultural Resources, APM CUL-1, APM CUL-2, and APM WEA-1 would be implemented.

Prior to construction, HWT would implement APM CUL-1 which includes completion of a survey to identify historic properties within the resource study corridor for the Proposed Project. The survey area would include the Area of Potential Effects, the area in which potential direct and indirect effects to historic properties may occur. The Area of Potential Effects would be developed in coordination with the appropriate agencies. The methods and results of the surveys would be compiled into a Class III Inventory Report subject to review by the appropriate agencies. To the extent feasible, the Proposed Project would be designed to avoid resources eligible for the National Register of Historic Places and California Register of Historic Resources, in cooperation with the appropriate agencies.

Pursuant to APM CUL-2, management of cultural/historical resources would follow applicable federal and state standards and guidelines. HWT would prepare and implement a Post-Review Discovery Management Plan addressing the post-review discovery of cultural resources during construction. The Proposed Project Archaeologist or their representative would be responsible for responding to unanticipated discoveries, implementing appropriate buffers and/or stopping work,

and communicating with the appropriate agencies in accordance with the plan. Human remains would be treated in accordance with applicable federal and state laws.

Prior to construction, HWT would implement APM WEA-2, which involves a worker environmental awareness program (WEAP) to train construction personnel by a qualified archaeologist regarding the recognition of possible buried cultural resources (i.e., prehistoric and/or historical artifacts, objects, or features) during construction. The training would inform all construction personnel of the resource protection and avoidance measures as well as procedures to be followed upon the discovery of cultural and environmental resources. The WEAP training would include, at a minimum, the following topics so crews would understand their obligations: 1) roles and responsibilities of Proposed Project personnel, including the stop work authority of biological, cultural, paleontological, and tribal monitors; 2) avoidance area boundaries; 3) good housekeeping practices; 4) Proposed Project mitigation measures and permit conditions; 5) communication protocol; 6) legal protections for sensitive resources and for non-compliance; and 7) notification and reporting requirements.

In the event that Native American remains are inadvertently discovered on federal lands, Native American Graves Protection and Repatriation Act (NAGPRA) requires that the responsible federal agency must be immediately notified by telephone and in writing. Following the receipt of the written notification, the federal agency must certify the receipt of it within three days. The activity that resulted in the discovery must be stopped immediately after discovery and may not resume until 30 days after the applicable federal agency certifies the receipt of the notification. The federal agency would also be responsible for taking immediate steps, if necessary, to further secure and protect the remains and/or items that were discovered. During this process, the federal agency would notify any most likely descendants (MLDs) or applicable Native American tribes of the discovery, obtain written confirmation of the notification, and initiate consultation, if necessary. Following consultation, the federal agency would prepare, approve, and sign a written NAGPRA Plan of Action (43 CFR 10.3 and 10.5), which would specify the treatment, care, and handling of the discovered remains and cultural resources.

In the event Native American remains are inadvertently discovered and the discovery is not on federal land, the County Coroner and CPUC shall be notified immediately and the remains shall be treated in accordance with Health and Safety Code section 7050.5, CEQA Guidelines section 15064.5(e), and PRC section 5097.98. HWT shall assist and support the BLM as appropriate, in all required NAGPRA and Section 106 actions, government-to-government and consultations with Native Americans, agencies, and consulting parties as requested by the BLM. HWT shall comply with and implement all required actions and studies that result from such consultations.

Project Components in Arizona

No Determination. The CEQA questions presented in this section apply specifically to California tribal groups. For informational purposes, Section 106 is an additional process affecting the Proposed Project and driven by the BLM.

Overall Project

No Determination. The CPUC will consult with eligible tribes under PRC section 21080.3.1 once the Application is complete. Impacts on tribal cultural resources are not addressed in this PEA because under AB 52, the CPUC must identify these resources during consultation. Therefore, no tribal cultural resources have been identified, and the impacts associated with tribal cultural resources have not been determined.

Operation

Project Components in California

No Determination. The CPUC will consult with eligible tribes under PRC section 21080.3.1 once the Application is complete. Impacts on tribal cultural resources are not addressed in this PEA because under AB 52, the CPUC must identify these resources during consultation. Therefore, no tribal cultural resources have been identified, and the impacts associated with tribal cultural resources have not been determined.

Project Components in Arizona

No Determination. The CEQA questions presented in this section apply specifically to California tribal groups. For informational purposes, Section 106 is an additional process affecting the Proposed Project and driven by the BLM.

Overall Project

No Determination. The CPUC will consult with eligible tribes under PRC section 21080.3.1 once the Application is complete. Impacts on tribal cultural resources are not addressed in this PEA because under AB 52, the CPUC must identify these resources during consultation. Therefore, no tribal cultural resources have been identified, and the impacts associated with tribal cultural resources have not been determined.

5.18.4.1.3 Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1?

Construction

Project Components in California

No Determination. The CPUC will consult with eligible tribes under PRC section 21080.3.1 once the Application is complete. Impacts on tribal cultural resources are not addressed in this PEA because under AB 52, the CPUC must identify these resources during consultation. Therefore, no tribal cultural resources have been identified, and the impacts associated with tribal cultural resources have not been determined.

A potential impact would occur if a tribal cultural resource is located within an area subject to disturbance. HWT would avoid impacts to known tribal cultural resources to the greatest extent possible through implementation of APM TCR-1 and APM TCR-2. Further, as outlined in Section 5.5, Cultural Resources, APMs CUL-1, CUL-2, and WEA-1 would be implemented and, through doing so, impacts to potential tribal cultural resources would be avoided or mitigated.

Project Components in Arizona

No Determination. The CEQA questions presented in this section apply specifically to California tribal groups. For informational purposes, Section 106 is an additional process affecting the Proposed Project and driven by the BLM.

Overall Project

No Determination. The CPUC will consult with eligible tribes under PRC section 21080.3.1 once the Application is complete. Impacts on tribal cultural resources are not addressed in this PEA because under AB 52, the CPUC must identify these resources during consultation. Therefore, no tribal cultural resources have been identified, and the impacts associated with tribal cultural resources have not been determined.

A potential impact would occur if a tribal cultural resource is located within an area subject to disturbance. HWT would avoid impacts to known tribal cultural resources to the greatest extent possible through implementation of APMs TCR-1 and TCR-2. Further, as outlined in Section 5.5, Cultural Resources, APMs CUL-1, CUL-2, and WEA-1 would be implemented and, through doing so, impacts to potential tribal cultural resources would be avoided or mitigated.

Operation

Project Components in California

No Determination. As previously described, O&M activities associated with the Proposed Project would occur within the existing or new ROW within California. Following construction of the Proposed Project, O&M activities would consist of regular transmission line maintenance, ROW repair, vegetation management, fire control, and noxious weed control. HWT is not the CEQA Lead Agency responsible for tribal consultations under PRC section 21080.3.1, and CPUC has not performed any tribal consultation. Therefore, no tribal cultural resources have been identified, and the impacts associated with tribal cultural resources have not been determined.

Project Components in Arizona

No Determination. The CEQA questions presented in this section apply specifically to California tribal groups. For informational purposes, Section 106 is an additional process affecting the Proposed Project and driven by the BLM.

Overall Project

No Determination. As previously described, O&M activities associated with the Proposed Project would occur within the existing or new ROW. Following construction of the Proposed Project, O&M activities would consist of regular transmission line maintenance, ROW repair, vegetation management, fire control, and noxious weed control. HWT is not the CEQA Lead Agency responsible for tribal consultations under PRC section 21080.3.1, and SCE has not performed any tribal consultation. Therefore, no tribal cultural resources have been identified, and the impacts associated with tribal cultural resources have not been determined.

5.18.4.2 Information Provided by Tribes

As detailed in Section 5.18.1.2 Sacred Lands File Search, Rincon Consultants, on behalf of HWT, requested an SLF search within the Proposed Project area from the NAHC. The NAHC responded

that the SLF results were positive and provided a list of 29 contacts. The CPUC will conduct additional NAHC and tribal consultation at a later date.

5.18.5 CPUC Draft Environmental Measures

There are no CPUC Draft Environmental Measures identified for Tribal Cultural Resources.

5.18.5.1 Applicant Proposed Measures

The following APMs would be implemented to reduce tribal cultural resources impacts associated with the Proposed Project.

- **TCR-1:** HWT would prepare and implement a Tribal Participation Plan that outlines the involvement of Native American Tribes in the surveys for cultural resources. This plan would include points of contact, any rotation schedule for participating tribes, communication protocols, roles and responsibilities of all parties, reporting requirements, and how HWT would continue to engage and coordinate with Native American Tribes throughout the Proposed Project. This Tribal Participation Plan would be submitted to the BLM for review and approval.
- **TCR-2:** HWT would prepare and implement a Tribal Participation Plan that outlines the involvement of Native American Tribes in the monitoring of ground-disturbing activities occurring during construction. This plan would include points of contact, any rotation schedule for participating tribes, communication protocols, roles and responsibilities of all parties, reporting requirements, and how HWT would continue to engage and coordinate with Native American Tribes throughout the Proposed Project. This Tribal Participation Plan would be submitted to the BLM for review and approval.

5.18.5.1.1 Cross-Referenced Applicant Proposed Measures

The following APMs from Section 5.5, Cultural Resources, would be implemented to reduce tribal cultural resources impacts associated with the Proposed Project:

- **CUL-1:** Prior to construction, HWT would conduct a survey to identify historic resources within the resource study corridor for the Proposed Project. The survey area would include the Area of Potential Effects, the area in which potential direct and indirect effects to historic resources may occur. The Area of Potential Effects would be developed in coordination with the appropriate agencies. The methods and results of the surveys would be compiled into a Class III Inventory Report subject to review by the appropriate agencies. To the extent feasible, the Proposed Project would be designed to avoid resources eligible for the National Register of Historic Places and California Register of Historic Resources, in cooperation with the appropriate agencies.
- **CUL-2:** Management of cultural/historical resources would follow applicable federal and state standards and guidelines. HWT would prepare and implement a Post-Review Discovery Management Plan addressing the post-review discovery of cultural resources during construction. The Proposed Project Archaeologist or their representative would be responsible for responding to unanticipated discoveries, implementing appropriate buffers and/or stopping work, and communicating with the appropriate agencies in accordance with the plan. Human remains would be treated in accordance with applicable federal and state laws.
- **WEA-1:** All workers on the Proposed Project site would be required to attend a Worker's Environmental Awareness Program (WEAP) training. The training would inform all construction personnel of the resource protection and avoidance measures as well as procedures to be followed upon the discovery of environmental resources. The WEAP training would include, at a

minimum, the following topics so crews would understand their obligations: 1) roles and responsibilities of Proposed Project personnel, including the stop work authority of biological, cultural, paleontological, and tribal monitors; 2) avoidance area boundaries; 3) good housekeeping practices; 4) Proposed Project mitigation measures and permit conditions; 5) communication protocol; 6) legal protections for sensitive resources and for non-compliance; and 7) notification and reporting requirements.

5.19 Utilities and Service Systems

This section describes the utilities and service systems in the vicinity of the Ironwood Transmission Line Project (Proposed Project) and characterizes the potential impacts to utilities and service systems associated with construction and operation of the Proposed Project.

Research for this analysis involved desktop review of numerous resources referenced herein, which include but are not limited to:

- Local agency planning documents, including Integrated Regional Water Management Plans (IRWMPs), Water Conservation Plans, Urban Water Management Plans (UWMPs), Water Shortage Contingency Plans (WSCPs), and other local and regional plans addressing water supply planning and management
- City and County General Plans
- Publications by the California Department of Water Resources (DWR), California Department of Resources Recycling and Recovery (CalRecycle), and U.S. Department of Transportation (USDOT)

5.19.1 Environmental Setting

The Proposed Project is located in Imperial County, California and Yuma County, Arizona on federal, state, municipal, and private land. These lands include unincorporated areas of Imperial and Yuma counties, the city of Calexico, California, and public lands under the jurisdiction or management of the U.S. Bureau of Land Management (BLM), U.S. Bureau of Reclamation (USBR), and the California Department of Parks and Recreation.

The environmental setting section describes the existing utility and service systems (electricity, natural gas, water supply, sewage and wastewater treatment, stormwater, solid waste services, and telecommunications) in the Proposed Project area.

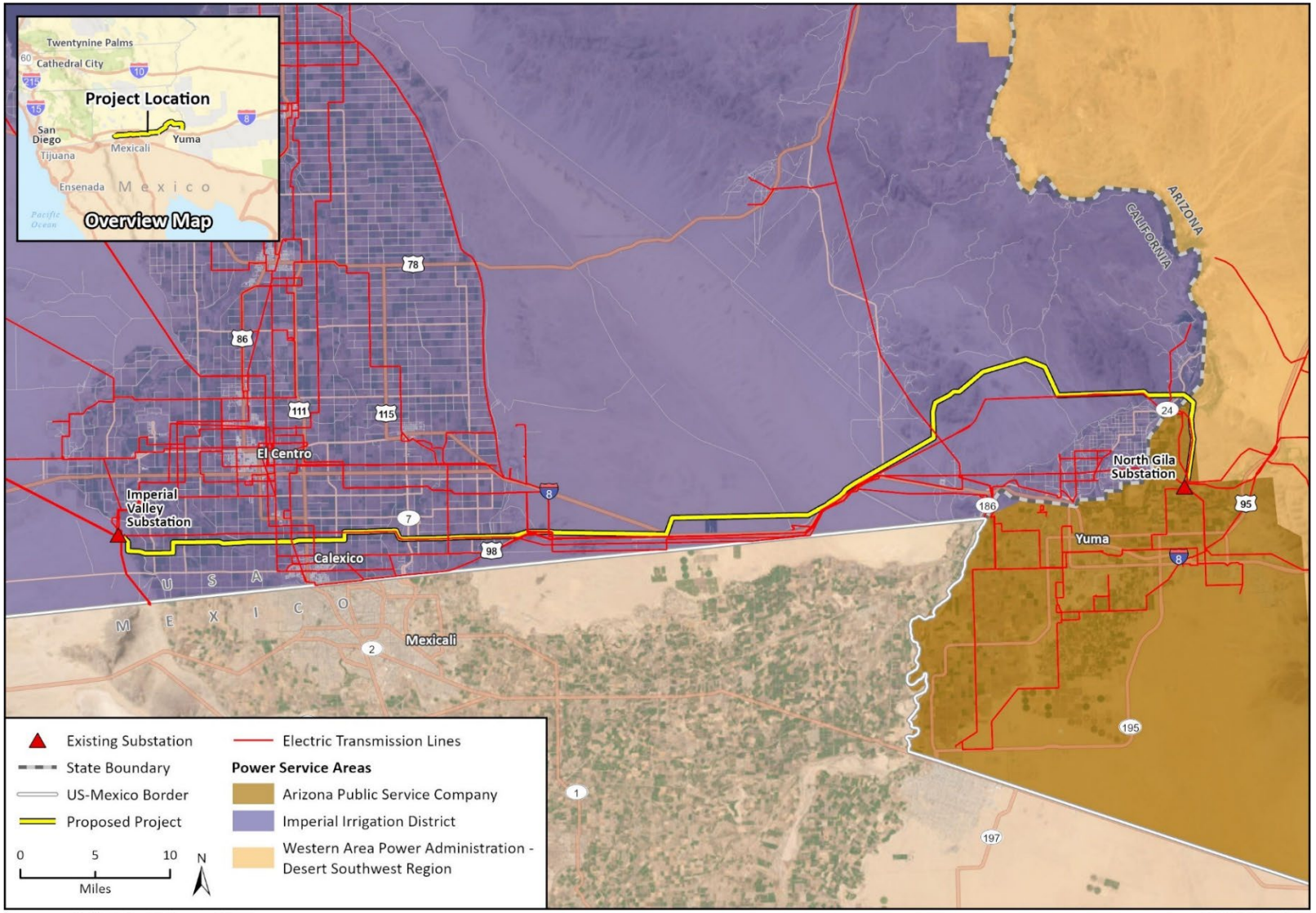
5.19.1.1 Utility Providers

This section identifies the utility providers that provide services in the Proposed Project area for electricity, natural gas, water supply, sewer/wastewater, stormwater, solid waste, and telecommunications. The associated infrastructure and facilities operated by utility providers in the Proposed Project area are described below in Section 5.19.1.2, Utility Lines.

Electricity

Figure 5.19-1, below, provides an overview of the electrical power service areas within the Proposed Project area, and alignments of existing transmission lines within those service areas.

Figure 5.19-1 Power Service and Facilities in the Proposed Project Area



Imagery provided by Esri and its licensors © 2025.
Additional data provided by HIFLD 2024, CEC 2023.

25-17237 PEA EPS Figures
PEA Fig 5.19-1 Power Service and Facilities 8.5x11

California

In the California portion of the Proposed Project, electricity service is provided by the Imperial Irrigation District (IID). IID provides electric power to more than 165,000 meters. IID's energy portfolio consists of more than 1,100 megawatts (MW) of power derived from IID's own renewable energy generation (biomass, biowaste, geothermal, hydroelectric, solar, wind), as well as long- and short-term power purchases (IID 2025c).

Arizona

In the Arizona portion of the Proposed Project, electricity service is provided by the Arizona Public Service Company (APS), which is the largest and longest-serving electric public service company in Arizona, providing electricity for approximately 1.4 million customers in 11 of Arizona's 15 counties. APS' energy portfolio consists of more than 10,000 MW, including purchased power agreements and customer-based resources, including energy efficiency, demand response actions, and rooftop solar (APS 2023).

Figure 5.19-1 also shows that a portion of the Proposed Project alignment in Arizona is adjacent to the service area of the Western Area Power Administration (WAPA)'s Desert Southwest Region. The Desert Southwest Region of WAPA sells federal hydroelectric power generated at Hoover Dam, Parker Dam, and Davis Dam to nearly 70 municipalities, cooperatives, federal and state agencies, and irrigation districts (WAPA 2025).

Natural Gas

California

In California, the Proposed Project is located within the service territory of the Southern California Gas Company (SoCalGas) for natural gas. SoCalGas owns and operates an integrated natural gas transmission system consisting of pipeline and storage facilities, including four interconnected storage fields located near primary load centers of the SoCalGas system (SoCalGas 2024). More than 90 percent of the natural gas used in California is produced out-of-state from basins in Texas and New Mexico; SoCalGas uses its storage facilities to bank natural gas supplies within its service territory for use as needed by its customers (SoCalGas 2024).

Arizona

In Arizona, the Proposed Project is located within the Southwest Gas Corporation (SGC)'s Southern Arizona Service Area for natural gas (SGC 2022). SGC and Kinder Morgan both own and operate high pressure natural gas pipelines within this service area, although SGC's pipelines are the primary conveyance facilities in and around Yuma and the Proposed Project (SGC 2022).

As stated above in the discussion of electricity providers, APS provides electricity service to the Arizona portion of the Proposed Project; APS currently has 1,598 MW of natural gas-based Purchased Power Agreements (PPAs) in place (APS 2023, pg. 30). These PPAs are for natural gas-fired electricity generators, or power plants that utilize natural gas as fuel to produce electricity. APS is working with natural gas providers and other Arizona gas shippers and utilities to assess long-term gas supply options aimed at ensuring reliable gas transportation into the future (APS 2023, pg. 30).

Water

Water supply providers in the Proposed Project area are shown in Figure 5.19-2, on the following page, and described in the subsections below.

California

Within Imperial County, California, IID provides untreated Colorado River water to seven cities and two special districts, each of which provides water quality treatment and water supply distribution for their respective customers. IID's water retailer customers include the City of Calexico, Golden State Water Company (Calipatria and Niland), City of Imperial, City of Westmorland, City of El Centro, City of Brawley, City of Holtville, City of Heber, Seeley County Water District (Special District separate from Imperial County), and Gateway of Americas ("Gateway") County Service Area (CSA)[1]. IID retailers whose service areas are crossed by the Project alignment include the City of Calexico, as shown in Figure 5.19-2.

IID is not a public water system and therefore is not required to maintain a UWMP under the Urban Water Management Planning Act. IID is an agricultural water supplier and, under California State legislation (California Water Code [CWC] Division 6, Parts 2.1, 2.55, 2.8, and 2.9), agricultural water suppliers are required to prepare an agricultural water management plan to achieve water conservation goals; however, State legislation (CWC Division 6, Part 2.55, Section 10608.8(d)) further specifies that because IID is a party to the Quantification Settlement Agreement, it is exempt from the agricultural water management plan requirements of the State under Senate Bill 7-7x (IID 2025d). Under federal legislation (PL 97-293 Reclamation Reform Act of 1982 Section 210 (a), (b) and (c) and Reclamation Manual Directives and Standards; and Regulations 43-CFR-427), IID is required to prepare a federal Water Conservation Plan every five years and to adopt economically feasible objectives to meet the requirement for reasonable and beneficial use (IID 2025d).

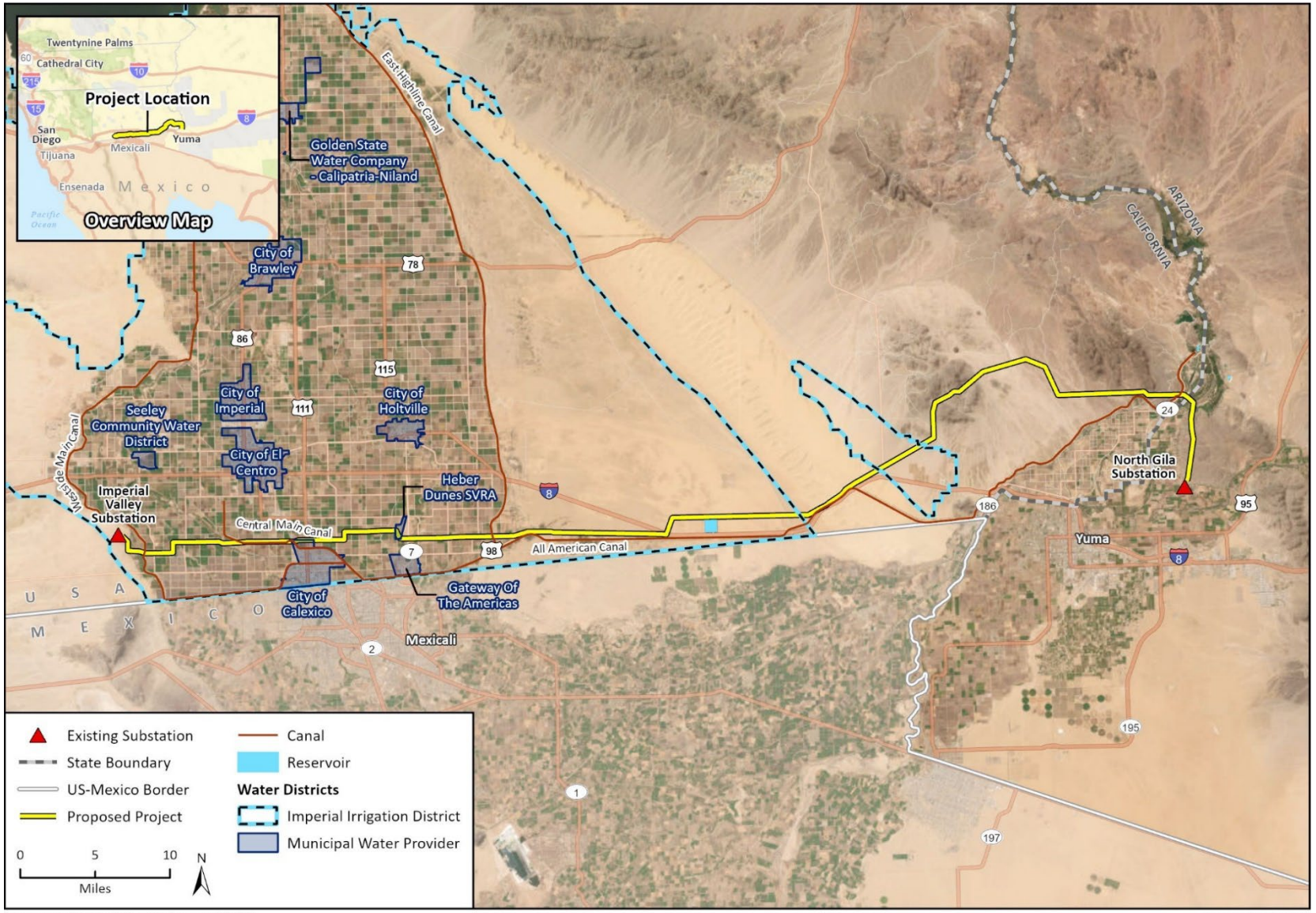
Areas outside IID's service area are not within the service area of another water supply provider; these areas are undeveloped and characterized by the alluvial fan and foothills of the Cargo Muchacho Mountains, northwest of Yuma; see the aerial imagery on Figure 5.19-2. As discussed in Section 5.19.1.4, *Water Supplies*, groundwater resources along the Proposed Project alignment in Imperial County are characterized by poor water quality due to high concentrations of total dissolved solids (TDS); due to poor quality and low yield, few groundwater wells have been drilled for production purposes (IID 2021, pg. 66). Therefore, groundwater is not a substantial supply source in Imperial County areas outside of IID's service area; see Section 5.19.1.4, *Water Supplies*, for detailed discussion of water supply sources.

Arizona

Within Yuma County, Arizona, water supply providers include the City of Yuma, which provides water supply service to the incorporated City areas as well as surrounding unincorporated County lands, including north of the City where the Proposed Project area is located. Water for the Project would not be provided through the City of Yuma's public water system, which distributes potable water to City residents; however, the City of Yuma holds some of the most senior entitlements to Colorado River water, and has contracts with the USBR for the allocation and delivery of Colorado River water within its service area, including unincorporated county lands were applicable.

[1] California Government Code 56036 (a) defines a Special District or CSA as "an agency of the state, formed pursuant to general law or special act, for the local performance of governmental or proprietary functions within limited boundaries. 'District' or 'special district' includes a county service area". The Gateway CSA was formed to enable Imperial County to localize the provision and financing of public services in this area, which are financed by the taxpayers of the CSA.

Figure 5.19-2 Water Supply Providers in the Proposed Project Area



Imagery provided by Esri and its licensors © 2025.
Additional data provided by CA DWR 2022, USGS 2024.

25-17237 PEA EPS Figures
PEA Fig 5.19-3 Water Supply Providers 8.5x11

Colorado River water is provided to Arizona through the Yuma Project, which diverts Colorado River water at Imperial Dam and delivers it to irrigate 53,415 acres in the Valley Division of the Yuma Project, which includes unincorporated Yuma County lands in the vicinity of Yuma, Somerton, and Gadsden in Arizona, including the Proposed Project. The Yuma Project is managed by the USBR; however, in the Valley Division, operating responsibility is held by the Yuma County Water Users Association (YCWUA) (City of Yuma 2020; USBR 2025). The distribution and use of Colorado River water in Arizona is managed by the Arizona Department of Water Resources (ADWR).

Residential and agricultural properties in unincorporated Yuma County areas also produce groundwater from privately owned wells.

Sewer/Wastewater

California

In the California portion of the Proposed Project, utility providers for wastewater are limited to incorporated cities that provide sewer collection systems and wastewater treatment facilities. The only incorporated city traversed by the Proposed Project alignment is the City of Calexico.

Sewer and wastewater management in unincorporated county areas is accomplished through the use of site-specific septic systems and Onsite Wastewater Treatment Systems (OWTS) managed and permitted through the Imperial County Public Health Department, which regulates discharges from OWTS' to protect water quality. OWTS' are sited and designed to accommodate storage, treatment, and disposal of wastewater associated with the land uses occurring on the property where the OWTS is located.

Arizona

In the Arizona portion of the Project area, utility providers for wastewater are similarly limited to incorporated cities that provide sewer system and wastewater treatment facilities. The Proposed Project alignment does not traverse incorporated cities or existing sewer systems for wastewater management in the Arizona portion of the Proposed Project. The nearest sewer system is in the City of Yuma and managed by the City of Yuma Public Utilities Department.

As described above for the California portion of the Proposed Project, sewer and wastewater management in unincorporated county areas is accomplished through the use of site-specific septic systems and OWTS. Yuma County's Environmental Programs Division regulates septic systems and OWTS in unincorporated county areas.

Stormwater

California

In the California portion of the Proposed Project, stormwater management is controlled by the County of Imperial through requirements detailed in the Imperial County Hydrology Manual, which applies to unincorporated areas as well as incorporated areas within the county's jurisdiction (Imperial County 2018).

The City of Calexico is responsible for maintenance of its stormwater system in compliance with a Small Municipal Separate Storm Sewer System (MS4) permit, which is accomplished through implementation of Title 13 of the Calexico Municipal Code, Chapter 13.50, *Urban Storm Water Quality Management and Discharge Control*. This ordinance details best management practices

(BMPs) and prohibitions for operation and maintenance of the City's stormwater system. The City also implements a Post-Construction Standards Plan which details design measures and controls to provide compliance with the Small MS4 permit (City of Calexico 2015).

Arizona

In the Arizona portion of the Proposed Project, Yuma County's Stormwater Management Program (SWMP) responsibilities are shared amongst the Department of Development Services (DDS), Department of Engineering (DOE), and Department of Public Works (DPW):

- The Yuma County DDS is the primary contact for the MS4 program, and implements public education and outreach efforts, provides public involvement and participation opportunities, performs outfall monitoring, responds to illicit discharge complaints, performs staff training, and inspects construction activities;
- The Yuma County DOE and Flood Control District oversee storm sewer infrastructure, perform plan reviews for structural and non-structural stormwater controls, conduct drainage studies, and maintain the MS4 storm sewer system mapping;
- The Yuma County DPW performs street sweeping activities for County roads, maintain discharge outfalls, conduct clean-up of non-hazardous material, and preserve stormwater basins for subdivisions within Yuma County permit jurisdiction (Yuma County 2024).

Solid Waste

California

Solid waste management in the California portion of the Proposed Project is provided by the Imperial County Department of Public Works and the City of Calexico.

Arizona

Solid waste management in the Arizona portion of the Proposed Project is provided by the Yuma County Department of Public Works and CR&R Environmental Services.

Telecommunications

California

Several major telecommunications companies provide service in the Proposed Project area in California. In Imperial County, providers include AT&T Fiber, Spectrum, Viasat, HughesNet, Beamspeed, Starlink, Verizon, and AlwaysON. In addition, the Imperial Valley Telecommunications Authority (IVTA) is a Joint Powers Authority consisting of 35 public agencies including IID to provide broadband connectivity throughout Imperial County. The primary telecommunications provider for the Imperial Valley Substation is Viasat.

Arizona

In unincorporated areas of Yuma County, telecommunications services are generally provided by private companies, including Spectrum, CenturyLink, HughesNet, Starlink, T-Mobile Home Internet, and Beamspeed. The North Gila Substation area is mainly serviced by Spectrum and Zayo Group. Yuma County also has a Regional Communications System for public safety agencies.

5.19.1.2 Utility Lines

This section describes existing utility infrastructure in the Proposed Project area and right-of-way (ROW), including utility lines and other facilities associated with the provision of services for electricity, natural gas, water supply, sewer/wastewater, stormwater, solid waste, and telecommunications.

Electricity

California

IID's electric transmission system includes approximately 1,800 miles of overhead transmission lines. Below is an overview of key components of IID's 500 kilovolt (kV) and 230kV transmission line systems (IID 2018).

- **500kV Southwest Power Link.** IID owns a portion of this system, which connects the Palo Verde Substation, a major wholesale electric trading hub, to the North Gila 500kV-69kV Substation near Yuma. The line continues from North Gila to the Imperial Valley 500kV-230kV Substation in El Centro.
- **500kV HANG2.** IID also owns a portion of the 500kV HANG2 line that connects Hassayampa to the North Gila 500kV Substation.
- **230kV "S" line.** This single circuit transmission line extends between IID's El Centro Switching Station in El Centro and the Imperial Valley Substation and is owned by IID.
- **230kV "KN/KS" lines.** This double-circuit transmission line runs south to north through IID's service territory and interconnects with SCE at the Devers and Mirage substations. One circuit interconnects at Mirage Substation and the second circuit continues west to Devers Substation through SCE's 230kV line.

IID and APS jointly own the Yucca Power Plant, located northwest of Yuma, Arizona (APS 2022). APS is the sole operator of the facility, which consists of eight electrical generating units, one steam boiler, and seven simple-cycle combustion turbines to provide electrical power to the grid (APS 2022). IID owns a 75-megawatt steam turbine and a 20-megawatt combustion turbine within the Yucca Power Plant, which delivers energy to IID on the Yucca Pilot Knob transmission line via the 161-kilovolt (kV) IID/APS interconnection (IID 2024a).

Arizona

APS's electric transmission facilities consist of nearly 6,000 miles of high voltage transmission lines (5,768 miles located in Arizona), approximately 33,000 miles of distribution lines, 469 substations, roughly 300,000 transformers and more than 550,000 power poles and structures. APS owns all or a part of several major transmission paths in the states of Arizona, New Mexico, and Nevada. Major transmission projects convey electricity from fossil, nuclear and renewable facilities as well as under various long-term power purchase agreements. (APS 2023, pg. 51)

WAPA's Desert Southwest Region also operates more than 40 substations and 3,100 miles of transmission lines throughout its service area, which spans portions of Arizona, southern Nevada, and southern California (WAPA 2025).

Natural Gas

Figure 5.19-3 on the following page portrays existing natural gas pipelines in the Proposed Project area, including two transmission pipelines situated in north-south alignments through Imperial County, California (USDOT 2024), and one in Yuma County, Arizona.

California

Within Imperial County, the pipeline on the western side of the Proposed Project alignment is owned and operated by SoCalGas, while the pipeline on the eastern side is part of the North Baja Pipeline System, owned and operated by TC Pipelines, LP (a subsidiary of TC Energy Corporation). SoCalGas also owns and operates a series of high-pressure natural gas distribution pipelines concentrated in and around population centers including through the cities of Calipatria, Brawley, and El Centro. Lower pressure distribution mains and smaller service lines connected to the gas meters at homes and businesses are not shown. IID also jointly owns the Yucca Power Plant, a natural gas-fueled plant near Yuma, with the APS; the Yucca Power Plant is discussed below under "Arizona."

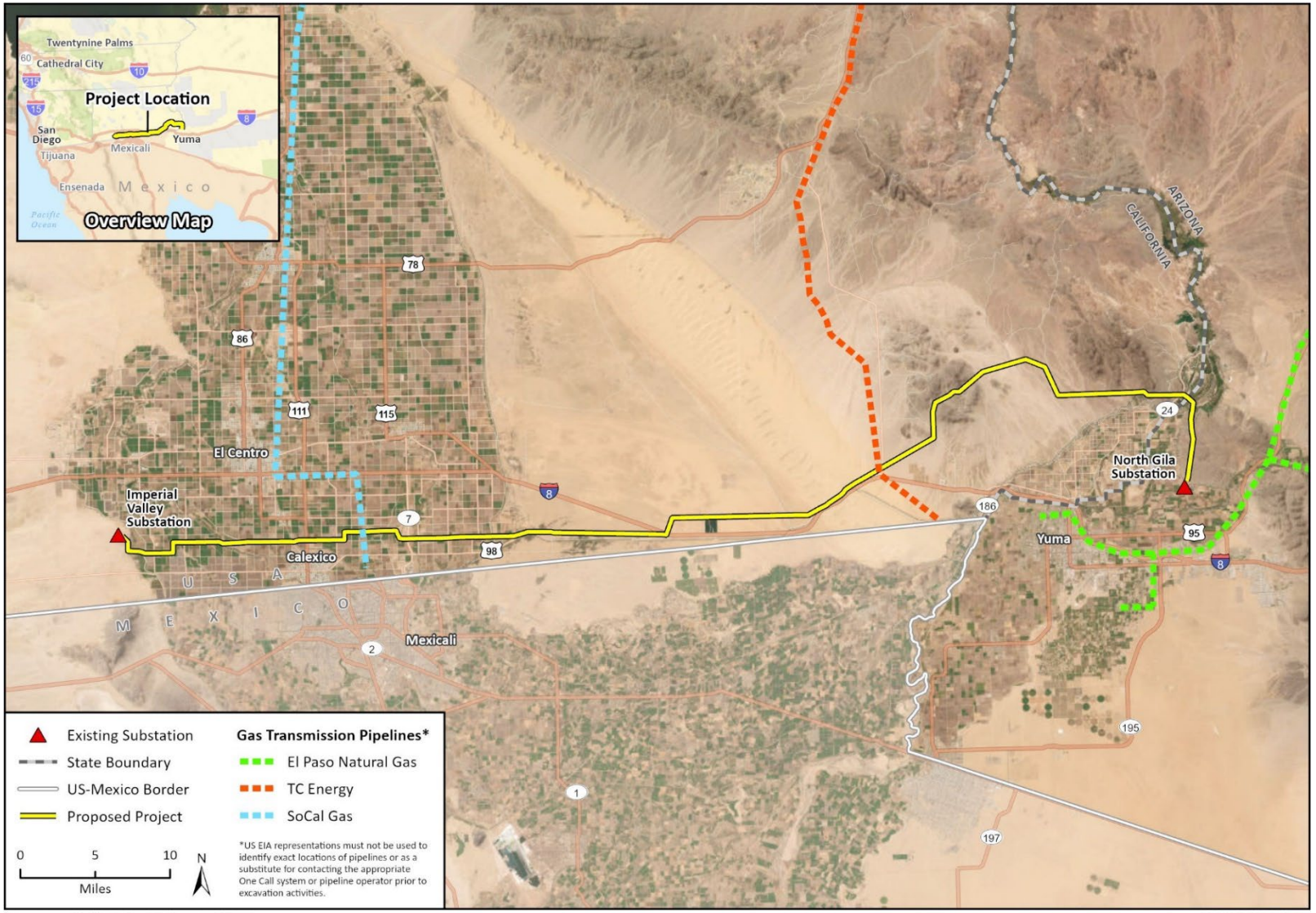
Arizona

Within Yuma County, Arizona, TC Energy's North Baja Pipeline connects to the El Paso Natural Gas Company (EPNG) pipeline at Ehrenberg, Arizona, that sources natural gas primarily from the West Texas and Southern Rocky Mountain supply regions. It has bi-directional capability and can transport natural gas northbound at Ogilby, California, as well as receive natural gas from the Energia Costa Azul liquid natural gas (LNG) terminal in Mexico. In addition, the North Baja Pipeline System includes the Yuma Lateral, which is a section of natural gas transmission pipeline between the Mexico/Arizona border and Yuma, Arizona (TC Energy 2019).

The EPNG system includes 10,140 miles of pipeline to convey natural gas from the San Juan, Permian, and Anadarko basins to California, Arizona, Nevada, New Mexico, Oklahoma, Texas, and Northern Mexico. EPNG also owns approximately 44 billion cubic feet of underground natural gas storage capacity in southeastern New Mexico (Kinder Morgan 2024).

In addition, the Yucca Power Plant, mentioned above under "Electricity," is a natural gas-fueled plant near Yuma, which is jointly owned by IID and operated by APS. The Yucca Power Plant has six combustion turbine units that produce 243 MW owned and operated by APS, as well as one 75-MW steam turbine and one 22-MW combustion turbine. (APS 2023)

Figure 5.19-3 Natural Gas Pipelines in the Proposed Project Area



Imagery provided by Esri and its licensors © 2025.
Additional data provided by U.S. Energy Information Administration 2020.

25-17237 PEA EPS Figures
PEA Fig 5.19-2 Natural Gas Pipelines 8.5x11

Water

The Colorado River provides the primary water supply source in both Imperial County, California, and Yuma County, Arizona. The Colorado River enters California at Lake Havasu, which was formed by Parker Dam (constructed in 1938) and straddles the border of California and Arizona. Colorado River water is conveyed into California from Lake Havasu via the Colorado River Aqueduct (242 miles) as well as from Imperial Diversion Dam, just northeast of Yuma, Arizona, via the All-American Canal (AAC) (80 miles) and the Coachella Canal (124 miles). Colorado River water entitlement holders in California and Arizona receive their available entitlements via the AAC. The following sections provide an overview of water supply facilities in the California and Arizona portions of the Proposed Project.

California

In California, the Proposed Project is located within IID's service area for water. IID's water delivery system begins at Imperial Dam where Colorado River water is diverted into IID's desilting basins at Senator's Wash. Imperial Dam is located about 20 miles north of Yuma, Arizona, and serves as a diversion structure for water deliveries throughout southeastern California, Arizona, and Mexico. The USBR controls operations of IID's River Division Office at Imperial Dam. From Imperial Dam, Colorado River water flows through one of three desilting basins before being released into the AAC, which conveys Colorado River water into both IID's and Yuma's service areas. Senator Wash is a regulating reservoir the balances fluctuating flow and delivery schedules at Imperial Dam. It is controlled by IID's Water Dispatching Unit under the direction of the USBR Yuma Area Office. (IID 2025a)

After desilting, the water is conveyed by gravity through the 80-mile-long AAC. The AAC discharges water to several turnouts, including the Coachella Canal and IID's three main canals, the East Highline, Central Main, and Westside Main (Imperial Water Forum 2012b):

- East Highline Canal roughly follows the northeastern boundary of the IID water service area and conveys irrigation water to agricultural fields via a series of east-to-west laterals, serving the eastern and central portions of the IID water service area;
- Central Main Canal connects to the AAC just east of Calexico and serves most of the central part of the IID water service area;
- Westside Main Canal extends from the AAC near the western edge of the IID water service area and serves the western portion of the IID water service area.

As noted in Section 5.19.1.1, Utility Providers, under "Water," IID retail purveyors in the Proposed Project area include the city of Calexico. Calexico's only water source is the Colorado River, which is provided by IID via the AAC in the western portion of the city, where a City-owned 42-inch pipeline intake is used to pump water into the City's Raw Water Transfer Pump Station No. 1 (City of Calexico 2022). Raw water is conveyed to a 25-million-gallon reservoir for storage before treatment and distribution to City customers (City of Calexico 2022).

Arizona

In Arizona, the Proposed Project is located within the service area for the Yuma Project, which conveys Colorado River water to entitlement holders throughout the Yuma Project's Valley Division, where the Proposed Project is located on unincorporated county lands. Water is diverted from the Colorado River via the AAC and conveyed via distribution facilities managed by the YCWUA and the

Gila Gravity Canal System. The Yuma Main Canal conveys water throughout the Valley Division, crossing underneath the Colorado River near Yuma to supply the West Main, Central, and East Main Canals, which flow south and irrigate land to the Mexican border (USBR 2025).

Colorado River water used in Yuma County is distributed via a network of approximately 226 miles of canals, which provide water for irrigation along the Lower Colorado and Lower Gila Rivers, as well as to public and private water providers for municipal and industrial use (Arizona WRRC 2024). Each Colorado River water entitlement holder, including the City of Yuma south of the Project area and private landowners along the Project alignment, manages their distribution facilities for use of Colorado River water under the direction of the USBR and the ADWR (Arizona WRRC 2024).

Water supply availability and reliability is addressed in Section 5.19.1.4, Water Supplies.

Sewer/Wastewater

Figure 5.19-4 provides an overview of wastewater facilities in the Proposed Project area. The Proposed Project area is predominantly characterized by unincorporated county areas, where wastewater management is typically accomplished through the use of privately owned septic systems.

California

The California portion of the Proposed Project includes one incorporated area, defined by the City of Calexico in Imperial County. The City of Calexico owns and operates its wastewater collection and treatment system, which consists of lateral sewer lines of six to 30 inches in diameter, connecting to one of two interceptor sewer mains that provide conveyance of raw sewage to the City's wastewater treatment plant (WWTP) (City of Calexico 2020). The WWTP uses activated sludge technology to produce secondary treated effluent, which is disposed of via discharge to the New River. The WWTP has an average daily flow of 4.3 million gallons per day (MGD) and peak daily flow capacity of 5.5 MGD (Colorado River Basin RWQCB 2025). The Calexico WWTP serves a population of 38,249 residents in the City of Calexico (City of Calexico 2020).

Arizona

The Arizona portion of the Proposed Project does not include incorporated areas, and wastewater management is conducted using site-specific septic systems permitted through the Yuma County Environmental Programs Division as OWTS.

The nearest municipal wastewater facilities include three treatment plants in the City of Yuma, south of the Project area. The Proposed Project alignment is not within the municipal service area for Yuma's wastewater treatment facilities; however, these facilities may be used by the licensed sanitation contractor that would be engaged to provide and service temporary sanitation facilities (portable toilets) for wastewater collection and disposal during construction of the Proposed Project. Yuma's three wastewater treatment facilities include the Figueroa Avenue Water Pollution Control Facility (WPCF), Jackrabbit Mesa, and Desert Dunes. The Figueroa Avenue WPCF treats approximately 80 percent of Yuma's wastewater, while Jackrabbit Mesa and Desert Dunes treat the remaining 20 percent (City of Yuma 2024). The Figueroa Avenue WPCF treats an average wastewater flow of 8.8 MGD and has a permitted design flow of 12 MGD (ADEQ 2022); the remaining available treatment capacity averages approximately 3.2 MGD.

Figure 5.19-4 Wastewater Treatment Facilities in the Proposed Project Area



Imagery provided by Esri and its licensors © 2025.
Additional data provided by CalOES 2019, USGS 2024.

25-17237 PEA EPS Figures
PEA Fig 5.19-4 Wastewater Treatment Facilities 8.5x11

Stormwater

Stormwater runoff is generated from rain and snowmelt that flows over land or impervious surfaces and does not soak into the ground. As it travels over the ground surface, runoff collects pollutants such as trash, chemicals, oils, and sediment. To protect receiving waters from contamination, stormwater controls and BMPs are used to filter pollutants and/or prevent pollution by controlling it at its source (City of Yuma 2025a).

California

Individual stormwater management systems consist of pipelines, culverts, ditches, detention basins, and discharge facilities, as applicable to the respective system. Components are designed to control the rate and amount of stormwater runoff, as well as to control for the contents of stormwater runoff, to minimize or avoid the discharge of pollutants to downstream waters. Cities within IID's service area maintain on-site stormwater retention/detention facilities and require new municipal, commercial, and industrial (MCI) developments to comply with local ordinances and IID requirements to mitigate for any increases in post-development runoff (Imperial Water Forum 2012b). In unincorporated areas, the County is responsible for management of flood control and stormwater runoff through the County's Flood Management Plan.

Surface water discharges from irrigated lands (tailwater) served by IID are collected in surface water drains and flow by gravity into either the Alamo River or the New River, and ultimately to the Salton Sea. Water that is applied to agricultural fields and allowed to infiltrate for the purpose of leaching salts below the root zone is collected in subsurface tile drains and discharged to surface water drains. Irrigated agricultural lands in the Imperial Valley are graded to carry irrigation water across fields and into a tailwater ditch; although there is limited rainfall in the region, stormwater runoff from irrigated agricultural lands is also discharged into surface receiving waters. (SWRCB 2021)

Arizona

Stormwater generated in unincorporated Yuma County is captured through a system of open drains, supplemented by wells in areas with limited drainage, that generally discharge to the Colorado River. Drains associated with the Yuma Project also serve to remove excess water from irrigated land in the Yuma Project area and convey stormwater runoff. There is one main drain that runs through the central portion of the Yuma Project Valley Division area and terminates at the Boundary Pumping Plant on the Mexican border (USBR 2025). As described in Section 5.19.1.1, Utility Providers, under "Water," water supply in the Arizona portion of the Proposed Project is provided through the Valley Division of the Yuma Project; facilities used for the conveyance and distribution of water supply may also serve stormwater management needs by capturing runoff from the surrounding area.

Telecommunications

California

The IVTA, in partnership with IID, maintains a telecommunications network with over 200 miles of fiber optic and 22 towers across Imperial County (IVTA 2025). The primary telecommunications provider for the Imperial Valley Substation is Viasat.

Arizona

The Yuma Regional Communications System (YRCS) is a land mobile radio (LMR) system for public safety and service agencies that is operated by the City of Yuma and shared by local, state, and federal agencies throughout Yuma County. The YRCS has 15 dispatch locations and 48 dispatch operator positions (City of Yuma 2025b). The primary telecommunications providers for the North Gila Substation are Spectrum and Zayo Group.

5.19.1.3 Approved Utility Projects

Chapter 7, Cumulative Impacts and Other CEQA Considerations, includes a list of cumulative projects which are identified as past, present, or probable future projects located within two miles of the Proposed Project that would potentially be constructed within one year before or after the Proposed Project. There are several utility projects within two miles of the Proposed Project, summarized below.

- Calexico Solar Project – this solar project overlaps with the Proposed Project alignment in the California portion of the Proposed Project and has been approved but is not yet built.
- Golden State Connect Authority (GSCA) Imperial County Broadband Network – this is an approved project that consists of new fiber optic lines throughout Imperial County.
- Imperial Valley–North of SONGS 500 kV Line and Substation – this transmission line project overlaps with the Imperial Valley Substation in the California portion of the Proposed Project and is currently in the planning phase, with an anticipated operational date in 2034.
- Perkins Renewable Energy Project - MET Station Installation and Geotech Exploration – this renewable energy project is currently in progress with an unknown operational date and overlaps with a Proposed Project access road and potentially a portion of the alignment.
- Colorado River Basin Project – this is a water supply development project proposed for implementation in the Lower Colorado River Basin to improve supply reliability for Colorado River water during drought conditions.
- Gila Project – this is an irrigation water service project with components including the Gila Gravity Main Canal that may be traversed by the Proposed Project's eastern terminus.

Cumulative projects including those listed above as related to utilities including for electricity, natural gas, water, sewer/wastewater, stormwater, solid waste, and communications, are assessed in Chapter 7.

5.19.1.4 Water Supplies

This section characterizes water supply sources in the Proposed Project area. The Colorado River is the primary water supply source throughout the Proposed Project area. The USBR operates and maintains the Colorado River for water supply, diverting water in the form of snowmelt from headwaters in the Rocky Mountains in Colorado and Wyoming, as well as portions of Utah, Nevada, New Mexico, and Arizona. USBR conveys Colorado River water to entitlement holders in the Upper Basin and Lower Basin of the Colorado River Watershed, including IID and the City of Yuma, both located in the Lower Basin. California is entitled to 4.4 million AFY (MAFY) from the Colorado River, while Arizona is entitled to 2.8 MAFY, as established by the Colorado River Compact of 1922 and the Boulder Canyon Project Act of 1928. Below are overviews of water supply sources in the California and Arizona portions of the Proposed Project, respectively.

California

In the California portion of the Proposed Project, wholesale water supply is provided by IID to agricultural customers and retail purveyors including the City of Calexico, which relies entirely on imported water from IID (City of Calexico 2022). Therefore, water supply sources in the Proposed Project area are defined by IID's water supply portfolio. Table 5.19-1, below, provides an overview of IID's annual water supply sources by month, followed by Table 5.19-2, which provides an overview of IID's annual water demands by month.

Table 5.19-1 IID Monthly Water Supplies (AFY), 2019

Month	All Surface Water (USBR)[1]	Groundwater Extraction		Effective Precipitation	Reclaimed Water	Total Supply
		LCWSP (USBR)[2]	IID Customers			
January	99,097	996	0	23,466	5,779	129,338
February	124,434	1,200	0	8,402	5,562	139,598
March	233,812	964	0	3,527	6,049	244,352
April	285,301	756	0	316	6,245	292,618
May	314,993	694	0	950	6,577	323,214
June	294,501	885	0	0	6,226	301,612
July	297,670	956	0	0	6,952	305,578
August	273,940	853	0	0	6,544	281,337
September	221,761	1,218	0	26,287	6,931	256,197
October	214,894	657	0	0	6,218	221,769
November	122,875	575	0	28,785	6,064	158,299
December	74,858	243	0	23,546	5,704	104,351
Total	**2,558,136**	**9,997**	**0**	**115,279**	**74,847**	**2,758,263**

AFY = acre-feet per year; USBR = U.S. Bureau of Reclamation; LCWSP = Lower Colorado Water Supply Project; IID = Imperial Irrigation District

[1] "All Surface Water" is the volume of Colorado River water available to IID at Imperial Dam per the USBR 2019 Decree Accounting Report.

[2] IID forbears consumptive use of Colorado River water allocated to the LCWSP, under which Colorado River water is diverted from the AAC for storage in the East Mesa wellfield; when needed, this water is pumped from the well field and returned to the AAC for distribution to LCWSP beneficiaries. The LCWSP is operated and maintained by USBR Yuma Area Office.

Source: IID 2021, pg. 45

The table above shows that IID's water supply portfolio includes surface water, which consists of Colorado River water managed by the USBR, groundwater extractions conducted under the Lower Colorado Water Supply Project (LCWSP), which diverts Colorado River water from the AAC to a well field for storage until needed for use by beneficiaries of the LCWSP, at which time it is pumped back into the AAC for distribution to LCWSP beneficiaries, as well as precipitation, and reclaimed water. Although groundwater extraction is part of IID's water supply portfolio, this extraction is limited to subsurface storage and conjunctive use through the LCWSP; groundwater from local basins is not produced by IID as part of its water supply portfolio.

As discussed in Section 5.10, *Hydrology and Water Quality*, and detailed in Section 5.10.1.3, *Groundwater*, the Proposed Project traverses three defined basins, including the Imperial Valley and Ogilby Valley Groundwater Basins in California, and the Yuma Valley Groundwater Basin in Arizona. These basins have a combined storage capacity estimated at approximately 21.5 million acre-feet

(MAF), including 14 MAF in the Imperial Valley Groundwater Basin, 2.9 MAF in the Ogilby Valley Groundwater Basin, and 4.6 MAF in the Yuma Valley Groundwater Basin. However, despite this substantial storage capacity, few wells have been drilled for production purposes because the yield is low and of poor quality, with high concentrations of TDS (IID 2021, pg. 66). Due to high TDS levels, groundwater in the Imperial Valley is generally unsuitable for domestic or irrigation purposes (Imperial Water Forum 2012c, pg. 5-7). To avoid contamination in the root zone of agricultural crops, tile drains are used to dewater and drain groundwater away from the roots of agricultural crops, discharging it to the Salton Sea (Imperial Water Forum 2012c, pg. 5-7).

Table 5.19-2, below, provides an overview of IID's annual water demands by month, represented by IID's water supply deliveries and other discharges in 2019; these include operational discharges (water spilled from the Main Canal including as a result of precipitation overflow), transportation losses, municipal and industrial uses, wildlife needs (environmental obligations), miscellaneous purposes (recreational water uses), non-agricultural deliveries, and agricultural (delivered to farms).

Table 5.19-2 IID Monthly Water Distribution (AFY), 2019

	Operational Discharge	Transportation Losses	Muni & Ind	Wildlife	Misc	Non-Ag Delivery	Agriculture	Total Demand
January	1,107	13,703	6,805	243	704	7,752	76,535	106,849
February	389	14,215	6,087	185	589	6,861	102,969	131,295
March	140	17,924	7,171	322	733	8,226	207,522	242,038
April	273	17,614	7,328	451	694	8,473	258,941	293,774
May	332	21,523	7,933	653	719	9,305	283,833	324,298
June	515	21,649	8,016	779	628	9,423	262,914	303,924
July	356	21,260	8,644	905	802	10,351	265,703	308,021
August	522	21,659	8,814	955	833	10,602	241,157	284,542
September	1,125	19,278	8,272	729	816	9,817	191,541	231,578
October	501	16,898	7,972	834	866	9,672	187,823	224,566
November	2,875	13,185	7,084	258	784	8,126	98,689	131,001
December	7,080	12,794	6,773	18	732	7,523	47,461	82,381
Total	**15,215**	**211,702**	**90,899**	**6,332**	**8,900**	**106,131**	**2,225,089**	**2,664,267**

AFY = acre-feet per year; Muni & Ind = Municipal and Industrial uses

Source: IID 2021, pg. 45

The table above shows that IID's water budget includes demands equivalent to 2,664,267 AFY, based upon 2019 distribution rates. These annual demands are less than the annual supply presented above in Table 5.19-2, with a surplus of approximately 93,996 acre-feet in 2019.

IID manages balanced water budget conditions through implementation of its Water Conservation Plan (IID 2021) and Equitable Distribution Plan (EDP) (IID 2023), which apportions available water supply each year to all of its water supply providers. The EDP does not allow for the transfer of water and/or water rights outside of the IID service area but rather provides for intra-district movement of available supplies to facilitate fulfillment of all needs (IID 2023). Under the EDP, each Water User Category (agricultural, industrial, potable) receives a Category Apportionment from the Available Water Supply, or the amount of water that is physically available for the given year (versus the amount of water contracted on paper from the respective water supply source, which is the Colorado River). The Category Apportionment is an amount of water determined by IID to be

available given the physical availability of Colorado River water for the given year. The Category Apportionment is distributed to the District Water Users within the respective Water User Category. The aggregate apportioned water distributed within each Water User Category may not exceed the Category Apportionment for that Water User Category (IID 2023).

In 2022, the U.S. Department of Interior determined that the Colorado River would operate under Tier 2 drought conditions in 2023. In response to the anticipated 2023 drought conditions, the USDOI announced its intent to modify the 2007 Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead, with $4 billion in funding appropriated by Congress specifically for the Colorado River Basin and other areas experiencing similar levels of drought, under the Inflation Reduction Act of 2022. In September 2022, the USBR announced the creation of the Lower Colorado River Basin System Conservation and Efficiency Program (LC Conservation Program), which would allocate funding from the Inflation Reduction Act of 2022 to Colorado River contractors to fund voluntary temporary conservation efforts. In November 2022, IID submitted a four-year LC Conservation Program proposal to the USBR to expand IID's conservation efforts for four years, from 2023 through 2026, creating up to one million acre-feet of conserved water. (IID 2025b)

IID and the USBR agreed to separate IID's LC Conservation Program proposal into two parts, developing one System Conservation Implementation Agreement (SCIA) for calendar year 2023 and one SCIA for calendar years 2024 through 2026, as follows:

- The 2023 SCIA was executed on December 6, 2023, and resulted in the creation of 106,111 acre-feet of System Conservation Water from IID's On-Farm Efficiency Conservation Program; and
- The 2024-2026 SCIA was executed on August 12, 2024, to fund the creation of up to 300,000 AFY of System Conservation Water to be left in Lake Mead, with a cumulative total of up to 700,000 acre-feet of conservation during those three years (IID 2025b).

In 2024, IID implemented a truncated Deficit Irrigation Program from August 13 to September 30, 2024. This shortened program involved 154,145 acres of Alfalfa, Bermuda grass, and Klein grass that were not irrigated for a 49- to 60-day period (IID 2025b). As a result, approximately 172,266 acre-feet of water was conserved at the Colorado River (IID 2025b); this equates to approximately 1.12 acre-feet of water conserved per acre of land included in the 2024 Deficit Irrigation Program.

Arizona

In the Arizona portion of the Proposed Project alignment, water supply is primarily sourced from the Colorado River and diverted to entitlement holders via the Yuma Project Valley Division. Water is diverted from the Colorado River by the AAC in amounts available within Arizona entitlements. As discussed in Section 5.19.1.1, *Utility Providers*, the City of Yuma provides water supply service to unincorporated county lands surrounding the incorporated City limits, including north of the city where the Project area is located. The City of Yuma holds some of the most senior entitlements to Colorado River water and has contracts with the USBR for the allocation and delivery of Colorado River water within its service area. Colorado River water is distributed to Arizona through the Valley Division of the Yuma Project, which is managed by the YCWUA under agreements with the USBR (City of Yuma 2020; USBR 2025).

The City of Yuma's contract with USBR provides a base allocation of 50,000 AFY of Colorado River water for municipal and domestic purposes; the City has also acquired delivery rights to 25,000 additional AFY, for a total annual water allotment of approximately 75,000 AFY of water from the

Colorado River (City of Yuma). The City is allowed to convert agricultural allocations to municipal and industrial uses and to receive return flow credits (City of Yuma 2020). However, as with the IID in California, the amount of Colorado River water actually diverted from the AAC each year is dependent upon the physical availability of water, as influenced by climatic conditions and other water users including the IID. Table 5.19-3, below, provides an overview of Yuma's annual water budget, represented by supply and demand conditions in 2019.

Table 5.19-3 City of Yuma – Water Supply Budget (2019)

Source/Demand	Quantity (AFY)
Supply	
All Surface Water[1]	23,273.39
Groundwater	2,245.98
Precipitation	0
Reclaimed Water	0
Total Supply	**25,519.37 AFY**
Demand	
Municipal & Industrial	22,554.08
Consumptive Environmental	656
Groundwater Recharge	0
Exchanges and Transfers	0
Colorado River Return Flow Credits[2]	8,489.58
Total Demand	**14,720.50 AFY**
Balance (Supply – Demand)	10,798.87 AFY

AFY = acre-feet per year

[1] "All Surface Water" includes surface water that is imported and originating within the City.

[2] "Return Flow Credits" represent wastewater that is returned to the Colorado River.

Source: City of Yuma 2020, pg. 11

The table above shows that Yuma's water supply portfolio consists of surface water and groundwater and does not include precipitation or reclaimed water; however, the City does receive credits for Colorado River water through wastewater return flow that is contributed back to the Colorado River. The table above shows that annual demands are less than the annual supply, with a surplus of approximately 10,798.87 acre-feet in 2019.

As with IID, the City of Yuma also implements a Water Conservation Plan for compliance with federal legislation (PL 97-293 Reclamation Reform Act of 1982 Section 210 (a), (b) and (c) and Reclamation Manual Directives and Standards; and Regulations 43-CFR-427). Yuma's Water Conservation Plan describes its Drought/Water Shortage Contingency Plan, through which the City provides for equal sharing of available water supply during shortage conditions (City of Yuma 2020).

5.19.1.5 Landfills and Recycling

Table 5.19-4, below, provides an overview of the permitted and remaining capacities and estimated closure dates for the landfills located nearest to the Proposed Project alignment.

Table 5.19-4 Landfill Capacities

Landfill	Location	Total Maximum Permitted Capacity (tons)	Remaining Capacity (Cubic Yards)	Estimated Date to Close
Allied Imperial Landfill	104 E Robinson Rd, Imperial, CA 92251	13,952,388	5,252,478	2051
Calexico Solid Waste Site	New River & Hwy 98, Calexico, CA 92231	3,437,800	1,561,235	2179
South Yuma County Landfill	19536 S Avenue 1 E, Yuma, AZ 85365	27,157,867	23,517,963	N/A

Source: CalRecycle 2024; USEPA 2024

California

The Imperial County Public Works Department operates nine landfills in the California portion of the Proposed Project, which are managed by the Imperial County Solid Waste Local Enforcement Agency (LEA). The LEA enforces federal, state, and local laws to ensure safe and proper solid waste management practices. The LEA, certified by the California Department of Resources Recycling and Recovery (CalRecycle), conducts regular inspections of permitted facilities (ICDPW 2019). The nearest landfills to the Proposed Project in Imperial County are the Allied Imperial Landfill in Imperial and the Calexico Solid Waste Site in Calexico.

Arizona

In Yuma County, the Waste Management Division under the Yuma County Department of Public Works (DPW) oversees the operation and regulation of landfills. The Yuma County DPW handles facilities dedicated to the proper disposal and recycling of various types of waste, including solid waste and tires (YCDPW 2024). The nearest landfill to the Project alignment in Arizona is South Yuma County Landfill (SYCL) in Yuma, owned and operated by CR&R Incorporated (SYCL 2012).

5.19.2 Regulatory Setting

Federal, state, and local regulations were reviewed for applicability to the Proposed Project. Section 5.10, Hydrology and Water Quality, provides detailed discussions of the Clean Water Act, Water Quality Control Plans, and other regulations related to the quality of surface water and groundwater resources and stormwater discharge, which are therefore not discussed further in this section.

5.19.2.1 Federal

Clean Water Act

The federal Clean Water Act (CWA) (33 United States Code [U.S.C.] § 1251 et seq.) is detailed in Section 5.10, Hydrology and Water Quality, including with discussion of the specific requirements and thresholds associated with the CWA sections listed below.

- Section 303(d), Impaired Waterbodies and Total Maximum Daily Loads
- Section 404, Placement of Dredge or Fill Material into Waters of the U.S. including Wetlands
- Section 401, Water Quality Certification
- Section 402, National Pollution Discharge Elimination System (NPDES)

With respect to this issue area of Utilities and Service Systems, CWA Section 402 defines NPDES program requirements that address construction activities relevant to the potential construction or relocation of new or expanded utility lines, as discussed in Section 5.19.4, Impact Analysis. Specifically, Section 5.19.4.2.1 describes that best management practices (BMPs) included in the Stormwater Pollution Prevention Plan (SWPPP) for Proposed Project compliance with the NPDES program (CWA Section 402) would apply to the construction or relocation of utility lines, as needed.

Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) regulates public water systems that supply drinking water (42 United States Code [USC] section 300(f) et seq.; 40 Code of Federal Regulations [CFR] section 141 et seq). The principal objective of the federal SDWA is to ensure that water from the tap is potable (safe and satisfactory for drinking, cooking, and hygiene). The main components of the federal SDWA are to:

- Ensure that water from the tap is potable
- Prevent contamination of groundwater aquifers that are the main source of drinking water for a community
- Regulate the discharge of wastes into underground injection wells pursuant to the Underground Injection Control program (see 40 CFR 144)
- Regulate distribution systems (40 CFR 141)

5.19.2.2 State of California

California Code of Regulations (Title 27)

Title 27 (Environmental Protection) of the California Code of Regulations defines regulations for the treatment, storage, processing, and disposal of solid waste. The SWRCB maintains and regulates compliance with Title 27 (Environmental Protection) of the California Code of Regulations. The compliance of the Proposed Project would be enforced by the Colorado River Basin RWQCB.

Integrated Waste Management Act of 1989

The Integrated Waste Management Act of 1989, also known as Assembly Bill (AB) 939, mandates that California's jurisdictions divert 50 percent of their solid waste from landfills. CalRecycle is under the umbrella of the California EPA and is responsible for the implementation of AB 939.

5.19.2.3 State of Arizona

Arizona Administrative Code R19-13 and R18-13-311

The Arizona Administrative Code R18-13 sets forth regulations for solid waste facility plans, disposal methods, and special waste management, such as wood waste. It recommends BMPs for handling treated or contaminated wood to ensure safe disposal and recycling, aiming to reduce environmental impact and promote sustainable waste management. Compliance with these regulations is mandatory to ensure environmental safety. The ADEQ conducts regular inspections to enforce these rules, ensuring that facilities operate within the legal framework (ADEQ 2024b).

Arizona Revised Statutes 49-701 to 49-881

The Arizona Revised Statutes 49-701 to 49-881 provide comprehensive regulations for solid waste management in Arizona. These statutes define key terms related to solid waste, outline facility requirements, and establish management practices to ensure proper handling, disposal, and recycling of solid waste. Arizona Revised Statutes 49-701 offers detailed definitions, including what constitutes solid waste and exemptions. Facilities must adhere to specific operational standards for design, construction, and maintenance to prevent environmental contamination and ensure safety. The statutes also prescribe best practices for waste segregation, recycling, and hazardous waste management. Facilities are required to obtain necessary permits from the ADEQ before commencing operations. The ADEQ conducts regular inspections and audits to ensure compliance, with Arizona Revised Statutes 49-881 detailing enforcement actions and penalties for non-compliance. These regulations promote sustainable waste management practices, minimizing environmental impact and protecting public health and the environment (ADEQ 2024c).

5.19.2.4 Local

The California Public Utilities Commission (CPUC) has sole and exclusive state jurisdiction over the siting and design of the Proposed Project in California. Pursuant to CPUC General Order (G.O.) 131-E, Section XI.B:

> "[L]ocal jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the Commission's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters."

Consequently, local agencies do not have jurisdiction over the Proposed Project, but public utilities must consult with local agencies and consider their regulations.

The Arizona Corporation Commission's Arizona Power Plant and Transmission Line Siting Committee has state jurisdiction over the Proposed Project in Arizona. This committee may approve or deny a Certificate of Environmental Compatibility application and impose reasonable conditions. However, pursuant to Arizona Revised Statutes Section 40-360.06(D):

> "Any certificate granted by the committee shall be conditioned on compliance by the applicant with all applicable ordinances, master plans and regulations of the state, a county or an incorporated city or town, except that the committee may grant a certificate notwithstanding any such ordinance, master plan or regulation, exclusive of franchises, if the committee finds as a fact that compliance with such ordinance, master plan or regulation is unreasonably restrictive and compliance therewith is not feasible in view of technology available."

As this Proponent's Environmental Assessment is being prepared for the CPUC, the following discussion of local land use regulations in California and Arizona is provided for informational purposes only.

Imperial County General Plan

Imperial County's General Plan Water Element contains goals and objectives related to utilities and service systems, as presented below (Imperial County 1997).

Goal 4: The County will adopt and implement ordinances, policies, and guidelines that assure the safety of County ground and surface waters from toxic or hazardous materials and wastes.

Objective 4.2: The provision of safe and efficient community wastewater treatment facilities which adequately service the present and future needs of residential, commercial, and industrial development within the Imperial Irrigation District service area.

Imperial County's General Plan Renewable Energy Transmission Element also contains goals and objectives related to utilities and service systems, as presented below (Imperial County 2015).

Goal 1: Support the safe and orderly development of renewable energy while providing for the protection of environmental resources.

Objective 1.1: The County of Imperial supports the overall goals of the Desert Renewable Energy Conservation Plan to provide a balance between the development of renewable energy resources while preserving sensitive environmental resources within its jurisdiction.

Objective 1.2: Lessen impacts of site and design production facilities on agricultural, natural, and cultural resources.

Objective 1.4: Analyze potential impacts on agricultural, natural, and cultural resources, as appropriate.

Objective 1.5: Require appropriate mitigation and monitoring for environmental issues associated with developing renewable energy facilities.

Objective 1.7: Assure that development of renewable energy facilities and transmission lines comply with Imperial County Air Pollution Control District's regulations and mitigation measures.

Goal 2: Encourage development of electrical transmission lines along routes which minimize potential environmental effects.

Objective 2.1: To the extent practicable, maximize utilization of IID's transmission capacity in existing easements or rights-of-way. Encourage the location of all major transmission lines within designated corridors, easements, and rights-of-way.

Objective 2.2: Where practicable and cost-effective, design transmission lines to minimize impacts on agricultural, natural, and cultural resources, urban areas, military operation areas, and recreational activities.

Goal 3: Support development of renewable energy resources that will contribute to and enhance the economic vitality of Imperial County.

Objective 3.1: Preserve IID's Balancing Authority and local rate-making authority which allows IID to continue to provide low-cost service. Lower energy rates enhance the economic vitality in Imperial County.

Objective 3.3: Encourage the development of services and industries associated with renewable energy facilities.

Objective 3.4: Assure that revenues projected from proposed renewable energy facility developments are sufficient to offset operational costs to the County from that particular development.

Goal 4: Support development of renewable energy resources that will contribute to the restoration efforts of the Salton Sea.

Objective 4.1: Prioritize the Salton Sea exposed seabed (playa) for renewable energy development.

Objective 4.2: Encourage the development of renewable energy facilities that will contribute to the reduction or elimination of airborne pollutants created by exposure of the seabed of the Salton Sea as it recedes.

Objective 4.3: Develop mitigation measures and monitoring programs to minimize impacts to avian species and other species that may be affected by renewable energy facilities constructed near the Salton Sea.

Goal 5: Encourage development of innovative renewable energy technologies that will diversify Imperial County's energy portfolio.

Objective 5.1: Support the implementation of pilot projects intended to test or demonstrate new and innovative renewable energy production technologies.

Objective 5.2: Encourage development of utility-scale distributed generation projects in the County.

Goal 6: Support development of renewable energy while providing for the protection of military aviation and operations.

Objective 6.1: Assure that renewable energy facilities proposed in areas adjacent to military installations and training areas will be compatible with these uses.

Objective 6.2: Facilitate the early exchange of project-related information with the military for proposed renewable energy facilities located within a military operations area (MOA) or within 1,000 feet of a military installation.

Objective 6.3: Assure that renewable energy facilities proposed within MOAs will not jeopardize the safety of existing residents or impact military operations.

Goal 7: Actively minimize the potential for land subsidence to occur as a result of renewable energy operations.

Objective 7.1: Require that all renewable energy facilities, where deemed appropriate, include design features that will prevent subsidence and other surface conditions from impacting existing land uses.

Objective 7.3: Require renewable energy facility permittees to establish and monitor subsidence detection networks in areas affected by permitted project activities.

Objective 7.4: Require monitoring programs for determining the possibility or extent of induced subsidence.

Objective 7.9: Consult with experts, such as CDOGGR [California Department of Conservation, Office of Geologic and Geothermal Resources], U.S. Geological Survey, geothermal industry representatives, permittees, and other developers to determine appropriate monitoring and mitigation requirements.

Imperial County Code of Ordinances

The Imperial County Code of Ordinances, Chapter 8.72A, Mandatory Organic Waste Disposal Reduction Program, includes requirements for haulers and facility operators (Section 8.72A.080) and self-haulers (Section 8.72A.090). Requirements include annual reporting to the County of the facilities planned for use to dispose of solid waste, recyclable materials, and organic matter, and quantities of each. In addition, Section 8.72A.100(b)(3) requires compliance with CALGreen Recycling Requirements for all new construction, including as related to the diversion of organic waste in construction and demolition activities from disposal in solid waste landfills.

Imperial County Integrated Waste Management Plan

The Countywide Integrated Waste Management Plan is comprised of the County's and the cities' solid waste reduction planning documents, Household Hazardous Waste (HHW) Element, Siting Element, Countywide Summary Plan, Negative Declaration, Nondisposal Facility Element, and the Household Hazardous Waste County Element. The Summary Plan includes information on the planning process, regulatory requirements, and the various "elements" prepared for Imperial County. The Countywide Summary Plan is intended to be a summary of previously prepared documents (ICDPW 2021).

Imperial Integrated Regional Water Management Plan

The Imperial Integrated Regional Water Management Plan (IRWMP) is a regional document to plan for and enable implementation of stakeholders' priority water resources projects and programs. It was prepared by the Imperial Water Forum, which consists of stakeholders including IID, Imperial County, multiple cities, agricultural organizations such as the Imperial County Farm Bureau and Imperial Valley Vegetable Growers Association, and groups including the Sierra Club CA-NV Regional Conservation Committee, among others. The purpose of the Imperial IRWMP is to define a portfolio of cost-effective water supply management strategies that support economic development while providing a reliable water supply for new municipal, commercial, and industrial (MCI) demands and avoiding negative impacts to existing MCI water users, agricultural water users, and existing agreements and contracts. The Imperial IRWMP is designed to guide resource management strategies and projects implemented by participating agencies and stakeholder groups. The Imperial IRWMP is also a resource to define long-term needs and priorities for water infrastructure in the Imperial Region, and match those needs to available state and federal funding. The Imperial IRWMP is intended to support and complement water management and land use plans based on the statutory authorities of IID, the County, and Imperial Region Cities. (Imperial Water Forum 2012a)

Yuma County General Plan

Yuma County's 2030 Comprehensive Plan Water Resources Element, Safety Element, and Energy Resources Elements contains policies and priorities relevant to utilities and service systems, as presented below (Yuma County 2023a, 2023b, 2023c).

Policy WRP.1: No new development or policy should degrade the water resources of existing water users and development.

Policy WRP.7: Land use adjacent to and in the immediate vicinity of major canals that supply irrigation and drinking water should not imperil the quality of water in these canals.

Policy SPP.5: Reduce level of human loss and damage and losses to existing and future critical facilities/infrastructure and other community assets due to floods.

Policy SPP.6: Decrease vulnerability of community assets, especially critical facilities, located in the 100-year floodplain.

Policy EPP.1: Support the provision of adequate energy for the future while protecting the natural environment and resources.

Policy EPP.2: Maintain cooperative working relationships with energy stakeholders in Yuma County.

Policy EPP.3: Increase public understanding, support and involvement regarding energy issues.

Policy EPP.4: Promote the energy efficiency in Yuma County.

Policy EPP.5: Promote reduction of energy demand through community planning.

Policy EPP.6: Support growth of renewable energy in Yuma County.

City of Calexico General Plan

The Public Facilities/Services Element of Calexico's General Plan contains policies and priorities relevant to utilities and service systems, as presented below (City of Calexico 2007).

Objective 2: Sewers: To provide high quality sewage services to existing residents as well as to accommodate future growth and development.

Policy 2a: Approve new development only if sewer facilities will be expanded to serve these areas at the expense of the developer or City.

Policy 2b: Continually monitor the existing sewer system to identify any necessary improvements to maintain high quality service and to ensure compliance with secondary treatment standards.

Objective 3: Potable Watter: To provide high quality potable water to existing residents as well as to accommodate future growth and development.

Policy 3a: The City shall assess existing water capacity when reviewing applications for new development, and comply with Senate Bills 610 and 221 requiring water supply assurance for projects of significant size (any project requiring water in the amount of or greater than that which would be required by a 500 dwelling unit residential project).

Policy 3b: All improvements to existing water system that are necessitated by a new development shall be financed entirely by the developer either by fee or actual construction.

Policy 3c: The dedication, maintenance, and construction of new water storage facilities, pumps, and transmission lines to serve new development shall be reviewed by the City with each new development application.

Policy 3d: The City shall incorporate measures to promote the conversation of water in new and existing development, specifically best available technologies in new construction and site development, including, but not limited to, water-saving toilets, showerheads, faucets, and water conserving irrigation.

Policy 3e: The extension of water service facilities such as transmission lines or pumps should be limited to one- quarter mile across an undeveloped area when necessitated by new development.

Objective 4: Stormwater: To maintain the current system and to provide long-term solutions for storm water runoff for the City.

Policy 4a: The City shall continue to require developers to construct or finance the necessary storm water runoff facilities such as underground storm drains and retention basins.

Policy 4b: The City should continue to work with the appropriate agencies to develop new arrangements for the discharge of storm water into the New River. To the extent feasible, these arrangements shall be consistent with the New River Improvement Project referenced and described in Section 5. 2. 5 of the Conservation/ Open Space Element.

Policy 4c: The City shall continue to work with IID to provide adequate storm water discharge in areas where applicable and in new development.

Policy 4d: Continually monitor the existing storm water system to identify any necessary improvements to maintain high quality service.

Objective 11: Solid Waste: To maintain solid waste collection and disposal services in accordance with the California lntegrated Waste Management Act of 1989 and pursue funding sources so as to reduce the cost of said services in the City.

Policy 11a: The City should monitor the operations of the solid waste solid waste collection contractor to ensure an adequate level of service.

Policy 11b: Encourage and support regional and statewide recycling programs that aim to reduce the solid waste stream.

Policy 11c: Continue to administer existing recycling programs and enact new ones as necessary to achieve current 50% solid waste diversion goal as set forth by the California lntegrated Waste Management Board.

5.19.3 Impact Questions

5.19.3.1 Utility and Service System Impact Questions

The thresholds of significance for assessing impacts come from the CEQA Environmental Checklist. For utilities and service systems, the CEQA Checklist asks, would the project:

- Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

- Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?
- Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?
- Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

5.19.3.2 Additional CEQA Impact Questions

The CPUC has identified the following additional CEQA impact question:

- Would the project increase the rate of corrosion of adjacent utility lines as a result of alternating current impacts?

5.19.4 Impact Analysis

5.19.4.1 Utilities and Service Systems Impact Analysis

5.19.4.1.1 Utilities and Service Systems Methodology

Utilities and service system impacts were evaluated based upon a review of UWMPs, data from Imperial County, Yuma County, and City of Calexico, regulatory requirements that apply to areas crossed by the Proposed Project, and the potential for the Proposed Project to affect utility infrastructure.

5.19.4.1.2 Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Construction

Project Components in California

Less than Significant Impact. Construction of the Proposed Project would introduce new electrical power transmission facilities; potential environmental impacts associated with the construction of these facilities are assessed in respective resource area sections throughout this document. For the purposes of this issue area of Utilities and Service Systems, analysis of potential impacts from the relocation or construction of new or expanded utility facilities addresses those relocations or expansions that may be necessary due to conflicts with the Proposed Project alignment, or as required to provide additional services to accommodate Proposed Project activities.

As stated in Section 3.3.5.1, Other Actions or Facilities that may be Required, under "Other Types of Infrastructure," the Proposed Project would not include relocation of other types of infrastructure, including third-party facilities associated with telecommunications and other cable-based utility services. Prior to the start of construction, Subsurface Utility Engineering (SUE) work would be

conducted to confirm the location of existing underground utilities and determine any potential conflict with the installation of Proposed Project facilities, as discussed in Section 3.5.4.2 under "Underground Utility Identification Process."

As stated in Section 3.5.4.2, Utilities, under "Relocating Existing Utilities," if relocation of existing utility line(s) is necessary to facilitate Proposed Project construction, the utility owner(s) would be contacted to perform the relocation(s). This coordination would be conducted as part of the Proposed Project. Coordination with utility owners regarding relocations, if necessary, would include scheduling such relocations to occur during construction of the Proposed Project, such that ground disturbance would be coordinated and potential impacts associated with ground disturbance would be minimized.

Construction of the Proposed Project would require a temporary water supply source, primarily for dust suppression during ground disturbing activities. As discussed in detail in Section 5.19.2.2, below, construction water would be obtained from existing sources and facilities and conveyed to work areas via water trucks. The Proposed Project would not construct new groundwater wells or other facilities associated with water supply, and would not require the expansion or relocation of water conveyance facilities, because water would be trucked from the source location(s) to the use locations along the Proposed Project alignment.

Construction of the Proposed Project would require wastewater facilities for the collection and disposal of wastewater generated during Project construction, which would be limited to sanitary wastes collected in portable toilets provided for use by on-site construction workers. As detailed in Section 5.19.4.2.3, below, wastewater would be disposed of by licensed sanitation contractor, at an off-site wastewater treatment facility; wastewater treatment facilities in the Proposed Project area have sufficient capacity to treat and dispose of wastewater generated during Proposed Project construction. No new wastewater management facilities would be constructed as part of the Project.

Construction of the Proposed Project would include the implementation of new site-specific stormwater drainage facilities to protect Proposed Project features from incurring damage or resulting in adverse impacts associated with erosion and drainage pattern alterations during storm events. Site-specific stormwater drainage facilities would include BMPs from the Proposed Project's SWPPP, as required by the SWRCB's Construction General Stormwater Permit for compliance with the NPDES program under the federal Clean Water Act. Typical stormwater management BMPs are listed in Section 3.5.11, Dust, Erosion, and Runoff Controls, and detailed analysis of stormwater and drainage pattern alterations is provided in Section 5.10, Hydrology and Water Quality. Construction of the Proposed Project would not include the expansion or construction of new stormwater facilities other than those included in BMPs for dust, erosion, and runoff controls.

Potential impacts associated with utility relocations in California would be less than significant.

Project Components in Arizona

Less than Significant Impact. As described above for Proposed Project components in California, the preparation of Proposed Project construction areas in Arizona would include SUE work to confirm the location of existing underground utility lines and identify any potential conflict(s) with Proposed Project facilities. Although the Proposed Project does not propose any utility line relocations, should conflicts be identified during SUE work, the respective utility owner(s) would be contacted to perform the relocation(s). Implementation of necessary utility relocations would be coordinated

with Proposed Project construction activities, to facilitate the relocations while minimizing ground disturbance.

Water supply required during construction in Arizona would be obtained from existing sources and conveyed to work areas via water trucks; as such, no new or expanded water supply facilities would be required as a result of Proposed Project construction water needs in Arizona.

Wastewater generated during Proposed Project construction in Arizona would be limited to sanitary wastes, which would be collected in portable toilets that would be services and disposed of by licensed sanitation contractor at an off-site wastewater treatment facility. Wastewater treatment facilities in the Proposed Project vicinity in Arizona have sufficient capacity to treat and dispose of wastewater generated during Project construction, and no new wastewater management facilities would be constructed as part of the Proposed Project.

Site-specific stormwater drainage facilities would be implemented as part of the Proposed Project and would include BMPs from the Proposed Project's SWPPP; in Arizona, the SWPPP would be required by the ADEQ's Construction General Stormwater Permit, which is comparable to California's SWRCB Construction General Stormwater Permit. Both states' Construction General Stormwater Permits are required for compliance with the NPDES program under the federal Clean Water Act. Construction of the Proposed Project in Arizona would not require expansion or construction of new stormwater facilities other than those included in Proposed Project BMPs to minimize or avoid impacts associated with stormwater (Section 3.5.11, Dust, Erosion, and Runoff Controls).

Potential impacts associated with utility relocations in Arizona would be less than significant.

Overall Project

Less than Significant Impact. The location(s) of underground utility relocations, if needed, are not currently known and would be identified through SUE work conducted during final engineering and construction preparation. Utility owner(s) would be contacted to conduct any necessary relocations; however, BMPs included in the Proposed Project design would serve to minimize or avoid potential impacts associated with utility relocations conducted during Proposed Project construction. Potential impacts during construction would be less than significant.

Operation

Project Components in California

No Impact. Operation of the Proposed Project would not involve utility line relocations for water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities. Any necessary utility relocations would be conducted during the Proposed Project construction period, addressed above. Therefore, this analysis addresses potential impacts associated with new or expanded services that may be required to support Proposed Project operations.

Operation of the Proposed Project would require an occasional water supply source, primarily for washing equipment and facilities, and conducting dust suppression during ground disturbing activities necessary for facility maintenance. As discussed in detail in Section 5.19.2.2, below, Operational water would be obtained from existing sources and facilities and would be conveyed to work areas via water trucks. Operation of the Proposed Project would not require the construction or expansion of water facilities.

Operation of the Proposed Project would require wastewater facilities, for the collection and disposal of wastewater consisting of sanitary wastes generated by new operational staff, which would consist of the equivalent of up to two full-time staff. The wastewater management needs of two individuals would be minimal compared to the available treatment capacities of existing wastewater facilities in the Proposed Project area, as detailed in Section 5.19.4.2.3, below. Operation of the Proposed Project would not require the construction or expansion of wastewater facilities.

Operation of the Proposed Project would not require the construction or expansion of stormwater management facilities. Stormwater design features and BMPs would be implemented as part of the Proposed Project during construction and would be maintained throughout Proposed Project operation.

No impact would occur with respect to the operation of existing and proposed utility features and facilities in California.

Project Components in Arizona

No Impact. As discussed above for potential operational impacts in California, operation of the Proposed Project in Arizona would not involve the relocation or construction of new or expanded utility facilities, including as related to water, wastewater treatment, stormwater drainage, electric power, natural gas, and telecommunications facilities. Water supply would be obtained from existing purveyors and sources in the Arizona portion of the Project, as detailed below in Section 5.19.4.2.2, and wastewater management would be provided by the existing facilities, as detailed below in Section 5.19.4.2.3. Stormwater drainage features implemented during Proposed Project construction would be maintained during Proposed Project operation, and BMPs included in the Proposed Project design would also inform the Proposed Project's SWPPP, to be developed for compliance with the ADEQ's Construction General Stormwater Permit in Arizona.

No impact would occur with respect to the operation of existing and proposed utility features and facilities in Arizona.

Overall Project

No Impact. Operation of the Proposed Project would result in no impacts associated with the relocation or expansion of water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities.

5.19.4.1.3 Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

Construction

Project Components in California

Less than Significant Impact. Construction water use estimates for the Proposed Project are presented in Section 3.5.12, Water Use and Dewatering. As described therein, water would be used for dust control during ground disturbing activities including site preparation, grading, compaction, and foundation construction, as well as during site restoration. Table 5.19-5, below, presents an overview of anticipated water demands for construction of the Proposed Project.

Table 5.19-5 Estimated Water Needs During Construction

Construction Water Demand	Quantity
Total	30,000,000 – 50,000,000 gallons
	92 – 153 AF
Annual[1]	8,571,429 – 12,285,714 gallons per year
	58.2 – 96.1 AFY

AF = acre-feet; AFY = acre-feet per year

[1] Annual construction water demands were calculated based on construction duration of 19 months (1.58 years).

As shown above, construction of the Proposed Project would require approximately 92 to 153 acre-feet of water over approximately 19 months (approximately 1.58 years), which equates to approximately 58.2 to 96.1 AFY. This water demand would occur along the entire Proposed Project alignment, in all areas where Proposed Project-related ground disturbance would occur and would be limited to the Proposed Project's 19-month construction period, with uses ceasing upon the completion of construction.

Throughout the Proposed Project alignment, water would be acquired from existing purveyors and conveyed via water trucks to active construction areas where needed. Water supply in the Proposed Project vicinity in California is sourced from the Colorado River and distributed by IID as the regional wholesaler to retail water purveyors and irrigation water users. Water supply for the Proposed Project may be purchased from IID or a retail water purveyor such as the City of Calexico, or from a private irrigation water user with surplus supply available. As discussed in Section 5.19.1.4, Water Supplies, groundwater is not a substantial water supply source in the Proposed Project vicinity in California, except to the extent that Colorado River water is stored in the ground by IID through the LCWSP. As shown in Table 5.19-1 and Table 5.19-2, IID has surplus water supply available to accommodate the Proposed Project construction water demands of approximately 58 to 97 AFY, which would be limited to the Proposed Project's 19-month construction period, and would cease upon the completion of Proposed Project construction.

The Proposed Project would not include the installation of any new groundwater wells. However, water for construction may be sourced from dewatered groundwater, if shallow groundwater is encountered during ground disturbing activities. Dewatering involves the removal of shallow groundwater from an active excavation area, and storage of removed water in tanks for off-site disposal or on-site discharge, depending upon discharge permit requirements. If on-site discharge is permitted, dewatered groundwater may be repurposed for use in dust suppression during construction, thereby reducing the quantity of water to be conveyed to the Proposed Project site.

As discussed in Section 5.19.1.4, IID implements a Water Conservation Plan (IID 2021) and Equitable Distribution Plan (IID 2023), under which IID manages the reliability of its water supply portfolio by apportioning water for municipal users first, and by managing municipal apportionments collectively. To the extent an individual municipal water user may exceed its annual apportionment, an increase is not necessary provided the cumulative uses of the municipal sector remain within the total municipal apportionment (IID 2024b). Should the cumulative uses exceed the quantified apportionment for all municipal users, IID uses the EDP to address municipal water user demands for reasonable and beneficial uses that are implementing appropriate best management practices for this area (IID 2024b).

Sufficient water supplies would be available to meet the Proposed Project's temporary construction demands in addition to the water demands of reasonably foreseeable future development. This determination is based upon IID's surplus supply availability in addition to its Water Conservation Plan and EDP which are implemented to manage supply during dry years and shortage conditions. Potential impacts related to water supply availability in the California portion of the Proposed Project would be less than significant.

Project Components in Arizona

Less than Significant Impact. As discussed in Section 5.19.1.4, Water Supplies, under "Arizona," water supply sources available in the Arizona portion of the Proposed Project consist of Colorado River water and groundwater. As shown in Table 5.19-3, sufficient surplus water supply is available to unincorporated county lands surrounding the city of Yuma to accommodate the Proposed Project construction water demands of approximately 58 to 97 AFY (along the entire Proposed Project alignment), which would occur during the construction period of approximately 19 months (1.58 years), and would cease upon the completion of Proposed Project construction. The city of Yuma also implements a Water Conservation Plan, which includes a Drought/Water Shortage Contingency Plan, through which the City provides for equal sharing of available water supply during shortage conditions (City of Yuma 2020).

Sufficient water supplies would be available to meet the Proposed Project's temporary demands during the approximately 19-month construction period, as well as reasonably foreseeable future development, based upon Yuma having surplus supply available and implementing a Water Conservation Plan and Drought/Water Shortage Contingency Plan to manage supply availability during dry years and shortage conditions. Potential impacts related to water supply availability in the Arizona portion of the Proposed Project would be less than significant.

Overall Project

Less than Significant Impact. As summarized above and detailed in Section 4.19.1.4, Water Supplies, Colorado River water is the primary water supply source throughout the Proposed Project area in California and Arizona. Sufficient water supply is available from existing sources within the California and Arizona portions of the Proposed Project to provide the Proposed Project's construction water supply of approximately 92 to 153 acre-feet of water. This water would be consumed over the Project's 19-month (1.58-year) construction duration, for an annual demand of approximately 58 to 97 AFY. Assuming a total Proposed Project alignment of approximately 87 miles, the construction water demand equates to approximately 0.7 to 1.1 AFY per mile. Water use during construction would occur in all areas requiring ground disturbance.

The water budget information presented in Section 5.19.1.4 for California and Arizona indicate that sufficient water supply is available in the Proposed Project area to meet all construction water demands for the Proposed Project. While sufficient water is available to meet the entire construction demand, water would likely be obtained from multiple purveyors along the Proposed Project alignment and trucked to active construction areas as needed, such that no singular purveyor would be responsible for the entire construction water demand. Sufficient water supply is available for construction of the Proposed Project and potential impacts would be less than significant.

Operation

Project Components in California

Less than Significant Impact. As discussed in Section 3.8.4.1, Existing and Proposed Maintenance Programs, under "Transmission Lines," operation and maintenance of the Proposed Project would include periodic washing of insulators to remove the buildup of dust, salts, bird droppings, smog, and condensation. The timing and frequency of insulator washing would depend upon site-specific conditions including weather events, and the amount of water required for the washing of insulators and other Proposed Project facilities has not been quantified. However, these activities would be consistent with existing operation and maintenance of utilities in the Project ROW.

Water for periodic washing of insulators would be obtained from the same purveyor(s) utilized during construction of the Proposed Project, if needed. This water would be conveyed along the Proposed Project alignment in a truck and a high-pressure nozzle would be used to wash necessary insulators. Although water for washing insulators has not been quantified, it would be minimal compared to the Proposed Project's construction water demands, assessed above, and sufficient water would be available from existing sources to provide water for insulator washing. Potential impacts associated with operational water demands in California would be less than significant.

Project Components in Arizona

Less than Significant Impact. During operation and maintenance of the Proposed Project in Arizona, water for periodic washing of insulators would be obtained from the same purveyor(s) utilized during construction of the Proposed Project, if needed. Potential impacts associated with water use for insulator washing in Arizona would be the same as discussed above for California. Due to the small quantity of water anticipated to be required for insulator washing, if needed, as well as the consistency of such activities with ongoing operation and maintenance of existing utilities in the Project ROW, and the sufficiency of Arizona water supply sources, potential impacts associated with operational water demands in Arizona would be less than significant.

Overall Project

Less than Significant Impact. Operation and maintenance of the Proposed Project may require a periodic water supply to conduct washing of transmission line insulators to maintain efficiency of the facilities. The volume of water needed to wash insulators has not been quantified because there are numerous variables that influence whether washing is necessary and how much water would be required. However, operational water demands for insulator washing, if needed, would be periodic and substantially less than the Proposed Project's construction water requirements for dust suppression. As discussed above, sufficient water supply is available from existing sources in California and Arizona to meet demands of the Proposed Project. Potential impacts would be less than significant.

5.19.4.1.4 Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Construction

Project Components in California

Less than Significant Impact. Wastewater generated during Proposed Project construction would be limited to sanitary waste that would be collected in portable toilets provided for use by on-site construction workers. As described in Section 3.5.14.2, Liquid Waste, sanitary waste would be the only type of wastewater generated during Proposed Project construction. Sanitary waste would be collected and contained in portable toilet facilities prior to disposal by a licensed sanitation contractor, which would dispose of sanitary waste at an off-site wastewater treatment facility.

As described in Section 3.6.1.1, Number of Construction Crew Members, the total construction workforce would vary in size depending upon the specific construction activities being conducted, and could range from six up to approximately 154, including construction workers as well as in-office staff including clerical, safety, and management personnel. Regulations of the Occupational Safety and Health Administration dictate that one toilet and one urinal are needed for every 40 employees if a construction site has more than 20 workers (OSHA 2011). Assuming a maximum construction workforce year-round during Proposed Project construction, up to four toilets and four urinals would be required; in the interest of developing conservative estimates, it is assumed that the urinals would contain the same capacity and have the same maintenance schedule requirements as the toilets. Further assuming that each portable toilet would contain up to 200 gallons of liquid (100 gallons of fresh water and 100 gallons of waste holding) and would be cleaned out weekly (All Site Rentals 2025), Project construction would involve the disposal of up to 1,600 gallons of liquids per week, or approximately 83,200 gallons (0.08 million gallons) per year.

In the California portion of the Proposed Project, wastewater treatment facilities include the Calexico WWTP. As stated in Section 5.19.1.2, Utility Lines, under "Sewer/Wastewater," the Calexico WWTP has an average daily flow of 4.3 MGD and peak daily flow capacity of 5.5 MGD, with available daily treatment capacity of up to approximately 1.2 MGD. As described above, the Project's maximum construction wastewater disposal needs would be up to approximately 0.08 MG per year, which equates to approximately 228 GPD. This amount is well within the available daily treatment capacity at the Calexico WWTP of 1.2 MGD. Therefore, adequate wastewater treatment capacity is available to serve the Proposed Project needs for wastewater disposal during construction in California.

Potential impacts associated with wastewater treatment in California would be less than significant.

Project Components in Arizona

Less than Significant Impact. The Arizona portion of the Proposed Project is located in unincorporated county areas that are not served by municipal wastewater treatment facilities; wastewater management is provided via site-specific septic systems permitted through Yuma County Department of Public Health. As described above for California, wastewater generated during Proposed Project construction in Arizona would be collected in portable toilets and disposed of by a licensed sanitation contractor at an off-site wastewater treatment facility. In Arizona, the

nearest facility to the Proposed Project alignment is the City of Yuma's Figueroa Avenue WPCF, which has an available daily treatment capacity of up to approximately 3.2 MGD (City of Yuma 2024). The Proposed Project's maximum construction wastewater disposal needs would be approximately 0.08 MG per year, or 228 GPD. This amount is well within the available daily treatment capacity at the Figueroa Avenue WPCF. Therefore, adequate wastewater treatment capacity is available in Arizona to serve the Proposed Project needs for wastewater disposal during construction.

Potential impacts associated with wastewater treatment in Arizona would be less than significant.

Overall Project

Less than Significant Impact. Construction of the Proposed Project would generate wastewater in the form of sanitary waste from construction workers, which would be collected in portable toilet facilities and transported by a licensed sanitary contractor to treatment facilities with sufficient permitted capacity to serve the Proposed Project. As discussed above, wastewater treatment facilities in both the California and Arizona portions of the Proposed Project have sufficient available daily treatment capacity to accommodate maximum wastewater generation rates during Project construction. This would not result in a determination by a wastewater treatment provider of insufficient capacity to serve the Proposed Project in addition to existing commitments. Potential impacts would be less than significant.

Operation

Operation of the Proposed Project would introduce an incremental increase in staffing equivalent to one to two subject matter experts, who would serve both the California and Arizona portions of the Project. These staff would be located remotely from the Proposed Project alignment and would use existing permanent sanitary facilities served by existing wastewater treatment providers. No habitable structures or new or expanded sanitary facilities are included in the Proposed Project.

Project Components in California

Less than Significant Impact. As discussed in Section 5.19.1.2, Utility Lines, under "Sewer/Wastewater," the Calexico WWTP treats an average daily flow of 4.3 MGD and serves a population of 38,249 individuals; this equates to a per capita wastewater generation rate of approximately 112 GPD. Assuming all new operational staff would be located in the California portion of the Proposed Project and would generate wastewater at a rate of 112 GPD, operational staff would increase wastewater treatment needs by 224 GPD. As discussed above for construction impacts, the Calexico WWTP has an available treatment capacity of approximately 1.2 MGD. Therefore, sufficient capacity is available to serve the Proposed Project during operation in California. The introduction of one to two staff would incrementally increase wastewater generation but would not affect the capacity of wastewater treatment systems or the ability of wastewater treatment providers to continue meeting their service area obligations.

Project Components in Arizona

Less than Significant Impact. As discussed in Section 5.19.1.2, Utility Lines, under "Sewer/Wastewater," the City of Yuma's Figuero Avenue WPCF treats an average flow of 8.8 MGD and serves a population of 112,330 individuals (City of Yuma 2024); this equates to a per capita wastewater generation rate of approximately 78 GPD. Assuming all new operational staff would be located in the Arizona portion of the Proposed Project and would generate wastewater at a rate of

78 GPD, operational staff would increase wastewater treatment needs by 156 GPD. As discussed above for construction impacts, the Figueroa Avenue WPCF has an available treatment capacity of approximately 3.4 MGD. Therefore, sufficient capacity is available to serve the Proposed Project during operation in Arizona. The introduction of one to two staff would incrementally increase wastewater generation but would not affect the capacity of wastewater treatment systems or the ability of wastewater treatment providers to continue meeting their service area obligations.

Overall Project

Less than Significant Impact. The Proposed Project would not introduce new permanent sanitary facilities or substantially increase the number of people using existing sanitary facilities. New operational staff would be minimal (one to two individuals) and would not alter the capacity of existing wastewater treatment facilities or availability of existing wastewater treatment providers to continue providing wastewater management to existing commitments. Potential impacts would be less than significant.

5.19.4.1.5 Would the project generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Construction

Project Components in California

Less than Significant Impact. As discussed in Section 3.5.14, Waste Generation and Management, during construction of the Proposed Project, solid waste may be generated in the form of metals, wood pallets, material packaging, food packaging, and removed vegetation. Recyclable materials, non-recyclable materials, and organic waste would be sorted and stored separately prior to disposal. The total amount of solid waste to be generated during Proposed Project construction is not currently known and will depend upon final engineering and design of the Proposed Project.

Table 5.19-4, Landfill Capacities, shows that in the California portion of the Proposed Project, the Calexico Solid Waste Site has approximately 1,561,235 cubic yards of remaining disposal capacity and approximately 154 years of continued operation, with an estimated closure date in the year 2179. The final disposition site for recyclable materials and non-recyclable solid wastes will be determined at the time of Proposed Project construction, and may depend upon factors such as market conditions. However, for the purposes of this analysis of Proposed Project components in California, it is assumed that the Proposed Project's temporary solid waste disposal needs during construction would be served by the Calexico Solid Waste Site. The Proposed Project would not generate solid waste in excess of the capacity of local infrastructure, as the Project's disposal needs would be limited to approximately 19 months (1.58 years) of the landfill's remaining lifespan of 154 years.

Solid waste reduction goals in California are presented in Section 5.19.1, Regulatory Setting, and discussed in detail below, in Section 5.19.4.2.5, which addresses potential impacts associated with compliance with management and reduction statutes and regulations related to solid waste. Potential impacts associated with solid waste generation during construction of Proposed Project components in California would be less than significant.

Project Components in Arizona

Less than Significant Impact. Table 5.19-4, Landfill Capacities, shows that in the Arizona portion of the Proposed Project, the South Yuma County Landfill has approximately 23,517,963 cubic yards of remaining disposal capacity, and no identified limit to its operational lifespan. It is assumed that the Proposed Project's temporary solid waste disposal needs would be served by the South Yuma County Landfill. The Proposed Project would not generate solid waste in excess of local infrastructure, as the Proposed Project's disposal needs would be limited to its 19-month construction period, and there is currently no closure date for the South Yuma County Landfill.

Solid waste reduction goals in Arizona are presented in Section 5.19.1, Regulatory Setting, and discussed in detail below, in Section 5.19.4.2.5. Potential impacts associated with solid waste generation during construction of Proposed Project components in Arizona would be less than significant.

Overall Project

Less than Significant Impact. The Proposed Project would generate solid waste during its temporary 19-month construction period. There is sufficient disposal capacity available at solid waste disposal facilities in both California and Arizona, which have lifespans that far exceed the Proposed Project construction period of approximately 1.58 years. Solid waste reduction goals in the Proposed Project area are presented in Section 5.19.1, Regulatory Setting, and discussed in detail below, in Section 5.19.4.2.5, which addresses potential impacts associated with compliance with management and reduction statutes and regulations related to solid waste. Potential impacts associated with solid waste generated during Project construction would be less than significant.

Operation

Project Components in California

Less than Significant Impact. During operation of the Proposed Project, the physical condition of facilities would be periodically inspected by field operations staff, and repairs or replacement of Proposed Project components and appurtenances would be conducted as needed. As described in Section 3.8.4.1, Existing and Proposed Maintenance Programs, maintenance activities may include replacing insulators, poles, or other hardware components, as needed to maintain circuit reliability; solid waste generation during Proposed Project operation would consist of the occasional malfunctioning or damaged Proposed Project components that are removed for replacement.

Due to the maintenance of Proposed Project components for maximum operational lifetime, and the nature of component replacements being conducted in response to unanticipated circumstances such as failures or malfunction, or storm events that damage Proposed Project facilities, solid waste generated during Proposed Project operation has not been quantified. Operational waste generation would be minimal and periodic. All materials would be appropriately disposed of, consistent with ongoing operation and maintenance of existing utility facilities in the Project ROW. As with solid waste generated during construction, materials would be recycled to the extent feasible, minimizing the quantity of solid waste sent to landfills for disposal.

As discussed above for the construction of Proposed Project components in California, it is assumed that all operational disposal needs would be accommodated by the Calexico Solid Waste Site. Although operational solid waste has not been quantified, it would realistically be substantially less than solid waste generated during construction, because operation would not involve the ground

disturbing activities or generation of spoils from structure foundations that would characterize solid waste generated during construction. The Calexico Solid Waste Site has approximately 1,561,235 cubic yards of available disposal capacity and a remaining operational lifetime of approximately 154 years, which covers the Proposed Project's anticipated operational lifetime of 60 to 80 years.

The Proposed Project would not generate solid waste in excess of the capacity of local infrastructure in California. Solid waste reduction goals are presented in Section 5.19.1, Regulatory Setting, and discussed in detail below, in Section 5.19.4.2.5; operation of the Proposed Project would not generate waste in excess of state or local standards or otherwise impair the attainment of solid waste reduction goals. Potential impacts would be less than significant.

Project Components in Arizona

Less than Significant Impact. As discussed above for the construction of Proposed Project components in Arizona, for the purposes of this analysis of operational solid waste associated with Proposed Project components in Arizona, it is assumed that all operational disposal needs would be accommodated by the South Yuma County Landfill. Although operational solid waste has not been quantified, as discussed above for the operation of Proposed Project components in California, operational waste would realistically be substantially less than solid waste generated during construction. The South Yuma County Landfill has approximately 23,517,963 cubic yards of available disposal capacity and no defined limit to its operational lifespan; the South Yuma County Landfill will realistically remain operational well beyond the Proposed Project's operational lifespan, such that it would be able to accommodate solid waste disposal associated with the operation of Proposed Project components in Arizona.

The Proposed Project would not generate solid waste in excess of the capacity of local infrastructure in Arizona. Solid waste reduction goals are presented in Section 5.19.1, Regulatory Setting, and discussed in detail below, in Section 5.19.4.2.5; operation of the Proposed Project would not generate waste in excess of state or local standards or otherwise impair the attainment of solid waste reduction goals. Potential impacts would be less than significant.

Overall Project

Less than Significant Impact. Operation of the Proposed Project would periodically generate solid waste consisting of Proposed Project components that would be removed to provide replacements for maximum efficiency and operational lifespan of the overall Proposed Project. There is sufficient disposal capacity available at solid waste disposal facilities in both California and Arizona, which have lifespans that exceed the Proposed Project operational lifetime of 60 to 80 years. Solid waste reduction goals in the Proposed Project area are presented in Section 5.19.1, Regulatory Setting, and discussed in detail below, in Section 5.19.4.2.5. Potential impacts associated with solid waste generated during Proposed Project operation would be less than significant.

5.19.4.1.6 Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Construction

Project Components in California

Less than Significant Impact. Solid waste management and reduction statutes and regulations are presented in Section 5.19.2, Regulatory Setting. As discussed above in the analysis of impacts related to solid waste generation and landfill disposal capacity (Section 5.19.4.2.4) and in Section 3.5.14.1, Solid Waste, up to 15 percent of solid waste generated during Proposed Project construction may be recyclable, such as concrete waste and washout, wood cribbing, and office supplies. The final disposition site for recyclable materials and non-recyclable solid waste will be determined at the time of Proposed Project construction and may depend upon factors including market conditions.

As presented in Section 5.19.2, under "California," the Integrated Waste Management Act of 1989 requires jurisdictions to divert 50 percent of their solid waste from landfills. Solid waste generated during Proposed Project construction would be conveyed to landfills that are also used by jurisdictions subject to the Integrated Waste Management Act. As discussed in Section 5.19.4.2.4, above, landfills in the California portion of the Proposed Project include the Calexico Solid Waste Site, which has sufficient capacity to accommodate disposal of solid waste generated by Proposed Project construction. The Proposed Project would occur in compliance with the Integrated Waste Management Act and would not impede local jurisdictions' compliance with the Integrated Waste Management Act.

In addition, the Imperial County Code of Ordinances, Chapter 8.72A, requires compliance of new construction with CALGreen Recycling Requirements, including as related to the diversion of organic waste in construction and demolition activities from disposal in solid waste landfills. Any organic waste generated during Proposed Project construction in California would be managed in accordance with CALGreen requirements. All Proposed Project-related waste generated in the California portion of the Proposed Project would be managed and disposed of in accordance with the Imperial County Code of Ordinances.

The Imperial County General Plan, Imperial County Integrated Waste Management Plan, and City of Calexico General Plan also contain goals and policies related to solid waste reduction. Solid waste generation from Proposed Project construction would be limited to the Proposed Project's 19-month construction period and would not impede or conflict with regional and local goals and policies to reduce long-term solid waste generation rates. The Proposed Project would comply with State and local statutes and regulations related to solid waste management and reduction in California.

Project Components in Arizona

Less than Significant Impact. As presented in Section 5.19.2, under "Arizona," Arizona Administrative Code R18-13 recommends BMPs for the handling of treated or contaminated wood to ensure safe disposal; if Proposed Project construction in Arizona involves any generation of solid waste in the form of treated or contaminated wood, it would be handled and disposed of in accordance with Arizona Administrative Code R18-13. In addition, Arizona Revised Statutes 49-701

through 49-881 outline requirements for the proper handling, disposal, and recycling of solid waste in Arizona; all solid waste generated from Proposed Project construction in Arizona would be managed in accordance with all requirements of the Arizona Revised Statutes and would be subject to inspections and audits by the ADEQ to ensure compliance.

Overall Project

Less than Significant Impact. Solid waste generated during Proposed Project construction would be managed and disposed of in accordance with all State and regional management and reduction statutes and regulations, including those defined by the Imperial County Code of Ordinances in California, and the Arizona Administrative Code and Arizona Revised Statutes in Arizona. No federal statutes or regulations have been identified for solid waste management and reduction. Potential impacts associated with compliance with statutes and regulations during Proposed Project construction would be less than significant.

Operation

Project Components in California

Less than Significant Impact. Operation of the Proposed Project would involve minimal solid waste generation, consisting of the occasional replacement of aging or damaged Proposed Project facilities and appurtenances. As described in Section 3.8.4.1, Existing and Proposed Maintenance Programs, maintenance of transmission line components would occur as needed and may include replacing insulators, poles, or other hardware components, as needed to maintain circuit reliability. As discussed above for construction activities, waste generated during Proposed Project operations would be diverted from landfills to the extent feasible, and the final disposition site(s) for recyclable materials and non-recyclable solid wastes will be determined at the time of application O&M activities and may depend upon factors including market conditions.

As discussed above for Proposed Project construction, solid waste generated during O&M activities in California would be managed and disposed of in accordance with the Imperial County Code of Ordinances. Potential impacts would be less than significant.

Project Components in Arizona

Less than Significant Impact. As discussed above for Proposed Project construction, solid waste generated during O&M activities in Arizona would be managed and disposed of in accordance with the Arizona Administrative Code and Arizona Revised Statutes. Potential impacts would be less than significant.

Overall Project

Less than Significant Impact. Solid waste generated during Proposed Project operation would be managed and disposed of in accordance with all State and regional management and reduction statutes and regulations, including those defined by the Imperial County Code of Ordinances in California, and the Arizona Administrative Code and Arizona Revised Statutes in Arizona. Potential impacts associated with compliance with statutes and regulations during Proposed Project operation would be less than significant.

5.19.4.1.7 Would the project increase the rate of corrosion of adjacent utility lines as a result of alternating current impacts?

Construction

Project Components in California

No Impact. Potential corrosion of utility lines due to alternating current (AC) impacts is an operational impact, as it relates to the presence of an electrical current; the Proposed Project facilities would not carry a current until fully operational. Therefore, construction of Proposed Project components in California would not increase the rate of corrosion of adjacent utility lines as a result of AC impacts. No impact would occur.

Project Components in Arizona

No Impact. Construction of Proposed Project components in Arizona would not increase the rate of corrosion of adjacent utility lines as a result of AC impacts. As such, no impact would occur.

Overall Project

No Impact. Construction of the Proposed Project would address the presence of other utilities that would be crossed or paralleled by the Proposed Project alignment, with appropriate protection systems incorporated into the Proposed Project design. Construction of the Proposed Project would not increase the rate of corrosion of adjacent utility lines as a result of AC impacts. As such, no impact would occur.

Operation

Project Components in California

Less than Significant Impact. Section 3.8.4.6, Cathodic Protection Maintenance, describes that potential for corrosion and associated design of AC mitigation systems for facilities adjacent to a transmission line are influenced by various parameters such as proximity to the transmission line, current on the transmission line, soil resistivity, and length of parallelism. Characteristics of adjacent facilities also influence corrosion potential and the design of AC protection, such as the facility material, size, and coating quality. Cathodic protection systems consist of electrochemical manipulation to make a metal structure the cathode in an electrochemical cell, such as by creating a protective current to inhibit the corrosion process. No cathodic protection systems are currently included in the Proposed Project design. However, final engineering and design of the Proposed Project will include consideration of the aforementioned parameters, including the presence of other utilities that would be crossed or paralleled by the Proposed Project alignment, and cathodic protection systems may be incorporated into the Proposed Project design where needed. Potential impacts associated with corrosion of adjacent utility lines due to operation of the Proposed Project in California would be less than significant.

Project Components in Arizona

Less than Significant Impact. As discussed above for the operation of Proposed Project components in California, final engineering and design of the Proposed Project in Arizona will include consideration of the parameters influencing corrosion from AC impacts and appropriate cathodic protection systems to avoid such corrosion. Cathodic protection systems may be incorporated into

the Proposed Project design where needed and would consist of electrochemical features to inhibit the corrosion process. Potential impacts associated with corrosion of adjacent utility lines due to operation of Proposed Project components in Arizona would be less than significant.

Overall Project

Less than Significant Impact. Operation of the Proposed Project may include cathodic protection systems where needed to avoid corrosion due to the presence of other utilities lines within or crossing the Proposed Project alignment. As such, operation of the Proposed Project would be conducted to avoid corrosion of adjacent utility lines. Potential impacts associated with cathodic protection would be less than significant.

5.19.4.2 Utility Relocation

Utility relocations are addressed in Section 5.19.4.2.1. As discussed therein, the Proposed Project would not involve replacement, modification, or relocation of existing transmission lines or other types of utility facilities. However, if underground utilities are encountered during construction preparation and SUE work conducted to confirm the location of existing underground utilities, the utility owner(s) would be contacted to conduct necessary relocation(s).

5.19.4.3 Waste

Solid waste associated with construction and operation of the Proposed Project is addressed in Section 5.19.4.2.4 and Section 5.19.4.2.5. As discussed therein, sufficient solid waste disposal capacity is available at landfills in the Proposed Project area to accommodate disposal of wastes generated during Proposed Project construction and operation.

5.19.4.4 Water Supply

5.19.4.4.1 Estimate of the amount of water required for project construction and operation, and potential water supply source(s)

Water required for Proposed Project construction and operation is addressed in Section 5.19.4.2.2. As discussed therein, sufficient water supply is available to meet demands of the Proposed Project, based upon the water supply sources detailed in Section 5.19.1.4, Water Supplies.

5.19.4.4.2 Evaluation of the ability of the water supplier to meet the project demand under a multiple dry year scenario

As discussed in Section 5.19.1.4, Water Supplies, and assessed in Section 5.19.4.2.2, the Colorado River serves as the primary water supply source in both the California and Arizona portions of the Proposed Project. IID and the City of Yuma are responsible for distributing Colorado River water to customers and entitlement holders in their respective service areas, in accordance with the allocations specified by USBR and the physical availability of water in a given year, which is variable depending upon climatic conditions. IID and the City of Yuma implement respective Water Conservation Plans with associated Drought/Water Shortage Contingency Plans for their service areas. As discussed in Section 5.19.1.4 and analyzed in Section 5.19.4.2.2, IID and the City of Yuma are able to meet the Proposed Project's anticipated water demands under a multiple dry year scenario, as the Water Conservation Plans ensure that available water supply is sufficient to meet demands.

5.19.4.4.3 Analysis of the Proposed Project meeting the criteria for consideration as a project subject to Water Supply Assessment Requirements under Water Code section 10912

In accordance with California Water Code Section 10912, as amended by Senate Bill (SB) 610, a Water Supply Assessment (WSA) is required for certain types of projects that are subject to CEQA, would use groundwater to meet some or all of the project's water needs, and meet the definition of "project" provided by SB 610. Projects that are subject to WSA requirements include:

- A residential development of more than 500 dwelling units;
- A shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space;
- A commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space;
- A hotel or motel, or both, having more than 500 rooms;
- An industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area;
- A mixed-use project that includes one or more of the projects specified above (California Water Code Section 10912(a)).

The Proposed Project does not meet any of the thresholds of "project" defined by SB 610 as listed above. SB 610 also specifies that a project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project may be subject to a WSA. According to the U.S. Census Bureau, the average number of people per household in 2019 through 2023 was 3.51 (U.S. Census Bureau 2025), and per capita municipal water demands for cities within IID's service area range from a low of approximately 0.17 AFY per person in Calexico to a high of 0.34 AFY per person in Brawley (Imperial Water Forum 2021c, pg. 5-39). As such, a 500-unit residential development in IID's service area with 3.51 individuals per household would have a water demand of approximately 298 AFY (per capita demand of 0.17 AFY) to 597 AFY (per capita demand of 0.34 AFY). As discussed in Section 5.19.4.2.2, the Proposed Project's water demand during construction would be approximately 58 to 97 AFY over approximately 19 months (1.58 years); this water demand rate is substantially less than the 298- to 597-AFY estimated demand rate associated with a 500-unit residential development. Therefore, the Proposed Project does not meet the criteria for consideration as a "project" subject to WSA requirements under Water Code Section 10912 and SB 610.

5.19.4.5 Cathodic Protection

The potential for the Proposed Project to result in corrosion to adjacent utility lines is discussed in detail in Section 5.19.4.1.7, above. Operation of the Proposed Project may include cathodic protection systems where needed to avoid corrosion due to the presence of other utilities lines within or crossing the Proposed Project alignment. As such, operation of the Proposed Project would be conducted to avoid corrosion of adjacent utility lines.

5.19.5 CPUC Draft Environmental Measures

Attachment 4 of the CPUC's *Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments* includes CPUC Draft Environmental Measure 5.19, Notify Utilities with Facilities Above and Below Ground. As described above, the Proposed Project would not result in significant impacts associated with utilities and service systems, and no environmental measures are necessary to reduce potential impacts.

5.19.5.1 Applicant Proposed Measures

No potentially significant impacts to utilities and service systems would occur as a result of the Proposed Project. As such, there are no Applicant Proposed Measures.

This page left intentionally blank.

5.20 Wildfire

This section describes the wildfire risk in the area of the Ironwood Transmission Line Project (Proposed Project), as well as the potential impacts that may result during construction and operation of the Proposed Project.

Research for this analysis involved a review of the following resources:

- Arizona Department of Forestry and Fire Management, Wildfire Risk Assessment Portal (AZWRAP)
- California Public Utilities Commission (CPUC) High Fire-Threat District (HFTD) Map
- California Department of Forestry and Fire Protection (CAL FIRE) Fire Hazard Severity Zone (FHSZ) maps
- CAL FIRE California Fire Perimeters maps
- U.S. Forest Service (USFS) Missoula Fire Sciences Laboratory fire regimes of creosotebush-white bursage desert scrub communities
- USFS Missoula Fire Sciences Laboratory fire regimes of desert riparian communities
- USFS Missoula Fire Sciences Laboratory fire regimes of saltbush desert scrub communities
- USFS Missoula Fire Sciences Laboratory fire regimes of Sonoran desert scrub communities
- Horizon West Transmission's (HWT) Wildfire Mitigation Plan (WMP)
- Local agency planning documents

5.20.1 Environmental Setting

The Proposed Project will be located in Imperial County, California and Yuma County, Arizona on federal, state, municipal, and private land. These lands include unincorporated areas of Imperial and Yuma counties, the city of Calexico, California, and public lands under the jurisdiction of management of the U.S. Bureau of Land Management, U.S. Bureau of Reclamation, and the California Department of Parks and Recreation.

The Wildfire Study Area for the purposes of the wildfire analysis encompasses an approximately 6-mile area around the Proposed Project alignment (3-mile buffer off the Proposed Project alignment) and includes mostly undeveloped open areas with some developed areas in unincorporated Imperial County. This section describes the existing wildfire setting in the Wildfire Study Area.

5.20.1.1 High Fire Risk Areas and State Responsibility Areas

Within California, FHSZs are designated by CAL FIRE using a three-tiered ranking system based on fuel hazard, wildland fire potential, and housing density. The tiers, from lowest to highest threat, are termed moderate threat, high threat, and very high threat. FHSZs are administered by the federal, state, or local government that is financially responsible for preventing and suppressing wildfires in a given area, and are categorized into the following three groups:

- Federal Responsibility Areas (FRA): The federal government is financially responsible for wildfire suppression.
- State Responsibility Areas (SRA): The state is financially responsible for wildfire suppression.
- Local Responsibility Areas (LRA): Cities or counties are financially responsible for wildfire suppression.

Figure 5.20-1a and Figure 5.20-1b present the high fire risk areas within the Wildfire Study Area. GIS data is provided under a separate electronic cover. The lengths of the Proposed Project alignment that are within the FHSZs, and the designations of FRA, SRA, and LRA, are provided in Table 5.20-1.

The CPUC's HFTD map shows areas where there is an elevated (Tier 2) or extreme (Tier 3) risk from wildfires associated with overhead utility power lines or overhead utility power line facilities also supporting communication facilities. The HFTD map also indicates areas (Zone 1) in direct proximity to communities, roads, and utility lines where there is a direct threat to public safety. The Wildfire Study Area is not within Tier 2, Tier 3, or Zone 1 of the HFTD (CPUC 2022).

In Arizona, the Department of Forestry and Fire Management calculates Wildfire Threat based on the probability of an acre igniting (fire occurrence), the effectiveness of fire suppression resources, and the expected final fire size based on the rate of spread in four weather percentile categories. The AZWRAP categorizes Wildfire Threat into nine levels, ranging from *Very Very Low* Threat to *Extreme* Threat. High Wildfire Threats (*High*, *Very High*, and *Extreme* Threat) are approximately 12 times greater than *Moderate* Wildfire Threats and 53 times greater than *Low* Wildfire Threats. Total alignment mileage of the Proposed Project through high fire risk areas including FHSZs, HFTDs, and AZWRAP's high wildfire threat areas are provided in Table 5.20-1.

Table 5.20-1 Miles of Proposed Project Alignment within High Fire Risk Areas and Responsibility Areas

Total Alignment Length (miles)	California Project Alignment (miles)					Arizona Project Alignment (miles)			
	California Alignment Length	CAL FIRE SRA	CAL FIRE LRA	CAL FIRE FRA	CPUC HFTD	Arizona Alignment Length	High Wildfire Threat	Very High Wildfire Threat	Extreme Wildfire Threat
86.3	80.6	0	29.8	50.5	N/A	6.0	0.1	1.2	1.1

Note: Total Arizona alignment length is greater than total mileage of *High*, *Very High*, and *Extreme* Wildfire Threat since remaining mileage is in reduced Wildfire Threat zones not listed.

Figure 5.20-2a and Figure 5.20-2b present the wildland urban interface (WUI) data in the Wildfire Study Area. GIS data is provided under a separate electronic cover. The WUI is the area where houses meet or intermingle with undeveloped wildland vegetation and is a focal area for human-environment conflicts such as wildland fires. Figure 5.20-2a and Figure 5.20-2b show that the Wildfire Study Area is primarily within areas of no to very low vegetation and no habitation, areas with vegetation but no habitation, and minimal areas of low interface (primarily near Calexico, California, and the California-Arizona state line).

Figure 5.20-1a High Fire Risk Areas in the Wildfire Study Area (Western Extent)

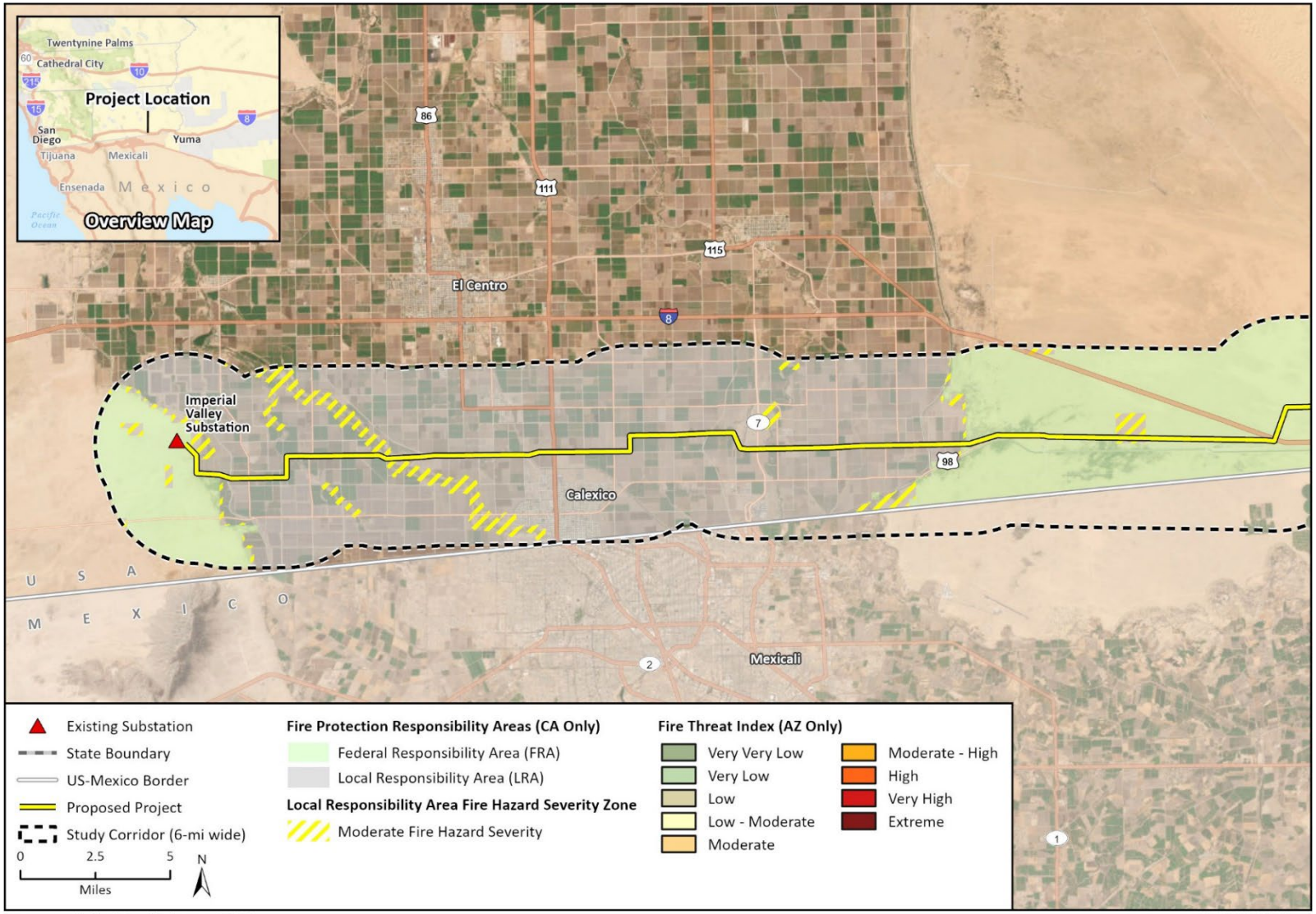


Figure 5.20-1b High Fire Risk Areas in the Wildfire Study Area (Eastern Extent)

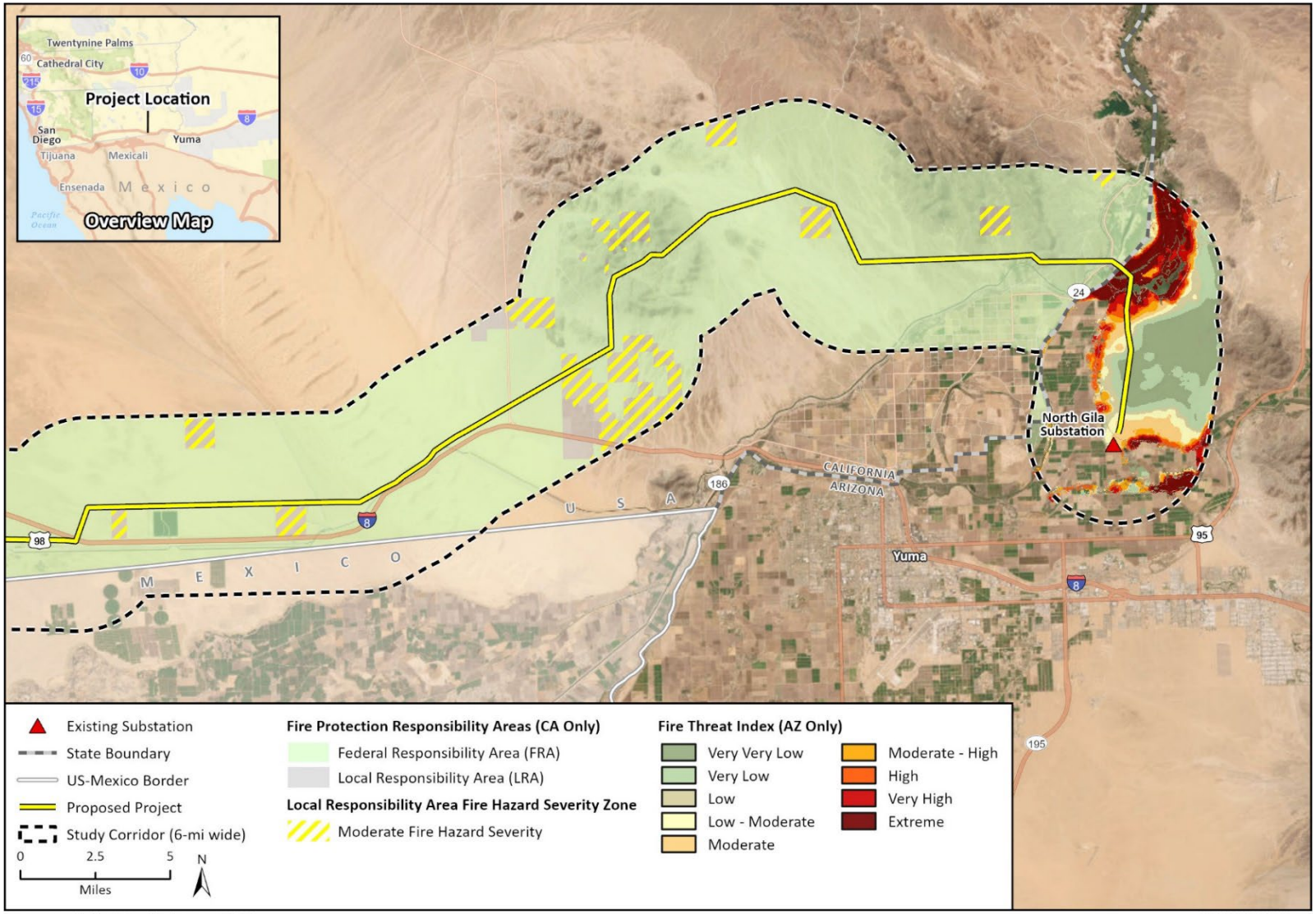


Figure 5.20-2a Wildland Urban Interface in the Wildfire Study Area (Western Extent)

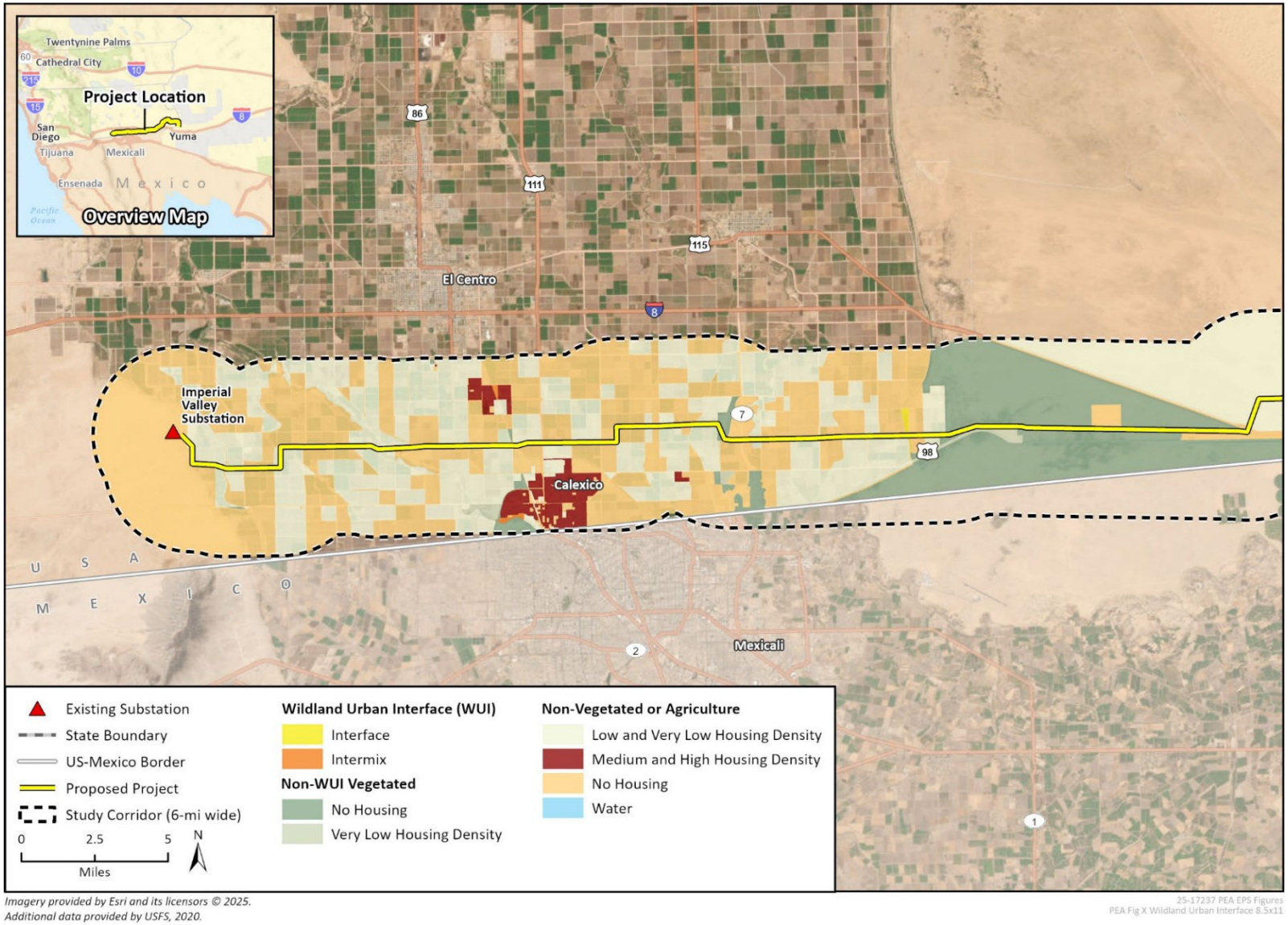
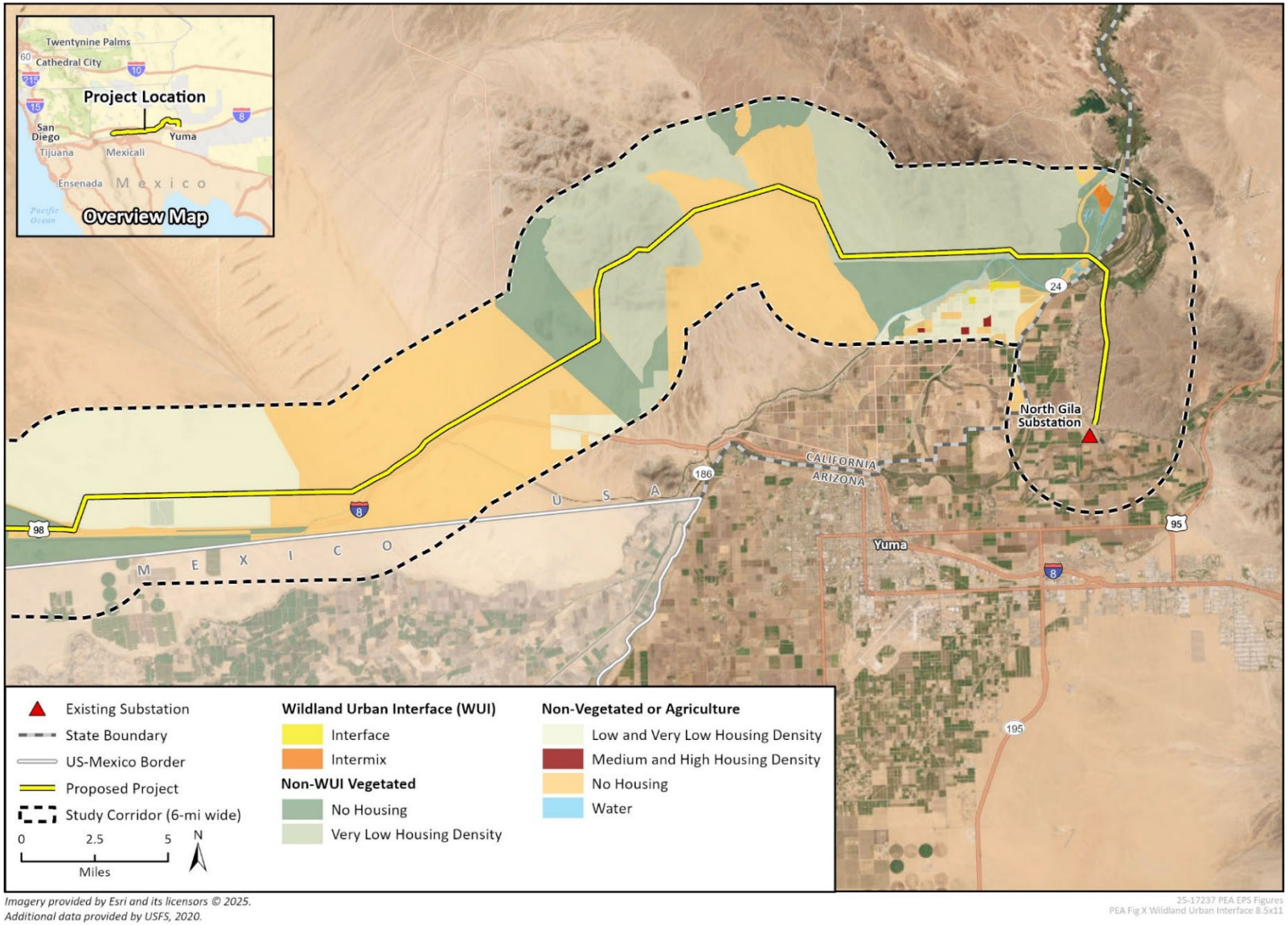


Figure 5.20-2b Wildland Urban Interface in the Wildfire Study Area (Eastern Extent)



5.20.1.2 Fire Occurrence

The CAL FIRE online historical fire map and AZWRAP's Ignition and Fire Occurrence Density map provide historical fire perimeters within California and Arizona. Historical fires that overlap or are located within 1 mile of the Proposed Project alignment include the 2023 Laguna Fire, 2021 Desert Fire, 2021 Yuha Fire, 2020 Potholes Fire, 2019 Bermuda Fire, 2015 Mittry Lake Fire, 2013 Highline Fire, 2013 Horseshoe Fire, 2011 Laguna Fire, and the 2009 Midway Fire. The footprints of historical fires that have occurred in the Wildfire Study Area are shown in Figure 5.20-3a and Figure 5.20-3b, which are detailed in Table 5.20-2. The boundary and fire area data for the fires shown in Table 5.20-2 are provided under separate cover. GIS data is provided under a separate electronic cover.

Table 5.20-2 Historical Fires Within 3 Miles of Proposed Project Alignment

Fire Name	Fire Year	Acres Burned	Distance from Proposed Project	State	Ignition Source	Ignition Location
Laguna	2023	19.9	Within 1 mile	California	Unknown	Unknown
Desert	2021	216.6	Within 1 mile	California	Unknown	Unknown
Yuha	2021	106.2	Within 1 mile	California	Unknown	Unknown
Potholes	2020	19.0	Within 1 mile	California	Human-caused	Unknown
Bermuda	2019	1199.6	Within 1 mile	Arizona	Human-caused	North of Yuma, Arizona
Mittry Lake	2015	66.4	Within 1 mile	Arizona	Human-caused	Mittry Lake, 8 miles NE of Yuma, AZ
Highline	2013	261.7	Within 1 mile	California	Unknown	10 miles SE of El Centro, Imperial County
Horseshoe	2013	20.7	Within 1 mile	Arizona	Human-caused	Chiricahua Mountains, near Portal, Arizona
Laguna	2011	730.8	Within 1 mile	California and Arizona	Human-caused	CA side of Colorado River
Midway	2009	111.6	Within 1 mile	California	Unknown	Unknown
All American	2022	25.0	Within 2 miles	California	Unknown	Unknown
Walker	2014	1107.8	Within 2 miles	Arizona	Unknown	Southeastern side of Santa Rita Mountains
Tower	2011	11.2	Within 2 miles	California	Unknown	Imperial Valley
McKinley	2022	107.3	Within 3 miles	California	Unknown	McKinley Road, Imperial Dam Recreation Area
Laguna	2008	161.7	Within 3 miles	California and Arizona	Fallen power line	Imperial Dam (CA and AZ)

Note: This table includes historic fires 10 or more acres in size within 3 miles of the Proposed Project alignment. Ignition source and location is provided for all fires where these details are known. For some fires this information is either unknown or not published to the public.

Figure 5.20-3a Historical Fire Perimeters in the Wildfire Study Area (Western Extent)

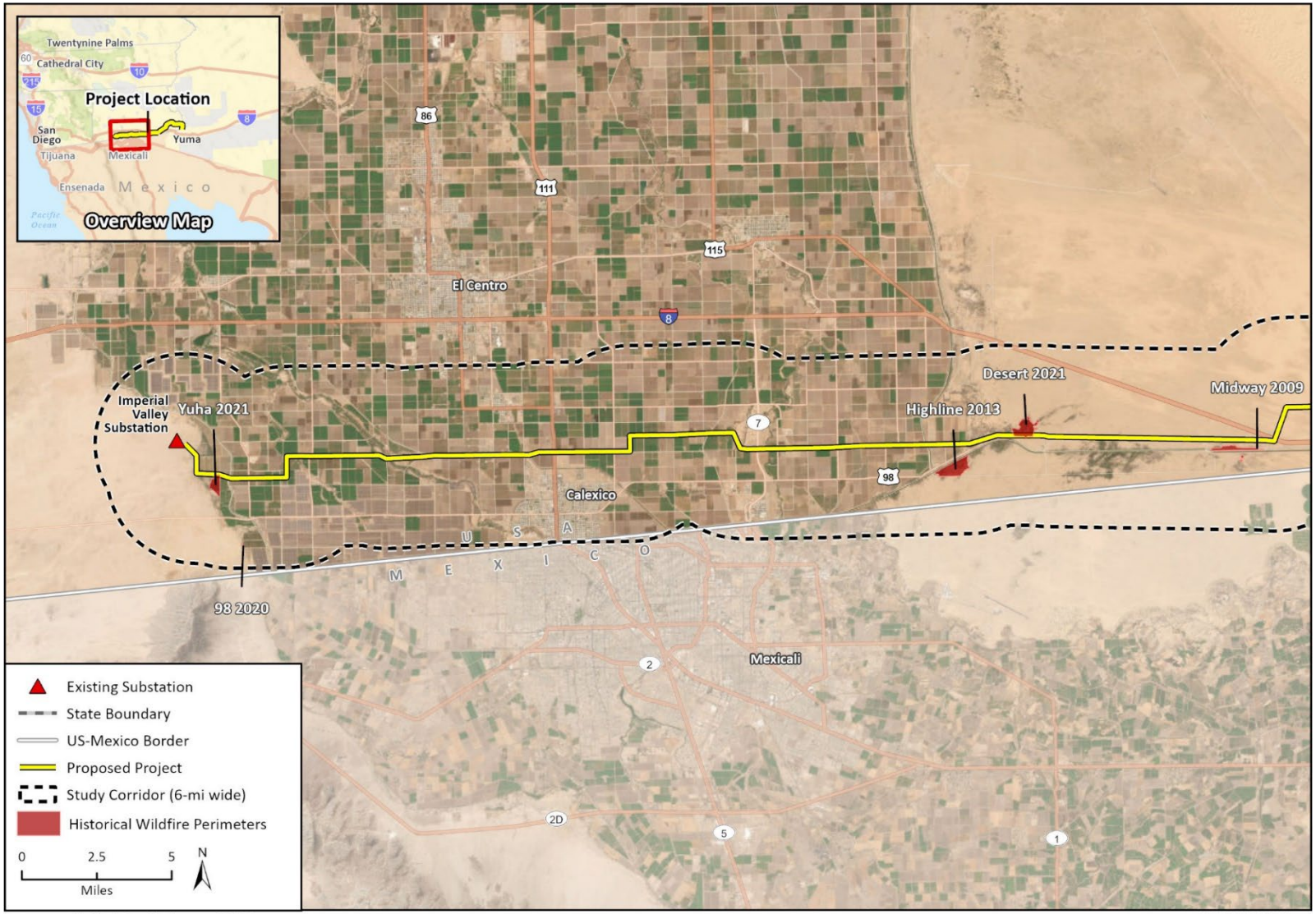
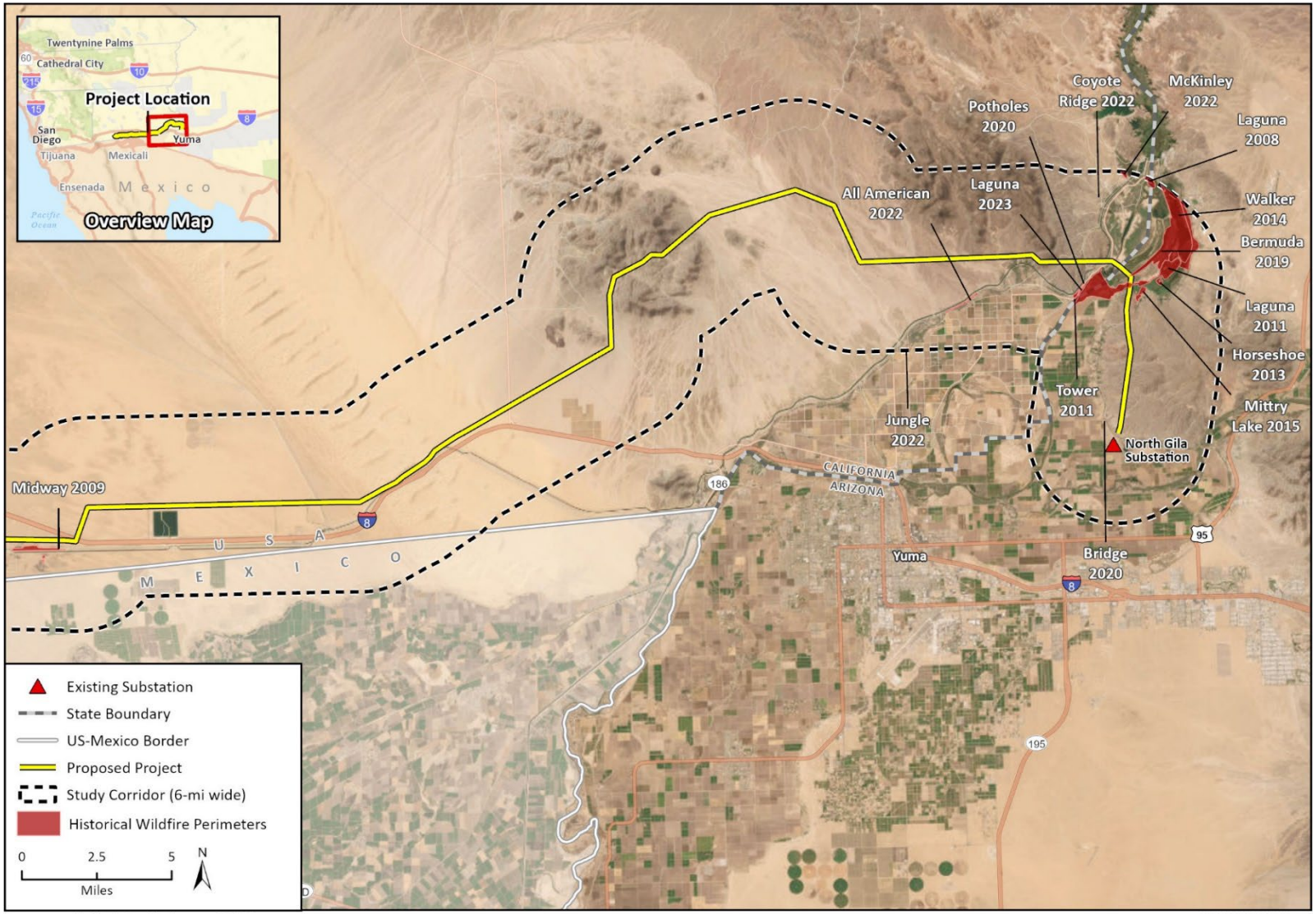


Figure 5.20-3b Historical Fire Perimeters in the Wildfire Study Area (Eastern Extent)



5.20.1.3 Fire Risk

Fire behavior fuel models use descriptions of fuel properties and climate to calculate fire behavior potentials. Anderson's original fire behavior fuel model contained 13 fuel properties (Anderson 1982). The Scott and Burgan Fire Behavior Fuel Model expanded the range of fuel models to improve predictions, with 40 classifications of fuel (Scott and Burgan 2005). Fuel classifications within the Wildfire Study Area are defined below; all fuel types are present in both California and Arizona (Landscape Fire and Resource Management Planning Tools [LANDFIRE] n.d.).

- NB1: Urban/Developed
- NB3: Agricultural
- NB8: Open Water
- NB9: Barren
- GR1: Short, sparse dry climate grass is short, naturally or heavy grazing, predicted rate of fire spread and flame length low
- GR2: Low load, dry climate grass primarily grass with some small amounts of fine, dead fuel, any shrubs do not affect fire behavior
- GS1: Low load, dry climate grass-shrub shrub about 1 foot high, grass load low, spread rate moderate and flame length low
- GS2: Moderate load, dry climate grass-shrub, shrubs are 1-3 feet high, grass load moderate, spread rate high, and flame length is moderate
- SH1: Low load dry climate shrub, woody shrubs and shrub litter, fuelbed depth about 1 foot, may be some grass, spread rate and flame low
- SH2: Moderate load dry climate shrub, woody shrubs and shrub litter, fuelbed depth about 1 foot, no grass, spread rate and flame low
- SH4: Low load, humid climate timber shrub, woody shrubs and shrub litter, low to moderate load, possible pine overstory, fuelbed depth about 3 feet, spread rate high and flame moderate
- SH5: High load, dry climate shrub litter and woody shrubs, heavy load with depth 4-6 feet, spread rate and flame very high, moisture extinction high
- SH7: Very high load, dry climate shrub, woody shrubs and shrub litter, very heavy shrub load, depth 4- 6 feet, spread rate somewhat lower than SH6 and flame very high
- TU1: Low load dry climate timber grass shrub, low load of grass and/or shrub with litter, spread rate and flame low
- TU2: Moderate load, humid climate timber-shrub, moderate litter load with some shrub, spread rate moderate and flame low
- TL1: Low load compact conifer litter, compact forest litter, light to moderate load, 1-2 inches deep, may represent a recent burn, spread rate and flame low
- TL2: Low load broadleaf litter, broadleaf, hardwood litter, spread rate and flame low
- TL3: Moderate load conifer litter, moderate load conifer litter, light load of coarse fuels, spread rate is very low and flame low
- TL5: High load conifer litter, light slash or dead fuel, spread rate and flame low
- TL6: Moderate load broadleaf litter, spread rate and flame moderate

Scott and Burgan Fire Behavior Fuel Model data within the Wildfire Study Area is presented in Figure 5.20-4a and Figure 5.20-4b. GIS data is provided under a separate electronic cover.

Figure 5.20-4a Scott and Burgan Fire Behavior Fuel Modeling (Western Extent)

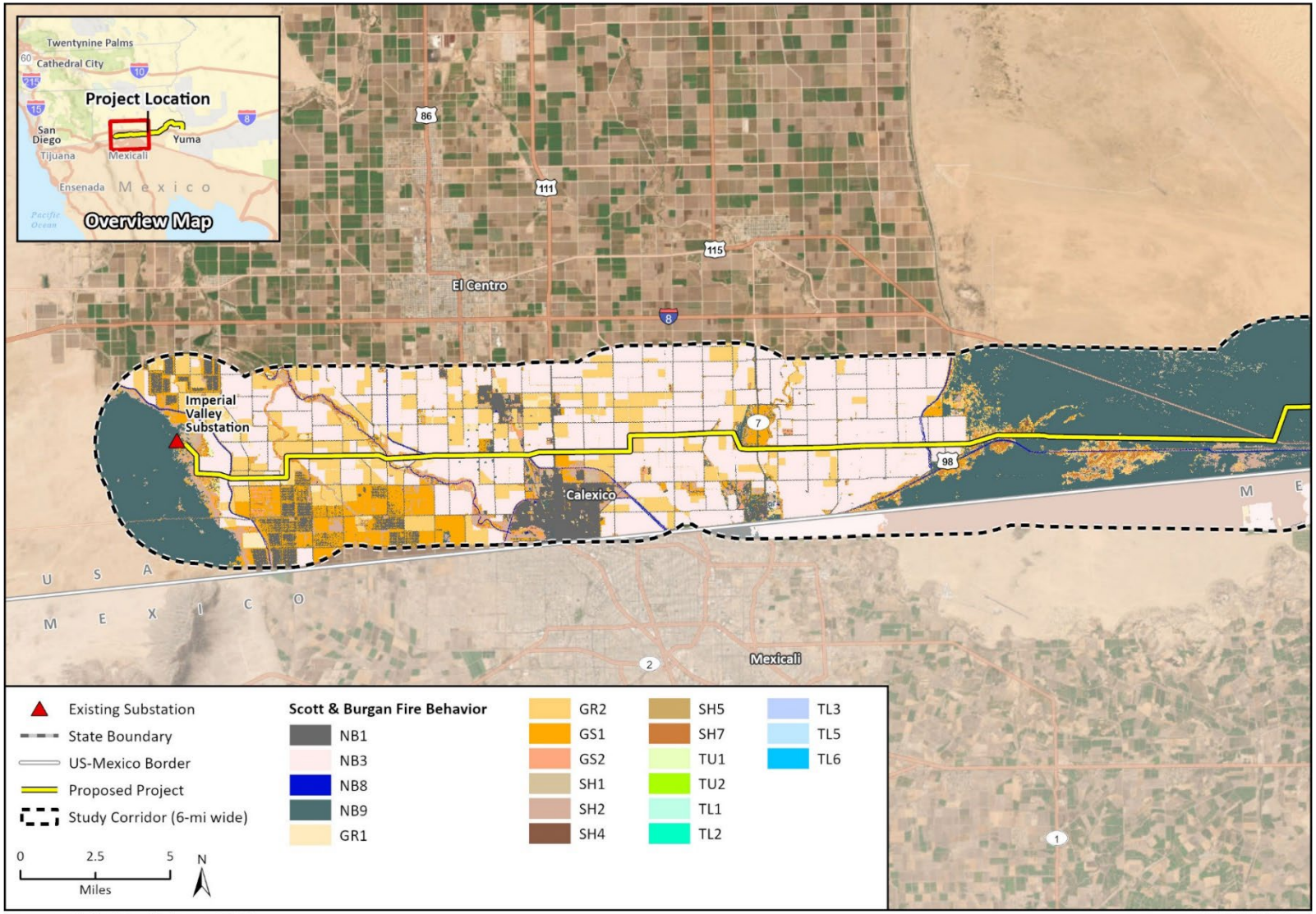


Figure 5.20-4b Scott and Burgan Fire Behavior Fuel Modeling (Eastern Extent)

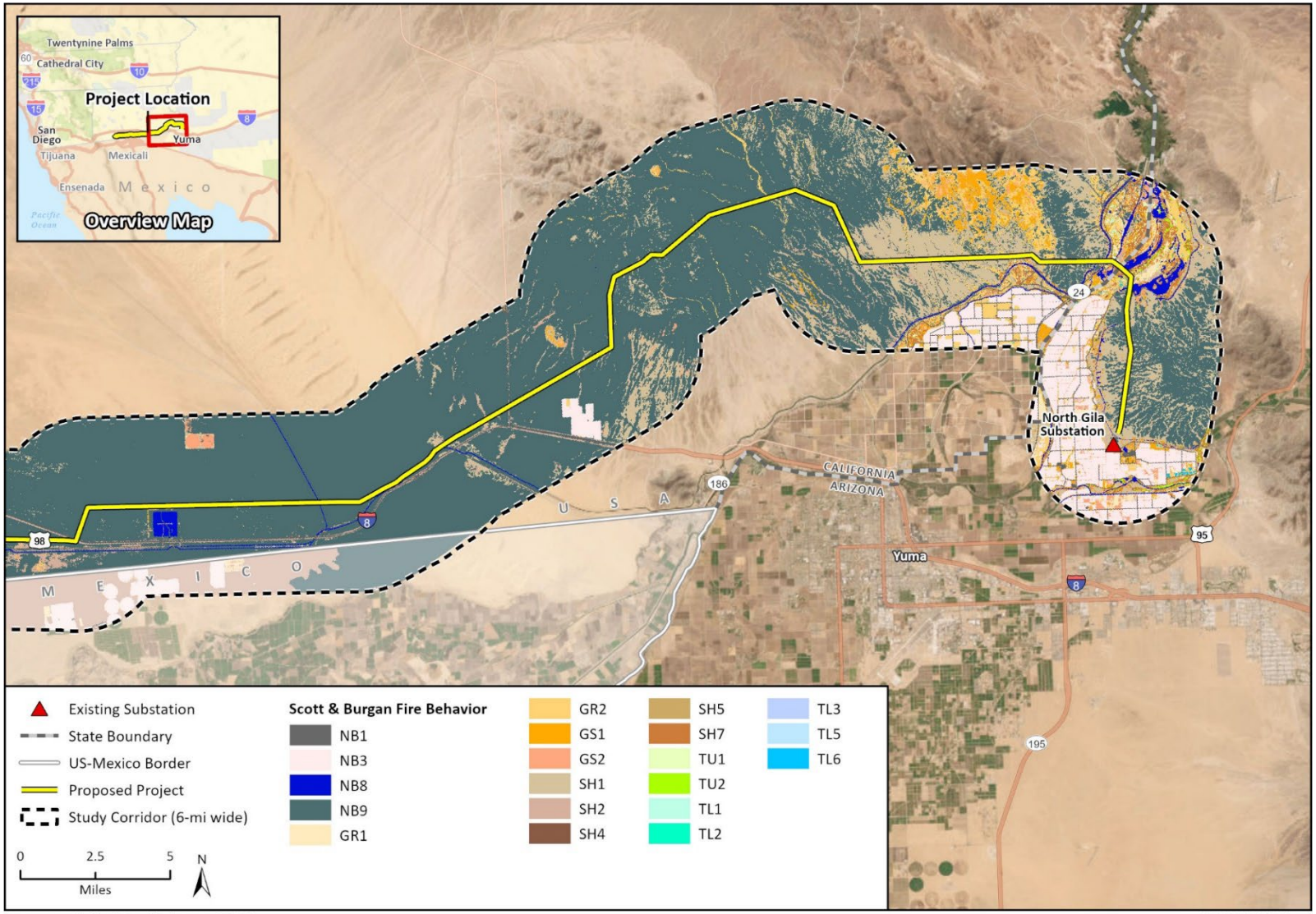


Table 5.20-3 lists the vegetation types included in the U.S. Department of Agriculture (USDA) Fire Effects Information System (FEIS) that are found along the Wildfire Study Area. Vegetation types are also shown on Figure 5.20-5a and Figure 5.20-5b. FEIS provides synthesized scientific information about fire effects on individual ecosystems, how often fire might occur in individual ecosystems, and how long it takes individual ecosystems to recover (USDA 2022). Based on the vegetation types and plant communities that the Wildfire Study Area crosses, potential fires would vary in severity; however, the frequency of fires occurring within these vegetation types and plant communities is generally low. Therefore, the vegetation types and plant communities that the Wildfire Study Area crosses do not present a high fire risk.

Wind direction and speed, relative humidity, and temperature for representative weather stations (Imperial County Airport, Yuma Marine Corps Air Station, and Yuma International Airport) along the alignment for the previous 10 years, gathered hourly, and digital elevation models of topography are provided under a separate electronic cover (Appendix L).

Table 5.20-3 USDA Fire Effects Information System Vegetation Types on Proposed Project Alignment

Vegetation Types/Plant Community	Fire Interval[1]	Fire Severity[2] (Percentage of Fires)			High Risk[3]
		Replacement	Mixed	Low	
Creosotebush-White Bursage Desert Scrub	329 years	100	0	0	No
Desert Riparian	20-666 years	3-100	0-97	0	No
Saltbush Desert Scrub	237-1,978 years	53-100	0-47	0	No
Sonoran Desert Scrub	104-1,284 years	100	0	0	No

Sources: USDA 2020, 2012a and USDA 2012b. Zouhar 2023.

[1] Average historical fire-return interval derived from LANDFIRE succession modeling (labeled "MFRI" in LANDFIRE).

[2] Percentage of fires in three fire severity classes that were derived from LANDFIRE succession modeling. Replacement severity fires cause greater than 75% kill or top-kill of the upper canopy layer; mixed-severity fires cause 26%-75%; low-severity fires cause less than 26%.

[3] Fire risk determined based on vegetation types and plant communities fire interval and fire severity data.

Figure 5.20-5a USDA FEIS Vegetation Types (Eastern Extent)

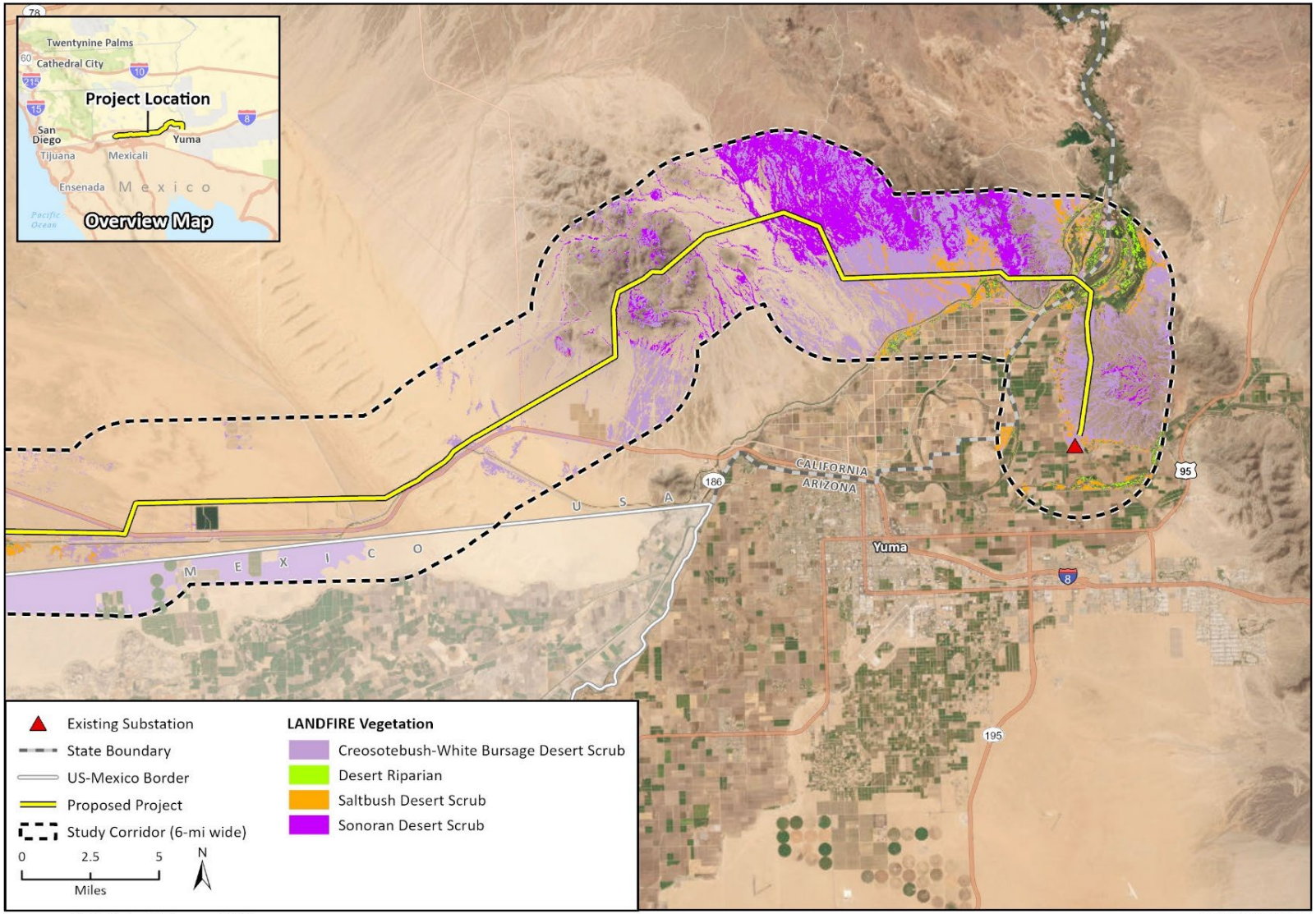
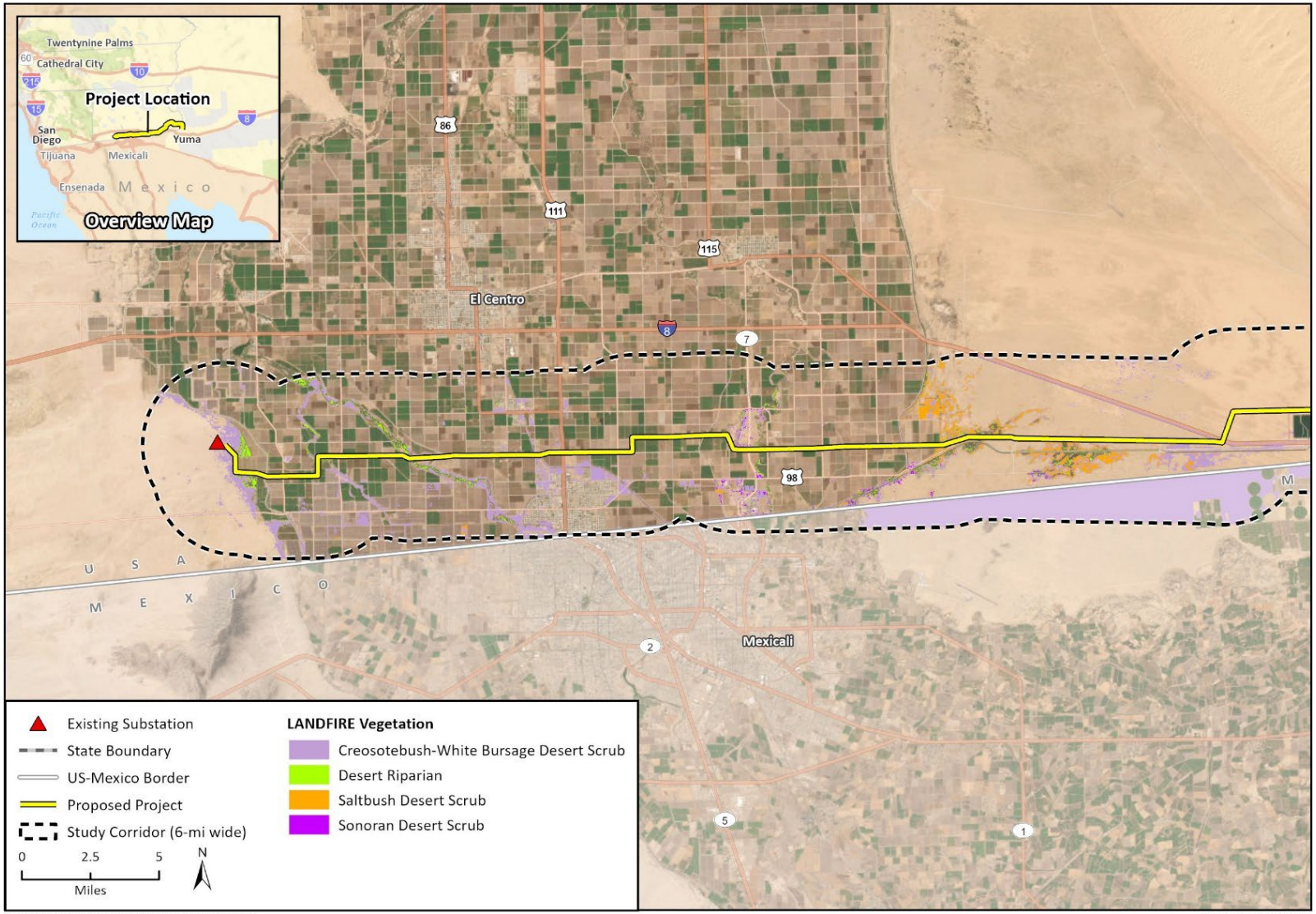


Figure 5.20-5b USDA FEIS Vegetation Types (Western Extent)



5.20.1.4 Values at Risk

Communities near the Proposed Project alignment are identified in Section 5.14, Population and Housing, and are shown in Figure 5.14-1. Values (facilities, structures, residences, sensitive habitat) within 1,000 feet of the Proposed Project alignment are included in Table 5.20-4 based on a review of aerial maps.

Table 5.20-4 Values at Risk Along the Proposed Project Alignment

Values at Risk	Building Material and Vulnerability	Approximate Distance from Proposed Project
D11 Caltrans Midway Transfer Yard	Low vulnerability	360 feet
Heber Geothermal Facility	Steel, Medium vulnerability	460 feet
Natural Gas Pipeline 559	Medium vulnerability	Within
Natural Gas Pipeline 5307000-1	Medium vulnerability	Within
Hazardous Liquid Pipeline 485111CLYU	Medium vulnerability	Within
National Public Lands	Medium vulnerability	Within
Imperial Sand Dunes Special Recreation Management Areas	High vulnerability	Within
Mittry Lake Wildlife Area	High vulnerability	Within
Heber Dunes State Vehicular Recreation Area (SVRA)	Medium vulnerability	Within
California Desert Conservation Area	High vulnerability	Within
Desert Renewable Energy Conservation Plan Area	High vulnerability	Within
Agricultural Fields and Development	Medium vulnerability	Within
Kubler Road Residence	Wood and other materials consistent with residential use, medium vulnerability	900 feet
Pyramid Construction and Aggregates Inc.	Low vulnerability	500 feet
Holtz Ranch Residences	Wood and other materials consistent with residential use, medium vulnerability	500 feet
Meadows Road Residence	Wood and other materials consistent with residential use, medium vulnerability	400 feet
Ash Nine A Drain Residence	Wood and other materials consistent with residential use, medium vulnerability	100 feet
Vencil Road Residence	Wood and other materials consistent with residential use, medium vulnerability	400 feet
Holdridge Road Residence	Wood and other materials consistent with residential use, medium vulnerability	960 feet
Tamarisk Long Term Visitor Area	Medium vulnerability	630 feet
Warren H. Brock Reservoir	Medium vulnerability	1000 feet
Yuma County Public Works North Gila Valley Material Site	Medium vulnerability	Within

5.20.1.5 Evacuation Routes

Information about emergency response plans and evacuation plans are addressed in Section 5.9, Hazards, Hazardous Materials, and Public Safety. Local transportation and hazard mitigation plans in Yuma and Imperial Counties do not specify any County-designated evacuation routes. Emergency access and evacuation would be provided by existing roadways in the Project vicinity as listed in Table 5.17-1 in Section 5.17, Transportation, such as I-8 and SR-7. All roads in the Project vicinity provide through access and do not lack a secondary point of access or exit.

5.20.2 Regulatory Setting

Federal, state, and local regulations were reviewed for applicability to the Proposed Project.

5.20.2.1 Federal

Red Flag Warning and Fire Weather Watches

Like Public Resource Code (PRC) sections 4292 and 4293 described below in Section 5.20.2.2, red-flag warnings and fire-weather watches aim to prevent fire events and reduce the potential for substantial damage. The National Weather Service (NWS) issues Red Flag Warnings and Fire Weather Watches to alert state and local agencies about the onset, or possible onset, of critical weather and fuel moisture conditions that could lead to rapid or dramatic increases in wildfire activity. The NWS coordinates with each state annually to implement a State Annual Operating Plan related to fire weather services. Red flag criteria are set in these plans and vary from state to state. State-specific red flag criteria are described below.

5.20.2.2 State of California

California Public Utilities Commission General Order 95, Section 35

Section 35 of CPUC General Order (G.O.) 95 covers all aspects of design, construction, and operation and maintenance of electrical power lines, as well as fire safety hazards.

California Code of Regulations, Title 14, Sections 1250 to 1258

Title 14 California Code of Regulations Sections 1250 to 1258 provide specific clearance standards to be maintained by utility companies between electric power lines and all vegetation.

Senate Bill 901

Senate Bill 901, enacted in 2018, adopted new provisions of Public Utilities Code section 8386 requiring all electric utilities to prepare, submit and implement annual Wildfire Mitigation Plans (WMP) that describe the utilities' plans to construct, operate and maintain their electrical lines and equipment in a manner that will help minimize the risk of catastrophic wildfires associated with those electrical lines and equipment. Senate Bill 901 gave the CPUC responsibility for reviewing and approving the WMPs. Section 8386(c) lists 19 elements each WMP is required to include, plus any other information the CPUC may require.

Wildfire Mitigation Plan

A regulated entity, of which HWT is one, must submit a "Base WMP" at least once every three years, and subsequent annual submissions may constitute an update to the last approved Base WMP.[1] The CPUC approved HWT's initial WMP in Decision 19-05-041 on May 30, 2019. On that same day, the CPUC issued its Guidance Decision on 2019 Wildfire Mitigation Plans Submitted Pursuant to Senate Bill 901 (Decision 19-05-036), which interprets the requirements of Senate Bill 901, orders all electrical corporations to collect data and file reports on the WMPs, initiates a process to establish metrics by which the WMPs will be evaluated, and creates a process for submittal of future WMPs.

Effective July 1, 2021, pursuant to Government Code Section 15475, responsibility for oversight of the WMPs transitioned from the Wildfire Safety Division within the CPUC to the Office of Energy Infrastructure Safety (OEIS) in the California Natural Resources Agency. OEIS has all of the same duties, powers, and responsibilities as were previously granted to the Wildfire Safety Division within the CPUC, including oversight and approval of WMPs.

OEIS issued the 2023-2025 Wildfire Mitigation Plan Technical Guidelines on December 6, 2022, which set forth substantive and procedural requirements for electrical corporations to prepare and submit their 2023-2025 Base WMPs. OEIS approved HWT's 2023-2025 Base WMP on January 30, 2024. HWT's most recent WMP, its 2025 WMP Update, was approved by OEIS on December 11, 2024.[2] Both WMP's are included in Appendix H.

Health and Safety Code Section 13009

Health and Safety Code section 13009 permits CAL FIRE to file civil actions to recover fire suppression costs from a party who causes a fire (1) negligently, or (2) in violation of a law or an order to correct a fire hazard. CAL FIRE established a Civil Cost Recovery Program to satisfy the statute's intent to assign financial responsibility to culpable parties and to prevent fires through deterrence.

California Public Resources Code Sections 4292 and 4293

California Public Resources Code (PRC) section 4292 states:

> "[A]ny person that owns, controls, operates, or maintains any electrical transmission or distribution line…shall, during such times and in such areas as are determined to be necessary by the director or the agency, has primary responsibility for fire protection of such areas, maintain around and adjacent to any pole or tower which supports a switch, fuse, transformer, lightening arrester, line junction, or dead end or corner pole, a firebreak which consists of a clearing of not less than 10 feet in each direction from the outer circumference of such a pole or tower."

PRC section 4293 states:

> "[A]ny person that owns, controls, operates, or maintains any electrical transmission or distribution line upon any mountainous land, or in forest-covered land, or grass-covered land shall, during such times and in such areas as are determined to be necessary by the director or the agency which has primary responsibility for the fire protection of such area, maintain a

[1] Public Utilities Code Section 8386(b); OEIS, 2023-2025 Wildfire Mitigation Plan Technical Guidelines (December 6, 2022).
[2] OEIS Decision, Horizon West Transmission, LLC 2025 Wildfire Mitigation Plan Update (December 2024), available at: https://energysafety.ca.gov/news/2024/12/11/energy-safety-approves-2025-wildfire-mitigation-plan-updates-for-horizon-west-transmission-and-trans-bay-cable/

clearance of the respective distances which are specified in this section in all directions between all vegetation and all conductors which are carrying electric current:

(a) For any line which is operating at 2,400 or more volts, but less than 72,000 volts, four feet

(b) For any line which is operating at 72,000 or more volts, but less than 110,000 volts, six feet

(c) For any line which is operating at 110,000 or more volts, 10 feet

In every case, such distance shall be sufficiently great to furnish the required clearance at any position of the wire, or conductor when the adjacent air temperature is 120 degrees Fahrenheit, or less. Dead trees, old decadent or rotten trees, trees weakened by decay or disease and trees or portions thereof that are leaning toward the line which may contact the line from the side or may fall on the line shall be felled, cut, or trimmed so as to remove such hazard."

California Division of Occupational Safety and Health, Department of Industrial Relations

The Division of California Occupational Safety and Health (Cal/OSHA) protects workers and the public from safety hazards. Cal/OSHA assumes primary responsibility for developing and enforcing workplace safety regulations. These regulations concern the use of hazardous materials in the workplace, including preparation of emergency action and fire prevention plans.

Cal/OSHA also enforces hazard communication program regulations. Cal/OSHA standards are generally more stringent than federal regulations. Construction workers and operational employees within the project alignment would be subject to these requirements.

2024 Strategic Plan for California

The 2024 Strategic Plan prepared by CAL FIRE and the California Natural Resources Agency lays out central goals for reducing and preventing the impacts of fire in California. The goals are meant to establish, through local, state, federal, and private partnerships, a natural environment that is more resilient and human-made assets that are more resistant to the occurrence and effects of wildland fire. In addition to the 2024 Strategic Plan for California, individual CAL FIRE units develop fire plans, which are major strategic documents that establish a set of tools for each CAL FIRE unit for its local area. Updated annually, unit fire plans identify wildfire protection areas, initial attack success, assets and infrastructure at risk, pre-fire management strategies, and accountability within their unit's geographical boundaries. The unit fire plan identifies strategic areas for pre-fire planning and fuel treatment as defined by the people who live and work locally. The plans include contributions from local collaborators and stakeholders and are aligned with other plans for the area (CAL FIRE 2024).

2024 California Fire Weather Annual Operating Plan

The 2024 California Fire Weather Annual Operating Plan (AOP) for the State is prepared as a collaborative effort between the California Wildland Fire Coordination Group (CWCG), NWS, the National Oceanic and Atmospheric Administration, Predictive Service Units, and the United States Department of Commerce. The AOP provides procedural and policy information regarding delivery of meteorological services to the fire management community in California to maximize firefighter and public safety. The AOP details and implements the Red Flag Program, which includes Fire Weather Watches and Red Flag Warnings, as well as "Particularly Dangerous Situation" warnings which are reserved to highlight exceptional fire weather conditions (combination of meteorological and fuels) considered rare and/or especially impactful to the public and firefighting community. The

AOP details Red Flag Warning criteria, such as fuel moisture and wind thresholds, for all zones across the state. The AOP also includes a Santa Ana Wildfire Threat Index which specifically categorizes Santa Ana winds based on anticipated fire potential (CWCG et. al 2024).

Power Line Fire Prevention Field Guide 2021 Edition

CAL FIRE, the state's three investor-owned utilities (Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company), and other California electric utilities have mutually developed a comprehensive field guide for their personnel. Its purpose is to provide information and guidance to the personnel of the fire service agencies and electrical operators for minimum uniform application within the areas of their respective jurisdiction and franchise responsibilities. In addition to the safety of the public, the guide details fire hazard reduction maintenance procedures for the safety of conductors and certain hardware (CAL FIRE 2021).

CPUC Standards

In October 2007, devastating wildfires driven by strong Santa Ana winds burned hundreds of square miles in Southern California. Several of the worst wildfires were reportedly ignited by overhead utility power lines and aerial communication facilities in close proximity to power lines. In response to these wildfires, the CPUC initiated Rulemaking (R.) 08-11-005 to consider and adopt regulations to protect the public from potential fire hazards associated with overhead powerline facilities and nearby aerial communication facilities.

Beginning in 2009, the CPUC issued several decisions in R.08-11-005 that together adopted dozens of new fire-safety regulations. Most of the adopted fire-safety regulations consisted of new or revised rules in G.O. 95. Several of the adopted fire-safety regulations apply only to areas, referred to as "high fire-threat areas," where there is an elevated risk for power lines igniting fires and spreading rapidly. These high fire threat areas are designated by several maps that were adopted on an interim basis. Each of the interim maps covers a different part of the state and uses its own methodology for identifying high fire-threat areas, presenting consistency and potential enforcement issues. To address these issues, the CPUC also commenced the development of a single statewide fire-threat map to designate areas where (1) there is an elevated risk for destructive power line fires, and (2) stricter fire-safety regulations should apply.

In May 2015, the CPUC closed R.08-11-005 and initiated successor rulemaking R.15-05-006 to complete the outstanding tasks in R.08-11-005. The general scope of R.15-05-006 was to address the following matters carried over from the scope of R.08-11-005: (1) develop and adopt a statewide fire-threat map that delineates the boundaries of a new HFTD where the previously adopted regulations will apply, (2) determine the need for additional fire-safety regulations in the HFTD, and (3) revise G.O. 95 to include a definition and maps of the HFTD, as well as any new fire-safety regulations. The scope and schedule for R.15-05-006 was divided into two parallel tracks. One track focused on the development and adoption of a statewide fire-threat map. The second track focused on the identification, evaluation, and adoption of fire-safety regulations in the HFTD.

On December 21, 2017, the CPUC issued Decision (D.) 17-12-024 adopting regulations to enhance fire safety in the HFTD, effectively completing the second track of R.15-05-006 described above. On January 19, 2018, the CPUC adopted, via Safety and Enforcement Division's (SED) disposition of a Tier 1 Advice Letter, the final CPUC Fire-Threat Map. The adopted CPUC Fire-Threat Map, together with the map of Tier 1 High Hazard Zones on the USFS-CAL FIRE joint map of tree mortality High Hazard Zones, comprise the HFTD Map where stricter fire-safety regulations apply.

Inspection and Maintenance Standards D. 96-11-021 and D.97-03-070 established inspection cycles and record-keeping requirements for utility distribution equipment, which are contained in G.O. 165. In general, utilities must patrol (walk, drive, or fly by) their systems once a year (in urban areas) or once every two years (in rural areas). Utilities must conduct detailed inspections every three to five years, depending on the type of equipment. For detailed inspections, utilities' records must specify the condition of inspected equipment, any problems found, and a scheduled date for corrective action. The utility must submit an annual report summarizing inspections made, equipment condition observed, and repairs made. Utilities are required to make intrusive inspections of power poles; no pole should go over 25 years before its first intrusive inspection, and once passed, every 20 years thereafter.

Tree Trimming Standards D. 97-01-044 of Investigation 94-06-012 establishes standards for trimming trees near power lines, issued as a revision to Rule 35 of G.O. 95-A. For lines at voltages higher than 750 volts, in general, trees must be trimmed to provide no less than 18 inches of clearance from lines under normal annual weather variations. When trimmed, where practicable, trees must be four to 15 feet from power lines over 2,400 volts (clearances vary with voltage). Detailed rules are contained in Appendix A of the decision.

5.20.2.3 State of Arizona

Arizona Department of Emergency and Military Affairs

The Arizona Department of Emergency and Military Affairs was established to coordinate the state's emergency services and military affairs. The Division of Emergency Management within the Department of Emergency and Military Affairs is responsible for all-hazard emergency preparedness, response, recovery, and mitigation efforts to minimize the impact of disasters on people and property in Arizona. This division works under the authority of the Arizona Revised Statues Title 26 and the Arizona Administrative Code Title 8.

Arizona Department of Forestry and Fire Management

The Arizona Department of Forestry and Fire Management (DFFM) provides fire protection and prevention services to approximately 22 million acres of state and private lands within Arizona (Arizona DFFM 2025a). The Arizona DFFM also implements the State's fire restrictions, which are based on Red Flag Warning and Fire Weather Watch data from the NWS and communicates what stage of fire restrictions are in effect.

2025 Arizona Annual Operating Plan for Cooperative Fire Rate Agreement

The Arizona DFFM coordinates annually with local, regional, and national cooperating fire agencies to prepare the Annual Operating Plan (AOP) for the Cooperative Fire Rate Agreement. The Arizona AOP includes requirements and guidelines for cooperative agencies, including those related to adherence to National Wildland Coordinating Group standards, qualifications and training, equipment and staffing requirements, and roles and responsibilities (Arizona DFFM 2025b).

Arizona Division of Occupational Safety and Health

The Arizona Division of Occupational Safety and Health (ADOSH), part of the Industrial Commission of Arizona, is responsible for protecting workers and the public from safety hazards in the workplace. ADOSH develops and enforces workplace safety regulations, ensuring compliance with

both state and federal standards. Construction workers and operational employees in Arizona are subject to these requirements to maintain a safe working environment.

Arizona Corporation Commission

The Arizona Corporation Commission (ACC) oversees the safety and reliability of utility services, including electricity, and implements regulations to mitigate wildfire risks associated with utility infrastructure. In response to increasing wildfire risks, the ACC has taken proactive steps to enhance fire safety and mitigate wildfire hazards.

Starting in 2024, the ACC has mandated that electric utilities develop and implement comprehensive wildfire mitigation plans. These plans include measures such as vegetation management, regular inspections, infrastructure upgrades, and the use of advanced risk modeling tools. One significant initiative is the introduction of Public Safety Power Shutoffs, where utilities may preemptively shut off power in high-risk areas during extreme fire conditions to prevent potential ignition sources.

Arizona Division of Occupational Safety and Health

The Arizona Division of Occupational Safety and Health (ADOSH), part of the Industrial Commission of Arizona, is responsible for protecting workers and the public from safety hazards in the workplace. ADOSH develops and enforces workplace safety regulations, ensuring compliance with both state and federal standards. Construction workers and operational employees in Arizona are subject to these requirements to maintain a safe working environment.

Arizona Revised Statutes Section 40-360.41 – 40.360.45

The Arizona Revised Statutes Section 40-360.41 through 40-360.45 outline safety regulations for high voltage power lines to prevent accidents involving overhead electrical lines. These sections detail the safety measures and establish minimum clearance requirements necessary to protect workers and the public during the construction, operation, and maintenance of electrical facilities.

State of Arizona Hazard Mitigation Plan

The 2023 Arizona State Hazard Mitigation Plan is Arizona's primary guidance document for hazard mitigation. It aims to reduce or eliminate the risks and impacts of natural and human-caused disasters, enhancing community resilience and disaster preparedness. The 2023 SHMP includes an updated risk assessment and mitigation strategy, outlines local mitigation capabilities, and details the processes for monitoring and implementing the plan. The plan supports local, county, and tribal governments in their mitigation efforts, ensuring a coordinated and effective approach to disaster risk. The United States FEMA approved Arizona's 2023 SHMP, aligning it with federal standards and best practices.

5.20.2.4 Local

The CPUC has sole and exclusive state jurisdiction over the siting and design of the Proposed Project in California. Pursuant to CPUC G.O. 131-E, Section XI.B:

> "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the Commission's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters."

Consequently, local agencies do not have jurisdiction over the Proposed Project, but public utilities must consult with local agencies and consider their regulations.

The ACC's Arizona Power Plant and Transmission Line Siting Committee has jurisdiction over the Proposed Project in Arizona. This committee may approve or deny a Certificate of Environmental Compatibility application and impose reasonable conditions. However, pursuant to Arizona Revised Statutes Section 40-360.06(D):

> "Any certificate granted by the committee shall be conditioned on compliance by the applicant with all applicable ordinances, master plans and regulations of the state, a county or an incorporated city or town, except that the committee may grant a certificate notwithstanding any such ordinance, master plan or regulation, exclusive of franchises, if the committee finds as a fact that compliance with such ordinance, master plan or regulation is unreasonably restrictive and compliance therewith is not feasible in view of technology available."

As this PEA is being prepared for the CPUC, the following discussion of local land use regulations in California and Arizona is provided for informational purposes only.

Imperial County General Plan

The Seismic and Public Safety Element of the Imperial County General Plan contains goals, policies, and programs to establish a framework that anticipates these hazards and prepares the community to mitigate exposure to hazards, including the following goal and policy that are relevant to the Proposed Project (Imperial County 2022):

Goal 4: Avoid the loss of life, injury, and minimize property damage from urban and wildland fires.

Policy 4.1: Enforce fire-safe development codes to use as standards and regulations for fire protection in accordance with the California Building Code, the California Fire Code, California Public Resources Code, and the County Municipal Planning & Development Services Department Seismic and Public Safety Element Page 54 Code for building and landscaping, and the Imperial County Fire Department regulations for new development in State Responsibility Areas or Very High Fire Hazard Severity Zones that meet or exceed the statewide minimums in the State Responsibility Area Fire Safe Regulations.

Imperial County Multi-Jurisdictional Hazard Mitigation Plan

Imperial County and several participating jurisdictions prepared a Comprehensive Update to the Multi-Jurisdictional Hazard Mitigation Plan in 2021, originally approved by the Federal Emergency Management Agency (FEMA) in 2009 (Imperial County 2021). The purpose of this plan is to significantly reduce deaths, injuries, and other disaster losses caused by natural and human-caused hazards, including wildfires, in Imperial County. The plan demonstrates the commitment of each participating jurisdiction to reducing risks from hazards and serves as a tool to help decision makers direct mitigation activities and resources.

Yuma County 2030 Comprehensive Plan

The Safety Element of the Yuma County 2030 Comprehensive Plan contains the following Safety Actions (SAs) for fire protection (Yuma County 2023).

SA.13: Develop a comprehensive approach to reducing the level of damage and losses due to wildland fire.

SA.14: Improve local, state, federal, and tribal coordination and support existing efforts to mitigate wildland fire hazards.

SA.15: Educate the public about wildland fire dangers and mitigation measures.

SA.22: Enhance efforts to recruit and train local residents as volunteer firefighters and emergency medical technicians, particularly in eastern Yuma County.

SA.26: Use the existing fire district in the Martinez Lake area as a mechanism to better equip the fire station located there.

Yuma County Community Wildfire Protection Plan

The Yuma County Community Wildfire Protection Plan provides analysis of wildfire related hazards and risks in wildland-urban interface (WUI) areas within the county, provides recommendations for wildfire prevention, and recommends local agreements and coordinated efforts for fire management and response.

Yuma County Multi-Jurisdictional Hazard Mitigation Plan

Yuma County and several participating jurisdictions prepared a Comprehensive Update to the Multi-Jurisdictional Hazard Mitigation Plan in 2019, originally approved by FEMA in 2010 (Yuma County 2019). The purpose of this plan is to identify hazards that impact the various jurisdictions and Tribes located within Yuma County, including wildfires, assess the vulnerability and risk posed by those hazards to community-wide human and structural assets, develop strategies for mitigation of those identified hazards, present future maintenance procedures for the plan, and document the planning process. The plan demonstrates the commitment of each participating jurisdiction to reducing risks from hazards and serves as a tool to help decision makers direct mitigation activities and resources.

City of Calexico General Plan

The Safety Element of the City of Calexico General Plan includes an overview of the City's current fire hazards. Damage from wildfires is considered a low risk due to the amount of undeveloped areas around and outside the City and the associated lack of fuel. Goals, objectives, and policies for wildfire that are relevant to the Project are as follows (City of Calexico 2015):

Goal: Reduce the risk to Calexico's day and nighttime population from fire and explosions.

Objective: Promote policies and programs that reduce the risk to the community from fire and explosions.

Policies:

- Continue to operate through the Fire Department an education program regarding fire hazards for residential, commercial, industrial and agricultural uses.
- Enforce Building Code requirements that assure adequate fire protection.
- Continue to enforce the weed abatement program.

City of Calexico Municipal Code

Chapter 15.20 of the Calexico Municipal Code adopts the City's Fire Prevention Code, which includes, but is not limited to, reporting and permit requirements, inspection authorities and requirements, and outlines regulations for alarm and extinguishing devices. Chapter 15.22 of the Calexico Municipal Code adopts the Uniform Fire Code with the City's amendments.

5.20.3 Impact Questions

5.20.3.1 Wildfire Impact Questions

The thresholds of significance for assessing impacts come from the California Environmental Quality Act (CEQA) Environmental Checklist. For wildfire, the CEQA Environmental Checklist asks, if located in or near SRA lands or lands classified as very high FHSZ, would the project:

- Substantially impair an adopted emergency response plan or emergency evacuation plan?
- Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?
- Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?
- Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

While the CEQA impact questions in this section are specific to California, the Project components located in Arizona have been evaluated using equivalent wildfire impact thresholds. For Arizona, instead of assessing impacts based on proximity to SRA lands or FHSZ as designated by CAL FIRE, the analysis uses Arizona-specific criteria, specifically, whether the components are located in or near areas classified as *High*/*Very High*/*Extreme* fire threat by AZWRAP.

5.20.3.2 Additional CEQA Impact Questions

There are no CPUC-identified additional CEQA impact questions.

5.20.4 Impact Analysis

5.20.4.1 Wildfire Impact Analysis

5.20.4.1.1 Wildfire Methodology

Wildfire impacts were evaluated based upon a review of California Air Resources Board and National Weather Service five-year meteorological data, CPUC HFTD data, CAL FIRE FHSZ data, AZWRAP Fire Threat data, USFS Missoula Fire Sciences Laboratory fire regimes of creosote-bush white bursage desert scrub, desert riparian, saltbush desert scrub, and Sonoran desert scrub communities, regulatory requirements that apply to the various wildfire risks crossed by the Proposed Project, and the potential for the Proposed Project to affect wildfire in the area.

5.20.4.1.2 If located in or near SRA lands or lands classified as very high FHSZ, would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

Construction

Project Components in California

No Impact. As stated in Section 5.20.1.1, the Proposed Project alignment is not within or near any SRA land or very high FHSZ within California. Because the project is not located in or near an SRA or a very high FHSZ, no impacts related to increased wildfire risk in a very high FHSZ would occur.

Project Components in Arizona

Less than Significant Impact with Mitigation. As detailed in Table 5.20-1 and shown in Figure 5.20-1c, the Proposed Project alignment crosses 0.1 mile of *High* Fire Threat Index area, 1.2 miles of *Very High* Fire Threat Index area, and 1.1 miles of *Extreme* Fire Threat Index area within Arizona. Adopted emergency plans within Yuma County, Arizona, include the 2019 Yuma County Multi-Jurisdictional Hazard Mitigation Plan (Yuma County 2019) and the Yuma County Community Wildfire Protection Plan (Yuma County 2010). The 2019 Yuma County Multi-Jurisdictional Hazard Mitigation Plan identifies hazards that may impact the various jurisdictions and Tribes located within Yuma County, assesses the vulnerability and risk posed by those hazards to community-wide human and structural assets, presents strategies for mitigation of those identified hazards, provides future maintenance procedures for the plan, and documents the planning process (Yuma County 2019). The Yuma County Community Wildfire Protection Plan provides analysis of wildfire related hazards and risks in WUI areas within the county, provides recommendations for wildfire prevention, and recommends local agreements and coordinated efforts for fire management and response (Yuma County 2010).

As discussed in Section 5.17, Transportation, construction activities for the Proposed Project may require temporary road and/or lane closures on public roads in residential areas and would involve the movement of oversize vehicles that could affect emergency vehicle access to and along the Proposed Project alignment in Arizona. Temporary activities across roadways could disrupt the operations of emergency service providers. However, HWT would prepare and implement traffic control plans in accordance with Applicant Proposed Measure (APM) TRA-1. With implementation of APM TRA-1, potential hazards from road closures would be minimal and the Proposed Project would not impair or interfere with emergency response or evacuation requirements included in the Yuma County Multi-Jurisdictional Hazard Mitigation Plan, Community Wildfire Protection Plan, and Emergency Operations Plan. In addition, guard structures would be set up next to highway and road crossings and would not impede emergency access. If an emergency vehicle, or helicopter, approached during Proposed Project helicopter activities, the HWT helicopter would be able to quickly maneuver out of the way for safe passage of the emergency responders. Therefore, the impacts associated with construction activities would be less than significant with mitigation.

Overall Project

Less than Significant Impact with Mitigation. For the same reasons described above, the Proposed Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan during construction with implementation of APM TRA-1. This impact would be less than significant with mitigation.

Operation

Project Components in California

No Impact. As stated in Section 5.20.1.1, the Proposed Project alignment is not within or near any SRA land or very high FHSZ within California. Because the project is not located in or near an SRA or a very high FHSZ, no impacts related to increased wildfire risk in a very high FHSZ would occur.

Project Components in Arizona

No Impact. The Proposed Project would involve operation and maintenance (O&M) activities such as maintenance and inspection trips. O&M vehicle trips associated with the Proposed Project are estimated to be up to two trips per month, or up to 24 trips annually, and it is anticipated that maintenance and inspection trips would generally occur along existing or to-be-constructed HWT access roads. Thus, O&M activities would not impair implementation or physically interfere with an adopted emergency response plan or emergency evaluation plan. As a result, no impact would occur.

Overall Project

No Impact. The Proposed Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan during operation. No impact would occur.

5.20.4.1.3 If located in or near SRA lands or lands classified as very high FHSZ, would the project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

Construction

Project Components in California

No Impact. As stated in Section 5.20.1.1, the Proposed Project alignment is not within or near any SRA land or very high FHSZ within California. Because the project is not located in or near an SRA or a very high FHSZ, no impacts related to increased wildfire risk in a very high FHSZ would occur.

Project Components in Arizona

Less than Significant Impact with Mitigation. As described above, the Proposed Project alignment crosses 0.1 miles of *High* Fire Threat Index area, 1.2 miles of *Very High* Fire Threat Index area, and 1.1 miles of *Extreme* Fire Threat Index area within Arizona. Multiple fires have occurred around where the Proposed Project alignment passes through the Mittry Lake Wildlife Area, the largest of which being the 2019 Bermuda Fire, which burned approximately 1,200 acres. The eastern edge of the Proposed Project alignment also crosses variable topography north and east of the Yuma Proving Ground and Mittry Lake, as well as the Laguna Mountains – all of which contain steep ridges and slopes. Elevations within the Proposed Project range between approximately 35 feet (10.7 meters) below mean sea level northeast of Calexico and 1,800 feet (5,487 meters) above mean sea level northeast of Yuma. The rate of wildfire spread increases as slope increases due to the tendency of heat from a fire to rise (i.e. convection). Vegetation communities in the Laguna

Mountains area are largely comprised of creosote bush scrub, creosote bush – brittle bush scrub, creosote bush – white burr sage scrub, as well as smaller areas of blue palo verde – ironwood woodland. Vegetation communities around Mittry Lake are comprised of a variable patchwork of tamarisk and arrow weed thickets; American bulrush, hardstem and California bulrush, cattail, and common reed marshes; and Fremont cottonwood forest and woodlands. The history of wildfires in the area, continuity of vegetative fuels, and steep terrain would be conducive to wildfire spread. Further, wind speeds in the Project vicinity average 3.3 meters per second with gusts exceeding 11 meters per second (24.6 miles per hour), which have the potential to increase the spread of wildfire and smoke (California Air Resources Board 2025, Iowa State University 2025).

Construction activities have the potential to ignite dry vegetation and cause fires. The Project would be required to develop and implement comprehensive wildfire mitigation plans pursuant to Arizona Corporation Commission mandates. The Project includes APM WF-1, which covers the preparation and implementation of a Project-specific WMP. The Project WMP would be similar in content to the example WMP included in Appendix H. The Project WMP would implement wildfire mitigation strategies and design based on site-specific fire ecology, fire history, climate, topography, and community, including requirements and guidelines related to equipment maintenance and repair, inspections and monitoring systems, vegetation management, situational awareness, weather forecasting, an Emergency Preparedness Plan, external emergency planning and mutual aid, drills and simulations, community outreach, public power safety shutoff, and general best practices. The Project would also comply with the Public Safety Power Shutoffs and preemptively shut off power in high-risk areas during extreme fire conditions to prevent potential ignition sources. In addition, the Project would also implement the fire prevention practices outlined in CPUC Draft Environmental Measure WF-1. Adherence to CPUC Draft Environmental Measure WF-1 would ensure that, during a Red Flag Warning, additional measures would be implemented during construction to address smoking and fire rules, storage and parking areas, the use of gasoline-powered tools, the use of spark arresters on construction equipment, road closures, the use of a fire guard, fire suppression tools, fire suppression equipment, and training requirements. CPUC Draft Environmental Measure WF-1 would also implement best practices for wildfire prevention during construction. Further, work areas within the Proposed Project alignment would generally be cleared of vegetation and graded prior to the staging of equipment, minimizing the risk of construction vehicles starting a fire, and preparation of a Fire Prevention and Emergency Response Plan pursuant to APM HAZ-2 would further reduce impacts resulting from wildfire. Therefore, this impact would be less than significant with implementation of APM WF-1, APM HAZ-2, and CPUC Draft Environmental Measure WF-1.

Operation

Project Components in California

No Impact. As stated in Section 5.20.1.1, the Proposed Project alignment is not within or near any SRA land or very high FHSZ within California. Because the project is not located in or near an SRA or a very high FHSZ, no impacts related to increased wildfire risk in a very high FHSZ would occur.

Project Components in Arizona

Less than Significant Impact with Mitigation. While the Proposed Project does not include habitable structures, Project employees present during construction and O&M may be exposed to pollutant concentrations (i.e. smoke) in the event of a wildfire onsite or in the vicinity. The Proposed Project involve O&M activities such as increased maintenance and inspection trips. High heat or sparks from vehicles or equipment during O&M have the potential to ignite dry vegetation and

cause fires. Proposed Project O&M activities would be located within existing HWT owned and/or new rights-of-way where vegetation would be cleared or trimmed as part of regular O&M. Vehicles and equipment would primarily use existing and proposed roads. HWT would continue to implement its standard fire prevention protocols during O&M activities, such as compliance with the Project-specific Wildfire Mitigation Plan (APM WF-1); comply with applicable laws and regulations; implement CPUC Draft Environmental Measure WF-1 and additional measures in the event of a Red Flag Warning during operation; and participate in the Red Flag Fire Prevention Program (in compliance with PRC sections 4292 and 4293 relating to vegetation management in subtransmission line corridors). Therefore, this impact would be less than significant with implementation of APM WF-1 and CPUC Draft Environmental Measure WF-1.

Overall Project

Less than Significant Impact with Mitigation. For the reasons detailed above, the Proposed Project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires during construction. This impact would be less than significant with implementation of CPUC Draft Environmental Measure WF-1.

5.20.4.1.4 If located in or near SRA lands or lands classified as very high FHSZ, would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

Construction and Operation

Project Components in California

No Impact. As stated in Section 5.20.1.1, the Proposed Project alignment is not within or near any SRA land or very high FHSZ. Because the project is not located in or near an SRA or a very high FHSZ, no impacts related to increased wildfire risk in a very high FHSZ would occur.

Project Components in Arizona

Less than Significant Impact with Mitigation. The Proposed Project would include approximately 6 miles of overhead 500 kV transmission line within Arizona, terminating at the Arizona Public Service Company's North Gila Substation. Regular maintenance of proposed infrastructure would reduce the possibility of electrical arcing which can result in circuit outages and fire hazards. The Proposed Project would increase electrical capacity and include redundancy measures that would help to reduce fire risk compared to existing conditions. No permanent emergency water sources or other utilities are proposed.

Existing access roads would be used to the extent feasible during construction and new permanent access and spur roads would be created. Construction activities would be conducted primarily from private access roads maintained by HWT. Ingress and egress points between public roadways and these HWT-maintained access roads would be designed and constructed in accordance with all applicable standards. New spur roads are expected to be constructed up to 14 feet wide but may be constructed up to 24 feet wide (20-foot road surface with a 2-foot berm or ditch on either side).

New roads that must be graded for access in steep terrain (side-hill roads) would require exceeding a 24-foot width of disturbance.

Routine access road maintenance is, and would continue to be, conducted on an annual and/or as-needed basis and in accordance with landowner agreements. Road maintenance includes maintaining a vegetation-free corridor (to facilitate access and for fire prevention) and blading to smooth over washouts, eroded areas, and washboard surfaces as needed as well as cleaning ditches, moving and establishing berms, clearing, and making functional drain inlets to culverts, culvert repair, clearing and establishing water bars, and cleaning and repairing over-side drains. All Project access roads would be designed and maintained in accordance with the PRC, Arizona Department of Transportation, and all other applicable roadway standards and requirements. The Project would provide maintained access routes where there currently are none, which would enhance emergency access and response efforts compared to existing conditions.

As described in Chapter 3, Proposed Project Description, no new permanent fire breaks are expected to be developed as part of the Proposed Project. Areas around new structures would be maintained in accordance with the applicable standards in CPUC G.O.128 and the Project-specific WMP, as implemented by APM WF-1. Additionally, no areas are expected to be cleared of vegetation solely for the purposes of creating a temporary fire break. In areas where hot work (e.g., welding) would be performed, or where equipment would be staged and operated where hot surfaces (e.g., exhaust systems) could come in contact with extant vegetation, such vegetation would be cleared or trimmed. This vegetation clearing or trimming would be contained within the construction work area identified for that given location. The Project would include APM WF-1, which includes the preparation and implementation of a Project-specific WMP. The Project would adhere to the Project-specific WMP (APM WF-1), including defensible space designations and vegetation clearance intervals; implementation of standard fire prevention protocols during construction and O&M activities (CPUC Draft Environmental Measure WF-1); and compliance with applicable laws and regulations. Implementation of APM WF-1 and CPUC Draft Environmental Measure WF-1 would ensure that no temporary or ongoing wildfire impacts result from implementation of the Project.

With implementation of APM WF-1 and CPUC Draft Environmental Measure WF-1, and adherence to the applicable state and local, regulations, Proposed Project impacts related to exacerbated fire risk would be less than significant. No additional temporary or ongoing impacts to the environment would occur beyond those analyzed in this document.

Overall Project

Less than Significant Impact with Mitigation. The Proposed Project would not require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment. This impact would be less than significant with implementation of APM WF-1 and CPUC Draft Environmental Measure WF-1.

5.20.4.1.5 If located in or near SRA lands or lands classified as very high FHSZ, would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Construction and Operation

Project Components in California

No Impact. As stated in Section 5.20.1.1, the Proposed Project alignment is not within or near any SRA land or very high FHSZ within California. Because the project is not located in or near an SRA or a very high FHSZ, no impacts related to increased wildfire risk in a very high FHSZ would occur.

Project Components in Arizona

Less than Significant Impact. As described in Chapter 5.7, Geology, Soils and Paleontological Resources, and Chapter 5.10, Hydrology and Water Quality, the Proposed Project alignment within Arizona is located in an area with steep slopes but is not mapped within a known liquefaction or landslide zone. In addition to stripping the land of vegetation and destroying natural resources, post-fire conditions leave exposed slopes and hillsides vulnerable to surface erosion and runoff. Soil exposed to intense heat may lose its capacity to absorb moisture and support life. Thus, Project construction and O&M personnel, structures and facilities, and proximate residences/residents may be exposed to post-fire flood and landslide risk.

Grading and construction activities at structure work areas would be limited to the immediate surroundings of infrastructure; proximate slopes and landscape would remain undisturbed, and it is anticipated that surrounding soils and vegetation would adequately absorb runoff under normal conditions. In addition, to minimize impacts on drainage and runoff, the Proposed Project would maintain onsite surface drainage patterns to the extent possible. Newly constructed access roads would be designed to follow natural contours and minimize hill cuts, and ditches and culverts would be incorporated into road design to capture and convey stormwater runoff. Except in areas where permanent recontouring is required, disturbed areas would be restored to pre-construction conditions. Furthermore, as discussed in Section 5.10, *Hydrology and Water Quality*, the Project Stormwater Pollution Prevention Plan would include measures to control stormwater runoff rates, which would minimize the potential for significant alteration of drainage patterns that could result in downslope or downstream flooding.

Through drainage design and Stormwater Pollution Prevention Plan implementation, the Project would not substantially alter the existing drainage pattern of work areas or increase the rate or amount of surface runoff in a manner which would result in downstream or downslope flooding. Impacts related to post-fire slope instability would be less than significant.

Overall Project

Less than Significant Impact. The Proposed Project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. This impact would be less than significant.

5.20.4.2 Fire Behavior Modeling

The Proposed Project is not within a CPUC-designated HFTD. Also, as shown in Table 5.20-2, the plant communities and vegetation types in the Proposed Project area have fire intervals of 20 to 1,978 years, meaning that the average time between fires in the Proposed Project area is approximately 999 years. These prolonged fire intervals indicate plant communities in the Proposed Project area do not present a high fire risk.

A total of approximately 2.3 miles of the proposed alignment within Arizona traverses *High, Very High, and Extreme* wildfire threat areas, as designated by the Arizona DFFM. However, as described in Section 5.20.1.3 and shown in Figure 5.20-4b, most of the open space area contained in the Wildfire Study Area within Arizona (primarily east of the alignment) is comprised of barren lands (Scott and Burgan classification NB9), which contain minimal vegetative cover to serve as fuel to a wildfire. Agricultural lands (Scott and Burgan classification NB3) cover the area west and south of the alignment, which similarly do not pose increased wildfire risk due to regular irrigation and maintenance of the land. Throughout the Proposed Project area within Arizona, intermittent swaths containing low loads of shrubs, litter, and grasses (Scott and Burgan classification SH1) exist which would have low flames and spread rates. Fuels to the north and northeast of the alignment contain varied loads and potential fire behavior. However, these fuels are bounded to the west and east by barren lands and to the south by agricultural lands with low shrub fuel loads in between; and thus, due to these fuel breaks, would not present a high fire risk.

Therefore, Fire Behavior Modeling is not necessary for the Proposed Project.

5.20.4.3 Wildfire Management

During O&M of the Proposed Project, HWT would implement a Project-specific Wildfire Mitigation Plan (as required by APM WF-1) to manage wildfire risk in the area. The Project-specific Wildfire Mitigation Plan would be similar in content to the example provided in Appendix H. No special procedures for wildfire management, beyond those addressed in the plan or required by regulation, are included as part of the Proposed Project.

5.20.5 CPUC Draft Environmental Measures

The CPUC has a Draft Environmental Measure that requires a project-specific Construction Fire Prevention Plan. However, this CPUC Draft Environmental Measure would not be required to reduce Project impacts to a less than significant level because the Project-specific Wildfire Mitigation Plan prepared in accordance with APM WF-1 would include and implement, among other things, the same requirements as a Construction Fire Prevention Plan.

The following CPUC Draft Environmental Measure would be implemented to reduce impacts related to Wildfire to a less than significant level:

WF-1: Fire Prevention Practices (Construction and Maintenance). The Applicant shall implement ongoing fire patrols during the fire season as defined each year by local, state, and federal fire agencies. These dates vary from year to year, generally occurring from late spring through dry winter periods. During Red Flag Warning events, as issued daily by the National Weather Service, all construction/maintenance activities shall cease, with an exception for transmission line testing, repairs, unfinished work, or other specific activities which may be allowed if the facility/equipment poses a greater fire risk if left in its current state.

All construction/maintenance crews and inspectors shall be provided with radio and cellular telephone access that is operational in all work areas and access routes to allow for immediate reporting of fires. Communication pathways and equipment shall be tested and confirmed operational each day prior to initiating construction/maintenance activities at each work site. All fires shall be reported to the fire agencies with jurisdiction in the area immediately upon discovery of the ignition. All construction/maintenance personnel shall be trained in fire-safe actions, initial attack firefighting, and fire reporting. All construction/maintenance personnel shall be trained and equipped to extinguish small fires in order to prevent them from growing into more serious threats.

All construction/maintenance personnel shall carry at all times a laminated card and be provided a hard hat sticker that list pertinent telephone numbers for reporting fires and defining immediate steps to take if a fire starts. Information on laminated contact cards and hard hat stickers shall be updated and redistributed to all construction/maintenance personnel and outdated cards and hard hat stickers shall be destroyed prior to the initiation of construction/maintenance activities on the day the information change goes into effect. Construction/maintenance personnel shall have fire suppression equipment on all construction vehicles. Construction/maintenance personnel shall be required to park vehicles away from dry vegetation. Water tanks and/or water trucks shall be sited or available at active project sites for fire protection during construction. The Applicant shall coordinate with applicable local fire departments prior to construction/maintenance activities to determine the appropriate amounts of fire equipment to be carried on vehicles and, should a fire occur, to coordinate fire suppression activities.

5.20.5.1 Applicant Proposed Measures

The following Applicant Proposed Measure would be implemented to reduce impacts related to Wildfire to a less than significant level (see Appendix H for example WMP):

- **WF-1: Project-Specific Wildfire Mitigation Plan.** HWT would prepare and implement a Project-specific Wildfire Mitigation Plan (WMP) throughout construction, operation, and maintenance. A draft copy of the WMP would be provided to the CPUC and state and local fire agencies at least 90 days before the start of any construction activities. Plan reviewers would also include federal, state, or local agencies with jurisdiction over areas where the project is located. The final Plan shall be approved by the CPUC at least 30 days prior to the initiation of construction activities. The Plan would be fully implemented throughout the construction, operation, and maintenance period and include the following at a minimum:
  - The purpose and applicability of the Plan
  - Responsibilities and duties
  - Overview of service territory to include:
    - Description of electrical infrastructure
    - Environmental setting (e.g. fire history, topography)
    - Community values at risk
  - Vegetation management and inspections
  - Monitoring and detection systems
  - Procedures for fire reporting, response, and prevention that include:
    - Identification of daily site-specific risk conditions
    - The tools and equipment needed on vehicles and to be on hand at sites

    - Reiteration of fire prevention and safety considerations during tailboard meetings
    - Daily monitoring of the red-flag warning system with appropriate restrictions on types and levels of permissible activity
- Coordination procedures with federal and local fire officials
- Crew training, including fire safety practices and restrictions as well as preparedness drills
- Method(s) for verifying that all Plan protocols and requirements are being followed

A project Fire Marshal or similar qualified position would be established to enforce all provisions of the Wildfire Mitigation Plan as well as perform other duties related to fire detection, prevention, and suppression for the project. Project construction, operations, and maintenance activities would be monitored to ensure implementation and effectiveness of the WMP.

5.20.5.2 Cross-Referenced Applicant Proposed Measures

The following APMs from Section 5.9, Hazards and Hazardous Materials, and Section 5.17, Transportation, would be implemented to reduce wildfire impacts associated with the Proposed Project:

- **HAZ-2:** HWT would prepare a Fire Prevention and Emergency Response Plan to ensure the health and safety or Proposed Project personnel, agency staff, and the public during construction and operations. The plan would describe the purpose of the plan; applicable jurisdictions for each element; roles and responsibilities; training methods; fire prevention equipment and methods; equipment and methods for fighting incipient-stage fires; Emergency Response Plan; communication plan; evacuation routes and nearest hospitals; and reporting.
- **TRA-1:** Prior to construction, HWT would cooperate with the relevant siting authorities (e.g., Bureau of Land Management), regulatory agencies (e.g., Federal Aviation Administration, Department of Defense, etc.), and local governments to implement appropriate traffic control measures during construction. These traffic control measures would also include requirements set by the encroachment permits granted by the California Department of Transportation and the Arizona Department of Transportation for the Proposed Project. The intent of the traffic control measures would be to ensure the safety of the Proposed Project personnel and the general public. Measures may include notifications to the public on the locations and timing of construction activities, traffic management such as signage and lane closures on public roads, the use of traffic cones and traffic personnel to further direct traffic, limitations on helicopter use in certain areas or at certain times, and daily work hours consistent with local ordinances. Traffic control measures would be implemented through the creation of a transportation plan that would be drafted and reviewed by the relevant siting authorities mentioned above prior to project construction.

6 Comparison of Alternatives

This Chapter includes a summary of the environmental impacts of the North Gila to Imperial Valley Transmission Line Project (Proposed Project), as detailed in Chapter 5 of the PEA. This Chapter also presents the results of a comparative analysis of the Proposed Project and feasible alternatives to the Proposed Project as they pertain to the ability to reduce the significant and unavoidable environmental impacts of the Proposed Project.

6.1 Summary of Impact Findings Presented in the PEA

As detailed in Chapter 5 of the PEA, the Proposed Project would have environmental impacts that would fall into one of the following categories: No Impact, Less than Significant, Less than Significant with Mitigation, or Significant and Unavoidable. Table 6-1 illustrates the impact criteria for the Proposed Project and the impact determination for each.

Table 6-1 Summary of the Proposed Project's Environmental Impacts

Impact Criteria	Proposed Project Impact
Aesthetics	
Would the project have a substantial adverse effect on a scenic vista?	Less than Significant
Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	No Impact
Would the project, in nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage points) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	Significant and Unavoidable
Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	Less than Significant
Agriculture and Forestry Resources	
Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use?	Less than Significant
Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?	No Impact
Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	No Impact
Would the project result in the loss of forest land or conversion of forest land to non-forest use?	No Impact
Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	No Impact
Air Quality	
Would the project conflict with implementation of the applicable air quality plan?	Less than Significant
Would the project result in cumulative considerable net increase of criteria pollutants?	Less than Significant
Would the project expose sensitive receptors to substantial pollutant concentrations?	Less than Significant
Would the project result in other emissions affecting a substantial number of people?	Less than Significant

Impact Criteria	Proposed Project Impact
Biological Resources	
Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status in local or regional plans, policies, or regulations, or by the CDFW or USFWS?	Less than Significant with Mitigation
Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS?	Less than Significant with Mitigation
Would the project have a substantial adverse effect on state or federally protected wetlands and waters, as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, and coastal) through direct removal, filling, hydrological interruption, or other means?	Less than Significant with Mitigation
Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridor, or impede the use of native wildlife nursery sites?	Less than Significant
Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	Less than Significant with Mitigation
Would the project conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan?	No Impact
Would the project create a substantial collision or electrocution risk for birds or bats?	Less than Significant
Cultural Resources	
Would the project cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	No Determination
Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	No Determination
Would the project disturb any human remains, including those interred outside of dedicated cemeteries?	Less than Significant with Mitigation
Energy	
Would the project result in wasteful, inefficient, or unnecessary energy consumption?	Less than Significant
Would the project conflict or obstruct a state or local plan for renewable energy or energy efficiency?	No Impact
Would the project serve a nonrenewable energy resource?	No Impact
Geology and Soils	
Would the project result in strong seismic ground shaking, seismic related ground failure, liquefaction, and landslides?	Less than Significant with Mitigation
Would the project result in substantial soil erosion or loss of topsoil?	Less than Significant
Would the project result in on or off site landslides, lateral spreading, subsidence, liquefaction, or collapse?	Less than Significant with Mitigation
Would the project be located on expansive soil?	Less than Significant with Mitigation
Would the project be located on soils incapable of supporting septic tanks or alternative wastewater disposal systems?	No Impact
Would the project directly or indirectly destroy a unique paleontological resources or geological feature?	No Determination
Greenhouse Gas Emissions	
Would the project generate greenhouse gas emissions that may have a significant impact on the environment?	Less than Significant

Impact Criteria	Proposed Project Impact
Would the project conflict with an applicable plan, policy, or regulation adopted for the purposes of reducing greenhouse gas emissions?	No Impact
Hazards and Hazardous Materials	
Would the project create a significant hazard to the public or the environment through routine transport, use, or disposal of hazardous materials?	Less than Significant with Mitigation
Would the project create a significant hazard through reasonably foreseeable upset and accident conditions?	Less than Significant with Mitigation
Would the project emit hazardous emissions or handle hazardous materials, substances, or waste within one quarter mile of an existing or proposed school?	No Impact
Would the project be located on a site which is included on a list f hazardous material sites pursuant to Government Code Section 65962.5?	No Impact
Would the project result in a safety hazard for people residing or working within the project area within two miles of a public airport or public use airport?	Less than Significant
Would the project impair implementation or physically interfere with an adopted emergency response plan or emergency evacuation plan?	Less than Significant with Mitigation
Would the project expose people or structures to a significant risk of loss, injury, or death involving wildland fires?	Less than Significant with Mitigation
Would the project create a significant hazard to air traffic from the installation of new power lines and structures?	Less than Significant with Mitigation
Would the project create a significant hazard to the public or environment through the transport of heavy materials using helicopters?	Less than Significant
Would the project expose people to a significant risk or injury or death involving unexploded ordinance?	No Impact
Would the project expose workers or the public to excessive shock hazards?	Less than Significant
Hydrology and Water Quality	
Would the project violate any water quality standards?	Less than Significant with Mitigation
Would the project substantially decrease groundwater supplies?	Less than Significant
Would the project substantially alter the existing drainage pattern?	Less than Significant
Would the project release pollutants due to project inundation?	Less than Significant with Mitigation
Would the project conflict with a water quality control plan or sustainable groundwater management plan?	Less than Significant
Land Use and Planning	
Would the project physically divide an established community?	Less than Significant with Mitigation
Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	Less than Significant
Mineral Resources	
Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	No Impact
Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	No Impact

Impact Criteria	Proposed Project Impact
Noise	
Would the project result in generation of a substantial temporary or permanent increase in ambient noise in excess of existing standards?	Less than Significant with Mitigation
Would the project generate excessive ground borne vibration or ground borne noise levels?	Less than Significant
Within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	No Impact
Population and Housing	
Would the project directly or indirectly induce substantial unplanned population growth?	No Impact
Would the project displace substantial numbers of existing people or housing?	No Impact
Public Services	
Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities?	No Impact
Recreation	
Would the project increase the use of existing neighborhood and regional parks?	Less than Significant
Would the project include recreational facilities or require the construction or expansion of recreational facilities?	No Impact
Would the project reduce or prevent access to a designated recreation facility or area?	Less than Significant with Mitigation
Would the project substantially change the character of a recreational area by reducing the scenic, biological, cultural, geologic, or other important characteristics that contribute to the value of recreational facilities or areas?	Significant and Unavoidable
Would the project damage recreational trails or facilities?	Less than Significant
Transportation	
Would the project conflict with a program, plan, ordinance, or policy addressing the circulation system?	Less than Significant
Would the project conflict with CEQA Guidelines section 15064.3 subdivision (b)?	Less than Significant
Would the project substantially increase hazards due to geometric deisgn features or incompatible uses?	Less than Significant with Mitigation
Would the project result in inadequate emergency access?	Less than Significant with Mitigation
Would the project create hazardous conditions for people walking, biking, or driving?	Less than Significant with Mitigation
Would the project interfere with walking or bicycling accessibility?	Less than Significant
Would the project substantially delay public transit?	Less than Significant
Tribal Cultural Resources	
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?	No Determination[1]
Would the project cause a substantial adverse change in the significance of the tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1?	No Determination

Impact Criteria	Proposed Project Impact
Utilities and Service Systems	
Would the project require new or expanded utility facilities?	Less than Significant
Would the project have sufficient water supplies	Less than Significant
Would the project result in inadequate wastewater treatment capacity?	Less than Significant
Would the project generate solid waste in excess of state or local standards or the capacity of local infrastructure?	Less than Significant
Would the project comply with solid waste reduction statutes and regulations?	Less than Significant
Would the project increase the rate of corrosion of adjacent utility lines?	Less than Significant
Wildfire	
Would the project substantially impair and adopted emergency response plan or emergency evacuation plan?	Less than Significant with Mitigation
Due to slope, prevailing winds, and other factors, would the project exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	Less than Significant with Mitigation
Would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	Less than Significant with Mitigation
Would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	Less than Significant

As indicated by the red squares in Table 6-1, the Proposed Project would only result in significant and unavoidable impacts for two environmental impact criteria – one in the aesthetics section and one in the recreation section that is related to aesthetics. For all other issue areas, the Proposed Project would either have no impact, or less than significant impacts either with or without implementation of mitigation measures. As described in the Introduction above, the alternatives analysis focuses on the two significant and unavoidable impacts of the Proposed Project and compares the alternatives in the context of these two impacts.

6.2 Alternatives Comparison

A comparison of the ability of each alternative to avoid or reduce a potentially significant Proposed Project impact is included in the analysis below. The California Public Utilities Commission General Order 131-E specifies in Section VII.C.2 that the range of reasonable alternatives to the proposed project in an initial draft EIR circulated for public comment may be limited to alternate routes or locations for construction of the relevant California Independent System Operator Transmission Plan-approved electric project and the “no action” alternative. The alternatives analyzed are consistent with this requirement.

As presented in Chapter 5, Environmental Analysis, and illustrated in Table 6-1 above, the Proposed Project would result in a significant and unavoidable impact for the following CEQA criteria:

Aesthetics

- Would the project, in nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage points) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Recreation

- Would the project substantially change the character of a recreational area by reducing the scenic, biological, cultural, geologic, or other important characteristics that contribute to the value of recreational facilities or areas?

As presented in Chapter 4, the following alternatives, organized by segment, have been identified as feasible, meet the underlying purpose of the Proposed Project, and meet the basic project objectives, though to a lesser extent than the Proposed Project:

Segment 1

- Alternative 1A
- Alternative 1C
- Alternative 1D
- Alternative 1-Alt

Segment 2

- Alternative 2A

Segment 3

- Alternative 3
- Alternative 3A
- Alternative 3B
- Alternative 3D

No Project Alternative

These alternatives are analyzed and compared to the Proposed Project below.

Aesthetics

Would the project, in nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage points) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

The Proposed Project would not result in a significant and unavoidable construction impact but would result in a significant and unavoidable operational impact. Therefore, the following summary and subsequent alternatives analysis focuses only on operational impacts.

The areas surrounding the Proposed Project alignment are undeveloped or have limited development features within the existing viewshed. The Proposed Project would introduce new transmission lines which would result in industrialization of the landscape and which would change the existing visual character of the area. Additionally, the Proposed Project would require vegetation removal and ground disturbance which would have lasting impacts on the existing visual character surrounding the Proposed Project alignment.

Visual change in this PEA is described in terms of contrast, which is affected by visibility, distance, and the aspects of the Project that bring about change in the landscape, such as the introduction of structure and conductor wires, access roads, work areas, equipment, and other Project features. For the Proposed Project, landscape contrast was combined with structure contrast to determine overall contrast along segments of the Project. In general terms, the higher the level of contrast, the greater the potential for significant impacts.

Landscape contrast was determined by combining vegetation groups based on LandFire Existing Vegetation Cover (United States Department of Agriculture 2025) data with Project slope. Strong-to-moderate vegetation contrasts would be expected where visually complex, course-textured, dominant-overstory vegetation removal necessary as a result of Project construction would likely contrast with adjacent intact areas after construction, combined with the potential grading necessary in steeper slope areas.

Strong structure contrasts are expected wherever 500-kV guyed-V lattice or other proposed structures are introduced in a landscape that has no similar feature. The Proposed Project would be the second 500-kV line between the North Gila and Imperial Valley substations; the existing transmission line is commonly referred to as the Southwest Powerlink (SWPL) constructed in the 1980s by SDG&E. Where the SWPL is present in the landscape alongside the Proposed Project, structure contrast is generally lower; where the Proposed Project would be present in the landscape without the SWPL, structure contrast is generally high.

Proposed Project contrast was considered at 19 key observation points (KOPs) along the alignment. Of the 19 KOPs, the Proposed Project was found to have significant and unavoidable impacts at four, while the remaining 15 KOPs would have impacts ranging from No Impact to Less than Significant with Mitigation.

Contrast was also considered in the context of the BLM's Visual Resources Management (VRM) classes, which are ranked Class I through Class IV. VRM Class I allows for no contrast, VRM Class II allows for weak contrast, VRM Class III allows for moderate contrast, and VRM Class IV allows for strong contrast. Of the 51 miles of BLM land crossed by the Proposed Project, 68% of the alignment is compliant with the associated VRM designation, while 32% is non-compliant with the associated VRM designation, which triggers a significant and unavoidable impact finding.

SUMMARY OF VISUAL IMPACTS ASSOCIATED WITH SEGMENT 1 OF THE PROPOSED PROJECT

Segment 1 of the Proposed Project would cross VRM Class II and Class III areas where immediate foreground and foreground views of moderate to strong contrasts would occur and the Project would be non-compliant with the VRM designations. Implementation of APMs AES-3 and AES-4 would reduce impacts but because VRM Class II and Class III objectives would not be met, impacts would be significant and unavoidable. Additionally, Segment 1 of the Proposed Project would significantly alter views in California from the Imperial Sand Dunes recreational area and moderate and high sensitivity travel corridors such as I-8, Ogilby Camp Recreation Destination Route, Ogilby Rd, Barney Oldfield Rd-Cargo Muchacho Mountains Recreation/Sacred Site Destination Route, Picacho Rd, and Levee Rd/S24. With the exception of Levee Rd/S24, these crossings and parallel viewing conditions would occur where the SWPL is also seen within the viewshed resulting in weak structure contrasts. In these locations, adverse but less than significant impacts would occur due to the presence of the SWPL that already results degradation of site visual character or quality. Implementation of APMs AES-1, AES-3, AES-4, and AES-5 would reduce impacts on views from Imperial Sand Dunes and Levee Road/S24; however, impacts would remain significant and unavoidable. In Arizona, Segment 1 of the Proposed Project would have a limited impact on views

around Mittry Lake due to vegetation and topography which would screen views of the Proposed Project in this area. The Proposed Project would cross Laguna Dam Road, a moderate sensitivity travel corridor that has a low compatibility with transmission facilities. Because the Proposed Project alignment deviates from the existing SWPL alignment in this area, strong contrasts would occur. The implementation of APMs AES-1, AES-3, and AES-4 would reduce impacts to a less than significant level except in the immediate foreground areas crossing Laguna Dam Road where impacts would be significant and unavoidable. While overall impacts for Segment 1 of the Proposed Project would be significant and unavoidable, impacts at individual KOPs within this segment of the Project alignment would have varying levels of impact. They are as follows:

- KOP 10: Less than Significant with Mitigation
- KOP 11: Less than Significant
- KOP 12: Less than Significant
- KOP 13: Significant and Unavoidable
- KOP 14: Less than Significant with Mitigation
- KOP 15: Significant and Unavoidable
- KOP 16: Significant and Unavoidable
- KOP 17: No Impact
- KOP 18: Less than Significant
- KOP 19: Less than Significant

SUMMARY OF VISUAL IMPACTS ASSOCIATED WITH SEGMENT 2 OF THE PROPOSED PROJECT

Segment 2 of the Proposed Project would cross VRM Class II and Class III areas where immediate foreground and foreground views of moderate to strong contrasts would occur and the Project would be non-compliant with the VRM designations. Implementation of APMs AES-3 and AES-4 would reduce impacts but because VRM Class II and Class III objectives would not be met, impacts would be significant and unavoidable. Additionally, Segment 2 of the Proposed Project would result in significant changes to visual character and quality of public views from the I-8 and SH 98 travel corridors where the Proposed Project would parallel or cross these roadways. South of I-8, parallel viewing conditions would occur along SH 98 where the existing H frame transmission line corridor and a communication tower is also seen within the viewshed. In these locations, adverse but less than significant impacts would occur due to the presence of these features that already degrade visual character and quality in this area. Additionally significant impacts to views in and around the Imperial Sand Dunes would occur. The implementation of APMs AES-1, AES-3, and AES-4would reduce impacts from some portions of the line, but strong Project contrasts as seen in the immediate foreground would result in significant unavoidable impacts. While overall impacts for Segment 2 of the Proposed Project would be significant and unavoidable, impacts at individual KOPs within this segment of the Project alignment would have varying levels of impact. They are as follows:

- KOP 8: Less than Significant with Mitigation
- KOP 9: Less than Significant

SUMMARY OF VISUAL IMPACTS ASSOCIATED WITH SEGMENT 3 OF THE PROPOSED PROJECT

A portion of segment 3 of the Proposed Project (1.9 miles) crosses VRM Class IV in the vicinity of Imperial Substation within the Yuha Basin ACEC and on the eastern end of the Project. In these

areas, overall contrasts would be moderate to strong, and the Project would be in compliance with VRM Class IV. Along a short section of Segment 3 of the Proposed Project (approximately 0.2 miles), strong contrasts would occur within VRM Class III landscapes on the east end of the Project, and the Project would not be compliant with the VRM designation. While Segment 3 of the Proposed Project would impact views along travel corridors near Heber Dunes SVRA, impacts both inside and outside the Heber Dunes SVRA would be less than significant due to the existing SWPL transmission lines paralleling the Proposed Project alignment in this area. Segment 3 of the Proposed Project would also cross several travel corridors with moderate viewer sensitivity and low compatibility with transmission facilities including Anderholt Road, Barbara Worth Road, Dogwood Road, Ferrel Road, SH 7/Orchard Road, Barbara Worth Road, SH 111 and E. Jasper Road. Some of these crossings would occur where the SWPL t is also seen within the viewshed resulting in weak structure contrasts. In these locations, adverse but less than significant impacts would occur due to the presence of the SWPL that already results in degradation of site visual character or quality. Significant and unavoidable impacts would occur where the Project deviates from the SWPL corridor and would result in the degradation of site visual character or quality. The implementation of APMs -AES-1, AES-3, AES-4, and AES-5 would help to reduce impacts from these travel corridors; however, impacts would remain significant and unavoidable. While overall impacts for Segment 3 of the Proposed Project would be significant and unavoidable, impacts at individual KOPs within this segment of the Project alignment would have varying levels of impact. They are as follows:

- KOP 1: Significant and Unavoidable
- KOP 2: Less than Significant
- KOP 3: Less than Significant
- KOP 4: No Impact
- KOP 5: Less than Significant
- KOP 6: Less than Significant with Mitigation
- KOP 7: Less than Significant with Mitigation

ALTERNATIVE 1A

Similar to the Proposed Project, Alternative 1A crosses VRM Class II areas in California and Arizona where immediate foreground and foreground views of strong contrasts would occur and the Project would be non-compliant with the VRM designation. Significant impacts to existing views from travel corridors and recreation areas would occur due to strong visual contrasts in the immediate foreground and foreground.

Alternative 1A would alter existing views in and around Imperial Sand Dunes and Mittry Lake. Similar to the Proposed Project, in California Alternative 1A would parallel the existing SWPL transmission corridor and impacts to views in these areas would be reduced due to the presence of existing transmission lines. In Arizona, Alternative 1A would impact residential views including those near Yuma Proving grounds and Hidden Shores Resort. Implementation of APMs AES-1, AES-3, AES-4, and AES-5 would reduce these impacts; however, impacts would remain significant and unavoidable, same as the Proposed Project.

Moderate and high sensitivity travel corridors where public views of existing visual character or quality of the site and its surroundings occur would be crossed by or paralleled by Alternative 1A and seen in the foreground and immediate foreground in both California and Arizona. These corridors include: I-8, Ogilby Camp Recreation Destination Route, Ogilby Road, Barney Oldfield Road-Cargo Muchacho Mountains Recreation/Sacred Site Destination Route, Picacho Road, and

Levee Road/S24 in California and Laguna Dam Road and Mittry Lake Road in Arizona. All of these roadways generally have low compatibility with transmission facilities. However, many of the road crossings in California that Alternative 1A would cross occur where the SWPL is also seen within the viewshed resulting in weak structure contrasts. In these locations, adverse but less than significant impacts would occur due to the presence of the SWPL that already results in degradation of site visual character or quality. The implementation of APMs AES-1, AES-3, AES-4, and AES-5 would help to reduce impacts at these travel corridor crossings.

Overall, Alternative 1A would have a significant and unavoidable impact to existing visual character and public views. The following impacts to existing views at KOPs within the alignment of Alternative 1A of the Project, and compared to the Proposed Project are as follows:

Table 6-2 Comparison of Alternative 1A to the Proposed Project

	Alternative 1A	Proposed Project
KOP 10	Less than Significant with Mitigation	Less than Significant with Mitigation
KOP 11	Less than Significant	Less than Significant
KOP 12	Less than Significant	Less than Significant
KOP 13	Significant and Unavoidable	Significant and Unavoidable
KOP 14	Less than Significant with Mitigation	Less than Significant with Mitigation
KOP 15	No Impact	Significant and Unavoidable
KOP 16	No Impact	Significant and Unavoidable
KOP 17	Significant and Unavoidable	No Impact
KOP 18	No Impact	Less than Significant
KOP 19	Less than Significant	Less than Significant

Due to the distance between Alternative 1A and KOPs 15, 16, and 18, impacts to existing views at these KOP locations would be slightly reduced for Alternative 1A as compared to the Proposed Project. However, at KOP 17, Alternative 1A would have a significant and unavoidable impact compared to the Proposed Project, which has no impact. Overall, this alternative would result in slightly reduced impacts compared to the Proposed Project.

ALTERNATIVE 1C

Similar to the Proposed Project, Alternative 1C crosses VRM Class II and Class III areas in California, and VRM Class II areas in Arizona where immediate foreground and foreground views of moderate to strong contrasts would occur and the Project would be non-compliant with the designation. The implementation of APMs AES-3 and AES-4 would reduce the impact of the Project, but VRM Class II objectives would not be met, and significant unavoidable impacts would occur.

Alternative 1C would alter existing views from travel corridors and recreation sites in both California and Arizona which would result in a substantial degradation of the existing visual character or quality of public views of the site and its surroundings where strong structure and overall Project contrasts would be seen in the immediate foreground and foreground.

Views from recreational sites in and around the Imperial Sand Dunes would generally be from the foreground and middleground. Typically, Alternative 1C is somewhat offset, but parallels SWPL within the viewshed and weak structure contrasts would occur. However, where the Project is located near the SWPL corridor, but is separated by I-8, and views are oriented north of I-8 toward the sand dune landscape, the existing visual character or quality of public views of the site and its

surroundings could be altered under some conditions. The implementation of APMsAES-1, AES-3, AES-4, and AES-5, would reduce impacts from some portions of the line, but strong Project contrasts as seen in the immediate foreground would result in significant unavoidable impacts, similar to the Proposed Project.

In Arizona Alternative 1C would impact views from residential development located near Laguna Dam Road. Implementation of APMs-AES-1, AES-3, AES-4, and AES-5 would reduce impacts to a less than significant level, same as the Proposed Project.

Moderate and high sensitivity travel corridors where public views of existing visual character or quality of the site and its surroundings occur would be crossed by or paralleled by Alternative 1C and seen in the foreground and immediate foreground. These corridors include: I-8, Ogilby Camp Recreation Destination Route, Ogilby Road, Barney Oldfield Road-Cargo Muchacho Mountains Recreation/Sacred Site Destination Route, Picacho Road, and Levee Road/S24 in California and Laguna Dam Road in Arizona. All of these roadways generally have low compatibility with transmission facilities. However, most of these crossings and parallel viewing conditions in California would occur where the SWPL is also seen within the viewshed resulting in weak structure contrasts. In these locations, adverse but less than significant impacts would occur due to the presence of the SWPL that already results in degradation of site visual character or quality. Implementation of APMsAES-1, AES-3, AES-4, and AES-5 would help to reduce impacts at these travel corridor crossings.

Overall, Alternative 1C would have a significant and unavoidable impact to existing visual character and public views. The following impacts to existing views at KOPs within the alignment of Alternative 1C and as compared to the Proposed Project are as follows:

Table 6-3 Comparison of Alternative 1C to the Proposed Project

	Alternative 1C	Proposed Project
KOP 10	Less than Significant with Mitigation	Less than Significant with Mitigation
KOP 11	Less than Significant	Less than Significant
KOP 12	Less than Significant	Less than Significant
KOP 13	Significant and Unavoidable	Significant and Unavoidable
KOP 14	Less than Significant with Mitigation	Less than Significant with Mitigation
KOP 15	Significant and Unavoidable	Significant and Unavoidable
KOP 16	Significant and Unavoidable	Significant and Unavoidable
KOP 17	No Impact	No Impact
KOP 18	Less than Significant with Mitigation	Less than Significant
KOP 19	Less than Significant	Less than Significant

These individual KOP impacts would be similar to the Proposed Project.

ALTERNATIVE 1D

Similar to the Proposed Project, Alternative 1D crosses VRM Class II and Class III areas in California and VRM Class II areas in Arizona where immediate foreground and foreground views of moderate to strong contrasts would occur and the Project would be non-compliant with the VRM designations. The implementation of APMs AES-3 and AES-4 would reduce the impacts of the Project, but VRM Class II and Class III objectives would not be met, and significant and unavoidable impacts would occur.

Alternative 1D would alter existing views from travel corridors and recreation sites in both California and Arizona which would result in a substantial degradation of the existing visual character or quality of public views of the site and its surroundings where strong structure and overall Project contrasts would be seen in the immediate foreground and foreground.

Views from recreational sites in and around the Imperial Sand Dunes would generally be from the foreground and middleground. Typically, Alternative 1D is somewhat offset, but parallels SWPL within the viewshed and weak structure contrasts would occur. However, where the Project is located near the SWPL corridor, but is separated by I-8, and views are oriented north of I-8 toward the sand dune landscape, the existing visual character or quality of public views of the site and its surroundings could be altered under some conditions. Views of Alternative 1D from Mittry Lake would generally in the middleground and background and would be screened by vegetation and topography in some cases, similar to the Proposed Project. Additionally, Alternative 1D would impact existing views from residences along Laguna Dam Road, similar to the Proposed Project. The implementation of APMsAES-1, AES-3, AES-4, and AES-5 would reduce impacts from residences along Laguna Dam Road to be less than significant.

Moderate and high sensitivity travel corridors where public views of existing visual character or quality of the site and its surroundings occur would be crossed by or paralleled by Alternative 1D and seen in the foreground and immediate foreground. These corridors include: I-8, Ogilby Camp Recreation Destination Route, Ogilby Road, Barney Oldfield Road-Cargo Muchacho Mountains Recreation/Sacred Site Destination Route, Picacho Road, and Levee Road/S24 in California and Laguna Dam Road in Arizona. All of these roadways generally have low compatibility with transmission facilities. However, most of these crossings and parallel viewing conditions in California would occur where the SWPL is also seen within the viewshed resulting in weak structure contrasts. In these locations, adverse but less than significant impacts would occur due to the presence of the SWPL that already results in degradation of site visual character or quality. Implementation of APMsAES-1, AES-3, AES-4, and AES-5 would help to reduce impacts at these travel corridor crossings.

Overall, Alternative 1D would have a significant and unavoidable impact to existing visual character and public views. The impacts to existing views at individual KOPs within the alignment of Alternative 1D and compared to the Proposed Project are as follows:

Table 6-4 Comparison of Alternative 1D to the Proposed Project

	Alternative 1D	Proposed Project
KOP 10	Less than Significant with Mitigation	Less than Significant with Mitigation
KOP 11	Less than Significant	Less than Significant
KOP 12	Less than Significant	Less than Significant
KOP 13	Significant and Unavoidable	Significant and Unavoidable
KOP 14	Less than Significant with Mitigation	Less than Significant with Mitigation
KOP 15	Significant and Unavoidable	Significant and Unavoidable
KOP 16	Significant and Unavoidable	Significant and Unavoidable
KOP 17	No Impact	No Impact
KOP 18	Less than Significant with Mitigation	Less than Significant
KOP 19	Less than Significant	Less than Significant

These individual KOP impacts would be similar to the Proposed Project.

ALTERNATIVE 1-ALT

As described in Chapter 4, *Description of Alternatives*, Alternative 1-Alt would be located along the southern side of the All-American Canal, deviating from the Proposed Project for approximately 2.5 miles in the vicinity of the Sand Hills I-8 Rest Area. The landscape character within the Project setting for Alternative 1-Alt is identical to the Proposed Project. Alternative 1-Alt would be offset from, but parallel to, the Proposed Project and up to approximately 850 feet closer to I-8. Alternative 1-Alt would extend into the immediate foreground distance zone from this moderate sensitivity travel corridor where the Proposed Project would be seen in the primarily in the foreground distance zone. Alternative 1-Alt would also be located 600 feet closer to KOP 10-Buttercup Campground, extending into the foreground as compared to the Proposed Project, which would be seen in the middleground/foreground transition distance zone.

From both I-8 and KOP 10, Alternative 1-Alt would be somewhat more prominent within the viewshed than the Proposed Project and aesthetic impacts would be similar. The existing SWPL and H-frame transmission lines, as well as distribution lines, contribute to the visual character of the site and surroundings and would also be seen within the viewshed with the construction and operation of either Alternative, and there would be minimal difference in impact significance as they related to CEQA criteria; impacts would not be significant in the area of the Proposed Project or Alternative 1-Alt within the I-8 and KOP 10 viewshed.

Alternative 1-Alt would also cross BLM VRM Class IV within the viewshed of I-8 and KOP 10. The VRM Class IV designation allows for a high level of change to the landscape. Weak to moderate contrasts would be seen from these viewpoints, and therefore, Alternative 1-Alt would be consistent with the Class IV VRM designation. Similar to the Proposed Project, Alternative 1-Alt crosses VRM Class II and Class III areas in California and VRM Class II areas in Arizona where immediate foreground and foreground views of moderate to strong contrasts would occur and the Project would be non-compliant with the VRM designations. The implementation of APMs AES-3 and AES-4 would reduce the impacts of the Project, but VRM Class II and Class III objectives would not be met, and significant and unavoidable impacts would occur.

Overall, Alternative 1-Alt would have a significant and unavoidable impact to existing visual character and public views. The impacts to existing views at individual KOPs within the alignment of Alternative 1-Alt and compared to the Proposed Project are as follows:

Table 6-5 Comparison of Alternative 1-Alt to the Proposed Project

	Alternative 1-Alt	Proposed Project
KOP 10	Less than Significant with Mitigation	Less than Significant with Mitigation
KOP 11	Less than Significant	Less than Significant
KOP 12	Less than Significant	Less than Significant
KOP 13	Significant and Unavoidable	Significant and Unavoidable
KOP 14	Less than Significant with Mitigation	Less than Significant with Mitigation
KOP 15	Significant and Unavoidable	Significant and Unavoidable
KOP 16	Significant and Unavoidable	Significant and Unavoidable
KOP 17	No Impact	No Impact
KOP 18	Less than Significant with Mitigation	Less than Significant with Mitigation
KOP 19	Less than Significant	Less than Significant

Compared to the Proposed Project, Alternative 1-Alt would have the same impacts at each KOP.

ALTERNATIVE 2A

Alternative 2A crosses VRM Class II and Class III areas where immediate foreground and foreground views of moderate to strong contrasts resulting primarily from vegetation clearing would occur and the Project would be non-compliant with the VRM designations. The implementation of APMs AES-3 and AES-4 would reduce the impacts of the Project, but VRM Class II and Class III objectives would not be met, and significant and unavoidable impacts would occur.

Similar to the Proposed Project, significant impacts to existing visual character and public views would occur primarily from the I-8 corridor where existing transmission lines are not visible and therefore Alternative 2A would result in strong contrasts to the existing visual setting. Alternative 2A views from the Imperial Sand Dunes Recreation Area occur where the Project crosses average scenery landscapes (e.g., Class C), where the existing utility corridor is seen in the viewshed resulting in the existing visual character or quality of public views of the site and its surroundings being minimally affected. Foreground views of Alternative 2A from Tamarisk Long Term Visitor Area would occur where weak structure contrasts would occur and much of this site is screened by surrounding vegetation resulting in limited impacts. The implementation of APMsAES-1, AES-3, AES-4, and AES-5 would reduce impacts from some portions of the line, but strong Project contrasts as seen in the immediate foreground would result in significant and unavoidable impacts.

Additionally, similar to the Proposed Project, Alternative 2A would cross or parallel I-8 and SH 98 which have low compatibility with transmission facilities. South of I-8, parallel viewing conditions would occur along both SH 98 and I-8 where the existing H-frame and SWPL transmission line corridor and a communication tower is also seen within the viewshed. In these locations, adverse but less than significant impacts would occur due to the presence of these features that already result in degradation of site visual character or quality. The implementation of APMs AES-1, AES-3, AES-4, and AES-5 would help to reduce impacts at these travel corridor crossings and parallel viewing conditions; however, impacts would remain significant and unavoidable.

Overall, Alternative 2A would have a significant and unavoidable impact to existing visual character and public views. The impacts at individual KOPs within the alignment of Alternative 2A and compared to the Proposed Project are as follows:

Table 6-6 Comparison of Alternative 2A to the Proposed Project

	Alternative 2A	Proposed Project
KOP 8	Less than Significant with Mitigation	Less than Significant with Mitigation
KOP 9	Less than Significant	Less than Significant

Compared to the Proposed Project, Alternative 2A would have the same impacts at each KOP.

ALTERNATIVE 3

Approximately 0.4 miles of Alternative 3 crosses VRM Class IV in the vicinity of Imperial Substation within the Yuma Basin ACEC. Overall contrasts would be weak to moderate, primarily due to the presence of the Imperial Valley Substation and multiple transmission lines within the viewshed, and the Project would be consistent with the VRM designation. Alternative 3 also crosses 0.2 miles of VRM Class III where immediate foreground and foreground views of moderate to strong contrasts would occur, and the Project would be non-compliant with the VRM designation. The implementation of APMs AES-3 and AES-4 would reduce impacts to the extent possible; however, impacts would remain significant and unavoidable.

Alternative 3 would impact existing views from Heber Dunes SVRA and along travel corridors in this area. In this area Alternative 3 parallels the existing SWPL and weak contrast would occur. However, some overstory tree clearing would occur that would result in strong landscape contrasts. The implementation of APMs AES-1, AES-3, AES-4, and AES-5 would reduce impacts from some portions of the line, but strong Project contrasts as seen in the immediate foreground would result in significant and unavoidable impacts, similar to the Proposed Project.

Moderate sensitivity travel corridors where public views of existing visual character or quality of the site and its surroundings occur would be crossed by Alternative 3 and seen in the foreground and immediate foreground. These corridors include: Anderholt Road, Barbara Worth Road, Dogwood Road, Ferrel Road, SH 7/Orchard Road, Barbara Worth Road, SH 111 and E. Jasper Road, which all generally have low compatibility with transmission facilities. However, all of these crossings would occur where the SWPL is also seen within the viewshed resulting in weak structure contrasts. In these locations, adverse but less than significant impacts would occur due to the presence of the SWPL that already results in degradation of site visual character or quality in these areas. Implementation of APMs AES-1, AES-3, AES-4, and AES-5 would help to reduce impacts at these travel corridor crossings.

Overall, Alternative 3 would have a significant and unavoidable impact to existing visual character and public views. The impacts at individual KOPs within the alignment of Alternative 3 and compared to the Proposed Project are as follows:

Table 6-7 Comparison of Alternative 3 to the Proposed Project

	Alternative 3	Proposed Project
KOP 1	Less than Significant	Significant and Unavoidable
KOP 2	Significant and Unavoidable	Less than Significant
KOP 3	Less than Significant	Less than Significant
KOP 4	No Impact	No Impact
KOP 5	Less than Significant with Mitigation	Less than Significant
KOP 6	Less than Significant with Mitigation	Less than Significant with Mitigation
KOP 7	Less than Significant with Mitigation	Less than Significant with Mitigation

Alternative 3 would result in similar impacts at all KOPs in Segment 3 except KOP 1 (where it would have reduced impacts compared to the Proposed Project), KOP 2 (where it would have increased impacts compared to the Proposed Project due to increasing proximity to agricultural land in this area), KOP 5 (where it would have an increased impact due to increasing proximity to agricultural land in this area), and KOP 7 where it would result in tree clearing that would create strong landscape contrasts. Overall this alternative would result in slightly increased impacts compared to the Proposed Project.

ALTERNATIVE 3A

A portion of Alternative 3A (0.6 miles) crosses VRM Class IV in the vicinity of Imperial Substation within the Yuha Basin ACEC and on the eastern end of the Project. In these areas, overall contrasts would be moderate to strong and the Project would be in compliance with VRM Class IV. Along the eastern portion of Alternative 3A (approximately 2.9 miles), strong contrasts resulting primarily from vegetation clearing and the presence of transmission structures would occur in the immediate foreground and foreground within VRM Class III landscapes on the east end of the Project, and the

Project would not be compliant, resulting in significant and unavoidable impacts which is similar to the Proposed Project.

Similar to the Proposed Project, Alternative 3A would substantially degrade the existing visual character or quality of public views of the site and its surroundings because along portions of Alternative 3A strong structure and overall Project contrasts would be seen in the immediate foreground and foreground. Additionally, Alternative 3A would cross moderate sensitivity travel corridors such as Anderholt Road, E. Heber Road/HWY 86, Barbara Worth Road, Dogwood Road, Ferrel Road, SH 7/Orchard Road, SH 111 and E. Jasper Road, which generally have low compatibility with transmission facilities. Significant and unavoidable impacts would occur along these roadways where the Project deviates from the SWPL corridor and would result in the degradation of site visual character or quality. The implementation of APMsAES-1, AES-3, AES-4, and AES-5 would help to reduce impacts from these travel corridors, but impacts would remain significant unavoidable, similar to the Proposed Project.

Overall, Alternative 3A would have a significant and unavoidable impact to existing visual character and public views. The impacts at individual KOPs within the alignment of Alternative 3A and compared to the Project are as follows:

Table 6-8 Comparison of Alternative 3A to the Proposed Project

	Alternative 3A	Proposed Project
KOP 1	Less than Significant	Significant and Unavoidable
KOP 2	Less than Significant with Mitigation	Less than Significant
KOP 3	Less than Significant with Mitigation	Less than Significant
KOP 4	Significant and Unavoidable	No Impact
KOP 5	No Impact	Less than Significant
KOP 6	Less than Significant	Less than Significant with Mitigation
KOP 7	No Impact	Less than Significant with Mitigation

Compared to the Proposed Project, Alternative 3A would result in reduced impacts at KOPs 1 , 6, and 7; however, it would result in increased impacts to KOPs 2, 3, and 4 including a new significant and unavoidable impact at KOP 4. Because of this, Alternative 3A would result in increased impacts compared to the Proposed Project.

ALTERNATIVE 3B

A portion of Alternative 3B (0.6 miles) crosses VRM Class IV in the vicinity of Imperial Substation within the Yuha Basin ACEC and on the eastern end of the Project. In these areas, overall contrasts would be moderate to strong, and the Project would be in compliance with the VRM designation. Along a short section of Alternative 3B (approximately 0.2 miles), strong contrasts resulting from vegetation clearing as seen from SH 98 would occur in immediate foreground within VRM Class III landscapes on the east end of the Project, and the Project would not be compliant with the VRM designation, resulting in significant and unavoidable impacts, similar to the Proposed Project.

Similar to the Proposed Project, Alternative 3B would substantially degrade the existing visual character or quality of public views of the site and its surroundings because along portions of Alternative 3B strong structure and overall Project contrasts would be seen in the immediate foreground and foreground. Additionally, Alternative 3B would cross or parallel moderate sensitivity travel corridors such as SH 98, Anderholt Road, E. Heber Road/HWY 86, Barbara Worth Road,

Dogwood Road, Ferrel Road, SH 7/Orchard Road, SH 111 and E. Jasper Road, which generally have low compatibility with transmission facilities. Significant and unavoidable impacts would occur along these roadways where the Project deviates from the SWPL corridor and would result in the degradation of site visual character or quality. The implementation of APMs-AES-1, AES-3, AES-4, and AES-5 would help to reduce impacts from these travel corridors, but impacts would remain significant unavoidable, similar to the Proposed Project.

Overall, Alternative 3B would have a significant and unavoidable impact to existing visual character and public views. The impacts at individual KOPs within the alignment of Alternative 3B and compared to the Proposed Project are as follows:

Table 6-9 Comparison of Alternative 3B to the Proposed Project

	Alternative 3B	Proposed Project
KOP 1	Significant and Unavoidable	Significant and Unavoidable
KOP 2	Less than Significant	Less than Significant
KOP 3	Less than Significant	Less than Significant
KOP 4	No Impact	No Impact
KOP 5	Less than Significant	Less than Significant
KOP 6	Less than Significant with Mitigation	Less than Significant with Mitigation
KOP 7	Less than Significant with Mitigation	Less than Significant with Mitigation

Compared to the Proposed Project, Alternative 3B would have the same impact at each KOP.

ALTERNATIVE 3D

Similar to the Proposed Project, a portion of Alternative 3D (1.9 miles) crosses VRM Class IV in the vicinity of Imperial Substation within the Yuha Basin ACEC and on the eastern end of the Project. In these areas, overall contrasts would be moderate to strong and the Project would be in compliance with the VRM designation. Along a short section of Alternative 3D (approximately 0.2 miles), strong contrasts would occur in immediate foreground or foreground of high or moderate sensitivity viewers within VRM Class III landscapes on the east end of Alternative 3D, and the Project would not be compliant with the VRM designation, resulting in significant and unavoidable impacts.

Similar to the Proposed Project, Alternative 3D would substantially degrade the existing visual character or quality of public views of the site and its surroundings because along portions of Alternative 3D strong structure and overall Project contrasts would be seen in the immediate foreground and foreground. Additionally, Alternative 3D would impact existing views from Heber Dunes SVRA and along travel corridors in this area. In this area Alternative 3D parallels the existing SWPL and weak contrast would occur. However, some overstory tree clearing would occur that would result in strong landscape contrasts. The implementation of APMsAES-1, AES-3, AES-4, and AES-5 would reduce impacts from some portions of the line, but strong Project contrasts as seen in the immediate foreground would result in significant unavoidable impacts, similar to the Proposed Project.

Alternative 3D would substantially degrade the existing visual character or quality of public views of the site and its surroundings because along portions of Alternative 3D strong structure and overall Project contrasts would be seen in the immediate foreground and foreground. Additionally, Alternative 3D would cross or parallel moderate sensitivity travel corridors such as Anderholt Road, E. Heber Road/HWY 86, Barbara Worth Road, Dogwood Road, Ferrel Road, SH 7/Orchard Road, SH

111 and E. Jasper Road, which generally have low compatibility with transmission facilities. Significant and unavoidable impacts would occur along these roadways where the Project deviates from the SWPL corridor and would result in the degradation of site visual character or quality. The implementation of APMsAES-1, AES-3, AES-4, and AES-5 would help to reduce impacts from these travel corridors, but impacts would remain significant and unavoidable, similar to the Proposed Project.

Overall, Alternative 3D would have a significant and unavoidable impact to existing visual character and public views. The impacts at individual KOPs within the alignment of Alternative 3D and compared to the Proposed Project are as follows:

Table 6-10 Comparison of Alternative 3D to the Proposed Project

	Alternative 3D	Proposed Project
KOP 1	Significant and Unavoidable	Significant and Unavoidable
KOP 2	Less than Significant	Less than Significant
KOP 3	Less than Significant	Less than Significant
KOP 4	No Impact	No Impact
KOP 5	Less than Significant	Less than Significant
KOP 6	Less than Significant with Mitigation	Less than Significant with Mitigation
KOP 7	Less than Significant with Mitigation	Less than Significant with Mitigation

Compared to the Proposed Project, Alternative 3D would have the same impacts at each KOP .

NO PROJECT ALTERNATIVE

The No Project alternative would not involve the construction of a new transmission line and therefore would not result in any changes to existing views or visual character. Therefore, the No Project alternative would result in reduced aesthetic impacts compared to the Proposed Project.

Recreation

Would the project substantially change the character of a recreational area by reducing the scenic, biological, cultural, geologic, or other important characteristics that contribute to the value of recreational facilities or areas?

The Proposed Project would not result in a significant and unavoidable construction impact but would result in a significant and unavoidable operational impact under this criterion. Therefore, the following summary and subsequent alternatives analysis focuses only on operational impacts.

The Proposed Project alignment passes through National Public Lands and designated recreation areas such as Heber Dunes SVRA, Imperial Sand Dunes, and Mittry Lake Wildlife Area. The Proposed Project would introduce a new transmission line which would result in industrialization of the landscape and which would change the existing visual character of these recreation areas. Additionally, the Proposed Project would require vegetation removal and ground disturbance which would have lasting impacts on the existing visual character surrounding the Proposed Project alignment.

SUMMARY OF IMPACTS TO RECREATIONAL FACILITIES ASSOCIATED WITH SEGMENT 1 OF THE PROPOSED PROJECT

Segment 1 of the Proposed Project would cross through Imperial Sand Dunes, National Public Lands, and Mitry Lake Wildlife Area. As discussed above in the Aesthetics section, Segment 1 of the Proposed Project would cross VRM Class II and Class III areas where immediate foreground and foreground views of moderate to strong contrasts would occur and the Project would be non-compliant with the VRM designations. Impacts related to increased visual contrast could affect views from Imperial Sand Dunes and Mittry Lake Wildlife Area. Implementation of APM AES-1, AES-2, AES-3, AES-4, and AES-5 would reduce impacts from some portions of the line, but strong Project contrasts as seen in the immediate foreground would result in significant and unavoidable impacts.

SUMMARY OF IMPACTS TO RECREATIONAL FACILITIES ASSOCIATED WITH SEGMENT 2 OF THE PROPOSED PROJECT

Segment 2 of the Proposed Project would cross through Imperial Sand Dunes and National Public Lands including the Tamarisk Long Term Visitor Area. As discussed above in the Aesthetics section, Segment 2 of the Proposed Project would cross VRM Class II and Class III areas where immediate foreground and foreground views of moderate to strong contrasts would occur and the Project would be non-compliant with the VRM designations. Impacts related to increases in visual contrast could affect views from recreational sites in and around the Imperial Sand Dunes and the Tamarisk Long Term Visitor Area. Implementation of APM AES-1, AES-2, AES-3, AES-4, and AES-5 would reduce impacts from some portions of the line, but strong Project contrasts as seen in the immediate foreground would result in significant and unavoidable impacts.

SUMMARY OF IMPACTS TO RECREATIONAL FACILITIES ASSOCIATED WITH SEGMENT 3 OF THE PROPOSED PROJECT

Segment 3 of the Proposed Project would cross through small portions of the Heber Dunes SVRA and would be adjacent to National Public Lands. As discussed above in the Aesthetics section, while Segment 3 of the Proposed Project would impact views along travel corridors near Heber Dunes SVRA, impacts both inside and outside the Heber Dunes SVRA would be less than significant due to the existing SWPL transmission lines paralleling the Proposed Project alignment in this area. Since recreational impacts are less than significant with mitigation for Segment 3 of the Proposed Project, Segment 3 alternatives are not analyzed in detail below.

ALTERNATIVE 1A

Similar to the Proposed Project, Alternative 1A crosses VRM Class II areas in California and Arizona where immediate foreground and foreground views of strong contrasts would occur and the Project would be non-compliant with the VRM designation. Alternative 1A would alter existing views in and around Imperial Sand Dunes and Mittry Lake. Similar to the Proposed Project, in California Alternative 1A would parallel the existing SWPL transmission corridor and impacts to views in these areas would be reduced due to the presence of existing transmission lines. In Arizona, Alternative 1A would impact residential views including those near Yuma Proving grounds and Hidden Shores Resort. Implementation of APMs AES-1, AES-3, AES-4, and AES-5 would reduce these impacts; however, impacts to views from Imperial Sand Dunes and Mittry Lake would remain significant and unavoidable, same as the Proposed Project.

ALTERNATIVE 1C

Similar to the Proposed Project, Alternative 1C crosses VRM Class II and Class III areas in California, and VRM Class II areas in Arizona where immediate foreground and foreground views of moderate to strong contrasts would occur and the Project would be non-compliant with the designation. Alternative 1C would alter existing views from recreation sites such as Imperial Sand Dunes and would result in a substantial degradation of the existing visual character or quality of public views of the site and its surroundings where strong structure and overall Project contrasts would be seen in the immediate foreground and foreground.

Views from recreational sites in and around the Imperial Sand Dunes would generally be from the foreground and middleground. Typically, Alternative 1C is somewhat offset, but parallels SWPL within the viewshed and weak structure contrasts would occur. However, where the Project is located near the SWPL corridor, but is separated by I-8, and views are oriented north of I-8 toward the sand dune landscape, the existing visual character or quality of public views of the site and its surroundings could be altered under some conditions. The implementation of APMs AES-1, AES-3, AES-4, and AES-5 would reduce impacts from some portions of the line, but strong Project contrasts as seen in the immediate foreground would result in significant unavoidable impacts to views from Imperial Sand Dunes, similar to the Proposed Project.

ALTERNATIVE 1D

Similar to the Proposed Project, Alternative 1D crosses VRM Class II and Class III areas in California and VRM Class II areas in Arizona where immediate foreground and foreground views of moderate to strong contrasts would occur and the Project would be non-compliant with the VRM designations. Alternative 1D would alter existing views from recreation sites such as Imperial Sand Dunes and would result in a substantial degradation of the existing visual character or quality of public views of the site and its surroundings where strong structure and overall Project contrasts would be seen in the immediate foreground and foreground.

Views from recreational sites in and around the Imperial Sand Dunes would generally be from the foreground and middleground. Typically, Alternative 1D is somewhat offset, but parallels SWPL within the viewshed and weak structure contrasts would occur. However, where the Project is located near the SWPL corridor, but is separated by I-8, and views are oriented north of I-8 toward the sand dune landscape, the existing visual character or quality of public views of the site and its surroundings could be altered under some conditions. Views of Alternative 1D from Mittry Lake would generally be seen in the middleground and background and would be screened by vegetation and topography in some cases, similar to the Proposed Project. Overall, Alternative 1D would have a significant and unavoidable impact to existing visual character and public views in and around Imperial Sand Dunes, similar to the Proposed Project.

ALTERNATIVE 1-ALT

Similar to the Proposed Project, Alternative 1-Alt would cross land designated by the BLM as VRM Class IV. The VRM Class IV designation allows for a high level of change to the landscape. Weak to moderate contrasts would be seen from these viewpoints, and therefore, Alternative 1-Alt would be consistent with the Class IV designation. As compared to the Proposed Project Alternative 1-Alt would be located 600 feet closer to Buttercup Campground, extending into the foreground as compared to the Proposed Project, which would be seen in the middleground/foreground transition distance zone. Therefore, views from the campground would be more significantly altered by

Alternative 1-Alt and impacts would be increased as compared to the Proposed Project. Overall, impacts would be significant and unavoidable.

ALTERNATIVE 2A

Alternative 2A crosses VRM Class II and Class III areas where immediate foreground and foreground views of moderate to strong contrasts resulting primarily from vegetation clearing would occur and the Project would be non-compliant with the VRM designations.

Alternative 2A views from the Imperial Sand Dunes Recreation Area occur where the Project crosses average scenery landscapes (e.g., Class C), where the existing utility corridor is seen in the viewshed resulting in the existing visual character or quality of public views of the site and its surroundings being minimally affected. Foreground views of Alternative 2A from Tamarisk Long Term Visitor Area would occur where weak structure contrasts would occur and much of this site is screened by surrounding vegetation resulting in limited impacts. Due to screening vegetation and existing utility infrastructure in the vicinity of Alternative 2A, impacts to views from Imperial Sand Dunes and Tamarisk Long Term Visitor Area would be reduced as compared to the Proposed Project; however, they would remain significant and unavoidable.

NO PROJECT ALTERNATIVE

The No Project alternative would not involve the construction of a new transmission line and therefore would not result in any changes to the scenic character of recreational areas or facilities. Therefore, the No Project alternative would result in reduced recreational impacts compared to the Proposed Project.

6.3 Alternatives Ranking

Table 6-11 summarizes the comparison results discussed in this Chapter and provides a comparison to show if impacts to existing visual character or quality of public views of the site and its surroundings are reduced, increased, or equal to the Proposed Project for each alternative.

Table 6-11 Alternatives Impact Comparison for Environmental Impacts that would be Significant and Unavoidable

Alternative	Alternative Impact Conclusion	Impacts Compared to the Proposed Project
Aesthetics		
Alternative 1A	Significant and Unavoidable	Reduced
Alternative 1C	Significant and Unavoidable	Equal to
Alternative 1D	Significant and Unavoidable	Equal to
Alternative 1-Alt	Significant and Unavoidable	Equal to
Alternative 2A	Significant and Unavoidable	Equal to
Alternative 3	Significant and Unavoidable	Increased
Alternative 3A	Significant and Unavoidable	Increased
Alternative 3B	Significant and Unavoidable	Equal to
Alternative 3D	Significant and Unavoidable	Equal to
Recreation[1]		
Alternative 1A	Significant and Unavoidable	Equal to
Alternative 1C	Significant and Unavoidable	Equal to
Alternative 1D	Significant and Unavoidable	Equal to
Alternative 1-Alt	Significant and Unavoidable	Increased
Alternative 2A	Significant and Unavoidable	Reduced

[1] As discussed previously in this Chapter, Segment 3 of the Proposed Project would have less than significant recreational impacts. Therefore, Segment 3 alternatives were not analyzed as part of the alternatives comparison for recreation.

In addition to the alternatives impact comparison made above and shown on Table 6-11 for issue areas where the Proposed Project would have significant and unavoidable impacts, Table 6-12 shows comparisons for each environmental topic and whether impacts are reduced, increased, or equal to the Proposed Project for each alternative. The findings in this table are based on the route alternatives comparison table included as Appendix B to the Routing Study (Appendix K) and additional background research and desktop review.

Table 6-12 Alternatives Impact Comparison for Each Environmental Topic

Environmental Impact	Proposed Project	Alternative 1A	Alternative 1C	Alternative 1D	Alternative 1-ALT	Alternative 2A	Alternative 3	Alternative 3A	Alternative 3B	Alternative 3D
Aesthetics	SU	Reduced	Equal to	Equal to	Equal to	Equal to	Increased	Increased	Equal to	Equal to
Agricultural and Forestry Resources	LTS	Equal to	Equal to	Equal to	Equal to	Increased	Reduced	Increased	Reduced	Equal to
Air Quality	LTS	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to	Increased	Equal to	Equal to
Biological Resources	LTSWM	Increased	Equal to	Equal to	Equal to	Increased	Equal to	Increased	Equal to	Equal to
Cultural Resources	LTSWM	Increased	Increased	Increased	Equal to	Increased	Increased	Increased	Increased	Equal to
Energy	LTS	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to
Geology and Soils	LTSWM	Reduced	Increased	Increased	Equal to	Increased	Increased	Reduced	Increased	Equal to
Greenhouse Gas Emissions	LTS	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to
Hazards and Hazardous Materials	LTSWM	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to
Hydrology and Water Quality	LTSWM	Increased	Reduced	Reduced	Equal to	Increased	Reduced	Equal to	Equal to	Equal to
Land Use and Planning	LTSWM	Increased	Equal to	Equal to	Increased	Equal to	Equal to	Equal to	Equal to	Equal to
Mineral Resources	NI	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to
Noise	LTSWM	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to	Increased	Equal to	Equal to
Population and Housing	NI	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to
Public Services	NI	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to
Recreation	SU	Equal to	Equal to	Equal to	Increased	Reduced	Equal to	Equal to	Equal to	Equal to
Transportation	LTSWM	Equal to	Equal to	Equal to	Equal to	Reduced	Equal to	Increased	Equal to	Equal to
Tribal Cultural Resources	ND	Increased	Increased	Increased	Equal to	Increased	Increased	Increased	Increased	Equal to
Utilities and Service Systems	LTS	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to
Wildfire	LTSWM	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to	Equal to

SU= Significant and Unavoidable, LTSWM = Less than Significant with Mitigation, LTS = Less than Significant, NI = No Impact, ND = No Determination

Based on the results summarized in Table 6-11 and Table 6-12, the rankings of alternatives in order of environmental performance as it relates to all environmental topics, including aesthetics and recreation for which the Proposed Project would have significant and unavoidable impacts, are as follows:

1. No Project Alternative
2. Proposed Project
3. Alternative 3D
4. Alternative 1-Alt
5. Alternative 1C
6. Alternative 1D
7. Alternative 3
8. Alternative 3B
9. Alternative 1A
10. Alternative 2A
11. Alternative 3A

It should be noted that the Proposed Project and Alternative 3D all would result in similar impacts and therefore there is minimal difference in their environmental performance.

Additionally, while the No Project Alternative would reduce all environmental impacts, and therefore ranks higher than the Proposed Project, it would not fulfill any of the project objectives. Because the No Project alternative would not involve construction of any project, the Proposed Project is considered the environmentally superior alternative as it is the highest-ranking alternative that involves construction of a project and would fulfill project objectives.

As shown in Table 6-11, Alternatives 1A and 2A would result in either reduced aesthetic or recreation impacts, which are the only environmental issue areas for which the Proposed Project would have significant and unavoidable impacts. Specifically, Alternative 1A would reduce the impacts to existing visual resources from KOPs 15, 16, and 18 when compared to the Proposed Project and would result in equal impacts to recreational resources. Alternative 2A would result in equal aesthetic impacts but slightly reduced recreational impacts due to screening vegetation and existing utility infrastructure along its alignment which would reduce impacts to views from Imperial Sand Dunes. None of the alternatives would fully reduce or eliminate the significant and unavoidable impacts to aesthetics identified for the Proposed Project.

6.4 Rationale for Selection of the Proposed Project Route

The PEA Guidelines specify that if the Proposed Project does not rank #1 in the ranking of alternatives in Section 6.2, the rationale for selecting the proposed project should be provided. The only alternative ranked higher than the Proposed Project is the No Project Alternative, which as noted above is eliminated from consideration because it would not fulfill any of the project objectives.

No other alternatives rank higher than the Proposed Project. While Alternatives 1A and 2A demonstrate slightly reduced significant and unavoidable impacts to aesthetics and recreation relative to the Proposed Project, neither eliminate the significant and unavoidable impact of the

Proposed Project and both Alternatives 1A and 2A would increase impacts to resources including biological resources, cultural resources, hydrology and water quality, and tribal cultural resources relative to the Proposed Project (see Table 6-12).

Further, the Proposed Project was selected because of the following key benefits:

- The Proposed Project has the highest level of engineering and construction feasibility.
- The Proposed Project avoids existing residential land uses and crossing through areas planned for future residential development.
- The Proposed Project avoids Tribal reservation land and other sensitive land uses.
- The Proposed Project maximizes the use of existing ROWs and designated utility corridors.
- The Proposed Project would result in low impacts to operating commercial businesses and industrial operations in the area.
- The Proposed Project would result in the lowest impacts to agricultural landowners as determined through landowner meetings.

As discussed in the Routing Study (Appendix K), several criterion were considered when selecting the Proposed Project Route. The Routing Study analyzed the Proposed Project and all project alternatives using the following routing criteria:

- Total length (in miles)
- Jurisdiction and Land Ownership
- Biological Resources
- Surface Water Resources
- Land Use/ Conservation/ Special Management Areas
- Existing roads and Utilities
- Utility Corridors
- Visual Resources
- Cultural Resources
- Geologic, Hazards, Soils, and Topography
- Constructability
- Resource Sensitivity
- Total number of miles the alignment would parallel existing transmission lines
- Number of existing crossings across transmission lines, pipelines, water, roads, and railroads
- Number of miles in BLM utility corridors
- Number of miles in each land jurisdiction (federal/ state lands or private property)
- Number of private parcels crossed
- Number of buildings in right of way (ROW)
- Number of buildings within 250 feet of the centerline of alignment
- Social/Community Impacts
- Permitting Risks

When comparing Alternatives 1A and 2A which would result in reduced aesthetics and recreation impacts as discussed throughout the alternatives comparison included in Section 6.2 and Table 6-11, across the expanded set of criteria included in the Routing Study, the following conclusions can be made which illustrate the Proposed Project's superiority over Alternatives 1A and 2A.

First, Alternative 1A would be approximately eight miles longer than the Proposed Project route which has implications for costs to rate payers and environmental impacts. Generally, the shorter the alignment, the lower the costs are to rate payers and there are fewer environmental impacts due to less land disturbance (Appendix K). Additionally, Alternative 1A would also have fewer miles located within BLM corridors when compared to the Proposed Project which would require HWT to acquire more land in the ROW than the Proposed Project. Additionally, as shown in Table 6-12, Alternative 1A would result in increased impacts to biological resources, cultural resources, hydrology and water quality, and tribal cultural resources when compared to the Proposed Project. Alternative 1A would also require additional regulatory review for permitting from the Department of Defense and the Imperial Irrigation District. While Alternative 1A does rank higher than the Proposed Project in the context of the two significant and unavoidable environmental impacts discussed in the comparison of alternatives analysis, for these reasons it is considered inferior to the Proposed Project.

As discussed in the Routing Study (Appendix K), Alternative 2A would result in additional canal crossings when compared to the Proposed Project which has implications for engineering and future outages as well as visual impacts. Additionally, as shown in Table 6-12, Alternative 2A would result in increased impacts to agricultural and forestry resources, biological resources, cultural resources, geology and soils, hydrology and water quality, and tribal cultural resources when compared to the Proposed Project. While Alternative 2A does rank higher than the Proposed Project in the context of the two significant and unavoidable environmental impacts discussed in the comparison of alternatives analysis, for these reasons it is considered inferior to the Proposed Project.

For these reasons, the Proposed Project was chosen because it is considered the most feasible while also avoiding environmental impacts to the greatest extent possible. Furthermore, as discussed above, it is considered the environmentally superior alternative because it is the highest-ranking alternative that would involve construction of a project and would fulfill the project objectives.

7 Cumulative Impacts and Other CEQA Considerations

This Chapter presents the results of a cumulative impacts analysis for the Ironwood Transmission Line Project (Proposed Project) and an analysis of the potential growth-inducing impacts associated with the Proposed Project.

7.1 Cumulative Impacts

This section analyzes the potential cumulative impacts related to the Proposed Project. The California Environmental Quality Act (CEQA) requires lead agencies to consider the cumulative impacts of proposals under their review. CEQA Guidelines section 15355 defines cumulative impacts as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." According to CEQA Guidelines Section 15130(a)(1), "a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the [Environmental Impact Report] EIR together with other projects causing related impacts." The cumulative impacts analysis should "examine reasonable, feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects" (Section 15130(b)(5)).

CEQA Guidelines Section 15130(a)(3) also states that an environmental document may determine that a project's contribution to a significant cumulative impact would be rendered less than cumulatively considerable, and thus not significant, if a project is required to implement or fund its fair share of mitigation measure(s) designed to alleviate the cumulative impact.

In conducting a cumulative impacts analysis, the proper frame of reference is the temporal span and spatial area in which the project would cause impacts. In addition, a discussion of cumulative impacts must include either:

- A list of past, present, and probable future projects, including, if necessary, those outside the lead agency's control; or
- A summary of projections contained in an adopted general plan or related planning document, or in a previously certified EIR, which described or evaluated regional or area-wide conditions contributing to the cumulative impact, provided that such documents are referenced and made available for public inspection at a specified location (Section 15130(b)(1)).

The following subsections discuss whether the Proposed Project could result in significant short-term or long-term environmental impacts when combined with past, present, planned, and probable future projects in the area. Short-term impacts are generally associated with construction of the Proposed Project and cumulative projects, while long-term impacts are those that result from operation and maintenance (O&M) of the Proposed Project features or O&M of the cumulative projects.

7.1.1 List of Cumulative Projects

Review of the following sources revealed several past, present, or probable future development, infrastructure, energy, or utilities projects located within 2 miles of the Proposed Project:

- Governor's Office of Land Use and Climate Innovation's (LCI) State Clearinghouse (SCH) CEQAnet database
- Imperial County Planning and Development Services Department website
- Yuma County Development Services Department website
- City of Calexico Project Inventory Map and Service Area Plan Update
- Imperial Irrigation District (IID) website
- CAISO's 2022-2023 Transmission Line Plan
- U.S. Bureau of Land Management (BLM) National NEPA Register
- Arizona Corporation Commission (ACC) website
- U.S. Bureau of Reclamation (USBR) website

These projects are listed in Table 7-1 along with a brief description, location, status, and anticipated construction schedule. These projects are shown on Figure 7-1.

Table 7-1 Cumulative Projects within Two Miles of Proposed Project

Project	Description	Location	Distance (Miles)	Status	Anticipated Construction Schedule
Calexico Solar Project[1]	Solar Project	Lyon Road, Wahl Road, Preston Road, Wormwood Road, Mandrapa Road, S29	Overlaps with Proposed Project alignment	Approved, not built	Unknown
Calexico Megapark[2,3]	Highway Commercial, Light Industrial, and Business Park Mixed-Use Complex	Northwestern corner of Highway SR-111 and Jasper Road	Overlaps with Proposed Project alignment	Planning	Unknown
Venezia[2,3]	Residential and Commercial	East of SR 98	1.68 miles	N/A	Unknown
Town Center Industrial Park[2,3]	Industrial	Bounded by Kloke Road, Southern Pacific Railroad, and W Cole Boulevard	0.62 miles	N/A	Unknown
GSCA Imperial County Broadband Network[4]	Fiber Optic Lines	Imperial County	Countywide	Approved	N/A
Caltrans Pavement Preservation Project[5]	Pavement Preservation Project	Imperial County I-8	Overlaps with eastern portion of the Proposed Project alignment	Approved	N/A
Imperial Valley–North of SONGS 500 kV Line and Substation[6]	Transmission Line and new Substation	Imperial Valley Substation to North of SONGS Substation	Connects to Imperial Valley Substation	Planning	Operational in 2034
Dezert Oasis LLC - Legal Access Right-of-Way[7]	Access Road ROW	Northwest of intersection of S34 and Frontage Road	0.1 mile	In progress	Unknown
Perkins Renewable Energy Project - MET Station Installation and Geotech Exploration[7]	Install and Operate Meteorological Station and Conduct Geotechnical Investigations	Intersection of I-8 and SR 98	0.1 mile / Overlaps with Proposed Project Access Road and potentially the Alignment	In progress	Unknown
Monster Energy Film Permit[7]	Film	Imperial Sand Dunes	Unknown location in Imperial Sand Dunes Recreation Area (0–20+ miles)	Planned	Unknown
Navigation Training on BLM routes in NECO[7]	Off-Road Navigation and Safety Training for 4WD Vehicles	American Girl Mine Road southwest of Pasadena Peak	1.1 miles	In progress	Unknown

Project	Description	Location	Distance (Miles)	Status	Anticipated Construction Schedule
Colorado River Basin Project[8]	Development of water resources of the Colorado River Basin	Lower Colorado Basin Region	Unknown project/s location – approx. 25 miles of the Project Alignment goes through the general Lower Colorado River Basin region	Unknown	Unknown
Gila Project[8]	Provide Irrigation Service	The Wellton- Mohawk Division begins about 12 miles east of the city of Yuma and continues upstream on both sides of the Gila River for about 45 miles, The Yuma Mesa Division is subdivided into three units; the Mesa Unit; located south and southeast of Yuma, and the North and South Gila Valley Units, which lie northeast and east of Yuma	Extent unknown, but Project Alignment may overlap with the Gila Project components – namely, it crosses the Gila Gravity Main Canal in two places near the alignment's eastern terminus.	Unknown	Unknown

N/A = not available, SR = State Route, ROW = right of way

[1] Imperial County 2024

[2] City of Calexico 2018

[3] City of Calexico 2015

[4] LCI 2023

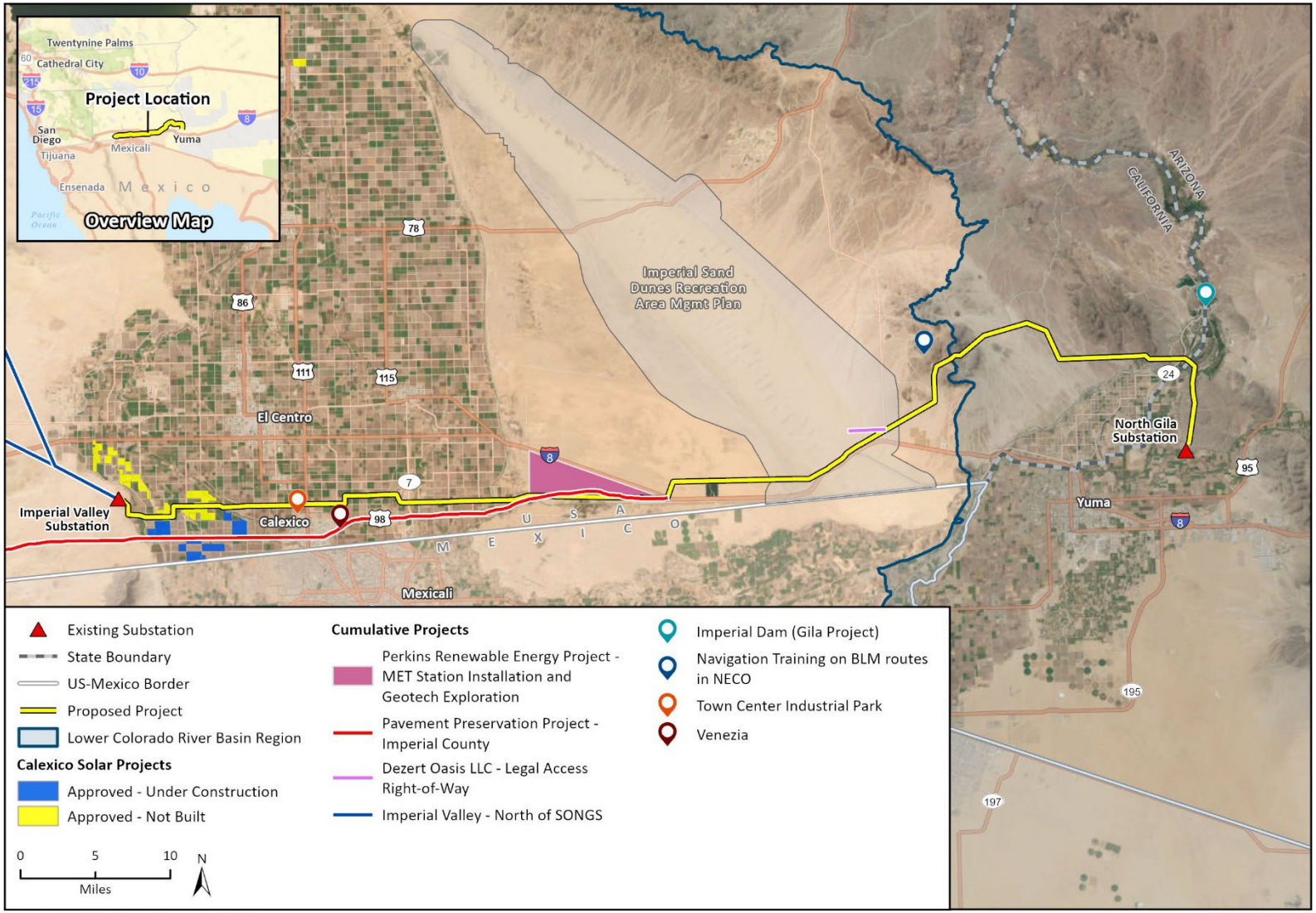
[5] LCI 2024

[6] CAISO 2023

[7] BLM National NEPA Register 2025

[8] US Bureau of Reclamation Projects 2025

Figure 7-1 Cumulative Projects



Imagery provided by Esri and its licensors © 2025.
Additional data provided by Imperial County 2022, USGS NHD 2024.

25-17237 PEA EPS Figures
PEA Fig 7-1 Cumulative Projects 8.5x11

7.1.2 Geographic Scope

The geographic scope of analysis for each resource topic is constrained to those areas where work under the Proposed Project would be performed or, for aesthetics, those areas where work under the Proposed Project would be visible.

7.1.3 Cumulative Impact Analysis

7.1.3.1 Aesthetics

The Proposed Project area and vicinity (2-mile radius) in which cumulative projects are located contains vast, largely uninterrupted desert and agricultural landscape views with the majority of development centered around the communities of El Centro, Calexico, and Heber. Several existing overhead transmission line utility corridors parallel Interstate 8 and State Highway 98 and extend across otherwise undeveloped landscapes, and converge at the Project terminus points in and around the Imperial Valley and North Gila Substations. Other development in the cumulative projects study area includes Imperial Dam and Laguna Dam, the All-American Canal, other irrigation and agricultural facilities, and communication towers.

The cumulative project area does not contain any designated scenic vistas or state scenic highways. Similar to the Proposed Project, while there are locations throughout the cumulative project vicinity where new development may impede a given view, the new development would be minor when taken as a whole within the vast landscape. Cumulative projects would not prevent public views of areas that are valued for their scenic quality. Therefore, cumulative projects are anticipated to have less than significant impacts to scenic vistas and no impacts associated with scenic resources within a state scenic highway.

Implementation of the Proposed Project would alter the visual character and quality in the Proposed Project vicinity as described in Section 5.1. Similarly, the cumulative projects listed in Table 7-1 would potentially alter the visual character and view quality in the 2-mile vicinity around the Proposed Project. Development of projects such as Imperial Valley-North of Songs 500 kV Transmission Line, Perkins Renewable Energy Project, Calexico Solar Projects, Town Center Industrial Park, Calexico Megapark, and other potentially visually prominent facilities would incrementally increase aesthetic impacts associated with development within the greater expansive, natural desert and agricultural landscape setting around Imperial Valley, the Imperial Valley Sand Dunes, and Yuha Desert landscape where similar projects currently affect aesthetic quality and visual character.

At KOP 1, Proposed Project impacts related to visual character and quality would be significant and unavoidable. The implementation of APMs AES-1, AES-3, and AES-4 and would reduce impacts, but they would remain significant and unavoidable. The nearest cumulative project would be the approved, but unbuilt Calexico Solar Projects located immediately north of the Proposed Project that would be seen in the immediate foreground. The future construction of these projects would cause the industrialization of the project's site and surroundings as a result of utility infrastructure introduced into the viewshed as viewed to the north within the agriculturally dominated landscape setting. Therefore, cumulatively considered, the Calexico Solar Project and the Proposed Project would cause significant, unavoidable impacts.

At KOP 2, Proposed Project impacts related to visual character and quality would be less than significant. The nearest cumulative project would be the approved, but unbuilt Calexico Solar Project, which would be seen in the foreground. The SWPL transmission line is located within the viewshed, and the future construction of these projects would incrementally add to the industrialization of the Project's site and surroundings where transmission lines currently influence the agricultural landscape setting. Therefore, cumulatively considered, the Calexico Solar Project and the Proposed Project impacts would be less than significant.

At KOP 3, Proposed Project impacts related to visual character and quality would be less than significant. The nearest cumulative project would be the Town Center Industrial Park, which would not be seen due to distance (background) and screening structures and vegetation. Other cumulative projects include the unbuilt Calexico Solar Project located to the southwest which would also not be seen due to distance (background), the project's low profile, and screening structures and vegetation. The presence of the SWPL transmission line located within the viewshed in the background currently influences the agricultural landscape setting. Therefore, cumulatively considered, the Calexico Solar Project and the Proposed Project impacts would be less than significant.

At KOP 4, Proposed Project would cause no impacts related to visual character and quality because the Proposed Project is completely screened by existing residential structures. The nearest cumulative project would be the Town Center Industrial Park, which would not be seen due to distance (background), the project's low profile, and screening structures and vegetation. Other cumulative projects include the unbuilt Calexico Solar Project, which would also not be seen due to distance (background) and screening structures and vegetation. The presence of the SWPL transmission line and distribution located within the viewshed in the background currently influences the agricultural landscape setting, and the Town Center Industrial Park would be seen in the context of the Calexico urban development. Therefore, cumulatively considered, the Town Center Industrial Park, Calexico Solar Project, and the Proposed Project impacts would be less than significant.

At KOP 5, Proposed Project impacts related to visual character and quality would be less than significant. The nearest cumulative project would be the Town Center Industrial Park, which would be potentially seen in the background. The presence of the SWPL transmission line and distribution located within the viewshed in the background currently influences the agricultural landscape setting, and the Town Center Industrial Park would be seen in the context of the Calexico urban development. Therefore, cumulatively considered, the Town Center Industrial Park and the Proposed Project impacts would be less than significant.

At KOP 6, Proposed Project impacts related to visual character and quality would be less than significant with mitigation. The implementation of APMs AES-1, AES-3, AES-4, and AES-5 reduce impacts to a less than significant level. The nearest cumulative projects would be the Venezia residential and commercial project and the Caltrans Pavement Preservation Project along SR 98, both of which would be potentially seen in the middleground within the context of the existing Calexico and SR 98 urbanized corridor. The presence of the SWPL transmission line located within the viewshed in the foreground currently influences the agricultural landscape setting, and the Venezia and Caltrans Pavement Preservation Project would incrementally increase urban development within the developed setting. Cumulatively considered, the Venezia Project, Caltrans Pavement Preservation Project and the Proposed Project impacts would be less than significant.

At KOP 7, Proposed Project impacts related to visual character and quality would be less than significant with mitigation. The implementation of APMs AES-1, AES-3, AES-4, and AES-5 would reduce impacts to a less than significant level. The nearest cumulative project would be the Caltrans Pavement Preservation Project, which would not be seen from this KOP. Therefore, cumulative impacts would be less than significant.

At KOP 8, Proposed Project impacts related to visual character and quality would be less than significant with mitigation. The implementation of APMs AES-1, AES-3, AES-4, and AES-5 would reduce impacts on VRM Class III landscapes and visual quality to a less than significant level. The Proposed Project is within approximately 200 feet to the north paralleling SH 98 and would be seen in the immediate foreground within the context of the existing multiple transmission lines that contribute to the visual character of the site and surroundings. The nearest cumulative projects would be the Perkins Renewable Energy Project located between I-8 and SH 98 and the Caltrans Pavement Preservation Project along SR 98, both of which would be potentially seen in the immediate foreground within the context of the existing Calexico and SR 98 transportation corridor. The presence of the existing transmission line corridor, the future presence of the Perkins Renewable Energy Project, the Caltrans Pavement Preservation Project, and the Proposed Project would incrementally increase the industrialized setting of the KOP viewshed. Cumulatively considered, impacts would be less than significant.

At KOP 9, Proposed Project impacts related to visual character and quality would be less than significant due to the Proposed Project being subdominant to the existing transmission line corridor. The nearest cumulative project would be the Dezert Oasis LLC – Legal Access ROW located over three miles to the northeast but would not be seen from this KOP due to topographical screening. Therefore, cumulatively considered, the Dezert Oasis LLC – Legal Access ROW and the Proposed Project impacts would be less than significant.

At KOP 10, Proposed Project impacts related to visual character and quality would be less than significant with mitigation because the existing SWPL transmission line is seen in the foreground and contributes to the visual character of the site and surroundings. The implementation of APMs AES-1, AES-3, and AES-4 would reduce impacts resulting in a less than significant level. The nearest cumulative project would be the Dezert Oasis LLC – Legal Access ROW located approximately three miles to the northeast, but would not be seen from this KOP due to topographical screening. Therefore, cumulatively considered, the Dezert Oasis LLC – Legal Access ROW and the Proposed Project impacts would be less than significant.

At KOP 11, Proposed Project impacts related to visual character and quality would be less than significant. The nearest cumulative project would be the Dezert Oasis LLC – Legal Access ROW located approximately three miles to the northeast, but visual contrasts as seen from KOP 11 would be weak and not noticeable to I-8 travelers would not be seen from this KOP due to vegetation screening and the low profile of the Dezert Oasis LLC – Legal Access ROW project. Therefore, cumulatively considered, the Dezert Oasis LLC – Legal Access ROW and the Proposed Project impacts would be less than significant.

At KOP 12, Proposed Project impacts related to visual character and quality would be less than significant because the existing SWPL transmission line is seen in the foreground and middleground and contributes to the visual character of the site and surroundings. The nearest cumulative project would be the Navigation Training on BLM routes in NECO. These off-road activities are located over six miles from the KOP in an area that is screened from view of KOP 12 by the Cargo Muchacho Mountains. Therefore, cumulatively considered, the Navigation Training on BLM routes in NECO and the Proposed Project impacts would be less than significant.

At KOP 13, Proposed Project impacts related to visual character and quality would be significant and unavoidable due to strong contrasts as seen from the viewpoint where the Project would not be compliant with VRM Class II designation. The nearest cumulative project would be the Imperial Dam Gila Project located approximately 5.3 miles to the northeast that would be completely screened from view from the KOP. The implementation of APMs AES-1, AES-3, AES-4, and AES-5 would reduce the impact of the Project, but VRM Class II objectives would not be met, and significant and unavoidable impacts would occur. Although the Proposed Project would have significant and unavoidable impacts, the Imperial Dam Gila Project would have no effect on visual character and quality at KOP 13. Therefore, cumulatively considered, the Imperial Dam Gila Project and the Proposed Project impacts would be less than significant.

At KOP 14, Proposed Project impacts related to visual character and quality would be less than significant with mitigation because the existing SWPL transmission line would be seen in the middleground. The Project would cross VRM Class II and Class III areas within the viewshed and be seen in the context of the existing SWPL transmission line. The implementation of APMs AES-1, AES-3, AES-4, and AES-5 would reduce impacts resulting in a less than significant level. The nearest cumulative project would be the Imperial Dam Gila Project located approximately six miles to the northeast and completely screened from view by topography. Therefore, cumulatively considered, the Imperial Dam Gila Project and the Proposed Project impacts would be less than significant.

At KOP 15, Proposed Project impacts related to visual character and quality would be significant and unavoidable. The nearest cumulative project would be the Imperial Dam Gila Project located approximately 4.6 miles to the north and completely screened from view by topography. Although the Proposed Project would have significant and unavoidable impacts, the Imperial Dam Gila Project would have no effect on KOP visual character and quality. Therefore, cumulatively considered, the Imperial Dam Gila Project and the Proposed Project impacts would be less than significant.

At KOP 16, Proposed Project impacts related to visual character and quality would be significant and unavoidable. The nearest cumulative project would be the Imperial Dam Gila Project located approximately 4.4 miles to the north and completely screened from view by topography. Although the Proposed Project would have significant and unavoidable impacts, the Imperial Dam Gila Project would have no effect on KOP visual character and quality. Therefore, cumulatively considered, the Imperial Dam Gila Project and the Proposed Project impacts would be less than significant.

At KOP 17, Proposed Project would cause no impacts related to visual character and quality. The nearest cumulative project would be the Imperial Dam Gila Project located approximately 0.6 miles to the north at its closest point and completely screened from view by vegetation and topography, also causing no impact. Therefore, cumulatively considered, the Imperial Dam Gila Project and the Proposed Project would have no impact.

At KOP 18, Proposed Project impacts related to visual character and quality would be less than significant with the implementation of APMs AES-1, AES-3, AES-4, and AES-5. The nearest cumulative project would be the Imperial Dam Gila Project located approximately 5.7 miles to the north and completely screened from view by topography. Although the Imperial Dam Gila Project would cause no effects on KOP visual character and quality of the site, impacts from the Proposed Project would occur but would be less than significant with mitigation. Therefore, cumulatively considered, the Imperial Dam Gila Project and the Proposed Project impacts would be less than significant.

At KOP 19, Proposed Project impacts related to visual character and quality would be less than significant. The nearest cumulative project would be the Imperial Dam Gila Project located approximately 9.7 miles to the north and completely screened from view by topography. Therefore, cumulatively considered, the Imperial Dam Gila Project and the Proposed Project impacts would be less than significant.

7.1.3.2 Agriculture and Forestry Resources

As discussed in Section 5.2, Agriculture and Forestry Resources, the Proposed Project would permanently disturb approximately 65.9 acres of Important Farmland in California and 1.5 acres of Important Farmland in Arizona associated with improvements to existing access roads, construction of new access roads, and the construction of 101 transmission line structures placed within Important Farmland. However, the majority of disturbance of Important Farmland would be for improvements to existing roads. Therefore, this disturbance would occur within previously disturbed areas that are not actively being used for agricultural purposes. Based on the nominal amount of Important Farmland in California that would be converted to nonagricultural use from transmission line structures (0.3 acre) and new access roads (0.3 acre), the project would not result in the conversion of Important Farmland to non-agricultural use. The Calexico Solar Project, which overlaps the Proposed Project (Table 7-1 and Figure 7-1), will also convert Important Farmland to nonagricultural use. However, based on the nominal amount of Important Farmland that would be converted to nonagricultural use by the Proposed Project (0.6 acres total), the Proposed Project's contribution to any cumulatively considerable agriculture-related impact would be nominal and less than significant. The Proposed Project area and vicinity (2-mile radius) in which cumulative projects are located do not contain any forestry resources or uses and cumulative projects are anticipated to have no forestry-related impacts. Therefore, the Proposed Project would not contribute to a cumulatively considerable impact to forestry resources.

7.1.3.3 Air Quality

As presented in Section 5.3, Air Quality, the Proposed Project would not conflict with ICAPCD's 2018 Imperial County PM_{10} State Implementation Plan, 2018 State Implementation Plan for the 12 $\mu g/m^3$ $PM_{2.5}$ Annual Standard, and 2017 State Implementation Plan for the 75 ppb 8-hour Ozone Standard; or the ADEQ's Yuma County PM_{10} Nonattainment State Implementation Plan or Marginal Ozone Plan for the Yuma Nonattainment Area. Therefore, the Proposed Project would not contribute to any cumulatively considerable impact.

Emissions during construction assuming all phases would overlap would exceed ICAPCD thresholds for NO_x and PM_{10}. However, this would not be representative of the Proposed Project as construction activities would be distributed along the 86-mile transmission line and would not occur at the same time. Section 5.3, Air Quality, analyzed air quality emissions on a localized basis, and found that the Proposed Project's maximum daily construction emissions per crew under the localized scenario would not exceed applicable air quality thresholds established by the ICAPCD for any criteria air pollutant. Additionally, all cumulative projects would be required to comply with ICAPCD's standard mitigation measures for construction equipment and fugitive PM_{10} and ADEQ's best practices to control fugitive dust during construction and agricultural activities. As a result, a cumulatively considerable net increase of a criteria pollutant is not anticipated.

The Proposed Project's less-than-significant impacts related to objectionable odors and exposure of sensitive receptors to substantial pollutant concentrations would not contribute to a cumulative impact because the odors and pollutant concentrations disperse rapidly with distance, and because

few (if any) of the identified cumulative projects would overlap the Proposed Project's construction workspaces in proximity to a potential receptor. As a result, the Proposed Project would not contribute to any cumulatively considerable impact.

7.1.3.4 Biological Resources

The geographical area evaluated for cumulative impacts to biological resources includes areas directly affected by construction as well as adjacent habitat potentially affected by construction activities. The geographical extent of the cumulative impact analysis also includes federal and state-regulated jurisdictional wetlands and other waters of the U.S.

Construction could affect plant, amphibian, reptilian, avian, and mammalian species identified as candidate, sensitive, or special-status species; cumulative projects listed in Table 7.1-1 would have the potential for similar effects where those projects' activities occur in the presence or habitat of these species. As discussed in Section 5.4, Biological Resources, all impacts associated with the Proposed Project would be reduced to a less than significant level with the implementation of APMs BIO-1 through BIO-12. Impacts on sensitive species and habitats during construction would be temporary and intermittent in nature (lasting only as long as construction work at a given site) and would be limited in their potential geographic scope. Construction work areas included under the Proposed Project may spatially overlap areas where work would occur under four of the cumulative projects: Calexico Solar Projects, Perkins Renewable Energy Project, Pavement Preservation Project, and Dezert Oasis LLC. Each of the cumulative project proponents would be expected to comply with federal and state regulations promulgated for the protection of sensitive species. Therefore, no cumulatively considerable impacts to sensitive species or their habitats would be anticipated.

As stated in Section 5.4, 11 sensitive natural communities were observed within the study area for the Proposed Project. Temporary impacts to sensitive vegetation communities as a result of construction activities are anticipated to total approximately 142.3 acres, while permanent impacts to sensitive vegetation communities are anticipated to total approximately 108.2 acres. These areas of sensitive natural communities that would be impacted would not result in a significant contribution to any cumulative impact to these communities with the implementation of APMs BIO-1, BIO-2, BIO-6, BIO-7, BIO-8, BIO-9, and BIO-10, and would not reduce the overall availability of these habitats.

The Proposed Project would result in both temporary and permanent impacts to federal and state jurisdictional waters. Prior to construction, HWT would obtain all necessary permits and authorizations, including those from the U.S. Army Corps of Engineers, California Regional Water Quality Control Board (RWQCB) and California Department of Fish and Wildlife (CDFW), and would comply with all conditions of approval identified in permits and authorizations. These actions would ensure that state jurisdictional waters impacts are less than significant. Further, HWT would develop and implement one or more Project-specific Stormwater Pollution Prevention Plan(s) (SWPPPs) that would include best management practices (BMPs) to prevent erosion and sedimentation into state jurisdictional waters and would protect water quality during construction. Compliance with such typical conditions is reflected in the measures contained in APM BIO-10. Cumulative projects would similarly be required to obtain all applicable permits for impacts to jurisdictional waters and wetlands, including restoration and mitigation conditions to reduce adverse impacts to these features. Due to compliance with applicable regulations protecting state and federally protected wetlands and waters, and HWT's implementation of APMs, no cumulatively considerable impact to state jurisdictional wetlands and waters is anticipated.

No component of the Proposed Project would result in permanent interference to the movement of any species. Construction activities would be temporary, transient, and would affect only small, geographically dispersed areas at any one time; these construction activities would not interfere substantially with the movement of any migratory wildlife species, although construction activities may interfere with the movement of individual animals. The cumulative projects also would have localized footprints and would not be expected to affect species movement within the region. For example, no new highways, levees, or other major infrastructure that would substantially inhibit passage by fish or wildlife species is planned. Therefore, no cumulatively considerable impact to fish or wildlife movement or wildlife corridors is anticipated.

Construction and operational activities would result in less than significant impacts related to collision or electrocution risk for birds and bats with adherence to existing regulations for avian protection on power lines. Cumulative projects would similarly have to comply with these regulations, and no cumulative considerable impact to birds or bats is anticipated.

Construction and operation of the Proposed Project would not conflict with any local policies or ordinances protecting biological resources, including trees, with the implementation of general biological resources and APMs BIO-1 through BIO-10. Cumulative projects would similarly be expected to comply with local policies, ordinances, and the conditions of applicable permits. Therefore, no cumulatively considerable impacts due to conflicts with local policies or ordinances protecting biological resources are anticipated.

There are no Habitat Conservation Plans, Natural Community Conservation Plans, or other approved local, regional, or state habitat conservation plans that apply to the Proposed Project. Therefore, the Proposed Project would not contribute to any cumulative impact involving conflicts with adopted natural resource plans.

7.1.3.5 Cultural Resources

Impacts to cultural resources are generally site- and resource-specific, and therefore potential cumulative impacts may be realized if two or more projects occur in the same location. The geographic scope of potential cumulative cultural resource impacts is limited to the immediate vicinity of ground-disturbing activities that would occur during construction. As discussed in Section 5.5, Cultural Resources, construction work areas included under the Proposed Project may spatially overlap areas where work would occur under four of the cumulative projects: Calexico Solar Projects, Perkins Renewable Energy Project, Pavement Preservation Project, and Dezert Oasis LLC. The cumulative project proponents would be expected to comply with state law relating to cultural resources. The results of the Class I Inventory, Class III Inventory Fieldwork, and Work Plan and Research Design are pending and currently under review by the BLM. Therefore, it cannot be determined at this time if significant historical or archaeological resources are present and would be affected by Proposed Project construction. As a result, no determination with respect to cumulative impacts has been made. Once the Class I Inventory, Class III Inventory Fieldwork, and Work Plan and Research Design have been reviewed and approved by BLM they will be provided to the CPUC.

7.1.3.6 Energy

As presented in Section 5.6, Energy, the Proposed Project would result in no or less than significant impacts under all energy-related CEQA criteria. Construction of the cumulative projects would, like the Proposed Project, consume energy resources during construction; the proponents of the cumulative projects are anticipated, like HWT, not to waste, unnecessarily use, or inefficiently consume energy resources. Further, the Proposed Project would result in no impact with respect to

conflicts with or obstruction of a state or local plan for renewable energy or energy efficiency. Therefore, the Proposed Project would not contribute to any cumulatively considerable impact.

7.1.3.7 Geology, Soils, and Paleontological Resources

Geological hazards are generally site-specific and depend on localized geologic and soil conditions. As discussed in Section 5.7, Geology, Soils, and Paleontological Resources, the Proposed Project would result in less than significant and less than significant with mitigation impacts related to fault rupture, seismic ground shaking, seismic ground failure, erosion and loss of topsoil, geologic instability, expansive soils, and soils capable of supporting septic systems. HWT would comply with applicable laws, regulations, ordinances, and permits pertaining to structural design, geotechnical analysis, and erosion control and would implement BMPs, SWPPPs, and APM GEO-1 where applicable. It is expected that those engaged in the construction of all cumulative projects would similarly comply with applicable regulations relevant to geologic and soil resources and risks. Therefore, the Proposed Project would not contribute to any cumulatively considerable impact.

As presented in Section 5.7, construction activities could impact paleontological resources. Consequently, the Proposed Project would be required to implement APMs PAL-1 through PAL-4, which would require the preparation of a Paleontological Resources Monitoring and Mitigation Plan; paleontological monitoring in PFYC 3, 4, 5, or U geologic units; recovery of scientifically significant fossil discoveries and associated data; and compilation of a paleontological resources construction monitoring report. Each of the Cumulative Projects would be required to undergo the appropriate level of project-specific environmental review, and proponents would be expected to comply with state and federal laws relating to paleontological resources. With implementation of APMs, the Proposed Project would not contribute to any cumulatively considerable impact related to paleontological resources.

7.1.3.8 Greenhouse Gas Emissions

As presented in Section 5.8, Greenhouse Gas Emissions, construction of the Proposed Project would result in emissions of GHGs from on-site construction equipment and worker trips. Over the entire construction period of the Proposed Project, approximately 19,018 metric tons of carbon dioxide (CO_2) equivalents ($MTCO_2e$) would be emitted. When construction emissions are amortized over a 30-year period, GHG emissions would be approximately 634 $MTCO_2e$ annually. These emissions would fall well below the identified threshold of significance. Annual O&M activities such as increased maintenance and inspection trips would result in minimal GHG emissions. Therefore, the Proposed Project would not generate, either directly or indirectly, GHG emissions that would have a significant impact on the environment. As a result, the Proposed Project's contribution to any cumulative impacts would not be cumulatively considerable.

GHG emissions from construction of the Proposed Project would fall well below the established numerical threshold of significance. Therefore, the Proposed Project would not conflict with any applicable plan, policy, or regulation and would not contribute to a cumulative impact resulting from any cumulative project's conflicts with such plans, policies, or regulations.

7.1.3.9 Hazards, Hazardous Materials, and Public Safety

The geographic scope for hazardous materials impacts includes areas near the Proposed Project that could be affected by a release of hazardous materials, including schools within 0.25 miles. Impacts from such releases are usually site-specific and localized. The geographic scope also includes areas affected by the cumulative projects listed in Table 7-1, including downgradient air, water bodies,

groundwater, and areas subject to wildland fire hazards. Materials delivery routes are also included to account for the potential impacts from a traffic accident-related spill.

As discussed in Section 5.9, Hazards, Hazardous Materials, and Public Safety, construction of the Proposed Project would result in less than significant impacts associated with the transport, use, disposal, or foreseeable upset of, or accidents involving, hazardous materials during construction with implementation of APM HAZ-1. Although construction work areas included under the Proposed Project may spatially overlap areas where work would occur under some of the cumulative projects (including potentially Calexico Solar Projects, Perkins Renewable Energy Project, Pavement Preservation Project, and Dezert Oasis LLC), cumulative projects would be expected to adhere to all applicable laws and regulations to reduce the potential impacts from use of hazardous materials from those projects to less than significant level. Therefore, there would be no cumulatively considerable impacts related to the transport, use, disposal or upset involving hazardous materials.

The Proposed Project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment with implementation of APMs. Although construction work areas included under the Proposed Project may spatially overlap areas where work would occur under some of the cumulative projects (including potentially Calexico Solar Projects, Perkins Renewable Energy Project, Pavement Preservation Project, and Dezert Oasis LLC), it is anticipated that cumulative projects would comply with applicable laws and regulations to reduce impacts from accidental release of hazardous materials. Therefore, the Proposed Project would not contribute to a cumulative impact from the release of hazardous materials.

There are no schools located within 0.25 mile of the Proposed Project. Therefore, no cumulative impact to schools within 0.25 mile of the Proposed Project would occur.

The Proposed Project would not be constructed on a site listed as a hazardous materials site pursuant to California Government Code section 65962.5 and would, thus, not contribute to any cumulative or significant hazard to the public or the environment from construction on such a site.

One public airport, Calexico International Airport (801 W 2nd Street, Calexico), is located approximately 2 miles south of the Proposed Project alignment, but no portion of the Proposed Project is located within the planning boundary of this airport. Cumulative projects within 2 miles of this airport would be required to comply with state and local regulations to ensure no safety hazards to people residing or working in the cumulative project area. Therefore, no cumulative impact related to safety hazards at airports would occur.

The Proposed Project would result in less than significant impacts related to impairing the implementation of or physically interfering with an adopted emergency response plan or emergency evacuation plan with implementation of APM TRA-1 and existing regulations. It is anticipated cumulative projects would also implement requirements to ensure emergency access and response is not hindered. Therefore, there would be no cumulative impact to the implementation or physical interference with such plans.

The Proposed Project is not located within a wildfire hazard zone in California and crosses 0.1 miles of High Fire Threat Index area, 1.2 miles of Very High Fire Threat Index area, and 1.1 miles of Extreme Fire Threat Index area within Arizona. Cumulative projects have the potential to cross over or be located in a wildfire hazard zone. However, the Proposed Project and cumulative projects would be required to comply with applicable federal, state, and local regulations related to wildfire as well as APMs HAZ-2 and WF-1, which would reduce impacts with respect to risk of loss, injury, or

death involving wildland fires. Therefore, the Proposed Project would not contribute to a cumulative impact.

With implementation of APM HAZ-3, the Proposed Project would not create a significant hazard to air traffic from the installation of new power lines and structures. The Imperial Valley – North of SONGS cumulative project involves rebuilding power lines and structures. It is assumed that this project would adhere to safety regulations and implement BMPs to reduce such hazards. Therefore, the two projects combined would not result in cumulatively considerable impact related air traffic hazards and the Proposed Project would not contribute to a cumulatively considerable impact related to this criterion.

The Proposed Project would not create a significant hazard to the public or environment through the transport of heavy materials using helicopters. It is anticipated that cumulative projects that may involve the use of helicopters, such as the Imperial Valley – North of SONGS cumulative project, would follow the same regulations regarding helicopter transport. Therefore, no cumulatively considerable impact would occur.

The Proposed Project would not expose people to a significant risk of injury or death involving unexploded ordnance (UXO). There are no UXO sites located within 1 mile of the Proposed Project alignment. Therefore, no cumulative impact would occur.

The Proposed Project would result in less than significant impacts regarding exposure of workers or the public to excessive shock hazards with implementation of state regulations, and thus would not contribute to a cumulative impact related to this criterion.

7.1.3.10 Hydrology and Water Quality

The geographic context for the cumulative impacts associated with hydrology and water quality consists of the watersheds and groundwater basins presented in Section 5.10, Hydrology and Water Quality. All cumulative projects are located within the same watersheds and groundwater basins as the Proposed Project.

No water quality standards or waste discharge requirements would be violated during construction of the Proposed Project with implementation of APMs HAZ-1, WTR-1, and WEA-1, as well as BMPs and adherence to federal and state permits and agreements in coordination with resource agencies; Proposed Project construction would result in a less than significant impact with mitigation incorporated. Operation of the Proposed Project would result in a less than significant impact to water quality, as the Proposed Project would comply with BMPs to minimize or avoid the potential for water quality degradation during O&M. Cumulative projects would be subject to similar regulatory requirements, including preparation of Project-specific SWPPPs during construction and operational stormwater runoff and treatment BMPs in accordance with RWQCB permit requirements. Therefore, cumulative impacts related to water quality or waste discharge would not be anticipated to be cumulatively considerable.

The Proposed Project would not substantially decrease groundwater supplies nor impede long-term sustainable management of the groundwater basins within the Proposed Project area. Construction of the Proposed Project would require water use for dust control and equipment maintenance, which would be obtained from existing local purveyors or irrigation water users with surplus supply available and would be sourced from the Colorado River through Imperial Irrigation District (IID) in California. As detailed in Section 5.19, Utilities and Service Systems, IID does not produce any local groundwater as part of its water supply portfolio. Therefore, the Proposed Project construction and

operational activities would result in a less than significant impact related to groundwater, and would not have a cumulatively considerable impact on groundwater supply or recharge.

Construction and operation of the Proposed Project would not directly alter the course of a stream or river. Implementation of BMPs and preparation of site-specific stormwater pollution prevention plans (SWPPPs) would reduce the risk of stormwater runoff or an unintended release of sediments or other materials into jurisdictional waters during construction activities and ensure that the Proposed Project would have a less than significant impact. Other cumulative projects would implement stormwater capture and treatment BMPs as necessary in accordance with applicable permit requirements. Therefore, the Proposed Project and cumulative projects would not result in a cumulatively considerable impact on the existing drainage pattern in the Proposed Project area.

The Proposed Project alignment is not located within a tsunami or seiche zone. Portions of the Proposed Project alignment crosses 100-year floodplains, particularly surrounding tributaries and streams of the Salton Sea in Imperial Valley, and some proposed structure sites and related construction areas may be within areas subject to inundation. Nonetheless, as described in Section 5.10, Hydrology and Water Quality, the Proposed Project would implement APMs HAZ-1 and WTR-1 and BMPs provided in SWPPPs to reduce potential impacts related to the potential release of pollutants during inundation. Cumulative projects would be subject to similar regulations to limit the risk of pollutant release in the event of inundation during construction and operation. Furthermore, the Proposed Project would implement APMs HAZ-1 and WTR-1, further reducing the risk of pollutant release in the event of flood inundation. Therefore, a cumulatively considerable impact associated with flood inundation is not anticipated.

As described in Section 5.10, the Proposed Project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. The Proposed Project would not involve construction of any new groundwater extraction wells and would not adversely impact groundwater resources. As such, cumulative impacts related to conflicts with or obstruction of water quality control plans or sustainable groundwater management plans would not occur.

7.1.3.11 Land Use and Planning

As discussed in Section 5.11, Land Use and Planning, the Proposed Project would result in less than significant impacts under all land use and planning-related CEQA criteria since construction activities and operation would not divide an established community with implementation of APM TRA-1 and the Proposed Project would be consistent with applicable land use policies and plans throughout the Proposed Project alignment and newly established rights-of way (ROWs). Therefore, the Proposed Project would not contribute to a cumulatively considerable impact to land use and planning.

7.1.3.12 Mineral Resources

As discussed in Section 5.12, Mineral Resources, the Proposed Project would result in no impacts under all mineral resources-related CEQA criteria during construction activities or operation since the Proposed Project alignment would not be located within or in proximity to a mineral resource zone or resource recovery site. Therefore, the Proposed Project would not contribute to a cumulatively considerable impact to mineral resources.

7.1.3.13 Noise

As presented in Section 5.13, Noise, the Proposed Project would have a less than significant impact related to the generation of a substantial temporary increase in ambient noise levels with implementation of APMs NOI-1 and NOI-2. In addition, the Proposed Project would result in less than significant impacts regarding the generation of excessive groundborne vibration or groundborne noise levels. None of the cumulative projects with known construction schedules would overlap with construction of the Proposed Project; therefore, the Proposed Project would not contribute to a cumulative impact related to excessive groundborne vibration or substantial temporary increase in ambient noise levels.

The Proposed Project is not located within the vicinity of a private airstrip or an airport land use plan and is located outside of noise contours for the Calexico International Airport and Compatibility Zones for the Imperial County Airport. Therefore, the Proposed Project would have no impact related to this impact criterion and would not contribute to a cumulative impact.

7.1.3.14 Population and Housing

As discussed in Section 5.14, Population and Housing, the Proposed Project would result in no impacts under all population and housing-related CEQA criteria during construction activities or operation since the Proposed Project would not induce substantial population growth or displace residents or housing. Construction activities would be temporary and the workforce would be relatively small; therefore, no permanent or long-term population growth in the cities of Calexico and El Centro in California and the City of Yuma in Arizona would occur due to Proposed Project construction. The Proposed Project is intended to mitigate resource deliverability constraints as identified in the CAISO's 2022-2023 Transmission Plan, which is consistent with the first objective outlined in Chapter 2, Introduction. Therefore, the Proposed Project would not induce population growth in the area either directly or indirectly. The Proposed Project facilities and temporary construction areas would be sited to avoid existing housing, and no residential uses are included as part of the Proposed Project. Therefore, the Proposed Project would not contribute to a cumulatively considerable impact to population and housing.

7.1.3.15 Public Services

As discussed in Section 5.15, Public Services, the Proposed Project would result in no impacts to all public services-related CEQA criteria during construction activities or operation. The Proposed Project is intended to mitigate resource deliverability constraints as identified in the CAISO's 2022-2023 Transmission Plan, which is consistent with the first objective outlined in Chapter 2, Introduction. The Proposed Project would not require the expansion of public facilities such as parks, hospitals, or libraries. Fire, emergency, and police services currently serve and would continue to serve the areas in and around the Proposed Project alignment. Therefore, the Proposed Project would not contribute to a cumulatively considerable impact to public services.

7.1.3.16 Recreation

As discussed in Section 5.16, Recreation, the Proposed Project would have no impact on neighborhood and regional parks or recreational facilities and no new recreational facilities would need to be built or expanded as a result of Proposed Project construction activities or operations. The Proposed Project is intended to mitigate resource deliverability constraints as identified in the CAISO's 2022-2023 Transmission Plan, which is consistent with the first objective outlined in

Chapter 2, Introduction. Therefore, the Proposed Project would not contribute to a cumulatively considerable impact to the use of neighborhood and regional parks or recreational facilities.

The Proposed Project would require temporary access restriction and/or road closures during construction activities, which would affect access to parks and recreation areas; however, none of the cumulative projects with known construction schedules would overlap with construction of the Proposed Project; therefore, the Proposed Project would not contribute to a cumulative impact related to access restrictions to these recreation areas with implementation of APM REC-1. O&M activities for the Proposed Project may require temporary access restrictions and/or road closures; however, such restrictions and/or closures would be temporary and unlikely to overlap with closures related to operation of other cumulative projects given the spatial distribution of the projects. Therefore, the Proposed Project would not contribute to a cumulatively considerable impact to the use of neighborhood and regional parks or recreational facilities.

The Proposed Project would be constructed through the Imperial Sand Dunes Recreation Management Area. As shown in Figure 7-1, one cumulative project would be located in the vicinity of sand dunes; however, this road project is under construction and should be completed by the start of this Proposed Project. In addition, impacted trails and facilities would be restored to pre-construction conditions to ensure Proposed Project impacts are less than significant.

Moreover, the Proposed Project would be required to comply with APMs BIO-1 through BIO-12, CUL-1, CUL-2, and PAL-1 through PAL-4, which would ensure construction and operational activities would not substantially change the character of recreational lands such as the Heber Dunes SVRA, Imperial Sand Dunes SMRA, and other public lands managed by the BLM by reducing biological, cultural, geologic, or other important characteristics that contribute to the value of recreational facilities or areas. However, even with implementation of APMs AES-1, AES-3, AES-4, AES-5, impacts related to increases in visual contrast could affect views from recreational sites in and around the Imperial Sand Dunes, from the Tamarisk Long Term Visitor Area, and from designated recreational travel corridors in California. Therefore, visual and scenic impacts of the Proposed Project on recreational facilities would be significant and unavoidable.

Therefore, the Proposed Project would not contribute to a cumulatively considerable impact to recreational areas, trails, or facilities.

7.1.3.17 Transportation

The geographic scope for cumulative transportation impacts includes the regional and local roadways that may be used to access the Proposed Project or that could otherwise be impacted by construction of the Proposed Project. The geographic scope also includes the bus routes and pedestrian and bike paths in the area.

As discussed in Section 5.17, Transportation, construction activities associated with the Proposed Project may disrupt traffic along a small number of roadways that have existing and proposed pedestrian and bicycle routes on them within the Proposed Project area. However, construction would be temporary, and would not conflict with an applicable plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. Similarly, cumulative projects are not expected to produce substantial traffic that overlaps the construction phase of the Proposed Project and traffic or road closures associated with construction would also be temporary. Therefore, the Proposed Project would not contribute to a cumulatively considerable impact in this regard.

The Proposed Project would not conflict or be inconsistent with CEQA Guidelines section 15065.3, subdivision (b). Construction activities would be temporary and would not contribute to a permanent per capita VMT. O&M activities for the Proposed Project would be minimal and infrequent and are estimated to be up to 24 trips annually. Therefore, the Proposed Project would not contribute to any cumulatively considerable vehicle miles traveled (VMT)-related impact.

Temporary road closures and encroachment into public roadways during construction could increase traffic hazards. However, with this impact would be less than significant and would not be cumulatively considerable with implementation of APM TRA-1.

Proposed Project construction activities would occur in remote and largely uninhabited areas; implementation of traffic control measures, coordination with the appropriate agencies and landowners, and implementation of APM TRA-1 would reduce impacts to a less than significant level. Impacts related to inadequate emergency access or hazardous conditions for people walking, bicycling, or driving or for public transit operations would not be cumulatively considerable.

7.1.3.18 Tribal Cultural Resources

The California Public Utilities Commission (CPUC) would consult with eligible tribes under Public Resources Code section 21080.3.1 once HWT's Permit to Construct (PTC) Application is complete. Impacts on tribal cultural resources (TCRs) are not addressed in this Proponent's Environmental Assessment (PEA) because under Assembly Bill 52, the CPUC must identify these resources during consultation. Therefore, no determination regarding cumulative impacts to tribal cultural resources can be made at this time.

7.1.3.19 Utilities and Service Systems

The geographic scope for cumulative analysis of utility and service system impacts is the service areas of utilities serving the Proposed Project vicinity.

As presented in Section 5.19, Utilities and Service Systems, the Proposed Project would include the implementation of site-specific stormwater drainage facilities including BMPs from the Proposed Project's SWPPP but would not result in the expansion or relocation of water, wastewater, stormwater, electrical, or telecommunications infrastructure. The cumulative projects identified in Table 7-1 mostly consist of solar generating facilities, electrical subtransmission lines, irrigation services, and fiber optic lines, none of which would induce population growth or are otherwise anticipated to require relocation or construction of new or expanded utility service systems that would result in significant environmental effects. As such, the Proposed Project is not anticipated to contribute to a cumulatively considerable impact related to the relocation or construction of water, wastewater treatment, stormwater drainage, electrical power, natural gas, or telecommunications facilities.

The Proposed Project is designed to accommodate existing and forecasting electrical demand and would not induce growth such that it would impact the availability of sufficient water supplies to serve the Proposed Project and reasonably foreseeable future development during normal, dry, and multiple dry years; adequate capacity of the wastewater treatment provider; and compliance with federal, state, and local management and reduction statutes and regulations related to solid waste. Therefore, the Proposed Project would not contribute to any potential cumulative impacts to under these thresholds.

As described in Section 5.19, solid waste disposal facilities report substantial remaining capacity to serve the Proposed Project and cumulative projects. Cumulative projects would be subject to applicable construction and operational solid waste diversion regulations. Therefore, the Proposed Project would not result in a cumulatively considerable impact related to generation of solid waste in excess of state or local standards or the capacity of local infrastructure.

7.1.3.20 Wildfire

As presented in Section 5.20, Wildfire, the Proposed Project is not located within or near a State Responsibility Area or Very High Fire Hazard Severity Zone within California. In Arizona, the Proposed Project alignment crosses 0.1 mile of High Fire Threat Index area, 1.2 miles of Very High Fire Threat Index area, and 1.1 miles of Extreme Fire Threat Index area. The Proposed Project would implement APMs TRA-1, WF-1, and HAZ-2, and would implement wildfire mitigation strategies and prepare a Fire Prevention and Emergency Response Plan. With the exception of the Imperial Dam (Gila Project), which is located within the Extreme Fire Threat Index area in Arizona, none of the other cumulative projects are located in Very High Fire Hazard Severity Zones in California or High to Extreme Fire Threat Index areas in Arizona. Therefore, impacts related to wildfire would be less than significant and the Proposed Project would not contribute to a cumulatively considerable impact.

7.1.4 Cumulative Impact Summary Table

Table 7-2 Summary of Cumulative Impacts and APMs for the Proposed Project

Impact	Cumulative Impact	Applicant Proposed Measures and CPUC Draft Environmental Measures	Residual Cumulative Impact
Aesthetics	SU	APMs AES-1, AES-2, AES-3, AES-4, and AES-5	SU
Agriculture and Forestry Resources	LTS	None required	LTS
Air Quality	LTS	None required	LTS
Biological Resources	LTSWM	APMs BIO-1, BIO-2, BIO-3, BIO-4, BIO-5, BIO-6, BIO-7, BIO-8, BIO-9, BIO-10, BIO-11 and BIO-12	LTS
Cultural Resources	ND	APM CUL-1, APM WEA-1, APM CUL-2	ND
Energy	LTS	None required	LTS
Geology and Soils	LTSWM	APM GEO-1	LTS
Geology and Soils (Paleontological Resources)	LTSWM	APMs PAL-1, PAL-2, PAL-3, and PAL-4	ND
Greenhouse Gas Emissions	LTS	None required	LTS
Hazards and Hazardous Materials	LTSWM	APM HAZ-1, HAZ-2, HAZ-3, TRA-1	LTS
Hydrology and Water Quality	LTSWM	APMs HAZ-1, WTR-1, WEA-1	LTS
Land Use and Planning	LTSWM	APM TRA-1	LTS
Mineral Resources	NI	None required	NI
Noise	LTSWM	APMs NOI-1, NOI-2	LTS
Population and Housing	NI	None required	NI
Public Services	NI	None required	NI
Recreation	SU	APMs REC-1, BIO-1 through BIO-12, CUL-1, CUL-2, PAL-1 through PAL-4, AES-1, AES-2, AES-3, AES-4, and AES-5	SU

Impact	Cumulative Impact	Applicant Proposed Measures and CPUC Draft Environmental Measures	Residual Cumulative Impact
Transportation	LTSWM	APM TRA-1	LTS
Tribal Cultural Resources	ND	ND	ND
Utilities and Service Systems	LTS	None required	LTS
Wildfire	LTSWM	APM TRA-1, WF-1, HAZ-2	LTS

Notes:

SU = Significant and Unavoidable
LTS = Less than Significant
LTSWM = Less than Significant with Mitigation
ND = No Determination
NI = No Impact

7.2 Growth-Inducing Impacts

7.2.1 Growth-Inducing Impacts

Section 15126(d) of the CEQA Guidelines requires a discussion of a Proposed Project's potential to foster economic or population growth, including ways in which a project could remove an obstacle to growth. Growth does not necessarily create significant physical changes to the environment. However, depending upon the type, magnitude, and location of growth, it can result in significant adverse environmental effects. The Proposed Project's growth inducing potential is therefore considered significant if project-induced growth could result in significant physical effects in one or more environmental issue areas.

7.2.1.1 Would the Project either directly or indirectly, foster economic or population growth or the construction of additional housing in the surrounding area?

As discussed in Chapter 2, Introduction, the Proposed Project is intended to mitigate resource deliverability constraints as identified in the CAISO's 2022-2023 Transmission Plan. As discussed in Chapter 3, Proposed Project Description, and Section 5.14, Population and Housing, the construction and operation of the Proposed Project would not substantially affect employment in the area. Construction would be performed by either HWT construction crews or contractors, and approximately 6 to 154 construction workers would be working on any given day during the approximate 19-month construction period. Following construction of the Proposed Project, HWT anticipates an increase of one to two permanent employees for O&M.

As further presented in Section 5.14, given the small number of workers required for construction of the Proposed Project and the short term of the construction period, construction of the Proposed Project would not induce substantial population growth and would not impact population, housing, employment, or other aspects that could either directly or indirectly foster economic or population growth or the construction of additional housing in the surrounding area. Therefore, no impacts would occur under this criterion.

7.2.1.2 Would the Project remove obstacles to population growth?

The Proposed Project would not remove land use restrictions or other obstacles to population growth. The Proposed Project has been proposed to accommodate the existing and forecasted electrical needs and demands within the cities of Calexico and El Centro in California and the City of Yuma in Arizona and surrounding portions of unincorporated Imperial and Yuma counties. The Proposed Project has been designed to meet forecasted demand and is not intended to encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively.

Obstacles to population growth in the region served by the Proposed Project are primarily due to feasibility of development, economic constraints, permitting, and other development restrictions and regulations administered by local agencies. The Proposed Project would not affect the feasibility of development in the area, remove an obstacle to growth, or affect development of restrictions administered by local agencies. Therefore, no impacts would occur under this criterion.

7.2.1.3 Would the Project require the construction of new community facilities that could cause significant environmental effects?

As discussed in Section 5.14, Population and Housing, the Proposed Project would not include the construction of housing, nor would it include residential or community facility components. The Proposed Project would not trigger population growth that could result in the construction of any new or upgraded community facilities such as parks or libraries. In addition, the Proposed Project would not build public roads that would provide new access to undeveloped or underdeveloped areas or extend the need for public services to new areas. Although the Proposed Project would require the construction of new access roads for construction and ongoing maintenance within newly established HWT ROWs, the new access roads would only be used to access HWT structures and would not extend public services to areas not presently served. Therefore, no impacts would occur under this criterion.

7.2.1.4 Would the Project encourage or facilitate other activities that could significantly affect the environment, either individually or cumulatively?

As discussed in Section 7.1, Cumulative Impacts, the Proposed Project would not encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. The Proposed Project is intended to mitigate resource deliverability constraints as identified in the CAISO's 2022-2023 Transmission Plan. While the Proposed Project would increase the reliability and capacity with which electricity is made available, the Proposed Project would not provide a new source of electricity that would encourage and facilitate other activities that could significantly affect the environment either individually or cumulatively. Therefore, no impacts would occur under this criterion.

8 List of Preparers

Horizon West Transmission, LLC

Fred Bauermeister, Director, Master of City Planning, Land Use Planning and Management/Development, University of California, Berkeley

Paul Mallmann, Project Director, BS in Civil Engineering, Missouri University of Science and Technology

Tracy Davis, Managing Attorney, JD, The University of Texas School of Law

Christine Leone, Senior Attorney, JD, University of the Pacific School of Law

Ally Little, Senior Environmental Specialist, BS in Environmental Studies, University of Nebraska, Lincoln

Hector Richkarday, Senior Project Manager, BS in Civil Engineering, Universidad Autónoma de Baja California

Natalie Borrelli, Engineering Leader, BS in Civil Engineering, Tufts University

Rebecca Farhi, Senior Project Manager, BS in Society and Government, University of California, Berkeley

Rincon Consultants, Inc.

Brenda Eells, Principal, Environmental Planning – Renewable Energy Infrastructure, Master of Planning, University of Wyoming

Christopher Duran, Registered Professional Archaeologist, Principal Archaeologist, MA, Northern Arizona University

Shannon Carmack, Cultural Resources Principal, Senior Architectural Historian, BA, California State University Long Beach

David Daitch Ph.D., Vice President, Natural Resources, Ph.D., Ecology and Evolutionary Biology, University of Colorado, Boulder; MS, Geology, University of Colorado, Boulder

Lindsey Sarquilla, Director, Environmental Planner, Master of Environmental Science and Management (MESM), University of California, Santa Barbara

Karly Kaufman, Senior Supervising Environmental Planner, MESM, University of California, Santa Barbara

Katherine Green AICP, Supervising Environmental Planner, BS Environmental Science, University of California, Davis; BA English, University of California, Davis

Megan Knight, Associate Environmental Planner, BA Landscape Architecture, California State Polytechnic University San Luis Obispo

Hannah Bireschi, Associate Environmental Planner, BS Environmental Policy, University of California, Davis

Nichole Yee, Associate Environmental Planner, BA Environmental Systems – Environmental Policy, University of California, San Diego

Brooke Baranek, Associate Environmental Planner, BS Environmental Science, University of California, Los Angeles

Aubrey Mescher, Senior Supervising Environmental Planner, MESM, University of California, Santa Barbara

Kyle Pritchard, Noise Specialist, BS Mechanical Engineering, The University of Maryland, College Park

Josh Carman INCE, Director of Technical Services, BA Environmental Studies, University of California, Santa Cruz

Breana Campbell RPA, Senior Supervising Cultural Resources Specialist, MA Anthropology, San Diego State University

Laura Maldonado RPA, Cultural Resources Specialist, MA, Anthropology, San Francisco State University

Aaron Rojas Jr., Air Quality Specialist, BS Earth System Science, University of California, Irvine

Jessie Jaeger, Air Quality Specialist, MA Public Health, University of California, Berkeley; MA City Planning, University of California, Berkeley

Michael Stewart PE, Senior Air Quality Specialist, BS Chemical Engineering, University of California, Los Angeles

Andrew Sandahl, Senior Biologist/ Legal Regulatory Specialist, MS Biological Sciences – Ecology and Evolution, University of Amsterdam, Netherlands

Andrew McGrath, Paleontologist/Assistant Project Manager, Ph.D. Earth Science, University of California, Santa Barbara

Ethan Ripperger, Senior Supervising Biologist, BS Biological Sciences, Roger William University, Bristol, Rhode Island

Michaela Kim GIT, Environmental Scientist, MS Geology, Northern Arizona University

Savanna Vrevich, Senior Environmental Scientist, BS Environmental Studies, University of California, Santa Barbara

Paul Rigby, GIS Analyst, BA Linguistics, Minor in Anthropology, University of California, Berkeley

Emily Gaston, Senior GIS Analyst, MS, Geographic Information Sciences, California State University, Long Beach

Yaritza Ramirez, Publishing Specialist, BA, California State University Channel Islands

POWER Engineers

Mike Strand, Senior Project Manager, BS, University of Idaho

Mike Ireland, Senior Project Manager, MA, University of California, Davis

Darrin K. Gilbert, Senior Environmental Planner, MLA, State University of New York, College of Environmental Science and Forestry

David Barrackman, Senior GIS Analysist, BA, University of Montana

Joy McClain, Senior Project Manager, BS, Boise State University

Kathleen Cooney, Project Manager, MA, San Francisco State University

Ben O'Connor, Environmental Planner, MA, Clark University

Ashley Brewer, Environmental Planner, BS, Texas A&M University, Galveston

Katie Jordan, Environmental Planner, BS, Texas State University

Andy Hughes, Environmental Specialist, MLA, Utah State University

9 References

9.1 Chapter 1, Executive Summary

California Independent System Operator. 2023. ISO Board-Approved 2022-2023 Transmission Plan. Available online at: https://stakeholdercenter.caiso.com/InitiativeDocuments/ISO-Board-Approved-2022-2023-Transmission-Plan.pdf Accessed July 10, 2025.

9.2 Chapter 2, Introduction

California Independent System Operator Corporation (CAISO). 2023a. *ISO Board-approved 2022-2023 Transmission Plan.* Retrieved from https://stakeholdercenter.caiso.com/InitiativeDocuments/ISO-Board-Approved-2022-2023-Transmission-Plan.pdf. Accessed July 2025.

_____. 2023b. *Appendix F: Board-Approved 2022-2023 Transmission Plan.* Retrieved from https://stakeholdercenter.caiso.com/InitiativeDocuments/Appendix-F-Board-Approved_2022-2023_Transmission-Plan.pdf. Accessed July 2025.

_____. 2023c. *Appendix H: Board-approved 2022-2023 Transmission Plan.* Retrieved from https://stakeholdercenter.caiso.com/InitiativeDocuments/Appendix-H-Board-Approved-2022-2023-Transmission-Plan.pdf. Accessed July 2025.

_____. 2024. Transmission Planning. Available online at: https://www.caiso.com/generation-transmission/transmission/transmission-planning. Accessed July 2025.

_____. 2025. *2024 Transmission Plan Deliverability Allocation Report*. Retrieved from https://www.caiso.com/documents/2024-transmission-plan-deliverability-allocation-report.pdf. Accessed September 2025.

California Public Utilities Commission (CPUC). 2022. *Decision 23-10-002: Decision granting PacifiCorp's petition for modification of decision 23-05-015 regarding the Klamath River Renewal Corporation funding mechanism.* Retrieved from https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M451/K412/451412947.PDF. Accessed July 2025.

9.3 Chapter 3, Proposed Project Description

California Independent System Operator. 2023. ISO Board-Approved 2022-2023 Transmission Plan. Available online at: https://stakeholdercenter.caiso.com/InitiativeDocuments/ISO-Board-Approved-2022-2023-Transmission-Plan.pdf Accessed July 2025.

9.4 Chapter 4, Description of Alternatives

California Independent System Operator. 2023. ISO Board-Approved 2022-2023 Transmission Plan. Available online at: https://stakeholdercenter.caiso.com/InitiativeDocuments/ISO-Board-Approved-2022-2023-Transmission-Plan.pdf. Accessed July 2025.

9.5 Chapter 5, Environmental Impact Analysis

No references are cited in this chapter.

9.5.1 Section 5.1, Aesthetics

Arizona Department of Transportation (AZDOT). 2024. Arizona State Scenic Highways. Available online at: https://azdot.gov/sites/default/files/2019/05/scenic-map.pdf. Accessed November 2024.

Bureau of Land Management (BLM). 1980. California Desert Conservation Area Plan Environmental Impact Statement (EIS). Desert District, Riverside, California.

_____. 1980. California Desert Conservation Area Plan. Reprinted in 1999. Available online at: BLM ePlanning. Accessed November 2024.

_____. 1986a. Manual H-8431. Visual Resource Contrast Rating. BLM. Available online at: http://www.blm.gov/nstc/VRM/8431.html. Accessed November 2024.

_____. 1986b. Manual H-8410-1. BLM. Available online at: Manual H-8410-1 Visual Resource Inventory.

_____. 2002. Northern and Eastern Colorado Desert Coordinated Management Plan. U.S. Department of the Interior. Available online at: https://www.blm.gov/programs/planning-and-nepa/eplanning. Accessed January 2025.

_____. 2010. Yuma Field Office Record of Decision Approved Resource Management Plan. Available online at: https://eplanning.blm.gov/eplanning-ui/project/68418/570. Accessed November 2024.

_____. 2013a. Best Management Practices (BMPs) for Reducing Visual Impact of Renewable Energy Facilities on BLM-Administered Lands.

_____. 2013b. Imperial Sand Dunes Recreation Area Management Plan and Record of Decision. U.S. Department of the Interior. Available online at: https://www.blm.gov/programs/planning-and-nepa/eplanning. Accessed January 2025.

_____. 2016. Desert Renewable Energy Conservation Plan. U.S. Department of the Interior. Available at: https://www.blm.gov/programs/planning-and-nepa/eplanning. Accessed January 2025.

_____. 2024. BLM Recreational Opportunities Mapper Website. Available online at: https://webmaps.blm.gov/program_apps/BLM_Natl_Recreation_Opportunities/. Accessed November 2024.

California Department of Transportation (Caltrans). 2024. California Transportation California State Scenic Highway System Map. Available online at: https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aacaa. Accessed November 2024.

Federal Highways Administration (FHWA). 2024. National Scenic Highways. Available online at: https://fhwaapps.fhwa.dot.gov/bywaysp/state/AZ/map. Accessed November 2024.

Imperial County. 1993. General Plan Available online at: http://www.icpds.com/?pid=571. Accessed November 2024.

United States Department of Agriculture (USDA 2025). Landfire Existing Vegetation Type database. Accessed July 2025. Available at: https://www.landfire.gov/viewer/

United States Environmental Protection Agency (USEPA). 2024. Level III and IV Ecoregions of the Continental United States Website. Available online at: https://www.epa.gov/eco-research/level-iii-and-iv-ecoregions-continental-united-states. Accessed November 2024.

Yuma County. 2023. 2030 Comprehensive Plan. Available online at: https://www.yumacountyaz.gov/government/development-services/laws-guidelines/2020-comprehensive-plan. Accessed November 2024.

9.5.2 Section 5.2, Agriculture and Forestry Resources

California Department of Conservation (DOC). 2022. California - Farmland Mapping and Monitoring Program (FMMP), 2018/2016. https://databasin.org/datasets/d863409b007d4f6589975103da32df3e/. Accessed May 2025.

_____. 2024. California Williamson Act Enrollment Finder. https://gis.conservation.ca.gov/portal/home/item.html?id=18f7488c0a9d4d299f5e9c33b312f312. Accessed May 2025.

_____. 2025. Important Farmland Categories. https://www.conservation.ca.gov/dlrp/fmmp/Pages/Important-Farmland-Categories.aspx. Accessed May 2025.

City of Calexico. 2015. 2015 Draft General Plan Update. https://www.calexico.ca.gov/index.asp?SEC=254C9C81-D449-44C7-B581-0B8070E31FF1. Accessed May 2025.

_____. 2020. Planning Division. https://www.calexico.ca.gov/index.asp?SEC=F089922B-6B0D-469A-B327-EE1D56685998. Accessed May 2025.

Imperial County. 2015a. Imperial County General Plan. Agricultural Element. https://www.icpds.com/planning/land-use-documents/general-plan/agricultural-element. Accessed May 2025.

_____. 2015b. Imperial County General Plan. Land Use Element. https://www.icpds.com/planning/land-use-documents/general-plan/land-use-element. Accessed May 2025.

_____. 2015c. Imperial County General Plan. Renewable Energy and Transmission Element. https://www.icpds.com/planning/land-use-documents/general-plan/renewable-energy-and-transmission-element. Accessed May 2025.

Imperial County Planning and Development Services. 2025. Land Use Zoning. https://icpds.maps.arcgis.com/apps/webappviewer/index.html?id=19214b2467784942a0cd8c8801dbaaa0. Accessed May 2025.

Natural Resources Conservation Service (NRCS). 2019. Web Soil Survey. https://websoilsurvey.nrcs.usda.gov/app/. Accessed May 2025.

United States Geological Survey (USGS). 2024. National Land Cover Database (NLCD). https://www.usgs.gov/centers/eros/science/data-access#overview. Accessed May 2025.

Yuma County. 2016. Zoning Ordinance. https://www.yumacountyaz.gov/government/development-services/laws-guidelines. Accessed May 2025.

_____. 2023. 2030 Comprehensive Plan. Land Use Element. https://www.yumacountyaz.gov/home/showpublisheddocument/54615/638508600875070000. Accessed May 2025.

9.5.3 Section 5.3, Air Quality

Arizona Corporation Commission (ACC). 2024. "Utilities Division". Utilities Division | Arizona Corporation Commission. Accessed November 2024.

Arizona Department of Environmental Quality (ADEQ). SIP Revision: 2015 Ozone NAAQS, Yuma Redesignation Request And Maintenance Plan. November 14, 2023. https://static.azdeq.gov/pn/aq_yumao3_siprevision.pdf

CAPCOA. 2021. California Emissions Estimator Model User's Guide Version 2020.4.0. May 2021. https://www.aqmd.gov/docs/default-source/caleemod/user-guide-2021/01_user-39-s-guide2020-4-0.pdf?sfvrsn=ece1d061_6 (accessed December 2025).

California Air Resource Board (CARB). 2005. AIR QUALITY AND LAND USE HANDBOOK: A COMMUNITY HEALTH PERSPECTIVE. April 2005. ARB's Community Health: 2005-04-00 ARB's Air Quality and Landuse Handbook: A Community Health Perspective.

_____. 2023. Maps of State and Federal Area Designation. November 2023. Maps of State and Federal Area Designations | California Air Resources Board

_____. 2024. "Top 4 Summary: Select Pollutant, Years, & Area." http://www.arb.ca.gov/adam/topfour/topfour1.php

_____. 2025. "Overview: Diesel Exhaust & Health". [website]. N.d. https://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health

Federal Office of Civil Aviation. 2015. Guidance on the Determination of Helicopter Emissions. https://www.bazl.admin.ch/dam/bazl/de/dokumente/Fachleute/Regulationen_und_Grundlagen/guidance_on_the_determinationofhelicopteremissions.pdf.download.pdf/guidance_on_the_determinationofhelicopteremissions.pdf

Giroux & Associates. 2020. Air Quality and GHG Impact Analysis TTM 37803. June 11, 2020. https://files.ceqanet.lci.ca.gov/267127-2/attachment/8LYXRQ7OYSaZ_DHb4GyF85WanisrKrIxMYSVLQzBFDFQksuO2IgClaKtgPHzblb54D25ejDyd8UE5hOK0 (accessed December 2025).

Imperial County Air Pollution Control District (ICAPCD). 2010. Final 2009 Reasonably Available Control Technology State Implementation Plan. July. https://apcd.imperialcounty.org/wp-content/uploads/2020/01/FINAL_RACTANALYSIS.pdf

_____. 2014. Imperial County 2013 State Implementation Plan for the 2006 24-Hour PM2.5 Moderate Nonattainment Area. December. https://apcd.imperialcounty.org/wp-content/uploads/2020/01/Final_PM25_SIP.pdf

_____. 2017a. CEQA Air Quality Handbook. December 12, 2017. https://apcd.imperialcounty.org/wp-content/uploads/2020/01/CEQAHandbk.pdf

_____. 2017b. Imperial County 2017 State Implementation Plan For The 2008 8-Hour Ozone Standard. September 2017. https://apcd.imperialcounty.org/wp-content/uploads/2020/01/OzoneSIP.pdf

_____. 2018a Imperial County 2018 Redesignation Request And Maintenance Plan For Particulate Matter Less Than 10 Microns In Diameter. October 23, 2018. https://apcd.imperialcounty.org/wp-content/uploads/2020/01/FinalPM10.pdf

_____. 2018b. Imperial County 2018 Annual Particulate Matter Less Than 2.5 Microns In Diameter State Implementation Plan. April 2018. https://apcd.imperialcounty.org/wp-content/uploads/2020/01/2018-IC-PM25SIP.pdf

Office of Environmental Health Hazard Assessment (OEHHA). 2015. Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments. https://oehha.ca.gov/air/crnr/notice-adoption-air-toxics-hot-spots-program-guidance-manual-preparation-health-risk-0.

San Diego County Air Pollution Control District (SDAPCD. 2023. Drilling & Blasting Operations. Last Updated: December 2023. https://www.sdapcd.org/content/dam/sdapcd/documents/permits/emissions-calculation/mineral-products-industry-drilling-blasting/APCD-blasting.pdf (accessed December 2025).

South Coast Air Quality Management District (SCAQMD). 2008. Localized Significance Thresholds Methodology. https://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/final-lst-methodology-document.pdf?sfvrsn=8c641d61_2 (accessed November 2025).

SCAQMD. 2009. Localized Significance Thresholds Factsheet. https://www.aqmd.gov/docs/default-source/Agendas/Environmental-Justice/localized-significance-thresholds-fact-sheet.pdf (accessed November 2025).

United States Environmental Protection Agency (USEPA). 2024a. Interactive Map of Air Quality Monitors. Last modified: August 16, 2024. https://www.epa.gov/outdoor-air-quality-data/interactive-map-air-quality-monitors

_____. 2024b. California Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants. October 31, 2024. https://www3.epa.gov/airquality/greenbook/anayo_ca.html

_____. 2024c. De Minimis Tables. June 10, 2024. https://www.epa.gov/general-conformity/de-minimis-tables.

USEPA. 1998. 11.9 Western Surface Coal Mining. October 1998. https://www.epa.gov/sites/default/files/2020-10/documents/c11s09.pdf (accessed December 2025).

WHO Regional Office for Europe. 2013. Review of evidence on health aspects of air pollution – REVIHAAP Project: Technical Report [Internet]. Copenhagen: WHO Regional Office for Europe; 2013. C, Proximity to roads, NO2, other air pollutants and their mixtures. Available from: https://www.ncbi.nlm.nih.gov/books/NBK361807/ (accessed November 2025).

9.5.4 Section 5.4, Biological Resources

Avian Power Line Interaction Committee (APLIC). 2012. Reducing Bird Collisions With Power Lines: State of the Art in 2012. Available at: https://www.aplic.org/uploads/files/15518/Reducing_Avian_Collisions_2012watermarkLR.pdf. Accessed July 2025.

Arizona Game and Fish Department (AZGFD). 2025a. Mittry Lake Wildlife Area. Available at: https://www.azgfd.com/location/mittry-lake-wildlife-area/. Accessed May 2025.

_____. 2025b. Arizona's Online Environmental Review Tool. Available at https://ert.azgfd.gov/. Accessed May 2025.

_____. 2025c. Arizona Wildlife Conservation Strategy: Species of Greatest Conservation Need. Available at: https://awcs.azgfd.com/species/. Accessed May 2025.

Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken, editors. 2012. The Jepson Manual: Vascular Plants of California, Second Edition. University of California Press, Berkeley.

Bureau of Land Management (BLM), U.S. Fish and Wildlife Service (USFWS), California Energy Commission (CEC), and California Department of Fish and Wildlife (CDFW). 2016. Desert Renewable Energy Conservation Plan Land Use Plan Amendment to the California Desert Conservation Area Plan, Bishop Resource Management Plan, and Bakersfield Resource Management Plan. September.

California Department of Fish and Wildlife (CDFW). 2018. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities. March 20, 2018. Available at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959&inline. Accessed July 2025.

_____. 2025a. RareFind5: California Natural Diversity Database (CNDDB). Accessed May 2025.

_____. 2025b. Special Animals List. California Natural Diversity Database. Periodic publication, 120 pp. Accessed May 2025.

_____. 2025c. Sensitive Natural Communities. Available at: https://wildlife.ca.gov/Data/VegCAMP/Natural-Communities#sensitive%20natural%20communities. Accessed May 2025.

California Fish and Game Commission. (CFGC) 2019. Mammal Hunting Regulations. § 460. Fisher, Marten, River Otter, Desert Kit Fox, and Red Fox. August 9, 2019.

California Invasive Plant Council (Cal-IPC). 2025. California Invasive Plant Inventory. Available at: https://www.cal-ipc.org/plants/inventory/. Accessed May 2025.

California Native Plant Society (CNPS). 2025a. The California Rare Plant Ranking System. Available online at http://www.cnps.org/cnps/rareplants/ranking.php. Accessed May 2025.

_____. 2025b. Inventory of Rare and Endangered Plants of California. Online edition Available at: http://www.rareplants.cnps.org/. Accessed May 2025.

_____. 2025c. A Manual of California Vegetation, Online Edition. Available at: http://www.cnps.org/cnps/vegetation/. Accessed May 2025.

California Public Utility Commission (CPUC). 2019. Guidelines for Energy Project Application Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments (Attachment 2). Version 1.0. Available at https://www.cpuc.ca.gov/-/media/cpuc-website/files/legacyfiles/c/6442463239-ceqa-pre-filing-guidelines-pea-checklist-nov-2019.pdf. Accessed June 2025.

City of Calexico. 2015. Sustainable Communities Planning Grant: City of Calexico Draft 2015 General Plan Update, September 2015. Available at: https://www.calexico.ca.gov/index.asp?SEC=254C9C81-D449-44C7-B581-0B8070E31FF1. Accesed May 2025.

City of El Centro. 2004. City of El Centro Final General Plan, February 2004. Available at: https://www.cityofelcentro.org/1185/Planning-Documents. Accessed May 2025.

Google Earth Pro 2025. Google Earth Pro. 7.3.3.7786 (64-bit). Aerial Imagery. Accessed May 2025.

Imperial County. 2016. Imperial County General Plan. Available at: https://www.icpds.com/planning/land-use-documents/general-plan. Accessed May 2025.

Jepson Flora Project (editors). 2025. Jepson eFlora. Available at: http://ucjeps.berkeley.edu/eflora/. Accessed May 2025.

Lower Colorado River Multi-Species Conservation Program (LCR MSCP). 2004. Lower Colorado River Multi-Species Conservation Program, Volume II: Habitat Conservation Plan (J&S 00450.00.) Available at: https://lcrmscp.gov/lcrm-prod/lcrm-prod/pdfs/hcp_volii_2004.pdf. Accessed July 2025.

_____. 2025a. About Us. Available at: https://www.lcrmscp.gov/about_us. Accessed July 2025.

_____. 2025b. Habitat Conservation Plan. Available at: https://www.lcrmscp.gov/about_us/habitat_conservation_plan. Accessed July 2025.

NatureServe. 2012. NatureServe Conservation Status Assessments: Methodology for Assigning Ranks. Revised June 2012.

Sawyer, J.O., T. Keeler-Wolf, and J. Evens. 2009. A Manual of California Vegetation, Second Edition. California Native Plant Society Press.

State Water Resources Control Board (SWRCB). 2021. State Wetland Definition and Procedures for Discharges of Dredged or Fill Materials to Waters of the State. Adopted April 2, 2019. Revised April 6, 2021. https://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/2021/procedures.pdf

United States Army Corps of Engineers (USACE). 2018. National Wetland Plant List. Available at: https://www.spd.usace.army.mil/Missions/Regulatory/Public-Notices-and-References/Article/2195902/final-2018-national-wetland-plant-list-nwpl/. May 22, 2020. Accessed May 2025.

_____. 2023. Definition of Waters of the United States. Available at: https://www.federalregister.gov/documents/2023/01/18/2022-28595/revised-definition-of-waters-of-the-united-states. Accessed May 2025.

_____. 2025. National Ordinary High Water Mark Field Delineation Manual for Rivers and Streams: Final Version. U.S. Army Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory. Hanover, New Hampshire. Available at: https://erdc-library.erdc.dren.mil/items/76c61f8f-6d75-4a35-aaf3-39aa64918afb. Accessed May 2025.

United States Department of Agriculture, Natural Resources Conservation Service (USDA, NRCS). 2025a. Web Soil Survey. Available at: https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx Accessed May 2025.

_____. 2025b. Lists of Hydric Soils – National Hydric Soils List by State: California. National Cooperative Soil Survey, United States Department of Agriculture. Accessed via: https://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric. Accessed May 2025.

United States Fish and Wildlife Service (USFWS). 1994. Endangered and Threatened Wildlife and Plants; Determination of Critical Habitat for the Colorado River Endangered Species: Razorback Sucker, Colorado Squawfish, Humpback Chub, and Bonytail Chub. U.S. Fish and Wildlife Service, Federal Register 59(54):13374-13400

_____. 2008. Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for Astragalus magdalenae var. peirsonii (Peirson's Milk-vetch). U.S. Fish and Wildlife Service, Federal Register 73(31):8748-8785.

_____. 2025a. Information for Planning and Consultation (IPaC) website. Available at: https://ecos.fws.gov/IPaC/. Accessed May 2025.

_____. 2025b. National Wetlands Inventory (NWI). Available at: http://wetlands.fws.gov. Accessed May 2025.

United States Geological Survey (USGS). 2025. National Hydrography Dataset (NHD) NHD Flowlines and Watershed Boundary Dataset (WBD) for Kern and San Bernardino Counties, California. Available at: https://apps.nationalmap.gov/downloader/#/. Accessed May 2025.

Western Bat Working Group (WBWG). 2017. Western Bat Species Regional Priority Matrix. Available at: http://wbwg.org/matrices/species-matrix/. Accessed May 2025.

Yuma County. 2023. 2030 Comprehensive Plan, Effective March 27, 2023, Includes Amendments through April 9, 2025. Available at: https://www.yumacountyaz.gov/government/development-services/laws-guidelines/2020-comprehensive-plan. Accessed May 2025.

Zeiner, D.C., W.F. Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1988-1990. California Wildlife Habitat Relationships (CWHR) System. California's Wildlife. Vol. I-III. California Depart. of Fish and Game, Sacramento, California.

9.5.5 Section 5.5, Cultural Resources

AARoads.com. 2007. "California 98." Electronic resource. https://www.aaroads.com/california/ca-098.html (accessed November 2024).

_____. 2009. "Interstate 8." Electronic resource. https://www.aaroads.com/guides/i-008-ca/ (accessed November 2024).

Arizona Department of Environmental Quality. 2024. "U.S. Army Garrison Yuma Proving Ground | Site History." https://azdeq.gov/us-army-garrison-yuma-proving-ground-site-history#:~:text=The YPG was first used,Branch%2C Army Corps of Engineers. (accessed November 2024).

Bean, Walton. 1968. California: An Interpretive History. McGraw-Hill Book Company, New York.

Bedwell, S. F. 1970. Prehistory and Environment of the Pluvial Fork Rock Lake Area of South-Central Oregon. Ph.D. dissertation. Department of Anthropology, University of Oregon, Eugene.

Buckles, Joseph E., and Dr. Timothy Krantz. 2005. Reconstruction of Prehistoric Shorelines for Cultural Restraints using GIS. Salton Sea Database Program, University of Redlands. Electronic document accessed August 3, 2012. Online at: http://proceedings.esri.com/library/userconf/proc00/professional/papers/pap751/p751.htm.

California Geologic Survey. 2002. California Geomorphic Provinces. Electronic document at https://www.conservation.ca.gov/cgs/documents/publications/cgs-notes/CGS-Note-36.pdf (accessed January 2025).

California Office of Historic Preservation (OHP). 2024. "Imperial." [California Historical Landmarks listed by County]. Electronic resource. https://ohp.parks.ca.gov/?page_id=21421 (accessed November 2024).

Clark, Tiffany and Gena Severen. 2024. Cultural Resources Assessment for the Dogwood Geothermal Energy Project, Dogwood Solar, and Heber 2 Solar Facilities, Imperial County, California. Paleo West LLC. Technical Report No. 23-152. March 21.0

Engelhardt, Zephyrin, O.F.M. 1927a. *San Fernando Rey, the Mission of the Valley*. Franciscan Herald Press, Chicago.

Engelhardt, Zephyrin. 1927b. *San Gabriel Mission and the Beginning of Los Angeles*. Mission San Gabriel, San Gabriel, California.

Griffith, G.E., J.M. Opernik, D.W. Smith, T.D. Cook, E. Tallyn, K. Moseley, and C.B. Johnson. 2016. Ecoregions of California. Electronic document at https://pubs.usgs.gov/publication/ofr20161021 (accessed February 2025).

Imperial Irrigation District (IID). 2015. "Brock Reservoir Summary Report." June 10, 2014, updated March 2015. Electronic resource. https://www.iid.com/home/showpublisheddocument/9615/635648001335730000 (accessed December 2024).

_____. 2025a. "IID History." Imperial Irrigation District, online. https://www.iid.com/about-iid/mission-vision-statements/iid-history#Energy%20History (accessed April 2025).

_____. 2025b. "Imperial Dam." Imperial Irrigation District, online. https://www.iid.com/water/water-transportation-system/colorado-river-facilities/imperial-dam (accessed February 2025).

Laylander, Don. 1995. Chronology of Lake Cahuilla's Final Stand. Proceedings of the Society for California Archaeology 8:69-78.

_____. 2006. "The Regional Consequences of Lake Cahuilla". San Diego State University Occasional Archaeology Papers 1(59-77).

Love, Bruce, and Mariam Dahdul. 2002. "Desert Chronologies and the Archaic Period in the Coachella Valley". Pacific Coast Archaeological Society Quarterly 38(1-2).

Michaelson, Joel. 2009. Colorado Desert Region Physical Geography. Electronic document at https://static1.squarespace.com/static/51481c79e4b07ce921202012/t/61beb2b31675367f06c5e884/1639887540023/Colorado+Desert+Region.pdf, accessed February 2025.

Moratto, Michael J. 1984. *California Archaeology*. Academic Press, New York.

National Park Service (NPS). 1978. National Register of Historic Places Inventory - Nomination Form. Yuma Crossing. Original form prepared by Robert Utley, 1959; Charles Snell, 1963; William Brown, 1966. Designation date November 13, 1966. Entered into National Register June 10, 1978.

_____. 1983. Secretary of the Interior's Standards and Guidelines for Professional Qualifications in Archaeology and Historic Preservation. Department of the Interior.

_____. 1997. National Register Bulletin-How to Apply the National Register Criteria for Evaluation. Accessed online at Bean, Walton. 1968. California: An Interpretive History. McGraw-Hill Book Company, New York.

_____. 2021. "The Dawes Act." Electronic resource. https://www.nps.gov/articles/000/dawes-act.htm#:~:text=The desired effect of the,History %26 Culture in the Badlands (accessed November 2024).

_____. 2024. "Arizona: Yuma Crossing National Heritage Area." https://www.nps.gov/articles/yuma.htm (accessed December 2024).

Rincon Consultants, Inc. 2025a. *Ironwood Transmission Line Project, Class I Existing Information Inventory, Imperial County, California and Yuma County, Arizona*. Rincon Consultants Project No. 24-16213. Report on file at the Bureau of Land Management.

_____. 2025b. *Ironwood Transmission Line Project, Cultural Resources Work Plan and Research Design, Imperial County, California and Yuma County, Arizona*. Rincon Consultants Project No. 24-16213. Report on file at the Bureau of Land Management.

Rogers, Malcom J. 1929. Report on an archaeological reconnaissance in the Mojave sink region. San Diego Museum of Man Papers 1.

Rolle, Andrew. 2003. *California: A History*. Revised and expanded sixth edition. Harlan Davidson, Inc., Wheeling, Illinois.

Romer, Margaret. 1922 "A History of Calexico." Annual Publication of the Historical Society of Southern California. Vol. 12, No. 2. pp. 22-66. https://www.jstor.org/stable/41168795 (accessed December 2024).

Schaefer, Jerry. N.D. Prehistoric Native American Responses to Ancient Lake Cahuilla, n.d. Salton Sea Authority. Electronic Document, https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=9490, accessed December 5, 2024.

Schaefer, Jerry and Don Laylander. 2007. "The Colorado Desert: Ancient Adaptations to Wetlands and Wastelands." In California Prehistory: Colonization, Culture, and Complexity, edited by Terry L. Jones and Kathryn A. Klar, pp. 247-257. AltaMira Press, Latham, Maryland.

Southern California Panama Expositions Commission (SCPEC). 1914. 'Imperial County" in Southern California: Comprising the Counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, San Diego, Ventura. Southern California Panama Expositions Commission. Accessed via HathiTrust, online: https://babel.hathitrust.org/cgi/pt?id=coo1.ark:/13960/t59c7hq7d&seq=269 (accessed December 2024).

United States Department of Agriculture (USDA). 2025. Chapter 40 Ecological Subregions of the United States. Electronic document at https://www.fs.usda.gov/land/pubs/ecoregions/ch40.html, accessed February 2025.

Wallace, William J. 1978. "Post-Pleistocene Archeology, 9000 to 2000 B.C." In "California," edited by Robert F. Heizer, pp. 592–609. *Handbook of North American Indians,* Vol. 8, W. C. Sturtevant, general editor. Smithsonian Institution Press, Washington, D.C.

Waters, Michael R. 1992. Principles of Geoarchaeology: A North American Perspective. The University of Arizona Press, Tucson.

Yuma County. 2024. Yuma County 2030 Comprehensive Plan. Electronic Resource. https://www.yumacountyaz.gov/home/showpublisheddocument/57382/638839347300270000, accessed July 2025.

9.5.6 Section 5.6, Energy

Arizona Corporation Commission (ACC). 2024. “Utilities Division”. Electric Utilities | Arizona Corporation Commission. Accessed November 2024.

ACC. 2025. Electric Company Renewable Energy Standard & Tariff. N.d. https://www.azcc.gov/utilities/industry-types/electric/renewable-energy-standard-and-tariff#:~:text=In%202006%2C%20the%20Commission%20approved,from%20renewable%20resources%20by%202025. Accessed February 2025.Arizona Public Service. 2024. “About Us”. https://www.aps.com/en/About/Our-Company/About-us Accessed November 2024.

Calexico, City of. 2007. City of Calexico General Plan Update’s 2.0 Land Use Element. February 2007. https://www.calexico.ca.gov/vertical/sites/%7B342ED706-1EBB-4FDE-BD1E-9543BAD44C09%7D/uploads/Section_2.0_Land_Use_Element_City_of_Calexico_General_Plan_Update.pdf.

California Air Pollution Control Officers Association (CAPCOA). 2022. CalEEMod User Guide Version 2022.1. April 2022.

California Air Resource Board (CARB). 2022. 2022 Scoping plan Documents. https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents. Accessed June 2025 .

_____. 2025a. Truck and Bus Regulation. N.d. https://ww2.arb.ca.gov/our-work/programs/truck-and-bus-regulation Accessed February 2025.

_____. 2025b. Off-Road Diesel Regulation. N.d. https://ww2.arb.ca.gov/our-work/programs/truckstop-resources/road-zone/road-diesel-regulation Accessed February 2025.

California Energy Commission (CEC). 2024a. “Electricity Consumption”. https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/california-energy-consumption-dashboards-. Accessed November 2025.

_____. 2024b. Diesel Fuel Data, Facts, and Statistics. N.d. [website]. https://www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/diesel-fuel-data-facts-and-statistics Accessed November 2024.

_____. 2024c. Adopted 2023 Integrated Energy Policy Report with Errata. February 14, 2024. https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report-iepr/2023-integrated-energy-policy-report Accessed November 2024.

_____. 2025. California Retail Fuel Outlet Annual Reporting (CEC-A15) Results. https://www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/california-retail-fuel-outlet-annual-reporting Accessed February 2025

California ISO. 2023. CAISO 2022-2023 Transmission Plan. May 18, 2023. caiso-2022-2023-transmission-plan-approved.pdf Accessed June 2025.

California Department of Tax and Fee Administration (CDTFA). 2025a. Motor Vehicle Fuel 10-Year Reports. https://www.cdtfa.ca.gov/taxes-and-fees/spftrpts.htm

_____. 2025b. Taxable Diesel Gallons 10-Year Report. https://www.cdtfa.ca.gov/taxes-and-fees/spftrpts.htm

_____. 2025c. Taxable Jet Fuel Gallons 10-Year Report. https://www.cdtfa.ca.gov/taxes-and-fees/spftrpts.htm

Imperial, County of. Renewable Energy and Transmission Element – County of Imperial General Plan. October 6, 2015. https://www.icpds.com/assets/planning/renewable-energy-and-transmission-element-2015.pdf

Imperial Irrigation District (IID). 2024. About IID Power. About IID Power | Imperial Irrigation District.

United States Department of Transportation (USDOT). 2023a. National Transportation Statistics: Table 4-11: Light Duty Vehicle, Short Wheel Base and Motorcycle Fuel Consumption and Travel. https://www.bts.gov/content/light-duty-vehicle-short-wheel-base-and-motorcycle-fuel-consumption-and-travel

_____. 2023b. National Transportation Statistics: Table 4-13: Single-Unit 2-Axle 6-Tire or More Truck Fuel Consumption and Travel. https://www.bts.gov/content/single-unit-2-axle-6-tire-or-more-truck-fuel-consumption-and-travel

United States Environmental Protection Agency (USEPA). 2021. Exhaust and Crankcase Emission Factors for Nonroad Compression-Ignition Engines in MOVES3.0.2. September. https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P1013KWQ.pdf (accessed June 2023).

United States Energy Information Administration (USEIA). 2022. Table C2. Energy consumption estimates for selected energy sources in physical units, 2022. sum_use_tot.pdf

_____. 2024. US Overview. https://www.eia.gov/state/?sid=AZ#tabs-2. Accessed November 2024.

Yuma, City of. 2022. City of Yuma 2022 General Plan. April 6, 2022. https://www.yumaaz.gov/home/showpublisheddocument/5172/637939261174930000

Yuma, County of. 2023. Section Ten-Energy Element. https://www.yumacountyaz.gov/home/showpublisheddocument/51843/638169858540530000

9.5.7 Section 5.7, Geology, Soils, and Paleontological Resources

Arizona Department of Emergency Management and Military Affairs, Division of Emergency Management (DEMA/EM). 2023. State of Arizona Hazard Mitigation Plan. https://dema.az.gov/sites/default/files/2023-11/SHMP_2023_Final.pdf (accessed April 2025)

Arizona House of Representatives. 2024. HB 2496: Transmission Lines. https://www.azleg.gov/legtext/56leg/1R/summary/H.HB2496_012723_NREW.DOCX.htm#:~:text=To%20build%20a%20transmission%20line,the%20Arizona%20Corporation%20Commission%20(A.R.S. (accessed February 2025)

Calexico, City of. 2015a. General Plan Conservation/Open Space Element. https://www.calexico.ca.gov/vertical/sites/%7B342ED706-1EBB-4FDE-BD1E-9543BAD44C09%7D/uploads/TABLE_OF_CONTENTS_SECTIONS_5.1_TO_5.4____6.pdf (accessed April 2025)

_____. 2015b. General Plan Safety Element. https://www.calexico.ca.gov/vertical/sites/%7B342ED706-1EBB-4FDE-BD1E-9543BAD44C09%7D/uploads/TABLE_OF_CONTENTS_SECTIONS_8.1_TO_8.4___9.pdf (accessed April 2025)

California Department of Conservation (DOC). 2016. Map Sheet 48: Earthquake Shaking Potential for California. https://www.conservation.ca.gov/cgs/Documents/Publications/Map-Sheets/MS_048.pdf (accessed February 2025)

_____. 2024a. Fault Activity Map of California. https://maps.conservation.ca.gov/cgs/fam/. (accessed February 2025)

_____. 2024b. Reported California Landslides. https://cadoc.maps.arcgis.com/apps/webappviewer/index.html?id=bc48ad40e3504134a1fc8f3909659041

California Geological Survey (CGS). 2002. Note 36 California Geomorphic Provinces. https://www.conservation.ca.gov/cgs/Documents/Publications/CGS-Notes/CGS-Note-36.pdf. (accessed February 2025)

_____. 2022. CGS Seismic Hazards Program: Liquefaction Zones. https://maps-cnra-cadoc.opendata.arcgis.com/datasets/cadoc::cgs-seismic-hazards-program-liquefaction-zones-1/explore?location=35.698065%2C-119.759465%2C8.06 (accessed February 2025)

California Public Resources Code. PRC Chapter 1.7, Section 5097.5 (a). 1965. California Code, PRC 5097.5. Accessed January 2025. (accessed April 2025)

California Public Utilities Commission (CPUC). G.O. 131-E, Section XIV.B. 2023. https://www.cpuc.ca.gov/-/media/cpuc-website/proceedings-and-rulemaking/documents/general-orders/go-131-e.pdf. (accessed February 2025)

Department of Energy (DOE). The National Environmental Policy Act of 1969, as Amended. 1982. NEPA of 1969. Accessed January 2025. (accessed April 2025)

Dibblee, T.W. and J.A. Minch. 2008a. Geologic map of the Coyote Wells & Heber 15 minute quadrangles, Imperial County, California. [map]. Dibblee Geologic Foundation, Dibblee Foundation Map DF-405, scale 1:62,500. (accessed April 2025)

_____. 2008b. Geologic map of the Plaster City & Brawley 15 minute quadrangles, Imperial County, California. [map]. Dibblee Geologic Foundation, Dibblee Foundation Map DF-406, scale 1:62,500. (accessed April 2025)

Federal Emergency Management Agency (FEMA). 2015. Renewable Energy and Transmission Element. https://www.icpds.com/assets/planning/renewable-energy-and-transmission-element-2015.pdf (accessed April 2025)2021. The National Earthquake Hazards Reduction Program (NEHRP) Overview. https://www.fema.gov/sites/default/files/documents/fema_nehrp-overview-factsheet_05-13-21.pdf. (accessed February 2025)

Imperial, County of. 2015a. Draft Programmatic Environmental Impact Report, Imperial County Renewable Energy and Transmission Element Update. https://www.icpds.com/assets/planning/cec-alternative-energy-update/reports-and-documents/12-deir-cec-renewable-energy-geology-soils.pdf (accessed April 2025)

_____. 2015b. Renewable Energy and Transmission Element. https://www.icpds.com/assets/planning/renewable-energy-and-transmission-element-2015.pdf (accessed April 2025)

_____. 2022a. General Plan Seismic and Public Safety Element. https://www.icpds.com/assets/GPA21-0004-Seismic-and-Public-Safety-Element-11-22-2022.pdf (accessed April 2025)

_____. 2022b. General Plan Renewable Energy and Transmission Element. https://www.icpds.com/assets/planning/renewable-energy-and-transmission-element-2015.pdf (accessed April 2025)

Jennings, C.W., C. Gutierrez, W. Bryant, G. Saucedo, and C. Wills. 2010. Geologic map of California. [map.] California Geological Survey. Geologic Data Map GDM-2.2010, scale 1:750,000. (accessed April 2025)

Mindat. 2024. Cargo Muchacho Mining District. https://www.mindat.org/loc-208829.html#:~:text=Geology%20and%20Ore%20Deposits%3A%20The,the%20metamorphic%20and%20granitic%20rocks. (accessed April 2025)

Morton, P.K. 1977. Geology and mineral resources of Imperial County, California. [map.] California Division of Mines and Geology. County Report CR-7, scale 1:125,000. (accessed April 2025)

Norris, R.M., and R.W. Webb. 1976. Geology of California. John Wiley and Sons, Inc. New York. (accessed April 2025)

State Water Resources Control Board (SWRCB). N.d. RUSLE K Factor Watershed Map Methodology. k_factor_map.pdf. Accessed January 2025. (accessed February 2025)

Society of Vertebrate Paleontology (SVP). 2010. Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources. Society of Vertebrate Paleontology Impact Mitigation Guidelines Revision Committee. https://vertpaleo.org/wp-content/uploads/2021/01/SVP_Impact_Mitigation_Guidelines-1.pdf. (accessed April 2025)

Southern California Earthquake Data Center (HWTDC). 2024. Earthquake Information. https://scedc.caltech.edu/earthquake/significant.html. (accessed April 2025)

United States Bureau of Reclamation (USBR). 1992. Characteristics and problems of Collapsible Soil. https://www.usbr.gov/tsc/techreferences/rec/R9202.pdf. (accessed April 2025)

United States Bureau of Land Management (BLM). 2016. Potential Fossil Yield Classification system: BLM Instruction Memorandum, no. 2016-124 (PFYC revised from USFS, 2008), https://www.blm.gov/sites/blm.gov/files/uploads/IM2016-124_att1.pdf. (accessed April 2025)

_____. 2023. BLM Natl PFYC Potential Fossil Yield Classification Geologic Formation Map Index 2022 Polygons. Updated April 7, 2023. https://gbp-blm-egis.hub.arcgis.com/datasets/813066f798704622ac8abf75d8786c69/about. (accessed April 2025)

United States Department of Agriculture (USDA). 2002. WIND ERODIBILITY GROUPS (I). https://efotg.sc.egov.usda.gov/references/Agency/SD/Archived_winderos_100415.pdf. (accessed April 2025)

_____. 2004. Understanding Soil Risks and Hazards Using Soil Survey to Identify Areas with Risks and Hazards to Human Life and Property. https://www.nrcs.usda.gov/sites/default/files/2022-10/soil-risks-and-hazards.pdf Accessed October 2024. (accessed April 2025)

_____. 2009. National Engineering Handbook, Part 630 Hydrology, Chapter 7 Hydrologic Soil Groups. https://directives.nrcs.usda.gov/sites/default/files2/1712930597/11905.pdf (accessed April 2025)

_____. 2022. Census of Agriculture, California State and County Data. Issued February 2024. (accessed April 2025)

_____. 2024. Web Soil Survey. https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. (accessed April 2025)

United States Geological Survey (USGS). 1984. Mineral Resources of the North Algodones Dunes Wilderness Study Area, Imperial County, California. https://pubs.usgs.gov/of/1984/0630/report.pdf (accessed February 2025)

_____. 2024a. What Is a Fault and What are the Different Types. https://www.usgs.gov/faqs/what-fault-and-what-are-different-types. (accessed February 2025)

_____. 2024b. U.S. Quaternary Faults (online map). https://usgs.maps.arcgis.com/apps/webappviewer/index.html?id=5a6038b3a1684561a9b0aadf88412fcf. (accessed February 2025)

_____. 2024c. Areas of Land Subsidence in California. https://ca.water.usgs.gov/land_subsidence/california-subsidence-areas.html (accessed February 2025)

Wilson, E.D. 1960. Geologic map of Yuma County, Arizona. [map.] Arizona Bureau of Mines. County Geologic Map Series M-3-11, scale 1:375,000. (accessed April 2025)

Yuma, County of. 2016. Yuma County Zoning Ordinance. https://livableaz.org/wp-content/uploads/2015/06/YumaCountyZoningOrdinance.pdf (accessed April 2025)

_____. 2023. Yuma County 2030 Comprehensive Plan Safety Element. https://www.yumacountyaz.gov/home/showpublisheddocument/51841/638169858231470000 (accessed April 2025).

9.5.8 Section 5.8, Greenhouse Gas Emissions

Arizona Governors' Office of Resiliency. 2024. The Clean Arizona Plan Priority Climate Action Plan State of Arizona. N.d. https://www.epa.gov/system/files/documents/2024-03/the-clean-arizona-plan.pdf. Accessed June 2025.

Association of Environmental Professionals. 2016. Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California. Available online at: https://califaep.org/docs/AEP-2016_Final_White_Paper.pdf. Accessed June 2022.

California Air Pollution Control Officers Association. 2022. CalEEMod. Available online at: http://www.caleemod.com. Accessed June 2022.

California Air Resource Board (CARB). 2008. Climate Change Scoping Plan. Sacramento, CA. December 2008. https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/document/adopted_scoping_plan.pdf Accessed June 2025

_____. 2014. AB 32 Scoping Plan Website. Updated June 2014. http://www.arb.ca.gov/cc/scopingplan/scopingplan.htm. Accessed June 2025

_____. 2017. California's 2017 Climate Change Scoping Plan. December 14, 2017. https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf. Accessed June 2025.

_____. 2018. Safeguarding California Plan: 2018 Update – California's Climate Adaptation Strategy. Safeguarding California Plan: 2018 Update. Accessed June 2022.

_____. 2022. 2022 Scoping plan Documents. https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents. Accessed June 2025

_____. 2025. Electricity Transmission and Distribution Greenhouse Gas Emissions. N.d. [website]. https://ww2.arb.ca.gov/our-work/programs/elec-tandd/about (accessed June 2025).

Intergovernmental Panel on Climate Change (IPCC). 2007. Climate Change 2007: Synthesis Report. A Report of the Intergovernmental Panel on Climate Change. https://www.ipcc.ch/site/assets/uploads/2018/03/ar4_wg2_full_report.pdf . Accessed June 2022.

_____. 2021. Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., P. Zhai, A. Pirani, S. L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M. I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T. K. Maycock, T. Waterfield, O. Yelekçi, R. Yu and B. Zhou (eds.)] Cambridge University Press. https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Full_Report.pdf. Accessed June 2025.

Swiss Federal Office of Civil Aviation. 2015. Guidance on the Determination of Helicopter Emissions. Edition 2. December.

9.5.9 Section 5.9, Hazards, Hazardous Materials, and Public Safety

Arizona Department of Environmental Quality. 2025. My Community Database. Available online at: https://azdeq.gov/MyCommunity. Accessed May 2025.

Arizona Department of Forestry and Fire Management. 2024. Wildfire Risk Assessment Portal. https://apps.azgeo.az.gov/azwrap/index.html. Accessed November 2024.

California Department of Toxic Substances Control (DTSC). 2025. EnviroStor [interactive map]. https://www.envirostor.dtsc.ca.gov/. Accessed May 2025.

California Public Utilities Commission (CPUC). 2024. CPUC High Fire Threat District. https://www.arcgis.com/apps/webappviewer/index.html?id=5bdb921d747a46929d9f00dbdb6d0fa2. Accessed November 2024.

California State Water Resources Control Board (SWRCB). 2025. GeoTracker [interactive map]. https://geotracker.waterboards.ca.gov/. Accessed May 2025.

City of Calexico. 2015. General Plan Safety Element. Available online at: https://www.calexico.ca.gov/vertical/sites/%7B342ED706-1EBB-4FDE-BD1E-9543BAD44C09%7D/uploads/TABLE_OF_CONTENTS_SECTIONS_8.1_TO_8.4___9.pdf. Accessed November 2024.

_____. 2019. Calexico International Airport. https://www.calexico.ca.gov/?SEC=531EF4A5-0975-43B0-9A41-3FAC5DBE4774. Accessed May 2025.

Environmental Data Resources, Inc (EDR). 2025a. Area/Corridor Report. April 18. Accessed May 2025.

_____. 2025b. Aerial Photographs. May. Accessed May 2025.

_____. 2025c. Topographic Maps. May. Accessed May 2025.

Imperial County. 1996. Imperial County Airport Land Use Compatibility Plan. Available online at: https://www.icpds.com/hearings/airport-land-use-commission. Accessed May 2025.

_____. 2021. Multi-Jurisdictional Hazard Mitigation Plan. Available online at: https://www.icpds.com/assets/Imperial-County-MHMP-2021-Plan-Update-2021_01_11.pdf. Accessed May 2025.

_____. 2022. Imperial County General Plan. Seismic and Public Safety Element. Available online at: https://www.icpds.com/assets/GPA21-0004-Seismic-and-Public-Safety-Element-11-22-2022.pdf. Accessed May 2025.

_____. 2025. Airport Land Use Compatibility Maps – Calexico International Airport. https://www.icpds.com/assets/planning/calexico-international-airport.pdf. Accessed May 2025.

North American Wood Pole Council. 2025. Wood Pole Preservatives. Available online at: https://woodpoles.org/Why-Wood-Poles/Preservatives. Accessed May 2025.

State of Iowa Department of Natural Resources. 2004. Frequently Asked Questions: Handling and Disposal of Chemically Treated Wood. Available online at: https://www.iowadnr.gov/portals/idnr/uploads/waste/swfact_treatedwood.pdf. Accessed May 2025.

Yuma County. 2019. Yuma County Multi-Jurisdictional Hazard Mitigation Plan. Available online at: https://www.yumacountyaz.gov/home/showpublisheddocument/41739/637165746725670000. Accessed November 2024.

_____. 2023. Yuma County 2030 Comprehensive Plan. Environmental Element. Available online at: https://www.yumacountyaz.gov/home/showpublisheddocument/51837/638169858210830000. Accessed November 2024.

_____. 2024. Yuma County 2030 Comprehensive Plan. Safety Element. Available online at: https://www.yumacountyaz.gov/home/showpublisheddocument/51841/638169858231470000. Accessed November 2024.

United States Department of Transportation (USDOT). 2025. Pipeline and Hazardous Materials Safety Administration National Pipeline Mapping System (NPMS) Public Map Viewer [interactive map]. Available online at: https://pvnpms.phmsa.dot.gov/PublicViewer/. Accessed May 2025.

United States Environmental Protection Agency (USEPA). 2005. Guidance for Evaluating Landfill Gas Emissions from Closed or Abandoned Facilities (EPA-600/R-05/123a). September. Available online at: https://nepis.epa.gov/Exe/ZyPDF.cgi/P1000BRN.PDF?Dockey=P1000BRN.PDF. Accessed May 2025.

9.5.10 Section 5.10, Hydrology and Water Quality

Arizona Department of Environmental Quality (ADEQ). 2020. Arizona Pollutant Discharge Elimination System General Permit for Stormwater Discharges Associated with Construction Activity to Protected Surface Waters. https://static.azdeq.gov/permits/azpdes/cgp_permit.pdf. Accessed May 2025.

_____. 2021. Arizona Pollutant Discharge Elimination System (AZPDES) FACT SHEET Construction General Permit (CGP) for Stormwater Discharges Associated with Construction Activity. https://static.azdeq.gov/permits/azpdes/cgp_fact_sheet.pdf. Accessed May 2025.

_____. 2023a. Arizona Department of Environmental Quality. https://azlibrary.gov/sla/agency_histories/arizona-department-environmental-quality-adeq#:~:text=ADEQ%20manages%20a%20variety%20of%20state%20and%20federal,state%20from%20the%20U.S.%20Environmental%20Protection%20Agency%20%28EPA%29. Accessed October 2024.

_____. 2023b. Surface Water Quality Standards. https://azdeq.gov/surface-water-quality-standards Accessed October 2024.

_____. 2023c. Protected Surface Waters List. https://www.azdeq.gov/pswl (Accessed October 2024).

_____. 2024a. Arizona's 2024 Clean Water Act Assessment (July 1, 2017 to June 30, 2022). Integrated 305(b) Assessment and 303(d) Listing Report. January. https://static.azdeq.gov/wqd/wqa/2024_cwaa.pdf. Accessed November 2024.

_____. 2024b. Surface Water Protection – Permitting Unit. https://azdeq.gov/SWPPermitting. Accessed October 2024.

_____. 2024c. Surface Water Monitoring and Assessment. https://azdeq.gov/SW-monitoring-n-assessment. Accessed October 2024.

_____. 2025. Construction Activity General Permit (CGP) for Stormwater. https://azdeq.gov/AZPDES/CGP. Accessed May 2025.

Arizona Department of Water Resources (ADWR). 2024. Arizona Department of Water Resources. https://azlibrary.gov/sla/agency_histories/arizona-department-water-resources. Accessed February 2025.California Public Utilities Commission (CPUC). G.O. 131-D, Section XIV.B. 2023. 521748942.pdf. Accessed January 2025.

CalMatters. 2023. Growers brace to give up some Colorado River water. January 17. https://calmatters.org/environment/2023/01/colorado-river-water/. Accessed February 2025.

City of Calexico. 2025. Municipal Code 1995. https://library.municode.com/ca/calexico/codes/code_of_ordinances. Accessed May 2025.

_____. 2015a. General Plan - Public Facilities/Services Element. https://www.calexico.ca.gov/vertical/sites/%7B342ED706-1EBB-4FDE-BD1E-9543BAD44C09%7D/uploads/TABLE_OF_CONTENTS_SECTIONS_4.1_TO_4.5___5.pdf. Accessed November 2024.

_____. 2015b. General Plan – Safety Element. https://www.calexico.ca.gov/vertical/sites/%7B342ED706-1EBB-4FDE-BD1E-9543BAD44C09%7D/uploads/TABLE_OF_CONTENTS_SECTIONS_8.1_TO_8.4___9.pdf. Accessed November 2024.

City of Yuma. 2022. General Plan. https://www.yumaaz.gov/home/showpublisheddocument/5172/637939261174930000. Accessed November 2024.

California Geological Survey (CGS). 2002. California Geomorphic Provinces (CGS Note 36). California Department of Conservation. https://www.conservation.ca.gov/cgs/documents/publications/cgs-notes/CGS-Note-36.pdf. Accessed October 2024.

Colorado River Basin Regional Water Quality Control Board (RWQCB). 2020a. Colorado River and Associated Lakes and Reservoirs (Lake Havasu Dam to Imperial Dam). Final California 2020 Integrated Report (303(d) List/305(b) Report). https://www.waterboards.ca.gov/water_issues/programs/tmdl/2020_2022state_ir_reports_revised_final/apx-b/01862.shtml. Accessed October 2024.

_____. 2020b. Colorado River and Associated Lakes and Reservoirs (Imperial Reservoir to California-Mexico Border). Final California 2020 Integrated Report (303(d) List/305(b) Report). https://www.waterboards.ca.gov/water_issues/programs/tmdl/2020_2022state_ir_reports_revised_final/apx-b/01527.shtml. Accessed October 2024.

_____. 2020c. All-American Canal. Final California 2020 Integrated Report (303(d) List/305(b) Report). https://www.waterboards.ca.gov/water_issues/programs/tmdl/2020_2022state_ir_reports_revised_final/apx-b/01526.shtml. Accessed October 2024.

_____. 2020d. Alamo River. Final California 2020 Integrated Report (303(d) List/305(b) Report). https://www.waterboards.ca.gov/water_issues/programs/tmdl/2020_2022state_ir_reports_revised_final/apx-b/01522.shtml. Accessed October 2024.

_____. 2020e. New River. Final California 2020 Integrated Report (303(d) List/305(b) Report). https://www.waterboards.ca.gov/water_issues/programs/tmdl/2020_2022state_ir_reports_revised_final/apx-b/01523.shtml. Accessed October 2024.

.2020f. Imperial Valley Drains. Final California 2020 Integrated Report (303(d) List/305(b) Report). https://www.waterboards.ca.gov/water_issues/programs/tmdl/2020_2022state_ir_reports_revised_final/apx-b/01524.shtml. Accessed October 2024.

_____. 2024. Water Quality Control Plan (Basin Plan) for the Colorado River Basin. https://www.waterboards.ca.gov/coloradoriver/water_issues/programs/basin_planning/docs/rb7-basin-plan.pdf. Accessed October 2024.

Department of Water Resources (DWR). 2004a. Imperial Valley Basin Description. https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Bulletin-118/Files/2003-Basin-Descriptions/7_030_ImperialValley.pdf. Accessed October 2024.

_____. 2004b. Ogilby Valley Basin Description. https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Bulletin-118/Files/2003-Basin-Descriptions/7_035_OgilbyValley.pdf. Accessed October 2024.

_____. 2004c. Yuma Valley Basin Description. https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Bulletin-118/Files/2003-Basin-Descriptions/7_036_YumaValley.pdf. Accessed October 2024.

_____. 2016. Adjudicated Basins Annual Reporting System. https://sgma.water.ca.gov/adjudbasins/signin. Accessed May 2025.

_____. 2018. DWR Releases Draft Prioritization of Groundwater Basins Under SGMA. https://water.ca.gov/News/News-Releases/2018/May-18/DWR-Releases-Draft-Prioritization-of-Groundwater-Basins-Under-SGMA. Accessed May 2025.

_____. 2024a. SGMA Data Viewer – Imperial Valley Groundwater Basin. https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer#boundaries. Accessed October 2024.

_____. 2024b. 2024a. SGMA Data Viewer – Ogilby Valley Groundwater Basin. https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer#boundaries. Accessed October 2024.

_____. 2024c. SGMA Data Viewer – Yuma Valley Groundwater Basin. https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer#boundaries. Accessed October 2024.

_____. 2025. Basin Prioritization. https://water.ca.gov/Programs/Groundwater-Management/Basin-Prioritization. Accessed May 2025.

Heber Public Utility District. 2018. Heber Public Utility District 2017 Service Area Plan. https://www.heber.ca.gov/sites/default/files/Service_Area_Plan_2017.pdf. Accessed May 2025.

Imperial Irrigation District (IID). 2012a. Imperial Integrated Regional Water Management Plan: Executive Summary. https://www.iid.com/home/showpublisheddocument/9575/635648001335730000. Accessed May 2025.

_____. 2012b. Imperial Integrated Regional Water Management Plan: Chapter 5 Supply, Demand and Water Budget. https://www.iid.com/home/showpublisheddocument/9571/635648001335730000 Accessed May 2025.

_____. 2012c. Imperial Integrated Regional Water Management Plan: Chapter 4 Region Description and Baseline Conditions. https://www.iid.com/home/showpublisheddocument/9509/635648001335730000 Accessed May 2025.

_____. 2015. Notice of Election to Serve as a Groundwater Sustainability Agency. 047_Imperial_Irrigation_District_GSA_2015-12-04_v2 (1).pdf. Accessed May 2025.

_____. 2024. “Imperial Integrated Regional Water Management Plan”. Imperial Irrigation District. https://www.iid.com/water/water-supply/water-plans/imperial-integrated-regional-water-management-plan. Accessed October 2024.

_____. 2025a. About IID Water. https://www.iid.com/water/about-iid-water. Accessed May 2025.

_____. 2025b. Public Water Map. https://mygis.iid.com/portal/apps/webappviewer/index.html?id=a33cfeb3714f4eb8a1c85320613a2d1b. Accessed May 2025.

Imperial County. 2003. Heber Urban Area Plan. https://www.icpds.com/assets/planning/community-plans/heber-urban-area-plan.pdf Accessed May 2025.

_____. 2015. Notice of Election to Become the Groundwater Sustainability Agency for All Groundwater Basins within Imperial County. https://sgma.water.ca.gov/portal/gsa/print/443. Accessed May 2025.

_____. 2024. Imperial County General Plan. Water Element. https://www.icpds.com/assets/planning/water-element.pdf. Accessed October 2024.

Imperial County and IID. 2016. Memorandum of Understanding. SGMA Portal. https://sgma.water.ca.gov/portal/gsa/print/443. Accessed October 2024.

Online Ethics Center. 2018. "Case Study: Climate Change Adaptation and Public Participation in Yuma, AZ". https://onlineethics.org/cases/case-study-climate-change-adaptation-and-public-participation-yuma-az#:~:text=With%20an%20average%20of%20350,%2C%20US%20states%2C%20and%20nations. Accessed October 2024.

State Water Resources Control Board (SWRCB). 2022. Construction Stormwater General Permit. Order No. 2022-0057-DWQ. Accessed October 2024.

_____. 2024. About SGMA. California Environmental Protection Agency. https://waterboards.ca.gov/water_issues/programs/sgma/about_sgma.html. Accessed October 2024.

U.S. Bureau of Reclamation (USBR). 2008. The Law of the River. https://www.usbr.gov/lc/region/g1000/lawofrvr.html. Accessed October 2024.

_____. 2024a. Approval of Calendar Year (CY) 2025 Colorado River Water Diversion – Bard Water District (BWD). https://www.usbr.gov/lc/region/g4000/4200Rpts/Approvals/2025/CA/2025%20Bard%20Approval.pdf. Accessed May 2025.

_____. 2024b. Approval of Calendar Year (CY) 2025 Colorado River Water Diversion – North Gila Valley Irrigation District (NGVID). https://www.usbr.gov/lc/region/g4000/4200Rpts/Approvals/2025/AZ/2025%20NGVID%20Approval.pdf. Accessed May 2025.

U.S. Environmental Protection Agency (USEPA). 2000. Fact Sheet: Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California. https://www.epa.gov/sites/default/files/2018-10/documents/wqs-establishment-numeric-criteria-ca-ctr-factsheet.pdf. Accessed May 2025.

_____. 2024a. Overview of the Drinking Water Sole Source Aquifer Program. https://www.epa.gov/dwssa/overview-drinking-water-sole-source-aquifer-program#What_Is_SSA. Accessed May 2025.

_____. 2024b. Water Quality Standards: Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California (California Toxics Rule). https://www.epa.gov/wqs-tech/water-quality-standards-establishment-numeric-criteria-priority-toxic-pollutants-state (Accessed May 2025).

_____. 2025a. Sole Source Aquifers. https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=9ebb047ba3ec41ada1877155fe31356b. Accessed May 2025.

_____. 2025b. Clean Water Act (CWA) and Federal Facilities. https://www.epa.gov/enforcement/clean-water-act-cwa-and-federal-facilities. Accessed January 2025.

U.S. Geological Survey (USGS). 2013a. National Water Information System: Mapper - Springs. https://maps.waterdata.usgs.gov/mapper/index.html. Accessed May 2025.

_____. 2013b. National Water Information System: Mapper - Groundwater Sites. Available at: https://maps.waterdata.usgs.gov/mapper/index.html/ Accessed May 2025.

_____. 2024. Scient in Your Watershed - Locate Your Watershed (Legacy 8-digit HUC). https://water.usgs.gov/wsc/sub/1810.html. Accessed November 2024.

Yuma Area Agricultural Council. 2025. Read About the Water Districts for Yuma County Agriculture. https://yaac.org/water-district/ Accessed May 2025.

Yuma County. 2023. Yuma County 2030 Comprehensive Plan. Water Resources Element https://www.yumacountyaz.gov/home/showpublisheddocument/51839/638169858220370000. Accessed October 2024.

Yuma County Library District. 2013. Yuma Water Users Association Collection. https://yumalibrary.org/yuma-water-users-association-collection/ Accessed May 2025.

9.5.11 Section 5.11, Land Use and Planning

Bureau of Land Management (BLM). 1980. California Desert Conservation Area Plan. Available online at: https://eplanning.blm.gov/eplanning-ui/project/66949/570

_____. 2002. Northern and Eastern Colorado Desert Coordinated Management Plan. Available online at: https://eplanning.blm.gov/eplanning-ui/project/67044/570

_____. 2010. Yuma Resource Management Plan. Available online at: https://eplanning.blm.gov/eplanning-ui/project/68418/510

_____. 2013. Imperial Sand Dunes Recreation Area Management Plan. Available online at: https://eplanning.blm.gov/eplanning-ui/project/71563/570

_____. 2015. Desert Renewable Energy Conservation Plan. Available online at: https://www.blm.gov/programs/planning-and-nepa/plans-in-development/california/desert-renewable-energy-conservation-plan

_____. 2016. Desert Renewable Energy Conservation Plan Land Use Plan Amendment. Available online at: https://eplanning.blm.gov/eplanning-ui/project/66459/570

_____. 2022. West-wide Energy Corridors. Available online at: https://www.blm.gov/energy-corridors.

City of Calexico. 2015. City of Calexico General Plan. Available online at: https://www.calexico.ca.gov/?SEC=254C9C81-D449-44C7-B581-0B8070E31FF1

_____. 2021. Zoning Map 2021. https://www.calexico.ca.gov/vertical/sites/%7B342ED706-1EBB-4FDE-BD1E-9543BAD44C09%7D/uploads/CLX_Zoning_Map_2021_Rev.A.pdf.

Imperial County. 1993. General Plan. Available online at: http://www.icpds.com/?pid=571

_____. 2025. Zone Maps. Available online at: https://www.icpds.com/planning/maps/zone-maps.

Yuma County. 2006. Yuma County Zoning Ordinance. Available online at: https://livableaz.org/wp-content/uploads/2015/06/YumaCountyZoningOrdinance.pdf

_____. 2023. Yuma County 2030 Comprehensive Plan. Available online at: https://www.yumacountyaz.gov/government/development-services/laws-guidelines/2020-comprehensive-plan

U.S. Bureau of Reclamation (USBR). 2025. Fact Sheet. Available online at: https://www.usbr.gov/main/about/fact.html

9.5.12 Section 5.12, Mineral Resources

Arizona Geological Survey (AZGS). 2025. Active Mines in Arizona. University of Arizona Science. https://uagis.maps.arcgis.com/apps/webappviewer/index.html?id=9eceb192cd86497e8eed04113302db8b. Accessed May 2025.

_____. 2019. Active Mines in Arizona – Directory and Map. https://azgs.arizona.edu/news/2019/12/active-mines-arizona-directory-and-map. Accessed June 2025.

Arizona Oil and Gas Conservation Commission (AZOGCC). 2025. Oil & Gas Wells. https://www.arcgis.com/apps/webappviewer/index.html?id=4d53e4cd05b6404f9b1ee5f067f55c04. Accessed June 2025.

California Division of Mines and Geology. 1977. Geology and Mineral Resources of Imperial County, California. https://archive.org/details/geologyandminer07mort/page/n7/mode/2up. Accessed May 2025.

California Department of Conservation (DOC). 2016. Division of Mine Reclamation. https://maps.conservation.ca.gov/mol/index.html. Accessed May 2025.

_____. 2025. California Mineral Resources Data Portal, Mines Online. https://maps.conservation.ca.gov/cgs/minerals/?page=All-Data. Accessed May 2025.

California Geologic Energy Management Division (CalGEM). 2025. CalGEM Well Finder. https://maps.conservation.ca.gov/doggr/wellfinder/. Accessed June 2025.

California Geological Survey (CGS). 2002. Note 36: California Geomorphic Provinces. https://www.conservation.ca.gov/cgs/Documents/Publications/CGS-Notes/CGS-Note-36.pdf. Accessed May 2025.

City of Calexico. 2015. General Plan. Conservation/Open Space Element. https://www.calexico.ca.gov/vertical/sites/%7B342ED706-1EBB-4FDE-BD1E-9543BAD44C09%7D/uploads/TABLE_OF_CONTENTS_SECTIONS_5.1_TO_5.4____6.pdf. Accessed May 2025.

Imperial County. 2016. Imperial County General Plan. Conservation and Open Space Element. https://www.icpds.com/assets/planning/conservation-open-space-element-2016.pdf. Accessed May 2025.

_____. 2015. Imperial County General Plan. Renewable Energy and Transmission Element. https://www.icpds.com/planning/land-use-documents/general-plan/renewable-energy-and-transmission-element. Accessed June 2025.

State Mining and Geology Board (SMGB). 1988. Guidelines for Classification and Designation of Mineral Lands. https://www.conservation.ca.gov/smgb/Guidelines/Documents/ClassDesig.pdf. Accessed May 2025.

U.S. Bureau of Land Management (BLM). 2025. Mineral & Lands Record System. https://mlrs.blm.gov/s/. Accessed May 2025.

U.S. Bureau of Mines & U.S. Geological Survey (USGS). 1976. Principles of the Mineral Resource Classification System of the U.S. Bureau of Mines and U.S. Geological Survey. https://pubs.usgs.gov/bul/1450a/report.pdf. Accessed May 2025.

U.S. Geological Survey (USGS). 2022. Mineral Resources Online Spatial Data. https://mrdata.usgs.gov/general/map-us.html. Accessed May 2025.

Yuma County. 2023. Yuma County 2030 Comprehensive Plan. Environmental Element. https://www.yumacountyaz.gov/home/showpublisheddocument/51837/638169858210830000. Accessed May 2025.

9.5.13 Section 5.13, Noise

Calexico, City of. 2015. City of Calexico Draft 2015 General Plan Update. https://www.calexico.ca.gov/index.asp?SEC=254C9C81-D449-44C7-B581-0B8070E31FF1 (accessed April 2025).

California Department of Transportation (Caltrans). 2013. *Technical Noise Supplement to the Traffic Noise Analysis Protocol*. (CT-HWANP-RT-13-069.25.2) September. http://www.dot.ca.gov/hq/env/noise/pub/TeNS_Sept_2013B.pdf (accessed May 2025).

Crocker, Malcom J (Editor). 2007. *Handbook of Noise and Vibration Control Book*, ISBN: 978-0-471-39599-7, Wiley-VCH, October.

Electric Power Research Institute (EPRI). 2010. Electrical Effects of HVDC Transmission Lines. https://www.epri.com/research/products/1020118 (accessed May 2025).

Federal Highway Administration (FHWA). 2006*. FHWA Highway Construction Noise Handbook*. (FHWAHEP-06-015; DOT-VNTSC-FHWA-06-02). http://www.fhwa.dot.gov/environment/construction_noise/handbook (accessed June 2025).

_____. 2011. Highway Traffic Noise Analysis and Abatement Policy and Guidance. (FHWA-HEP-10-025). December.

_____. 2017. *Highway Construction Noise: Measurement, Prediction, and Mitigation*. June.

Federal Transit Administration (FTA). 2018. Transit Noise and Vibration Impact Assessment Manual. November. https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf (accessed April 2025).

International Society of Explosives Engineers (ISEE). 2011. Blasters' Handbook, 18th Edition.

Imperial, County of. 2015. Imperial County General Plan Noise Element. https://www.icpds.com/planning/land-use-documents/general-plan (accessed April 2025).

Kinsler, Lawrence E., R. Frey, Austin, B. Coppens, Alan and V. Sanders, James. Fundamentals of Acoustics, 4th Edition. ISBN 0-471-84789-5. Wiley-VCH, December 1999.

United States Environmental Protection Agency (USEPA). 1974. Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=2000L3LN.TXT. Accessed June 2025.

United States Forest Service (USFS). 2008. Sound Measurements of Helicopters During Logging Operations. https://www.fs.usda.gov/t-d/programs/im/sound_measure/helo_index.shtml (accessed June 2025).

Yuma County Airport Authority. 2022. Yuma International Airport Master Plan. https://flyyuma.com/masterplan.html (accessed April 2025).

Yuma, County of. 2023. Yuma County 2030 Comprehensive Plan. https://www.yumacountyaz.gov/government/development-services/laws-guidelines/2020-comprehensive-plan (accessed April 2025).

9.5.14 Section 5.14, Population and Housing

Arizona Office of Economic Opportunity. 2022. Population Projections, Medium Series. https://oeo.az.gov/population/projections. Accessed May 2025.

California Department of Finance. 2024. Demographic Projections. https://dof.ca.gov/Forecasting/Demographics/Projections/. Accessed May 2025.

City of Calexico. 2018. City of Calexico. Service Area Plan Update 2018. Item_14_-_Attachment_No._3.pdf. Accessed June 2025.

_____. 2022. 2021-2029 Housing Element Update. https://www.calexico.ca.gov/vertical/Sites/%7B342ED706-1EBB-4FDE-BD1E-9543BAD44C09%7D/uploads/20220902_Calexico_HEU_Compiled_Redlines.pdf. Accessed May 2025.

City of El Centro. 2015. Final Vision 2050 Strategic Plan. Vision-2050-Strategic-Plan-PDF. Accessed June 2025.

City of Yuma. 2021. Housing Market Assessment. https://www.yumaaz.gov/home/showpublisheddocument/3976/637642721353399613. Accessed May 2025.

_____. 2022. General Plan. https://www.yumaaz.gov/home/showpublisheddocument/5172/637939261174930000. Accessed May 2025.

Imperial County. 2022. Imperial County 2021-2029 Housing Element. https://www.icpds.com/assets/IMPERIALCO_Housing-Element_Adopted-2.8.22.pdf. Accessed May 2025.

United States Census Bureau. 2020. 2020 Census: Redistricting File (Public Law 94-171) Dataset. https://data.census.gov/. Accessed May 2025.

Yuma County. 2023. Yuma County 2030 Comprehensive Plan. https://www.yumacountyaz.gov/government/development-services/laws-guidelines/2020-comprehensive-plan. Accessed May 2025.

9.5.15 Section 5.15, Public Services

City of Calexico. 2015. General Plan Public Facilities/Services Element. 4.0_Public_Facilities_and_Services_Element.pdf. Accessed May 2025.

_____. 2020. Fire Suppression. https://www.calexico.ca.gov/index.asp?SEC=AD50BA87-05CF-4B57-9A0E-9688E3616E13&DE=7D4207A2-1BD2-47D4-9542-1F36FFC6FA0A. Accessed June 2025.

Imperial County. 2022a. General Plan Seismic and Public Safety Element. https://www.icpds.com/planning/land-use-documents/general-plan/seismic-and-public-safety. Accessed June 2025.

_____. 2022b. General Plan Overview- Public Safety. https://www.icpds.com/assets/planning/general-plan-overview.pdf. Accessed May 2025.

Imperial County Fire Department. 2021. Imperial County Multi-Jurisdictional Hazard Mitigation Plan Update. https://firedept.imperialcounty.org/wp-content/uploads/2021/01/Imperial-County-MHMP-2021-Plan-Update-2021_01_11.pdf. Accessed June 2025.

Yuma County. 2019. Yuma County Multi-Jurisdictional Hazard Mitigation Plan. https://www.yumacountyaz.gov/home/showpublisheddocument/41739/637165746725670000. Accessed June 2025.

_____. 2023. Yuma County 2030 Comprehensive Plan Safety Element. https://www.yumacountyaz.gov/home/showpublisheddocument/51841/638169858231470000. Accessed May 2025.

9.5.16 Section 5.16, Recreation

Arizona Game and Fish Department. About Arizona Game and Fish. https://www.azgfd.com/about-arizona-game-fish/. Accessed June 2025.

Bureau of Land Management (BLM). 1999. California Desert Conservation Area Plan. https://eplanning.blm.gov/eplanning-ui/project/66949/510. Accessed June 2025.

_____. 2002. Northern & Eastern Colorado Desert Coordinated Management Plan. https://eplanning.blm.gov/public_projects/lup/67044/82331/97329/NECO_Plan_Vol_1.pdf. Accessed September 2025.

_____. 2005. BLM Land Use Planning Handbook. https://www.ntc.blm.gov/krc/system/files?file=legacy/uploads/5656/4_BLM%20Planning%20Handbook%20H-1601-1.pdf. Accessed June 2025.

_____. 2010. Yuma Resource Management Plan. Available online at: https://eplanning.blm.gov/eplanning-ui/project/68418/510. Accessed June 2025.

_____. 2013. Imperial Sand Dunes Recreation Area Business Plan. Available online at: https://www.blm.gov/sites/default/files/docs/2025-01/Imperial%20Sand%20Dunes%20Imperial%20Sand%20Dunes%20Recreation%20Area%20Business%20Plan-%20Final%20FM%2020241213.pdf. Accessed September 2025.

_____. 2015. Desert Renewable Energy Conservation Plan. Available online at: https://www.blm.gov/programs/planning-and-nepa/plans-in-development/california/desert-renewable-energy-conservation-plan. Accessed June 2025.

_____. 2025a. Visit. Maps. https://www.blm.gov/maps. Accessed June 2025.

_____. 2025b. Mittry Lake Wildlife Area. https://www.blm.gov/visit/mittry-lake-wildlife-area. Accessed June 2025.

_____. 2025c. Betty's Kitchen Watchable Wildlife Viewing Area and National Recreation Trail. https://www.blm.gov/visit/bettys-kitchen-watchable-wildlife-viewing-area-and-national-recreation-trail. Accessed September 2025.

California Department of Parks and Recreation. 2025. Off-Highway Motor Vehicle Recreation Division (OHMVR). Heber Dunes SVRA. https://ohv.parks.ca.gov/?page_id=25642. Accessed June 2025.

City of Calexico. 2015. City of Calexico General Plan. Available online at: https://www.calexico.ca.gov/?SEC=254C9C81-D449-44C7-B581-0B8070E31FF1. Accessed June 2025.

City of Yuma. 2022. City of Yuma General Plan. Available online at: https://www.yumaaz.gov/home/showpublisheddocument/5172/637939261174930000. Accessed June 2025.

Imperial County. 1993. General Plan. Available online at: http://www.icpds.com/?pid=571. Accessed June 2025.

Yuma County. 2023. Yuma County 2030 Comprehensive Plan. Available online at: https://www.yumacountyaz.gov/government/development-services/laws-guidelines/2020-comprehensive-plan. Accessed June 2025.

9.5.17 Section 5.17, Transportation

Arizona Department of Transportation (ADOT). 2019. Traffic Control Guidelines. https://azdot.gov/sites/default/files/2023-08/TrafficControlDesignGuidelines2019.pdf. Accessed May 2025.

Arizona Revised Statutes Section 40-360.06(D). 2022. https://codes.findlaw.com/az/title-40-public-utilities-and-carriers/az-rev-st-sect-40-360-06/. Accessed June 2025.

Arizona State Board of Transportation. 2025. Website Home. https://aztransportationboard.gov/. Accessed May 2025.

California Department of Transportation. 2021. California Public 2020 Road Data. Statistical Information https://dot.ca.gov/-/media/dot-media/programs/research-innovation-system-information/documents/california-public-road-data/prd-2020-a11y.pdf Accessed May 2025.

California Public Utilities Commission (CPUC). G.O. 131-E, Section XIV.B. January 30, 2025. https://www.cpuc.ca.gov/-/media/cpuc-website/proceedings-and-rulemaking/documents/general-orders/go-131-e.pdf. Accessed May 2025.

City of Calexico. 2007. City of Calexico General Plan Circulation Element. https://www.calexico.ca.gov/vertical/sites/%7B342ED706-1EBB-4FDE-BD1E-9543BAD44C09%7D/uploads/3.0_Circulation_Element.pdf. Accessed June 2025.

_____. 2015. General Plan – Circulation Element. https://www.calexico.ca.gov/vertical/sites/%7B342ED706-1EBB-4FDE-BD1E-9543BAD44C09%7D/uploads/TABLE_OF_CONTENTS_SECTIONS_3.1_TO_3.8___4.pdf. Accessed November 2024.

_____. 2025. Calexico International Airport (CXL). https://www.calexico.ca.gov/?SEC=531EF4A5-0975-43B0-9A41-3FAC5DBE4774. Accessed June 2025.

City of Yuma. 2022. General Plan. https://www.yumaaz.gov/home/showpublisheddocument/5172/637939261174930000. Accessed November 2024.

County of Imperial. 2024. Regional Long-Range Transportation Plan. https://www.imperialctc.org/assets/lrtp_2.6.24-1711045986.pdf. Accessed May 2025.

FlixBus. 2024. Bus Travel in the US. https://www.flixbus.com/?atb_pdid=074daef0-6929-4ea2-a9ff-8ca6560e5a2f&_sp=3dd12cd9-d384-4959-bda6-5461f95b87c2.1732646610774. Accessed November 2024.

Imperial County Transportation Commission (ICTC). 2022. Imperial County Regional Active TransportationPlan. https://www.imperialctc.org/assets/documents/transportation-plans-and-studies/ICTC-ATP_Final-Document_2022.02.28_Reduced-Size.pdf. Accessed November 2024.

Southern California Association of Governments. 2023. Bike Routes – SCAG Region. https://gisdata-scag.opendata.arcgis.com/datasets/SCAG::bike-routes-scag-region-/about. Accessed December 2024.

Yuma County. 2023. Yuma County 2030 Comprehensive Plan. Circulation Element. https://www.yumacountyaz.gov/home/showpublisheddocument/51835/638169858204900000. Accessed December 2024.

Yuma Metropolitan Planning Organization (YMPO). 2020. Traffic Counts. https://ympo.org/maps-more/traffic-counts/. Accessed November 2024.

_____. 2021a. FY 2022-2026 YMPO Transportation Improvement Program (TIP) Final. https://ympo.org/docs/FY%202022-2026%20YMPO%20Transportation%20Improvement%20Program%20(TIP)%20Final.pdf. Accessed November 2024.

_____. 2021b. YMPO 2022-2045 Long-Range Transportation Plan Update. https://ympo.org/docs/YMPO_2022-2045_Final_LRTP.pdf. Accessed December 2024.

9.5.18 Section 5.18, Tribal Cultural Resources

Augustine Band of Cahuilla Indians. 2024. Lasting Legacy. https://tribe.augustinetribe-nsn.gov/lasting-legacy/, accessed February 2025.

Bean, Walton. 1978. California: An Interpretive History. McGraw-Hill Book Company, New York.

Bee, Robert L. 1983. The Quechan. In Southwest, edited by Alfonso Ortiz, pp. 86–98. Handbook of North American Indians, Vol. 10, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Feathers, Susan L. 2004. The Cocopah Story. Electronic resource. https://walkearth.org/wp-content/uploads/2022/07/the-cocopah-story.pdf, accessed March 2025.

Gamble, Lynn H. and Irma Carmen Zepeda. 2002. “Social Differentiation and Exchange Among the Kumeyaay Indians during the Historic Period in California.” Historical Archaeology, Vol. 36, No. 2.

Gifford, Edward W. 1931. The Kamia of Imperial Valley. Smithsonian Institution Bureau of American Ethnology, Bulletin 97. Government Printing Office, Washington, D.C.

Gum, Lou. 2019. Cocopah Tribe Effort to Revive Tea Recipe Stymied by Tree Die-off. Electronic resource at https://www.kawc.org/science/2019-04-02/cocopah-tribe-effort-to-revive-tea-recipe-stymied-by-tree-die-off, accessed March 2025.

Inter Tribal Council of Arizona. 2025. Cocopah Indian Tribe Introductory Information. Electronic resource. https://itcaonline.com/member-tribes/cocopah-tribe/, accessed March 2025.

Kelly, William H. 1977. Cocopa Ethnography. The Anthropological Papers of the University of Arizona. No. 29 (1).

Kroeber, Alfred L. 1908. Ethnography of the Cahuilla Indians. University of California Publications in American. *Archaeology and Ethnology* 8(2): 29–68.

Kroeber, Alfred L. 1925. Handbook of the Indians of California. Bureau of American Ethnology Bulletin 78. Smithsonian Institution, Washington, D.C. Reprinted, 1976, Dover Publications, New York.

Luomala, Katherine. 1978. "Tipai and Ipai." In "California," edited by Robert F. Heizer, pp. 592-609. Handbook of North American Indians, Vol. 8, W. C. Sturtevant, general editor. Smithsonian Iinstitution Press, Washington, D.C.

Morton, Julia. 2023. Tribal-led Restoration in the Colorado River Delta. Electronic resource at https://www.audubon.org/news/tribal-led-restoration-colorado-river-delta, accessed March 2025.

Moratto, Michael J. 1984. *California Archaeology*. Academic Press, New York.

Rincon Consultants, Inc. 2025a. *Ironwood Transmission Line Project, Ethnographic Literature Review, Imperial County, California and Yuma County, Arizona*. Rincon Consultants Project No. 24-16213. Report on file at the Bureau of Land Management.

Rincon Consultants, Inc. 2025b. *Ironwood Transmission Line Project, Tribal Participation Plan (Survey) Imperial County, California and Yuma County, Arizona. Rincon Consultants Project No. 24-16213. Report on file at the Bureau of Land Management.*

Shipek, Florence. 1982. "Kumeyaay Socio-Political Structure." Journal of California and Great Basin Anthropology 4(2): 296–303.

Shipek, Florence. 1985. "Kuuchamaa: The Kumeyaay Sacred Mountain." Journal of California and Great Basin Anthropology 7(1): 67–74.

Ten Tribes Partnership. 2025. Cocopah Indian Tribe. Electronic resource. https://tentribespartnership.org/tribes/cocopah-indian-tribe/, accessed March 2025.

9.5.19 Section 5.19, Utilities and Service Systems

All Site Rentals. 2025. Porta Potty Calculator. https://www.allsiterentals.com/products/portable-restrooms-los-angeles/. Accessed September 2025.

Arizona Department of Environmental Quality (ADEQ). 2022. Draft Fact Sheet – Arizona Pollutant Discharge Elimination System. https://static.azdeq.gov/pn/jbs_azpdes_draft_fs.pdf. Accessed June 2025.

_____. 2024a. About Us. https://azdeq.gov/AboutUs. Accessed October 2024.

_____. 2024b. Special Waste. https://azdeq.gov/special-waste. Accessed October 2024.

_____. 2024c. Solid Waste Section. https://azdeq.gov/SolidWaste. Accessed October 2024.

Arizona Power Service Company (APS). 2022. Significant Permit Revision Application – Class I Air Quality Permit No. 90384. https://static.azdeq.gov/pn/aq_yuccapower_app.pdf. Accessed October 2024.

_____. 2023. Integrated Resource Report. https://www.aps.com/-/media/APS/APSCOM-PDFs/About/Our-Company/Doing-business-with-us/Resource-Planning-and-Management/APS_IRP_2023_PUBLIC.pdf?la=en&hash=F601897086C6836F7FD33C5C2F295F47. Accessed June 2025.

Arizona Water Resources Research Center (WRRC). 2024. Arizona Water Factsheet: Yuma County. November. https://wrrc.arizona.edu/sites/default/files/2024-01/Yuma_Factsheet_01_2024.pdf. Accessed June 2025.

California Department of Resources Recycling and Recovery (CalRecylce). 2024. SWIS Facility/Site Search. https://www2.calrecycle.ca.gov/SolidWaste/Site/Search/ Accessed October 2024.

Colorado River Basin Regional Water Quality Control Board (RWQCB). 2025. Notice of Public Hearing: National Pollutant Discharge Elimination System Permit and Waste Discharge Requirements Proposed Order R7-2025-XXXX. https://www.waterboards.ca.gov/coloradoriver/public_notices/2025/pn72501-rev2.pdf. Accessed September 2025.

Colorado River Board (CRB). 2025. The Lower Colorado Water Supply Act. PL 99-655; PL 109-103. https://crb.ca.gov/wp-content/uploads/2025/06/LCWSA-Background.pdf. Accessed June 2025.

City of Calexico. 2007. City of Calexico General Plan Public Facilities/Services Element. https://www.calexico.ca.gov/vertical/sites/%7B342ED706-1EBB-4FDE-BD1E-9543BAD44C09%7D/uploads/4.0_Public_Facilities_and_Services_Element.pdf. Accessed May 2025.

_____. 2015. Post-Construction Standards Plan. https://www.calexico.ca.gov/vertical/Sites/%7B342ED706-1EBB-4FDE-BD1E-9543BAD44C09%7D/uploads/9_Requirement_E.12_-Calexico_Post_Construction_Standards_Plan_(003).pdf#:~:text=This%20Post-Construction%20Standards%20Plan%20was%20prepared%20for%20the,Municipal%20Separate%20Storm%20Water%20Sewer%20System%20%28MS4%29%20Permit. Accessed September 2025.

_____. 2020. Wastewater Treatment Plant. https://www.calexico.ca.gov/index.asp?SEC=2858194C-3CEE-4A5E-8130-96CEDD701DA2#:~:text=The%20plant%20uses%20activated%20sludge%20technology%20and%20has,capacity%20of%205.5%20million%20gallons%20per%20day%20%28MDG%29. Accessed September 2025.

_____. 2022. Urban Water Management Plan. https://www.calexico.ca.gov/vertical/Sites/%7B342ED706-1EBB-4FDE-BD1E-9543BAD44C09%7D/uploads/Calexico_2020_UWMP_February_2022.pdf. Accessed September 2025.

City of Yuma. 2020. City of Yuma Water Conservation Plan. October. https://www.yumaaz.gov/home/showpublisheddocument/6444/638187145904170000 Accessed October 2024.

_____. 2024. Wastewater Treatment. https://www.yumaaz.gov/government/utilities/utilities-treatment-division/wastewater-treatment/. Accessed June 2025.

_____. 2025a. Only Rain Down the Drain. https://www.yumaaz.gov/government/engineering/stormwater-management-program Accessed June 2025.

_____. 2025b. Yuma Regional Communications System. https://www.yumaaz.gov/government/information-technology/yuma-regional-communication-system. Accessed June 2025.

Imperial County. 1997. Imperial County General Plan – Water Element. https://www.icpds.com/assets/planning/water-element.pdf. Accessed November 2024.

_____. 2015. Imperial County General Plan – Renewable Energy and Transmission Element. https://www.icpds.com/assets/planning/renewable-energy-and-transmission-element-2015.pdf. Accessed November 2024.

_____. 2018. Imperial County Hydrology Manual. https://publicworks.imperialcounty.org/wp-content/uploads/2023/05/Imperial-Cnty-Hydrology-Manual_10-9-18.pdf. Accessed October 2024.

Imperial County Public Health Department (ICPHD). 2023. Solid Waste. https://www.icphd.org/environmental-health/solid-waste/ Accessed October 2024.

Imperial County Department of Public Works (ICDPW). 2019. Divisions. https://publicworks.imperialcounty.org/divisions/. Accessed October 2024.

_____. 2021. Imperial County Integrated Waste Management Plan. https://publicworks.imperialcounty.org/wp-content/uploads/2021/01/Imperial-County-Integrated-Waste-Management-Plan.pdf. Accessed October 2024.

Imperial Irrigation District (IID). 2012a. Imperial Integrated Regional Water Management Plan (IRWMP) -- Executive Summary. https://imperialirwmp.org/wp-content/uploads/2013/07/A_Executive-Summary-20121005_Proof1.pdf. Accessed May 2025.

_____. 2012b. Imperial Integrated Regional Water Management Plan (IRWMP) – Chapter 4 Region Description and Baseline Conditions. https://imperialirwmp.org/wp-content/uploads/2013/07/CH04-Region-Description-and-Baseline-Conditions_20121012_Proof-21.pdf. Accessed September 2025.

_____. 2012c. Imperial Integrated Regional Water Management Plan (IRWMP) – Chapter 5 Supply, Demand and Water Budget. https://imperialirwmp.org/wp-content/uploads/2013/07/CH05-Supply-Demand-and-Water-Budget-20121010_Proof-21.pdf. Accessed September 2025.

_____. 2021. 2021 Water Conservation Plan. October. https://www.iid.com/home/showpublisheddocument/19518/637690432334530000 Accessed October 2024

_____. 2023. Equitable Distribution Plan. Revised July 26. https://www.iid.com/home/showpublisheddocument/20254/638313266942930000 Accessed October 2024

_____. 2024a. Yucca Gas Pipeline Project. https://www.iid.com/home/showpublisheddocument/4762/635986586693300000 Accessed October 2024.

_____. 2024b. Municipal Water Provider Contact Information. https://www.iid.com/water/municipal-industrial-and-commercial-customers/municipal-water-providers. Accessed October 2024.

_____. 2025a. Colorado River Facilities. https://www.iid.com/water/water-transportation-system/colorado-river-facilities. Accessed June 2025.

_____. 2025b. Deficit Irrigation Program (DIP). https://www.iid.com/water/water-conservation/deficit-irrigation-program. Accessed June 2025.

_____. 2025c. About IID Power. https://www.iid.com/power/about-iid-power#:~:text=Located%20in%20a%20region%20with,%2C%20hydroelectric%2C%20solar%20and%20wind. Accessed June 2025.

_____. 2025d. Water Plans. https://www.iid.com/water/water-supply/water-plans#:~:text=However%20state%20legislation%20%28CWC%20Division%206%2C%20Part%202.55%29,the%20State%20of%20California%20under%20SB%207%207x. Accessed September 2025.

Imperial Valley Telecommunications Authority (IVTA). 2025. Who We Are. https://www.ivta.net/about-us/ Accessed June 2025.

Kinder Morgan. 2024. Natural Gas Pipelines. West Region – El Paso Natural Gas. https://www.kindermorgan.com/Operations/Natural-Gas/Index/ Accessed October 2024.

Occupational Safety and Health Administration (OSHA). 2011. 1926.51 - Sanitation. https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926.51. Accessed September 2025.

Southern California Gas Company (SoCalGas). 2024. Natural Gas Transmission. https://www.socalgas.com/sustainability/pipeline-and-storage-safety/natural-gas-transmission. Accessed October 2024.

South Yuma County Landfill (SYCL). 2012. About Us. http://www.southyumacountylandfill.com/aboutus.php/ Accessed October 2024.

Southwest Gas Corporation (SGC). 2022. Southwest Gas Corporation Service Areas. https://www.swgas.com/7200000200599/SWG-Territory-Map-03-2022.pdf. Accessed July 2025.

State Water Resources Control Board (SWRCB). 2021. Order R7-2021-0050. General Waste Discharge Requirements for Imperial Valley Irrigated Agricultural Lands. https://www.waterboards.ca.gov/coloradoriver/board_decisions/adopted_orders/orders/2021/2021_0050imperialvalley_ag_adopted_wdr.pdf. Accessed June 2025.

TC Energy. 2019. About North Baja Pipeline, LLC. https://www.tcplus.com/North%20Baja. Accessed October 2024.

U.S. Bureau of Reclamation (USBR). 2025. Projects & Facilities – Yuma Project. https://www.usbr.gov/projects/index.php?id=391#:~:text=The%20Yuma%20Project%20provides%20water,Bard%20and%20Winterhaven%20in%20California. Accessed June 2024.

U.S. Census Bureau. 2025. Quick Facts: Imperial County, California. https://www.census.gov/quickfacts/fact/table/imperialcountycalifornia/PST045224. Accessed June 2025.

U.S. Department of Transportation (USDOT). 2024. National Pipeline Mapping System (NPMS) Public Viewer. https://pvnpms.phmsa.dot.gov/PublicViewer/. Accessed October 2024.

United States Environmental Protection Agency (USEPA). 2024. LMOP Landfill and Project Database. https://www.epa.gov/lmop/lmop-landfill-and-project-database. Accessed October 2024.

Western Area Power Administration (WAPA). 2025. Desert Southwest Region. https://www.wapa.gov/project/desert-southwest-region/. Accessed June 2025.

Yuma County Department of Public Works (YCDPW). 2024. About Us. https://www.yumacountyaz.gov/government/public-works/about-us. Accessed October 2024.

Yuma County. 2024. Yuma County Stormwater Management Plan. National Pollutant Discharge Elimination System (NPDES) Stormwater Phase II Permit Program. https://www.yumacountyaz.gov/home/showpublisheddocument/55625/638626997248870000. Accessed June 2025.

_____. 2023a. 2030 Comprehensive Plan. Water Resources Element. https://www.yumacountyaz.gov/home/showpublisheddocument/51839/638169858220370000/ Accessed November 2024.

_____. 2023b. 2030 Comprehensive Plan. Safety Element. https://www.yumacountyaz.gov/home/showpublisheddocument/51841/638169858231470000 Accessed November 2024.

_____. 2023c. 2030 Comprehensive Plan. Energy Element. https://www.yumacountyaz.gov/home/showpublisheddocument/51843/638169858540530000. Accessed November 2024.

9.5.20 Section 5.20, Wildfire

Anderson, H.E. 1982. Aids to Determining Fuel Models for Estimating Fire Behavior. https://www.fs.usda.gov/rm/pubs_int/int_gtr122.pdf. Accessed November 2024.

Arizona Department of Environmental Quality (ADEQ). 2025. AERMET Data Files – Yuma AERMET Files. https://www.azdeq.gov/aermet-data-files. Accessed June 2025.

Arizona Department of Forestry and Fire Management (DFFM). 2024. Wildfire Risk Assessment Portal. https://apps.azgeo.az.gov/azwrap/index.html. Accessed November 2024.

_____. 2025a. Fire Webpage. https://dffm.az.gov/fire. Accessed June 2025.

_____. 2025b. Annual Operating Plan (AOP) for Cooperative Fire Rate Agreement. https://dffm.az.gov/sites/default/files/media/AZ%20AOP%20Final%202025%20%281%29.pdf. Accessed June 2025.

Arizona Revised Statutes Section 40-360.06(D). 2011.

California Air Resources Board (CARB). 2025. Meteorological Station Information and Years Processed – Imperial County Airport. https://ww2.arb.ca.gov/resources/documents/harp-aermod-meteorological-files. Accessed June 2025.

California Department of Forestry and Fire Protection (CAL FIRE). 2024. CAL FIRE Strategic Plan 2024. https://www.paperturn-view.com/cal-fire-communications/cal-fire-strategicplan24-web?pid=ODg8828162&v=2. Accessed November 2024.

_____. 2023. Fire Hazard Severity Zone Viewer. https://calfire-forestry.maps.arcgis.com/apps/webappviewer/index.html?id=988d431a42b242b29d89597ab693d008. Accessed November 2024.

_____. 2021. California Power Line Fire Prevention Field Guide. https://34c031f8-c9fd-4018-8c5a-4159cdff6b0d-cdn-endpoint.azureedge.net/-/media/osfm-website/what-we-do/community-wildfire-preparedness-and-mitigation/prevention-field-guides/2021-power-line-fire-prevention-field-guide-ada-final_jf_20210125.pdf. Accessed November 2024.

California Public Utilities Commission (CPUC). 2024. CPUC High Fire Threat District. https://www.arcgis.com/apps/webappviewer/index.html?id=5bdb921d747a46929d9f00dbdb6d0fa2. Accessed November 2024.

_____. 2023. G.O. 131-D, Section XIV.B. May 23rd, 2023.

City of Calexico. 2015. General Plan. Safety Element. https://www.calexico.ca.gov/vertical/sites/%7B342ED706-1EBB-4FDE-BD1E-9543BAD44C09%7D/uploads/TABLE_OF_CONTENTS_SECTIONS_8.1_TO_8.4___9.pdf. Accessed November 2024.

California Wildland Fire Coordination Group, National Oceanic and Atmospheric Administration, National Weather Service, U.S. Department of Commerce. 2024. California Fire Weather Annual Operating Plan 2024. https://www.weather.gov/media/wrh/cafw/2024_CA_FIRE_AOP.pdf. Accessed June 2025.

Imperial County. 2022. Imperial County General Plan. Seismic and Public Safety Element. https://www.icpds.com/assets/GPA21-0004-Seismic-and-Public-Safety-Element-11-22-2022.pdf. Accessed November 2024.

_____. 2021. Multi-Jurisdictional Hazard Mitigation Plan. https://www.icpds.com/assets/Imperial-County-MHMP-2021-Plan-Update-2021_01_11.pdf. Accessed November 2024.

Iowa State University. 2025. Iowa Environmental Mesonet – Wind Roses. https://mesonet3.agron.iastate.edu/sites/windrose.phtml?station=NYL&network=AZ_ASOS. Accessed June 2025.

LANDFIRE. N.d. LANDFIRE Data Dictionary. Version 1.0. https://landfire.gov/sites/default/files/documents/LF_Data_Dictionary.pdf. Accessed June 2025.

Scott, J.H. & Burgan R.E. (2005). Standard Fire Behavior Fuel Models: A Comprehensive Set for Use with Rothermel's Surface Fire Spread Model. https://www.fs.usda.gov/rm/pubs/rmrs_gtr153.pdf. Accessed November 2024.

United States Forest Service. 2023. Wildland Urban Interface: 2020. https://data-usfs.hub.arcgis.com/documents/usfs::wildland-urban-interface-2020-map-service/explore. Accessed November 2024.

United States Department of Agriculture (USDA), Forest Service. 2022. Fire Effects Information System (FEIS). https://www.feis-crs.org/feis/. Accessed November 2024.

USDA, Forest Service, Missoula Fire Sciences Laboratory. 2020. Information from LANDFIRE on fire regimes of creosotebush-white bursage desert scrub communities. In: FEIS, [Online]. USDA, Forest Service, Rocky Mountain Research Station, Missoula Fire Sciences Laboratory (Producer). https://www.fs.usda.gov/database/feis/fire_regimes/Creosotebush-white_bursage_desert_scrub/all.html. Accessed November 2024.

USDA. 2012a. Information from LANDFIRE on fire regimes of desert riparian communities. In: FEIS, [Online]. USDA, Forest Service, Rocky Mountain Research Station, Missoula Fire Sciences Laboratory (Producer). https://www.fs.usda.gov/database/feis/fire_regimes/Desert_riparian/all.html. Accessed November 2024.

_____. 2012b. Information from LANDFIRE on fire regimes of saltbush desert scrub communities. In: FEIS, [Online]. USDA, Forest Service, Rocky Mountain Research Station, Missoula Fire Sciences Laboratory (Producer). https://www.fs.usda.gov/database/feis/fire_regimes/Saltbush_desert_scrub/all.html. Accessed November 2024.

Yuma County. 2023. Yuma County 2030 Comprehensive Plan. Safety Element. https://www.yumacountyaz.gov/home/showpublisheddocument/51841/638169858231470000. Accessed November 2024.

_____. 2019. Yuma County Multi-Jurisdictional Hazard Mitigation Plan. https://www.yumacountyaz.gov/home/showpublisheddocument/41739/637165746725670000. Accessed November 2024.

_____. 2010. Yuma County Community Wildfire Protection Plan. https://www.yumacountyaz.gov/home/showdocument?id=7728. Accessed June 2025.

Zouhar, K. 2023. Fire regimes of Sonoran desert scrub communities. In: FEIS, [Online]. USDA, Forest Service, Rocky Mountain Research Station, Missoula Fire Sciences Laboratory (Producer). https://www.fs.usda.gov/database/feis/fire_regimes/Sonoran_desert_scrub/all.html. Accessed November 2024.

9.5.21 Section 5.21, Mandatory Findings of Significance

No references are cited in this section.

9.6 Chapter 6, Comparison of Alternatives

United States Department of Agriculture (USDA 2025). Landfire Existing Vegetation Type database. Accessed July 2025. Available at: https://www.landfire.gov/viewer/

9.7 Chapter 7, Cumulative and Other CEQA

California Energy Commission. 2024. Perkins Renewable Energy Project. https://www.energy.ca.gov/powerplant/solar-photovoltaic-pv/perkins-renewable-energy-project.

City of Calexico. 2015. City of Calexico Project Inventory Map. https://calexicoca.govoffice3.com/vertical/Sites/%7B342ED706-1EBB-4FDE-BD1E-9543BAD44C09%7D/uploads/Project_map_Feb_2015.pdf.

_____. 2018. City of Calexico Service Area Plan. https://www.calexico.ca.gov/vertical/sites/%7B342ED706-1EBB-4FDE-BD1E-9543BAD44C09%7D/uploads/Item_14_-_Attachment_No._3.pdf.

City of Yuma. 2024. Yuma N. End 16th St & 4th AVE Redevelopment Area. https://yumaaz-energovweb.tylerhost.net/apps/selfservice#/project/aed5bf8e-fc56-43bd-929e-a3aaa1559474.

Imperial County. 2024. Renewable Energy Overlap and Plant Location Map. https://icpds.maps.arcgis.com/apps/webappviewer/index.html?id=0d869c18d11645cc918391fdcac24b80.

Governor's Office of Land Use and Climate Innovation (LCI). 2021. Viking Solar Energy Generation and Battery Storage Project. https://ceqanet.opr.ca.gov/2021050036.

_____. 2023. GSCA Imperial County Broadband Network. https://ceqanet.opr.ca.gov/2023120224.

_____. 2024. Pavement Preservation Project – Imperial County. https://ceqanet.opr.ca.gov/2024060136.

United States Bureau of Land Management (BLM). 2021. Navigation Training on BLM routes in NECO. https://eplanning.blm.gov/eplanning-ui/project/2015121/510

_____. 2022. Dezert Oasis LLC - Legal Access Right-of-Way. https://eplanning.blm.gov/eplanning-ui/project/2018496/510

_____. 2024. Perkins Renewable Energy Project - MET Station Installation and Geotech Exploration. https://eplanning.blm.gov/eplanning-ui/project/2031539/510

_____. 2025. Monster Energy Film Permit. https://eplanning.blm.gov/eplanning-ui/project/69490/510

United States Bureau of Reclamation (USBR). 2025a. Colorado River Basin Project. https://www.usbr.gov/projects/index.php?id=437

_____. 2025b. Gila Project. https://www.usbr.gov/projects/index.php?id=459

9.8 Chapter 8, List of Preparers

No references are cited in this chapter.