

August  
2021



*Final*

## Environmental Assessment

Addressing the Proposed Improvement, Maintenance, and  
Repair of 1418 Firebreak Road in the Chula Vista Station  
Area of Responsibility of the U.S. Border Patrol, San  
Diego Sector, California

*Department of Homeland Security  
U.S. Customs and Border Protection*



*This page intentionally left blank*

## ABBREVIATIONS AND ACRONYMS

ACHP	Advisory Council on Historic Preservation	DHS	Department of Homeland Security
AIRFA	American Indian Religious Freedom Act	DNL	Day-Night Level
AMSL	above mean sea level	DOD	U.S. Department of Defense
AOR	Area of Responsibility	EA	Environmental Assessment
AQCR	air quality control region	EIA	U.S. Energy Information Administration
ARHA	Archaeological and Historic Preservation Act	EIS	Environmental Impact Statement
BLM	Bureau of Land Management	E.O.	Executive Order
BMP	Best Management Practice	ESA	Endangered Species Act
B.P.	Before Present	FC	Functional Classification
CAA	Clean Air Act	FEMA	Federal Emergency Management Agency
Cal/EPA	California Environmental Protection Agency	FIRM	Flood Insurance Rate Map
CBP	U.S. Customs and Border Protection	FONSI	Finding of No Significant Impact
CCR	California Code of Regulations	FPPA	Farmland Protection Policy Act
CDFW	California Department of Fish and Wildlife	ft	feet
CDWR	California Department of Water Resources	FY	Fiscal year
CEQ	Council on Environmental Quality	GHG	Greenhouse gas
CEQA	California Environmental Quality Act	HAP	hazardous air pollutant
CFR	Code of Federal Regulations	MBTA	Migratory Bird Treaty Act
CGS	California Geological Survey	MSCP	Multiple Species Conservation Program
CHU	Chula Vista Station	NAAQS	National Ambient Air Quality Standards
CNDDB	California Natural Diversity Database	NAGPRA	Native American Graves Protection and Repatriation Act
CNPS	California Native Plant Society	NEPA	National Environmental Policy Act
CO	Carbon dioxide	NHPA	National Historic Preservation Act
CWA	Clean Water Act	NO <sub>x</sub>	Total nitrogen oxides
CRHR	California Register of Historical Resources	NO <sub>2</sub>	Nitrogen dioxide
dB	decibel	NOAA	National Oceanic and Atmospheric Administration
dBA	A-weighted decibel	NPDES	National Pollutant Discharge Elimination System

NRCS	Natural Resources Conservation Service	SDMMP	San Diego Management & Monitoring Program
NRHP	National Register of Historic Places	SDNHM	San Diego Natural History Museum
NVCS	National Vegetation Classification System	SHPO	State Historic Preservation Officer
NWR	National Wildlife Refuge	SIP	State Implementation Plan
O <sub>3</sub>	ozone	SO <sub>x</sub>	Sulfur oxides
OHWM	ordinary high water mark	TCR	tribal cultural resources
OMER	Otay Mountain Ecological Reserve	typ	tons per year
POE	Port of Entry	µg/m <sup>3</sup>	micrograms per cubic meter
PRC	Public Resources Code	USACE	U.S. Army Corps of Engineers
PSD	Prevention of Significant Deterioration	USBP	U.S. Border Patrol
RWQCB	Regional Water Quality Control Board	U.S.C.	United States Code
SDAPCD	San Diego Air Pollution Control District	USEPA	U.S. Environmental Protection Agency
SDC	San Diego Sector	USFWS	U.S. Fish and Wildlife Service
SDIAQCR	San Diego Intrastate AQCR	USNVC	United States National Vegetation Classification
		USGS	U.S. Geological Survey
		VOC	volatile organic compound



## **Cover Sheet**

### **Final Environmental Assessment Addressing the Proposed Improvement, Maintenance, and Repair of 1418 Firebreak Road in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol, San Diego Sector, California**

**Responsible Agencies:** Department of Homeland Security (DHS), U.S. Customs and Border Protection (CBP), U.S. Border Patrol (USBP).

**Affected Location:** East of Lower Otay Reservoir, San Diego County, California.

**Report Designation:** Final Environmental Assessment (EA) Addressing the Proposed Improvement, Maintenance, and Repair of 1418 Firebreak Road.

**Abstract:** DHS and CBP propose to improve, maintain, and repair 1418 Firebreak Road in the Chula Vista Station (CHU) Area of Responsibility (AOR) of the USBP San Diego Sector (SDC) to support USBP operations. The objective of this project would be to improve the Firebreak Road to a Functional Classification 2 (FC-2) level, all-weather roadway.

This EA presents the analysis and documents potential environmental consequences associated with the Proposed Action. The analyses presented in this EA indicate that implementation of the Proposed Action would not result in significant environmental or socioeconomic impacts, therefore a Finding of No Significant Impact (FONSI) has been prepared. If potential environmental concerns had arisen that could not be mitigated to a level of insignificance, a Notice of Intent to prepare an Environmental Impact Statement (EIS) would have been required.

*This page intentionally left blank*

**FINAL**

---

**ENVIRONMENTAL ASSESSMENT  
ADDRESSING THE  
PROPOSED IMPROVEMENT, MAINTENANCE, AND  
REPAIR OF 1418 FIREBREAK ROAD IN THE CHULA  
VISTA STATION AREA OF RESPONSIBILITY OF THE  
U.S. BORDER PATROL,  
SAN DIEGO SECTOR, CALIFORNIA**

---

**DEPARTMENT OF HOMELAND SECURITY  
U.S. CUSTOMS AND BORDER PROTECTION  
U.S. BORDER PATROL**

**AUGUST 2021**

*This page intentionally left blank*

## TABLE OF CONTENTS

<b>1</b>	<b>INTRODUCTION.....</b>	<b>1-1</b>
1.1	BACKGROUND.....	1-1
1.2	LOCATION.....	1-2
1.3	PURPOSE OF AND NEED FOR THE PROPOSED ACTION.....	1-2
1.4	PUBLIC INVOLVEMENT.....	1-5
1.5	FRAMEWORK FOR ANALYSIS .....	1-6
<b>2</b>	<b>PROPOSED ACTION AND ALTERNATIVES .....</b>	<b>2-1</b>
2.1	INTRODUCTION.....	2-1
2.2	SCREENING CRITERIA FOR ALTERNATIVES .....	2-1
2.3	ALTERNATIVE 1: PARTIAL ROAD IMPROVEMENT.....	2-1
2.4	ALTERNATIVE 2: COMPLETE ROAD IMPROVEMENT .....	2-3
2.5	ALTERNATIVE 3: IMPROVE DRAINAGE FEATURES WITHOUT WIDENING ROAD (PREFERRED ALTERNATIVE) .....	2-4
2.6	NO ACTION ALTERNATIVE .....	2-5
2.7	COMPARISON OF ALTERNATIVES.....	2-5
<b>3</b>	<b>AFFECTED ENVIRONMENT .....</b>	<b>3-1</b>
3.1	PRELIMINARY IMPACT SCOPING .....	3-1
3.1.1	Socioeconomic Resources, Environmental Justice, and Protection of Children .....	3-2
3.1.2	Roadways and Traffic .....	3-2
3.1.3	Hazardous Materials and Waste Management.....	3-2
3.1.4	Aesthetic and Visual Resources.....	3-2
3.1.5	Health and Human Safety .....	3-2
3.2	LAND USE .....	3-3
3.2.1	Definition of the Resource .....	3-3
3.2.2	Affected Environment.....	3-4
3.2.3	Environmental Consequences.....	3-7
3.3	GEOLOGY AND SOILS.....	3-8
3.3.1	Definition of the Resource .....	3-8
3.3.2	Affected Environment.....	3-8
3.3.3	Environmental Consequences.....	3-10
3.4	VEGETATION .....	3-14
3.4.1	Definition of the Resource .....	3-14
3.4.2	Affected Environment.....	3-15
3.4.3	Environmental Consequences.....	3-18
3.5	TERRESTRIAL AND AQUATIC WILDLIFE RESOURCES.....	3-20
3.5.1	Definition of the Resource .....	3-20
3.5.2	Affected Environment.....	3-20
3.5.3	Environmental Consequences.....	3-21
3.6	THREATENED AND ENDANGERED SPECIES .....	3-23
3.6.1	Definition of the Resource .....	3-23
3.6.2	Affected Environment.....	3-24
3.6.3	Environmental Consequences.....	3-39

3.7	HYDROLOGY AND GROUNDWATER.....	3-43
3.7.1	Definition of the Resource.....	3-43
3.7.2	Affected Environment.....	3-43
3.7.3	Environmental Consequences.....	3-44
3.8	SURFACE WATERS AND WATERS OF THE UNITED STATES.....	3-46
3.8.1	Definition of the Resource.....	3-46
3.8.2	Affected Environment.....	3-48
3.8.3	Environmental Consequences.....	3-50
3.9	FLOODPLAINS.....	3-51
3.9.1	Definition of the Resource.....	3-51
3.9.2	Affected Environment.....	3-51
3.9.3	Environmental Consequences.....	3-52
3.10	AIR QUALITY.....	3-53
3.10.1	Definition of the Resource.....	3-53
3.10.2	Affected Environment.....	3-54
3.10.3	Environmental Consequences.....	3-54
3.11	NOISE.....	3-60
3.11.1	Definition of the Resource.....	3-60
3.11.2	Affected Environment.....	3-61
3.11.3	Environmental Consequences.....	3-61
3.12	CULTURAL RESOURCES.....	3-64
3.12.1	Definition of the Resource.....	3-64
3.12.2	Affected Environment.....	3-65
3.12.3	Environmental Consequences.....	3-68
3.13	RECREATION AND ACCESS.....	3-69
3.13.1	Definition of the Resource.....	3-69
3.13.2	Affected Environment.....	3-70
3.13.3	Environmental Consequences.....	3-70
<b>4</b>	<b>CUMULATIVE AND OTHER IMPACTS.....</b>	<b>4-1</b>
4.1	CUMULATIVE IMPACTS.....	4-1
4.1.1	Past, Present, and Reasonably Foreseeable Future Actions.....	4-1
4.1.2	Cumulative Analysis by Resource Area.....	4-3
4.2	RELATIONSHIP BETWEEN THE SHORT-TERM USE OF THE ENVIRONMENT AND LONG-TERM PRODUCTIVITY.....	4-8
4.3	CEQA FINDINGS OF SIGNIFICANCE.....	4-8
4.4	GROWTH-INDUCING IMPACTS.....	4-8
<b>5</b>	<b>REFERENCES.....</b>	<b>5-1</b>
<b>6</b>	<b>LIST OF PREPARERS.....</b>	<b>6-1</b>

**FIGURES & PHOTOGRAPHS**

Figure 1-1. General Location Map..... 1-3
Figure 1-2. Project Location ..... 1-4
Photograph 1-1. Vehicle traversing poor road conditions ..... 1-5
Photograph 1-2. Erosion on existing roadbed..... 1-5
Figure 2-1. Project Alternatives ..... 2-6
Figure 2-2. Example Water Bar Design and Construction (Keller and Sherar 2003)..... 2-7
Figure 2-3. Water Bar Perspective View ..... 2-7
Photograph 2-1. Example Water Bar Location..... 2-8
Photograph 2-2. Example Water Cutout Location..... 2-8
Figure 3-1. Critical Habitat ..... 3-26
Figure 3-2. Water Features within the Proposed Project Area..... 3-49

**TABLES**

Table 1-1. Key Permits and Approvals (as applicable) and Interagency Coordination..... 1-8
Table 2-1. Comparison of Features of Each Alternative..... 2-9
Table 2-2. Comparison of Purpose and Need with Alternatives Summary ..... 2-10
Table 3-1. Land Ownership within the Project Area ..... 3-5
Table 3-2. Major Faults within the Vicinity of 1418 Firebreak Road ..... 3-10
Table 3-3. Vegetation Communities Occurring in the Project Area ..... 3-16
Table 3-4. Approximate Surface Area to be Graded During Maintenance and Repair Activities..... 3-56
Table 3-5. 2020 Estimated Construction Air Emissions from Alternative 1 ..... 3-57
Table 3-6. 2020 Estimated Construction Air Emissions from Alternative 2 ..... 3-58
Table 3-7. 2020 Estimated Construction Air Emissions from Alternative 3 ..... 3-59
Table 3-8. Common Sounds and Their Levels ..... 3-60
Table 3-9. Predicted Noise Levels for Typical Construction Equipment ..... 3-62
Table 4-1. CEQA Findings of Significance for the Proposed Action..... 4-11

**APPENDICES**

- Appendix A: Road Classifications and Maintenance and Repair Standards
Appendix B: Public Involvement Materials
Appendix C: Applicable Laws, Regulations, and Executive Orders
Appendix D: Best Management Practices and Mitigation Measures
Appendix E Water Bar and Water Cutout Location Photographs
Appendix F: Soil Maps
Appendix G: Vegetative Community Maps
Appendix H: Air Quality Emissions Calculations

# 1 INTRODUCTION

U.S. Customs and Border Protection (CBP) proposes to improve, maintain, and repair 1418 Firebreak Road in the Chula Vista Station (CHU) Area of Responsibility (AOR) of the U.S. Border Patrol (USBP) San Diego Sector (SDC), California, to support USBP operations. The objective of this project would be to improve 1418 Firebreak Road from a Functional Classification 4 (FC-4) two-track road to a FC-2 all-weather roadway.

This Environmental Assessment (EA) was prepared to describe and assess the potential environmental and socioeconomic impacts of the Proposed Action. This EA complies with the National Environmental Policy Act (NEPA) of 1969, as amended (42 United States Code [U.S.C.] Section 4321–4347); the Council on Environmental Quality’s (CEQ) *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act* (40 Code of Federal Regulations [CFR] Parts 1500–1508); and Department of Homeland Security’s Instructional Manual 023-01-001-01, Rev. 01, *Implementing the National Environmental Policy Act*. In addition, this EA also meets the requirements of the California Environmental Quality Act (CEQA).

This EA is organized into six sections plus appendices. **Section 1** provides background information on the existing 1418 Firebreak Road, identifies the purpose of and need for the Proposed Action, describes the area in which the Proposed Action would occur, and explains the public involvement process. **Section 2** provides a detailed description of the Proposed Action and alternatives, including the No Action Alternative. **Section 3** describes existing environmental conditions in the area where the Proposed Action would occur and identifies potential environmental impacts that could occur within each resource area. **Section 4** contains an analysis of the cumulative and other impacts that the Proposed Action, combined with other projects in the area, could have on the environment. **Sections 5** and **6** provide a list of references used to develop this EA, and a list of preparers who developed this EA, respectively. Finally, the appendices include other information pertinent to the development of this EA.

## 1.1 BACKGROUND

The mission of the USBP is to detect and prevent cross-border violators, terrorists, and terrorist weapons from entering the United States, and prevent illegal trafficking of people and contraband. In many areas, tactical infrastructure, of which roads are considered an important component, is a critical element of border security, and contributes as a force multiplier for controlling and preventing illegal border intrusion. To achieve effective control of our nation’s borders, CBP uses a multi-prong approach including a combination of personnel, technology, and infrastructure; the mobilization and rapid deployment of people and resources; and the fostering of partnerships with other law enforcement agencies. CBP must ensure that tactical infrastructure functions as intended, which includes facilitation of meeting the following mission requirements:

- Establishing substantial probability of apprehending terrorists and their weapons as they attempt to illegally enter between the Ports of Entry (POEs)
- Deterring illegal entries through improved enforcement



- Detecting, apprehending, and deterring smugglers of humans, drugs, and other contraband.

Furthermore, well-maintained tactical infrastructure allows ready access to the U.S./Mexico international border and environs for rapid response to detected threats and facilitates the ability to adjust quickly to changing threats.

## 1.2 LOCATION

The project is east of Lower Otay Reservoir in San Diego County, California (see **Figure 1-1**). The valley is situated north of Otay Mountain and east of Lower Otay Lake. 1418 Firebreak Road connects to a larger dirt road south of a gated junction with Otay Lakes Road. There are four landowners along the road's route, including Bureau of Land Management (BLM), United States Fish and Wildlife Service (USFWS), City of Chula Vista (which is managed by the County of San Diego) and the California Department of Fish and Wildlife (CDFW). The Proposed Action's staging area and the access road from Otay Lakes Road is on the CDFW Otay Mountain Ecological Reserve (OMER). The western portion of 1418 Firebreak Road crosses CDFW OMER and the USFWS San Diego National Wildlife Refuge (NWR). A major portion of the road is on BLM land designated as the Otay Mountain Wilderness. The southern end of the road crosses Otay Ranch Preserve (see **Figure 1-2**) and is managed by the City of Chula Vista and County of San Diego through a Joint Powers Agreement. The road is gated and motorized access by the public is prohibited. The majority, if not all, of motorized traffic on the road is USBP traffic.

## 1.3 PURPOSE OF AND NEED FOR THE PROPOSED ACTION

The purpose of the Proposed Action is to ensure that the physical integrity of the existing road and associated supporting elements continue to perform as intended to assist the USBP in securing the U.S./Mexico international border in California. The improvement of the road would enhance agent safety and effectiveness by providing efficient, reliable, and safe routes to remote areas that require patrolling. The road is critical to SDC's ability to maintain easy access to otherwise inaccessible portions of the border region by linking Otay Lakes Road to Otay Mountain, an area with high rates of apprehension of cross border violators. The road also provides a high point for visibility for USBP agents. The current FC-4 two-track road is composed of unimproved road, wagon trail, and 4-wheel drive road and is 10-12 feet wide through most of its length (see **Photograph 1-1**). As "two-track" implies, the road consists of two parallel tracks created by the loss of vegetation where the tires make contact with and compact the earth, between which lies a strip of low-growth vegetation (see **Appendix A**). In many areas, the central vegetated strip has succumbed to erosion (see **Photograph 1-2**). The road has received no maintenance in over 10 years; some prior blading activity is still evident. The road has no crown and does not have any improved drainage features or ditches. Road deterioration has occurred to the extent that drivers have widened the existing route and created a section of new route to avoid the extreme erosion. The proposed activities would ensure that the road is passable, providing faster response time to border incidents in strategically valuable areas.

The need for the Proposed Action is to ensure that the increased level of border security provided by access along 1418 Firebreak Road is not compromised by natural events or breaches in road integrity. CBP must ensure that tactical infrastructure functions as it is intended.

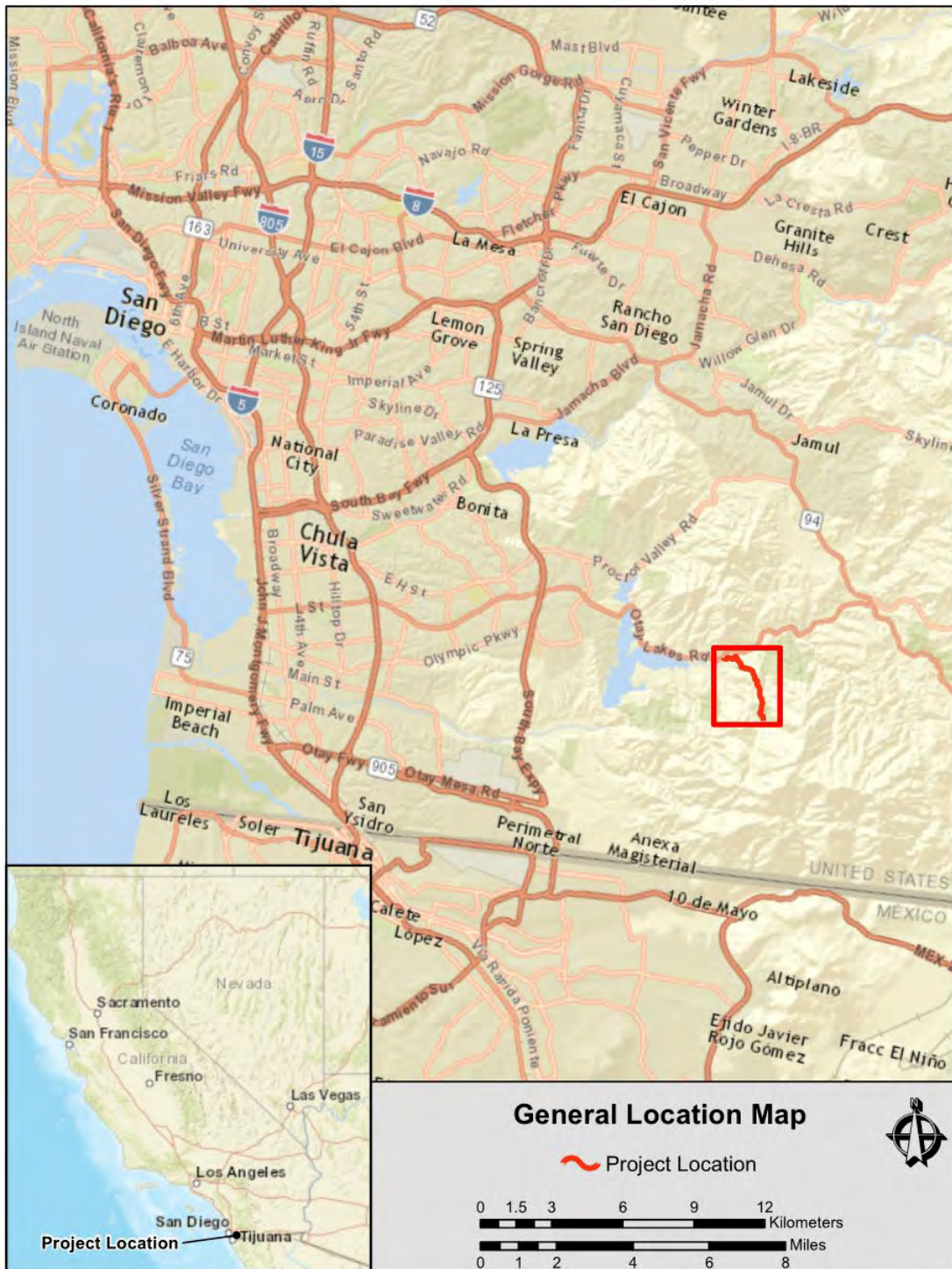


Figure 1-1. General Location Map

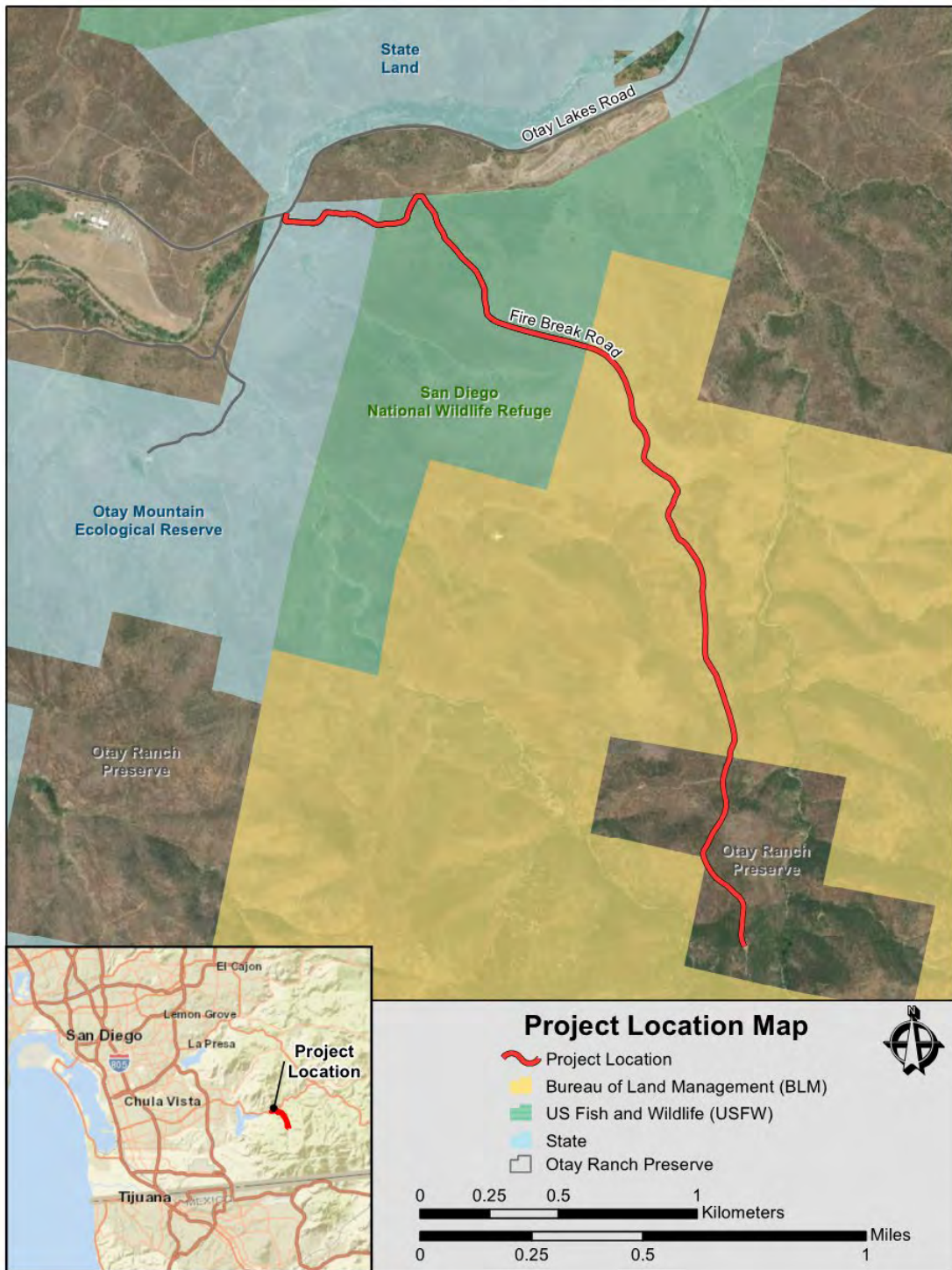


Figure 1-2. Project Location





**Photograph 1-1. Vehicle traversing poor road conditions**



**Photograph 1-2. Erosion on existing roadbed**

## 1.4 PUBLIC INVOLVEMENT

Agency and public involvement in the NEPA process promotes open communication between the public and the government and enhances the decision-making process. All persons or organizations having a potential interest in the Proposed Action are encouraged to participate in the decision-making process by submitting comments. NEPA and CEQ guidance direct agencies to make their NEPA documents available to the public during the decision-making process and prior to actions being taken. The premise of NEPA is that the quality of federal decisions will be enhanced if additional information is provided to the public and the public is involved in the planning process.

Through the public involvement process, CBP notified by mail all relevant federal, state, and local agencies of the Proposed Action and the availability of the Draft EA. CBP requested input on environmental concerns these agencies had regarding the Proposed Action. This public involvement process provided CBP with the opportunity to consider and incorporate state and local input in decisions regarding implementation of this federal proposal.

CBP coordinated with agencies such as USFWS; BLM; U.S. Army Corps of Engineers (USACE); CDFW; the State Historic Preservation Officer (SHPO), which is a component of the California Office of Historic Preservation; San Diego Regional Water Quality Control Board (RWQCB); San Diego County Air Pollution Control District; other local agencies; Native American tribes, and the public.

Consultation with USFWS began in spring of 2019 with the Notice of Preparation for an EA. USFWS then identified potential impacts to the San Diego refuge, and federally listed species and their critical habitats. Formal consultation was requested in September 2020 for the San Diego fairy shrimp, Quino checkerspot butterfly, Least Bell's vireo, and California gnatcatcher with the submission of the Biological Assessment. In early 2021, USFWS identified potential impacts to Riverside fairy shrimp and requested the addition of the species to the formal consultation process in February 2021. A final Biological Opinion for San Diego and Riverside fairy shrimp was dated May 26, 2021. Quino checkerspot butterfly, Least Bell's vireo and California gnatcatcher were addressed under informal consultation. Consultation with the California SHPO was completed, and concurrence was given.

A Notice of Availability for this EA and draft Finding of No Significant Impact (FONSI) were published in the *San Diego Union Tribune* for the purpose of soliciting comments on the Proposed Action and alternatives, and to involve the local community in the decision-making process.

Throughout the NEPA process, the public was able to obtain information concerning the status and progress of the EA via the project website at <https://www.cbp.gov/about/environmental-management-sustainability/documents/docs-review>. Comments received were incorporated into the Final EA. Comment letters and other agency and public involvement materials are included in **Appendix B** of the Final EA.

## 1.5 FRAMEWORK FOR ANALYSIS

NEPA is a federal statute requiring the identification and analysis of potential environmental impacts from proposed federal actions before those actions are taken. CEQ is the principal federal agency responsible for the administration of NEPA. CEQ regulations mandate that all federal agencies use a systematic, interdisciplinary approach to environmental planning and the evaluation of actions that might affect the environment. This process identifies and evaluates potential environmental consequences associated with a proposed action and considers alternative courses of action. The intent of NEPA is to protect, restore, or enhance the environment through well-informed federal decisions.

Recent changes to the CEQ regulations implementing NEPA (40 CFR §§ 1500–1508) became effective on September 14, 2020 (85 Fed. R. 43304-76 [July 16, 2020]). As stated in 40 CFR § 1506.13, the new regulatory changes apply to any NEPA process begun after September 14, 2020. This EA substantively commenced prior to that date, as shown by the scoping letters sent to stakeholders on April 30, 2019. Therefore, this EA conforms to the CEQ NEPA implementing regulations that were in place prior to September 14, 2020.

The process for implementing NEPA is codified in 40 CFR §§ 1500–1508, *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act*. CEQ was established under NEPA to implement and oversee federal policy in this process. CEQ regulations specify that an EA may be prepared for the following reasons:

- Providing evidence and analysis to determine whether to prepare a FONSI or an Environmental Impact Statement (EIS).

- Aiding in an agency's compliance with NEPA when an EIS is unnecessary.
- Facilitating preparation of an EIS when one is necessary.

Within the Department of Homeland Security (DHS) and CBP, NEPA is implemented using DHS Instruction Manual 023-01-001-01 Rev. 01, *Implementing the National Environmental Policy Act*, and CBP policies and procedures.

To comply with NEPA, the planning and decision-making processes for actions proposed by federal agencies require a study of other relevant environmental statutes and regulations. However, the NEPA process does not replace procedural or substantive requirements of other environmental statutes and regulations. Rather, it addresses them collectively in the form of an EA or EIS, enabling the decision maker to have a comprehensive view of major environmental issues and requirements associated with a proposed action. Per CEQ regulations, NEPA requirements must be integrated “with other planning and environmental review procedures required by law or by agency so that all such procedures run concurrently, rather than consecutively.”

Within the NEPA framework of environmental impact analysis, additional authorities that could be applicable include the Clean Air Act (CAA), Clean Water Act (CWA) (including a National Pollutant Discharge Elimination System [NPDES] stormwater discharge permit and Section 404 permit), Endangered Species Act (ESA), Migratory Bird Treaty Act (MBTA), National Historic Preservation Act (NHPA), Archaeological Resources Protection Act, and various Executive Orders. A summary of laws, regulations, and Executive Orders that could be applicable to the Proposed Action is presented in **Appendix C**.

CEQA (California Public Resources Code Sections 21000–21177) is a statute that requires the State of California and local agencies to identify significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible. CEQA applies to any discretionary action by a state or local agency. CEQA applies to projects that have the potential to result in a physical change to the environment or that might be subject to several discretionary approvals by governmental agencies, including construction activities, clearing of or grading land, improvements to existing structures, and activities or equipment involving the issuance of a permit.

For this project, CEQA is relevant because CBP would likely be required to obtain Section 401 certification from the San Diego Regional Water Quality Control Board for potential discharge to state or tribal waters, including wetlands. To paraphrase Section 15221 of the Guidelines for Implementation of the CEQA (California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000–15387), an EIS or EA and FONSI prepared under NEPA can be used instead of an Environmental Impact Report or Negative Declaration prepared under CEQA, provided the NEPA documentation meets CEQA requirements.

**Table 1-1** lists major federal and state permits, approvals, and interagency coordination that could be required regarding the proposed improvement, maintenance, and repair of 1418 Firebreak Road.

**Table 1-1. Key Permits and Approvals (as applicable) and Interagency Coordination**

<b>Agency</b>	<b>Permit/Approval/Coordination</b>
USACE	– CWA Section 404 permit
USFWS	– Section 7 ESA coordination/consultation – MBTA coordination
Native American Tribes	– Consultation regarding potential effects on cultural resources
California SHPO	– NHPA Section 106 consultation
California Water Quality Control Board, Region 9 (San Diego RWQCB)	– CWA Section 401 State Water Quality Certification – CWA NPDES permit
San Diego County Air Pollution Control District	– Clean Air Act permit consultation

*This page left intentionally blank*



## 2 PROPOSED ACTION AND ALTERNATIVES

### 2.1 INTRODUCTION

This section provides detailed information on CBP's proposal to improve, maintain, and repair 1418 Firebreak Road in the CHU AOR of the USBP SDC to support USBP operations. As discussed in **Section 1.5**, the NEPA process evaluates potential environmental consequences associated with a proposed action and considers alternative courses of action. Alternatives must satisfy the purpose of and need for a proposed action, which are defined for this action in **Section 1.3**. CEQ guidance advocates the inclusion of a No Action Alternative against which potential effects can be compared. No action in such cases would mean the proposed activity would not take place, and the resulting environmental effects from taking no action would be compared with the effects of permitting the proposed activity or an alternative activity to go forward. While the No Action Alternative would not satisfy the purpose of or need for the Proposed Action, it is analyzed in detail as recommended by CEQ regulations.

### 2.2 SCREENING CRITERIA FOR ALTERNATIVES

Each alternative to the Proposed Action considered in the EA must meet CBP's purpose of and need for the Proposed Action (as described in **Section 1.3**). The following screening criteria were used to develop the Proposed Action and evaluate potential alternatives:

- ***Maintaining Situational Awareness.*** Proposed activities must provide USBP agents the ability to stay abreast of cross-border violations in the area of 1418 Firebreak Road.
- ***Facilitating Effective Response.*** Proposed activities must facilitate the efficient and effective response to cross border violations in the area of 1418 Firebreak Road.
- ***Minimize and/or Avoid Environmental Impacts.*** Proposed activities must consider the environment to minimize and avoid current and future impacts.

### 2.3 ALTERNATIVE 1: PARTIAL ROAD IMPROVEMENT

Under Alternative 1, 1418 Firebreak Road would be improved to a FC-2 level, all-weather roadway for 4,885 feet (ft) from Otay Lakes Road to a point where the road enters the Otay Mountain Wilderness on BLM property (see **Figure 2-1**). FC-2 roads typically consist of two 3.6-meter (12 ft) travel lanes at a 4 percent cross-slope. A cross-slope is built into the road to provide a drainage gradient so that water will run off the surface to a drainage system such as a street gutter or ditch. Under this alternative, 1418 Firebreak Road would be widened where necessary to ensure a minimum 24-ft width from Otay Lakes Road to the boundary of the Otay Mountain Wilderness. Parallel ditches with a 1-vertical to 3-horizontal (1V:3H) front slope and 1-vertical to 4-horizontal (1V:4H) backslope would be cut on the downslope side of the road to allow for proper drainage. Imported roadway material would be added to the road to achieve a minimum 150-millimeter (6-inch) deep, well-graded roadbed shaped with a defined crown section (see **Figure 2-2**). It is anticipated that construction would be completed within six to

twelve weeks and would comply with all seasonal restrictions. All necessary materials such as gravel, topsoil, or fill would be imported to the site. No on-site materials will be used except for the material within the existing roadway. To the maximum extent practicable, all material sources would be certified weed-free.

Wherever possible, CBP would limit disturbance to the proposed width of the proposed FC-2 road and ancillary structures. Where turnouts and passing lanes would be required for construction, CBP would use currently disturbed areas (e.g., locations where a secondary trail has been created due to impassable road conditions), to the maximum extent practicable, and restore all such areas upon completion of the Proposed Action. More information regarding temporary and permanent impacts can be found in **Appendix D** for all alternatives discussed.

Equipment and materials would be stored at a staging area at the entrance to the project area. The staging area would be an unimproved, previously disturbed area (see **Figure 2-1**). The types and numbers of equipment used would be kept to a minimum. It is anticipated that backhoes, graders, and dump trucks would be necessary for road improvement activities. Water trucks would be employed to aid in dust suppression. All equipment would be cleaned prior to entering and departing the project corridor to minimize the spread and establishment of non-native invasive plant species. See **Appendix D** for additional best management practices (BMP).

Seven water bars would be installed in locations where washouts occur to allow the agents to drive on the designated road rather than seek an alternate route during flood events (see **Figure 2-1** and **Appendix E**). There are several areas along 1418 Firebreak Road with extensive damage due to agents driving outside of the road footprint to avoid severely washed out sections of the road (see **Photograph 1-2**). Water bars are frequently spaced, constructed drainage devices that use road material mounded in the road surface to interrupt the flow of water and divert it off the road surface (see **Figure 2-2** and **Photograph 2-1**). The frequency of water bar placement is determined by the road gradient within the impacted area. In road areas with an approximate 5 percent slope, the interval would typically be 125 ft. Should slopes of 5 – 10 percent be encountered, the interval would be reduced to 100 ft. Under the Proposed Action, the water bars would be designed to be drivable by high clearance vehicles (see **Figure 2-2**).

Eight water cutouts would be installed with the implementation of Alternative 1 (see **Figure 2-1** and **Appendix E**). These are earthen low water crossings already present in the road. The outfall for the water cutout would have a 3-foot by 3-foot rip-rap outfall protection apron.

The finished road would be a reinforced roadbed with a soil stabilizer (e.g., Lignin, Soiltec, Envirotec, or some other suitable soil stabilizer) applied during the late summer/early fall months. Proper use of a non-toxic road stabilizer helps to avoid impacts on federally listed species habitat by minimizing road run-off and is neither toxic nor harmful to sensitive species.

Road maintenance and repair would include reactive maintenance and repair activities (e.g., resolving damage from use or severe weather events) and preventive/scheduled maintenance and repair activities designed to ensure ongoing operability and environmental sustainability (e.g., soil erosion preventive measures). All maintenance and repair would occur via a periodic work plan based on anticipated situations within each sector and funding availability. Prior to any maintenance/non-emergency repairs, coordination with landowners would occur. Furthermore,

such work would be done outside of any breeding/flight season for listed species present. Maintenance and repair requirements could change over time based on changes in usage or priority but would likely occur at least annually and would not exceed the scope of the Proposed Action.

Maintenance and repair would consist of grading and resurfacing existing areas of the roads that have been eroded by surface water flows, filling potholes, and removing protruding boulders. Trees and other vegetation within, or overhanging, the existing roadway would be trimmed, grubbed, or cut back to facilitate safe vehicle passage. Any vegetation that has established within the existing road would be removed, cleared, or trampled.

Some activities may need to be conducted in areas immediately adjacent to the existing road footprint (road edges). For example, equipment might need to be operated off existing roads to remove debris from ditches, and to access and maintain roads. Temporary impacts on vegetation and soil resulting from these activities would be minimized through appropriate heavy equipment operation techniques, such as installing temporary construction mats, reducing operating speeds, using the initial ingress and egress points, and selecting appropriately sized equipment for the area and project.

For water-control features (such as ditches), activities would include cleaning, maintaining, repairing, or replacing features, as needed. Implementing improved water drainage measures includes ensuring road crowns shed water and runoff flows to established drainage ditches or other water-control features as needed to control runoff and prevent deterioration of existing infrastructure or surrounding land. The stabilization of roads with the use of a soil binder would function as a means to reduce erosion and improve road strength. The application of a soil binder would be completed on an annual basis or less frequently, depending on need.

Heavy equipment would be needed for activities such as grading, filling, and compacting. Equipment staging would occur on the existing road footprint or at existing CBP laydown yards. All equipment would be hauled into sites as needed. Required equipment would likely include dump trucks, road graders, backhoes, bulldozers, drum roller/compactors, and water trucks.

## 2.4 ALTERNATIVE 2: COMPLETE ROAD IMPROVEMENT

Under this alternative, 1418 Firebreak Road would be improved to a FC-2 level, all-weather roadway for the entire 12,983 ft from Otay Lakes Road to a point where the road terminates on the City of Chula Vista property that is surrounded by the Otay Mountain Wilderness area (see **Figure 2-1**).

Nine water bars would be installed where washouts occur to allow the agents to drive on the designated road rather than seek alternate routes during flood events. All construction methods would be as described in Alternative 1 with the addition of rip-rap. Rip-rap crossings are only on BLM property and therefore only required for Alternative 2 because it is the only alternative that includes a stream. These would be in-road stretches of 6-inch rip-rap placed the width of the driving surface and approximately 60 feet in length.

Nineteen water cutouts would be installed with the implementation of Alternative 2 (see **Figure 2-1** and **Appendix E**). As with Alternative 1, the outfall for the water cutout would have a 3-foot by 3-foot rip-rap outfall protection apron.

It is the current policy of BLM to prohibit road maintenance or improvements within the Otay Mountain Wilderness boundary. The Wilderness Act (16 U.S.C. 1131 et seq.) and the Otay Mountain Wilderness Act of 1999 do provide for exceptions that could grant BLM permission for authorizing these activities. The Otay Mountain Wilderness Act recognizes that, because of the proximity of the Wilderness Area to the U.S./Mexico international border, drug interdiction and border operations need to continue, provided such management actions are conducted in accordance with the Wilderness Act. In turn, Section 5 of the Wilderness Act states that:

...in any case where State-owned or privately-owned land is completely surrounded by national forest lands within areas designated by this Act as wilderness, such State or private owner shall be given such rights as may be necessary to assure adequate access to such State-owned or privately-owned land by such State or private owner and their successors in interest. (16 U.S.C. 1131 et seq.)

These provisions could provide a mechanism for potential improvement, maintenance, and repair activities to the southern portion of 1418 Firebreak Road. CBP has determined that it would be preferable to conduct the analysis for the entire 1418 Firebreak Road should a compelling need arise, in concurrence with BLM, for improvement, maintenance, and repair activities to occur.

## **2.5 ALTERNATIVE 3: IMPROVE DRAINAGE FEATURES WITHOUT WIDENING ROAD (PREFERRED ALTERNATIVE)**

Alternative 3 is the preferred alternative. Under this alternative, 1418 Firebreak Road would be improved to a FC-2 level, all-weather roadway for 4,885 ft from Otay Lakes Road to the point where the road enters the Otay Mountain Wilderness on BLM property. However, under this alternative, 1418 Firebreak Road would not be widened as it would be under Alternative 1. All drainage and other improvements that would be implemented under Alternative 1 would also be implemented under Alternative 3 with the exception of parallel ditches, which would not be installed under this alternative. One turnout would be added. This alternative would minimize ground disturbance and would not change the existing footprint.

Seven water bars would be installed in locations where washouts occur to allow the agents to drive on the designated road rather than seek an alternate route during flood events. All construction methods would be as described in Alternative 1.

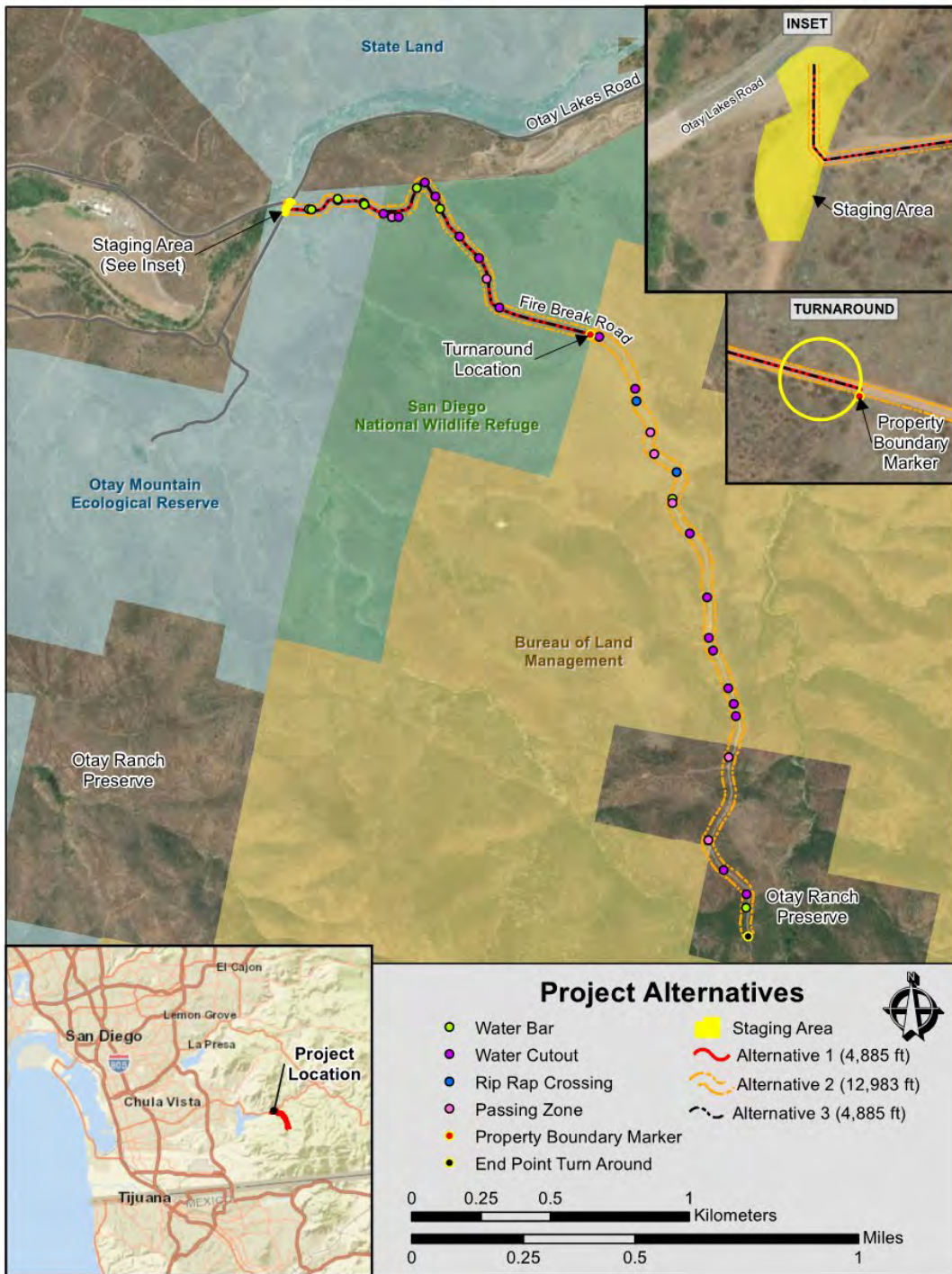
Under this alternative, maintenance and repair of the road would include reactive maintenance and repair activities and preventive/scheduled maintenance and repair activities designed to ensure ongoing operability and environmental stewardship. All maintenance and repair activities would be as described in Alternative 1 but would be confined to the current road footprint. As with Alternative 1, locations where a secondary trail has been created due to impassable road conditions would be restored upon completion of the project. The addition of material to the road would be kept to the minimum amount needed to achieve the proposed objective.

## 2.6 NO ACTION ALTERNATIVE

The other alternative that will be carried forward for analysis is the No Action Alternative, as recommended by CEQ regulations. Under the No Action Alternative, CBP would not be maintaining, repairing, and improving the road.

## 2.7 COMPARISON OF ALTERNATIVES

The following tables provide a summary comparison of each alternative. **Table 2-1** compares the features of each alternative. **Table 2-2** compares how the alternatives respond to the purpose of and need for the Proposed Action. A detailed comparison of the impacts that could occur as a result of implementing each alternative is provided in **Section 3.0**.



**Figure 2-1. Project Alternatives**

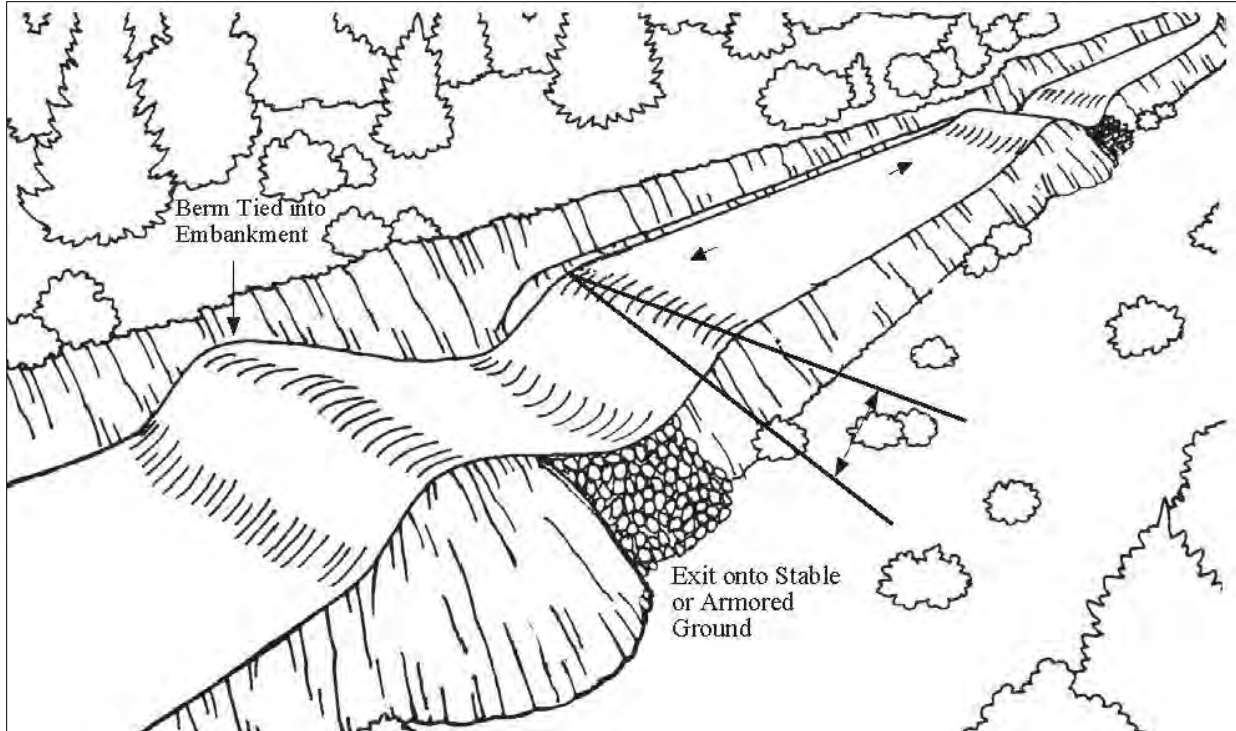


Figure 2-2. Example Water Bar Design and Construction (Keller and Sherar 2003)

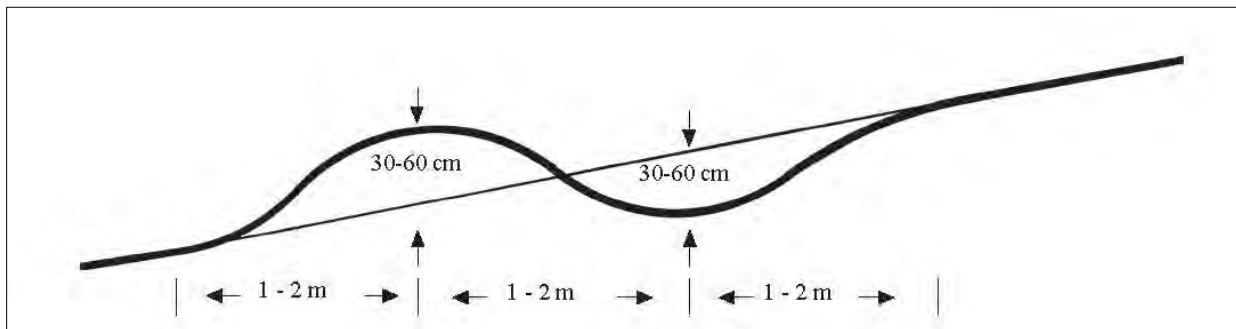


Figure 2-3. Water Bar Perspective View





**Photograph 2-1. Example Water Bar Location**



**Photograph 2-2. Example Water Cutout Location**



**Table 2-1. Comparison of Features of Each Alternative**

Features	Alternative 1: Partial Road Improvement	Alternative 2: Complete Road Improvement	Alternative 3: Improve Drainage Features Without Widening Road	Alternative 4: No Action Alternative
Linear Footage of Road Repairs	4,885	12,983	4,885	0
Temporarily Impacted Acres	0.25	0.25	0.25	0
Permanently Impacted Acres	3.121	7.664	0.115	0
Constructed to Meet FC-2 Design Standards	Yes	Yes	Partially	N/A
Construction Activity Confined to Existing Roadbed	No	No	Yes	N/A
Turnouts and Passing Lanes Constructed in Currently Disturbed Areas	Yes	Yes	Yes	N/A
Staging Area Required	Yes	Yes	Yes	N/A
Number of Water Bars Constructed	7	9	7	0
Application of a Soil Stabilizer	Yes	Yes	Yes	N/A

Key: N/A = Not Applicable  
FC-2 design standards include a 24-foot road width.

Table 2-2. Comparison of Purpose and Need with Alternatives Summary

Purpose and Need	Alternative 1: Partial Road Improvement	Alternative 2: Complete Road Improvement	Alternative 3: Improve Drainage Features Without Widening Road	Alternative 4: No Action Alternative
<p><b>Purpose:</b> The road is critical to SDC's ability to maintain easy access to otherwise inaccessible portions of the border region by linking Otay Lakes Road to Otay Mountain. The proposed activities would ensure that the road is passable, providing faster response time to border incidents in strategically valuable areas.</p>	Yes	Yes	Yes	No
<p><b>Need:</b> The need for the Proposed Action is to ensure that the increased level of border security provided by 1418 Firebreak Road is not compromised by natural events or breaches in road integrity because of poor maintenance and repair. CBP must ensure that tactical infrastructure functions as it is intended.</p>	Yes	Yes	Yes	No

Key: FC-2 = roads typically consisting of two 3.6-meter (12-foot) travel lanes at a 4 percent cross-slope. Parallel ditches with a 1-vertical to 3-horizontal (1V:3H) front slope and 1-vertical to 4-horizontal (1V:4H) backslope allow for proper drainage. To achieve this standard, sufficient roadway material would be imported to achieve a minimum 150-millimeter (6-inch) deep, well-graded roadbed shaped with a defined crown section.

### 3 AFFECTED ENVIRONMENT

This section provides a discussion of the affected environment, as well as an analysis of the potential direct and indirect impacts that the alternatives could have on the affected environment. Cumulative and other impacts are discussed in **Section 4**. All potentially relevant resource areas were initially considered in this EA. In accordance with NEPA, CEQ regulations, and DHS Instruction Manual 023-01-001-01, Rev. 01, this evaluation focuses on those resources and conditions potentially subject to effects, and on potentially significant environmental issues deserving of study. It does not go into detail on insignificant issues.

The following categories describe various types of impacts that could potentially result from the proposed project:

- *Short-term or long-term.* These characteristics are determined on a case-by-case basis and do not refer to any rigid time period. In general, short-term effects are those that would occur only with respect to a particular activity or for a finite period or only during the time required for maintenance and repair activities. Long-term effects are those that are more likely to be persistent and chronic.
- *Direct or indirect.* A direct effect is caused by and occurs contemporaneously at or near the location of the action. An indirect effect is caused by a proposed action and might occur later in time or be farther removed in distance, but still be a reasonably foreseeable outcome of the action. For example, a direct effect of erosion on a stream might include sediment-laden waters in the vicinity of the action, whereas an indirect impact of the same erosion might lead to lack of spawning and result in lowered reproduction rates of indigenous fish downstream.
- *Negligible, minor, moderate, or major.* These relative terms are used to characterize the magnitude or intensity of an impact. Negligible effects are generally those that might be perceptible but are at the lower level of detection. A minor effect is slight, but detectable. A moderate effect is readily apparent. A major effect is one that is severely adverse or exceptionally beneficial.
- *Adverse or beneficial.* An adverse effect is one having unfavorable, or undesirable, outcomes on the man-made or natural environment. A beneficial effect is one having positive outcomes on the man-made or natural environment. A single act might result in adverse effects on one environmental resource and beneficial effects on another resource.

#### 3.1 PRELIMINARY IMPACT SCOPING

Some environmental resources and issues that are often analyzed in an EA have been omitted from detailed analysis. The following provides the basis for such exclusions.

### 3.1.1 Socioeconomic Resources, Environmental Justice, and Protection of Children

Minority or low-income populations are present and could be affected by a project if the percentage of persons characterized as being a minority or low-income within the region of influence is either greater than 50 percent or meaningfully higher than in the general population or other appropriate unit of geographic analysis (e.g., community of comparison). The community of comparison should be the smallest jurisdiction for which U.S. Census data are collected that encompasses the footprint of impacts for all resource areas. CEQ also states, “A minority population also exists if there is more than one minority group present and the minority percentage, as calculated by aggregating all minority persons, meets one of the above-stated thresholds” (CEQ 1997).

Project activities would not have a significant effect on socioeconomic resources, environmental justice, or the protection of children, since there are no populations living within or nearby the survey area. Therefore, no effect on these resources would be anticipated, and therefore no detailed discussion is provided.

### 3.1.2 Roadways and Traffic

Project activities could cause short-term roadway closures and detours while work is underway; however, most of the roadways proposed for maintenance and repair are used solely by USBP. Therefore, the public would not be impacted by these roadway closures or detours. Roadway closures and detours would be temporary, so USBP patrols would experience only minor disruptions. As a result, impacts on roadways and transportation would be negligible and are not discussed further.

### 3.1.3 Hazardous Materials and Waste Management

Project activities could cause long-term adverse impacts on the environment as roadway construction vehicles containing hazardous substances and petroleum products would be deployed, which could result in a spill or release. Roadway construction would also generate solid wastes during grading and construction activities. Potential impacts from uncollected solid wastes include increased risk of injury, obstruction of draining areas, land and water pollution, and/or loss of biodiversity. However, these incidents are unlikely to occur and therefore impacts on the environment would be negligible and are not discussed further.

### 3.1.4 Aesthetic and Visual Resources

Project activities would not have a significant impact on aesthetic and visual resources as maintenance and repair activities would occur in remote areas on or directly adjacent to the existing footprint of the roadway and no additional infrastructure would be installed.. Therefore, no effect on aesthetic and visual resources would be anticipated, and therefore no detailed discussion is provided.

### 3.1.5 Health and Human Safety

Project activities could cause long-term beneficial impacts to health and human safety as the improved roadway would offer a more stable and safe driving surface for vehicles. Short-term,

negligible, adverse impacts on health and human safety could occur during construction; however, construction site safety is largely a matter of adherence to regulatory requirements imposed for the benefit of employees and implementation of operational practices that reduce risks of illness, injury, death, and property damage. Occupational Safety and Health Administration and the USEPA issue standards that specify the amount and type of training required for industrial workers, the use of protective equipment and clothing, engineering controls, and maximum exposure limits with respect to workplace stressors.

Contractors would be required to establish and maintain safety programs at the construction site. The proposed project would not expose members of the general public to increased safety risks. Therefore, because the Proposed Action would not introduce new or unusual safety risks, and assuming appropriate protocols are followed and implemented, detailed examination of safety is not included in this EA.

Additionally, due to the remote location of the region of analysis, the likelihood of this project impacting the health and safety of humans other than USBP agents and contractors or USBP personnel performing the road repairs is extremely low. However, minor, beneficial impacts on safety could occur from public use of repaired roads.

## 3.2 LAND USE

### 3.2.1 Definition of the Resource

The term “land use” refers to real property classifications that indicate either natural conditions or the types of human activity occurring on a parcel of land. In many cases, land use descriptions are codified in local zoning laws. However, there is no nationally recognized convention or uniform terminology for describing land use categories. As a result, the meaning of various land use descriptions, “labels,” and definitions vary among jurisdictions.

Natural property conditions can be described or categorized as unimproved, undeveloped, conservation or preservation area, and natural or scenic area. There is a wide variety of land use categories resulting from human activity. Descriptive terms often used include residential, commercial, industrial, agricultural, institutional, and recreational.

Two main objectives of land use planning are to ensure orderly growth and compatible uses among adjacent property parcels or areas. Compatibility among land uses fosters the societal interest of obtaining the highest and best uses of real property. Tools supporting land use planning include written master plans/management plans and zoning regulations. In appropriate cases, the location and extent of a proposed action needs to be evaluated for its potential effects on the proposed project corridor and adjacent land uses. The foremost factor affecting a proposed action in terms of land use is its compliance with any applicable land use or zoning regulations. Other relevant factors include matters such as existing land use in the proposed project corridor, the types of land uses on adjacent properties and their proximity to a proposed action, the duration of a proposed activity, and its permanence.

### 3.2.2 Affected Environment

The project area is east of Lower Otay Reservoir in San Diego County, California, located within the Otay Subregional Plan Area. The nearest town is Otay Ranch, approximately 4 miles to the west. In general, land uses and ownership in and adjacent to the project area include public land; federal, state, and local land; and vacant and undeveloped land. Public land includes cemeteries, religious facilities, libraries, post offices, fire or police stations, hospitals, military facilities, and educational institutions. Public land also includes land belonging to the Federal Government in the public domain. Federal, state, and local land ownership include wildlife refuges, ecological reserves, conservation areas, and designated wildernesses lands owned by the Federal Government. Vacant and undeveloped land is historically and currently vacant, and undeveloped land is land not placed in another land use category.

Land ownership within the project area is shown in **Table 3-1**. **Figure 2-1** illustrates the project alternatives and various landowners.

**Land Ownership.** The Otay subregional resource conservation areas have been recognized as having statewide significance, to include Lower Otay Reservoir, rare and endangered plants on the lower mesa areas, and Otay Mountain.

The project area occurs on portions of the OMER, which is managed by the California Fish and Game Commission. The OMER is a public reserve of about 1,200 acres that hosts many sensitive species and habitats. This parcel is currently closed to all public access; however, permitted uses on other portions of the OMER include hiking, wildlife viewing, bike riding, and horseback riding.

Land in the San Diego NWR also composes parts of the project area. This NWR is managed by USFWS and is part of a USFWS contribution to the Multiple Species Conservation Program (MSCP), a landscape-wide habitat conservation plan to preserve habitat and species while allowing for appropriate development. Permitted uses of the land include hiking, wildlife viewing, bike riding, and horseback riding.

Alternative 2 is on portions of BLM land composing the Otay Mountain Wilderness. Otay Mountain is predominantly under BLM ownership. BLM is responsible for managing public lands and resources for multiple uses. BLM land within and around the project area is used for recreational purposes, such as hunting, hiking, horseback riding, camping, wildlife viewing, and other wilderness activities.

Alternative 2 is also on a portion of the Otay Ranch Preserve co-owned by both the City of Chula Vista and the County of San Diego. This preserve was authorized in 1996 through an agreement between the County of San Diego and the City of Chula Vista. The Preserve includes more than 11,000 acres set aside as mitigation for impacts on sensitive resources resulting from development occurring both in the county and the city.

**Table 3-1. Land Ownership within the Project Area**

Owner	Project Acreage	Agency	Designation Type	Name
California Department of Fish and Wildlife	2.88	State	State Conservation Area	Otay Mountain Ecological Reserve
U.S. Fish and Wildlife Service	8.22	Federal	National Wildlife Refuge	San Diego National Wildlife Refuge
Bureau of Land Management	12.86	Federal	National Public Lands	Otay Mountain Wilderness (managed by the Palm Springs/South Coast Field Office)
City of Chula Vista and County of San Diego	5.84	Local government (managed by the County of San Diego)	Local Conservation Area	Otay Ranch Preserve

Source: USGS 2019a

**Regulatory Setting.** Several federal, state, and local land use plans, policies, and regulations could be relevant to the project area for the Proposed Action. These land use plans, policies, and regulations are identified in the following paragraphs.

*National Wildlife Refuge System Administration Act of 1966; National Wildlife Refuge System Improvement Act of 1997.* The Act was passed to ensure that the Refuge System is managed as a national system of related lands, waters, and interests for the protection and conservation of our Nation's wildlife resources. The National Wildlife Refuge System is the only system of federal lands devoted specifically to wildlife. It is a network of diverse and strategically located habitats with at least one refuge in each state. The passage of this Act gave guidance to the Secretary of the Interior for the overall management of the Refuge System.

*South Coast Resource Management Plan.* In 1994, this plan was developed to guide the future management of approximately 296,000 acres of BLM-administered public land, including 129,000 acres of BLM-administered surface land (referred to as BLM public land) and 167,000 acres of federal mineral ownership where the surface is privately owned (referred to as BLM split estate land). The 129,000 acres of BLM public land are scattered over a five-county area in 296 separate parcels. Ninety-five percent of the BLM land base in the planning area is in western San Diego and western Riverside counties, with the remainder in southwestern San Bernardino, Los Angeles and Orange counties.

*Otay Mountain Wilderness Act of 1999.* In 1999, the Otay Mountain Wilderness became part of the approximately 109-million-acre National Wilderness Preservation System. Consequently, it is BLM policy to prohibit road maintenance or improvement within the Otay Mountain Wilderness boundary; however, the Wilderness Act (16 U.S.C. 1131 et seq.) and the Otay Mountain

Wilderness Act of 1999 do provide for exceptions that could grant BLM permission for authorizing proposed activities for Alternative 2. These exceptions could provide a mechanism for potential improvement, maintenance, and repair activities to the southern portion of 1418 Firebreak Road.

*San Diego County General Plan/Otay Subregional Plan.* The San Diego County General Plan is a framework for the future growth and development of the unincorporated areas of the county, particularly in the western communities. It is based on a set of 10 guiding principles designed to protect the county's unique and diverse natural resources and maintain the character of its rural and semi-rural communities. It reflects an environmentally sustainable approach to planning that balances the need for adequate infrastructure, housing, and economic vitality, while maintaining and preserving unique communities, agricultural areas, and open space. The General Plan provides a consistent framework for land use and development decisions consistent with an established community vision. An unincorporated community's vision, characteristics, and issues are addressed in more specific Community Plans, such as the Otay Subregional Plan. The San Diego County General Plan identifies goals and policies relevant to land use within 10 chapters, including Land Use, Housing, Circulation (Mobility), Conservation and Open Space, Safety, and Noise.

*San Diego County Zoning Ordinance.* The San Diego County Zoning Ordinance regulates land uses within the unincorporated areas of the county by dividing the land into zones based on the present and potential uses of the land. A "zone" is the combination of human and animal use, development type, and special planning area regulations. The San Diego County Zoning Ordinance does not apply to federally owned public lands within the county, which are defined as parcels that are identified as federally owned public lands by the San Diego County Assessor. It should be noted that most of the project area falls within these federally owned public lands.

*San Diego County Board of Supervisors Policies.* The following San Diego County Board of Supervisors policies could be relevant to construction and operation of facilities under Alternative 1:

- ***Policy I-18.*** Right-of-way dedication and public improvement requirements in connection with major and minor use permits.
- ***Policy I-49.*** Distribution of notification of land use hearings.
- ***Policy I-81.*** Easements and right-of ways on county-owned or special district-owned real property.
- ***Policy I-100.*** Minor encroachments into an open space easement.
- ***Policy I-122.*** Use of the county's five percent allowable loss of coastal sage scrub by other jurisdictions.
- ***Policy I-138.*** Mitigation on county-owned land managed by the department of parks and recreation.

*Multiple Species Conservation Program (MSCP).* The MSCP is a comprehensive habitat conservation planning program that addresses multiple species habitat needs and the preservation



of native vegetation communities in San Diego County. The MSCP is a subregional plan under the Natural Communities Conservation Program that is implemented through local subarea plans, which describe specific implementing mechanisms for the MSCP.

CBP is not a signatory to the MSCP and, therefore, is not required to comply with MSCP-specific mitigation requirements and ratios. However, wherever possible, CBP would comply with such requirements and ratios. Any CBP mitigation requirements are fulfilled through ESA Section 7 consultation with USFWS. Therefore, USBP is permitted to perform activities within any preserve, subject to applicable requirements of federal and state law with no additional permit requirements associated with the MSCP. Additionally, projects within Tier IV habitats, which include disturbed and agricultural lands, would not be required to mitigate for impacts on habitat pursuant to the South County Subarea Plan (County of San Diego 1997). See **Sections 3.3.2** and **3.4.2** for more information on the MSCP.

### 3.2.3 Environmental Consequences

#### 3.2.3.1 Alternative 1: Partial Road Improvement

Following the implementation of this alternative, the land use would remain the same. Alternative 1 is only on OMER and the San Diego NWR land and stops before entering the Otay Mountain Wilderness on BLM property. CBP would comply with all MSCP-specific mitigation requirements and ratios, including restrictions on motorized vehicles and permanent roads. Alternative 1 would be compatible with the existing land use categories and would not impact land use.

#### 3.2.3.2 Alternative 2: Complete Road Improvement

Following the implementation of Alternative 2, land use would remain the same. Alternative 2 is on land composed of the OMER, San Diego NWR, Otay Mountain Wilderness, and Otay Ranch Preserve. Short-term, minor impacts would occur from construction and use of staging areas during construction. Long-term, negligible to minor, adverse impacts would be anticipated due to converting vegetated land to expand the roadway. A greater area of vegetation would be converted into parts of the improved 1418 Firebreak Road than in Alternative 1. A greater area of land than Alternative 1 would be converted into turnouts and passing lanes along the roadway. Improvements on BLM land would be prohibited under the *Otay Mountain Wilderness Act of 1999* and *South Coast Resource Management Plan*; however, exceptions granted to CBP could allow for road improvements. Construction activities within the Otay Ranch Preserve would comply with the *Otay Subregional Plan* and the *San Diego County Zoning Ordinance* and would adhere to all relevant San Diego County Board of Supervisors policies. All construction activities would also comply with the *National Wildlife Refuge System Administration Act of 1966* and the *National Wildlife Refuge System Improvement Act of 1997*. CBP would comply with all MSCP-specific mitigation requirements and ratios, including restrictions on motorized vehicles and permanent roads. Alternative 2 would be compatible with existing land use categories and would not significantly impact land use.

### 3.2.3.3 Alternative 3: Preferred Alternative (Improve Drainage Features Without Widening Road)

No new construction or change in land use would occur under Alternative 3; all activity would be confined to repair and maintenance of the current road footprint. CBP would comply with all MSCP-specific mitigation requirements and ratios. No effects on land use would be expected as a result of Alternative 3.

### 3.2.3.4 No Action Alternative

Under the No Action Alternative, CBP would not be maintaining, repairing, or improving the road. CBP enforcement actions would be maintained at current levels or diminish over time due to inaccessibility of the area to CBP agents. CBP would comply with all MSCP-specific mitigation requirements and ratios. The No Action Alternative would result in continuation of existing land uses. No effects on land use would be expected as a result of the No Action Alternative.

## 3.3 GEOLOGY AND SOILS

### 3.3.1 Definition of the Resource

Geological resources consist of the Earth's surface and subsurface materials. Within a given physiographic province, these resources typically are described in terms of topography and physiography, geology, soils, and, where applicable, geologic hazards and paleontology. Topography and physiography pertain to the general shape and arrangement of a land surface, including its height and the position of its natural and human-made features. Geology is the study of the Earth's composition and provides information on the structure and configuration of surface and subsurface features. Such information derives from field analysis based on observations of the surface and borings to identify subsurface composition.

Soils are the unconsolidated materials overlying bedrock or other parent material. Soils typically are described in terms of their complex type, slope, and physical characteristics. Differences among soil types in terms of their structure, elasticity, strength, shrink-swell potential, and erosion potential affect their abilities to support certain applications or uses. In appropriate cases, soil properties must be examined for their compatibility with certain construction activities or types of land use.

Prime farmland is protected under the Farmland Protection Policy Act (FPPA) of 1981. Prime farmland is defined as land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and that is also available for these uses. The intent of the FPPA is to minimize the extent that federal programs contribute to the unnecessary conversion of farmland to non-agricultural uses. The Natural Resources Conservation Service (NRCS) is responsible for overseeing compliance with the FPPA and has developed the rules and regulations for implementation of the Act (see 7 CFR Part 658, 5 July 1984).

### 3.3.2 Affected Environment

**Regional Geology.** The project is within the Lower Californian sub-province of the Pacific Geologic Province. The sub-province includes the Peninsular Ranges and the coastal area of San

Diego. The Peninsular Ranges extend into the Los Angeles Ranges to the north and form the Baja Peninsula to the south. The Peninsular Ranges are composed of batholithic rock formed under extreme heat and pressure by solidification of magma deep within the earth's crust. Uplift and tilting of the Peninsular Range resulted in the Elsinore and San Jacinto Faults, which form the eastern boundary of the Pacific Geologic Province. The western portion of the Lower Californian sub-province is composed of dissected, mesa-like terraces that graduate inland into rolling hills. The terrain here is underlain by sedimentary rocks composed mainly of sandstone, shale, and conglomerate beds, reflecting the erosion of the Peninsular Ranges.

The Otay Mountain area is part of the San Ysidro Mountains, which lies just north of the U.S.-Mexico border in San Diego County. Otay Mountain is part of a zone of Late Jurassic (176–200 million years old) rocks, termed the Santiago Peak Volcanics. These rocks consist of a complex blend of volcanic and sedimentary rocks formed within a submarine island-arc environment. Elevation ranges from 400 ft along the western portion to about 3,550 ft on Otay Mountain. The area rises above a mesa on the west and is deeply dissected by numerous ephemeral streams. The streams have cut steep, narrow canyons or ravines into the hillsides that dominate the area, making it extremely rugged terrain.

**Topography.** Elevations in the project area range from approximately 500 ft at the northern portion of the road to approximately 1,500 ft at the southern portion of the road.

**Soils.** Five soil associations occur within the limits of the project area (Soil Survey Staff 2019b; Bowman 1973). The southern portions of the road are predominantly characterized by San Miguel Exchequer soils, and the northern portions of the road are predominantly Olivenheim cobbly loam soils. The remaining soils are small areas of Friant rocky fine sandy loams and Redding cobbly loams on the northern portion of the project area. Of the five soil associations mapped, the Olivenheim cobbly loams, with 9 to 30 percent slopes, have a moderate potential for erosion, while the remaining soils have a severe potential for erosion. Limitations to construction also range from moderate to severe. There is no perennial water source within the survey area. Figures in **Appendix F** contain more detailed picture of soils in the project area.

**Prime Farmland.** Of the five soil associations mapped within the project area, none are considered prime farmland. Because no prime farmland soils exist within the project area, further analysis of the environmental consequences of Alternatives 1, 2, and 3 on prime farmland are not needed.

**Geologic Hazards.** Geologic hazards are prevalent throughout Southern California in the form of seismic events, landslides, debris flows, and rock falls. There are thousands of recognized faults in California, of which a very small number pose significant hazards. While tectonic plate motion is constant, pressure can build along the fault lines and can be released as earthquakes. The maximum size of an earthquake is related to the length of the fault. No faults are in the project area; however, the Rose Canyon fault zone and Elsinore fault zone are to the west and east of the project area, respectively. These faults have a relatively low average slip rate (rate of movement) of 2 to 5 millimeters per year. Faults with lower slip rates have correspondingly longer times between earthquakes. Major fault systems within the vicinity of the project area are outlined in **Table 3-2**.

Seismic movement has been assessed by the U.S. Geological Survey (USGS) and California Geological Survey (CGS), which has produced seismic hazard maps based on current information about the rate at which earthquakes occur in different areas and on how far strong shaking extends from the quake source. The Earthquake Shaking Potential maps show the levels of horizontal shaking that have a 2 in 100 chance of being exceeded in a 50-year period. The project area is within the earthquake hazard zone associated with the lowest intensity, indicating it is relatively distant from known, active faults and would experience lower levels of shaking less frequently. In this hazard zone, most earthquakes would only cause damage to weaker, masonry buildings; however, very infrequent earthquakes could still cause strong shaking. Historically, there have been up to 6-7 magnitude earthquakes in the vicinity of the project area.

Per the CGS, the project area has not been evaluated for liquefaction or landslides. The project area ranges from a deep-seated Landslide Susceptibility of Class V to Class IX. Weak rocks and steep slopes are most likely to generate landslides.

**Table 3-2. Major Faults within the Vicinity of 1418 Firebreak Road**

	County	Estimated Fault Slip Rate	Fault Class
La Nacion Fault Zone	San Diego	Unspecified	A*
Elsinore Fault Zone	San Diego/Imperial	2-5 mm/year	A
Newport-Inglewood-Rose Canyon Fault Zone	San Diego	2-5 mm/year	A
San Jacinto Fault Zone	San Diego/Imperial	6-15 mm/year	A

\*Geologic evidence demonstrates the existence of a Quaternary Period fault of tectonic origin, whether the fault is exposed for mapping or inferred from liquefaction or other deformational features.  
Source: USGS 2019b.

### 3.3.3 Environmental Consequences

Protection of unique geological features, minimization of soil erosion, and siting of facilities in relation to potential geologic hazards are considered when evaluating potential effects of a proposed action on geological resources. Generally, adverse effects can be avoided or minimized if proper techniques, erosion-control measures, and structural engineering design are incorporated into project development.

Effects on geology and soils would be major and adverse if they would alter the lithology (i.e., the character of a rock formation), stratigraphy (i.e., the layering of sedimentary rocks), and geological structures that control groundwater quality, distribution of aquifers and confining beds, and groundwater availability; or change the soil composition, structure, or function within the environment.

#### 3.3.3.1 Alternative 1: Partial Road Improvement

**Regional Geology.** Alternative 1 would not expose people or structures to substantial adverse effects, nor would it entirely remove a geologic resource. Alternative 1 would not alter rock

formations or layering of sedimentary rock. Negligible impacts on geology would be anticipated from the implementation of Alternative 1.

**Topography.** Long-term, negligible, adverse impacts on topography would be anticipated from grading activities that would locally alter existing topography. The majority of areas proposed for grading have been previously graded, and, therefore, impacts would be negligible.

**Soils.** Under Alternative 1, road improvements to 4,885 ft of road would stop further deterioration of road conditions and prevent future erosion of the road surface from occurring. The application of soil stabilizing agents and the construction of water bars would result in safer driving conditions and reduce the potential for future deterioration of the road.

With the implementation of Alternative 1, primarily Olivenheim cobbly loam soils would be collectively impacted; however, a majority of the soils have already been disturbed by the existing road and its turnouts and secondary trails. Construction and grading activities would result in short-term, minor, adverse impacts on soil resulting from erosion and sedimentation. Grading activities in more rugged terrain could result in greater potential for soil erosion and sedimentation than in flat terrain. Erosion-and-sediment-control plans would be developed and implemented both during and following road improvements to contain soil and runoff on site and would reduce the potential for adverse effects associated with erosion and sedimentation and transport of sediments in runoff. Once grading activities have subsided, and soils have once again compacted under vehicle weight, soil erosion would be much less likely to occur. Expansion of the road to 24 ft in locations where that standard is not currently met could involve removal of some loose sediment and soil. Improvements to the existing road would permanently impact Olivenheim cobbly loam soils due to road widening.

Maintenance of roads would reduce the effects incurred from negligence, such as rutting, washout, and long-term soil erosion. Proper crowning of the road to manage stormwater runoff would also reduce the potential for soil erosion and sedimentation. Therefore, maintenance of the road would result in a long-term, beneficial impact on soils. Upon completion of the construction of the project, all disturbed areas would be seeded and mulched immediately, thereby further stabilizing the soil.

With the implementation of Alternative 1, soil erosion would decrease, and the integrity of the surrounding soil would be maintained. Loss of soil and topsoil would decrease with the proposed installation of the water bar system. Furthermore, Olivenheim cobbly loam soils are moderately suitable for road-building uses. Therefore, impacts on soils are considered minor and insignificant.

**Geologic Hazards.** Continued maintenance and repair would be beneficial to reduce the future deterioration of the road and remove debris following a potential geological event. BMPs would be implemented to minimize soil erosion and sedimentation. Alternative 1 would not expose people or structures to substantial adverse geologic hazard effects.

### 3.3.3.2 Alternative 2: Complete Road Improvement

**Regional Geology.** Alternative 2 would not expose people or structures to substantial adverse effects or remove a geologic resource. Alternative 2 would not alter rock formations or layering of sedimentary rock. Negligible impacts on geology would be anticipated from the implementation

of Alternative 2, which would be similar to, but slightly greater than, impacts resulting from Alternative 1.

**Topography.** Long-term, negligible, adverse impacts on topography would be anticipated from grading activities that would locally alter existing topography. The majority of areas proposed for grading have been previously graded, and, therefore, impacts would be negligible; however, impacts would be greater than those for Alternative 1 due to improving more than twice the length of road.

**Soils.** Under Alternative 2, road improvements for the entire 12,983 ft of road would stop further deterioration of road conditions and prevent future erosion of the road surface from occurring. The application of soil stabilizing agents and the construction of water bars would each result in safer driving conditions and reduce the potential for future deterioration of the road. The installation of rip-rap would also further prevent erosion. Impacts on soils under Alternative 2 would be anticipated to be similar to, but greater than, impacts from Alternative 1 due to the larger project area.

With implementation of Alternative 2, primarily Olivenheim cobbly loam soils and San Miguel Exchequer soils would be impacted; however, a majority of the soils have already been disturbed by the existing road and its turnouts and secondary trails. Construction and grading activities would result in short-term, minor, adverse impacts on soil resulting from erosion and sedimentation. Grading activities in more rugged terrain could result in greater potential for soil erosion and sedimentation than in flat terrain. However, erosion-and-sediment-control plans would be developed and implemented both during and following road improvements to reduce the potential for adverse effects associated with erosion and sedimentation and transport of sediments in runoff. Once grading activities have subsided, and soils have once again compacted under vehicle weight, soil erosion and sedimentation into nearby water bodies would be much less likely to occur. Expansion of the road to 24 ft in locations where that standard is not currently met could involve removal of some loose sediment and soil. Improvements to the existing road would permanently impact Olivenheim cobbly loam and Miguel Exchequer soils due to road widening.

Maintenance of roads would reduce the effects incurred from negligence, such as rutting, washout, and long-term soil erosion. Proper crowning of the road to manage stormwater runoff would also reduce the potential for soil erosion and sedimentation. Therefore, maintenance of the road would result in a long-term, beneficial impact on soils. Upon completion of the construction of the project, all disturbed areas would immediately be seeded and mulched.

With the implementation of Alternative 2, soil erosion would decrease, and the integrity of the surrounding soil would be maintained. Loss of soil and topsoil would decrease with the proposed installation of the water bar system. Olivenheim cobbly loam soils are moderately suitable for road-building uses; however, the Miguel Exchequer soils on the southern portion of the road are poorly suited for road-building uses, mainly due to runoff potential and a very high erosion hazard. While impacts on soils would be considered minor and insignificant, the impact from the implementation of Alternative 2 would be greater than impacts from Alternative 1 due to additional maintenance and construction activities on the longer stretch of road.

**Geologic Hazards.** Alternative 2 would not expose people or structures to substantial adverse geologic hazard effects. The geologic hazard impacts for Alternative 2 would be similar to, or slightly greater than, those described for Alternative 1, due to the larger project area.

### 3.3.3.3 Alternative 3: Preferred Alternative (Improve Drainage Features Without Widening Road)

**Regional Geology.** Alternative 3 would not expose people or structures to substantial adverse effects or entirely remove a geologic resource. Alternative 3 would not alter rock formations or layering of sedimentary rock. Negligible impacts on geology would be anticipated from the implementation of Alternative 3.

**Topography.** Long-term, negligible, adverse impacts on topography would be anticipated from increased erosion and sedimentation that would locally alter existing topography. Although areas proposed for re-grading have been previously graded, impacts on topography would be anticipated to be long-term, negligible, and adverse because existing topography would be locally altered.

**Soils.** Under Alternative 3, CBP would repair the current two track road and make drainage and other improvements. Because of the lack of formal construction design, FC-4 roadways are subject to greater deterioration than FC-2 roadways if left unmaintained. When subjected to heavier traffic, rutting occurs, which in turn is exacerbated by rain events that further erode the surface.

Maintenance and repair of FC-4 roads such as grading and other ground-disturbing activities would result in erosion and sedimentation. Maintenance of FC-4 roads include filling in potholes and re-grading and compacting road surfaces in areas that have been severely eroded. These activities would result in short- and long-term, minor, adverse impacts on soil resulting from erosion and sedimentation if compaction does not occur during or immediately after the grading process. Grading activities in more rugged terrain could result in greater potential for soil erosion and sedimentation than in flat terrain, increasing the need for immediate compaction.

Unmanaged stormwater flow also causes general erosion to occur, washing out complete sections of road and in many instances making roads impassable. As drainage improvements would be made under this alternative, no short- or long-term, adverse impacts on soils would be expected due to increased erosion potential. Under Alternative 3, impacts on soils would be similar to Alternative 1 due to the implementation of such drainage improvements.

**Geologic Hazards.** Alternative 3 would not expose people or structures to substantial adverse geologic hazard effects. The geologic hazard impacts would be similar to those described in Alternative 1.

### 3.3.3.4 No Action Alternative

Under the No Action Alternative, CBP would not be maintaining, repairing, or improving the road. CBP enforcement actions would be maintained at current levels or diminish over time due to inaccessibility of the area to CBP agents. Under this alternative, CBP agents could be exposed to injury in the event of road failure and illegal foot traffic would continue to impact the project area and the Otay Mountain Wilderness.

Under the No Action Alternative, road conditions would continue to deteriorate, resulting in increased soil and sediment erosion. The No Action Alternative could therefore result in greater impacts on soils than Alternatives 1, 2, or 3, due to the greater potential for soil erosion and sedimentation without key maintenance and repair activities to the road.

## 3.4 VEGETATION

### 3.4.1 Definition of the Resource

Vegetation includes native or naturalized plants and the habitats in which they exist. This section includes a description of all plants, plant communities, and their habitats occurring within the boundaries of the proposed 1418 Firebreak Road improvement area. This section describes the affected environment, including native and non-native vegetation occurring within the project area. Local special-status or rare vegetation species as defined by California Natural Diversity Database (CNDDDB) (CNDDDB 2019), San Diego County MSCP, California Native Plant Society Inventory records (CNPS 2019a), and U.S. Department of Agriculture Natural Resource Conservation Service Soil Survey Data (Soil Survey Staff 2019a) are discussed in this section and are considered in the same general manner as the vegetation communities and other plant species discussed in this section and are not analyzed individually by species in this EA. Federal and state threatened, endangered, and candidate plant species are discussed in **Section 3.6**.

Surveys were conducted from February 2019 through September 2019 to identify suitable habitats for special-status species. The survey area included a 50-foot corridor from the road centerline, totaling a 100-foot wide boundary along the entire length of 1418 Firebreak Road. Habitat conditions observed in the project area were used to evaluate the potential for occurrence of special-status species based on these searches and the professional expertise of the investigating biologists. The potential for each special-status species to occur in the project area was then evaluated according to the following criteria:

- *No Potential*. Habitat on and adjacent to the site is clearly unsuitable for the species' requirements. For wildlife, this is based on a lack of one or more essential habitat elements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime). Species surveys are not considered necessary.
- *Unlikely*. Few of the habitat components meeting the species' requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site. Species surveys are not considered necessary but could be performed to confirm species absence.
- *Moderate Potential*. Some of the habitat components meeting the species' requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site. Species surveys could be necessary to determine presence, extent, density, and details of species distribution.



- *High Potential.* Most or all of the habitat components meeting the species' requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site. If species surveys are not conducted, then it is recommended that the species is assumed to be present. Species surveys could be necessary to determine extent, density, and details of species distribution.
- *Present.* Species was observed on the site or has been documented recently as being on the site. Focused species surveys could still be needed to determine extent, density, and details of species distribution.

### 3.4.2 Affected Environment

Two-thousand forty-seven plants species have been documented within San Diego County (Rebman and Simpson 2014). Of these species, 1,689 are native to the county and 758 are non-native and naturalized. A total of 96 plants species were documented within the project area during surveys, including 94 native species.

Vegetation communities were surveyed during biological surveys conducted in spring and September 2019 and described in a biological survey report (CBP 2020). Prior to these surveys, data from the Web Soil Survey (Soil Survey Staff 2019b) and aerial photographs of the site (Google Earth 2019) were examined to determine whether any unique soil types that could support sensitive plant communities and/or aquatic features were present in the project area. Biological communities observed were classified using the National Vegetation Classification System (NVCS). The vegetation was mapped based on existing NVCS plant community descriptions discussed in *A Manual of California Vegetation* (Sawyer et al. 2009) and *A Manual of California Vegetation, Online Edition* (CNPS 2019b), NatureServe's Classification of Ecological Communities (NatureServe 2019), and the *Vegetation Classification Manual for Western San Diego County* (Sproul et al. 2011). These references describe communities down to the alliance or association level, which are the two most detailed levels of vegetation community classification. Associations are one step more specific than alliances. Vegetation communities within the project area were mapped to the association level, whenever possible.

Vegetation communities found within the project area include *Adenostoma fasciculatum-Xylococcus bicolor-Ceanothus tomentosus* Association (Chamise chaparral), *Bahiopsis lacinata-Artemisia californica-Eriogonium fasciculatum* Association (Coastal Sage Scrub), Disturbed Bare Ground, *Hesperocyparis forbesii* Alliance (Southern Interior Cypress Forest), Mediterranean California Naturalized Annual and Perennial Grassland Semi-Natural Stands (Non-native Grassland/Coastal Sage Scrub), *Nassella* ssp. Association (Native Grassland), *Raphanus sativus* Ruderal Forbland (Non-native Grassland) (USNVC 2019; Sproul et al. 2011).

Sensitive biological communities include habitats that fulfill special functions or have special values. Natural communities considered sensitive are those identified in local or regional plans, policies, Habitat Conservation Plans, or regulations by the CDFW. The CDFW ranks sensitive communities as "threatened" or "very threatened" and keeps records of their occurrences in its CNDDDB (CDFW 2019). CNDDDB vegetation alliances are ranked 1 through 5 based on

NatureServe's (2018) methodology, with those alliances ranked globally (G) or statewide (S) as 1 through 3.

For the purposes of this EA, any vegetation community that would be considered a Tier I or Tier II sensitive community per the San Diego MSCP (County of San Diego 1997) was considered sensitive, regardless of the CDFW ranking. The MSCP uses plant community descriptions described in the *A California Flora and Supplement* (Munz 1968), and *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986), which are different classification systems that predate alliance- and association-level classifications. A classification conversion crosswalk (CNPS 2019b) was used to convert mapped alliances into the MSCP, which used Munz and Holland classifications to determine sensitivity. If a mapped vegetation community within the project area did not fit into one of the MSCP's described communities, the CDFW ranking was used to determine sensitivity. Vegetation communities along with their associated CDFW rank, respective acreages within the survey area, and respective acreage in the impact area are summarized in **Table 3-3**.

**Table 3-3. Vegetation Communities Occurring in the Project Area**

Vegetation Community	CDFW Rank	Acres in Survey Area	Acres in Impact Area for Alternative 1	Acres in Impact Area for Alternative 2	Acres in Impact Area for Alternative 3
Chamise Chaparral	Tier 3	11.98	0.35	1.44	0.02
Coastal Sage Scrub	Tier 2	4.38	0.48	0.59	0.01
Disturbed	No Rank	4.64	1.75	4.32	1.11
Native Grassland	Tier 1, G4, S4	0.36	0.00	0.06	0.00
Non-Native Grassland	No Rank	0.06	0.02	0.02	0.00
Non-Native Grassland/Coastal Sage Scrub	No Rank	8.18	0.52	1.15	0.02
Southern Interior Cypress Forest	Tier 1, G2, S2	0.67	0.00	0.08	0.00
<b>Total</b>		<b>30.27</b>	<b>3.12</b>	<b>7.66</b>	<b>1.16</b>

These vegetation communities vary in species composition and levels of anthropogenic disturbance, from relatively undisturbed chamise chaparral and coastal sage scrub communities throughout the project area, to non-native, grassland-dominated communities along access road edges and at the southern terminus of 1418 Firebreak Road. Vegetation communities were identified during site visits and mapped to the association level where possible using field-verified aerial photographs. In some cases, it is necessary to identify variants of community types or to describe non-vegetated areas that are not described in the literature. The vegetation community

descriptions below are based on conditions observed during the 2019 surveys. Maps of the observed vegetation communities can be found in **Appendix G**.

**Native Vegetation.** A total of 11.98 acres of chamise chaparral were mapped across a majority of the project area. Chaparral is generally composed of hard-stemmed shrubs with leathery leaves that avoid desiccation during the dry season (Dudek 2012). Common species in this vegetation community that were observed during the 2019 biological surveys include chamise (*Adenostoma fasciculatum*), mission manzanita (*Xylococcus bicolor*), hairy ceanothus (*Ceanothus oliganthus*), ashy spike-moss (*Selaginella cinerascens*), and wire-lettuce (*Stephanomeria* sp.).

The northern and southern extents of the project area contain 4.38 acres of coastal sage scrub. This vegetation community is characterized by soft, low, aromatic shrubs and sub-shrubs characteristically dominated by drought-deciduous species. This community typically occurs on sites with low moisture availability, such as dry slopes and clay-rich soils that are slow to release stored water (Dudek 2012). This land cover type was dominated by San Diego County viguiera (*Bahiopsis lacinata*), California sagebrush (*Artemisia californica*), and California buckwheat (*Eriogonium fasciculatum*), with co-dominant plant species being clustered tarweed (*Deinandra fasciculata*), coastal goldenbush (*Isocoma menziesii*), and turkey mullein (*Croton setiger*).

The project area contains 4.64 acres of disturbed unvegetated areas, which include bare patches of dirt where vegetation is constantly disturbed or removed such that little to no vegetation persists. Disturbed unvegetated areas include all unpaved access roads and areas that are constantly disturbed due to vehicle traffic but are not concrete or gravel roads.

A total of 0.67 acres of southern interior cypress forest were mapped in the project area. This vegetation community is a moderately dense, fire-maintained, low forest. The canopy is open to intermittent, depending on stand age and substrate development, with trees up to 52 feet tall. This vegetation community often occurs as isolated groves within a matrix of chaparral or pinon-juniper woodland. The shrub layer can range from intermittent to continuous, and the herbaceous layer is sparse to intermittent (SDMMP 2010). Common species in this vegetation community that were observed include Tecate cypress (*Hesperocyparis forbesii*) and chamise with co-dominant plant species being chaparral pea (*Pickeringia montana*) and San Diego County viguiera (*Bahiopsis lacinata*).

In the southern portion of the project area, 0.36 acres of native grassland were mapped. Common species in this vegetation community that were observed include purple needle grass (*Nassella Stipa* sp.), western blue-eyed grass (*Sisyrinchium bellum*), and clustered tarweed with co-dominant plant species being blue dicks (*Dichelostemma capitatum*), deerweed (*Acmispon glaber*), and filaree (*Erodium* spp.).

**Non-Native Vegetation.** The middle portion of the project area contains 8.18 acres of non-native grassland/coastal sage scrub. This land cover type was dominated by brome (*Bromus* ssp.) and wild oats with patches of deerweed, California sagebrush, turkey mullein, and western blue-eyed grass, with additional plant species being San Diego goldenstar (*Bloomeria clevelandii*), checkerbloom (*Sidalcea* sp.), and red maids (*Calandrinia menziesii*).

The project area contains 0.06 acres of non-native grassland mapped in the northernmost portion. This land cover type was dominated by brome, radish (*Raphanus sativus*), turkey mullein, wire-lettuce, and sow thistle (*Sonchus* spp.), with co-dominant plant species being checkerbloom, California matchweed (*Gutierrezia californica*), and red maids.

**Local Special Status Vegetation Species.** Seven special-status plants were mapped within the project area during survey efforts, and a total of nine additional special-status plant species have been documented to occur within 1 mile of the project area, within the Dulzura, Jamul Mountain, and Otay Mountain USGS 7.5-minute quadrangle maps.

Special-status species include species that are listed as endangered or threatened at the federal or state level, CDFW species of special concern, and City of San Diego MSCP-listed species. Seven special-status species are present within the project area, none of which are federally listed species. Otay manzanita (*Arctostaphylos otayensis*) was observed and mapped within dense chamise chaparral along the middle and southern portions of the project area. San Diego County viguiera (*Bahiopsis laciniata*) was prolific throughout the project area and could be found along disturbed margins of the road and within open areas associated with coastal sage scrub, chamise chaparral, and southern interior cypress forest. Extensive populations of San Diego goldenstar (*Bloomeria clevelandii*) were mapped within the central portion of the project area, specifically in open non-native grassland/coastal sage scrub habitat. Western dichondra (*Dichondra occidentalis*) was found in rocky outcrops within open areas of chamise chaparral habitat towards the southern portion of the project area. Tecate cypress (*Hesperocyparis forbesii*) formed dense stands within the southern interior cypress forest habitat at the southern terminus of the project area. Munz's sage (*Salvia munzii*) favored the ecotone between chamise chaparral and grassland habitats as well as open chamise chaparral throughout the project area. Ashy spike-moss (*Selaginella cinerascens*) carpeted the understory of the chamise chaparral habitat found throughout the project area.

Rare plant surveys were conducted in the spring and summer of 2019, peak blooming season for perennial herbs and shrubs. No rare plants were observed.

**Pesticides.** Neither USBP nor its contractors would use herbicides or pesticides for vegetation control for maintenance activities along 1418 Firebreak Road. Therefore, the use of herbicides and pesticides will not be further discussed.

### 3.4.3 Environmental Consequences

Impacts on vegetation would be considered major and adverse if a large portion of the vegetation community was affected or if the Proposed Action permanently affected the range of a species or population size of a plant community.

#### 3.4.3.1 Alternative 1: Partial Road Improvement

Short- and long-term, negligible to minor, direct and indirect, adverse effects on vegetation would occur from Alternative 1 due to vegetation clearing, crushing, accidental spills, and temporary increases in turbidity and sedimentation. All maintenance and repair activities would occur within or adjacent to the existing footprint of 1418 Firebreak Road.

Long-term, negligible to minor, adverse impacts would occur from the loss of vegetation during road widening since some areas of vegetation would be converted into parts of the improved road. Some portions of land consisting of currently disturbed areas would be converted into turnouts and passing lanes along the roadway. Maintenance activities would also have the potential to generate dust, therefore covering nearby vegetation. This dust could affect photosynthesis, respiration, transpiration and allow for the penetration of pollutants. However, vegetation control would be limited to the existing footprint and immediately surrounding areas where very little vegetation currently grows. Vegetation clearing could include the selective removal of woody vegetation and could have the potential to result in conversion or degradation of habitat.

Negligible to minor, direct, adverse effects on vegetation, such as crushing, could occur when required vehicles and equipment access, park at, and maneuver around areas requiring maintenance. All maintenance activities are expected to occur within or adjacent to existing footprints of the roadway; as such, these impacts would be negligible to minor.

Degradation of plant communities would also occur if petroleum products or other hazardous materials are accidentally released during the temporary operation and storage of maintenance and repair vehicles and other equipment.

Under this alternative, a long-term, beneficial impact on erosion and sedimentation would occur from the periodic, scheduled inspections and maintenance of roadway. Beneficial impacts would also be expected from the installation of water bars, which would result in the reduced potential for erosion and sedimentation. Adverse impacts on vegetation would be minimized by using appropriate BMPs (see **Appendix D**).

### 3.4.3.2 Alternative 2: Complete Road Improvement

Short- and long-term, negligible to minor, direct and indirect, adverse effects on vegetation would occur from Alternative 2 due to vegetation clearing, crushing, accidental spills, and temporary increases in turbidity and sedimentation. Impacts from Alternative 2 would be expected to be greater than those from Alternative 1 due to the additional 8,098 ft of roadway slated for improvement. As with Alternative 1, all maintenance and repair activities would occur within or adjacent to the existing footprint of 1418 Firebreak Road.

The likelihood of an accidental spill of petroleum products or other hazardous materials during the operation or storage of maintenance and repair vehicles would be greater with Alternative 2 than Alternative 1, which could lead to further degradation of plant communities. However, all regulatory requirements for handling and storage of fuels, oils, and other hazardous materials would be implemented.

Under this alternative, a long-term, beneficial impact on erosion and sedimentation would occur from the periodic, scheduled inspections and maintenance of roadway. Beneficial impacts of Alternative 2 would be greater than those of Alternative 1 due to the additional 8,098 ft of roadway slated for improvement. Adverse impacts on vegetation would be minimized by using appropriate BMPs (see **Appendix D**).

### 3.4.3.3 Alternative 3: Preferred Alternative (Improve Drainage Features Without Widening Road)

Under Alternative 3, short- and long-term, negligible, direct and indirect, adverse effects on vegetation would occur. All maintenance and repair activities would occur within the existing footprint of 1418 Firebreak Road. Maintenance and repair under this alternative would result in impacts on vegetation, such as the accidental release of petroleum products or other hazardous materials, trampling and crushing vegetation while accessing the site, and increased erosion, turbidity, and sedimentation. Impacts associated with the implementation of Alternative 3 would be expected to be similar to those of Alternative 1.

### 3.4.3.4 Alternative 4: No Action Alternative

Under the No Action Alternative, CBP would not be maintaining, repairing, and improving the road. CBP enforcement actions would be maintained at current levels or diminish over time due to inaccessibility of the area to CBP agents. Therefore, no impacts on vegetation would be expected from the implementation of the No Action Alternative because no maintenance or repair activities would occur in the project area.

## 3.5 TERRESTRIAL AND AQUATIC WILDLIFE RESOURCES

### 3.5.1 Definition of the Resource

Terrestrial and aquatic wildlife resources include native or naturalized terrestrial and aquatic animals and the habitats in which they exist. This section includes a description of terrestrial and aquatic wildlife species and their habitats that are likely to be found in the project area. Local special status or rare wildlife species as defined by CNDDB, MSCP, San Diego County Bird Atlas (Unitt 2004), and San Diego County Mammal Atlas (Tremor et al. 2017) are discussed in this section. Federally listed threatened, endangered, and candidate species and California state-listed threatened and endangered wildlife species are addressed in **Section 3.6**.

This section is supported by data gathered during biological surveys conducted from February 2019 through September 2019, and the associated biological survey report (CBP 2020).

### 3.5.2 Affected Environment

**Terrestrial Resources.** The proposed project area is capable of supporting various wildlife species, including mammals, birds, reptiles, and amphibians.

One hundred and twelve species of mammals have been documented in San Diego County (Tremor et al. 2017). During biological surveys, only one special-status mammal species, the southern mule deer (*Odocoileus hemionus*), was observed. Southern mule deer are found throughout San Diego County in habitats providing proximity to water and a wide selection of forage. This MSCP species is impacted by a lack of wildlife corridors and has a high potential to occur on site. One additional special-status mammal has a moderate potential to occur within the project area, the Bryant's woodrat (*Neotoma bryanti*). The Bryant's woodrat uses bases of shrubs, cacti, or rock crevices for nesting structures and prefers areas with succulent vegetation for forage, habitat that is abundant in the project area.

Five hundred and twenty-one species of bird have been documented in San Diego County (Unitt 2004). Many of these are migratory birds that do not nest in the area, but still rely on stop over locations to feed and rest during their migration. Seven special-status bird species were documented within the project area during recent surveys: the Northern harrier (*Circus cyaneus*), least Bell's vireo (*Vireo bellii pusillus*), California horned lark (*Eremophila alpestris actis*), coastal California gnatcatcher (*Polioptila californica californica*), Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), black-chinned sparrow (*Spizella atrogularis*), and grasshopper sparrow (*Ammodramus savannarum*).

One special-status bird species, the white-tailed kite (*Elanus leucurus*), has a moderate potential to occur within 1 mile of the project area. White-tailed kite require open habitats with adequate vegetative structure to support prey animals, which include grasslands, savannah, woodlands, and wetlands. This species prefers edge habitat with tree structure for nesting with no preference for a specific land cover type. Suitable foraging habitat for this species exists within the open grassland and coastal sage scrub in the project area.

Seventy-nine species of reptiles and amphibians have been documented in San Diego County (SDNHM 2017). During biological surveys, only one special-status reptile species was observed, the San Diegan tiger whiptail (*Aspidoscelis tigris stejnegeri*). In addition, one amphibian and two reptile special-status species have high potential to occur within the project area including the Western spadefoot (*Spea hammondi*), coast horned lizard (*Phrynosoma blainvillii*), and red diamond rattlesnake (*Crotalus ruber*). Meanwhile, four special-status reptile species have moderate potential to occur within the project area including the Southern California legless lizard (*Anniella stebbinsi*), orange-throated whiptail (*Aspidoscelis hyperythra beldingi*), coast patch-nosed Snake (*Salvadora hexalepis virgultea*), and two-striped garter snake (*Thamnophis hammondi*).

**Aquatic Resources.** No special-status aquatic wildlife, including native or naturalized fish, mollusks, and crustaceans, was identified in the 2019 surveys. However, the project area does contain 14 road pools that have potential suitable habitat for both San Diego fairy shrimp (*Branchinecta sandiegonensis*) and Riverside fairy shrimp (*Streptocephalus woottoni*). Four of these road pools were found to be occupied by San Diego fairy shrimp during 2019 surveys. Impacts on fairy shrimp are discussed further in **Section 3.6**. No impacts on aquatic resources would be anticipated; therefore, they are not discussed further.

### 3.5.3 Environmental Consequences

Effects on wildlife would be major and adverse if the species or habitats are adversely affected over relatively large areas. Effects would also be considered significant if disturbances cause substantial or permanent reductions in population size or distribution of a species.

#### 3.5.3.1 Alternative 1: Partial Road Improvement

Short- and long-term, negligible to minor, direct and indirect, adverse effects on wildlife would occur from implementation of Alternative 1. All maintenance and repair activities would occur within or adjacent to the existing footprint of 1418 Firebreak Road. As such, maintenance and repair of the roadway would result in temporary, minor degradation of wildlife habitat and a small amount of permanent habitat loss.

Mechanical vegetation clearing, such as mowing and trimming, could cause larger mammals, reptiles, and birds, including breeding migratory birds, to temporarily relocate. Individuals of smaller, less-mobile species could inadvertently be directly impacted by maintenance and repair activities. Vegetation control would occur within the existing footprint where vegetation is being maintained. As such, impacts from vegetation control would be temporary. The direct disturbance of habitat associated with vegetation clearing, including the selective removal of woody plants, could result in the establishment of invasive plant species in the cleared area resulting in the conversion of habitat.

Localized degradation of habitat would also occur if petroleum products or other hazardous materials are accidentally released during operation or storage of maintenance vehicles and other equipment. However, all regulatory requirements for handling and storage of fuels, oils, and other hazardous materials (such as the development of spill prevention plans) would be implemented. Thus, habitat degradation resulting from accidental releases of hazardous materials would be negligible.

Some wildlife might be killed or injured during ground-disturbing activities or during transportation of equipment and personnel. Ground-disturbing activities would occur within or adjacent to the existing footprint, potentially resulting in animals being killed or injured during planned activities. Burrowing animals, such as the rodents and reptiles, could also be impacted.

Temporary displacement of mobile wildlife from noise and other disturbances associated with Alternative 1 would occur. However, adverse impacts would be minimized by using appropriate BMPs (see **Appendix D**).

### 3.5.3.2 Alternative 2: Complete Road Improvement

Short- and long-term, negligible to minor, direct and indirect, adverse effects on wildlife would occur from the implementation of Alternative 2. Wildlife could be killed or injured during ground-disturbing activities or during transportation of equipment and personnel. Temporary displacement of mobile wildlife from noise and other disturbances could also be associated with this alternative. As a result, wildlife impacts associated with Alternative 2 would be greater than those associated with Alternative 1 due to the extended construction period and increased distance that accompanies complete road improvement. As with Alternative 1, all maintenance and repair activities would occur within or adjacent to the existing roadway footprint, yet such activities would still result in temporary, minor degradation of wildlife habitat and a small amount of permanent habitat loss.

As with Alternative 1, mechanical vegetation clearing could cause larger mammals, reptiles, and birds to temporarily relocate and individuals of smaller, less-mobile species to be inadvertently directly impacted. In addition, vegetation clearing could result in the establishment of invasive plant species in the cleared area resulting in the habitat conversion. Impacts under Alternative 2 would be greater than those of Alternative 1 due to the extended project area that accompanies complete road improvement.

The likelihood of an accidental spill of petroleum products or other hazardous materials during the operation or storage of maintenance and repair vehicles would be greater with Alternative 2 than Alternative 1 and could lead to localized habitat degradation. All regulatory requirements for



handling and storage of fuels, oils, and other hazardous materials (such as the development of spill prevention plans) would be implemented. Thus, habitat degradation resulting from accidental releases of hazardous materials would be negligible. BMPs would be implemented to further minimize these adverse effects.

### 3.5.3.3 Alternative 3: Preferred Alternative (Improve Drainage Features Without Widening Road)

Under Alternative 3, short- and long-term, negligible to minor, direct and indirect, adverse effects on terrestrial wildlife would occur. All maintenance and repair activities would occur within the existing footprint of 1418 Firebreak Road. Under this alternative, impacts on wildlife, such as displacement of wildlife, habitat conversion, and degradation from vegetation clearing and the accidental release of petroleum products; crushing of smaller, less-mobile species resulting in death or injury; and disturbance from noise effects and temporary displacement of terrestrial species would be expected. Impacts associated with the implementation of Alternative 3 would be expected to be similar to those of Alternative 1.

### 3.5.3.4 Alternative 4: No Action Alternative

Under the No Action Alternative, CBP would not be maintaining, repairing, and improving the road. Therefore, no impacts on terrestrial wildlife would be expected from the implementation of the No Action Alternative because no maintenance or repair activities would occur in the project area. Under this alternative, traffic on the road would continue as normal and it is unlikely that any other entity would maintain the road.

## 3.6 THREATENED AND ENDANGERED SPECIES

### 3.6.1 Definition of the Resource

Threatened and endangered species are commonly protected because their historic range and habitat have been reduced and will only support a small number of individuals. Some species have declined for natural reasons, but declines are commonly exacerbated or accelerated by anthropogenic influences. Anthropogenic influences that have contributed to reduced range and habitat availability and reduced populations include agriculture, livestock grazing, urban development and road construction, overcollection, trampling and off-road vehicle use, hydrologic modifications, and altered fire regimes. Once natural vegetation and habitat are disturbed, introduced species can colonize more readily and out-compete native species. Some species occupy specific niches, so even minor alterations are not well-tolerated.

Species listed as threatened or endangered under the ESA (federally listed species) and California ESA, as well as designated critical habitat that have the potential to be affected, are discussed in this section. A list of potential threatened, endangered, or candidate species was compiled from USFWS and CDFW. USFWS is responsible for maintaining and tracking a list of federal threatened, endangered, and candidate species. CDFW is responsible for maintaining a similar list of species for the State of California. In terms of protection and habitat suitability, any species listed as a federal or state candidate is assessed in a manner as though it has already been listed threatened or endangered. This section presents those federal- and state-listed species that are known to occur or have the potential to occur within the project area.

Consultation with USFWS began in the spring of 2019 with the Notice of Preparation for an EA for the project. USFWS responded with by identifying potential project impacts to the San Diego refuge, and federally listed species and their critical habitats. Consultation with USFWS was formally requested in September 2020 for the San Diego fairy shrimp, Quino checkerspot butterfly, Least Bell's vireo, and California gnatcatcher with the submission of the project Biological Assessment.

In early 2021, USFWS identified potential impacts to Riverside fairy shrimp as part of the project restoration component and requested the addition of the species to the consultation process. A formal request for consultation for Riverside fairy shrimp was issued in February 2021. A final Biological Opinion for San Diego and Riverside fairy shrimp was dated May 26, 2021. Quino checkerspot butterfly, Least Bell's vireo, and California gnatcatcher were addressed under informal consultation.

### 3.6.2 Affected Environment

Following biological surveys, it was determined that four federally listed species, the Quino checkerspot butterfly (*Euphydryas editha quino*), coastal California gnatcatcher (*Polioptila californica californica*), least Bell's vireo (*Vireo bellii pusillus*), and San Diego fairy shrimp (*Branchinecta sandiegonensis*), are known to occur within or adjacent to the project area. The coastal California gnatcatcher and Quino checkerspot butterfly occur primarily within the chaparral habitats of the project area, which is atypical for both species. The least Bell's vireo was observed northwest of the project area within riparian woodland habitat. It is expected that the entire project area contains potential habitat for the Quino checkerspot butterfly and coastal California gnatcatcher. These federally listed species are not uniformly distributed among the project area but instead concentrated in areas with preferable habitat.

Three species have critical habitat that overlaps the project area. Least Bell's vireo mapped critical habitat is at the northernmost terminus of 1418 Firebreak Road, at the intersection with Otay Lakes Road. However, while critical habitat overlaps the project area, no riparian habitat used by least Bell's vireo was observed within the project area. Coastal California gnatcatcher mapped critical habitat is found along the northern portion of 1418 Firebreak Road from the intersection with Otay Lakes Road and continues south approximately 1 mile. Approximately 2.13 acres of coastal California gnatcatcher critical habitat is found within the project area. Quino checkerspot butterfly mapped critical habitat encompasses the northern terminus and middle section of 1418 Firebreak Road, for a total of approximately 1 mile. Approximately 4.64 acres of Quino checkerspot butterfly critical habitat is found within the project area. **Figure 3-1** depicts all critical habitat within the project area.

#### 3.6.2.1 Terrestrial Threatened and Endangered Species

**Quino checkerspot butterfly.** The Quino checkerspot butterfly is a small butterfly in the brush-footed butterfly family (*Nymphalidae*). The species is one of at least 18 California subspecies of the more widespread Edith's checkerspot. Adults fly once per year from late February to mid-April. Threats to the Quino checkerspot include agriculture and urban development, conversion of native habitats, fire management practices, and grazing.

Historically, the Quino checkerspot butterfly was found from the Santa Monica Mountains south into northern Baja California. The Quino checkerspot butterfly is found in areas with open canopies of coastal sage scrub, open chaparral, juniper woodland, and native grasslands. The species habitat contains open areas and low-growing, sparse vegetation, with a low to moderate amount of non-native species (USFWS 2003). Food plants used by Quino checkerspot larva is restricted to dot-seed plantain (*Plantago erecta*), woolly plantain (*P. patagonica*), possibly desert Indianwheat (*P. ovata*), purple owl's clover (*Castilleja exserta*), Coulter's snapdragon (*Antirrhinum coulterianum*), bird's beak (*Cordylanthus rigidus*), and Chinese houses (*Collinsia* spp.) (USFWS 2003, Mattoni et al. 1997).

There is suitable habitat for the Quino checkerspot butterfly within the project area, because there are habitats with appropriate structure, species makeup, and host plants present within the surrounding area. During the 2019 surveys, a total of 25 Quino checkerspot butterflies were observed in or around the project area.

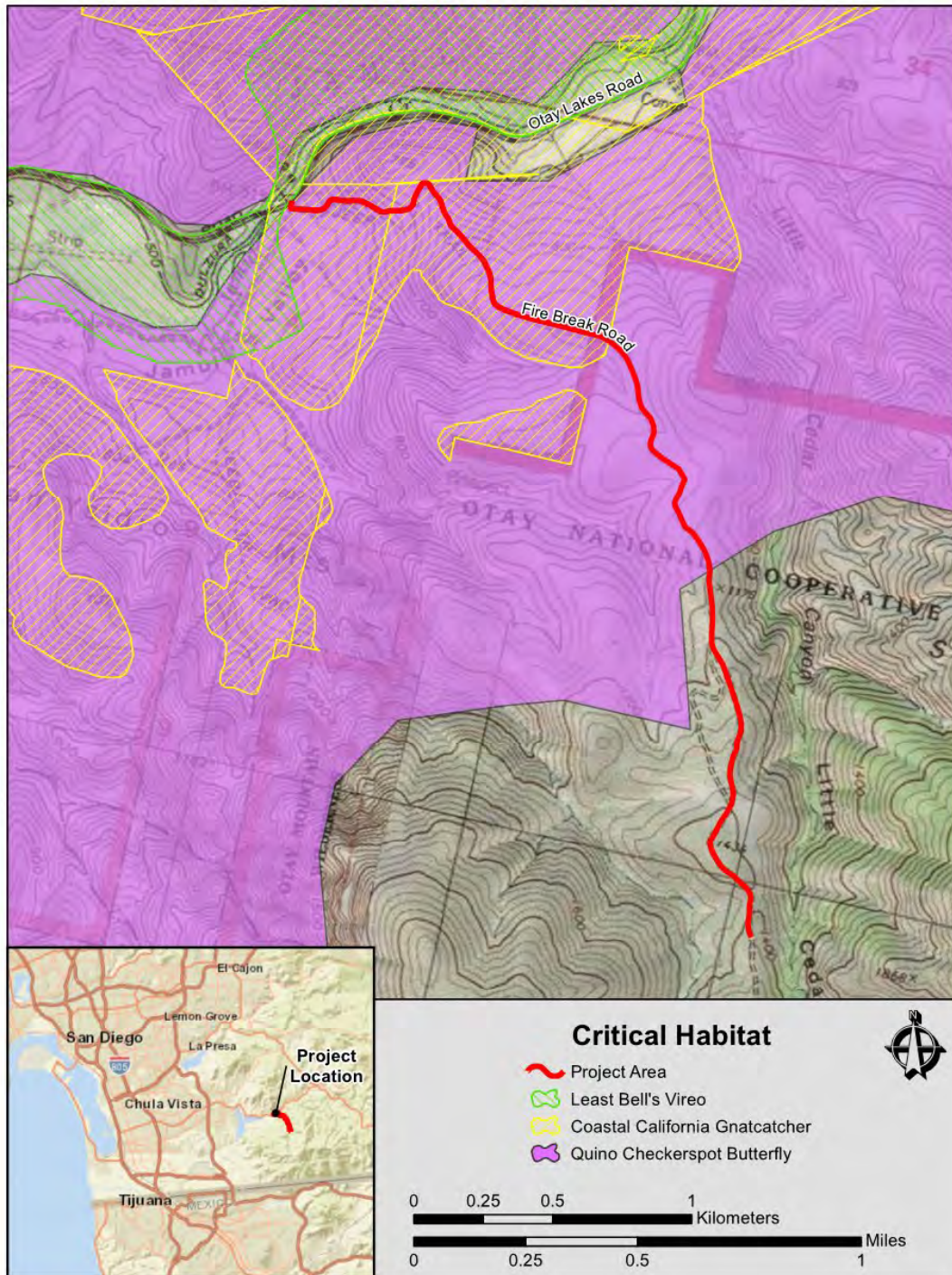


Figure 3-1. Critical Habitat

The following measures would be implemented to minimize impacts to Quino checkerspot butterflies:

1. CBP would staff a biologist, approved by USFWS, who would be responsible for monitoring and reporting compliance with avoidance and minimization measures for biological resources during work activities addressed in the biological opinion. The biologist must be knowledgeable of Quino checkerspot butterfly biology and ecology. The biologist would perform the following duties:
  - a. Be on site during all vegetation clearing/grubbing and project construction within 500 feet of habitat to be avoided.
  - b. Oversee installation of and inspect the fencing and erosion control measures a minimum of once per week and daily during all rain events to ensure that any breaks in the fence or erosion control measures are repaired immediately.
  - c. Conduct Quino checkerspot butterfly and host plant surveys in the impact area within one week prior to impacts. If found, host plants would be flagged and avoided to the maximum extent practicable. If host plants cannot be avoided, CBP would contact USFWS for further consultation.
  - d. Periodically monitor the work area to ensure that work activities do not generate excessive amounts of dust.
  - e. Train all contractors and construction personnel on the biological resources associated with this project and ensure that training is implemented by construction personnel. At a minimum, training would include: (i) the purpose for resource protection; (ii) a description of the sensitive species found on site and their habitat(s); (iii) the conservation measures that should be implemented during project construction to conserve sensitive species, including strictly limiting activities, vehicles, equipment, and construction materials to the project area to avoid sensitive resource areas in the field (i.e., avoided areas delineated on maps or on the project site by fencing); (iv) environmentally responsible construction practices; (v) the protocol to resolve conflicts that may arise at any time during the construction process; (vi) the general provisions of the ESA, the need to adhere to the provisions of the ESA, and the penalties associated with violating the ESA.
  - f. Halt work, if necessary, and confer with USFWS to ensure the proper implementation of species and habitat protection measures. The biologist would report any violation to USFWS within 24 hours of its occurrence.
  - g. Submit weekly email reports to USFWS during vegetation clearing and/or project construction. These weekly reports would document that authorized impacts were not exceeded and general compliance with all conditions. The reports would also outline the duration of monitoring, the location of construction activities, the type of construction which occurred, and equipment used. These reports would specify numbers, locations, and sex of sensitive species observed and remedial measures



employed to avoid, minimize, and mitigate impacts to sensitive species. Raw field notes should be available upon request by USFWS.

- h. Submit a final report to USFWS within 60 days of project completion that includes as-built construction drawings with an overlay of habitat that was impacted and avoided, photographs of habitat areas that were to be avoided, and other relevant summary information documenting that authorized impacts were not exceeded and that general compliance with all conditions of this consultation was achieved.
2. Offset impacts to 1.43 acres of Quino checkerspot butterfly critical habitat, including 0.02 acre of coastal sage scrub/chamise chaparral gnatcatcher habitat, 0.0012 acres of which is gnatcatcher critical habitat with physical or biological features, by closing 2.32 acres of unauthorized roads in the vicinity of 1418 Firebreak Road and restoring/enhancing the area for Quino checkerspot butterfly/gnatcatcher habitat. In addition, CBP would place reflective delineating markers where vegetation does not delineate the 10-foot-wide roadbed in order to discourage use and allow passive vegetation restoration of the areas outside of the 10-foot-wide roadbed.
3. Project construction and maintenance would occur outside the Quino checkerspot butterfly reproduction season, December 1 to May 31.
4. CBP would submit a habitat restoration plan to USFWS for review and approval prior to initiating project impacts and would include the following information and conditions:
  - a. All specifications and topographic-based grading, planting, and irrigation plans. Topsoil and plant materials salvaged from the habitat areas to be impacted would be transplanted to, and/or used as a seed/cutting source for, the habitat restoration areas to the maximum extent practicable as approved by USFWS. Planting and irrigation would not be installed until USFWS has approved of upland habitat restoration site grading. All plantings would be installed in a way that mimics natural plant distribution. Planting would include pockets of coastal sage scrub surrounded by more herbaceous annuals associated with Quino checkerspot butterfly habitat.
  - b. Planting palettes (plant species, size, and number/acre) and seed mix (plant species and pounds/acre). The plant palettes would include Quino checkerspot butterfly host and nectar plants, other native annuals, and limited coastal sage scrub species. Seed would be collected from existing plants on site as much as possible. Unless otherwise approved by USFWS, only locally native species (no cultivars) obtained from as close to the project area as possible would be used. The source and proof of local origin of all plant material and seed would be provided.
  - c. An implementation schedule that indicates when all restoration grading, planting, and irrigation would begin and end. Upland habitat restoration grading, planting, and irrigation would be completed during the concurrent or next planting season (i.e., late fall to early spring) after finishing grading within the restoration area. Any temporal loss of upland habitat caused by delays in restoration would be offset

through upland habitat restoration at a 0.5:1 ratio for every 6 months of delay (i.e., 1:1 for 12 months delay, 1.5:1 for 18 months delay, etc.). If CBP is wholly or partly prevented from performing obligations under the final plans (causing temporal losses due to delays) because of unforeseeable circumstances or causes beyond their reasonable control, and without the fault or negligence of CBP, CBP would be excused by such unforeseeable cause(s).

- d. Restoration maintenance would be conducted outside the Quino checkerspot butterfly and gnatcatcher reproduction seasons (December 1 to August 31). If maintenance is needed between December 1 and May 31, a Quino checkerspot butterfly permitted biologist would conduct host plants surveys within the maintenance area within one week prior to work. If found, host plants would be flagged and avoided. If maintenance is necessary between February 15 and August 31, a biologist would survey for gnatcatchers within the maintenance area. Surveys would consist of three visits within one week prior to work and one survey would be conducted the day immediately prior to the initiation of work. Work would be allowed to continue on site during the survey period. However, if gnatcatchers are found during any of the visits, CBP would notify and coordinate with USFWS to identify measures to avoid and/or minimize effects to the gnatcatcher (e.g., nests and an appropriate buffer would be flagged by the biologist and avoided by the maintenance work).
- e. Five years of success criteria for restoration areas including: a total of no more than 20 percent absolute cover of coastal sage scrub shrub species, evidence of natural recruitment of multiple species, 0 percent coverage for Cal-IPC List A and B species, and no more than 10 percent coverage for other exotic/weed species.
- f. A qualitative and quantitative vegetation monitoring plan with a map of proposed sampling locations. Photo points would be used for qualitative monitoring and stratified-random sampling would be used for all quantitative.
- g. Contingency measures in the event of restoration failure.
- h. Annual mitigation maintenance and monitoring reports would be submitted to USFWS after the maintenance and monitoring period and no later than December 1 of each year.

***Coastal California gnatcatcher.*** The coastal California gnatcatcher has a limited range within the United States. This subspecies is restricted to coastal Southern California and northwestern Baja California, Mexico, from Ventura and San Bernardino counties, California, south to approximately El Rosario, Mexico (American Ornithologists' Union 1957, Atwood 1991, Garrett and Dunn 1981). The subspecies exists predominantly in Southern California's coastal sage scrub habitat, with a strong preference towards areas dominated by California sagebrush (*Artemisia californica*), chaparral broom (*Baccharis sarothroides*), and California buckwheat (*Eriogonum fasciculatum*). The majority of plant species found in coastal sage scrub habitat are low-growing, drought deciduous shrubs and sub-shrubs (USFWS 1997). Densities are highest along sage scrub-grassland borders or in relatively open sage scrub habitat. Nesting occurs in a variety of host shrub species,

with a high depredation rate, which results in frequent replacement clutches throughout the breeding season. The coastal California gnatcatcher is non-migratory (Unitt 2004) and generally avoids crossing even small areas of unsuitable habitat (Atwood and Bolsinger 1992). The species is typically observed on dry coastal slopes, washes, and mesas, in areas with low plant growth of approximately 1 meter (3 ft.) in height (NatureServe 2019). These areas such as in this project footprint can also include low-growing chaparral instead of the more common coastal sage scrub association.

The project area contains suitable coastal sage scrub habitat, dominated by California sagebrush and flat-top buckwheat. During the spring 2019 surveys, multiple coastal California gnatcatchers were detected within the region of analysis, but not within the coastal sage scrub areas. Instead, both observations were within or along the edge of the low growing chaparral areas. This species occurs within the project area and was observed during the 2019 surveys. There is critical habitat for the coastal California gnatcatcher in the northern portion of the project area.

The following measures would be implemented to minimize impacts to coastal California gnatcatchers:

1. A biologist approved by USFWS would be onsite during the initial clearing/grubbing of coastal sage scrub/chamise chaparral and project construction within 500 feet of least Bell's vireo and coastal California gnatcatcher habitat to ensure compliance with applicable mitigation measures. The biologist must be knowledgeable of least Bell's vireo and coastal California gnatcatcher biology and ecology. The biologist would perform the following duties:
  - a. Perform a minimum of three focused surveys, on separate days, to determine the presence of coastal California gnatcatchers in the disturbance area outside the coastal California gnatcatcher breeding season. Surveys would begin a maximum of 7 days prior to performing initial clearing/grubbing of coastal sage scrub/chamise chaparral and one survey would be conducted the day immediately prior to the initiation of clearing/grubbing. If any coastal California gnatcatchers are found within the disturbance area, the biologist would direct construction personnel to begin clearing/grubbing in an area away from the coastal California gnatcatchers. It would be the responsibility of the biologist to ensure that coastal California gnatcatchers are not in the area to be cleared/grubbed. The biologist would also record the number and location of coastal California gnatcatchers disturbed by clearing/grubbing. CBP would notify USFWS at least 7 days prior to clearing/grubbing to allow USFWS to coordinate with the biologist on bird flushing activities.
  - b. If project construction or maintenance is necessary during the least Bell's vireo and coastal California gnatcatcher breeding seasons, the biologist would perform a minimum of three focused surveys, on separate days, to determine the presence of least Bell's vireo and coastal California gnatcatcher nest building activities, egg incubation activities, or brood rearing activities in, or within, 500 feet of these areas. The surveys would begin a maximum of 7 days prior to project construction and one survey would be conducted the day immediately prior to the initiation of work.



Additional surveys would be done once a week during project construction in the breeding season. These additional surveys may be suspended as approved by USFWS. CBP would notify USFWS at least 7 days prior to the initiation of surveys, and within 24 hours of locating any least Bell's vireos or coastal California gnatcatchers.

- c. If a least Bell's vireo or coastal California gnatcatcher nest is found in or within 500 feet of project construction or maintenance, the biologist would postpone work within 500 feet of the nest and contact USFWS to discuss: (i) the best approach to avoid/minimize impacts to nesting birds (e.g., sound walls); and (ii) a nest monitoring program acceptable to USFWS. Subsequent to these discussions, work may be initiated subject to implementation of the agreed upon avoidance/minimization approach and nest monitoring program. Nest success or failure would be established by regular and frequent trips to the site, as determined by the biologist and through a schedule approved by USFWS. The biologist would determine whether bird activity is being disrupted. If the biologist determines that bird activity is being disrupted, CBP would stop work and coordinate with USFWS to review the avoidance/minimization approach. Coordination between CBP and USFWS to review the avoidance/minimization approach would occur within 48 hours. Upon agreement as to the necessary revisions to the avoidance/minimization approach, work may resume subject to the revisions and continued nest monitoring. Nest monitoring would continue until fledglings have dispersed or the nest has been determined to be a failure, as approved by USFWS.
2. If a nest is found, established either an 8-foot-tall plywood sound wall as far from the nest as possible, but no less than 50 feet between construction and the nest, or conduct sound analysis and monitoring to demonstrate that noise does not exceed 60 Db sustained for an hour at the nest site during project activities.
3. Avoid impacts to areas of perennial vegetation to the extent practicable. Where vegetation impacts cannot be avoided salvage overstory shrubs and stockpile the top 6 inches of topsoil and any grubbed vegetation stockpiled to assist in revegetation.
4. For permanent impacts to coastal California gnatcatcher habitat as a result of the Proposed Action, a mitigation ration of 2:1 has been proposed to address impacts, achieved through restoration of 0.1-acre of coastal sage scrub habitat within disturbed roadways identified by USFWS.
5. Initial clearing/grubbing of coastal sage scrub/chamise chaparral, and project construction and maintenance within 500 feet of least Bell's vireo and coastal California gnatcatcher suitable habitat, would occur between September 16 and February 14 to avoid the least Bell's vireo and coastal California gnatcatcher breeding seasons (or sooner if surveys determine that all nesting is complete). If project construction or maintenance are necessary between February 15 and August 31, CBP would conduct least Bell's vireo and coastal California gnatcatcher nest surveys/monitoring.

**Least Bell's vireo.** This subspecies of Bell's vireo is a neotropical migrant and summer resident in California and northern Baja California, wintering in southern Baja California (Brown 1993). This vireo was once common in lowland riparian habitats throughout California but declined precipitously during the 20th Century. By the time of federal listing in 1986, an estimated 300 pairs were restricted to Southern California, primarily in San Diego County (USFWS 1998). The population has increased since, with the number of nesting territories in California in 2006 estimated to be approximately 10 times greater than in 1986. However, the distribution of the vireo at that time remained almost entirely within Southern California (USFWS 2006).

Least Bell's vireo breeding habitat consists of riparian vegetation, usually in an early successional state, between 5 and 10 years old. Such habitat is preferred by least Bell's vireo because it provides dense cover in the lower shrub layer for nest concealment, as well as a stratified canopy structure favorable to insect abundance, and thus vireo foraging. Riparian habitat types used for breeding include those dominated by willows (*Salix* sp.), Fremont's cottonwood (*Populus fremontii*), and/or oaks (*Quercus* sp.), with a dense understory of species, such as willows, mulefat (*Baccharis salicifolia*), California wild rose (*Rosa californica*), poison oak (*Toxicodendron diversilobum*), and mugwort (*Artemisia douglasiana*) (USFWS 1998). Nests are typically placed within 3 ft of the ground. Least Bell's vireo could attempt multiple broods during the breeding season from mid-March to late September, although one brood is typical (Brown 1993). Habitats such as chaparral and coastal sage scrub adjacent to riparian areas are used for foraging and even nesting, and thus provide another potentially important habitat component (Kus and Miner 1989). Along with habitat destruction, brood parasitism by the brown-headed cowbird (*Molothrus ater*) is widely considered a major contributor to the decline of least Bell's vireo, and a continuing challenge to its recovery.

The project area does not contain suitable nesting or foraging riparian habitat for least Bell's vireo, and none have been detected immediately within the project area during survey efforts. However, occupied habitat for this species does exist nearby, within the Otay River Riparian corridor approximately 100 ft north of the northern terminus of the project area. This species does not occur within the project survey area but was heard by surveyors in the riparian areas described.

### 3.6.2.2 Aquatic Threatened and Endangered Species

**San Diego fairy shrimp.** San Diego fairy shrimp are small aquatic invertebrates, generally restricted to vernal pools and other ephemeral basins within coastal Southern California coastal sage scrub and chaparral upland habitat. Claypan and hardpan pools provide suitable pools, which generally fill for a short time in the winter and are dry in the summer (Eriksen and Belk 1999). The San Diego fairy shrimp is a habitat specialist that is found in shallower pools up to 12 inches deep. Fairy shrimp feed on a variety of algae, diatoms, and particulate organic matter (USFWS 2007). San Diego fairy shrimp hatch following rainfall in suitable vernal pool habitat and mature within 7–14 days. Individuals are usually seen from January to March, although observations of the species could fall outside this range during early or late rainfall events. Cysts of the species can withstand prolonged dry periods and often form cyst banks in pool soils. These cyst banks allow for the recolonization of habitat in subsequent years (USFWS 2007).

San Diego fairy shrimp was described as a species in 1993 (Fugate 1993). Critical habitat for San Diego fairy shrimp was designated on December 12, 2007 (USFWS 2007). The species is currently

covered under the Vernal Pools of Southern California Recovery Plan issued on September 3, 1998.

The project area falls within the known range of San Diego fairy shrimp, and while there are no vernal pools within the surrounding areas, there are road pools in the access road that could have ponding long enough for fairy shrimp from nearby pools to colonize and use. No critical habitat for the species is within the project area. During biological surveys, San Diego fairy shrimp were observed in ephemeral basins (roadside pools of water) within low areas of 1418 Firebreak Road. Protocol fairy shrimp surveys are complete for the 2020 winter/spring season.

The following measures would be implemented to minimize impacts to San Diego fairy shrimp:

1. CBP would staff a biologist during the vernal pool restoration/enhancement who would be responsible for overseeing compliance with the mitigation measures and would be approved by USFWS. The biologist must be knowledgeable of fairy shrimp and vernal pool biology/ecology. The biologist would perform the following duties:
  - a. Be on site during work and/or grading to ensure compliance with all mitigation measures.
  - b. Oversee the installation and inspection of the project perimeter marking and erosion BMPs a minimum of once per week and daily during all rain events to ensure that any breaks in the fence or erosion control measures are repaired immediately.
  - c. Periodically monitor the work area to ensure that work activities do not generate excessive amounts of dust.
  - d. Allow salvage of live plants and collection of inoculum for transplant to pools, watersheds and surrounding uplands to be restored/enhanced as practicable and approved by USFWS.
  - e. Train all contractors and construction personnel on the biological resources associated with this project and ensure that training is implemented by construction personnel. At a minimum, training would include: (i) the purpose for resource protection; (ii) a description of the fairy shrimp and its habitat; (iii) the conservation measures given in the biological opinion that should be implemented during project construction to avoid and/or minimize impacts to the fairy shrimp; including strictly limiting activities, vehicles, equipment, and construction materials to the marked project footprint to avoid sensitive resource areas in the field (i.e., avoided areas delineated on maps or on the project site by fencing); (iv) the protocol to resolve conflicts that may arise any time during the construction process; and (v) the general provisions of the ESA, the need to adhere to the provisions of the ESA, and the penalties associated with non-compliance with the ESA.
  - f. Halt work, if necessary, for any project activities that are not in compliance with the conservation measures committed to as part of the project and specified in this biological opinion. The biologist would report any non-compliance issues to

USFWS within 24 hours of its occurrence and confer with USFWS to ensure the proper implementation of species and habitat protection measures.

- g. Submit a final report to USFWS within 60 days of project completion that includes as-built construction drawings showing restored pools, photographs of the restored pools and uplands, and other relevant information documenting compliance with the mitigation measures.
2. Offset impacts to a 0.004-acre road pool occupied by San Diego fairy shrimp in coordination with the Persistent Surveillance and Detection System Improvements Project by restoring 0.012 acre of new vernal pools occupied by San Diego fairy shrimp and enhance the existing vernal pools/uplands such that existing vernal pools and upland areas help to contribute to the success of vernal pool restoration at the Arnie's Point property on Otay Mesa.
3. Prior to initiating vernal pool restoration, CBP would temporarily mark the limits of restoration impacts (including staging areas and access routes) and install BMPs (e.g., straw wattles, silt fencing, jute cloth) to prevent additional impacts and the spread of silt into extant vernal pools. No restoration activities, materials, or equipment would be permitted outside the marked project footprint. CBP would submit to USFWS for approval, at least 7 days prior to initiating project construction, final construction plans that include photographs of the marked limits of impact, BMPs, and all areas to be impacted or avoided. If work occurs beyond the marked limits of impact, all work would cease until the problem has been remedied to the satisfaction of USFWS. Temporary construction marking would be removed upon project completion.
4. CBP would develop a vernal pool restoration/enhancement plan concurrently with the onset of project impacts and in coordination with the Persistent Surveillance and Detection System Improvements Project. CBP would submit final vernal pool restoration/enhancement plans to USFWS for approval. The restoration/enhancement would not begin until USFWS approves of the final plans. The restoration/enhancement plans would include the following information and measures:
  - a. All restoration/enhancement activities would commence the first summer-fall season after the initiation of project impacts.
  - b. All final specifications and topographic-based grading, planting, and watering plans for the vernal pools, watersheds, and surrounding uplands (including adjacent mima mounds) at the restoration sites. Grading plans would have 0.5-foot contours. Vernal pool size and depth would be similar to extant pools closest to the restoration area. The grading plans would also show the watersheds of extant vernal pools, and overflow pathways that hydrologically connect the restored pools in a way that mimics natural vernal pool complex topography/hydrology.
  - c. A hydraulic analysis that shows each proposed vernal pool and its watershed, the vernal pool to watershed ratio, and hydrologic connection between the pools. The vernal pool to watershed ratio would be similar to extant pools closest to the

restoration area. Restored pools and their watersheds would not impact the watersheds of any extant pools except where needed to establish hydrologic connections.

- d. A final implementation schedule that indicates when vernal pool restoration grading and planting would begin and end.
- e. Native plants and animals would be established within the restored/enhanced pools, their watersheds, and surrounding uplands. This can be accomplished by redistributing topsoil containing seeds, spores, bulbs, eggs, and other propagules from affected pools and adjacent vernal pools and upland habitats; by the translocation of propagules of individual species; and by the use of commercially available native plant species. Any vernal pool inoculum or plant material from an off-site source must be approved by USFWS. Topsoil and plant materials from the native habitats to be affected on-site would be applied to the watersheds of the restored/enhanced pools to the maximum extent practicable. Exotic weed control would be implemented within the restoration areas to protect and enhance habitat remaining on-site.
- f. Plant palettes (species, size, and number/acre) and seed mix (species and pounds/acre) would be included in the restoration plans. The plant palette would include native species specifically associated with the onsite habitat type(s). If native plant species (no cultivars) cannot be obtained on site, an alternate site would be used only upon approval by USFWS. The source and proof of local origin of all plant material and seed would be provided to USFWS.
- g. If inoculum would be used for restoration, the plan would identify any proposed donor pools and include documentation that they are free of versatile fairy shrimp (*Branchinecta lindahli*). No more than 5 percent of the basin area of any donor pool would be used for collection of inoculum. Inoculum would be collected from donor vernal pools when dry to avoid damaging or destroying fairy shrimp cysts and plant seeds. Whenever possible during collection of soil inoculum, a trowel would be used to pry up intact chunks of soil rather than loosening the soil by raking and shoveling which can damage the cysts and seeds. Soil inoculum would be kept separately for each donor pool, would be stored individually in labeled boxes that are adequately ventilated and kept out of direct sunlight to prevent the occurrence of fungus or excessive heating of the soil, and stored off site at an appropriate facility for vernal pool inoculum. No more than 5 percent of the basin area of any donor pool would be used for collection of inoculum. Soil inoculum would be spread out and raked into the bottoms of the restored/enhanced vernal pools.
- h. Inoculum and planting would not be installed until USFWS approves the habitat restoration site grading. All planting would be installed in a way that mimics natural plant distribution and not in rows. Inoculum would not be introduced into the restored/enhanced vernal pools until after they have been demonstrated to retain water for the appropriate amount of time to support San Diego fairy shrimp [i.e., at least 30 days] and have been surveyed for versatile fairy shrimp to the satisfaction

of USFWS. If versatile fairy shrimp are detected in the pools, inoculum would not be introduced until measures approved by USFWS are implemented to attempt to remove the versatile fairy shrimp from the pools. Inoculum would be placed in a manner that preserves, to the maximum extent possible, the orientation of the fairy shrimp cysts within the surface layer of soil (e.g., collected inoculum would be shallowly distributed within the pond so that cysts have the potential to be brought into solution upon inundation).

- i. A map depicting the location of the control pools and a table detailing basin size, depth, ponding duration, native cover, nonnative cover, and presence of listed species for each pool.
- j. If natural rain is inadequate to support plant establishment, artificial watering of the restored/enhanced vernal pools and their watersheds may be carried out as described in the restoration plan and agreed upon by USFWS. Any artificial watering would be conducted in a manner that prevents ponding in the pools. Artificial watering would not be used to germinate vernal pool plants, rather it would be used only as necessary to maintain any plants that germinated naturally but are at risk of dying before flowering and seed set. Any water to be used would be identified and documented to be free of contaminants that could affect the water quality of the pools and harm San Diego and Riverside fairy shrimp.
- k. Any planting stock to be brought onto the restoration sites would be inspected by a pest inspector to ensure it is free of pest species that could invade natural areas, including but not limited to, Argentine ants (*Linepithema humile*), fire ants (*Solenopsis invicta*), and other insect pests.
- l. All weeding personnel would be educated to distinguish between native and nonnative species so that local native plants are not inadvertently killed. All weeding within and immediately adjacent to the restored pools would be performed by hand. Use of weed trimmers and herbicides within and immediately adjacent to restored pools would only be used under conditions approved by USFWS. All herbicide and pesticide use would be under the direction of a licensed pest control advisor and would be applied by a licensed applicator, under the supervision of a vernal pool restoration specialist. Glyphosate-based herbicides, such as RoundUp or Aquamaster, would be applied on all areas that have been dethatched. Herbicide would only be applied when wind speed is less than 5 miles per hour, and spray nozzles would be of a design to maximize the size of droplets, to reduce the potential for drift of herbicide to non-target plants. A 10-foot buffer would be maintained around concentrations of any sensitive plant species. Application of herbicide would not occur if rain is projected within 24 hours of the scheduled application. When vernal pools are ponding or close to saturation, only hand herbicide application (i.e., saturated glove technique) would be used in and around the edges of pools by specially trained herbicide applicators under the direct supervision of the vernal pool restoration specialist. When vernal pools are not ponding or close to saturation, herbicide may be sprayed but applicators must stay at least 3 feet from the edge of the pools.

- m. Five years of monitoring and success criteria for vernal pool and upland habitat restoration areas that includes quantitative hydrological, vegetation transects, viable cyst, hatched fairy shrimp, and gravid female measurements, and complete flora and fauna inventories, and photographic documentation. To minimize impacts to the vernal pool's soil surface during monitoring, cobbles should be oriented within the restored vernal pools to serve as stepping stones.
  - n. Verification that the restoration of the vernal pools is complete would require written sign-off by USFWS. If a performance criterion is not met for any of the restored/enhanced vernal pools or upland habitat in any year, or if the final success criteria are not met, CBP should prepare an analysis of the cause(s) of failure and, if deemed necessary by USFWS, propose remedial actions for approval. If any of the restored/enhanced vernal pools or upland habitat have not met a performance criterion during the initial 5-year period, CBP's maintenance and monitoring obligations would continue until USFWS deems the restoration successful, or contingency measures must be implemented. Restoration would not be deemed successful until at least 2 years after any significant contingency measures are implemented, as determined by USFWS.
  - o. Annual reports should be submitted to USFWS by December 1 of each year that assess both the attainment of yearly success criteria and progress toward the final success criteria. The reports should also summarize the project's compliance with all mitigation measures. The first annual report should include as built grading, planting, and watering plans for the vernal pool restoration.
5. Restoration grading activities would be timed to avoid wet weather to minimize potential impacts (e.g., siltation) to extant vernal pools unless the area to be graded is at an elevation below extant pools. To achieve this goal, grading would comply with the following:
- a. Grading would occur only when the soil is dry to the touch at the surface and 1 inch below. A visual check for color differences (i.e., darker soil indicating moisture) in the soil between the surface and 1 inch below indicates the soil is dry.
  - b. After a rain of greater than 0.2-inch, grading would occur only after the soil surface has dried sufficiently as described above, and no sooner than 2 days (48 hours) after the rain event ends.
  - c. Grading would commence only when no rain is forecast during the anticipated grading period.
  - d. To prevent erosion and siltation from storm water runoff due to unexpected rains, BMPs (e.g., silt fences, straw wattles) would be implemented as needed during grading.
  - e. If rain occurs during grading, work would stop and resume only after soils are dry, as described above.

- f. Grading would be conducted in a manner to prevent run-off or erosion from entering extant vernal pools.
6. The changing of oil, refueling, and other actions that could result in a release of a hazardous substance should be restricted to designated areas that are a minimum of 100 feet from the Arnie's Point vernal pool preserve and at a lower elevation if possible. Such designated areas should be surrounded with berms, sandbags, or other barriers to further prevent the accidental spill of fuel, oil, or chemicals. Any accidental spills should be immediately contained, cleaned up, and properly disposed of.
7. CBP would plan for 5 years of maintenance and monitoring for vernal pool restoration/enhancement (including a 20 percent contingency to be added to the total costs) to help guarantee the successful implementation.
8. CBP would implement long-term management, maintenance, and monitoring for the preservation of Arnie's Point. CBP would submit a draft long-term management plan for the onsite conservation area to USFWS for review and approval with 60 days of initiating project impacts. The long-term management plan would include, but not be limited to, the following: (a) measures for controlling invasive species; (b) an estimated cost of long-term management of Arnie's Point and funding mechanism; (c) to the extent CBP proposes to use contract personnel to implement the plan, the proposed land manager's name, qualifications, business address, and contact information or if such information is unavailable a commitment to provide such information when it does become available; (d) proposed methods of protecting the resources in perpetuity (e.g., conservation easement or other measures); (e) a monitoring schedule; (f) measures to prevent human and invasive species encroachment; (g) contingency measures should problems occur; and (h) a commitment that CBP would not permit easements or activities (e.g., cattle grazing, fuel modification zones, public trails, drainage facilities, walls, maintenance access roads, utility easements) that negatively impact the value of the Arnie's Point to listed species or result in soil disturbance and/or native vegetation removal within or on Arnie's Point. If CBP determines that it is necessary to use Arnie's Point in a manner that is inconsistent with the long-term management plan, then CBP would reinitiate consultation with USFWS.

***Riverside fairy shrimp.*** Suitable habitat for Riverside fairy shrimp includes vernal pools, seasonally ponded areas within vernal swales, and ephemeral freshwater habitats. Riverside fairy shrimp are considered habitat specialists and differ from San Diego Fairy Shrimp in habitat use because they are found in moderate-to-deep pools (generally ranging from 10 inches to 10 ft in depth), longer-lived vernal pools, and ephemeral wetlands. Riverside fairy shrimp do not occur in riverine or marine waters or other permanent bodies of water. Restrictive soil layers are typically hardpan or claypan, and bedrock types are volcanic mud or lava flows. Other kinds of depressions that hold water of a similar volume, depth, and area, and for a similar duration and seasonality as vernal pools and ponded areas within swales could also provide potential habitat for Riverside fairy shrimp. Riverside fairy shrimp habitat is limited to non-vegetated ephemeral and vernal pool systems, which are generally large, and are found within chaparral and coastal sage scrub habitats from 100 to 1,300 ft in elevation. The most common unifying feature of Riverside fairy shrimp habitat, in general, is an ephemeral wet, flooded, or ponded area that is typically wet during a



portion of the year and dry for the remainder of the year. A minimum period of inundation, or pool duration, that Riverside fairy shrimp need to hatch and reach sexual maturity is approximately 8 weeks.

Soils and soil series that underlie vernal pool habitat supporting Riverside fairy shrimp are generally characterized by a high content of coarse sandy grains (marine alluvial sediments), loams, or clay inclusions, or a combination of these, with a subsurface clay or hardpan layer. These are also limited in number and geographically fixed.

Riverside fairy shrimp was described as a species in 1990 (Eng et al. 1990) and was listed as federally endangered on August 3, 1993. Critical habitat for Riverside fairy shrimp was designated on May 30, 2001 (USFWS 2008) and revised on December 4, 2012 (77 FR 72069-72140). Riverside fairy shrimp is currently covered under the Vernal Pools of Southern California Recovery Plan, issued on September 3, 1998.

The project area falls within the known range of Riverside fairy shrimp, and while there are no vernal pools within the surrounding areas, there are ephemeral drainages nearby that could have ponding long enough for fairy shrimp from nearby pools to colonize and use. No critical habitat for the species is within the project area. During biological surveys, Riverside fairy shrimp were not observed near 1418 Firebreak Road. Protocol fairy shrimp surveys are complete for the 2020 winter/spring season.

### 3.6.3 Environmental Consequences

Effects on threatened and endangered species would be major and adverse if the species or habitats are adversely affected over relatively large areas, or if any of the following occur:

- Permanent loss of occupied, critical, or another suitable habitat,
- Temporary loss of critical habitat that adversely affects recolonization by threatened or endangered benthic resources, and
- Take (as defined under the ESA) of a threatened or endangered species.

#### 3.6.3.1 Alternative 1: Partial Road Improvement

***Quino checkerspot butterfly.*** Short- and long-term, moderate to major, direct and indirect, adverse effects from construction activities on the Quino checkerspot butterfly would be expected. It is possible that ground-disturbing activities associated with Alternative 1 could affect breeding practices. Surveys in 2019 also revealed the presence of Quino checkerspot butterfly host and food plants within the proposed disturbance area. Surveys found that an estimated 1.75 acres of Quino checkerspot butterfly habitat would be impacted with the implementation of Alternative 1. Overall, surveys revealed a high-quality potential habitat for the species due to its isolation, presence of host plants, and topographical features (openings, hilltops, roadbed). Although BMPs would likely minimize direct impacts on Quino checkerspot butterflies, indirect effects from the potential loss of host and food plants would occur.

If ground clearing or road maintenance occurs during the active period for Quino checkerspot butterflies (February–mid-May, depending on weather), there is a potential to impact adult Quino checkerspot butterflies. If adult Quino checkerspot butterflies forage within the proposed disturbance area during construction or maintenance activities, they could potentially be run over or hit by vehicles. Furthermore, impacts from construction and maintenance activities such as fugitive dust emissions and human activity could displace or kill Quino checkerspot butterflies.

Recently disturbed soils can increase the potential for invasive species, such as Lehman's lovegrass and false-brome, to become established. These and other invasive species tend to form dense stands that out-compete larval host species and nectar-providing species resulting in degraded habitat. The Quino checkerspot butterfly occurs in open areas with low-growing and sparse vegetation that are typically formed or maintained by some form of disturbance. Most of the vegetation-control activities would be limited to the landscaped vegetation within the proposed 1418 Firebreak Road. Outside of the proposed disturbance area, vegetation control would be limited to the minimum extent necessary to create defensible space for wildfires.

While it is possible to avoid impacts to adult Quino checkerspot butterfly individuals with the implementation of mitigation measures and BMPs, the impact on host and food plants also found in the project area would be inevitable. In addition, the USFWS considers any area within 0.6 miles (estimated movement distance) of a known Quino checkerspot butterfly observation to be occupied habitat. Therefore, Alternative 1 could affect this habitat and is likely to adversely affect Quino checkerspot butterfly.

BMPs would be implemented to minimize these direct and indirect effects on Quino checkerspot butterfly adults, eggs, and larvae, in the unlikely event they occur within the proposed project area. Effects could include injury or crushing of individuals during site preparation and by use of construction equipment. Indirect effects could also occur from fugitive dust emissions, increased invasive species, and loss of habitat from site-preparation activities.

***Coastal California gnatcatcher.*** Short- and long-term, direct and indirect, negligible, adverse effects on the coastal California gnatcatcher would be expected. Surveys conducted in 2019 found that an estimated 1.42 acres of coastal California gnatcatcher habitat would be impacted with the implementation of Alternative 1. Surveys also indicated one pair of coastal California gnatcatchers were present either near or within the project area throughout the duration of the survey period. One pair and three juveniles were observed outside of the protocol survey period when a biologist was conducting a rare plant survey within the same survey area. It is possible that activity associated with Alternative 1 could affect species breeding. BMPs would be implemented to avoid or minimize these direct and indirect effects to a level that is negligible.

Noise, fugitive dust, and human activity, which could result from improvement activities to 1418 Firebreak Road, could cause coastal California gnatcatchers to avoid areas in which they might otherwise forage or nest. Any temporary “loss” (due to avoidance by gnatcatchers) of forage and nesting habitat would be reduced or eliminated by implementing BMPs. Effects on coastal California gnatcatchers would be negligible.

***Least Bell's vireo.*** Short- and long-term, direct and indirect, negligible, adverse effects on the least Bell's vireo would be expected. Based on the lack of the riparian habitat for least Bell's vireo

nesting, it is unlikely that the species would occur within the project area and the species was not observed during the 2019 surveys. However, occupied habitat does exist nearby, within the Otay River Riparian corridor. At this distance, there would be the potential for short-term noise impacts at the proposed staging area. Noise impacts on wildlife are discussed further in **Section 3.11**. BMPs would be implemented to avoid or minimize these direct and indirect effects to a level that is negligible.

***San Diego fairy shrimp.*** Short- and long-term, direct and indirect, moderate to major, adverse effects on San Diego fairy shrimp would be expected. San Diego fairy shrimp are obligate vernal pool inhabitants and require rainwater that collects in depressions to survive (USFWS 2008). While no vernal pools are present in the project area, there are road pools in the access road that could have been ponding long enough for fairy shrimp from nearby pools to colonize and use. During biological surveys, San Diego fairy shrimp were observed in ephemeral basins within low areas of 1418 Firebreak Road. Habitat destruction would be a direct impact on the species due to construction and maintenance activities. BMPs would be implemented to avoid and minimize these direct and indirect effects to a negligible level.

***Riverside fairy shrimp.*** No direct or indirect impacts on Riverside fairy shrimp are expected. Riverside fairy shrimp, similar to San Diego fairy shrimp, are obligate vernal pool inhabitants and require rainwater that collects in depressions to survive (USFWS 2008). During biological surveys, Riverside fairy shrimp were not observed near 1418 Firebreak Road. Protocol fairy shrimp surveys are complete for the 2020 winter/spring season and presence of Riverside fairy shrimp has not been confirmed to date. Therefore, Alternative 1 is not likely to impact this species.

### 3.6.3.2 Alternative 2: Complete Road Improvement

***Quino checkerspot butterfly.*** Short- and long-term, minor to major, direct and indirect, adverse effects from construction activities on the Quino checkerspot butterfly would be expected from implementing Alternative 2. As with Alternative 1, it is possible that activity associated with Alternative 2 could affect species breeding. Although BMPs would likely minimize direct impacts on Quino checkerspot butterflies, indirect effects from the potential loss of host and food plants would occur. Impacts due to the implementation of Alternative 2 would be expected to be greater than Alternative 1 because construction would take place over a longer period of time and within a larger geographical area. Surveys found that an estimated 4.32 acres of Quino checkerspot butterfly habitat would be impacted with the implementation of Alternative 2.

***Coastal California gnatcatcher.*** Short-term, direct and indirect, negligible, adverse effects on the coastal California gnatcatcher would be expected with the implementation of Alternative 2. Surveys found that an estimated 0.50 acres of coastal California gnatcatcher habitat would be impacted with the implementation of Alternative 2. As with Alternative 1, it is possible that activity associated with Alternative 2 could affect species breeding. Impacts due to the implementation of Alternative 2 would be expected to be greater than Alternative 1 as construction would take place over a longer period of time and within a larger geographical area. As with Alternative 1, BMPs would be implemented to avoid and minimize these direct and indirect effects to a level that is negligible.

**Least Bell's vireo.** Short-term, direct and indirect, negligible, adverse effects on the least Bell's vireo would be expected with the implementation of Alternative 2. Similar to Alternative 1, there would be the potential for noise impacts on the species at the proposed staging area. Implementation of Alternative 2 would be expected to cause a greater impact on the species due to the extended construction period resulting in noise being produced over a longer duration. As with Alternative 1, BMPs would be implemented to avoid and minimize these direct and indirect effects to a negligible level.

**San Diego fairy shrimp.** Short-term, direct and indirect, minor to moderate, adverse effects on San Diego fairy shrimp would be expected with the implementation of Alternative 2. Habitat destruction caused by this alternative would be expected to be greater than Alternative 1 due to the larger disturbance area, resulting in a higher potential of habitat being encountered. As with Alternative 1, BMPs would be implemented to avoid and minimize these direct and indirect effects to a negligible level.

**Riverside fairy shrimp.** Similar to Alternative 1, no direct or indirect impacts on Riverside fairy shrimp are expected with the implementation of Alternative 2.

### 3.6.3.3 Alternative 3: Preferred Alternative (Improve Drainage Features Without Widening Road)

**Quino checkerspot butterfly.** Short-term, direct and indirect, minor to moderate, adverse effects on the Quino checkerspot butterfly would be expected to occur with the implementation of Alternative 3. As with Alternative 1, it is possible that activity associated with Alternative 3 could affect species breeding. Impacts due to the implementation of Alternative 3 would be expected to be similar to or slightly less than Alternative 1 due to road widening. Surveys found that an estimated 1.11 acres of Quino checkerspot butterfly habitat would be impacted with the implementation of Alternative 3.

**Coastal California gnatcatcher.** Short-term, direct and indirect, negligible, adverse effects on the coastal California gnatcatcher would be expected with the implementation of Alternative 3. Surveys found that an estimated 0.50 acres of coastal California gnatcatcher habitat would be impacted with the implementation of Alternative 3. As with Alternative 1, it is possible that activity associated with Alternative 3 could affect species breeding. Impacts due to the implementation of Alternative 3 would be expected to be similar to or slightly less than Alternative 1 due to the smaller disturbance area.

**Least Bell's vireo.** Short-term, direct and indirect, negligible, adverse effects on the least Bell's vireo would be expected with the implementation of Alternative 3. Similar to Alternative 1, there would be the potential for noise impacts on the species. Impacts due to the implementation of Alternative 3 would be expected to be similar to or slightly less than Alternative 1 due to the smaller disturbance area.

**San Diego fairy shrimp.** Short-term, direct and indirect, minor to moderate, adverse effects on San Diego fairy shrimp would be expected with the implementation of Alternative 3. Habitat destruction caused by this alternative would be expected to be similar to or slightly less than Alternative 1 due to the smaller disturbance area.

**Riverside fairy shrimp.** Similar to Alternative 1, no direct or indirect impacts on Riverside fairy shrimp are expected with the implementation of Alternative 3.

#### 3.6.3.4 Alternative 4: No Action Alternative

Under the No Action Alternative, CBP would not be maintaining, repairing, and improving the road. CBP would continue to use the existing two-track 1418 Firebreak Road, which could impact San Diego fairy shrimp currently residing in road pools as well as Quino checkerspot butterfly using the road. If the current road further deteriorates, newly created routes in currently undisturbed habitat could be driven by vehicles causing further impacts to the fairy shrimp. No impacts on coastal California gnatcatcher or least Bell's vireo, would be expected.

## 3.7 HYDROLOGY AND GROUNDWATER

### 3.7.1 Definition of the Resource

Evaluation of hydrology requires a study of the occurrence, distribution, and movement of water, and its relationship with the environment. Many factors affect the hydrology of a region, including natural precipitation and evaporation rates and outside influences such as groundwater withdrawals. Groundwater is a subsurface hydrologic resource, and it recharges surface water. It is used for drinking, irrigation, and industrial processes. Groundwater typically can be described in terms of its depth from the surface, aquifer or well capacity, water quality, recharge rate, and surrounding geologic formations. In California, groundwater use is managed by the CDWR.

### 3.7.2 Affected Environment

**Climate and Hydrology.** The project area occurs within the Mediterranean Division – California Coastal Sage, Chaparral, and Oak Woodland Province (Bailey 1995). Regional climate is defined by hot, dry summers and rainy, mild winters with annual temperatures ranging from 55°F to 71°F. Average low temperatures range from 45°F in December to 66°F in August. Average high temperatures range from 67°F in December to 78°F in August. The record low and record high temperatures for the region are 22°F and 96°F, respectively (NOAA 2019; U.S. Climate Data 2019). Average precipitation totals 9.81 inches per year. The elevation of the project area ranges from 525 ft above mean sea level (AMSL) at the northern terminus of 1418 Firebreak Road to 1,435 ft AMSL at the southern terminus. (Google Earth 2019).

Much of the region is dominated by the chaparral climax association, which forms a mosaic across the region. A wide variety of wildlife use this province, especially birds, for whom coastal California constitutes a major migration route. Threatened and endangered species also use habitat near the project area and are subject to regional protection plans.

**Groundwater.** The aquifers in Southern California are classified by the USGS as either coastal basin aquifers or basin and range aquifers (USGS 1995). Coastal basin aquifers are partly filled with marine sedimentary rocks that were deposited during periodic encroachment of the sea, and with terrestrial deposits consisting of weathered igneous and sedimentary rock material, which was transported into the basins via mountain streams. Most of the fresh water is contained in aquifers consisting of sand and gravel terrestrial deposits and confining units of fine-grained material like

silt and clay. Water enters coastal basin aquifers primarily when runoff from precipitation in the surrounding mountains infiltrates the permeable sediments of the valley floor. Some direct recharge is provided by precipitation falling on the valley floor, but most of the precipitation evaporates or is transpired by plants. Water can also enter the aquifer system as lateral subsurface flow from an adjacent basin; however, basin and range aquifers are not continuous because of the complex faulting in the region.

There are four aquifer types collectively known as basin and range aquifers, volcanic-rock aquifers, carbonate-rock aquifers, and basin-fill aquifers. Any combination of the four aquifers could be in, or below, any basin and constitute four separate sources of water; or they might be hydraulically connected and form a single source. The aquifers are formed from volcanic and carbonate rocks and unconsolidated to consolidated basin-fill deposits. The basin-fill deposits are the most productive aquifers and are generally found in internally drained individual alluvial basins, which are separated by low mountains (USGS 1995). Most of these basins are small, generally averaging less than 10 square miles in area.

The U.S./Mexico international border in California is composed of the South Coast and Colorado River hydrologic regions. Within the San Diego area of the South Coast hydrologic region, there are 27 groundwater basins covering 277,000 acres. Groundwater is found in unconfined alluvial aquifers in most of the basins and has local impairments of nitrate, sulfate, and total dissolved solids (CDWR 2003). The Colorado River hydrologic region covers approximately 13 million acres in southeastern California, with 64 groundwater basins or subbasins. Within the Colorado River hydrologic region lies the Imperial Valley Groundwater Basin. This basin is approximately 1,870 square miles in southeastern California along the U.S./Mexico international border and is the primary aquifer in the project area. It is bounded to the north by the Salton Sea, which is also its discharge point. The Imperial Valley Groundwater Basin is composed of an upper and lower aquifer, which are separated by a semi-permeable aquitard. Recharge comes from irrigation return, rainfall and surface runoff percolation, and seepage from unlined canals, such as the Coachella and All-American canals. Water quality varies in the basin, but it is generally unusable for domestic or irrigation purposes unless it is treated first, since it has high levels of dissolved solids, fluoride, and boron. Many of the water quality issues can be attributed to recharge provided by the highly polluted New River, which drains the Mexicali Valley (CDWR 2003).

### 3.7.3 Environmental Consequences

The Proposed Action would be considered to cause a major adverse impact on hydrology or groundwater if it were to substantially affect water quality; substantially reduce water availability or supply to existing users; threaten or damage hydrologic characteristics; or violate established federal, state, or local laws and regulations.

#### 3.7.3.1 Alternative 1: Partial Road Improvement

***Climate and hydrology.*** No impacts on climate and hydrology with respect to the ecoregions or precipitation regime would be anticipated with the implementation of Alternative 1. Climate and hydrologic cycles are large-scale processes that affect local areas; however, a significant contribution of greenhouse gas (GHG) emissions or alteration to the existing topography,

vegetation, or precipitation regime would be required to modify climate or hydrology. Those large-scale changes would not occur with this project.

**Groundwater.** Short-term, negligible, indirect, adverse impacts could occur on groundwater from vegetation clearing and debris removal, which could cause the deposition of fill materials or increased erosion into groundwater recharge areas. Long-term, negligible to minor, indirect, beneficial impacts on groundwater could occur from a decrease in erosion because roadways would be properly maintained with the installation of water bars, which would reduce the effects incurred from negligence, such as washout and long-term sedimentation.

Maintenance and repair of the road could lead to short-term, minor, adverse, impacts on groundwater because grading and other ground-disturbing activities would result in erosion and sedimentation. In addition, maintenance and repair activities could require the clearing of vegetation and rock, which could alter the flow of water and percolation of precipitation into the ground, resulting in a long-term, negligible, adverse impact on groundwater recharge.

Rutting can occur along graded earth and sand roads, which is exacerbated by rain events that further erode the surface. Unmanaged stormwater flow also causes general erosion to occur, washing out complete sections of road and in many instances making roads impassable. Maintenance and repair of the existing road would have short- and long-term, minor to moderate, beneficial impacts on groundwater by minimizing erosion of potentially contaminated (e.g., oils, metals) road material into groundwater recharge areas. Improper maintenance could result in short-term, negligible to minor, direct and indirect, adverse impacts on groundwater by increasing erosion or introducing fill material into groundwater recharge areas.

All necessary erosion-control BMPs (see **Appendix D**) would be adopted to ensure stabilization of the project area. All of the standards CBP is adopting are developed based on comprehensive engineering analysis, proven BMPs adopted by other federal agencies, and mitigation measures derived from extensive consultation with both regulatory and resource agencies.

### 3.7.3.2 Alternative 2: Complete Road Improvement

**Climate and hydrology.** As with Alternative 1, no impacts on climate and hydrology with respect to the ecoregions or precipitation regime would be anticipated.

**Groundwater.** Short-term, negligible, indirect, adverse impacts could occur on groundwater from vegetation clearing and debris removal as with Alternative 1. Long-term, negligible to minor, indirect, beneficial impacts on groundwater could occur from a decrease in erosion because roadways would be properly maintained. Impacts associated with Alternative 2, both beneficial and adverse, would be expected to be greater than those impacts associated with Alternative 1 due to the greater disturbance and change associated with a complete road improvement. Under Alternative 1, 4,885 linear feet of roadway would be impacted while 12,983 linear feet of roadway would be impacted with the implementation of Alternative 2.

As with Alternative 1, maintenance and repair of the roadway could lead to short-term, minor, adverse, impacts on groundwater because grading and other ground-disturbing activities would result in erosion and sedimentation. Although, long-term, minor beneficial impacts on groundwater would occur through properly maintained roads. These impacts associated with

Alternative 2 would be expected to be greater than those impacts associated with Alternative 1 due to the greater disturbance and change associated with a complete road improvement. Maintenance and repair of the existing roadway would be in accordance with proven maintenance and repair standards. All necessary erosion-control BMPs would be adopted to ensure stabilization of the project areas.

### 3.7.3.3 Alternative 3: Preferred Alternative (Improve Drainage Features Without Widening Road)

**Climate and hydrology.** As with Alternative 1, no impacts on climate and hydrology with respect to the ecoregions or precipitation regime would be anticipated.

**Groundwater.** Short-term, negligible, indirect, adverse impacts could occur on groundwater from vegetation clearing and debris removal. Impacts associated with Alternative 3 would be expected to be similar to those impacts associated with Alternative 1.

As with Alternative 1, maintenance and repair of the roadway could lead to short-term, minor, adverse, impacts on groundwater because ground-disturbing activities would result in erosion and sedimentation. Impacts associated with Alternative 3 would be expected to be similar to those impacts associated with Alternative 1.

### 3.7.3.4 Alternative 4: No Action Alternative

Under the No Action Alternative, short- and long-term, minor, direct and indirect, adverse impacts on hydrology and groundwater would be anticipated as maintenance and repair activities would not be implemented. Therefore, the degrading roadway could increase flood risk. Changes in hydrology from clogged drainage structures could occur, which could reduce the potential for groundwater recharge in the area. Impacts on hydrology and groundwater under the No Action Alternative would be anticipated to be greater than impacts for Alternative 1 because unlike Alternative 1, mitigation measures for stormwater drainage would not be implemented under the No Action Alternative.

## 3.8 SURFACE WATERS AND WATERS OF THE UNITED STATES

### 3.8.1 Definition of the Resource

Surface water resources generally consist of wetlands, lakes, rivers, and streams. All of these surface water components contribute to the economic, ecological, recreational, and human health of a community.

Waters of the United States are defined within the CWA, and jurisdiction is addressed by the U.S. Environmental Protection Agency (USEPA) and the USACE. These agencies assert jurisdiction over traditional navigable waters and their relatively permanent tributaries, and the wetlands that are adjacent to these waters (USEPA 2010a). The California State Water Resources Control Board, through the appropriate RWQCB, regulates activities pursuant to Section 401 and Section 402 of the CWA (USEPA 2016) within California.

The CWA establishes the basic structure for regulating discharges of pollutants into the Waters of the United States (USEPA 2010b), with the objective of restoration and maintenance of chemical,



physical, and biological integrity of the Nation's waters (USEPA 2010a). To achieve this objective, several goals were enacted, including (1) eliminate discharge of pollutants into navigable waters by 1985; (2) achieve water quality that provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water by 1983; (3) prohibit the discharge of toxic pollutants in toxic amounts; (4) provide federal financial assistance to construct publicly owned waste treatment works; (5) develop and implement the national policy that area-wide waste treatment management planning processes ensure adequate control of sources of pollutants in each state; (6) enforce the national policy that a major research and demonstration effort be made to develop technology necessary to eliminate the discharge of pollutants into navigable waters, waters of the contiguous zone, and the oceans; and (7) establish the national policy that programs be developed and implemented in an expeditious manner to enable the goals to be met through the control of both point and nonpoint sources of pollution.

The USACE regulates the discharge of dredged and fill material (e.g., concrete, soil, cement block, gravel, sand) into Waters of the United States including adjacent wetlands under Section 404 of the CWA (USEPA 2010b) and work on structures in or affecting navigable Waters of the United States under Section 10 of the Rivers and Harbors Act of 1899 (USEPA 2010c).

Wetlands and riparian habitats are ecologically important communities that provide many benefits for people, fish, and other wildlife. They provide key habitat for a wide array of plant and animal species, including resident and migrating birds, amphibian and fish species, mammals, and insects. Vegetation production and diversity are usually very high in and around these sites, with many plant species adapted only to these unique environments. In addition, wetlands and riparian zones provide a variety of hydrologic functions vital to ecosystem integrity. They protect and improve water quality by storing floodwaters, recharging groundwater, and filtering out nutrients and chemicals (USEPA 2001a). Development and conversion of wetlands and riparian zones affects wildlife diversity, carrying capacity, and hydrologic regime. More than 220 million acres of wetlands are estimated to have existed in the lower 48 states in the 1600s. More than half of those wetland acres have been drained or converted to other uses, with the most impacts occurring in the 1950s to 1970s. Approximately 60,000 acres of wetlands are still lost annually, primarily from conversion for agriculture and other development purposes (USEPA 2001b).

Wetlands are a protected resource under E.O. 11990, *Protection of Wetlands*, issued in 1977 “to avoid to the extent possible the short- and long-term, adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative.” Wetlands have been defined by agencies responsible for their management. The term “wetland,” used herein, is defined using USACE conventions. The USACE has jurisdiction to protect wetlands under Section 404 of the CWA that are defined as “. . . areas that are inundated or saturated by surface or ground water 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[b]).

Three diagnostic characteristics must be met to classify an area as a wetland: (1) more than 50 percent of the dominant vegetation species present must be classified as obligate (species that are found greater than 99 percent of the time in wetlands), facultative wetland (species that are found 67 to 99 percent of the time in wetlands), or facultative (species that are found 34 to 66 percent of the time in wetlands); (2) the soils must be classified as hydric; and (3) the area is

either permanently or seasonally inundated, or saturated to the surface at some time during the growing season of the prevalent vegetation (USACE 1987).

Wetlands are protected as a subset of “the Waters of the United States” under Section 404 of the CWA. The term “Waters of the United States” has a broad meaning under the CWA and incorporates deep water aquatic habitats and special aquatic habitats, including wetlands. Section 404 of the CWA authorizes the USACE to issue permits for the discharge of dredged or fill materials into the Waters of the United States, including wetlands. In addition, Section 404 of the CWA also grants states with sufficient resources the right to assume these responsibilities. Section 401 of the CWA gives the state board and regional boards the authority to regulate through water quality certification any proposed federally permitted activity that could result in a discharge to water bodies, including wetlands. The state may issue certification, with or without conditions, or deny certification for activities that might result in a discharge to water bodies (USEPA 2010b).

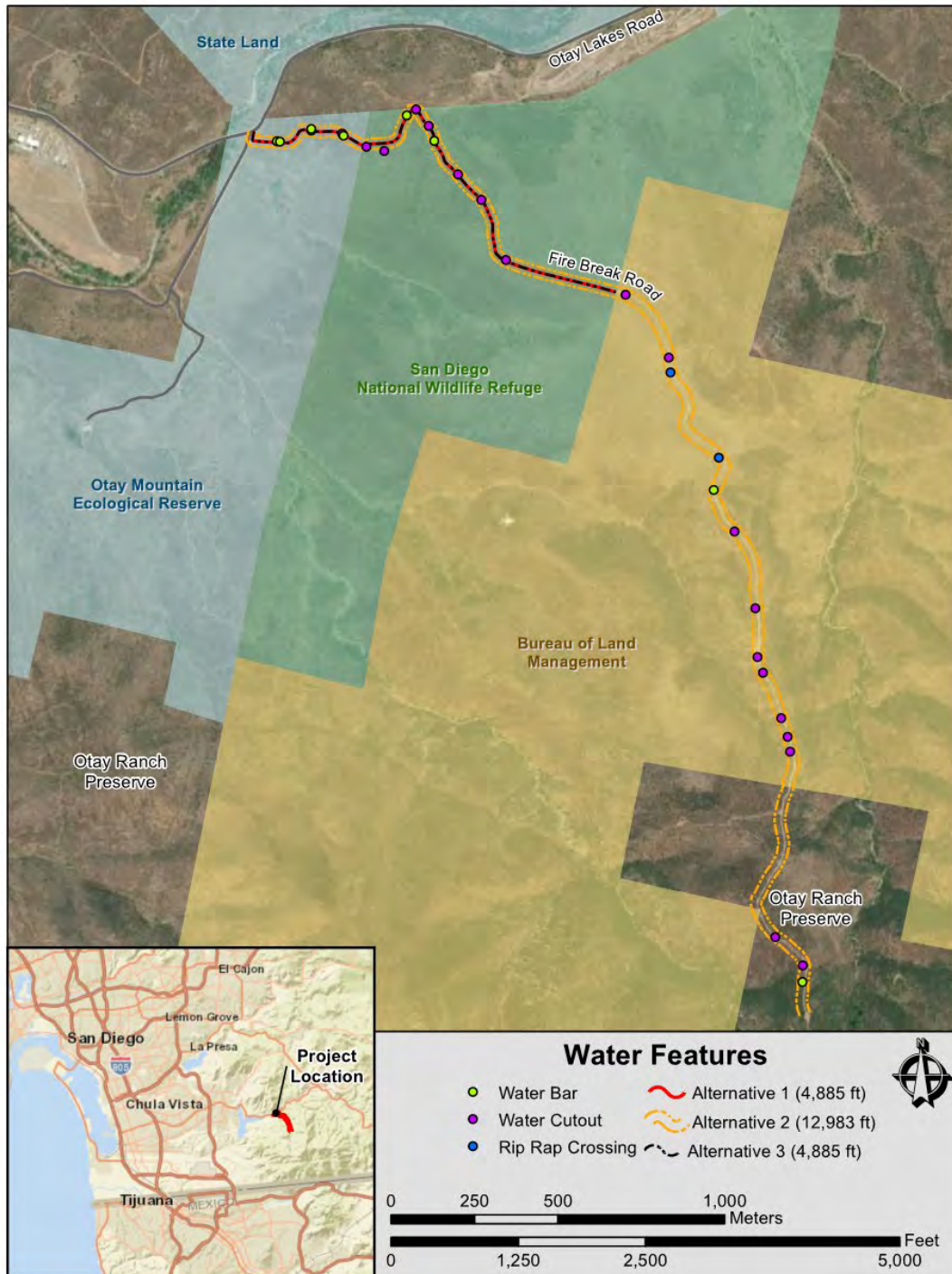
Only 0.077 acres of potential CWA Section 404 jurisdictional area were found within the survey area. These acres were classified as ephemeral drainage.

### 3.8.2 Affected Environment

Thirteen non-jurisdictional surface water features were identified during wetland delineations (see **Figure 3-2**). Two features were ephemeral drainages, episodic channels that appear to convey flows only during and immediately after precipitation events, and eleven features were road pools or ponding in the existing road due to low permeability of the soils. These features have not been delineated as jurisdictional based on the 2008 USACE and USEPA joint memorandum on guidance (post-U.S. Supreme Court decision in *Rapanos and Carabell vs. The United States*). This guidance states that agencies will not assert jurisdiction over erosional features and ditches that are only draining upland. Executive guidance established during the Obama administration was rescinded and the jurisdiction reverts to the post-Rapanos delineation approach, therefore this guidance is again relevant to the jurisdictional assessments.

**Non-Wetland Waters.** The project area contains two ephemeral drainages. The western crossing has a clearly delineated bed and bank with an ordinary high-water mark (OHWM). The eastern drainage is more complex, but due to the high levels of disturbance, there is not a clear bed and bank, but there is evidence of an OHWM in portions of the eastern drainage. There are no wetlands or Waters of the United States in the project area. However, similar to wetland waters, these features occur in areas that have been heavily altered by human activity.

**Other Features Not Mapped as Potentially Jurisdictional.** There are many eroded channels within the existing footprint of 1418 Firebreak Road, especially towards the northern end of the project area. The road is impassable in some areas and bypass roads have been informally constructed. Additionally, there are eleven ponded areas referred to as road pools that are not associated with any drainages or other potential features. Although these features would be considered isolated waters and not regulated by USACE, they are potential habitat for endangered species and may be regulated by ESA.



**Figure 3-2. Water Features within the Proposed Project Area**

### 3.8.3 Environmental Consequences

#### 3.8.3.1 Alternative 1: Partial Road Improvement

Short-term, negligible, indirect, adverse impacts could occur from vegetation clearing and debris removal, which could cause the deposition of fill materials or increased sedimentation into surface water or ephemeral drainages. However, maintenance and repair of the roadway would be conducted in such a manner as to have negligible impacts on surface waters and drainage resources to the maximum extent practical. Erosion-control BMPs would be adopted to maintain runoff on site and would minimize the potential for adverse effects on downstream water quality. Pertinent local, state, and federal permits would be obtained for any work, including work that could occur near surface water or ephemeral drainages.

Installation of water bars would result in short-term, minor, adverse impacts on water quality due to an increase in turbidity from a disturbance in sediments and potential for contaminants to enter water bodies during construction activities, such as through leaking or spills from construction equipment. Long-term, beneficial impacts would occur after installation because the drainage features would properly manage stormwater flow and minimize long-term erosion.

#### 3.8.3.2 Alternative 2: Complete Road Improvement

Implementation of Alternative 2 would result in short-term, negligible, indirect, adverse impacts from vegetation clearing and debris removal. Impacts resulting from Alternative 2 would be expected to be great than those of Alternative 1 as the two ephemeral drainages fall within the project area for Alternative 2. Loss of waters resulting from the implementation of Alternative 2 would be minor to moderate. As with Alternative 1, erosion-control BMPs would be adopted to maintain runoff on site and minimize the potential for adverse effects on downstream water quality. Pertinent local, state, and federal permits would be obtained for any work in waterways.

As with Alternative 1, installation of water bars would result in short-term, minor, adverse impacts on water quality due to an increase in turbidity from a disturbance in sediments and potential for contaminants to enter into water bodies during construction activities. Long-term, beneficial impacts would occur after installation activities have ceased and stormwater flow is properly managed.

#### 3.8.3.3 Alternative 3: Preferred Alternative (Improve Drainage Features Without Widening Road)

Implementation of Alternative 3 would result in short-term, negligible, indirect, adverse impacts from vegetation clearing and debris removal. Impacts resulting from Alternative 3 would be expected to be similar to Alternative 1. With the installation water bars, long-term, minor beneficial impacts on water quality would occur due to drainage features properly managing stormwater flow and minimizing long-term erosion.

#### 3.8.3.4 Alternative 4: No Action Alternative

Under the No Action Alternative, there is a potential for short- and long-term, minor, direct and indirect adverse impacts on surface waters. The No Action Alternative would result in greater impacts on surface waters than Alternative 1 because the remaining area would be considered a

minimal flood hazard area. Therefore, the degrading roadway could lead to increased sediments, nutrients, and contaminants in water-related features and blocked drainage structures could increase flood risk.

## 3.9 FLOODPLAINS

### 3.9.1 Definition of the Resource

Floodplains are areas of low-level ground present along rivers, stream channels, or coastal waters that are periodically inundated. Floodplain ecosystem functions include natural moderation of floods through flood storage and conveyance, groundwater recharge, nutrient cycling, water quality maintenance, and support of a diversity of plants and animals. Floodplains provide a broad area to spread out and temporarily store floodwaters. This reduces flood peaks and velocities and the potential for erosion. In their natural vegetated state, floodplains slow the rate at which the incoming overland flow reaches the main water body (FEMA 1994).

Floodplains are subject to periodic or infrequent inundation due to rain or melting snow. Risk of flooding typically hinges on local topography, the frequency of precipitation events, and the size of the watershed above the floodplain. Flood potential is evaluated by Federal Emergency Management Agency (FEMA), which defines the 100-year floodplain. The 100-year floodplain is the area that has a 1 percent chance of inundation by a flood event in a given year (FEMA 1994). Certain facilities inherently pose too great a risk to be in either the 100- or 500-year floodplain, such as hospitals, schools, or storage buildings for irreplaceable records. Federal, state, and local regulations often limit floodplain development to passive uses, such as recreational and preservation activities, to reduce the risks to human health and safety. E.O. 11988, *Floodplain Management*, requires federal agencies to determine whether a proposed action would occur within a floodplain. This determination typically involves consultation of appropriate FEMA Flood Insurance Rate Maps (FIRMs), which contain enough general information to determine the relationship of the project area to nearby floodplains. E.O. 11988 directs federal agencies to avoid floodplains unless the agency determines that there is no practicable alternative. Where the only practicable alternative is to site in a floodplain, a specific step-by-step process must be followed to comply with E.O. 11988 outlined in the FEMA document, *Further Advice on Executive Order 11988 Floodplain Management*.

### 3.9.2 Affected Environment

The project area is mapped as an area of minimal flood hazard. No existing floodplain information on the project area exists; however, the northern access to Firebreak Road is within 300 feet of Jamul Creek. The staging area and the access road to Firebreak Road are in low areas near the river. Based on vegetation and topography, it is likely these areas are within the historic floodplain for the Otay River. The surrounding area is a minimal flood hazard; however, no floodplain mapping for the Otay River exists for the project area.

The remainder of the project area goes upslope and most of the project area is either climbing to or along a ridgeline and outside of any floodplains. All water from this project area drains into the Otay River Watershed, specifically the Dulzura segment, which drains into San Diego Bay.

### 3.9.3 Environmental Consequences

The Proposed Action would be considered to cause a major, adverse impact on floodplains if it were to site habitable structures within the floodplain or alter flood hazards as designated on a FIRM.

#### 3.9.3.1 Alternative 1: Partial Road Improvement

Short-term, negligible, indirect impacts on floodplain areas would be anticipated from the implementation of Alternative 1. Due to vegetation clearing, increased sedimentation into drainage structures could occur. However, clearing blocked drainage structures of debris and fill materials would result in short- and long-term, direct and indirect, beneficial impacts on floodplains by improving conveyance of floodwaters. Widening of the road and clearing of vegetation would result in an increase of flow as well as an increase in the speed of flow. However, water cutouts would act to mitigate these effects. BMPs would be implemented to minimize any potential impacts on floodplains. The maintenance and repair of the existing roadway would be conducted in such a manner as to have negligible impacts on floodplains as drainage mitigation measures would be implemented.

#### 3.9.3.2 Alternative 2: Complete Road Improvement

Short-term, negligible, indirect impacts on floodplain areas would be anticipated from the implementation of Alternative 2. As with Alternative 1, vegetation clearing could cause increased sedimentation into drainage structures, though clearing blocked drainage structures of debris and fill materials would result in short- and long-term, direct and indirect, beneficial impacts on floodplains. BMPs would be implemented to minimize any potential impacts on floodplains. Impacts associated with this alternative would be comparable to those of Alternative 1.

#### 3.9.3.3 Alternative 3: Preferred Alternative (Improve Drainage Features Without Widening Road)

Alternative 3 would have short- and long-term, minor, direct, beneficial impacts on floodplains by minimizing erosion of road material into floodplain areas. Improper maintenance of the road would result in short- to long-term, negligible to minor, direct and indirect, adverse impacts on floodplains by increasing erosion and adding fill materials into floodplain areas. Impacts associated with Alternative 3 would be expected to be similar to those of Alternative 1.

#### 3.9.3.4 Alternative 4: No Action Alternative

Under the No Action Alternative, there is a potential for short- and long-term, minor, direct and indirect, adverse impacts on floodplains as maintenance and repairs activities would not be conducted. Degrading roadway and blocked drainage structures impair flow, which could increase flood risk. This approach would result in greater impacts on floodplains than Alternative 1 because maintenance and repair activities would not be conducted.

## 3.10 AIR QUALITY

### 3.10.1 Definition of the Resource

Air quality is defined by the concentration of various pollutants in the atmosphere at a given location. The air quality in a region is a result of not only the types and quantities of atmospheric pollutants and pollutant sources in an area, but also surface topography, the size of the topological “air basin,” and the prevailing meteorological conditions.

Under the CAA, the USEPA developed numerical concentration-based standards, or National Ambient Air Quality Standards (NAAQS), for pollutants that have been determined to affect human health and the environment. The NAAQS represent the maximum allowable concentrations for ozone (O<sub>3</sub>), measured as either volatile organic compounds (VOCs) or total nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur oxides (SO<sub>x</sub>), respirable particulate matter (including particulate matter equal to or less than 10 microns in diameter [PM<sub>10</sub>] and particulate matter equal to or less than 2.5 microns in diameter [PM<sub>2.5</sub>]), and lead (Pb) (40 CFR Part 50). The CAA also gives the authority to states to establish air quality rules and regulations.

California has also established its own ambient air quality standards for these pollutants, which in some cases are stricter than the NAAQS, and also include sulfates, hydrogen sulfide, and visibility reducing particulates as principal air pollutants.

The USEPA classifies the air quality in an air quality control region (AQCR), or in subareas of an AQCR, according to whether the concentrations of criteria pollutants in ambient air exceed the NAAQS. Areas within each AQCR are therefore designated as either “attainment,” “nonattainment,” “maintenance,” or “unclassified” for each of the six criteria pollutants. Attainment means that the air quality within an AQCR is better than the NAAQS; nonattainment indicates that criteria pollutant levels exceed NAAQS; maintenance indicates that an area was previously designated nonattainment but is now attainment; and an unclassified air quality designation by USEPA means that there is not enough information to appropriately classify an AQCR, so the area is considered attainment. In accordance with the CAA, each state must develop a State Implementation Plan (SIP), which is a compilation of regulations, strategies, schedules, and enforcement actions designed to move the state into compliance with all NAAQS.

The General Conformity Rule requires that any federal action meet the requirements of a SIP or Federal Implementation Plan. More specifically, CAA conformity is ensured when a federal action does not cause a new violation of the NAAQS; contribute to an increase in the frequency or severity of violations of NAAQS; or delay the timely attainment of any NAAQS, interim progress milestones, or other milestones towards achieving compliance with the NAAQS. The General Conformity Rule applies only to regionally significant actions in nonattainment or maintenance areas.

Federal Prevention of Significant Deterioration (PSD) regulations apply in attainment areas to a major stationary source, (i.e., source with the potential to emit of 250 tons per year [tpy] of any criteria pollutant), and a significant modification to a major stationary source, (i.e., change that adds 15 to 40 tpy to the facility’s potential to emit depending on the pollutant). PSD regulations can also apply to stationary sources if (1) a proposed project is within 6.21 miles of national parks

or wilderness areas, (i.e., Class I Areas), and (2) regulated stationary source pollutant emissions would cause an increase in the 24-hour average concentration of any regulated pollutant in the Class I area of 1 microgram per cubic meter ( $\mu\text{g}/\text{m}^3$ ) or more (40 CFR 52.21[b][23][iii]). A Class I area includes national parks larger than 6,000 acres, national wilderness areas and national memorial parks larger than 5,000 acres, and international parks. PSD regulations also define ambient air increments, limiting the allowable increases to any area's baseline air contaminant concentrations, based on the area's class designation (40 CFR 52.21[c]).

Title V of the CAA Amendments of 1990 requires states and local agencies to use a permitting process for major stationary sources. A major stationary source has the potential to emit more than 100 tpy of any one criteria air pollutant, 10 tpy of a hazardous air pollutant (HAP), or 25 tpy of any combination of HAPs. The purpose of the permitting rule is to establish regulatory control over large, industrial-type activities and monitor their impact on air quality. Section 112 of the CAA defines the sources and kinds of HAPs.

GHGs are gaseous emissions that trap heat in the atmosphere. These emissions occur from natural processes and human activities. The most common GHGs emitted from natural processes and human activities include carbon dioxide ( $\text{CO}_2$ ), methane, and nitrous oxide. GHGs are mainly produced by the burning of fossil fuels and through industrial and biological processes. On September 22, 2009, the USEPA issued a final rule for mandatory GHG reporting from large GHG emissions sources in the United States. The purpose of the rule is to collect comprehensive and accurate data on  $\text{CO}_2$  and other GHG emissions that can be used to inform future policy decisions. In general, the threshold for reporting is 25,000 metric tons or more of  $\text{CO}_2$  equivalent emissions per year but excludes mobile source emissions. GHG emissions will also be factors in PSD and Title V permitting and reporting, according to a USEPA rulemaking issued on June 3, 2010 (75 FR 31514). GHG emissions thresholds of significance for stationary sources are 75,000 tons  $\text{CO}_2$  equivalent per year and 100,000 tons  $\text{CO}_2$  equivalent per year under these permit programs.

### 3.10.2 Affected Environment

The project area is within the San Diego Intrastate AQCR (SDIAQCR) (40 CFR 81.164). San Diego County is designated by USEPA as nonattainment for 8-hour  $\text{O}_3$  (moderate), maintenance for CO, and attainment for the remaining criteria pollutants (USEPA 2019). The county is designated by the California Environmental Protection Agency (Cal/EPA) as nonattainment for 8- and 1-hour  $\text{O}_3$ ,  $\text{PM}_{10}$ , and  $\text{PM}_{2.5}$  and attainment for the remaining criteria pollutants and sulfates, hydrogen sulfide, and visibility reducing particulates (SDAPCD 2017).

There are very few air emissions sources currently in the project area and all are transient. Air emissions are currently generated from vehicle operations, most notably from USBP agents responding to cross border violations.

### 3.10.3 Environmental Consequences

The environmental consequences on local and regional air quality conditions near a proposed action are determined based upon the increases in regulated pollutant emissions relative to existing conditions and ambient air quality. Specifically, the impact in NAAQS "attainment" areas would



be considered significant if the net increases in pollutant emissions from the federal action would result in any one of the following scenarios:

- Cause or contribute to a violation of any national or state ambient air quality standard,
- Expose sensitive receptors to substantially increased pollutant concentrations,
- Exceed any evaluation criteria established by a SIP or permit limitations/requirements, and/or
- Emissions representing an increase of 100 tpy for any attainment criteria pollutant (NO<sub>x</sub>, VOCs, CO, PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>), unless the proposed activity qualifies for an exemption under the Federal General Conformity Rule.

Based on compliance with the NAAQS, the General Conformity Rule is only applicable in San Diego County to emissions of O<sub>3</sub> and CO and as outlined in 40 CFR § 93.153(b), the applicable *de minimis* threshold for both pollutants is 100 tpy. While the General Conformity Rule is not applicable to emissions of the other criteria pollutants, it is being applied as a conservative measure of significance to determine the level of impacts under NEPA. The rationale for this conservative threshold is that it is consistent with the highest General Conformity *de minimis* levels for nonattainment areas and maintenance areas. In addition, it is consistent with federal stationary source major source thresholds for Title V permitting, which formed the basis for the nonattainment *de minimis* levels.

The Air Pollution Control District of San Diego County does not provide quantitative screening level thresholds for construction or mobile source-related impacts. However, the district does specify threshold levels for new or modified stationary sources. If a proposed action's stationary source emissions are below these threshold levels, the proposed action's impacts on air quality are presumed to be negligible to minor. Major, adverse impacts on air quality would also occur if the Proposed Action meaningfully contributed to the potential effects of global climate change.

### 3.10.3.1 Alternative 1: Partial Road Improvement

Alternative 1 would only generate temporary air pollutant emissions. The maintenance and repair activities associated with this alternative would generate air pollutant emissions because of grading, filling, compacting, trenching, and other activities; however, these emissions would be temporary and would not be expected to generate any offsite effects. Alternative 1 is not anticipated to result in a net increase in USBP traffic along the roadway. Therefore, the emissions associated with Alternative 1 from existing USBP traffic would not result in an adverse impact on local or regional air quality.

For the purpose of analysis in this EA, the total mileage of roadway for each alternative was obtained to estimate air emissions. **Table 3-4** describes the approximate mileage and acreage that would be graded. **Appendix H** contains air quality emissions calculations for Alternative 1.

**Table 3-4. Approximate Surface Area to be Graded During Maintenance and Repair Activities**

Alternative	Total Road (ft)	Area Included in Air Quality Analysis <sup>1</sup> (acres)
1	4,885	2.69
2	12,983	7.15
3	4,885	2.69
No Action <sup>2</sup>	0	0

Key: NA = not applicable

Notes:

1. Area of land disturbance considered in this air quality analysis assumes the width of disturbance would be 24 ft multiplied by the length.
2. Under the No Action Alternative, no construction or repairs would be conducted.

Criteria pollutant and GHG air emissions would be produced from the combustion of fuels in heavy equipment. Particulate matter air emissions, such as fugitive dust, would be produced from ground-disturbing activities and the combustion of fuels in heavy equipment. Fugitive dust air emissions would be greatest during the initial site grading and excavation and vary day to day depending on the work phase, level of activity, and prevailing weather conditions. The quantity of uncontrolled fugitive dust emissions from a construction site is proportional to the area of land being worked and the level of activity. Construction would incorporate BMPs and environmental control measures (e.g., wetting the ground surface) to minimize fugitive particulate matter air emissions. Additionally, work vehicles are assumed to be well maintained and use diesel particulate filters to reduce particulate matter air emissions. Workers and truck drivers commuting daily to and from the job site in their personal vehicles and heavy-duty diesel vehicles hauling grading and rock materials to the job site would also result in criteria pollutant and GHG air emissions.

**Table 3-5** summarizes all criteria pollutant and GHG air emissions resulting from Alternative 1 as well as applicable thresholds. Criteria pollutant emissions from construction would be below the *de minimis* threshold of 100 tpy of each pollutant; therefore, impacts would be minor and a General Conformity determination (applicable to O<sub>3</sub> and CO) is not required. Air Pollution Control District of San Diego County screening level thresholds do not apply to construction emissions. Detailed emissions calculations are provided in **Appendix H**.

The maintenance and repair activities associated with Alternative 1 would not have significant effects on regional or local air quality. Alternative 1 would generate emissions well below *de minimis* levels for all criteria pollutants in the SDIAQCR, and all emissions would be temporary.

Alternative 1 would contribute directly to emissions of GHGs from the combustion of fossil fuels from maintenance and repair activities and commuting of support personnel. CO<sub>2</sub> accounts for 92 percent of all GHG emissions; transportation is the primary source of anthropogenic CO<sub>2</sub>, followed by electric utilities (CARB 2019).

**Table 3-5. 2020 Estimated Construction Air Emissions from Alternative 1**

<b>Emissions Source<sup>1</sup></b>	<b>NO<sub>x</sub> (tpy)</b>	<b>VOC (tpy)</b>	<b>CO (tpy)</b>	<b>SO<sub>2</sub> (tpy)</b>	<b>PM<sub>10</sub> (tpy)</b>	<b>PM<sub>2.5</sub> (tpy)</b>	<b>GHGs (tpy)</b>
Combustion	0.337	0.020	0.136	0.029	0.021	0.020	41.50
Fugitive Dust	-	-	-	-	6.782	0.678	-
Haul Truck On-Road	0.215	0.019	0.071	0.001	0.008	0.008	58.92
Construction Commuter	0.195	0.164	1.966	0.001	0.004	0.004	175.02
<b>Total</b>	<b>0.75</b>	<b>0.20</b>	<b>2.17</b>	<b>0.03</b>	<b>6.82</b>	<b>0.71</b>	<b>275.43</b>
Thresholds <sup>2</sup>	100	100	100	100	100	100	NA

Key: NA = not applicable

Notes:

<sup>1</sup> Lead, sulfates, hydrogen sulfide, and visibility reducing particulates emissions are not included as they are negligible for the types of emission sources under this Proposed Action.

<sup>2</sup> General Conformity Rule *de minimis* thresholds or surrogate.

The U.S. Energy Information Administration (EIA) estimates that in 2017, gross CO<sub>2</sub> emissions in the State of California were 358.6 million metric tons of CO<sub>2</sub> equivalent (EIA 2019). The total annual CO<sub>2</sub> emissions from Alternative 1 in California would be 275.43 metric tons, or less than 0.001 percent of the state CO<sub>2</sub> emissions (see **Appendix H**). Therefore, Alternative 1 would represent a negligible contribution towards statewide GHG inventories.

Alternative 1 would emit approximately 275 tons of GHGs from construction during 2020. By comparison, 275 tons of carbon dioxide equivalent are approximately the respective GHG footprints of 14 single-family houses with two cars per home (USEPA 2017). As such, these increases and decreases of GHG emission rates would not meaningfully contribute or lessen the potential effects of global climate change (e.g., increases in atmospheric temperature, sea level, storm activity, accelerated coastal erosion, hydrological changes and flooding, and vegetation and wildlife changes).

As noted in **Section 3.10.2**, ongoing changes to regional climate patterns could increase average temperatures, alter precipitation patterns, and increase the frequency and severity of droughts in southern California (Garfin et al. 2014). However, even under severe drought conditions or during warmer temperatures, it is unlikely these ongoing climate change impacts would impair implementation of Alternative 1 or prevent CBP from fulfilling its mission.

### 3.10.3.2 Alternative 2: Complete Road Improvement

As with Alternative 1, Alternative 2 would generate only temporary air pollutant emissions. However, emissions from Alternative 2 would be greater than those of Alternative 1 due to the expanded section of roadway slated for improvement. Maintenance and repair activities would generate air pollutant emissions, but these emissions would be temporary and would not be expected to generate any offsite effects. As with Alternative 1, Alternative 2 is not anticipated to result in an increase of USBP traffic along the roadway and therefore would not result in an adverse impact on local or regional air quality.

Maintenance and repair activities would result in short-term emissions of criteria pollutants as combustion products from construction equipment. Emissions of all criteria pollutants would result from construction activities including combustion of fuels from on-road haul trucks transporting materials and construction commuter emissions. Fugitive dust air emissions would be greatest during the initial site grading and excavation and vary day to day depending on the work phase, level of activity, and prevailing weather conditions. The quantity of uncontrolled fugitive dust emissions from a construction site is proportional to the area of land being worked and the level of activity. Construction would incorporate BMPs and environmental control measures (e.g., wetting the ground surface) to minimize fugitive particulate matter air emissions. Additionally, work vehicles are assumed to be well maintained and use diesel particulate filters to reduce particulate matter air emissions. Construction workers commuting daily to and from the job site in their personal vehicles and heavy-duty diesel vehicles hauling construction materials to the job site would also result in criteria pollutant and GHG air emissions.

**Table 3-6** summarizes all criteria pollutant and GHG air emissions resulting from Alternative 2 as well as applicable thresholds. Criteria pollutant emissions from construction would be below the *de minimis* threshold of 100 tpy of each pollutant; therefore, impacts would be minor and a General Conformity determination (applicable to O<sub>3</sub> and CO) is not required. Air Pollution Control District of San Diego County screening level thresholds do not apply to construction emissions.

The maintenance and repair activities associated with Alternative 2 would not have significant effects on regional or local air quality, generating only short-term emissions well below *de minimis* levels for all criteria pollutants in the SDIAQCR.

Alternative 2 would contribute directly to emissions of GHGs from the combustion of fossil fuels from maintenance and repair activities and support personnel commuting. GHGs emissions from Alternative 2 would be expected to be greater than those from Alternative 1 due to the expanded section of roadway slated for improvement. The total annual CO<sub>2</sub> emissions from Alternative 2 in California would be 437.17 metric tons, or less than 0.001 percent of the state CO<sub>2</sub> emissions (see **Appendix H**). Therefore, Alternative 2 would represent a negligible contribution towards statewide GHG inventories.

**Table 3-6. 2020 Estimated Construction Air Emissions from Alternative 2**

Emissions Source <sup>1</sup>	NO <sub>x</sub> (tpy)	VOC (tpy)	CO (tpy)	SO <sub>2</sub> (tpy)	PM <sub>10</sub> (tpy)	PM <sub>2.5</sub> (tpy)	GHGs (tpy)
Combustion	0.877	0.051	0.357	0.076	0.054	0.052	108.30
Fugitive Dust	-	-	-	-	18.026	1.803	-
Haul Truck On-Road	0.560	0.050	0.187	0.001	0.022	0.020	153.85
Construction Commuter	0.195	0.164	1.966	0.001	0.004	0.004	175.02
<b>Total</b>	<b>1.63</b>	<b>0.26</b>	<b>2.51</b>	<b>0.08</b>	<b>18.11</b>	<b>1.88</b>	<b>437.17</b>
Thresholds <sup>2</sup>	100	100	100	100	100	100	NA

Key: NA = not applicable

Notes:

<sup>1</sup> Lead, sulfates, hydrogen sulfide, and visibility reducing particulates emissions are not included as they are negligible for the types of emission sources under this Proposed Action.

<sup>b</sup> General Conformity Rule *de minimis* thresholds or surrogate.

### 3.10.3.3 Alternative 3: Preferred Alternative (Improve Drainage Features Without Widening Road)

Under Alternative 3, short- and long-term, negligible to minor, adverse impacts on air quality would be anticipated from emissions associated with combustion of fossil fuels, particulate matter, and fugitive dust emissions. Alternative 3 would be expected to result in similar or slightly greater impacts on air quality than Alternative 1 due to road widening.

Under the General Conformity Rule, a number of different federal activities are exempt. The exemption under 40 CFR 93.153(c)(iv) of the General Conformity rules states, “routine maintenance and repair activities, including repair and maintenance of administrative sites, roads, trails, and facilities” are exempt from General Conformity. All proposed activities associated with Alternative 3 are considered to be exempt under the General Conformity Rule.

**Table 3-7** summarizes all criteria pollutant and GHG air emissions resulting from Alternative 3 as well as applicable thresholds. Criteria pollutant emissions from construction would be below the *de minimis* threshold of 100 tpy of each pollutant; therefore, impacts would be minor and a General Conformity determination (applicable to O<sub>3</sub> and CO) is not required. Air Pollution Control District of San Diego County screening level thresholds do not apply to construction emissions.

Alternative 3 would contribute directly to emissions of GHGs from the combustion of fossil fuels from maintenance and repair activities and support personnel commuting. GHGs emissions from Alternative 3 would be expected to be similar to or slightly greater than those from Alternative 1 due to road widening. The total annual CO<sub>2</sub> emissions from Alternative 3 in California would be 437.17 metric tons, or less than 0.001 percent of the state CO<sub>2</sub> emissions (see **Appendix H**). Therefore, Alternative 3 would represent a negligible contribution towards statewide GHG inventories.

**Table 3-7. 2020 Estimated Construction Air Emissions from Alternative 3**

Emissions Source <sup>1</sup>	NO <sub>x</sub> (tpy)	VOC (tpy)	CO (tpy)	SO <sub>2</sub> (tpy)	PM <sub>10</sub> (tpy)	PM <sub>2.5</sub> (tpy)	GHGs (tpy)
Combustion	0.877	0.051	0.357	0.076	0.054	0.052	108.30
Fugitive Dust	-	-	-	-	18.026	1.803	-
Haul Truck On-Road	0.560	0.050	0.187	0.001	0.022	0.020	153.85
Construction Commuter	0.195	0.164	1.966	0.001	0.004	0.004	175.02
<b>Total</b>	<b>1.63</b>	<b>0.26</b>	<b>2.51</b>	<b>0.08</b>	<b>18.11</b>	<b>1.88</b>	<b>437.17</b>
Thresholds <sup>2</sup>	100	100	100	100	100	100	NA

Key: NA = not applicable

Notes:

<sup>1</sup> Lead, sulfates, hydrogen sulfide, and visibility reducing particulates emissions are not included as they are negligible for the types of emission sources under this Proposed Action.

<sup>2b</sup> General Conformity Rule *de minimis* thresholds or surrogate.

### 3.10.3.4 Alternative 4: No Action Alternative

Under the No Action Alternative, CBP would not be maintaining, repairing, and improving the road. CBP enforcement actions would be maintained at current levels or diminish over time due to inaccessibility of the area to CBP agents. Therefore, no impacts no air quality would be expected from the implementation of the No Action Alternative because no maintenance or repair activities would occur in the project area.

## 3.11 NOISE

### 3.11.1 Definition of the Resource

Sound is a physical phenomenon consisting of vibrations that travel through a medium, such as air, and are sensed by humans (see **Sections 3.5.3** and **3.6.3** for noise impacts to wildlife). Noise can be defined as unwanted sound that interferes with communication, poses a threat to health, or is irritating. Noise can be intermittent or continuous, steady or impulsive, and can involve any number of sources and frequencies. Response to noise varies depending on the type and characteristics of the noise, distance between the noise source and the receptor, receptor sensitivity, and time of day. Noise-sensitive land uses include areas where an excessive amount of noise would interfere with normal activities. Noise is often generated by activities essential to a community's quality of life, such as construction or vehicular traffic.

**Sound Metrics.** Sound varies by both intensity and frequency. Sound pressure level, expressed in decibels (dB), is used to quantify sound intensity. Within the range of human hearing, a sound may vary in intensity by more than 1 million units. A logarithmic scale is used to compress the range of audible decibels into a more manageable form so that noise can be quantified. The A-weighted decibel (dBA) is used to characterize sound levels that can be sensed by the human ear. The threshold of audibility is generally within the range of 10 to 25 dBA for normal hearing. The upper boundary of audibility is 135 dBA and can be painfully loud (USEPA 1981). Sounds encountered in daily life and their dBA levels are provided in **Table 3-8**.

**Table 3-8. Common Sounds and Their Levels**

Outdoor Noise Sources	Sound Level (dBA)	Indoor Noise Sources
Motorcycle	100	Subway train
Tractor	90	Garbage disposal
Noisy restaurant	85	Blender
Downtown (large city)	80	Vacuum cleaner
Freeway traffic	70	TV audio
Normal conversation	60	Sewing machine
Rainfall	50	Refrigerator
Quiet residential area	40	Library

Source: Harris 1998

The sound pressure level noise metric describes steady noise levels. Very few noises are constant; therefore, additional metrics have been developed to describe noise. The day-night average A-weighted noise level (DNL) averages the sum of all noise-producing events over a 24-hour period. DNL is a useful descriptor for noise because it averages ongoing yet intermittent noise and measures total sound energy over a 24-hour period with penalties applied to noise levels during nighttime hours (County of San Diego 2016).

**Regulatory Overview.** The Noise Control Act of 1972 (Public Law 92-574) serves “to promote an environment for all Americans free from noise that jeopardizes their public health and welfare.” In San Diego County, residential, commercial and residential mixed-use, and agricultural land uses are compatible (acceptable) within areas with exterior DNL noise exposure levels at or below 60 dBA, at or below 65 dBA, and at or below 70 dBA, respectively (County of San Diego 2016). The San Diego County Code of Regulatory Ordinances relating to Noise Control and Abatement (County Noise Ordinance) states that it is unlawful for residential, agricultural, or civic uses within the A72 zone (i.e., zone for the proposed 1418 Firebreak Road improvement) to generate noise exceeding the 1-hour average sound level limits of 50 dBA (from 7 a.m. to 10 p.m.) and 45 dBA (from 10 p.m. to 7 a.m.). The County Noise Ordinance further states that construction equipment operations must not exceed an average sound level of 75 dB over an 8-hour period, between 7 a.m. and 7 p.m., or produce an impulsive noise that exceeds a maximum sound level in surrounding occupied properties (82 dBA for residential uses and 85 dBA for agricultural and commercial uses) for more than 15 minutes within a 1-hour measurement period.

**Construction Sound Levels.** Noise generated by construction activities has the potential to quickly surpass ambient sound levels. The type and intensity of the sound is dependent upon the type of construction activity taking place. The predicted noise levels for various construction equipment that might be used during Alternative 1 are presented in **Table 3-9**.

### 3.11.2 Affected Environment

The proposed project site is undeveloped and in a rural area. The surrounding area contains scattered residences, ecological reserve, wildlife refuge, and commercial businesses. Additionally, Johns Nichol’s Field Airport is located 0.33 miles west of 1418 Firebreak Road and contains one commercial business. Sensitive receptors in the vicinity include residences within approximately 2.3 miles of the footprint of the proposed 1418 Firebreak Road improvement.

### 3.11.3 Environmental Consequences

The impacts associated with noise were evaluated based on the changes to the ambient noise environment that would result from implementation of the Proposed Action. Impacts would be considered adverse if the Proposed Action were to result in the violation of applicable federal, state, or local noise regulations; or create appreciable areas of incompatible land use.

**Table 3-9. Predicted Noise Levels for Typical Construction Equipment**

Construction Equipment	Predicted Noise Level at 50 feet (dBA)	Predicted Noise Level at 500 feet (dBA)	Predicted Noise Level at 1,000 feet (dBA)	Predicted Noise Level at 2,000 feet (dBA)	Predicted Noise Level at 4,000 feet (dBA)
<b>Clearing and Grading</b>					
<b>Bulldozer</b>	80	60	54	48	42
<b>Grader</b>	80-93	60-73	54-67	48-61	42-55
<b>Truck</b>	83-94	63-74	57-68	51-62	45-56
<b>Excavation</b>					
<b>Backhoe</b>	72-93	52-73	46-67	40-61	34-55
<b>Jackhammer</b>	81-98	61-78	55-72	49-66	43-60
<b>Roadway Improvement</b>					
<b>Concrete Mixer</b>	74-88	54-68	48-62	42-56	36-50
<b>Paver</b>	86-88	66-68	60-62	54-56	48-50

Source: USEPA 1971

Note: Construction equipment equipped with noise control devices (e.g., mufflers) and use of sound barriers would result in lower noise levels than shown in this table.

### 3.11.3.1 Alternative 1: Partial Road Improvement

**Construction.** Construction noise from the proposed improvement to 1418 Firebreak Road would result in short-term, minor, adverse impacts on the ambient noise environment. Increases in noise levels would occur intermittently during construction. Noise from construction would vary depending on the type of equipment being used, the area in which the activity would occur, and the distance of the receptor from the noise source. Heavy construction equipment would be periodically used during construction; therefore, noise levels would fluctuate. Most equipment used would be expected to produce noise levels between approximately 70 and 100 dBA at a distance of 50 ft (see **Table 3-9**). Noise levels at the upper end of this range would be limited to intermittent spurts. Sound levels on the lower end of the range would be more constant during construction activities. These noise levels would decrease with distance from the construction area. Noise levels associated with typical construction equipment would noticeably attenuate to below 65 dBA between approximately 500 and 4,000 ft from the source, depending on the equipment used (see **Table 3-9**).

Construction activities usually require simultaneous use of several pieces of equipment. In general, the addition of a piece of equipment with identical noise levels to another piece of equipment would add approximately 3 dB to the overall noise environment, which is barely perceptible by the human ear (TRS Audio 2017). Cumulative noise associated with multiple pieces of construction equipment operating simultaneously would increase the overall noise environment by a few dB over the noisiest equipment, depending on the noise levels.



In addition, noise generation due to construction would be temporary, only lasting for the duration of construction activities, and would be isolated to normal workdays and working hours (i.e., weekdays 7 a.m. to 7 p.m.). All applicable noise laws and guidelines would be followed to reduce effects from noise produced by construction. Although the County Noise Ordinance does not apply to federal property, CBP would comply with the ordinance to the extent practicable. Construction workers would be required to use proper personal hearing protection to limit exposure and would use the appropriate noise attenuation equipment.

The nearest sensitive receptors (i.e., permanent residences within approximately 2.3 miles of the footprint of the proposed 1418 Firebreak Road improvement) would not be substantially impacted by temporary construction equipment noise. Even the loudest construction equipment, a paver, would register at 48-50 dBA 0.75 miles from the source. This is approximately the same sound level as rainfall (see **Table 3-8**). Construction equipment noise impacts on sensitive receptors would be minor because of the minimal cumulative contribution of the construction equipment to existing ambient noise levels from traffic and agricultural equipment; the distance of the residential receptors from the construction area; and the use of noise attenuation equipment to ensure that noise levels would not exceed an average of 75 dB over an 8-hour period. While existing noise sources produce elevated noise levels intermittently, noise during construction would be more continuous (with temporary increases in noise levels from the use of the loudest equipment) between the hours of 7 a.m. and 7 p.m.

Short-term, minor, adverse impacts on wildlife would occur as a result of temporary noise disturbances associated with construction and demolition activities. Loud noise can disturb wildlife resulting in escape or avoidance behaviors; however, these effects would be temporary. Noise can also distort or mask bird communications signals (e.g., songs, warning calls, fledgling begging calls) and their ability to find prey or detect predators. If noise persists in a particular area, animals could leave their habitat and avoid it permanently. Avoidance behavior by animals requires the expenditures of excess energy that is needed for survival (e.g., finding new food sources, water sources, and breeding and nesting habitats) (Ellis et al. 1991). Noises associated with construction and demolition would only be expected to affect individual animals within close proximity (typically within 400 to 800 ft) to the noise sources. Wildlife species would generally be expected to recover quickly from noise disturbance once the construction activities have ceased. As a result, population-level impacts would not be expected to occur.

**Maintenance.** Long-term, negligible, adverse impacts on the ambient noise environment would periodically occur during proposed maintenance activities, which would primarily occur within the footprint of the existing roadway. Maintenance crews would be required to use proper personal hearing protection to limit exposure and would use the appropriate noise attenuation equipment when necessary. Noise from maintenance activities would not impact areas outside of the proposed 1418 Firebreak Road improvement area or sensitive receptors. Impacts would be similar to those described for construction because similar equipment would be required. These maintenance activities would be temporary and intermittent; therefore, no major, adverse impacts would be expected.

### 3.11.3.2 Alternative 2: Complete Road Improvement

Under Alternative 2, impacts on noise receptors would be greater than Alternative 1 as the noise would occur over a longer distance and period of time. However, the noise from equipment used for maintenance and repair activities would not occur closer to sensitive receptors and would be localized, short-term, and intermittent during machinery operations and normal working hours. The proposed maintenance and repair activities would be expected to result in noise levels comparable to those indicated in **Table 3-9**.

### 3.11.3.3 Alternative 3: Preferred Alternative (Improve Drainage Features Without Widening Road)

Short-term and long-term impacts on noise receptors from Alternative 3 would be similar to those described for Alternative 1. Noise from equipment used for maintenance and repair activities would be localized, short-term, and intermittent during machinery operations and normal working hours. The proposed maintenance and repair activities would be expected to result in noise levels comparable to those indicated in **Table 3-9**.

### 3.11.3.4 Alternative 4: No Action Alternative

Under the No Action Alternative, CBP would not be maintaining, repairing, and improving the road. Therefore, no impacts on noise would be expected from the implementation of the No Action Alternative because no maintenance or repair activities would occur in the project area.

## 3.12 CULTURAL RESOURCES

### 3.12.1 Definition of the Resource

The term “cultural resources” refers to a broad range of properties relating to history, prehistory, or places important in traditional religious practices. Several federal laws and E.O.s, including the NHPA, the Archaeological and Historic Preservation Act (ARHA), the American Indian Religious Freedom Act (AIRFA), the Archaeological Resources Protection Act, and the Native American Graves Protection and Repatriation Act (NAGPRA) refer to cultural resources. The NHPA focuses on property types such as prehistoric and historic sites, buildings and structures, districts, and other places that have physical evidence of human activity considered important to a culture or a community for scientific, traditional, religious, or other reasons. These resources can prove useful in understanding and describing the cultural practices of past peoples or retain cultural and religious significance to modern groups. Resources judged significant under criteria established in the NHPA are considered eligible for listing in the National Register of Historic Places (NRHP). The NRHP refers to these places as “historic properties” and they are protected under the NHPA.

The NHPA requires federal agencies to consider the effects of their activities and programs on NRHP-eligible properties. Regulations for Protection of Historic Properties (36 CFR Part 800) present a process for federal agencies to consult with the appropriate SHPO, Native American groups, other interested parties, and when appropriate, the Advisory Council on Historic Preservation (ACHP). This is to ensure that the impacts from the undertaking are adequately considered on historic properties.

NAGPRA is a federal law passed in 1990 that provides a process for museums and federal agencies to return certain Native American cultural items—human remains, funerary objects, sacred objects, or objects of cultural patrimony—to lineal descendants, and culturally affiliated Indian tribes and Native Hawaiian organizations.

Under the CEQA, resources deemed historically significant through an assessment based on the California Register of Historical Resources (CRHR) set forth in Public Resources Code (PRC) § 5024.1, Title 14 California Code of Regulations (CCR) § 4852 are defined as historical resources. Historical resources are prehistoric and historic resources listed, or determined to be eligible for listing, in the CRHR, a resource included in a local register of historical resources (CCR, Title 14(3) § 15064.5[a][2]), or any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant (CCR, Title 14(3) § 15064.5[a][3]). The County of San Diego’s Resource Protection Ordinance defines “Significant Prehistoric or Historic Sites” as any resource formally determined eligible or listed in the NRHP by the Keeper of the National Register; one-of-a-kind, locally unique, or regionally unique cultural resources that contain a significant volume and range of data and materials; or any location of past or current sacred religious or ceremonial observances (County of San Diego 2016).

Under CEQA, Assembly Bill 52 recognizes tribal cultural values, in addition to scientific and archaeological values, when determining impacts and mitigation with a category of resources called tribal cultural resources (TCRs) (California OPR 2015); the California equivalent of TCRs. To qualify as a TCR, a resource must be listed, or determined eligible for listing, on the national, state, or local register of historic resources; or be a resource that a lead agency chooses to treat as a TCR based on the CRHR criteria and the cultural value of a resource to a California Native American tribe (PRC § 21074). To identify TCRs, lead agencies are required to consult with local Native American tribes in a manner that is cognizant of all parties’ cultural values and, where feasible, seeking agreement on a proposed action.

Prior to the start of field work, the California Native American Heritage Commission and BLM were consulted with a notice of intent to survey. On March 05, 2019, the Barona, Santa Ysbel, Campo, Inaja, Ewiiapaayp, Jamul, Kwaaymii, San Pasqual, La Posta, Sycuan, Manzanita, Viejas, and Mesa Grande Native American communities were contacted with a notice of intent to survey. A final consultation letter for the California SHPO was prepared and sent to CBP on September 21, 2020. Concurrence was given by the California SHPO on November 25, 2020.

### 3.12.2 Affected Environment

The northern portion of 1418 Firebreak Road is depicted on the 1903 15’ 2<sup>o</sup> Cuyamaca USGS topographic map and originates from an unnamed road that follows the present-day path of Otay Lakes Road. The early 1418 Firebreak Road follows an unnamed creek that fed into the Lower Otay Reservoir. The 1943 Jamul 15’ map depicts 1418 Firebreak Road as an unimproved trail that follows the Little Cedar Canyon and Creek. In the 1955 Jamul 15’ USGS topographic map, 1418 Firebreak Road is clearly labeled as a “Jeep Trail.” Nearby, a land patent (homestead entry) was filed in 1891. This could be the origins of 1418 Firebreak Road.

***Regional Prehistory.*** Prehistoric cultural chronology for the San Diego region subsequent to approximately 12,000 years ago is divided into three broad temporal periods: Paleoindian (San

Dieguito Complex), Archaic (La Jolla Complex/Encinitas Tradition), and Late Prehistoric. The sequence is based on syntheses by Rogers (1939, 1945, 1966); Wallace (1955, 1978); Moriarty (1966); Warren (1967, 1968); and True (1980), among others. There is no accepted evidence of occupation in this region prior to 12,000 years ago.

The San Dieguito Complex period dates from 9,030 to 8,000 years Before Present (B.P.) Sites from this period have been identified as part of the Western Lithic Co-Tradition or part of the Western Pluvial Lakes Tradition (Davis et al. 1969; Bedwell 1970). Occupants of most sites dating to this time period made use of coastal and inland resources. Artifacts include bifaces, knives, scrapers, cobble tools, and milling tools and bone tools used to process plants, shellfish, fish, birds, and small and large mammals.

The La Jolla Complex/Encinitas Tradition period dates from 8,600 to 1,300 years B.P. Doughnut stones, discoidals, stone balls, plummets, Elko-eared points and stone, shell and bone beads appear in this period and shellfish gathering decreases. Hunting tools initially consisted of the atlatl and dart but quickly advanced to bow and arrow. Most sites were in coastal areas.

The Late Prehistoric period dates from 1,300 years B.P. to historic contact. The cultures are divided into two groups: “San Luis Rey” (Shoshonean) in northern San Diego County and “Kumeyaay” (Yuman) in southern San Diego County. Sites from this period include ceramics, although Cuyamaca sites have a variety of type artifacts, such as pipes and effigies. Use of other traditional tools continues; marked differences between the two groups include Cuyamaca clay-lined hearths and cemeteries separate from living areas.

***Ethnography.*** The project area is within the historical territory of the Kumeyaay, which extends from Northern San Diego County and south beyond Ensenada, Mexico (Campo 2018). The Kumeyaay were historically referred to as the Diegueño after Mission San Diego de Alcalá was established. The main language spoken is Hokan within the Yuman language family with dialects that are further broken into Tipai (southern) and Ipai (northern). The Takic-speaking Luiseño and Cahuilla live to the north (Loumala 1978).

The Kumeyaay were organized into autonomous bands based on family clans known as Sh’mulq which usually occupied a main village and several smaller habitation sites. Communities seasonally disbanded and established smaller groups of between 200 and 1,000 people to gather, process, and store resources. Subgroups spoke individual dialects and often intermarried (Campo 2018; Royo 1999).

As typical California seasonal hunters and gatherers, the Kumeyaay diet consisted mainly of plant foods, especially acorns, but also various other seeds and bulbs. This was supplemented by small game, including mammals and reptiles, and coastal inhabitants also had access to fish, shellfish, and sea mammals (Loumala 1978). Plants were also used for medicinal and ceremonial, as well as utilitarian, purposes. The medicinal use of plants covered a wide range of ailments, including European-introduced diseases such as syphilis, smallpox, and tuberculosis (Gallegos et al. 1998). Ceremonial usage included tattoos, girls’ puberty ceremonies, and rock art. A variety of objects were manufactured with plant materials, including houses, granaries, baskets, nets, adhesives, clothing, and soaps (Gallegos et al. 1998). The Kumeyaay maintained extensive trade networks as far east as the Colorado River, moving acorns, dried seafood, and seashells eastward and bringing

salt, seeds, and mesquite beans west (Loumala 1978). The Jamul Indian Village, home of one of the federally recognized tribes of Kumeyaay people, is 8.6 miles north of the project area.

**Regional History.** The earliest explorations of the San Diego area began in 1542, when Juan Rodríguez Cabrillo and his party landed near Point Loma. Cabrillo had been tasked with the exploration of the interior of the western United States by the Spanish monarch. Interaction with the Kumeyaay was initiated, but overall little attention was given to California until the 1700s.

Spanish settlement of the San Diego area began in 1769 when the Spanish developed plans to build four presidios (forts), and three towns along the California coastline stretching from San Diego northward to Monterey. The town sites, established between 1777 and 1797, included present-day Los Angeles, San Jose, and a small town near Santa Cruz, named Branciforte. The presidios were established at San Diego, Santa Barbara, Monterey, and San Francisco. Under Spain, the “borderlands were colonized as defenses against the intrusion of the English, French, Dutch, and Russians, with the Manila trade an important item for protection in California. They were held by two typical institutions: the mission and the presidio” (Bolton 1913; 1921; 1930 as cited in Aviña 1976).

Mission San Diego Alcalá was also founded in 1769, the first of 21 Franciscan missions built along the coast on the El Camino Real, from San Diego to Sonoma. The goals of the missions were tri-fold: they helped establish a Spanish presence on the West Coast, allowed for a means to Christianize the native peoples, and served to exploit the native population as laborers. The missionaries, or padres, would essentially serve as a mayor, or head of the town. The Kumeyaay socio-political structure was severely disrupted by the Mission, especially those living closest to the grounds (Loumala 1978).

The arrival of the Spanish missionaries brought about prevailing changes for the Native Americans, including high mortality rates and social changes due to the introduction of European diseases and customs (e.g., European farming methods) (Dobyns 1983; Walker and Hudson 1993). Due to the high mortality rates, many Native American villages were abandoned, with inhabitants fleeing to the missions.

The Kumeyaay population decreased due to disease, revolts, and changes to their traditional ways of life. The San Diego Mission, however, was unique in that it allowed neophytes to move freely between the mission and traditional villages to hunt and gather food for the struggling mission. This allowed the Kumeyaay to experience a smaller population decline than Native Americans at other California missions. Those who did not return to the mission, however, were hunted as criminals (Carrico 2008).

Mexico gained independence from Spain in 1821 taking control of the lands Spain once held. The Secularization Act of 1833 transferred much of the mission lands to political appointees. Between 1840 and 1846, the Governors of California, Juan B. Alvarado, Manuel Micheltorena and Pio Pico, made a series of land grants, transferring Mission properties to private ownership (Cowan 1977; Ohles 1997).

In 1846, the Mexican-American War broke out in part because of American excursions into California. In 1847, General Andrés Pico and John C. Frémont signed the Articles of Capitulation,

ending hostilities between the United States and Mexico. The United States and Mexico signed the Treaty of Guadalupe Hidalgo, which resulted in Mexico ceding the lands of present-day California, New Mexico, and Texas to the United States for \$15 million (Fogelson 1993:10). Within 2 years of the Treaty of Guadalupe Hidalgo, California applied for admission as a state.

**Known Cultural Resources.** In October 2019, *Class III Cultural Resources Survey for the Proposed Improvement, Operation, Maintenance, and Repair Of the 1418 Firebreak Road Project in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol San Diego Sector, San Diego County, California* was completed (Cogstone 2019). According to the study, surveys occurred during April and May 2019 and included an intensive-level pedestrian survey of the project area with no larger than 49.21-foot-wide transects. Smaller transects were used in narrower areas of the project area and within previously recorded and newly discovered archaeological sites. There were seven sites previously recorded within the project area, including two prehistoric sites, two historic sites, two multi-component sites, and one site of indeterminate origin (rock feature). These sites were revisited and updated on California State Parks and Recreation Series (DPR) 523 forms. No artifacts were collected, and no resources listed or eligible for listing under NHPA are in the project area.

### 3.12.3 Environmental Consequences

Adverse effects on cultural resources can include physically altering, damaging, or destroying all or part of a resource; altering characteristics of the surrounding environment that contribute to the resource's significance; introducing visual or audible elements that are out of character with the property or that alter its setting; neglecting the resource to the extent that it deteriorates or is destroyed; or selling, transferring, or leasing the property out of agency ownership (or control) without adequate legally enforceable restrictions or conditions to ensure preservation of the property's historic significance.

Ground-disturbing activities associated with the implementation of the Proposed Action constitute the most relevant potential impacts on cultural resources.

#### 3.12.3.1 Alternative 1: Partial Road Improvement

Under Alternative 1, ground-disturbing activities would occur within or adjacent to the existing footprint of the roadway (up to 24-foot wide in compliance with FC-2 design standards). If previously documented or newly discovered archaeological sites are found, mitigation measures (including avoidance of the sites) would be implemented. Alternative 1 would have negligible to minor adverse effects on cultural resources.

The potential exists for the unanticipated discovery of cultural resources or human remains during the maintenance and repair of roadway. Consequently, CBP would develop appropriate measures that detail crew member responsibilities for reporting in the event of a discovery during maintenance and repair activities. These measures would also include mitigation procedures to be implemented in the event of a significant unanticipated find. If human remains are discovered, CBP would adhere to the stipulations of Public Resources Code Section 5097.98 and Health and Safety Code 7050 and stop work within 50 ft of the discovery. CBP would then contact the county coroner and a professional archaeologist that meets the Secretary of the Interior's Professional

Qualifications Standards in archaeology or history to determine the significance of the discovery. If appropriate, CBP would also adhere to NAGPRA and its implementing regulations (43 CFR 19). Depending on the recommendations of the coroner or the archaeologist, CBP would consult with the county to establish additional mitigation procedures. Potential mitigation procedures for unanticipated discoveries include avoidance, documentation, excavation, and curation. As a result, potential impacts on cultural resources discovered during the maintenance and repair of tactical infrastructure would be minor.

### 3.12.3.2 Alternative 2: Complete Road Improvement

Short- and long-term, negligible to minor, adverse impacts on cultural resources would be expected from the implementation of Alternative 2. Under this alternative, ground-disturbing activities would be more extensive than Alternative 1 and occur within or adjacent to the existing footprint of the roadway (up to 24-foot wide in compliance with FC-2 design standards). As with Alternative 1, if previously documented or newly discovered archaeological sites are discovered, mitigation measures would be implemented. Alternative 2 would have negligible to minor adverse effects on cultural resources.

### 3.12.3.3 Alternative 3: Preferred Alternative (Improve Drainage Features Without Widening Road)

Under Alternative 3, ground-disturbing activities would be confined to the existing footprint of the roadway. If previously documented or newly discovered archaeological sites are discovered, mitigation measures would be implemented. As a result, Alternative 3 would have a negligible to minor impact on cultural resources.

### 3.12.3.4 Alternative 4: No Action Alternative

Under the No Action Alternative, CBP would not be maintaining, repairing, and improving the road. Therefore, no impacts on cultural resources would be expected from the implementation of the No Action Alternative because no ground-disturbing activities would occur in the project area.

## 3.13 RECREATION AND ACCESS

### 3.13.1 Definition of the Resource

The term “recreation” refers to activities of leisure often done for enjoyment, amusement, or pleasure. Recreation is an essential part of human life and can be found in many different forms that are shaped by the interests of the individual, as well as their surrounding social construction. Public spaces, such as ecological reserves, wildlife refuges, and ranches are essential venues for many of these recreational activities. Tourist activities reflect that visitors are specifically attracted by the recreational activities that certain venues can offer. Therefore, recreation is an important factor in the economy, and outdoor recreation alone is among the nation’s largest economic sectors.

Outdoor recreation can include activities such as hiking, hunting, camping, horseback riding, wildlife viewing, and biking. According to the Wilderness Society, nearly 50 percent of all Americans—141.1 million people—participated in at least one outdoor activity in 2011, totaling to 11.6 billion outings. And in 2019, Americans enjoyed 1.5 billion more outings than the previous

year. It is estimated that outdoor recreational activity contributes roughly \$730 billion to the economy of the United States (The Wilderness Society 2020).

### 3.13.2 Affected Environment

As stated in **Section 3.2**, land ownership of the project area includes various federal, state, and local agencies. The project area includes the OMER, San Diego NMR, Otay Mountain Wilderness, and Otay Ranch Preserve. While the BLM lands and San Diego NWR are not open to the public, the surrounding areas hold many different opportunities for recreational activities, including but not limited to hiking, hunting, camping, horseback riding, wildlife viewing, and biking.

Individuals seeking opportunities to engage in these activities occasionally use 1418 Firebreak Road for access. Along the road, there is a gate at which individuals have been known to park and leave their cars. Improvement of the roadway would temporarily close the road, resulting in decreased access for hikers and mountain bikers who would normally park along the road. Over the long-term, improving the road could potentially affect unauthorized mechanized activity in the wilderness.

### 3.13.3 Environmental Consequences

#### 3.13.3.1 Alternative 1: Partial Road Improvement

Following the implementation of this alternative, 1418 Firebreak Road would be temporarily closed. Short-term, direct, minor to moderate impacts would occur from the temporary closure of the road. With the closure of the road, individuals would no longer be allowed to use the area near the gate as a makeshift parking lot, therefore temporarily decreasing access to public lands for recreational use. Long-term, indirect, negligible to minor impacts could occur from the improvement of the roadway, as formalizing the road may inadvertently encourage members of the public to access these areas as hiking or off-highway vehicle trails, due to proximity to the BLM wilderness and public lands.

#### 3.13.3.2 Alternative 2: Complete Road Improvement

As with Alternative 1, 1418 Firebreak Road would be temporarily closed to the public with the implementation of Alternative 2. Short-term, direct, minor to moderate impacts would occur from the temporary closure of the road. These impacts would be expected to be greater than Alternative 1 as the complete roadway improvement would last longer than the partial roadway improvement. Construction would occur over a longer period of time and therefore result in a longer closure of the roadway. As with Alternative 1, under the road closure, individuals would no longer be allowed to use the area near the gate as a makeshift parking lot, therefore temporarily decreasing access to public lands for recreational use. Long-term, indirect, negligible to minor impacts could occur from the improvement of the roadway as formalizing the road may inadvertently encourage members of the public to access these areas more often for recreational purposes. Such impacts would be expected to be similar to impacts associated with Alternative 1.



### 3.13.3.3 Alternative 3: Preferred Alternative (Improve Drainage Features Without Widening Road)

Under this alternative, impacts on recreation would be expected to be similar to Alternative 1, as improvement activities under Alternative 3 are identical to Alternative 1 in all aspects except road widening.

### 3.13.3.4 No Action Alternative

Under the No Action Alternative, CBP would not be maintaining, repairing, and improving the road. CBP enforcement actions would be maintained at current levels or diminish over time due to inaccessibility of the area to CBP agents. The No Action Alternative would result in the continuation of individuals using the road to access public lands for recreational uses. No effects on recreation would be expected as a result of the No Action Alternative.

*This page intentionally left blank*

## 4 CUMULATIVE AND OTHER IMPACTS

### 4.1 CUMULATIVE IMPACTS

CEQ defines cumulative impacts as the “impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions” (40 CFR § 1508.7). Cumulative impacts can result from individually minor but collectively significant past, present, and foreseeable future actions. Informed decision-making is served by consideration of cumulative impacts resulting from projects that are proposed, under construction, recently completed, or anticipated to be implemented in the reasonably foreseeable future.

This cumulative impacts analysis summarizes expected environmental impacts from the combined impacts of past, current, and reasonably foreseeable future projects in accordance with CEQ regulations implementing NEPA and CEQ guidance on cumulative effects (CEQ 1997). The geographic scope of the analysis varies by resource area. For example, the geographic scope of cumulative impacts on resources such as soils and vegetation are narrow and focused on the location of the resource. The geographic scope of air quality and wildlife and sensitive species is much broader and considers more county- or region-wide activities. Projects that were considered for this analysis were identified by reviewing CBP documents; news releases and published media reports; the CEQAnet database; and publicly available information and reports from federal, state, and local agencies. Projects that do not occur in proximity (i.e., within several miles) of the proposed project site would not contribute to a cumulative impact and are generally not evaluated further.

#### 4.1.1 Past, Present, and Reasonably Foreseeable Future Actions

Past actions are those within the cumulative impacts analysis areas that have occurred prior to the development of this EA. The impacts of these past actions are generally described in **Section 3**. Present actions include current or funded construction projects, CBP or other agency operations near the proposed site, and current resource management programs and land use activities within the cumulative impacts analysis areas. Reasonably foreseeable future actions consist of activities that have been approved and can be evaluated with respect to their effects. The following activities are present or reasonably foreseeable future actions:

*Repair/Rebuild to FC-2 Minnewawa Road.* The rebuilding and restoration of Minnewawa Road was designed to enhance officer safety by providing a more reliable and safe driving surface. The road is critical to USBP’s ability to maintain visual surveillance and communications capabilities in the vicinity of the project, and the road improvements were needed to ensure that the road is passable and to ensure officers’ safety. The entire 5.23 miles of roadway was rebuilt to FC-2 (all weather road) condition. Activities began November 2016 and the project was completed in November 2017.

*Improvement of Otay Truck Trail.* Otay Truck Trail East Road was an FC-2 level all-weather road not regularly maintained by CBP. The road had washed out in a number of locations, had lost much

of the drain-line ditches, and had a number of potholes as a result of water erosion and road washout. The project included the importing of roadway material to achieve a 6-inch-deep, well-graded roadbed, shaped with a defined crown section and included parallel ditches and cross culverts to ensure proper drainage both parallel and transverse to the road alignment. The improvement included repairs to 57 existing culverts of either 12, 18, or 24 inches in diameter of corrugated pipe. Some culverts were old and rusted, especially those 12 inches in diameter, and other culverts were clogged and/or collapsed. Activities began in September 2018 and the project was completed in January 2019.

*Improvement and Widening of A-1 West Access Road.* The project consisted of improving the westernmost 1,800 feet of the existing access road to an A-1 fence and border road. The project improved the road to a 24-foot-wide, all-weather road with appropriate drainage structures, including a low-water crossing and three culverts. The project required minor cut and fill work, grading, and adding an aggregate road base. A new turnaround area and the alignment shift in some sections of the road both caused disturbance outside of the existing road alignment. A utility pole was also relocated to outside the new road alignment. A locking gate along Alta Road at the turnoff to the improved access road was replaced. The project terminated to the west where the access road intersects Alta Road and to the east where it becomes Otay Mountain Truck Trail. The total project disturbance was 6 acres, of which approximately 4 acres were temporary disturbance and approximately 2 acres were permanent disturbance.

*Improvement of the A-1 Border Road.* The project consisted of improving approximately 5.4 miles of existing FC-3 road to a FC-2 all-weather road. The project also included cleaning out existing drainage ditches adjacent to the A-1 border road and repairing/replacing existing drainage ditches, rip-rap lining at inlet and outlet structures, and other ancillary drainage structures. The combined temporary and permanent footprint of the road improvements was approximately 24 feet wide in most of the project area.

*Construction of San Diego Border Fence Replacement.* The project replaced approximately 12.5 miles of existing secondary border wall, constructed approximately 1.5 miles of new secondary border wall (14 total miles), installed fiber-optic cable, and constructed an all-weather road along the southwestern border of the United States. The new taller and more substantial bollard-style wall that replaced the secondary wall is critical to prevent illegal entries into the United States and to achieve operational control of the border. The project included design, site preparation and material delivery, removal and replacement of the existing secondary wall, removal and replacement of existing motorized vehicle gates, installation of new fiber-optic cable, installation of grouted rip-rap, and construction of a 40-foot-wide all-weather road with electrical and lighting along 1.5 miles of new section of wall.

*Construction of Brown Field Border Patrol Station.* For this project, CBP proposed to construct, operate, and maintain a new USBP Brown Field Border Patrol Station on a 125.2-acre government-owned property in Dulzura, San Diego County, California. The project included construction of a main Border Patrol Station building designed to accommodate up to 400 USBP agents and support staff, as well as ancillary support facilities and structures including a vehicle maintenance/all-terrain vehicle storage facility, outdoor tactical support areas, government and privately owned vehicle parking areas, vehicle wash rack, fuel island, canine kennel, communications tower, septic

system and leach field, water supply facility, stormwater management system, helipad, roadways, emergency generators, and utilities.

*State Route (SR) 905/SR 125/SR 11 Northbound Connector Project.* This project is designed to help ease border congestion and facilitate goods movement between the United States and Mexico. New connectors at this critical link in the overall border road network provide direct access to SR 125 from SR 905 and SR 11. SR 905, a new six-lane, 6.4-mile highway that parallels Otay Mesa Road, opened to traffic in July 2012. Construction of the northbound connectors began in October 2015 and opened to traffic November 2016. This connector project is approximately 6 miles from the proposed project site.

*SR 11 and Otay Mesa East Port of Entry.* The purpose of this project is to meet expected, increased demand and reduce the impacts from idling vehicles at the existing border crossings in the bi-national San Diego-Baja California “mega region.” On both sides of the border, the project will create a network for the POE system that incorporates the latest security technologies with evolving border policies and procedures, including intelligent transportation management strategies, and serve as a model for a safe, secure, and efficient 21st Century POE. Under a plan approved in January 2012 by the California Transportation Commission, the United States portion of the project is being built in three segments. The first segment was completed and opened in 2016. This POE system would be approximately 6 miles from the proposed project site.

*SR 94 Improvement Project.* Caltrans is the lead agency for the SR 94 Improvement Project, which is funded by Jamul Indian Village and mitigates projected impacts on Highway 94 that are associated with the operation of the Hollywood Casino. The project consists of a series of improvement projects that include realigning and widening Highway 94 from north of Melody Road to south of Reservation Road, and five intersection improvements at Jamacha Boulevard and Jamacha, Steele Canyon, Lyons Valley, and Maxfield roads (Caltrans 2016). However, portions of the SR 94 Improvement Project would be at least 5 miles north of the proposed project site.

#### 4.1.2 Cumulative Analysis by Resource Area

A cumulative impacts analysis must be conducted within the context of the resource areas. The magnitude and context of the impact on a resource area depends on whether the cumulative effects exceed the capacity of a resource to sustain itself and remain productive (CEQ 1997). The following discusses potential cumulative impacts that could occur as a result of implementing the Proposed Action and other past, present, and reasonably foreseeable future actions. No major, adverse, cumulative impacts were identified in the cumulative impacts analysis. Similar results would be expected with the implementation of Alternatives 1 and 3. Impacts resulting from the implementation of Alternative 2 would be expected to be greater than Alternatives 1 and 3, however the difference would not be significant. Meanwhile, implementation of the No Action Alternative could lead to moderate, adverse cumulative impacts due to further road deterioration.

##### 4.1.2.1 Proposed Action

Implementation of the Proposed Action would ensure that the physical integrity of the existing road and associated supporting elements continue to perform as intended to assist the USBP in securing the U.S./Mexico international border in California. Improvement of the road would

enhance agent safety by providing efficient, reliable, and safe driving surfaces for USBP personnel. The Proposed Action would ensure the road is passable, providing faster response times to border incidents in strategically valuable areas. All maintenance and repair activities would occur via a periodic work plan. Implementation of the Proposed Action would not be expected to contribute to significant adverse cumulative effects. However, implementation would be expected to contribute to long-term, beneficial effects when effects from past projects such as Repair/Rebuild to FC-2 Minnewawa Road, Improvement of Otay Truck Trail, Improvement and Widening of A-1 West Access Road, and Improvement of the A-1 Border Road are considered. The combined roadway improvement projects would ensure that roadways used by USBP are passable, providing faster response times to border incidents in strategically valuable areas.

#### 4.1.2.2 Land Use

Most of the project area is remote and predominately ecological reserve and wildlife refuge, most of which is managed or protected by the Federal Government. The maintenance and repair of tactical infrastructure would have no effect on land use plans or policies. Maintenance and repair activities involve work on existing infrastructure, so there would be no change in long-term land uses. Cumulatively, the Proposed Action and other maintenance and repair activities would not contribute to adverse effects on land use.

#### 4.1.2.3 Geology and Soils

The potential for effects on geology and soils is limited to areas where ground disturbance would occur within the project area. The adoption of appropriate BMPs and proposed schedule for maintenance would ensure that erosion would be minimized, and erosion-creating activities well dispersed throughout the area avoiding any pockets of intense activity. Cumulatively, this approach reduces the impacts of any ad hoc approach applied to past maintenance and repair activities and ensures future potential erosion is well-managed.

Consequently, the maintenance and repair of 1418 Firebreak Road combined with other present construction activity, including Construction of Brown Field Border Patrol Station, SR 94 Improvement Project, and State Route 11 and Otay Mesa East Port of Entry, would be expected to result in short-term, minor, adverse effects that are localized to the areas where ground disturbance has occurred. Long-term, beneficial effects would be expected from stabilization of the roadway and drainage structures in the project area.

#### 4.1.2.4 Vegetation

Minor to moderate effects on native species vegetation and habitat and introduction of non-native species are observable from past and present development and land use. Selective maintenance and repair activities would be expected to result in generally negligible adverse effects on terrestrial and aquatic vegetation. Under the work plan, BMPs would ensure impacts on vegetation including the introduction of non-native species would be minimized, and consequently the cumulative effects on vegetation resources would be considered negligible.

#### 4.1.2.5 Terrestrial Wildlife Resources

Minor to moderate effects on wildlife species have occurred from the additive effects of past and present actions, although there is quality habitat surrounding the project area to support wildlife. Maintenance and repair activities would be expected to result in generally negligible, adverse effects on wildlife and aquatic species. Operation of heavy equipment would generate temporary noise and could displace wildlife species. Under the work plan, BMPs would ensure impacts on terrestrial and aquatic wildlife resources would be minimized and therefore the cumulative impacts on terrestrial and aquatic wildlife resources would also be considered to be negligible in effect.

#### 4.1.2.6 Threatened and Endangered Species

As discussed in **Section 3.6**, CBP has formally consulted with USFWS under Section 7 of the ESA regarding potential effects on listed species and designated critical habitat. Potential direct and indirect effects on federally listed species presented in this EA are based on currently available data. A separate effects analysis is developed under NEPA, but parallels impact determinations made for the Section 7 consultation process. The designation of threatened or endangered implies that past activities have had major adverse effects on these species.

There are three federally listed threatened or endangered plant or animal species that are known to occur within the region of analysis and one other federally listed species that has a high potential to occur in the project area. **Section 3.6** presents detailed discussions for each of these species. Cumulatively, present and future activities are likely to continue to affect threatened and endangered species. Potential threats include habitat loss from urbanization and road construction, trampling of protected plants, corridor fragmentation, and noise from increasingly urban areas. The ESA will continue to protect threatened and endangered species and designated critical habitat with the goal of recovery. Short-term, cumulative adverse impacts from Construction of Brown Field Border Patrol Station, SR 94 Improvement Project, and State Route 11 and Otay Mesa East Port of Entry would be expected, as construction for all four projects would be occurring at the same time. However, cumulatively, the Proposed Action would be expected to have negligible to moderate contributions to adverse effects on threatened and endangered species.

#### 4.1.2.7 Hydrology and Groundwater

Water quality of the Imperial Valley Groundwater Basin, the main aquifer in the project area, has historically been adversely affected by surrounding land uses and water withdrawals. The Proposed Action does not involve new development activities; negligible, indirect, adverse effects could occur on hydrology and groundwater systems from the maintenance and repair of roadways and drainage management structures. Cumulatively, effects on hydrology and groundwater from the maintenance and repair of the roadway in addition to other projects would also be negligible.

#### 4.1.2.8 Surface Waters and Waters of the United States

Surface water quality of sub-watersheds within the project area have historically been significantly affected by various inputs including urban, agricultural and livestock runoff, and septic, wastewater, and industrial discharges. Some surface water bodies are consequently on USEPA's 303(d) list of impaired waters, as discussed in **Section 3.8** (USEPA 2010d). Historically significant wetland losses have resulted from draining, dredging, filling, leveling, and flooding for agricultural

and urban development. California has lost as much as 91 percent of its original wetlands, primarily from conversion to agriculture (USGS 1996).

The Proposed Action does not involve new development activities, but negligible, indirect, adverse effects could occur on surface waters from the maintenance and repair of the roadway and drainage management structures. Under the work plan, BMPs would ensure impacts on surface water and ephemeral drainages are minimized. Cumulatively, effects on surface waters and Waters of the United States from the maintenance and repair of the roadway would be negligible in the short-term but with the consistent observance of the work plan could result in long-term, minor, beneficial impacts on surface water quality.

#### 4.1.2.9 Floodplains

Floodplain resources can be adversely impacted by development, increases in impervious areas, loss of vegetation, hydrological changes, and soil compaction. Historically, natural floodplains have been permanently altered by development activities and the construction of canals and reservoirs. The Proposed Action does not involve new development activities and would have no direct effects on floodplains. Clearing of vegetation and removal of debris could result in increased sedimentation into floodplains and drainage structures, but this would be a negligible indirect effect. Cumulatively, effects on floodplains from the maintenance and repair of the roadway, in addition to other projects, would be negligible.

#### 4.1.2.10 Air Quality

USBP San Diego Sector operates within an AQCR that is in nonattainment for one or more criteria pollutants. The Proposed Action would have short-term, negligible, localized, adverse effects on air quality during maintenance and repair activities. The adoption of appropriate BMPs and proposed schedule for maintenance would ensure that dust creation would be minimized. Cumulative effects on local and regional air quality from the maintenance and repair of the roadway, in addition to other projects, would be negligible.

#### 4.1.2.11 Noise

Cumulative effects on the noise environment occur when a project has noise emissions that are noticeably loud or that raise ambient noise levels. New noise sources are generally more noticeable in areas that have lower ambient noise levels. Cumulative effects on noise would only be expected where multiple projects are occurring at the same time and in the same vicinity because noise attenuates over distance. Short-term, cumulative adverse impacts from Construction of Brown Field Border Patrol Station, SR 94 Improvement Project, and State Route 11 and Otay Mesa East Port of Entry would be expected as construction for all four projects would be occurring at the same time.

The Proposed Action would have short-term, negligible to minor, localized adverse effects as a result of the operation of heavy machinery to maintain and repair the roadway. Maintenance and repair of roadway in remote areas would be distant from most other substantial noise-generating activities, so there is little potential for cumulative effects. Increased noise from operation of machinery could combine with existing noise sources or other construction-type activities to produce a temporary cumulative effect on sensitive noise receptors. The adoption of appropriate



BMPs and proposed schedule for maintenance would ensure that noise would be minimized. Consequently, existing noise sources would continue to dominate the noise environment and, cumulatively, effects on the noise environment from maintenance and repair of the roadway, in addition to other projects, would be negligible to minor.

#### 4.1.2.12 Cultural Resources

Historically, long-term, major, adverse effects on cultural resources have likely occurred from the destruction or alteration of resources before their significance was realized. Tactical infrastructure construction for those projects identified in **Section 1.1** was performed under the supervision of cultural resources specialists to ensure known cultural resources would be protected and that any unanticipated discoveries would be identified and coordinated with the appropriate federal, state, or tribal parties. The cumulative effects on cultural resources from the maintenance and repair of past, present, and foreseeable future tactical infrastructure projects when considered in conjunction with the Proposed Action would be negligible since all activity would occur within previously disturbed or environmentally cleared footprints.

#### 4.1.2.13 Recreation and Access

The Proposed Action would temporarily close 1418 Firebreak Road to the public. Short-term, minor to moderate impacts would occur from the temporary closure of the road as individuals would no longer be allowed to use the area near the gate as a parking lot. Long-term, negligible to minor impacts would occur from the improvement of the roadway. Improvement of the road could draw more individuals to use 1418 Firebreak Road for access to these public lands for recreation. Cumulatively, effects on recreation and access from the maintenance and repair of the roadway would be minor to moderate when combined with possible impacts from other projects occurring at the same time, including Construction of Brown Field Border Patrol Station, SR 94 Improvement Project, and State Route 11 and Otay Mesa East Port of Entry.

#### 4.1.2.14 No Action Alternative

Under the No Action Alternative, CBP would not be maintaining, repairing, and improving the road. As discussed in **Section 3**, generally, the No Action Alternative would be expected to have no impacts on soils, vegetation, terrestrial and aquatic wildlife, threatened and endangered species, groundwater, surface water and Waters of the United States, floodplains, air quality, noise, cultural resources, or recreation and access. Under the No Action Alternative, maintenance and repair work would not be completed. Under such conditions, there is also a greater likelihood of road degradation occurring beyond the proposed footprint with a corresponding potential to adversely affect cultural resources and species habitat that have not been previously surveyed. Effects on land use under the No Action Alternative would be the same as effects under the Proposed Action.

Cumulative effects on soils, vegetation, terrestrial and aquatic wildlife, threatened and endangered species, groundwater, surface water and Waters of the United States, floodplains, air quality, noise, cultural resources, and recreation and access under the No Action Alternative would be expected to be less adverse than those discussed under the Proposed Action. Cumulative effects on land use would be essentially the same as those discussed under the Proposed Action. Implementation of the No Action Alternative would not, however, be expected to contribute to significant adverse,

cumulative effects when considered with other recently completed or planned future projects in the project area.

## 4.2 RELATIONSHIP BETWEEN THE SHORT-TERM USE OF THE ENVIRONMENT AND LONG-TERM PRODUCTIVITY

Short-term uses of the biophysical components of the human environment include direct construction-related disturbances and direct impacts associated with an increase in population and activity that occurs over a period of less than 5 years. Long-term uses of the human environment include those impacts that occur over a period of more than 5 years, including permanent resource loss.

As the proposed improvement, maintenance, and repair activities would be confined to the existing footprint of 1418 Firebreak Road, very little permanent impact would occur. The impact resulting from the installation of the turnout would, however, permanently remove a portion of the natural resources in the area, such as vegetation and wildlife habitat.

## 4.3 CEQA FINDINGS OF SIGNIFICANCE

This EA was prepared to comply with NEPA, but also meets the requirements of CEQA. Use of the term “significant” to describe impacts differs under these two laws. Under NEPA, an EA is prepared to determine whether an action as a whole (i.e., adverse and beneficial impacts) would have a significant impact on the environment based on context and intensity and, if no unmitigable significant impact would occur, then a FONSI is prepared. Whereas, CEQA requires a determination of each significant impact on the environment resulting from the action. Due to these differences, the determination of significant impacts under CEQA have not been specifically addressed in other sections of this EA.

Section 15382 of the CEQA Guidelines defines a significant impact on the environment as “a substantial, or potential substantial, adverse change in any of the physical conditions within the area affected by the project.” This definition underlies the analysis of environmental impacts for most of the impact issues identified in the CEQA Environmental Checklist Form (CEQA Guidelines Appendix G). Using these significance criteria, it was determined that the Proposed Action would not result in unavoidable significant impacts under CEQA with implementation of the BMPs and mitigation measures identified in **Appendix D** of this Final EA. **Table 4-1** identifies the CEQA findings of significance for each resource area identified in the CEQA Environmental Checklist Form, and the EA section in which detailed analysis for each resource area is located.

## 4.4 GROWTH-INDUCING IMPACTS

Section 15126.2(d) of the CEQA Guidelines defines growth-inducing impacts as “the ways in which the project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment.” These projects include those that would remove obstacles to population growth (e.g., major expansion of wastewater treatment plant) and those that could encourage and facilitate other activities that could significantly affect the environment.

The Proposed Action would not result in an intensification of land use or remove any barriers to growth in the area surrounding the project corridor. Implementation of the Proposed Action is not anticipated to encourage additional growth in the area because 1418 Firebreak Road is not a public road and is only intended for use by CBP. Additional limitations to growth in the vicinity include the presence of federally-, state-, and locally-protected lands as the project corridor falls within the boundaries of OMER, San Diego NWR, Otay Ranch Preserve, and BLM public lands.

*This page intentionally left blank*

**Table 4-1. CEQA Findings of Significance for the Proposed Action**

CEQA Resource Area	EA Section	CEQA Finding of Significance
Aesthetics	3.1.4	The Proposed Action would have no impact on aesthetics because it would not have a substantial adverse effect on scenic vistas, would not substantially damage scenic resources, or substantially degrade the existing visual character and quality of the project corridor and surroundings.
Agriculture and Forestry Resources	3.2	The Proposed Action would have no impact on prime farmland or forestry resources. The project corridor does not fall within or adjacent to any designated farmland. Additionally, the Proposed Action does not conflict with existing zoning or cause rezoning of forestland or timberland, nor would it result in the direct or indirect loss of or conversion of forestland to non-forest use.
Air Quality	3.10	The Proposed Action would have less than significant impacts on air quality. 1418 Firebreak Road is east of Lower Otay Reservoir in San Diego County, California, which is within the SDIAQCR. San Diego County is designated by USEPA as nonattainment for 8-hour O <sub>3</sub> (moderate), maintenance for CO, and attainment for the remaining criteria pollutants (USEPA 2019). The county is designated by the Cal/EPA as nonattainment for 8- and 1-hour O <sub>3</sub> , PM <sub>10</sub> , and PM <sub>2.5</sub> and attainment for the remaining criteria pollutants and sulfates, hydrogen sulfide, and visibility reducing particulates (SDAPCD 2017). Criteria pollutant emissions would be below the <i>de minimis</i> threshold of each pollutant during construction (see <b>Table 3-7</b> ); therefore, the level of impacts would not be significant and a General Conformity determination is not required. Use of equipment and vehicles during construction would contribute to pollutant emissions; however, annual reductions in pollutant emissions would result from less frequent routine maintenance resulting in long-term, beneficial impacts on air quality. The Proposed Action would not conflict with applicable air quality plans, violate air quality standards, or result in a cumulatively considerable net increase in emissions of 8- and 1-hour O <sub>3</sub> , PM <sub>10</sub> , and PM <sub>2.5</sub> . The roadway is in a rural area, and the Proposed Action would not expose sensitive receptors to substantial pollutant concentrations. Air quality regulators typically define sensitive receptors as schools, hospitals, resident care facilities, or daycare centers, or other facilities for persons with health conditions that would be adversely impacted by changes in air quality. Although use of diesel-powered equipment during construction could produce temporary odors, the Proposed Action does not include heavy industrial or agricultural uses that are typically associated with objectionable odors.
Biological Resources	3.4, 3.5, 3.6	The Proposed Action would have less than significant impacts on biological resources. The Proposed Action would not have a substantial adverse effect on species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by CDFW or USFWS. San Diego County ordinances do not apply to federally owned public lands within the county, and CBP is not a signatory to MSCP and, therefore, is not required to comply with MSCP-specific mitigation

		<p>requirements and ratios. However, wherever possible, CBP would comply with such requirements and ratios. Any CBP mitigation requirements are fulfilled through ESA Section 7 consultation with USFWS. As such, mitigation for temporary and permanent impacts on chamise chaparral, coastal sage scrub, and non-native grassland/coastal sage scrub vegetation communities would be accomplished through restoration of at least 0.10 acres of disturbed native and non-native vegetation. Short- and long-term, negligible, direct and indirect, adverse effects on vegetation and short- and long-term, direct and indirect, negligible to moderate effects on Quino checkerspot butterfly, coastal California gnatcatcher, least Bell’s vireo, and San Diego fairy shrimp would occur. Appropriate BMPs would be implemented to reduce or eliminate adverse effects on all species. The Proposed Action may affect and is likely to adversely affect Quino checkerspot butterfly and San Diego fairy shrimp. However, CBP would restore at least 2.32 acres of disturbed vegetation, including suitable Quino checkerspot butterfly habitat, as well as 0.06 acres of road pools, including suitable fairy shrimp habitat. The Proposed Action would not have a substantial adverse effect on sensitive natural communities. Habitat type, relative presence of habitat type near the project corridor, its condition and size, presence or potential for sensitive species, relative connectivity with other native habitat, wildlife species, activity near the roadway, and relationship to the MSCP are discussed in <b>Sections 3.4 to 3.6</b>. The Proposed Action would have no impact on federally protected wetlands. Although direct impacts to several non-jurisdictional features, including two ephemeral drainages and 11 road pools, are unavoidable. Construction and routine maintenance of 1418 Firebreak Road would not interfere substantially with the movement or migratory corridors of any native resident, established, or migratory fish or wildlife species, or native wildlife nursery sites. The Proposed Action would not conflict with any local policies or ordinances protecting biological resources.</p>
<p>Cultural Resources</p>	<p>3.12</p>	<p>The Proposed Action would have less than significant impacts on cultural resources. Under CEQA, a proposed project is considered to have a significant effect on the environment if it can be expected to “cause a substantial adverse change in the significance of an historical resource” (PRC § 21084.1; CEQA Guidelines, CCR § 15064.5[b]). According to subdivision (h) of PRC § 21083.2, “a non-unique archaeological resource need be given no further consideration, other than the simple recording of its existence by the lead agency if it so elects.” These resources are recorded or updated at the time of the 2019 cultural resources survey, do not qualify as historical resources under CEQA, and are not unique archaeological resources.</p> <p>There is potential for adverse effects due to ground-disturbing activities, but these activities would not cause a substantial adverse change in the significance of any known cultural resources. There are no known existing cemeteries or previously recorded Native American or other human remains within or adjacent to the roadway, and no impacts are anticipated for these resources. There are no known unique paleontological resources or geologic features near the roadway. Resources were recorded or updated at the time of the 2019 cultural resources survey, do not qualify as historical resources under</p>

		CEQA, and are not unique archaeological resources. There is potential for the inadvertent discovery of cultural resources and human remains during construction; however, with implementation of BMPs, impacts on unknown cultural resources would be avoided. The California SHPO concurred with the finding of ‘No Historic Properties Affected’ for the Proposed Action (see <b>Appendix B</b> ).
Geology and Soils	3.3	The Proposed Action would have less than significant impacts on geology and soils. The Proposed Action would not expose people or structures to substantial adverse effects, nor would it entirely remove a geologic resource. 1418 Firebreak Road is within a seismically active region of southern California and while there are no faults in the project area, the Rose Canyon fault zone and Elsinore fault zone are to the west and east of the project area, respectively. However, the Proposed Action would not expose people or structures to substantial adverse geologic hazard effects. The Proposed Action would not result in substantial soil erosion and BMPs would be implemented during and after construction to reduce erosion impacts (see <b>Appendix D</b> ).
GHG Emissions	3.10	The Proposed Action would have less than significant impacts on GHG emissions. Use of equipment and vehicles during construction would contribute to pollutant emissions; however, annual reductions in pollutant emissions, including GHGs, would result from less frequent routine maintenance. As such, the Proposed Action would result in a long-term, beneficial impact on air quality and GHGs from changes to annual emissions of GHGs. However, the increases (during construction) and decreases (during routine maintenance) of GHG emission rates would not meaningfully contribute or lessen the potential effects of global climate change. The Proposed Action would not conflict with applicable plans, policies, or regulations related to reducing GHG emissions.
Hazards and Hazardous Materials	3.1.3	The Proposed Action would have less than significant impacts on hazards and hazardous materials. The Proposed Action could cause long-term adverse impacts on the environment as roadway construction vehicles containing hazardous substances and petroleum products would be deployed, which could result in a spill or release. Roadway construction would also generate solid wastes during grading and construction activities. Potential impacts from uncollected solid wastes include increased risk of injury, obstruction of draining areas, land and water pollution, and/or loss of biodiversity. However, these incidents are unlikely to occur and therefore the Proposed Action would not have a substantial adverse effect on the surrounding area.
Hydrology and Water Quality	3.7, 3.8, 3.9	The Proposed Action would have less than significant impacts on hydrology and water quality. The Proposed Action would not substantially affect water quality, reduce water availability or supply to existing users, threaten or damage hydrologic characteristics, or violate established federal, state, or local laws and regulations. No impacts on climate and hydrology with respect to the ecoregions or precipitation regime would be anticipated. Short-term, negligible, indirect, adverse impacts would occur on groundwater from vegetation clearing and debris removal. Long-term, negligible to minor, indirect, beneficial impacts on groundwater would occur from a decrease in erosion as the roadway

		would be properly maintained. The project area is mapped as an area of minimal flood hazard and no existing floodplain information on the project area exists. Short-term, negligible, indirect impacts on floodplain areas would be anticipated due to vegetation clearing as increased sedimentation into drainage structures would occur. Clearing of vegetation would result in an increase of flow as well as an increase in the speed of flow. However, BMPs would be implemented to minimize any potential impacts on floodplains.
Land Use and Planning	3.2	The Proposed Action would have less than significant impacts on land use and planning. The Proposed Action would not disrupt or physically divide an established community. The Proposed Action is consistent with the intent of the land use policies in San Diego County General Plan and other local land use policies adopted for the purposes of avoiding or mitigating effects. The San Diego County Zoning Ordinance does not apply to federal property. CBP is not a signatory to the MSCP and, therefore, is not required to comply with MSCP-specific mitigation requirements. However, wherever possible, CBP would comply with such requirements and ratios. Any CBP mitigation requirements are fulfilled through ESA Section 7 consultation with USFWS. USBP and other law enforcement and fire control agencies and agencies that respond to natural disasters are permitted to perform their activities within any preserve system subject to all applicable requirements of federal and state law. The MSCP creates no additional permit requirements beyond those of existing federal and state law for the activities of these agencies (County of San Diego 1997). Therefore, the Proposed Action would not conflict with the MSCP.
Mineral Resources	3.3	The Proposed Action would have no impacts on mineral resources. The project area would not be within a designated mineral resource zone or an area with a known mineral resource deposit. Therefore, the Proposed Action would not result in the loss of availability of a known mineral resource or locally important mineral resource recovery site.
Noise	3.11	The Proposed Action would have less than significant impacts on noise. Improvement, maintenance, and repair activities would not expose people to excessive noise or vibrations. Although, the San Diego County Noise Ordinance does not apply to federal property, CBP would comply with the ordinance and other local standards to the extent practicable. Short-term noise would be generated during construction, and long-term, intermittent noise would be generated during routine maintenance; however, the change in ambient noise levels would not be substantial. The Proposed Action would be in an undeveloped, rural area, 2.3 miles from the nearest sensitive receptor.
Populations and Housing	3.1.1	The Proposed Action would have no impact on population and housing. The Proposed Action would not result in a direct or indirect change in population that would require housing, nor would it displace existing housing or people requiring new housing.
Public Services	3.1.5	The Proposed Action would have no impact on fire protection or other public services (police protection, schools, parks, and other public facilities). The Proposed Action would not increase the



		demand for fire protection/emergency medical services, nor would it increase response times for emergency services. The Proposed Action would not result in a change in population or demographics that would require a change in schools, parks, or other public facilities.
Recreation	3.13	The Proposed Action would have less than significant impacts on recreation. The Proposed Action may inadvertently encourage members of the public to access the surrounding area more often for recreational purposes. However, it would not include or require the expansion of recreational facilities.

*This page intentionally left blank*

## 5 REFERENCES

- American Ornithologists' Union 1957  
 American Ornithologists' Union. 1957. Check-list of North American Birds, 5th ed. American Ornithology Union, Baltimore.
- Atwood 1991  
 Atwood, J. L. 1991. Subspecies limits and geographic patterns of morphological variation in California Gnatcatchers (*Poliophtila californica*). Bull. S. Calif. Acad. Sci. 90:118-133.
- Atwood and Bolsinger 1992  
 Atwood, J. L. and J. S. Bolsinger. 1992. Elevation Distribution of California Gnatcatchers in the United States. *Journal of Field Ornithology*. Volume 63:159-168.
- Bailey 1995  
 Robert G. Bailey. 1995. Description of the Ecoregions of the United States. United States Department of Agriculture. March 1995.  
 Available Online:  
 <<https://www.fs.fed.us/land/ecosysmgmt/colorimagemap/images/261.html>>  
 Accessed October 2019.
- Bedwell 1970  
 Bedwell, Stephen Ferguson. 1970. Prehistory and Environment of the Pluvial Fort Rock Lake Area of South Central Oregon. PhD Dissertation, Department of Anthropology, University of Oregon.
- Bolton 1913; 1921; 1930 as cited in Aviña 1976  
 Bolton, H. E. 1913. Guide to Materials for the History of the United States in the Principal Archives of Mexico, Papers of the Department of Historical Research, Publication No. 163, Carnegie Institution of Washington, Washington, D.C.  
 1921 The Spanish Borderlands: A Chronicle of Old Florida and the Southwest, Yale University Press, New Haven, CT.  
 1930 Anza's California Expeditions, in five volumes, University of California Press, Berkeley, CA.
- Brown 1993  
 Brown, B. 1993. Bell's Vireo (*Vireo bellii*). In: Poole, A and F Gill, eds. The Birds of North America, No. 35. The Academy of Natural Sciences: Philadelphia, PA; The American Ornithologists' Union: Washington, D.C.
- Bowman 1973  
 Bowman, R. H. 1973. Soil Survey, San Diego Area, California, Part 1. United States Department of Agriculture. 104 pp. + appendices. Available online:  
 <[https://www.nrcs.usda.gov/Internet/FSE\\_MANUSCRIPTS/California/CA638/0/part1.pdf](https://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/California/CA638/0/part1.pdf)> Accessed June 2018.
- California OPR 2015  
 California Governor's Office of Planning and Research (OPR). 2015. Discussion Draft Technical Advisory: AB 52 and Tribal Cultural Resources in CEQA. May 2015. Available online:  
 <[https://www.opr.ca.gov/docs/DRAFT\\_AB\\_52\\_Technical\\_Advisory.pdf](https://www.opr.ca.gov/docs/DRAFT_AB_52_Technical_Advisory.pdf)>.
- Caltrans 2016  
 Caltrans. 2016. SR-94 Improvement Project Fact Sheet. May 2016. Available online: <<https://dot.ca.gov/caltrans-near-me/district-11/current-projects/sr-94-125-interchange-project>>.
- Campo 2018  
 Campo Kumeyaay Nation. 2018. History. Available online:  
 <<http://www.campo-nsn.gov/precontact.html>>. Accessed May 31, 2019.

- CARB 2019 California Air Resources Board (CARB) 2019. California Greenhouse Gas Emissions for 2000 to 2017, Trends of Emissions and Other Indicators. Available online: [https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000\\_2017/ghg\\_inventory\\_trends\\_00-17.pdf](https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2017/ghg_inventory_trends_00-17.pdf). Accessed 8 December 2019.
- Carrico 2008 Carrico, R. 2008. Strangers in a Stolen Land: Indians of San Diego County from Prehistory to the New Deal. Sunbelt Publications, San Diego.
- CBP 2020 CBP. 2020. Biological Survey Report 1418 Firebreak Road Improvement Project.
- CDFW 2019 California Department of Fish and Wildlife (CDFW). 2019. Natural Communities. Available online: <https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities#sensitive%20natural%20communities>. Accessed September 2019.
- CDWR 2003 California Department of Water Resources (CDWR). 2003. "California's Groundwater, Bulletin 110-Update 2003." Available online: [http://www.water.ca.gov/pubs/groundwater/bulletin\\_118/california's\\_groundwater\\_bulletin\\_118\\_-\\_update\\_2003\\_/bulletin118\\_entire.pdf](http://www.water.ca.gov/pubs/groundwater/bulletin_118/california's_groundwater_bulletin_118_-_update_2003_/bulletin118_entire.pdf). Accessed 29 December 2010.
- CEQ 1997 Council on Environmental Quality (CEQ). 1997. Considering Cumulative Effects Under the National Environmental Policy Act. January 1997.
- CNDDDB 2019 California Natural Diversity Database (CNDDDB). 2019. Biogeographic Data Branch. Biogeographic Data Branch, California Natural Diversity Database. Sacramento, CA. Available online: [http://www.dfg.ca.gov/biogeodata/cnddb/rf\\_ftpinfo.asp](http://www.dfg.ca.gov/biogeodata/cnddb/rf_ftpinfo.asp).
- CNPS 2019a California Native Plant Society (CNPS). 2019. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Rare Plant Program. Accessed February 2019. Available online: <http://www.rareplants.cnps.org>.
- CNPS 2019b CNPS. 2019. A Manual of California Vegetation, Online Edition. Available online: <http://vegetation.cnps.org/>. Accessed September 2019.
- County of San Diego 1997 County of San Diego. 1997. Multiple Species Conservation Program. Available online: <https://www.sandiegocounty.gov/content/dam/sdc/pds/mscp/docs/SCMSCP/FinalMSCPProgramPlan.pdf>.
- County of San Diego 2016 County of San Diego. 2016. San Diego County General Plan: A Plan for Growth, Conservation, and Sustainability. Adopted August 3, 2011. Amended December 14, 2016. Available online: <http://www.sandiegocounty.gov/content/sdc/pds/generalplan.html>.
- Cowan 1977 Cowan, R. G. 1977. Ranchos of California: A List of Spanish Concessions, 1775-1882 and Mexican Grants, 1822-1846. Historical Society of Southern California.
- Davis et al. 1969 Davis, Emma Lou, C. W. Brott, and D. L. Weide. 1969. The Western Lithic Co-Tradition. San Diego, California. San Diego Museum Papers No. 6.

- Dobyns 1983 Dobyns, H. F. 1983. Their Number Become Thinned: Native American Population Dynamics in Eastern North America. University of Tennessee, Knoxville.
- Dudek 2012 Dudek. 2012. *Environmental Impact Statement, Wind Energy Ordinance Amendment POD 10-007*. Prepared by Dudek, Encinitas, California. April 2012.
- EIA 2019 U.S. Department of Energy/Energy Information Administration (EIA). 2019. State Carbon Dioxide Emissions, Emissions Detail for the State of California. Released date: 23 October 2019. Available online <<https://www.eia.gov/environment/emissions/state/>>. Accessed 09 December 2019.
- Ellis et al. 1991 Ellis, D.H., C.H. Ellis, and D.P. Mindell. 1991. "Raptor Responses to Low-Level Jet Aircraft and Sonic Booms." *Environmental Pollution*. 74:53-83.
- Eng et al. 1990 Eng, L. L., D. Belk, and C. H. Eriksen. 1990. California Anostraca: Distribution, Habitat and Status. *Journal of Crustacean Biology* 10: 247-277.
- Eriksen and Belk 1999 Eriksen, C. and D. Belk 1999. *Fairy Shrimps of California's Puddles, Pools, and Playas*. Mad River Press, Inc., Eureka, California.
- FEMA 1994 Federal Emergency Management Agency (FEMA). 1994. A Unified National Program for Floodplain Management. Available online: <<http://www.fema.gov/library/viewRecord.do?id=4150>>. Accessed 22 December 2010.
- Fogelson 1993:10 Fogelson, R. M. 1993. *The Fragmented Metropolis: Los Angeles, 1850-1930*. University of California Press, Berkeley, California.
- Fugate 1993 Fugate, M. 1993. *Branchinecta sandiegonensis*, a new species of fairy shrimp (Crustacea: Anostraca) from western North America. *Proceedings of the Biological Society of Washington* 106: 296-304.
- Gallegos et al. 1998 Gallegos, D. R., C. Kyle, A. Schroth, and P. Mitchell. 1998. *Management Plan for Otay Mesa Prehistoric Resources*, San Diego, California. Coyote Press, Salinas, CA.
- Garfin et al. 2014 Garfin, G., G. Franco, H. Blanco, A. Comrie, P. Gonzalez, T. Piechota, R. Smyth, and R. Waskom (Garfin et al.). 2014. Chapter 20: Southwest. *Climate Change Impacts in the United States: The Third National Climate Assessment*. J. M. Melillo, Terese (T.C.) Richmond, and G. W. Yohe, Eds., U.S. Global Change Research Program, pages 462 to 486. doi:10.7930/J08G8HMN.
- Garrett and Dunn 1981 Garrett, K., and J. Dunn. 1981. *Birds of Southern California*. Los Angeles Audubon Soc. 408pp.
- Google Earth 2019 Google Earth. 2019. *Aerial Photography 1994-2019*.
- Harris 1998 Harris, C.M. 1998. *Handbook of Acoustical Measurement and Noise Control*. Acoustical Society of America.
- Holland 1986 Holland, R. F. 1986. *Preliminary Descriptions of the Terrestrial Natural Communities of California*. Non-game Heritage Program, State of California Department of Fish and Game, Sacramento, CA. 157 pp.

- Kus and Miner 1989 Kus, Barbara E.; Miner, Karen L. 1989. Use of Non-Riparian Habitats by Least Bell's Vireos. In: Abell, Dana L., Technical Coordinator. 1989. Proceedings of the California Riparian Systems Conference: protection, management, and restoration for the 1990s; 1988 September 22-24; Davis, CA. Gen. Tech. Rep. PSW-GTR-110. Berkeley, CA: Pacific Southwest Forest and Range Experiment Station, Forest Service, U.S. Department of Agriculture; p. 299-304.
- Loumala 1978 Luomala, K. 1978. Tipai and Ipai. In California, edited by Robert F. Heizer, pp. 592–609. Handbook of North American Indians, Vol. 8, William G. Sturtevant, general editor, Smithsonian Institution, Washington, D.C.
- Mattoni et al. 1997 Mattoni, R., G.F. Pratt, T.R. Longcore, J.F. Emmel, and J.N. George. 1997. "The Endangered Quino Checkerspot Butterfly, *Euphedryas editha quino* (Lepidoptera: Nymphalidae)." *Journal of Research on the Lepidoptera* 34:99-118.
- Munz 1968 Philip A. Munz. 1968. Supplement to a California Flora.
- NatureServe 2019 NatureServe. 2019. An Online Encyclopedia of Life. Available online: <<http://explorer.natureserve.org>>. Accessed September 2019.
- NOAA 2019 National Oceanic and Atmospheric Administration (NOAA). 2019. National Weather Service Forecast Office. San Diego Area Extremes and Normals. Available Online: <<https://w2.weather.gov/climate/index.php?wfo=sgx>>. Accessed October 2019.
- Ohles 1997 Ohles, W. V. 1997. Mission San Miguel Property and Padres. The Friends of the Adobes, Inc.
- Rebman and Simpson 2014 Rebman, JP and MG Simpson. 2014. Checklist of the Vascular Plants of San Diego County, 5th edition. San Diego Natural History Museum and San Diego State University, San Diego, CA.
- Royo 1999 Royo, A. R. 1999. The Kumeyaay (Diegueno) of San Diego and Baja. Available online: <<http://www.desertusa.com/mag99/july/papr/kumeyaay.html>>. Accessed May 24, 2019.
- Sawyer et al. 2009 Sawyer, J, T Keeler-Wolf, J Evens. 2009. A Manual of California Vegetation. Sacramento: California Native Plant Society Press.
- SDAPCD 2017 San Diego Air Pollution Control District (SDAPCD). 2017. "Attainment Status." Available online: <<https://www.sandiegocounty.gov/content/sdc/apcd/en/air-quality-planning/attainment-status.html>> . Accessed May 4, 2017.
- SDMMP 2010 San Diego Management & Monitoring Program (SDMMP). 2010. "Southern interior cypress forest." Available online: <[https://sdmmp.com/view\\_species.php?taxaid=SDMMP\\_vegcom\\_9](https://sdmmp.com/view_species.php?taxaid=SDMMP_vegcom_9)>. Accessed November 20, 2019.
- SDNHM 2017 San Diego Natural History Museum (SDNHM). 2014. Checklists of San Diego County. Available online: <<http://www.sdnhm.org/science/field-guide/>>. Accessed September 2019>.

---

Soil Survey Staff 2019a	Soil Survey Staff. 2019. Natural Resources Conservation Service, United States Department of Agriculture. Official Soil Series Descriptions. 2018. Available online: < <a href="https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/soils/survey/class/data/?cid=nrcs142p2_053587">https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/soils/survey/class/data/?cid=nrcs142p2_053587</a> >. Accessed June 5, 2019.
Soil Survey Staff 2019b	Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Soil Survey Geographic (SSURGO) Database for [Survey Area, State]. Available online. Accessed [month/day/year].
Sproul et al. 2011	Sproul, F, T Keeler-Wolf, P Gordon-Reedy, J Dunn, A Klein, K Harper. 2011. Vegetation Classification Manual for Western San Diego County. San Diego Association of Governments.
The Wilderness Society 2020	The Wilderness Society. 2020. "Outdoor Recreation FAQs" Available online: < <a href="https://www.wilderness.org/articles/article/outdoor-recreation-faqs">https://www.wilderness.org/articles/article/outdoor-recreation-faqs</a> >. Accessed April 23, 2020.
Tremor et al. 2017	Tremor et al. 2017. San Diego County Mammal Atlas. Ibis Publishing Company.
TRS Audio 2017	TRS Audio. 2017. "Adding acoustic levels of sound sources." Available online: < <a href="http://www.sengpielaudio.com/calculator-spl.htm">http://www.sengpielaudio.com/calculator-spl.htm</a> >. Accessed November 13, 2019.
Unitt 2004	Unitt, Phillip. 2004. San Diego County Bird Atlas. Ibis Publishing Company. Pgs. 430-433.
USACE 1987	U.S. Army Corps of Engineers (USACE). 1987. Corps of Engineers Wetland Delineation Manual. Wetlands Research Program Technical Report Y-87-1. 1987. Available online: < <a href="https://www.lrh.usace.army.mil/Portals/38/docs/USACE%2087%20Wetland%20Delineation%20Manual.pdf">https://www.lrh.usace.army.mil/Portals/38/docs/USACE%2087%20Wetland%20Delineation%20Manual.pdf</a> >. Accessed 5 January 2011.
U.S. Climate Data 2019	U.S. Climate Data. 2019. Available online: < <a href="https://www.usclimatedata.com/climate/campo/california/united-states/usca0167">https://www.usclimatedata.com/climate/campo/california/united-states/usca0167</a> >. Accessed September 2019.
USEPA 1971	U.S. Environmental Protection Agency (USEPA). 1971. Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances. 31 December 1971.
USEPA 1981	USEPA. 1981. Noise Effects Handbook: A Desk Reference to Health and Welfare Effects of Noise. July 1981. Available online: < <a href="http://www.nonoise.org/library/handbook/handbook.htm">http://www.nonoise.org/library/handbook/handbook.htm</a> >. Accessed November 13, 2019.
USEPA 2001a	USEPA. 2001. Functions and Values of Wetlands. EPA Publication 843-F-01-002c. Available online: < <a href="http://www.epa.gov/owow/wetlands/pdf/fun_val.pdf">http://www.epa.gov/owow/wetlands/pdf/fun_val.pdf</a> >. Accessed 4 January 2011.
USEPA 2001b	USEPA. 2001. Threats to Wetlands. EPA Publication 843-F-01-002d. Available online: < <a href="http://www.epa.gov/owow/wetlands/pdf/threats.pdf">http://www.epa.gov/owow/wetlands/pdf/threats.pdf</a> >. Accessed 4 January 2011.
USEPA 2010a	USEPA. 2010. "Clean Water Act Definitions of 'Waters of the United States'." Available online: < <a href="http://www.epa.gov/owow/keep/wetlands/guidance/CWAwaters.html">http://www.epa.gov/owow/keep/wetlands/guidance/CWAwaters.html</a> >. Accessed 4 January 2011.

- USEPA 2010b USEPA. 2010. “Clean Water Act.” Available online: <http://www.thecre.com/fedlaw/legal14water/cwa.htm>. Accessed 4 January 2011.
- USEPA 2010c USEPA. 2010. “Section 10 of the Rivers and Harbors Appropriation Act of 1899.” Available online: <http://water.epa.gov/lawsregs/guidance/wetlands/sect10.cfm>. Accessed 4 January 2011.
- USEPA 2010d USEPA. 2010. “Water Quality Assessment and Total Maximum Daily Loads Information.” Available online: [http://www.water.ca.gov/groundwater/bulletin118/colorado\\_river.cfm](http://www.water.ca.gov/groundwater/bulletin118/colorado_river.cfm). Accessed 29 December 2010.
- USEPA 2016 USEPA. 2016. “Section 404 of the Clean Water Act.” Last updated October 6, 2016. Available online: <https://www.epa.gov/cwa-404/overview-clean-water-act-section-404>. Accessed June 16, 2017.
- USEPA 2017 USEPA. 2017. “Greenhouse Gas Equivalencies Calculator.” Available online: <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>. Accessed July 14, 2017.
- USEPA 2019 USEPA. 2019. “California Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants.” As of November 30, 2019. Available online: [https://www3.epa.gov/airquality/greenbook/anayo\\_ca.html](https://www3.epa.gov/airquality/greenbook/anayo_ca.html). Accessed December 9, 2019.
- USFWS 1997 U.S. Fish and Wildlife Service (USFWS). 1997. Coastal California Gnatcatcher (*Polioptila californica californica*) Presence/Absence Survey Guidelines. February 28, 1997.
- USFWS 1998 USFWS. 1998. *Vernal Pools of Southern California Recovery Plan*. Prepared by U.S. Fish and Wildlife Service, Portland, Oregon.
- USFWS 2003 USFWS. 2003. Draft Recovery Plan for *Deinandra conjugens* (Otay Tarplant). Portland, Oregon. xi + 51 pp.
- USFWS 2006 USFWS. 2006. *Least Bell’s vireo (Vireo bellii pusillus) 5-Year Review: Summary Evaluation*. Prepared by U.S. Fish and Wildlife Service, Carlsbad, California.
- USFWS 2007 Federal Register (72 FR 70648), December 12, 2007.
- USFWS 2008 USFWS. 2008. *Riverside Fairy Shrimp (Streptocephalus wootoni) 5-Year Review: Summary Evaluation*. Prepared by U.S. Fish and Wildlife Service, Carlsbad California.
- USGS 1995 United States Geological Survey (USGS). 1995. Ground Water Atlas of the United States, California, Nevada. Available online: [http://pubs.usgs.gov/ha/ha730/ch\\_b/index.html](http://pubs.usgs.gov/ha/ha730/ch_b/index.html). Accessed 27 December 2010.
- USGS 1996 USGS. 1996. “Loss of Wetlands in the Southwestern United States.” Available online: <http://geochange.er.usgs.gov/sw/impacts/hydrology/wetlands/>. Accessed 21 December 2010.
- USGS 2019a USGS. 2019. “Protected Areas Database of the United States.” Available online: <https://maps.usgs.gov/padus/>. Accessed 3 December 2019.
- USGS 2019b USGS. 2019. “Quaternary Fault and Fold Database of the United States.” Available online: <https://earthquake.usgs.gov/hazards/qfaults/>. Accessed 3 December 2019.



- USNVC 2019      United States National Vegetation Classification (USNVC). 2019. United States National Vegetation Classification Database, V2.01. Federal Geographic Data Committee, Vegetation Subcommittee, Washington DC. [usnvc.org] Accessed June 2019.
- Walker and Hudson 1993      Walker, Phillip and Travis Hudson. 1993. Chumash Healing: Changing Health and Medical Practices in an American Indian Society. Banning, CA: Malki Museum Press.

*This page left intentionally blank*

## 6 LIST OF PREPARERS

**David Boyes**

M.S. Natural Resource Science

B.S. Applied Biology

Years of Experience: 43

**Nicolas Frederick**

M.S. Biology

B.S. Psychology

Years of Experience: 10

**Hannah Kopydlowski**

B.S. Biology

Years of Experience: 4

*This page left intentionally blank*

# APPENDIX A

## Road Classifications



*This page left intentionally blank*

# APPENDIX A

## Road Classifications and Maintenance and Repair Standards

---

### Introduction

Firebreak Road would be maintained in accordance with proven maintenance and repair standards. All of the standards CBP is adopting are developed based on comprehensive engineering analysis, proven BMPs adopted by other Federal agencies, and mitigation measures derived from extensive consultation with both regulatory and resources agencies. Below is a description of road classifications and maintenance and repair standards.

### Road Classification

CBP has developed a road classification system whereby roads are maintained to specific standards dependent upon their classification. Under the CBP classification system, five standards for roads have been developed:

- *FC-1 Paved Road* – Paved, all-weather road constructed of any material. Road is two lane with a total road width of 24 feet (see **Figures A-1** and **A-2**).
- *FC-2 All-Weather Road* – Unpaved, all-weather road consisting of a surface of imported aggregate material such as milled bituminous material or processed stone and gravel. Road is two-lane with a total road width of 24 feet (see **Figures A-3** and **A-4**).
- *FC-3 Graded Earth Road* – Unpaved road constructed of graded, native material. Road is two-lane with a total road width of 20 feet (see **Figures A-5** and **A-6**).
- *FC-4 Two-Track Road* – Unpaved road on natural ground consisting of a single lane with an overall road width of 10 feet (see **Figures A-7** and **A-8**).
- *FC-5 Sand Road* – Unpaved, sand road consisting of natural ground conditions, two lanes, and an overall road width of 16 to 18 feet (see **Figures A-9** and **A-10**).

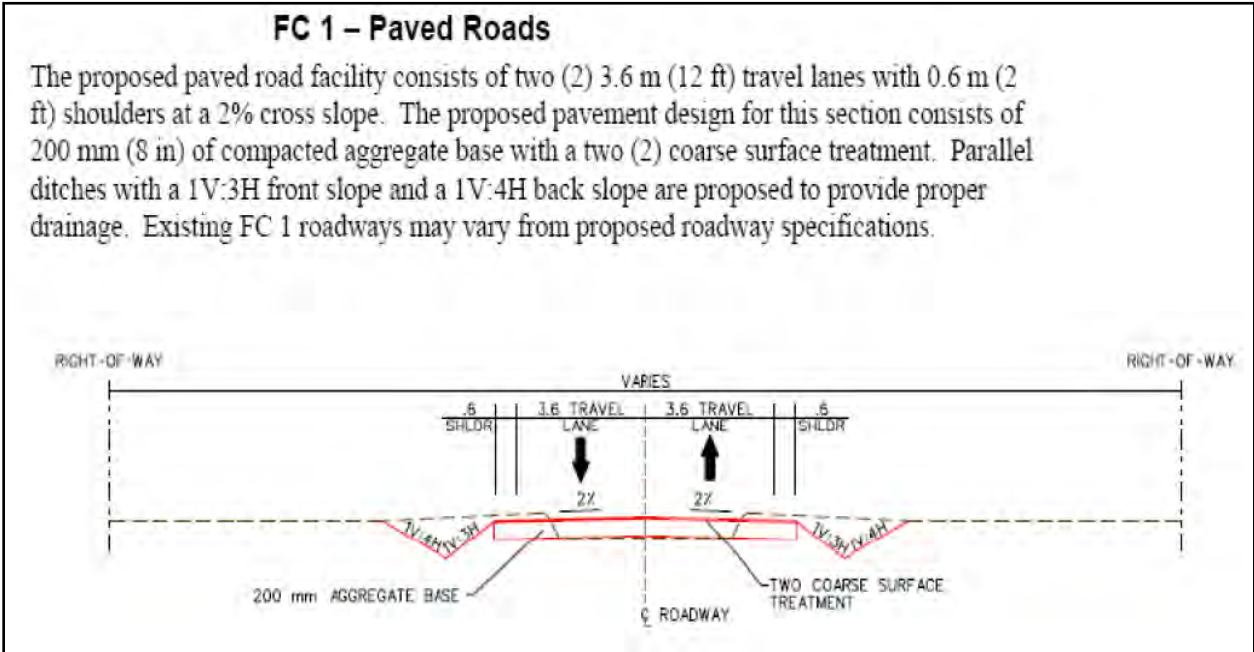
### Road Maintenance and Repair

The maintenance and repair of FC-1 and FC-2 roads within state, county, or municipal government's purview is completed by their transportation departments. Maintenance and repair of FC-1 and FC-2 roads located on Federal land are maintained in coordination and performed where necessary by agreement with the appropriate Federal agency. In general, CBP would adhere to U.S. Forest Service (USFS) standards for road maintenance, which have been tried and proven over many years and in a variety of environmental conditions.

Some of the road is on Federal lands (e.g., BLM, USFWS) and is the responsibility of CBP to maintain and repair. In the few instances where CBP is required to maintain FC-1 and FC-2 roads, maintenance and repair would be restricted to minor resurfacing to address potholes in paved surfaces and rutting and raveling in all-weather roads. Minor work to shoulder areas of these roads would also be required to maintain the integrity of the road surfaces and road beds.



**Figure A-1. FC-1 Paved Road (Photograph)**

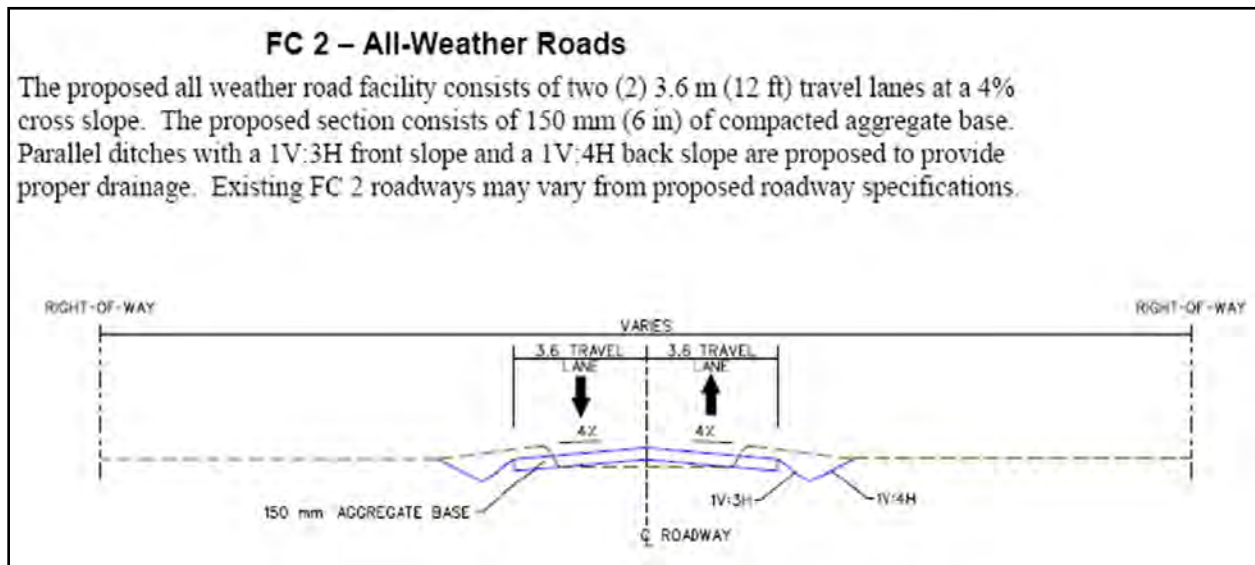


**Figure A-2. FC-1 Paved Road (Diagram)**





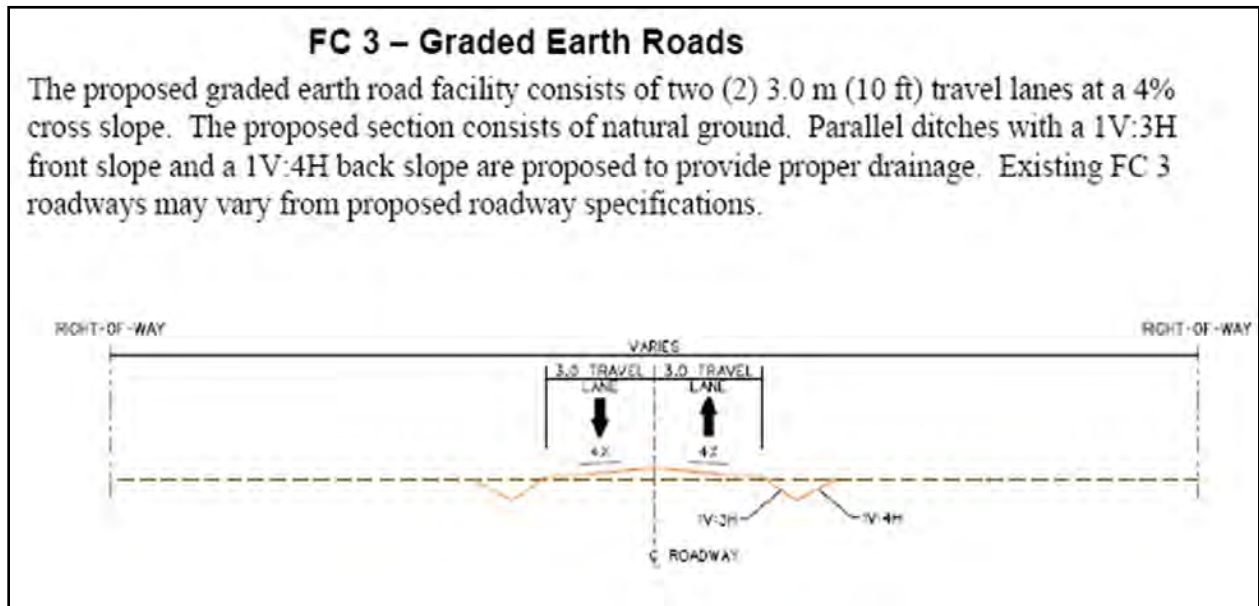
**Figure A-3. FC-2 All-Weather Road (Photograph)**



**Figure A-4. FC-2 All-Weather Road (Diagram)**



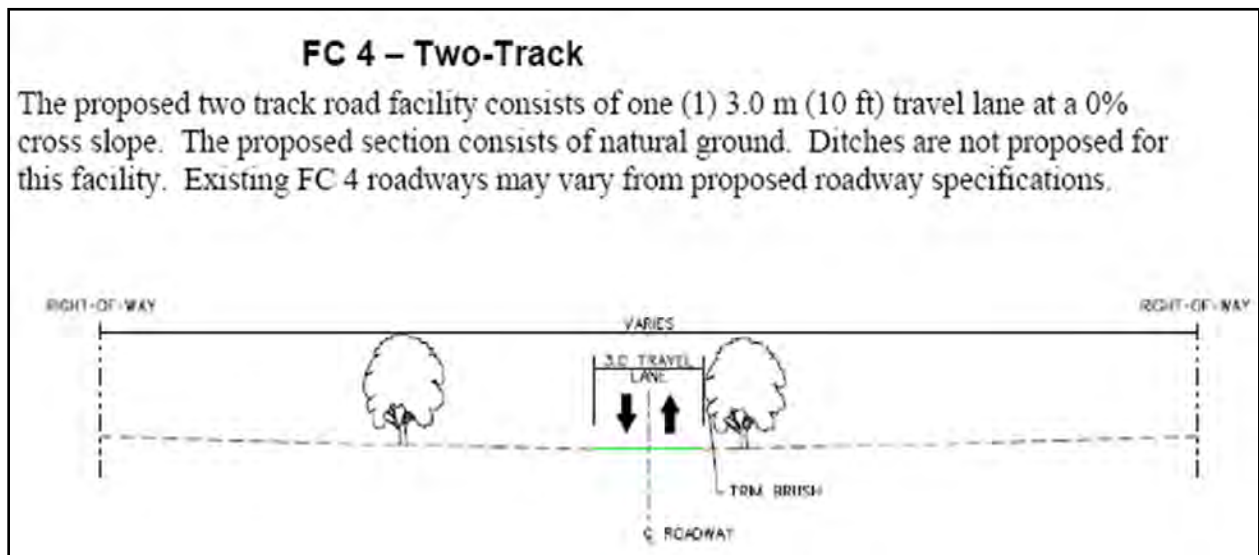
**Figure A-5. FC-3 Graded Earth Road (Photograph)**



**Figure A-6. FC-3 Graded Road (Diagram)**



**Figure A-7. FC-4 Two-Track Road (Photograph)**



**Figure A-8. FC-4 Two-Track Road (Diagram)**





**Figure A-9. FC-5 Sand Road (Photograph)**

### **FC5 – Sand Road**

The proposed sand road consists of 16-18 feet travel lane at a 0% cross slope. The proposed section consist of natural ground – no foundation base. Drainage ditches are not proposed for this type road. Existing FC-5 roadways may vary from proposed roadway specifications,



**Figure A-10. FC-5 Sand Road (Diagram)**

Because of their lack of formal construction design, FC-3 and FC-4 roadways are subject to the greatest deterioration if left unmaintained. When subjected to heavier traffic, rutting occurs, which in turn is exacerbated by rain events that further erode the surface. Unmanaged storm water flow also causes general erosion to occur, washing out complete sections of road and in many instances making roads impassable.

As the two track name implies, FC-4 roads consist of two parallel tracks created by the loss of vegetation where the tires contact and compact the earth; between which may lay a strip of low-growth vegetation. These roads receive very little maintenance consisting primarily of occasional brush and boulder clearing, and possibly but much less frequently grading with small tractor mounted box blades. Two-track roads have no crown, and generally do not have any improved drainage features or ditches, although culverts and low water crossings may be installed where continuous erosion issues occur.

*This page left intentionally blank*

# **APPENDIX B**

## **Public Involvement Materials**



*This page left intentionally blank*



# APPENDIX B

## Public Involvement Materials

---

### Interested Party List

#### FEDERAL AGENCY CONTACTS

Mr. Jeremiah Karuzas,  
Acting Field Manager  
Bureau of Land Management  
Palm Springs-South Coast Field Office  
1201 Bird Center Drive  
Palm Springs, CA 92262  
[BLM\\_CA\\_Web\\_PS@blm.gov](mailto:BLM_CA_Web_PS@blm.gov)

Ms. Shari Johnson  
U.S. Army Corps of Engineers  
Los Angeles District  
Regulatory Division  
Carlsbad Field Office  
5900 La Place Court, Suite 100  
Carlsbad, CA 92008  
[Shari.Johnson@usace.army.mil](mailto:Shari.Johnson@usace.army.mil)

Mr. Scott Sobiech  
Field Supervisor  
U.S. Fish and Wildlife Service  
Carlsbad Ecological Services Field Office  
2177 Salk Avenue, Suite 250  
Carlsbad, CA 92008

#### STATE AGENCY CONTACTS

Mr. Jose Ornelas  
Border Liaison  
California Department of Transportation  
Traffic Operations Division  
4050 Taylor Street  
San Diego, CA 92110

Mr. William Vivar  
Treasurer  
California Department of Transportation  
4050 Taylor Street  
San Diego, CA 92110

Mr. Gustavo Dallarda  
District 11 Director  
California Department of Transportation  
District 11  
4050 Taylor Street  
San Diego, CA 92110

Mr. Ed Pert  
Regional Manager  
California Department of Fish & Wildlife  
South Coast Region  
3883 Ruffin Road  
San Diego, CA 92123  
[AskR5@wildlife.ca.gov](mailto:AskR5@wildlife.ca.gov)

Mr. Scott Morgan  
Chief Deputy Director  
State Clearinghouse Director  
Governor's Office of Planning and Research  
1400 Tenth Street  
Sacramento, CA 95814  
[Scott.Morgan@opr.ca.gov](mailto:Scott.Morgan@opr.ca.gov)

#### LOCAL CONTACTS

San Diego County Air Pollution Control  
District  
10124 Old Grove Road  
San Diego, CA 92121

Mr. Mark Wardlaw  
Director  
San Diego County  
Planning & Development Services  
5510 Overland Avenue  
San Diego, CA 92123  
[mark.wardlaw@sdcountry.ca.gov](mailto:mark.wardlaw@sdcountry.ca.gov)

Ms. Sarah Aghassi  
Deputy Chief Administrative Officer  
San Diego County  
Land Use & Environment Group  
5510 Overland Avenue  
San Diego, CA 92123

The Honorable Steve Vaus  
Chairperson  
San Diego Association of Governments  
401 B Street, Suite 800  
San Diego, CA 92101  
[svaus@poway.org](mailto:svaus@poway.org)

San Diego Gas & Electric  
PO Box 129831  
San Diego, CA 92112-9831

**TRIBAL CONTACTS**

The Honorable Edwin Romero  
Chairperson  
Barona Group of the Capitan Grande  
1095 Barona Road  
Lakeside, CA 92040  
[counciloffice@barona-nsn.gov](mailto:counciloffice@barona-nsn.gov)

The Honorable Robert Pinto, Sr.  
Chairperson  
Ewiiapaayp Tribal Office  
4054 Willows Road  
Alpine, CA 91901  
[wmicklin@leaningrock.net](mailto:wmicklin@leaningrock.net)

The Honorable Gwendolyn Parada  
Chairperson  
La Posta Band of Mission Indians  
8 Crestwood Road  
Boulevard, CA 91905  
[info1@lptribe.net](mailto:info1@lptribe.net)

The Honorable Angela Elliott Santos  
Chairperson  
Manzanita Band of Kumeyaay Nation  
PO Box 1302  
Boulevard, CA 91905  
[ljbirdsinger@aol.com](mailto:ljbirdsinger@aol.com)

The Honorable Stephen W. Cope  
Chairperson  
San Pasqual Band of Mission Indians  
PO Box 365  
Valley Center, CA 92082  
[dorrisc@sanpasqualtribe.org](mailto:dorrisc@sanpasqualtribe.org)

The Honorable Cody J. Martinez  
Chairperson  
Sycuan Band of the Kumeyaay Nation  
1 Kwaaypaay Court  
El Cajon, CA 92019

The Honorable Robert Welch, Jr.  
Chairperson  
Viejas Band of Kumeyaay Indians  
PO Box 908  
Alpine, CA 91903

The Honorable Ralph Goff  
Chairperson  
Campo Band of Mission Indians  
36190 Church Road, Suite 1  
Campo, CA 91906  
[rgoff@campo-nsn.gov](mailto:rgoff@campo-nsn.gov)

The Honorable Erica Pinto  
Chairperson  
Jamul Indian Village  
PO Box 612  
Jamul, CA 91935  
[info@jamulindianvillage.com](mailto:info@jamulindianvillage.com)

The Honorable Michael Linton  
Chairperson  
Mesa Grande Band of Mission Indians  
PO Box 270  
Santa Ysabel, CA 92070  
[mesagrandeband@msn.com](mailto:mesagrandeband@msn.com)

Ms. Carmen Lucas  
Kwaaymii Laguna Band of Mission Indians  
PO Box 775  
Pine Valley, CA 91962

The Honorable Rebecca Osuna  
Chairperson  
Inaja Band of Mission Indians  
2005 S. Escondido Blvd.  
Escondido, CA 92025  
[inaja\\_cosmit@hotmail.com](mailto:inaja_cosmit@hotmail.com)

Mr. Clint Linton  
Director of Cultural Resources  
Iipay Nation of Santa Ysabel  
PO Box 507  
Santa Ysabel, CA 92070  
[cjlinton73@aol.com](mailto:cjlinton73@aol.com)

The Honorable Virgil Perez  
Chairperson  
Iipay Nation of Santa Ysabel  
PO Box 130  
Santa Ysabel, CA 92070

The Honorable Michael Garcia Vice  
Chairperson  
Ewiiapaayp Tribal Office  
4054 Willows Road  
Alpine, CA 91901

*This page left intentionally blank.*

**From:** [Nicolas Frederick](#)  
**To:** [Hannah Kopydlowski](#)  
**Subject:** FW: 1418 Firebreak Road Improvement comments  
**Date:** Tuesday, September 15, 2020 9:20:37 AM  
**Attachments:** [BLM Comments to CBP Draft EA FONSI.docx](#)  
[2020.09.03 DEA Firebreak Rd 08112020 BLM KRB \(2\).pdf](#)

---

For our records.

**Nicolas Frederick**

Senior Project Manager

**DAWSON**

Mobile: 919.698.8060

---

**From:** PETRILLA, JOHN <[JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov)>  
**Sent:** Monday, September 14, 2020 4:55 PM  
**To:** Nicolas Frederick <[nfrederick@dawson8a.com](mailto:nfrederick@dawson8a.com)>; FREDERICK, NICOLAS B (CTR) <[NICOLAS.B.FREDERICK@associates.cbp.dhs.gov](mailto:NICOLAS.B.FREDERICK@associates.cbp.dhs.gov)>  
**Subject:** FW: 1418 Firebreak Road Improvement comments

Hi Nic,

Please see attached comments and a pdf with track changes from the BLM.

Regards,

John

---

**From:** Dalton, John E <[jdalton@blm.gov](mailto:jdalton@blm.gov)>  
**Sent:** Monday, September 14, 2020 11:15 AM  
**To:** PETRILLA, JOHN <[JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov)>  
**Cc:** Dalton, John E <[jdalton@blm.gov](mailto:jdalton@blm.gov)>; Hernandez, Victoria L <[vhernandez@blm.gov](mailto:vhernandez@blm.gov)>  
**Subject:** 1418 Firebreak Road Improvement comments

**CAUTION:** This email originated from outside of DHS. DO NOT click links or open attachments unless you recognize and/or trust the sender. Contact the [CBP Security Operations Center](#) with questions or concerns.

John -Thank you for the opportunity to comment on the CBP Draft EA and FONSI for 1418 Firebreak Road Improvement.

Attached are the Bureau of Land Management's (BLM) comments on the Draft EA. And attached are the Biology comment directly on the draft PDF in track changes.

If you have any questions please do not hesitate to contact me:

John Dalton BLM NEPA/Planner

1201 Bird Center Drive

Palm Springs, CA 92262

(760) 833-7100

(951) 956-3578 cell

September 14, 2020

John Petrilla  
Acting Environmental Branch Chief  
Border Patrol & Air and Marine Program Management Office  
U.S. Customs and Border Protection  
Office: (949) 643-6385  
Mobile: (949) 278-0353  
[john.p.petrilla@cbp.dhs.gov](mailto:john.p.petrilla@cbp.dhs.gov)

Thank you for the opportunity to comment on the CBP Draft EA and FONSI for 1418 Firebreak Road Improvement Available for Review.

Below are the Bureau of Land Management's (BLM) comments on the Draft EA. Also attached are the Biology comment directly on the draft PDF.

1. EA Section 2.3, end of the first paragraph on page 2-1: All materials needs to be certified weed-free if Alternative 2 is selected to work on BLM-managed public land (this also was in the FONSI on page 2).
2. EA Section 3.2.2, Regulatory setting on page 3-5: include the South Coast Resource Management Plan 1994 in this land use plan. section. <https://eplanning.blm.gov/eplanning-ui/admin/project/67040/570>
3. EA Appendix B, Public Involvement Materials on page B-1: update the BLM Field Manager's name: Jeremiah Karuzas, Acting BLM Palm Springs-South Coast Field Manager.

#### **Cultural Resource Specific Comments on the FONSI:**

- Some Alternatives discussed in the FONSI have potential “negligible to minor adverse effects” to cultural resources, which are not a National Historic Preservation Act (NHPA) term. Either the project will have no effect to historic properties or there is an adverse effect.

#### **Cultural Resource Specific Comments on the EA:**

- Consultation for Section 106 of the National Historic Preservation Act (NHPA) is not discussed in the EA. Did this project consult with the California State Historic Preservation Officer (SHPO) and Tribal Nations pursuant to 36 CFR Part 800 Protection of Historic Properties? If not, what authority (i.e. programmatic agreement with SHPO) was used to waive consultation?

- Appendix G, stipulation 1.11.2 discusses the presence of cultural monitors. Will a Monitoring and Discovery Plan be created for this project and be added to the stipulations?
- Were the seven sites in the project area evaluated under Criteria A-D for the National Register of Historic Places (NRHP)? The term “significance” is used instead of specifically referencing “eligibility” for the NRHP. The language in the EA states “no significant resources”. Does that mean you evaluated them and they are all not eligible for the NRHP? Did you receive SHPO concurrence on this? If not evaluated, will all sites be treated as eligible and avoided?
- Are the seven sites historic, prehistoric, or multi-component?
- The term “negligible to minor adverse effects” is not a NHPA term. Either the project will have no effect to historic properties or there is an adverse effect. There can only be adverse effects to determined “eligible” or listed sites, Traditional Cultural Places (TCPs), and historic districts. If all sites were evaluated and found ineligible for the NRHP, then there would not be an adverse effect. If evaluated and found eligible, there will be an adverse effect. You would plan to enter into an agreement (MOA, PA, etc.) with the SHPO.
- If there will be an adverse effect to cultural resources, which site(s)? Under what criteria were they eligible for the NRHP? How will the site’s eligibility be affected by the proposed action?
- For site avoidance discussed in Alternative 1, what will the buffer be around each previously identified cultural resource? Will this be in a monitoring and discovery plan?
- Why isn’t Alternative 2 discussed in the cumulative effects section for cultural resources?

If you have any questions please contact:

John Dalton BLM NEPA/Planner

1201 Bird Center Drive

Palm Springs, CA 92262

(760) 833-7100



**From:** [PETRILLA, JOHN](#)  
**To:** [Johna \(Johna@northlandresearch.com\)](mailto:Johna@northlandresearch.com); [rod dossey](#); [DEYOUNG, DONNA J.](#); [David Boyes](#)  
**Subject:** FW: Proposed Improvement EA for 1418 Firebreak Road  
**Date:** Monday, May 13, 2019 5:44:19 PM  
**Attachments:** [image001.png](#)  
[SDC 1418 Firebreak Road Figure.docx](#)

---

FYI see below

## John Petrilla

Environmental Protection Specialist  
Real Estate, Environmental, and Leasing Division  
Border Patrol and Air and Marine Program Management Office  
U.S. Customs and Border Protection  
Office: (949) 643-6385  
Mobile: (949) 278-0353  
[john.p.petrilla@cbp.dhs.gov](mailto:john.p.petrilla@cbp.dhs.gov)



***Defined by our excellence since 2009. Defining excellence for years to come.***

---

**From:** PETRILLA, JOHN  
**Sent:** Monday, May 13, 2019 2:42 PM  
**To:** Collins, Chelsea <cncollins@blm.gov>  
**Subject:** RE: Proposed Improvement EA for 1418 Firebreak Road

Hi Chelsea,

Thanks for your interest in the project. Under the current proposed action, improvement of the road would stop at the BLM boundary. Another alternative we are considering is the improvement of the full length of the road (Alternative 2). See attached. Alternative 2 would likely also require additional drainage improvements on BLM and County/City of Chula Vista lands, but we don't know the extent of that yet.

The current proposed action consists of improving the road from Otay Lakes Road to the point where the road enters BLM-managed lands. The road would be improved to a functional classification (FC)-2 level all-weather roadway with two 12 ft. travel lanes. Parallel ditches would be installed to allow for proper drainage. Roadway material would be imported to achieve a minimum 6 inch depth roadbed. All necessary materials such as gravel, topsoil, or fill would be from existing developed or previously used sources, not from undisturbed areas adjacent to the road.

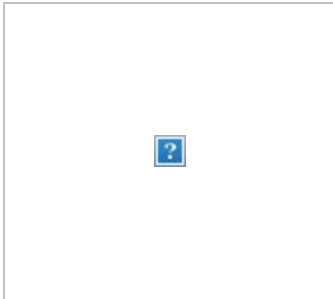
Culverts and water bars would be installed in locations where washouts occur to allow Border Patrol to drive the road rather than seek an alternate route when the road floods during and after rainstorms. There are several areas that have extensive damage due to vehicles traveling outside the road footprint to avoid severely washed out sections of the road. Culvert outlet areas would be stabilized with 3 – 12-inch diameter riprap in the excavated outfall area, tamped level with the stream bottom. Water bars would use road material mounded in the road surface to interrupt the flow of water and divert it off the road surface.

A soil stabilizer, either Lignin or Soiltac, would be applied to the finished road during the late summer/early fall months to improve road performance and durability.

I hope that helps. Please let me know if you have any other questions.

Regards,  
John

**John Petrilla**  
Environmental Protection Specialist  
Real Estate, Environmental, and Leasing Division  
Border Patrol and Air and Marine Program Management Office  
U.S. Customs and Border Protection  
Office: (949) 643-6385  
Mobile: (949) 278-0353  
[john.p.petrilla@cbp.dhs.gov](mailto:john.p.petrilla@cbp.dhs.gov)



***Defined by our excellence since 2009. Defining excellence for years to come.***

**From:** Collins, Chelsea <[cncollins@blm.gov](mailto:cncollins@blm.gov)>  
**Sent:** Monday, May 13, 2019 2:02 PM  
**To:** PETRILLA, JOHN <[JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov)>  
**Subject:** Proposed Improvement EA for 1418 Firebreak Road

Hello John:

Could you please provide a more detailed project description and map? It was unclear whether the maintenance was going to continue onto land managed by the BLM or was going to stop at the BLM boundary.

Thank you,

--

Chelsea Collins

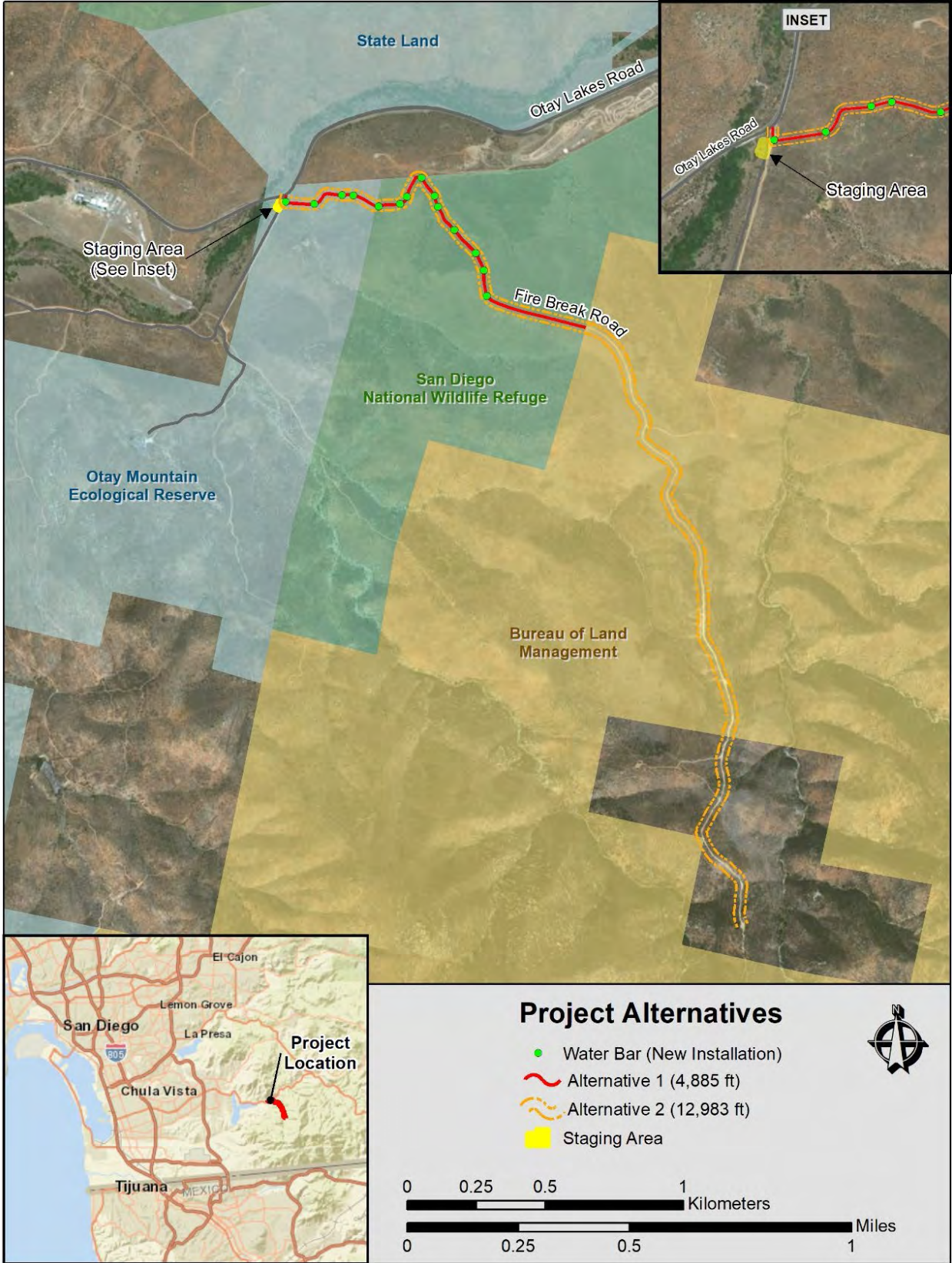
Realty Specialist

Bureau of Land Management

Palm Springs/South Coast Field Office

Office: 760-833-7150

Fax: 760-833-7199



**From:** [FREDERICK, NICOLAS B \(CTR\)](#)  
**To:** [Hannah Kopydlowski](#)  
**Subject:** FW: Proposed Improvement, Maintenance, and Repair of 1418 Firebreak Road  
**Date:** Monday, September 21, 2020 8:24:33 AM  
**Attachments:** [Final Comment Letter for 1418 Fuelbreak Road.pdf](#)

---

NICOLAS.B.FREDERICK@ASSOCIATES.CBP.DHS.GOV appears similar to someone who previously sent you email, but may not be that person. [Learn why this could be a risk](#)

[Feedback](#)

More comments. We also need to set up a call w John on 9/30, so we'll need our responses done beforehand.

---

**From:** Kelly, Audrey@Wildlife <Audrey.Kelly@Wildlife.ca.gov>  
**Sent:** Friday, September 18, 2020 12:47 PM  
**To:** PETRILLA, JOHN <JOHN.P.PETRILLA@cbp.dhs.gov>; FREDERICK, NICOLAS B (CTR) <NICOLAS.B.FREDERICK@associates.cbp.dhs.gov>  
**Cc:** Wilson-Olgin, Erinn@Wildlife <Erinn.Wilson-Olgin@wildlife.ca.gov>; Turner, Jennifer@Wildlife <Jennifer.Turner@wildlife.ca.gov>; Nelson, Tracie@Wildlife <Tracie.Nelson@wildlife.ca.gov>; Mayer, David@Wildlife <David.Mayer@wildlife.ca.gov>; Wildlife CEQA Comment Letters <CEQACommentLetters@wildlife.ca.gov>  
**Subject:** Proposed Improvement, Maintenance, and Repair of 1418 Firebreak Road

**CAUTION:** This email originated from outside of DHS. DO NOT click links or open attachments unless you recognize and/or trust the sender. Contact the [CBP Security Operations Center](#) with questions or concerns.

Dear Mr. Petrilla,

Please see the attached comments for the Proposed Improvement, Maintenance, and Repair of 1418 Firebreak Road Project. If you have any questions feel free to contact me.

Sincerely,

**Audrey Kelly**

Environmental Scientist

California Department of Fish and Wildlife – South Coast Region

Temporary line: (805)861-8475





State of California – Natural Resources Agency  
DEPARTMENT OF FISH AND WILDLIFE  
South Coast Region  
3883 Ruffin Road  
San Diego, CA 92123  
[www.wildlife.ca.gov](http://www.wildlife.ca.gov)

**GAVIN NEWSOM, Governor**  
**CHARLTON H. BONHAM, Director**



September 18, 2020

Mr. John Petrilla  
Border Patrol and Air & Marine Program  
Management Office, 24000 Avila Road, Suite 5020  
Laguna Niguel, California 92677  
[john.p.petrilla@cbp.dhs.gov](mailto:john.p.petrilla@cbp.dhs.gov)

Dear Mr. Petrilla:

**Subject: Comments on the proposed Improvement, Maintenance, and Repair of 1418 Firebreak Road in Chula Vista Station Area of Responsibility of the U.S. Border Patrol, San Diego Sector (Project), San Diego County,**

The California Department of Fish and Wildlife (CDFW) reviewed the Draft Environmental Assessment (EA) Addressing the Proposed Improvement, Maintenance, and Repair of 1418 Firebreak Road in Chula Vista Station Area of Responsibility of the U.S. Border Patrol (USBP), San Diego Sector dated August, 2020, prepared by the United States Customs and Border Protection Agency (CPB). Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife.

### **CDFW ROLE**

CDFW is California's **Trustee Agency** for fish and wildlife resources and holds those resources in trust by statute for all the people of the state. (Fish & Game Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a).) CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (*Id.*, § 1802).

CDFW is also submitting comments as a Responsible Agency under CEQA (Public Resources Code, § 21069; CEQA Guidelines, § 15381). CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code, including lake and streambed alteration regulatory authority (Fish & Game Code, § 1600 et seq.). Likewise, to the extent implementation of the Project as proposed may result in "take", as defined by State law, of any species protected under the California Endangered Species Act (CESA) (Fish & Game Code, § 2050 et seq.), or state-listed rare plant pursuant to the Native Plant Protection Act (NPPA; Fish and Game Code, §1900 et seq.) authorization as provided by the applicable Fish and Game Code will be required.

### **PROJECT DESCRIPTION SUMMARY**

**Proponent:** United States Customs and Border Patrol (CPB)

**Objective:** The proposed Project would result in improvements along the 1418 Firebreak Road (Road) which is used by the United States Border Patrol (USBP) to secure the United States/Mexico international border. The Road is located south of Otay Lakes Road, and crosses

John Patrilla  
Border Patrol Air & Marine Program  
September 18, 2020  
Page 2

through Otay Mountain Ecological Reserve, owned and managed by CDFW, the San Diego National Wildlife Refuge, owned by the United States Fish and Wildlife Service (USFWS), the Otay Wilderness, owned and managed by the Bureau of Land Management (BLM), and City of Chula Vista land which is managed by the County of San Diego. The EA discusses three potential Project Alternatives.

Alternative 1 (the Proposed Action)

Alternative 1 (the Proposed Action) would result in improvements to a 4,558 linear foot portion of the Road between Otay Lakes Road to the border of the Otay Wilderness area, crossing CDFW-owned, and USFWS-owned property.

The Road in its existing condition, consists of two parallel tire tracks with a strip of low-growth vegetation between them. The Road does not receive regular maintenance and the Road has degraded, resulting in poor drainage and erosion issues. The Proposed Action would upgrade the existing Road from a Functional Classification (FC) -4 road, consisting of the two-track road two track road with a width of 10-12 feet, to an FC-2 road. The upgraded FC-2 road would consist of an unpaved, all-weather road consisting of a surface of imported aggregate material such as milled bituminous material or processed stone and gravel. The Road would be a 24-foot-wide road with two lane passage capabilities. The improved Road would have upgraded drainage features, including water bars, water cutouts, and rip rap crossings. A 4 percent cross-slope drainage gradient would be graded so that water would run off the surface to a drainage system such as a street gutter or ditch. Parallel ditches with a 1-vertical to 3-horizontal (1V:3H) front slope and 1-vertical to 4-horizontal (1V:4H) backslope would be cut on the downslope side of the Road to allow for proper drainage.

Imported roadway material would be added to the Road to achieve a minimum 150- millimeter (6-inch) deep, well-graded roadbed shaped with a defined crown section. All necessary materials such as gravel, topsoil, or fill would be from existing developed or previously used sources, not from undisturbed areas adjacent to the project area.

A series of seven water bars, which are frequently spaced constructed drainage devices that use road material mounded in the Road surface to interrupt the flow of water and divert it off the Road surface, would be constructed along the Road throughout the project area. The finished Road would be a reinforced roadbed with a nontoxic soil stabilizer (e.g., Lignin, Soiltac, Envirotec, or some other suitable soil stabilizer) applied during the late summer/early fall months.

Heavy equipment would be needed for activities such as grading, filling, and compacting. Equipment staging would occur on the existing Road footprint or at existing CBP laydown yards, including an area within the Otay Mountain Ecological Reserve, to the south of Otay Lakes Road and adjacent to Jamul Creek. All equipment would be hauled into work sites as needed. Required equipment would likely include dump trucks, road graders, backhoes, bulldozers, drum roller/compactors, and water trucks. Any subsequent maintenance activities would be confined to the existing Road footprint.

Alternative 2

Alternative 2 would result in improvements to the entire 12,983 linear foot Road between Otay Lakes Road to the to the point where the Road terminates on the City of Chula Vista property that is surrounded by the Otay Mountain Wilderness area. A series of 9 water bard would be spaced

John Patrilla  
Border Patrol Air & Marine Program  
September 18, 2020  
Page 3

out along the Road. Any subsequent maintenance activities would be confined to the existing Road footprint.

### Alternative 3

Alternative 3 would make improvements to the Road resulting in an an FC-2 level, all-weather roadway for 4,885 ft from Otay Lakes Road to a point where the Road enters the Otay Mountain Wilderness on BLM property. However, under this alternative, the Road would not be widened as it would be under the Proposed Action. All drainage and other improvements that would be implemented under the Proposed Action would also be implemented for Alternative 3.

One turnout would be added. This alternative would minimize ground disturbance and would not change the existing footprint. Seven water bars would be installed in locations where washouts occur to allow the agents to drive on the designated Road rather than seek an alternate route during flood events. All construction methods would be as described in the Proposed Action.

Under Alternative 3, maintenance and repair of the Road would include reactive maintenance and repair activities and preventive/scheduled maintenance and repair activities designed to ensure ongoing operability and environmental stewardship. All maintenance and repair activities would be as described in the Proposed Action but would be confined to the current Road footprint. As with the Proposed Action, locations where a secondary trail has been created due to impassable road conditions would be restored upon completion of the project. The addition of material to the Road would be kept to the minimum amount needed to achieve the proposed objective.

**Location:** The project is in Proctor Valley, San Diego County, California, Latitude 32°38'5.93"N, Longitude, 116°52'5.72"W. The valley is situated north of Otay Mountain and east of Lower Otay Lake. The Road connects to the south of a gated junction with Otay Lakes Road. The Road terminates on the City of Chula Vista property that is surrounded by the Otay Mountain Wilderness area.

**Timeframe:** Project start and end dates were not disclosed.

## **COMMENTS AND RECOMMENDATIONS**

CDFW offers the comments and recommendations below to assist the CPB in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources. Editorial comments or other suggestions may also be included to improve the document.

Based on the potential for the Project to have a significant impact on biological resources, CDFW concludes that additional avoidance and minimization and/or mitigation measures are likely appropriate for the Project to avoid or mitigate any potentially significant biological effects and should be addressed in the Final EA.

CDFW emphasizes prioritization of impact avoidance over minimization and/or mitigation measures. Due to the potential impacts to biological resources and special status species and their habitat associated with road widening in the Preferred Alternative and Alternative 2, CDFW concludes that Alternative 3, which avoids road widening, would be the preferred alternative.



John Patrilla  
Border Patrol Air & Marine Program  
September 18, 2020  
Page 4

### **COMMENT # 1: California Environmental Quality Act**

The Project passes through the Otay Mountain Ecological Reserve, a CDFW owned and managed property, as well as property owned by the City of Chula Vista that is managed by the County of San Diego. The California Environmental Quality Act (CEQA) requires that state agencies shall regulate the activities of private individuals, corporations, and other public agencies whose activities may affect the environment shall regulate to prevent environmental damage (Pub. Resources Code, § § 21000 - 21178, and Title 14 CCR, § 753, and Chapter 3, § § 15000 - 15387).

Projects that are subject to environmental review under CEQA are defined as a the “whole of the action” which has potential to cause either a direct physical change to the environment, or a reasonably foreseeable indirect physical change in the environment, which may be subject to several discretionary approvals by governmental agencies (CEQA Guidelines, §15378(a)(c), and § § 21065 & 21080(a)).

The proposed Project, including the Proposed Action, and Alternatives 2 and 3, consist of such discretionary actions on lands subject to state agency jurisdictional areas that may be subject to CEQA environmental review requirements. CDFW recommends the Final EA work to incorporate avoidance, minimization, and mitigation practices that meet the standards for environmental protection afforded by CEQA guidelines in order to avoid project delays from subsequent environmental review.

### **COMMENT # 2: Least Bell's Vireo**

#### **Appendix G, Section 1.5.1, Page # 5**

**Issue:** Least Bell's vireo is a species listed under the California Endangered Species Act (CESA) and the Federal Endangered Species Act (FESA). The project staging area is adjacent to suitable least Bell's vireo breeding habitat. The proposed Best Management Practices (BMP's) may not provide adequate protection to least Bell's vireo nesting pairs.

**Specific Issue:** Section 1.5.1 of the EA lists BMPs to reduce potential impacts to least Bell's vireo, stating that the CPB will:

1. Conduct pre-construction surveys between February 15 and August 15, to determine if least Bell's vireo are nesting within 300 feet of construction activities.
2. If a nest is found, establish either an 8-foot tall plywood sound wall as far from the nest as possible, but no less than 50 feet between construction and the nest, or conduct sound analysis and monitoring to demonstrate that noise does not exceed 60 Db sustained for an hour at the nest site during project activities.

CDFW advises against reliance on pre-construction surveys to detect CESA-listed species. Deferring impact assessment and disclosure to pre-construction surveys may be inadequate to meet the standards of the CEQA environmental review (see Comment 1). If Project related activities are conducted during least Bell's vireo nesting season, the proposed BMPs may not adequately protect nesting pairs from disturbance.

**Why impact would occur:** Birds that display high site fidelity, such as least Bell's vireo, return to the same nesting site annually. The high likelihood of a least Bell's vireo occurrence adjacent to

John Patrilla  
Border Patrol Air & Marine Program  
September 18, 2020  
Page 5

the proposed Project staging area is supported by suitable breeding habitat along Jamul Creek and a 2010 California Natural Diversity Database observation of these species in the vicinity of the Project. Reliance solely on pre-construction surveys proposed as BMP 1 of section 1.5.1 of this EA may be inadequate to detect the presence of least Bell's vireo. Without focused surveys conducted by a biologist familiar with the species behavior and life history, nesting pairs of least Bell's vireo may go undetected.

BMP 2 of section 1.5.1 of this EA does not specify a buffer distance between the nest and sound wall or other Project activities. BMP 2 may be inadequate to protect least Bell's vireo from direct impacts via noise, percussive vibration, and human disturbance that could reasonably occur during implementation Project related construction. Anthropogenic noise can disrupt the communication of many wildlife species including frogs, birds, and bats (Sun and Narins 2005, Patricelli and Blickley 2006, Gillam and McCracken 2007, Slabbekoorn and Ripmeester 2008). Noise can also affect predator-prey relationships as many nocturnal animals such as bats and owls primarily use auditory cues (i.e., hearing) to hunt. Additionally, many prey species increase their vigilance behavior when exposed to noise because they need to rely more on visual detection of predators when auditory cues may be masked by noise (Rabin et al. 2006, Quinn et al. 2017). Noise has also been shown to reduce the density of nesting birds (Francis et al. 2009) and cause increased stress that results in decreased immune responses (Kight and Swaddle 2011).

**Evidence Impact Would Be Significant:** Take of least Bell's vireo, through nest abandonment or reproductive suppression, may constitute take under CESA which would be considered a significant impact absent appropriate mitigation. CESA, as defined by State law, prohibits take of any species protected under the CESA (Fish & Game Code, § 2050 et seq.)

Fish and Game Code § 3503 makes it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by Fish and Game Code or any regulation made pursuant thereto. Fish and Game Code § 3503.5 makes it unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by Fish and Game Code or any regulation adopted pursuant thereto. Fish and Game Code § 3513 makes it unlawful to take or possess any migratory nongame bird or part thereof except as provided by the rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Bird Treaty Act of 1918 (MBTA; 16 U.S.C. § 703 et seq.) before January 1, 2017, and subsequent rules and regulations adopted pursuant to the MBTA that are consistent with the Fish and Game Code.

**To Reduce Impacts to Less Than Significant:** To reduce impacts to least Bell's vireo to less than significant, CDFW recommends limiting Project related activities in the staging area adjacent to Jamul creek to outside the nesting season (February 1 to September 15).

#### **Mitigation Measures:**

**Mitigation Measure #1:** CDFW recommends focused surveys be conducted within the same year as Project related activities will be conducted, but prior to initiation of Project related activities. The surveys should be conducted by a qualified biologist with knowledge of least Bell's vireo behavior and life history, including the songs, whisper songs, calls, scolds, and plumage characteristics of adult and juvenile vireos. The United States Fish and Wildlife Service (USFWS) has created a protocol to facilitate accurate assessments of the presence/absence of the CESA-listed and FESA-listed least Bell's vireo which can be found at

[https://www.fws.gov/ventura/docs/species/protocols/lbv/leastbellsvireo\\_survey-guidelines.pdf](https://www.fws.gov/ventura/docs/species/protocols/lbv/leastbellsvireo_survey-guidelines.pdf).

John Patrilla  
Border Patrol Air & Marine Program  
September 18, 2020  
Page 6

Surveys should be conducted following the USFWS protocol within the Project and an adjacent 500-foot buffer in order to analyze the potential significant effects of the proposed Project on the species.

**Mitigation Measure #2:** CDFW recommends implementation of a 500-foot minimum avoidance buffer for any detected least Bell's vireo or other special status passerine species. The avoidance buffer zone should exclude placement of equipment or structures, as well as exclude anthropogenic activities that may cause visual or audible disturbances. If this buffer cannot be maintained, or if the Project or any Project-related activity may result in take of least Bell's vireo, CDFW recommends that the Project proponent seek appropriate take authorization under CESA prior to implementing the Project. Appropriate authorization from CDFW may include an Incidental Take Permit (ITP).

**Mitigation Measure #3:** CDFW recommends the Project restrict use of equipment and lighting to hours least likely to disrupt wildlife (e.g., not at night or in early morning before 9 a.m.). CDFW recommends use of noise suppression devices that can be installed as close to the source as possible, such as mufflers or enclosure for generators. Sounds generated from any means should be below the 55-60 dB range within 50-feet from the source. Generators should not be used except for temporary use in emergencies. Power to sites can be provided by solar PV (photovoltaic) systems, cogeneration systems (natural gas generator), or small wind turbine systems.

### **Comment #3: Lake and Streambed Alteration Agreement**

#### **Framework for Analysis, Section 1.5, Page #1-7**

**Issue:** The EA does not specify if Project activities will be conducted within ephemeral streams, washes, watercourses with a subsurface flow, and/or floodplains. Project-related activities within any stream (e.g., drainage, swale, or waterway) within the proposed Project area may be subject to notification requirements pursuant to Lake and Streambed Alteration Agreement (LSAA), Fish and Game Code, §§ 1600 *et. seq.* Notification is required for any activity that will substantially divert or obstruct the natural flow; change or use material from the bed, channel, or bank including associated riparian or wetland resources; or deposit or dispose of material where it may pass into a river, lake or stream.

**Specific Impact:** The improvements to Road drainage, as proposed in the Preferred Action and Alternatives 2 and 3, may result in alteration of site hydrology requiring the construction of stormwater outlets (such as culvert or rip-rap outlets) into streams subject to LSAA notification.

**Why Impact Would Occur:** Ground disturbing activities such as grading, filling, and water diversions would physically remove or otherwise alter existing streams or their function and associated habitat on the Project site. Permanent alterations to stream hydrology may result from additional flow inputs associated with the stormwater outlets during high flow events. Downstream streams and associated biological resources beyond the Project area may also be impacted by Project related releases of sediment resulting from construction activities.

**Evidence Impact Would Be Significant:** Construction of stormwater outlets may result in temporary and permanent impacts to streambed area(s). In the absence of specific mitigation measures, substantial adverse effects to the existing stream hydrology downstream due to

John Patrilla  
Border Patrol Air & Marine Program  
September 18, 2020  
Page 7

increased flows released at the stormwater outlet during high flow events could result in substantial erosion or siltation on site or off site of the Project.

**Recommended Potentially Feasible Mitigation Measure(s):**

**Mitigation Measure #1:** If the Project, including the Proposed Action or Alternatives 2 or 3, support streams, CDFW recommends that plans be designed to avoid impacts to this resource.

**Mitigation Measure#2:** If avoidance is not feasible the Project applicant (or “entity”) must provide written notification to CDFW pursuant to section 1600 *et seq.* of the Fish and Game Code. Based on this notification and other information, CDFW determines whether a LSAA with the applicant is required prior to conducting the proposed activities. A notification package for a LSAA may be obtained by accessing CDFW’s web site at [www.wildlife.ca.gov/habcon/1600](http://www.wildlife.ca.gov/habcon/1600).

CDFW’s issuance of an LSAA for a Project that is subject to CEQA will require CEQA compliance actions by CDFW as a Responsible Agency. As a Responsible Agency, CDFW may consider the CEQA document of the Lead Agency for the Project. To minimize additional requirements by CDFW pursuant to Fish and Game code section 1600 *et seq.* and/or under CEQA, the CEQA document should fully identify the potential impacts to the stream or riparian resources and provide adequate avoidance, mitigation, monitoring and reporting commitments for issuance of the LSAA.

**Mitigation Measure #3:** Any LSAA issued for the Project by CDFW may include additional measures protective of streambeds on and downstream of the Project. The LSAA may include further erosion and pollution control measures. To compensate for any on-site and off-site impacts to riparian resources, additional mitigation conditioned in any LSAA may include the avoidance of resources, on-site or off-site creation, enhancement or restoration, and/or protection and management of mitigation lands in perpetuity.

**Mitigation Measure #4:** CDFW recommends the Project proponent actively implement Best Management Practices (BMPs) to prevent erosion and the discharge of sediment and pollutants into ephemeral stream beds during Project activities. BMPs should be monitored and repaired, if necessary, to ensure maximum erosion, sediment, and pollution control. The Project proponent shall prohibit the use of erosion control materials potentially harmful to fish and wildlife species, such as mono-filament netting (erosion control matting) or similar material, within stream areas. All fiber rolls, straw wattles, and/or hay bales utilized within and adjacent to the Project site shall be free of nonnative plant materials. Fiber rolls or erosion control mesh shall be made of loose-weave mesh that is not fused at the intersections of the weave, such as jute, or coconut (coir) fiber, or other projects without welded weaves. Non-welded weaves reduce entanglement risks to wildlife by allowing animals to push through the weave, which expands when spread.

To minimize additional requirements by CDFW pursuant to section Fish and Game code section 1600 *et seq.* and/or under CEQA, the Final EA document should fully identify the potential impacts to the stream or riparian resources and provide adequate avoidance, mitigation, monitoring and reporting commitments for issuance of the LSAA.

**Comment #4: Quino Checkerspot Butterfly and California Coastal Gnatcatcher**

**Threatened and Endangered Species, Section 3.6.2.1, Pages 3-24-3.28**

John Patrilla  
Border Patrol Air & Marine Program  
September 18, 2020  
Page 8

**Issue:** The Otay Mountain Ecological Reserve, and the San Diego National Wildlife Refuge, and the Otay Mountain Wilderness Area, contain designated critical habitat for the FESA listed Quino checkerspot butterfly (*Euphydryas editha quino*) and California coastal gnatcatcher (*Poliioptila californica californica*). The Project may result in temporary and permanent impacts to Quino checkerspot butterfly and California coastal gnatcatcher within their designated Critical Habitat areas.

**Specific Issue:** The Proposed Action and Alternative 2 would result in Road widening which would reduce the amount of available habitat causing direct impacts for the two listed species.

The Project, including the Proposed Action, and Alternatives 2 and 3, would improve the existing Road into an all-weather road. Post-improvements, there would be a reasonably foreseeable increase in Road traffic.

**Why Impact Would Occur:** The Proposed Action and Alternative 2 would result in the widening of the Road into an FC-2 all-weather two-lane road of approximately 24 feet across with additional width from drainage ditches. Road widening would result in a reduction of Critical Habitat for Quino checkerspot butterfly and California coastal gnatcatcher and removal of any host plants for the Quino checkerspot butterfly which may be adjacent to the Project area.

The Proposed Action, Alternative 2 and Alternative 3 will improve Road accessibility and may result in increased noise, lighting, off-road vehicle usage, and likelihood for introduction of invasive and non-native species into habitat that was previously undisturbed prior to Project implementation.

**Why Impact Would Be Significant:** The Quino checkerspot butterfly and California coastal gnatcatcher may be impacted by habitat loss through direct removal to accommodate Road widening, or indirect impacts due to habitat degradation.

In the absence of project specific mitigation measures to reduce impacts to nesting California coastal gnatcatcher, project activities may result in take of nesting birds through direct habitat removal during nesting season or through human related disturbance such as increased construction related noises and lighting.

The Quino checkerspot butterfly is threatened by elimination, fragmentation, and degradation of habitat caused by changes in land use, exotic plants, and impacts from off-road vehicles (USFWS, 2009). Increased Road accessibility may increase the likelihood of off roading, impacting larval host plants eggs, and butterfly larva.

Both species are listed as endangered under the FESA. FESA Section 9 prohibits take of any fish or wildlife species listed as endangered, including the destruction of habitat that prevents the species' recovery. "Take" is defined as any action or attempt to hunt, harm, harass, pursue, shoot, wound, capture, kill, trap, or collect a species. Both species meet the CEQA definition of rare, threatened or endangered species (CEQA Guidelines, § 15065). CDFW would consider any project activity causing take of Quino checkerspot butterfly or California coastal gnatcatcher to be potentially significant.

**Mitigation Measure #1:** CDFW recommends that the Final EA should include an analysis of the project area to specify the amount (in acres) of suitable and/or occupied Quino checkerspot

John Patrilla  
Border Patrol Air & Marine Program  
September 18, 2020  
Page 9

butterfly and California coastal gnatcatcher habitat that may be lost as a result of this Project, including the Proposed Action, and Alternative 2 and 3 scenarios.

The USFWS has prepared survey protocols that contain recommended guidelines to assess the Project site for suitable habitat and species occupancy:

- *Quino Checkerspot Butterfly (Euphydryas editha quino) Survey Protocol Information*, prepared by the USFWS in February, 2002, is available at the following link: [https://www.fws.gov/ventura/docs/species/protocols/qcbf/qchkrsptbfly\\_survprotocols.pdf](https://www.fws.gov/ventura/docs/species/protocols/qcbf/qchkrsptbfly_survprotocols.pdf)
- *Coastal California Gnatcatcher (Polioptila californica californica) Presence/Absence Survey Guidelines* prepared by the USFWS in February 28, 1997, is available at the following link: [https://www.fws.gov/ventura/docs/species/protocols/cagn/coastal-gnatcatcher\\_survey-guidelines.pdf](https://www.fws.gov/ventura/docs/species/protocols/cagn/coastal-gnatcatcher_survey-guidelines.pdf)

**Mitigation Measure #2:** CDFW recommends that the Project activities be scheduled seasonally to avoid impacts to the Quino checkerspot butterfly during reproduction season (February 15 to August 31) and to avoid impacts or take of nesting California coastal gnatcatcher (typical nesting season for this species is between February 15- August 31).

**Mitigation Measure #3:** In order to mitigate against the degradation of Critical Habitat for both species, CDFW recommends the development of a monitoring and adaptive management plan to effectively control and remove noxious and problematic weeds adjacent to the roadside.

**Mitigation Measure #4:** CDFW recommends the Final EA propose a ratio of no less than 2:1 habitat creation for permanent loss of critical habitat as a result of the Project activities. CDFW recommends a 3:1 ratio of creation for impacts to occupied habitat. CDFW requests any on-site mitigation plans be submitted for review and comment prior to initiation.

## General Comments

**Comment #4:** CDFW recommends following the conservation measures (CM's) provided by the USFWS (included as Attachment 1 of this comment letter) to further reduce and mitigate for species impacts during Project construction activities.

**Comment #5:** The Proposed Alternative would result in Road widening of 4,558 linear feet of the Road which terminates at the border between the USFWS owned land and the BLM owned designated wilderness area. Under the Proposed Action and Alternatives section on pages 2-1 through 2-4 of the EA, policy constraints prohibiting road maintenance or improvements on BLM land which has been designated as a wilderness area are discussed. The section also discusses potential mechanisms in which the existing regulations governing wilderness designated areas may provide exceptions to the current constraints.

The Road improvements proposed as the Proposed Action and Alternatives 2 and 3 will improve access to the Road, which is currently unmaintained. Under the Proposed Alternative and Alternative 3, improvement to the Road would terminate after 4,558 linear feet where the Road enters the designated wilderness area. It is reasonably foreseeable that improvements on the upper portion of the Road providing increased accessibility could increase traffic on this portion, resulting in increased pressure to make exceptions to the existing regulatory constraints in the designated wilderness area in order to complete the Road improvement project. CDFW

John Patrilla  
Border Patrol Air & Marine Program  
September 18, 2020  
Page 10

recommends the Final EA include a section to discuss the potential for growth inducing impacts, including the potential for Road widening through the wilderness area if the Proposed Alternative is implemented.

**Comment #6:** The first paragraph under the Road Maintenance and Repair heading included in Appendix A, page A-1, states that maintenance and repair of FC-1 and FC-2 roads within state, county, or municipal government's purview is completed by their transportation departments. Portions of the Road, including the Preferred Alternative, and Alternatives 2 and 3, fall within the Otay Mountain Ecological Reserve, owned and managed by CDFW. CDFW requests that the CPB coordinate with CDFW to clarify details on road maintenance responsibilities in the Final EA.

**Comment #7:** The Otay Mountain Ecological Reserve provides recreational opportunities for deer hunting. Seasonal work restrictions recommended in this comment letter that were incorporated to avoid sensitive species breeding seasons may cause Project related construction activities to overlap with a period of heavy recreational use of the Reserve during the fall hunting season. Construction activities could potentially impact normal biological movement patterns of prey species, resulting in altered hunter constituent use patterns. CDFW recommends that the Final EA incorporate a discussion over potential impacts of altered constituent use patterns (including both potential ecological impacts and anthropogenic) into the Recreation and Access section of the Final EA, Section 3.13. CDFW also requests CPB coordinate with CDFW on potential avoidance and minimization measures to reduce any potential impacts prior to issuance of the Final EA.

**Comment #8:** The proposed Project entry and exit gate on the Otay Mountain Ecological Reserve is prohibited from motorized vehicle usage by the public (as recognized in Section 1.2 of the EA). CDFW is concerned that unauthorized vehicle use on the Otay Mountain Ecological Reserve may increase during the Project related construction period. CDFW recommends that CPD implement an on-site security monitoring plan to prevent unauthorized vehicles from entering the property. CDFW requests that the gate remain closed and locked at all times, in the absence of CPB-provided onsite security to control access thru the gate.

### **Editorial Comments**

**Comment #9:** In the third paragraph of page 1-7, the EA describes CEQA's relevance due to the likely requirement to obtain Section 401 certification from the San Diego Regional Water Quality Control Board for potential discharge to state or tribal waters, including wetlands. CDFW recommends that this paragraph be amended in the Final EA to include that a notification may be submitted to CDFW for a LSAA if Project activities impact streams. If significant impacts to least Bell's vireo cannot be avoided, CDFW recommends this paragraph also indicate Project proponent will seek appropriate take authorization under CESA prior to implementing the Project which may include an Incidental Take Permit (ITP).

**Comment #10:** Appendix A includes a standardized diagram depicting the proposed Road improvements to an FC-2 all-weather road. CDFW requests the Final EA include project specific designs for the proposed Road improvements which may be constructed as a result of this Project, including diagrams for the Proposed Alternative, and Alternatives 2 and 3.

### **ENVIRONMENTAL DATA**

CDFW requests the USFS report any special status species and natural communities detected during Project surveys to the California Natural Diversity Database (CNDDDB). The CNDDDB field

John Patrilla  
Border Patrol Air & Marine Program  
September 18, 2020  
Page 11

survey form can be found at the following link:

[http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/CNDDB\\_FieldSurveyForm.pdf](http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/CNDDB_FieldSurveyForm.pdf). The completed form can be mailed electronically to CNDDDB at the following email address: [CNDDDB@wildlife.ca.gov](mailto:CNDDDB@wildlife.ca.gov).

The types of information reported to CNDDDB can be found at the following link:

[http://www.dfg.ca.gov/biogeodata/cnddb/plants\\_and\\_animals.asp](http://www.dfg.ca.gov/biogeodata/cnddb/plants_and_animals.asp).

## CONCLUSION

CDFW appreciates the opportunity to comment on the EA to assist the CPB in identifying and mitigating Project impacts on biological resources.

Questions regarding this letter or further coordination should be directed to Audrey Kelly, Environmental Scientist at (562) 430-7882 or [Audrey.Kelly@wildlife.ca.gov](mailto:Audrey.Kelly@wildlife.ca.gov).

Sincerely,

DocuSigned by:



B6E58CFE24724F5...

Erinn Wilson

Environmental Program Manager

ec: CDFW - South Coast Region  
Jenifer Turner, Senior Environmental Scientist (Supervisory)  
[Jenifer.Turner@wildlife.ca.gov](mailto:Jenifer.Turner@wildlife.ca.gov)

Tracie Nelson, South San Diego Reserve Manager  
[Tracie.Nelson@wildlife.ca.gov](mailto:Tracie.Nelson@wildlife.ca.gov)

David Mayer, Environmental Program Manager  
[David.Mayer@wildlife.ca.gov](mailto:David.Mayer@wildlife.ca.gov)

Susan Howell, Staff Services Analyst  
[Susan.Howell@wildlife.ca.gov](mailto:Susan.Howell@wildlife.ca.gov)

Audrey Kelly, Environmental Scientist  
[Audrey.Kelly@wildlife.ca.gov](mailto:Audrey.Kelly@wildlife.ca.gov)

CEQA Program Coordinator  
[ceqacommentletters@wildlife.ca.gov](mailto:ceqacommentletters@wildlife.ca.gov)

## ATTACHMENTS

1. *U.S. Fish and Wildlife Service comments on the 1418 Fire Break Road Project Draft Environmental Assessment*, letter written by the USFWS dated September 11, 2020.

## REFERENCES



John Patrilla  
Border Patrol Air & Marine Program  
September 18, 2020  
Page 12

Francis, C. D., C. P. Ortega, and A. Cruz. 2009. Noise pollution changes avian communities and species interactions. *Current Biology* 19:1415–1419.

Gillam, E. H., and G. F. McCracken. 2007. Variability in the echolocation of *Tadarida brasiliensis*: effects of geography and local acoustic environment. *Animal Behaviour* 74:277–286.

Kight, C. R., and J. P. Swaddle. 2011. How and why environmental noise impacts animals: An integrative, mechanistic review. *Ecology Letters* 14:1052–1061.

Patricelli, G., and J. J. L. Blickley. 2006. Avian communication in urban noise: causes and consequences of vocal adjustment. *Auk* 123:639–649.

Rabin, L. A., R. G. Coss, and D. H. Owings. 2006. The effects of wind turbines on antipredator behavior in California ground squirrels (*Spermophilus beecheyi*). *Biological Conservation* 131:410–420.

Slabbekoorn, H., and E. A. P. Ripmeester. 2008. Birdsong and anthropogenic noise: Implications and applications for conservation. *Molecular Ecology* 17:72–83.

Sun, J. W. C., and P. M. Narins. 2005. Anthropogenic sounds differentially affect amphibian call rate. *Biological Conservation* 121:419–427.

United States Fish and Wildlife Service, Carlsbad Fish and Wildlife Office. 2009. Quino Checkerspot Butterfly (*Euphydryas editha quino*) 5-Year Review: Summary and Evaluation.



# United States Department of the Interior



FISH AND WILDLIFE SERVICE  
San Diego National Wildlife Refuge Complex  
1080 Gunpowder Point Drive  
Chula Vista, CA 91910  
Phone (619) 476-9150; Fax (619) 476-9149

September 11, 2020

John P. Petrilla  
U.S. Border Patrol  
Border Patrol and Air & Marine Program Management Office  
24000 Avila Road, Suite 5020  
Laguna Niguel, California 92677

Subject: U.S. Fish and Wildlife Service comments on the 1418 Fire Break Road Project  
Draft Environmental Assessment

Dear Mr. Petrilla:

Thank you for the opportunity to provide comments on the 1418 Fire Break Road Project Draft Environmental Assessment (EA). This road crosses the San Diego National Wildlife Refuge (Refuge), and has been the subject of discussion between our agencies for over a decade.

Our primary comment is that Alternative 3 would be preferred by our agency over what is described in the EA as the proposed action of Alternative 1. Alternative 3 would have a much smaller road width and thus a smaller impact area to the Refuge and adjacent State of California lands. This alternative reduces impacts to federally listed threatened and endangered species and their designated Critical Habitats. Reducing impacts also reduces overall project costs and the conservation measures that Border Patrol would carry out to offset the project impacts.

We appreciate the close coordination between our agencies and look forward to continued work on this and other projects or concerns. Please let us know if you have any questions about our comments by contacting Jill Terp, Deputy Project Leader, at [Jill\\_Terp@fws.gov](mailto:Jill_Terp@fws.gov) or 619-719-8579.

Sincerely,

Andrew Yuen  
Project Leader

Enclosures – Specific comments on EA

The following recommendations are based on our review of proposed Best Management Practices (BMPs) provided by Customs and Border Protection (CBP) on August 2020, species occurrence information available in our records and our knowledge of sensitive and declining vegetation communities in San Diego County. The BMPs contain detailed measures to address environmental impacts during construction and will contribute to avoiding and minimizing impacts to some of the sensitive species listed above. In addition, if possible, we recommend that CBP consider the following additional measures to avoid and minimize potential impacts to the sensitive species and critical habitats that occur in the project area.

### **General Measures**

- CM 1. Project construction will occur during daylight hours. However, if temporary night work is required, night lighting will be of the lowest illumination necessary for human safety, selectively placed, shielded and directed away from natural habitats.
- CM 2. The applicant will ensure that the following conditions are implemented during project construction:
  - a. Employees will strictly limit their activities, vehicles, equipment, and construction materials to the fenced project footprint and designated staging areas and routes of travel. The construction area(s) will be the minimal area necessary to complete the project and will be specified in construction plans;
  - b. To avoid attracting predators of the gnatcatcher, the project site will be kept as clean of debris as possible. All food related trash items will be enclosed in sealed containers and regularly removed from the site;
  - c. Disposal or temporary placement of excess fill, brush or other debris will not be allowed in waters of the United States or their banks;
  - d. Pets of project personnel will not be allowed on the project site; and
  - e. Impacts from fugitive dust will be avoided and minimized through watering and other appropriate measures

### **Quino checkerspot butterfly**

- CM 3. CBP will temporarily fence the limits of the project footprint including staging areas and access routes, to prevent additional habitat impacts and install erosion control devices to prevent the spread of silt from the construction zone into adjacent habitats to be avoided. Erosion control devices, (e.g., fiber rolls and bonded fiber matrix) will be made from biodegradable materials such as jute, with no plastic mesh, to avoid creating a wildlife entanglement. Fencing and erosion control devices will be installed in a manner that does not impact habitats to be avoided. CBP will submit to the Service for approval, at least 14 days prior to initiating project impacts, the final plans for initial clearing/grubbing of

habitat and project construction. These final plans will include photographs that show the temporary fencing and erosion control devices. If work occurs beyond the fenced limits of impact, all work will cease until the problem has been remedied to the satisfaction of the Service. Any habitat impacts that occur beyond the approved fenced will be offset at a minimum 5:1 ratio. Temporary fencing and erosion control devices will be removed upon project completion.

CM 4. Initial vegetation clearing/grubbing and project construction will occur outside the Quino reproduction season (February 15 to August 31). If these activities are necessary between February 15 and August 31, CBP will conduct Quino and host plant surveys as outlined in 3.c. in the impact area within 1 week prior to impacts.

CM 5. CBP will staff a Quino biologist<sup>1</sup> who will be responsible for monitoring and reporting compliance with avoidance and minimization measures for biological resources during work activities addressed in the biological opinion. The Quino biologist will perform the following:

- a. Be on site during all vegetation clearing/grubbing and project construction within 500 feet of habitat to be avoided;
- b. Oversee installation of and inspect the fencing and erosion control measures a minimum of once per week and daily during all rain events to ensure that any breaks in the fence or erosion control measures are repaired immediately;
- c. Conduct Quino and host plant surveys in the impact area within 1 week prior to impacts. If found, host plants will be flagged and avoided to the maximum extent practicable. If host plants cannot be avoided, the Quino biologist will survey for Quino adults, larvae, and eggs within the impact area. The Quino biologist will salvage and/or relocate any Quino adults, larvae, and host plants containing eggs and larvae found in the impact area to a location supporting suitable Quino habitat that will not be impacted. The Service will be notified of any Quino relocation within 24 hours following relocation.
- d. Periodically monitor the work area to ensure that work activities do not generate excessive amounts of dust;
- e. Train all contractors and construction personnel on the biological resources associated with this project and ensure that training is implemented by construction personnel. At a minimum, training will include: (i) the purpose for resource protection; (ii) a description of the sensitive species found on site and their habitat(s); (iii) the conservation measures that should be implemented during project construction to conserve sensitive species, including strictly limiting activities, vehicles, equipment, and construction materials to the disturbance area

---

<sup>1</sup> The Quino biologist will have at least 2 years of experience working with all stages of Quino including adults, eggs, all larval instars, larval webbing, and pupae; and ability to identify Quino larval host and nectar plants in the field.

to avoid sensitive resource areas in the field (i.e., avoided areas delineated on maps or on the project site by fencing); (iv) environmentally responsible construction practices as outlined in measure 7; (v) the protocol to resolve conflicts that may arise at any time during the construction process; (vi) the general provisions of the Act, the need to adhere to the provisions of the Act, the penalties associated with violating the Act;

- f. Halt work, if necessary, and confer with the Service to ensure the proper implementation of species and habitat protection measures. The biologist will report any violation to the Service within 24 hours of its occurrence;
- g. Submit weekly email reports (including photographs of impact areas) to the Service during vegetation clearing and/or project construction within 500 feet of avoided habitat. The weekly reports will document that authorized impacts were not exceeded, work did not occur within the 500 foot setback except as approved by the Service and general compliance with all conditions. The reports will also outline the duration of monitoring, the location of construction activities, the type of construction which occurred, and equipment used. These reports will specify numbers, locations, and sex of sensitive species observed and remedial measures employed to avoid, minimize, and mitigate impacts to sensitive species. Raw field notes should be available upon request by the Service; and
- h. Submit a final report to the Service within 60 days of project completion that includes: as-built construction drawings with an overlay of habitat that was impacted and avoided, photographs of habitat areas that were to be avoided, and other relevant summary information documenting that authorized impacts were not exceeded and that general compliance with all conditions of this consultation was achieved.

CM 6. If soil binding agents will be used equip road water trucks with calibrated soil stabilizer spray bars that minimizes the potential for overspray onto adjacent vegetation and pooling of soil stabilizer liquid within the roadway.

### **Coastal California Gnatcatcher and Least Bell's vireo**

CM 7. Initial clearing/grubbing of vegetation, and to the maximum extent practicable project construction within 500 feet of avoided gnatcatcher and vireo habitat, will occur between September 15 and February 14 to avoid the gnatcatcher and vireo breeding seasons (or sooner if surveys determine that all nesting is complete). If project construction within 500 feet of avoided gnatcatcher and vireo habitat is necessary between February 15 and September 15, CBP will conduct gnatcatcher and vireo nest surveys as outlined in CM 3.b.

CM 8. A gnatcatcher and vireo biologist will be onsite during: (a) initial clearing/grubbing of vegetation; and (b) project construction within 500 feet of avoided gnatcatcher and vireo habitat to ensure compliance with applicable conservation measures for gnatcatcher and vireo. The biologist must be knowledgeable of gnatcatcher and vireo biology and

ecology. CBP will submit the biologist's name, address, telephone number, and work schedule on the project to the Service at least 14 days prior to initiating project impacts. The biologist will perform the following duties:

- a. Perform a minimum of three focused surveys, on separate days, to determine the presence of gnatcatchers outside the gnatcatcher breeding season. Surveys will begin a maximum of 7 days prior to performing vegetation clearing/grubbing, and one survey will be conducted the day immediately prior to the initiation of clearing/grubbing. If any gnatcatchers are found within the disturbance area, the biologist will direct construction personnel to begin vegetation clearing/grubbing in an area away from the gnatcatchers. It will be the responsibility of the biologist to ensure that gnatcatchers are not in the vegetation to be cleared/grubbed. The biologist will also record the number and location of gnatcatchers disturbed by vegetation clearing/grubbing. CBP will notify the Service at least 7 days prior to vegetation clearing/grubbing to allow the Service to coordinate with the biologist on bird flushing activities;
- b. Perform a minimum of three focused surveys, on separate days, to determine the presence of gnatcatcher and vireo nest building activities, egg incubation activities, or brood rearing activities within 500 feet of any project construction during the gnatcatcher and vireo breeding seasons. The surveys will begin a maximum of 7 days prior to vegetation clearing/grubbing or project construction and one survey will be conducted the day immediately prior to the initiation of work. Additional surveys will be done once a week during project construction in the breeding season. These additional surveys may be suspended as approved by the Service. CBP will notify the Service at least 7 days prior to the initiation of surveys and within 24 hours of locating any gnatcatchers.
- c. If an active gnatcatcher or vireo nest is found in or within 500 feet of project construction, the biologist will postpone work within 500 feet of the nest and contact the Service to discuss: (i) the best approach to avoid/minimize impacts to nesting birds (e.g., sound walls); and (ii) a nest monitoring program acceptable to the Service. Subsequent to these discussions, work may be initiated subject to implementation of the agreed upon avoidance/minimization approach and nest monitoring program. Nest success or failure will be established by regular and frequent trips to the site, as determined by the biologist and through a schedule approved by the Service. The biologist will determine whether bird activity is being disrupted. If the biologist determines that bird activity is being disrupted, CBP will stop work and coordinate with the Service to review the avoidance/minimization approach. Coordination between CBP and Service to review the avoidance/minimization approach will occur within 48 hours. Upon agreement as to the necessary revisions to the avoidance/minimization approach, work may resume subject to the revisions and continued nest monitoring. Nest monitoring will continue until fledglings have dispersed or the nest has been determined to be a failure, as approved by the Service;

- d. Oversee installation of and inspect temporary fencing and erosion control measures within or up-slope of avoided and/or preserved areas a minimum of once per week during installation and daily during all rain events until established to ensure that any breaks in the fence or erosion control measures are repaired immediately.
- e. Periodically monitor the work area to ensure that work activities do not generate excessive amounts of dust.
- f. Train all contractors and construction personnel a maximum of 14 days prior to project construction on the biological resources associated with the projects and ensure that training is implemented by construction personnel. At a minimum, training will include: (i) the purpose for resource protection; (ii) a description of the gnatcatcher and vireo and their habitats; (iii) the conservation measures given in the biological opinion that should be implemented during project construction to conserve the sensitive resource, including strictly limiting activities, vehicles, equipment, and construction materials to the fenced project footprint to avoid sensitive resource areas in the field (i.e., avoided areas delineated on maps or on the project site by fencing); (iv) environmentally responsible construction practices; (v) the protocol to resolve conflicts that may arise at any time during the construction process; and, (vi) the general provisions of the Act, the need to adhere to the provisions of the Act, and the penalties associated with violating the Act.
- g. Halt work, if necessary, and confer with the Service to ensure the proper implementation of gnatcatcher and vireo and habitat protection measures. The project biologist will report any violation to the Service within 24 hours of its occurrence.
- h. Submit weekly letter reports (including photographs of impact areas) via regular or electronic mail (email) to the Service during initial clearing/grubbing of vegetation and/or project construction within 500 feet of avoided gnatcatcher and vireo habitat, or unless otherwise authorized by the Service if requested by the applicant to cease weekly monitoring prior to completion of project construction. The weekly reports will document that authorized impacts were not exceeded, work did not occur within the 500-foot buffer or otherwise Service approved setback, and general compliance with all conditions. The reports will also outline the duration of gnatcatcher monitoring, the location of construction activities, the type of construction that occurred, and equipment used. These reports will specify numbers and locations of gnatcatchers and vireos and nests, sex of gnatcatchers and vireos, observed gnatcatcher and vireo behavior (especially in relation to construction activities), and remedial measures employed to avoid, minimize, and mitigate impacts to gnatcatchers and vireos and nests. Raw field notes should be available upon request by the Service.

- i. Submit a final report to the Service within 60 days of project completion that includes: (i) as-built construction drawings with an overlay of habitat that was impacted and avoided, (ii) photographs of habitat areas that were to be avoided, and (iii) summary of all gnatcatcher and vireo and nest observations, and iv) other relevant summary information documenting that authorized impacts were not exceeded and that general compliance with all CMs was achieved.

CM 9. The Mitigation Management Plan will include the following information and conditions:

- a. All final specifications and topographic-based grading, planting and irrigation plans. All habitat restoration sites will be prepared for planting by decompacting the top soil in a way that mimics natural habitat top soil to the maximum extent practicable while maintaining slope stability. Topsoil and plant materials salvaged from the habitat areas to be impacted will be transplanted to, and/or used as a seed/cutting source for, the habitat restoration areas to the maximum extent practicable as approved by the Service. Planting and irrigation will not be installed until the Service has approved of upland habitat restoration site grading. All planting will be installed in a way that mimics natural plant distribution, and not in rows. Planting will include pockets of coastal sage scrub surrounded by more herbaceous annuals associated with Quino habitat;
- b. Planting palettes (plant species, size and number/acre) and seed mix (plant species and pounds/acre). The upland plant palette proposed in the draft plans will include native species specifically associated with the habitat type(s). Unless otherwise approved by the Service, only locally native species (no cultivars) obtained within as close to the project area as possible will be used. The source and proof of local origin of all plant material and seed will be provided;
- c. Container plant survival will be 80 percent of the initial plantings for the first 5 years. At the first and second anniversary of plant installation, all dead plants will be replaced unless their function has been replaced by natural recruitment;
- d. A final implementation schedule that indicates when all upland habitat impacts, as well as restoration/enhancement grading, planting and irrigation will begin and end. Upland habitat restoration/enhancement grading, planting and irrigation will be completed during the concurrent or next planting season (i.e., late fall to early spring) after finishing grading within the restoration/enhancement area. Any temporal loss of upland habitat caused by delays in restoration/enhancement will be offset through upland habitat restoration/enhancement at a 0.5:1 ratio for every 6 months of delay (i.e., 1:1 for 12 months delay, 1.5:1 for 18 months delay, etc.). In the event that CBP is wholly or partly prevented from performing obligations under the final plans (causing temporal losses due to delays) because of unforeseeable circumstances or causes beyond their reasonable control, and without the fault or negligence of CBP, CBP will be excused by such unforeseeable cause(s);



- e. Restoration maintenance will be conducted outside the Quino reproduction season (February 15 to August 31). If maintenance is needed between February 15 and August 31, a Quino biologist will conduct host plants surveys within the maintenance area within 1 week prior to work. If found, host plants will be flagged and avoided.
- f. Five years of success criteria for restoration areas including: a total of no more than 50 percent absolute cover of shrub species; evidence of natural recruitment of multiple species; 0 percent coverage for Cal-IPC List A and B species, and no more than 10 percent coverage for other exotic/weed species;
- g. A qualitative and quantitative vegetation monitoring plan with a map of proposed sampling locations. Photo points will be used for qualitative monitoring and stratified-random sampling will be used for all quantitative;
- h. Contingency measures in the event of restoration/enhancement failure; and
- i. Annual mitigation maintenance and monitoring reports will be submitted to the Service after the maintenance and monitoring period and no later than December 1 of each year.

### **Vernal pool restoration**

- CM 10. CBP will submit a final vernal restoration/enhancement plan to the Service for approval 60 days prior to initiating project impacts. The final plan will include the following information and conditions:
- a) Implementation of the restoration/enhancement will be conducted under the direction of a qualified biologist (vernal pool restoration specialist) with at least three years of vernal pool restoration experience, to be approved by the Service;
  - b) To avoid impacts to any extant vernal pools, all conservation measures required at the project construction site to avoid and minimize impacts to adjacent vernal pools and their watersheds should also be implemented at the restoration/enhancement site and thus specified in the restoration/enhancement plan.
  - c) All vernal pools to be avoided and their watersheds will be enhanced as appropriate to achieve the same success criteria as the restored pools and surrounding uplands. Enhancement activities will include addition of vernal pool plant species and addition of coastal sage scrub/native grassland plant species in the surrounding uplands. All plant material used for enhancement will be collected from local sources as close to the site as feasible;
  - d) All restoration/enhancement activities will commence the first summer-fall season prior to or concurrently with the initiation of project impacts;

- e) All final specifications and topographic-based grading, planting and watering plans for the vernal pools, watersheds and surrounding uplands (including adjacent mima mounds) at the restoration sites. Grading plans will have 0.1-foot contours. Vernal pool size and depth will be similar to extant pools closest to the restoration area. The grading plans will also show the watersheds of extant vernal pools, and overflow pathways that hydrologically connect the restored pools in a way that mimics natural vernal pool complex topography/hydrology;
- f) A hydraulic analysis that shows each proposed vernal pool and its watershed, the vernal pool to watershed ratio, and hydrologic connection between the pools. The vernal pool to watershed ratio will be similar to extant pools closest to the restoration area. Restored pools and their watersheds will not impact the watersheds of any extant pools except where needed to establish hydrologic connections;
- g) If inoculum will be used for restoration/enhancement, the plan will identify any proposed donor pools and include documentation that they are free of versatile fairy shrimp (*Branchinecta lindahli*). No more than 5 percent of the basin area of any donor pool will be used for collection of inoculum. Collection of inoculum from Agency approved donor pools will be consistent with Conservation Measure 8;
- h) Inoculum and planting will not be installed until the Service has approved of habitat restoration site grading. All planting will be installed in a way that mimics natural plant distribution, and not in rows. Inoculum will not be introduced into the restored pools until after they have been demonstrated to retain water for the appropriate amount of time to support San Diego fairy shrimp and have been surveyed for versatile fairy shrimp to the satisfaction of the Service. If versatile fairy shrimp are detected in the restored or enhanced pools, inoculum will not be introduced until measures approved by the Service are implemented in attempt to remove the versatile fairy shrimp from the pools. Inoculum will be spread evenly over the surface, no more than 0.25 inch deep. If there is any ponding water at the time of soil inoculation, the soil will only be placed on the wet soil adjacent to the ponded areas. Inoculum will be placed into the bottoms of the restored/enhanced pools in a manner that preserves, to the maximum extent possible, the orientation of the fairy shrimp cysts and plant seeds within the surface layer of soil (e.g., collected inoculum will be shallowly distributed within the pond so that cysts have the potential to be brought into solution upon inundation)
- i) Plant palettes (species, size and number/acre) and seed mix (species and pounds/acre) will be included in the restoration/enhancement plan. The plant palette will include native species specifically associated with the on-site habitat type(s). The source and proof of local origin of all plant material and seed will be provided;

- j) Native plants and animals will be established within the restored/enhanced pools, their watersheds and surrounding uplands. This can be accomplished by redistributing topsoil containing seeds, spores, bulbs, eggs, and other propagules from affected pools and adjacent vernal pool and upland habitats; by the translocation of propagules of individual species; and by the use of commercially available native plant species. Any vernal pool inoculum or plant material from an off-site source must be approved by the Service. Topsoil and plant materials from the native habitats to be affected on-site will be applied to the watersheds of the restored/enhanced pools to the maximum extent practicable. Exotic weed control will be implemented within the restoration/enhancement areas to protect and enhance habitat remaining on-site;
- k) In the event that natural rain is inadequate to support plant establishment, artificial watering of the restored/enhanced pools and their watersheds may be done upon approval by the Service. Any artificial watering will be done in a manner that prevents ponding in the pools. Any water to be used will be identified and documented to be free of contaminants that could harm the pools;
- l) Use of herbicides within and immediately adjacent to restored/enhanced pools will only be used under conditions authorized by the Service. All herbicide and pesticide use will be under the direction of a licensed pest control advisor and will be applied by a licensed applicator, under the supervision of a vernal pool restoration specialist. Glyphosate-based herbicides, such as RoundUp or Aquamaster, will be applied on all areas that have been dethatched. Herbicide will only be applied when wind speed is less than 5 miles per hour to reduce the potential for drift. Spray nozzles will be of a design to maximize the size of droplets and thus reduce the potential for drift of herbicide to nontarget plants. A 10-foot buffer will be maintained around concentrations of any sensitive plant species. Application of herbicide will not occur if rain is projected within 24 hours of the scheduled application activity. When vernal pools are ponding or close to saturation, only hand herbicide application will be used in the pools. Herbicide spraying will be permitted, but applicators will stay at least 3 feet from the edge of the vernal pools. The saturated glove technique will be used around the edges of pools that are ponded by specially trained herbicide applicators under the direct supervision of the vernal pool restoration specialist. If weeds are not completely controlled by herbicide, then weed populations will be removed by weed trimming. Weed trimming will be used on the specific patches of sensitive plants to establish a buffer around the populations. Hand weeding will generally only be used around the vernal pools and other sensitive resources;
- m) A final implementation schedule that indicates when all vernal pool impacts, as well as vernal pool restoration/enhancement grading and planting will begin and end. A temporal loss of vernal pools should be avoided by initiating the restoration work prior to or concurrent with impacts. This will minimize the length of time inoculum is kept in storage and ensure that there is appropriate habitat to translocate it to.

- n) Five years of monitoring and success criteria for vernal pool and upland habitat restoration/enhancement areas that includes quantitative hydrological, vegetation transects, viable cyst, hatched fairy shrimp, and gravid female measurements, and complete floral and fauna inventories, and photographic documentation. To minimize impacts to the vernal pool's soil surface during monitoring, cobbles should be oriented within the restored vernal pools to serve as stepping stone;
- o) Restoration success for fairy shrimp will be determined by measuring the ponding of water, and density of viable cysts, hatched fairy shrimp, and gravid females, within the restored pools. Water measurements will be taken in the restored pools to determine the depth, duration and quality (e.g., pH, temperature, total dissolved solids, and salinity) of ponding. Dry samples will be taken in the restored pools to determine the density of viable cysts in the soils. Wet samples will also be taken in the restored pools to determine the density of hatched fairy shrimp and gravid females. The pools must pond for a period of time similarly to reference vernal pools during an average rainfall year and at an appropriate depth and quality to support fairy shrimp. The hatched fairy shrimp, and gravid female density of the restored pools must not differ significantly ( $p < 0.05$ ) from reference pools for, at least, three wet seasons before a determination of success can be made. The average viable cyst density of the restored pools must not differ significantly ( $p < 0.05$ ) from reference pools at the end of the monitoring period before a determination of success can be made. Vernal pools selected as reference or control pools for evaluating restoration success will be identified and described in the restoration plan. Alternate methods of determining success may be used upon approval by the Service;
- p) Monitoring and success criteria for vernal pool and upland restoration/enhancement areas will include: coastal sage scrub/native grassland species richness and cover criteria for all five years of monitoring; 0 percent cover for weed species categorized as High or Moderate in the Cal-IPC Invasive Plant Inventory and relative cover of all other weed species is no more than 5 percent and 10 percent coverage in the pools basins and watersheds, respectively, for other exotic/weed species for all five years of the monitoring period. Container plant survival will be 80 percent of the initial plantings for the first five years. At the first and second anniversary of plant installation, all dead plants will be replaced unless their function has been replaced by natural recruitment. The method used for monitoring will be described and a map of proposed sampling locations will be included. Photo points will be used for qualitative monitoring and stratified-random sampling will be used for all quantitative monitoring;
- q) Verification that restoration/enhancement of vernal pool is complete will require written sign-off by the Service. If a performance criterion is not met for any of the restored/enhanced vernal pools or upland habitat in any year, or if the final success criteria are not met, CBP will prepare an analysis of the cause(s) of failure and, if deemed necessary by the Service, propose remedial actions for approval. If any of the restored/enhanced vernal pools or upland habitat have not

met a performance criterion during the initial five-year period, CBP's maintenance and monitoring obligations will continue until the Service deems the restoration/enhancement successful, or contingency measures must be implemented. Restoration/enhancement will not be deemed successful until at least two years after any significant contingency measures are implemented, as determined by the Service;

- r) Annual reports will be submitted the Service by December 1 of each year that assess both the attainment of yearly success criteria and progress toward the final success criteria. The reports will also summarize the project's compliance with all Service biological opinion conservation measures and terms and conditions. The first annual report will include as built grading, planting, and watering plans for the vernal pool restoration;

**From:** [Nicolas Frederick](#)  
**To:** [David Boyes](#); [Hannah Kopydlowski](#)  
**Subject:** FW: COSD comment letter - 1418 Firebreak Road  
**Date:** Monday, September 14, 2020 4:36:45 PM  
**Attachments:** [image001.jpg](#)  
[image002.jpg](#)  
[2020-09-14 COSD Comment Letter - 1418 Firebreak Road.pdf](#)  
[Attachment A.pdf](#)  
**Importance:** High

---

FYI

**Nicolas Frederick**

Senior Project Manager

**DAWSON**

Mobile: 919.698.8060

---

**From:** PETRILLA, JOHN <[JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov)>  
**Sent:** Monday, September 14, 2020 4:18 PM  
**To:** FREDERICK, NICOLAS B (CTR) <[NICOLAS.B.FREDERICK@associates.cbp.dhs.gov](mailto:NICOLAS.B.FREDERICK@associates.cbp.dhs.gov)>; Nicolas Frederick <[nfrederick@dawson8a.com](mailto:nfrederick@dawson8a.com)>  
**Subject:** FW: COSD comment letter - 1418 Firebreak Road  
**Importance:** High

Hi Nic,

Please see comments on the 1418 Firebreak Road from the County of San Diego.

Regards,

John

---

**From:** Ippolito, Sharon <[Sharon.Ippolito@sdcounty.ca.gov](mailto:Sharon.Ippolito@sdcounty.ca.gov)>  
**Sent:** Monday, September 14, 2020 11:20 AM  
**To:** PETRILLA, JOHN <[JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov)>  
**Cc:** Mayorga, Marvin <[Marvin.Mayorga@sdcounty.ca.gov](mailto:Marvin.Mayorga@sdcounty.ca.gov)>; Wilson, Adam <[Adam.Wilson@sdcounty.ca.gov](mailto:Adam.Wilson@sdcounty.ca.gov)>; Boghossian, Nicole <[Nicole.Boghossian@sdcounty.ca.gov](mailto:Nicole.Boghossian@sdcounty.ca.gov)>; Aquino, Emmet <[Emmet.Aquino@sdcounty.ca.gov](mailto:Emmet.Aquino@sdcounty.ca.gov)>; Lardy, Eric <[Eric.Lardy@sdcounty.ca.gov](mailto:Eric.Lardy@sdcounty.ca.gov)>; Vertino, Timothy <[Timothy.Vertino@sdcounty.ca.gov](mailto:Timothy.Vertino@sdcounty.ca.gov)>  
**Subject:** COSD comment letter - 1418 Firebreak Road  
**Importance:** High

**CAUTION:** This email originated from outside of DHS. DO NOT click links or open attachments unless you recognize and/or trust the sender. Contact the [CBP Security Operations Center](#) with questions or concerns.

Good Morning, Mr. Petrilla,

Attached is the County of San Diego's comment letter regarding the request for input on the Notice of Availability (NOA) for Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for Proposed Improvement, Maintenance and Repair of 1418 Firebreak Road in

response to the U.S. Customs and Border Protection. Also attached is the COSD comment letter from 5/30/19 (Attachment A).

Please review the letter, and let me know if you have any questions.

Thank you,

Sharon

**Sharon Ippolito**, Administrative Analyst III  
Inter-Jurisdictional Notice Coordinator  
Planning & Development Services  
County of San Diego Land Use & Environment Group  
O: (858) 495-5450





# County of San Diego

**MARK WARDLAW**  
DIRECTOR

PLANNING & DEVELOPMENT SERVICES  
5510 OVERLAND AVENUE, SUITE 310, SAN DIEGO, CA 92123  
(858) 505-6445 General • (858) 694-2705 Codes • (858) 565-5920 Building Services  
[www.SDCPDS.org](http://www.SDCPDS.org)

September 14, 2020

Mr. John Petrilla  
Border and Marine Program Management Office  
U.S. Customs and Border Protection  
24000 Avila Road, Suite 5020  
Laguna Niguel, CA 92677

Via e-mail to: [John.P.Petrilla@cbp.dhs.gov](mailto:John.P.Petrilla@cbp.dhs.gov)

## **REQUEST FOR COMMENTS ON THE NOTICE OF AVAILABILITY FOR DRAFT ENVIRONMENTAL ASSESSMENT AND DRAFT FINDING OF NO SIGNIFICANT IMPACT FOR PROPOSED IMPROVEMENT, MAINTENANCE AND REPAIR OF 1418 FIREBREAK ROAD FOR THE U.S. CUSTOMS AND BORDER PROTECTION**

Dear Mr. Petrilla:

The County of San Diego (County) reviewed the U.S. Customs and Border Protection's (CBP) Request for Comments on the Notice of Availability (NOA) for Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for Proposed Improvement, Maintenance and Repair of 1418 Firebreak Road (Project), received on August 14, 2020.

The County appreciates the opportunity to review the Project and offers the following comments for your consideration. Please note that none of these comments should be construed as County support for this Project.

### **PARKS AND RECREATION**

1. Border Patrol has two Right-of-Entry (ROE) permits with the County Department of Parks and Recreation (DPR) for biological and cultural surveys (No. OR 2019 5-4) and fairy shrimp surveys (No. OR 2019 9-30) for this Project.
  - a. Fairy shrimp populations were detected through surveys. Please identify locations and include maps showing found fairy shrimp as well as mitigation areas. Part of the ROE is that Border Patrol will coordinate with DPR Rangers.
  - b. DPR has not yet received results of these surveys, the County requests property specific reports be provided to DPR per the conditions of the ROE permits.
    - i. As noted under standard conditions for the ROE Permit "Permittee shall submit raw data, draft findings, survey results and final reports to Permittor. prior to disseminating data to (1) academic publications, (2) print media, (3)



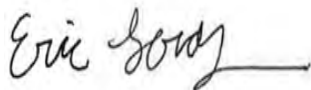
mass media, (4) social media, or (5) any other research organizations, public agencies, wildlife agencies and/or the general public, Permittee must submit all data to Permitter and take Permitter input/feedback into account. Permitter shall be allowed up to two weeks to review and respond to research findings before release. Any GIS data acquired shall also be submitted in SanBIOS format.”

2. A portion of the proposed road improvements are located with the Otay Ranch Preserve Owner/Manager (POM) Preserve (APN: 647-110-03-00). These lands are owned and managed jointly by the County and the City of Chula Vista POM for the purposes of species and open space conservation.
  - a. Any impacts or work carried out within the POM is required to utilize the Phase 2 Resource Management Plan policies and biological take requirements when conducting activities within the POM.
  - b. The County recommends relabeling Figure 1-2 “City land” to “Otay Ranch POM Preserve” and the figure legend should include this revised designation – On page 3-4 of the EA, there is a statement that City of Chula Vista owns the property with no mention of the County co-owning the property. This should be another recommended revision.
3. This area is not open to the public, there are no formal trails on this parcel and USBP access to the parcel currently outlined in the ROE permit No. OR 2019 5-4.
  - a. Under 3.13.3 Recreation and Access- Environmental Consequences: Alternatives 1-3 pose both direct, minor to moderate impacts to recreational resources.
  - b. The County requests additional information on Best Management Practices and mitigation to address these impacts.
4. Formalizing the road may inadvertently encourage members of the public to access these areas as hiking or Off-Highway Vehicle (OHV) trails, due to proximity to the Bureau of Land Management (BLM) Wilderness and BLM Public Lands. DPR requests that access issues be analyzed in the EA.
5. Formalization of this access would require a 3rd party license agreement with the CBP, County, and City of Chula Vista for CBP to maintain and access the proposed improvements. Please contact DPR for more information on this.
6. The EA should consider findings made in the Phase 2 Resource Management Plan Update regarding section 3.2.5.1 County of San Diego Infrastructure and construction of public facilities or projects, such as circulation element roads and public infrastructure facilities. Particularly, the EA should ensure that any habitat protection or take of covered species is consistent with the County's Biological Mitigation Ordinance (BMO). Measures may include:

- a. The facility or Project is consistent with the County General Plan, the Multiple Species Conservation Program (MSCP) Plan and the County's MSCP Subarea Plan, as approved by the Board of Supervisors.
- b. All feasible mitigation measures have been incorporated into the facility or Project and there are no feasible, less environmentally damaging locations, alignments or non-structural alternatives that would meet Project objectives.
- c. Where the facility or project encroaches into a wetland or floodplain, mitigation measures are required that result in a net gain in wetland and/or riparian habitat.
- d. Where the facility or project encroaches into steep slopes, native vegetation will be used to revegetate, and landscape cut and fill areas;
- e. No mature riparian woodland is destroyed or reduced in size due to otherwise allowed encroachments;
- f. All Critical Populations of Sensitive Plant Species within the County's MSCP Subarea (Attachment C of Document No. 0769999 on file with the Clerk of the Board), Rare, Narrow Endemic Animal Species within the County's MSCP Subarea (Attachment D of Document No. 0769999 on file with the Clerk of the Board), Narrow, Endemic Plant Species within the County's MSCP's Subarea (Attachment E of Document No. 0769999 on file with the Clerk of the Board), and San Diego County Sensitive Plant Species, as defined herein will be avoided as required by, and consistent with, the terms of the County's MSCP Subarea Plan (County of San Diego 2012).
- g. DPR respectfully requests the CBP reach out and contact DPR as it relates to any proposed improvements within our Otay Ranch POM facilities. Additionally, DPR requests and appreciates early discussions as it relates to any needed agreements between Agencies to maintain and access the proposed improvements. Please contact DPR for more information on this.

The County appreciates the opportunity to comment on this Project. We look forward to receiving future documents related to this Project and providing additional assistance, at your request. If you have any questions regarding these comments, please contact Timothy Vertino, Land Use / Environmental Planner, at (858) 495-5468, or via e-mail at [timothy.vertino@sdcounty.ca.gov](mailto:timothy.vertino@sdcounty.ca.gov).

Sincerely,



Eric Lardy, AICP  
Chief, Advance Planning Division  
Planning & Development Services

Mr. Petrilla  
September 14, 2020  
Page 4

Enclosure:

Attachment A: Previous COSD Comment Letter

cc: Marvin Mayorga, Policy Advisor, Board of Supervisors, District 1  
Adam Wilson, Policy Advisor, Board of Supervisors, District 2  
Nicole Boghossian, CAO Staff Officer, LUEG  
Emmet Aquino, Park Project Manager, DPR



# County of San Diego

MARK WARDLAW  
DIRECTOR

PLANNING & DEVELOPMENT SERVICES  
5510 OVERLAND AVENUE, SUITE 310, SAN DIEGO, CA 92123  
(858) 505-6445 General • (858) 694-2705 Codes • (858) 565-5920 Building Services  
www.SDCPDS.org

KATHLEEN A. FLANNERY  
ASSISTANT DIRECTOR

May 30, 2019

Mr. John Petrilla  
Border and Marine Program Management Office  
U.S. Customs and Border Protection  
24000 Avila Road, Suite 5020  
Laguna Niguel, CA 92677

Via e-mail to: [John.P.Petrilla@cbp.dhs.gov](mailto:John.P.Petrilla@cbp.dhs.gov)

## REQUEST FOR COMMENTS ON THE U.S. CUSTOMS AND BORDER PROTECTION'S PREPARATION OF AN ENVIRONMENTAL ASSESSMENT ADDRESSING THE PROPOSED IMPROVEMENT, OPERATION, MAINTENANCE, AND REPAIR OF THE 1418 FIREBREAK ROAD IN THE U.S. BORDER PATROL SAN DIEGO SECTOR

Dear Mr. Petrilla,

The County of San Diego (County) reviewed the U.S. Customs and Border Protection's (CBP) Notice of Preparation of an Environmental Assessment Addressing the Proposed Improvement, Operation, Maintenance, and Repair of the 1418 Firebreak Road in the U.S. Border Patrol San Diego Sector (Project), dated April 30, 2019.

The County appreciates the opportunity to review the Project and offers the following comments for your consideration. Please note that none of these comments should be construed as County support for this Project.

### BIOLOGY

1. The proposed Project area is largely within the County's approved South County Multiple Species Conservation Program Subarea Plan (Subarea Plan). The Subarea Plan contains information on 85 plant and animal species that may be located within the proposed Project area and could be negatively affected (directly and indirectly) by Project installation.
2. The Subarea Plan is a useful resource for information pertaining to plant and animal species potentially located within the Project area and may assist in evaluating potential impacts and developing feasible mitigation measures.
3. Additional information for the Subarea Plan and its primary implementing local ordinance, the Biological Mitigation Ordinance (BMO), can be found at the following web pages:

- a. Subarea Plan: <https://www.sandiegocounty.gov/content/sdc/pds/mscp/sc.html>
  - b. BMO: <https://www.sandiegocounty.gov/content/sdc/pds/mscp/bmo.html>
  - c. Additional information regarding the County's Multiple Species Conservation Program is available at: <https://www.sandiegocounty.gov/pds/mscp/>
4. The Implementing Agreement for the MSCP states that "To the maximum extent appropriate, in any consultation under Section 7 of the ESA (16 U.S.C. § 1536) involving the County and/or an existing or prospective Third Party Beneficiary with regard to Covered Species Subject to Incidental Take, the USFWS shall ensure that the biological opinion issued in connection with the proposed project which is the subject of the consultation is consistent with the biological opinion issued in connection with the MSCP and Subarea Plan, provided that the proposed project is consistent with the MSCP and Subarea Plan. Any biological measures included under the terms and conditions of the Section 7 biological opinion shall, to the maximum extent appropriate, be consistent with the mitigation required by the County for the particular project or activity under the MSCP and Subarea Plan as implemented by this Agreement."

#### **PARKS AND RECREATION**

1. A portion of the proposed road improvements are located with the Otay Ranch Preserve, (APN: 647-110-03-00). These lands are managed jointly by the County and City of Chula Vista Preserve Owner Manager (POM) for the purposes of species and open space conservation. Any impacts or work carried out within the POM is required to utilize the Phase 2 Resource Management Plan policies and biological take requirements when conducting activities within the POM.
2. This area is not open to the public, there are no formal trails on this parcel and USBP access to the parcel currently outlined in the Right of Entry (ROE) permit No. OR 2019 5-4.
3. Formalizing the road may inadvertently encourage members of the public to access these areas as hiking or OHV trails, due to proximity to the BLM Wilderness and BLM Public Lands. The Department of Parks & Recreations (DPR) requests that access issues be analyzed in the EA
4. Formalization of this access would require a 3rd party license agreement with the CBP, County, and City of Chula Vista for CBP to maintain and access the proposed improvements. Please contact DPR for more information on this.
5. The Environmental Assessment (EA) should consider findings made in the Phase 2 Resource Management Plan Update regarding section 3.2.5.1 County of San Diego Infrastructure and construction of public facilities or projects, such as circulation element roads and public infrastructure facilities. Particularly, the EA should ensure that any habitat protection or take of covered species is consistent with the County's BMO. Measures may include:
  - a. The facility or project is consistent with the County General Plan, the MSCP Plan and the County's MSCP Subarea Plan, as approved by the Board of Supervisors.

- b. All feasible mitigation measures have been incorporated into the facility or project and there are no feasible, less environmentally damaging locations, alignments or non-structural alternatives that would meet project objectives;
  - c. Where the facility or project encroaches into a wetland or floodplain, mitigation measures are required that result in a net gain in wetland and/or riparian habitat.
  - d. Where the facility or project encroaches into steep slopes, native vegetation will be used to revegetate, and landscape cut and fill areas;
  - e. No mature riparian woodland is destroyed or reduced in size due to otherwise allowed encroachments;
  - f. All Critical Populations of Sensitive Plant Species within the County's MSCP Subarea (Attachment C of Document No. 0769999 on file with the Clerk of the Board), Rare, Narrow Endemic Animal Species within the County's MSCP Subarea (Attachment D of Document No. 0769999 on file with the Clerk of the Board), Narrow, Endemic Plant Species within the County's MSCP's Subarea (Attachment E of Document No. 0769999 on file with the Clerk of the Board), and San Diego County Sensitive Plant Species, as defined herein will be avoided as required by, and consistent with, the terms of the County's MSCP Subarea Plan (County of San Diego 2012).
6. DPR respectfully requests the CBP reach out and contact DPR as it relates to any proposed improvements within our Otay Ranch POM facilities. Additionally, DPR requests and appreciates early discussions as it relates to any needed agreements between Agencies to maintain and access the proposed improvements. Please contact DPR for more information on this.

## TRAFFIC

1. The Project proposes road improvements to Firebreak Road starting at Otay Lakes Road. Otay Lakes Road is a public County- maintained road. Please coordinate with the County Department of Public Works to obtain an encroachment permit when constructing improvements within the Otay Lakes Road right-of-way.

## WATERSHED PROTECTION PROGRAM

1. The proposed Project may generate potential pollutant and hydromodification impacts to adjacent private parcels and local receiving waters located in the unincorporated County. Therefore, the project may need to consider the following items:
  - a. San Diego Municipal Storm Water Permit Order No. R9-2013-0001, (as amended by Order Nos. R9-2015-0001 and R9-2015-0100). It is recommended that the project implement permanent Site Design, Source Control, Pollutant Control, and Hydromodification Management practices in accordance with the County of San Diego Model Best Management Practice (BMP) Design Manual ([http://www.sandiegocounty.gov/content/sdc/dpw/watersheds/DevelopmentandConstruction/BMP\\_Design\\_Manual.html](http://www.sandiegocounty.gov/content/sdc/dpw/watersheds/DevelopmentandConstruction/BMP_Design_Manual.html)). County staff is available as a resource to assist in project design to minimize impacts from stormwater runoff leaving the project site.

Mr. Petrilla  
May 30, 2019  
Page 4

- b. Construction BMPs and associated plans for conformance with the State of California's Construction General Permit.

The County appreciates the opportunity to comment on this Project. We look forward to receiving future documents related to this Project and providing additional assistance, at your request. If you have any questions regarding these comments, please contact Timothy Vertino, Land Use / Environmental Planner, at (858) 495-5468, or via e-mail at [timothy.vertino@sdcounty.ca.gov](mailto:timothy.vertino@sdcounty.ca.gov).

Sincerely,



Eric Lardy, AICP  
Chief, Advance Planning Division  
Planning & Development Services

E-mail cc: Victor Avina, Policy Advisor, Board of Supervisors, District 1  
Adam Wilson, Policy Advisor, Board of Supervisors, District 2  
Mel Millstein, Group Program Manager, LUEG  
Lara Barrett, CAO Staff Officer, LUEG  
Peter Eichar, Planning Manager, PDS  
Jeff Kashak, Land Use/Environmental Planner, DPW  
Emmet Aquino, Park Project Manager, DPR





# County of San Diego

**MARK WARDLAW**  
DIRECTOR

**PLANNING & DEVELOPMENT SERVICES**  
5510 OVERLAND AVENUE, SUITE 310, SAN DIEGO, CA 92123  
(858) 505-6445 General • (858) 694-2705 Codes • (858) 565-5920 Building Services  
[www.SDCPDS.org](http://www.SDCPDS.org)

**KATHLEEN A. FLANNERY**  
ASSISTANT DIRECTOR

May 30, 2019

Mr. John Petrilla  
Border and Marine Program Management Office  
U.S. Customs and Border Protection  
24000 Avila Road, Suite 5020  
Laguna Niguel, CA 92677

Via e-mail to: [John.P.Petrilla@cbp.dhs.gov](mailto:John.P.Petrilla@cbp.dhs.gov)

## **REQUEST FOR COMMENTS ON THE U.S. CUSTOMS AND BORDER PROTECTION'S PREPARATION OF AN ENVIRONMENTAL ASSESSMENT ADDRESSING THE PROPOSED IMPROVEMENT, OPERATION, MAINTENANCE, AND REPAIR OF THE 1418 FIREBREAK ROAD IN THE U.S. BORDER PATROL SAN DIEGO SECTOR**

Dear Mr. Petrilla,

The County of San Diego (County) reviewed the U.S. Customs and Border Protection's (CBP) Notice of Preparation of an Environmental Assessment Addressing the Proposed Improvement, Operation, Maintenance, and Repair of the 1418 Firebreak Road in the U.S. Border Patrol San Diego Sector (Project), dated April 30, 2019.

The County appreciates the opportunity to review the Project and offers the following comments for your consideration. Please note that none of these comments should be construed as County support for this Project.

### **BIOLOGY**

1. The proposed Project area is largely within the County's approved South County Multiple Species Conservation Program Subarea Plan (Subarea Plan). The Subarea Plan contains information on 85 plant and animal species that may be located within the proposed Project area and could be negatively affected (directly and indirectly) by Project installation.
2. The Subarea Plan is a useful resource for information pertaining to plant and animal species potentially located within the Project area and may assist in evaluating potential impacts and developing feasible mitigation measures.
3. Additional information for the Subarea Plan and its primary implementing local ordinance, the Biological Mitigation Ordinance (BMO), can be found at the following web pages:



- a. Subarea Plan: <https://www.sandiegocounty.gov/content/sdc/pds/mscp/sc.html>
  - b. BMO: <https://www.sandiegocounty.gov/content/sdc/pds/mscp/bmo.html>
  - c. Additional information regarding the County's Multiple Species Conservation Program is available at: <https://www.sandiegocounty.gov/pds/mscp/>
4. The Implementing Agreement for the MSCP states that "To the maximum extent appropriate, in any consultation under Section 7 of the ESA (16 U.S.C. § 1536) involving the County and/or an existing or prospective Third Party Beneficiary with regard to Covered Species Subject to Incidental Take, the USFWS shall ensure that the biological opinion issued in connection with the proposed project which is the subject of the consultation is consistent with the biological opinion issued in connection with the MSCP and Subarea Plan, provided that the proposed project is consistent with the MSCP and Subarea Plan. Any biological measures included under the terms and conditions of the Section 7 biological opinion shall, to the maximum extent appropriate, be consistent with the mitigation required by the County for the particular project or activity under the MSCP and Subarea Plan as implemented by this Agreement."

#### **PARKS AND RECREATION**

1. A portion of the proposed road improvements are located with the Otay Ranch Preserve, (APN: 647-110-03-00). These lands are managed jointly by the County and City of Chula Vista Preserve Owner Manager (POM) for the purposes of species and open space conservation. Any impacts or work carried out within the POM is required to utilize the Phase 2 Resource Management Plan policies and biological take requirements when conducting activities within the POM.
2. This area is not open to the public, there are no formal trails on this parcel and USBP access to the parcel currently outlined in the Right of Entry (ROE) permit No. OR 2019 5-4.
3. Formalizing the road may inadvertently encourage members of the public to access these areas as hiking or OHV trails, due to proximity to the BLM Wilderness and BLM Public Lands. The Department of Parks & Recreations (DPR) requests that access issues be analyzed in the EA
4. Formalization of this access would require a 3rd party license agreement with the CBP, County, and City of Chula Vista for CBP to maintain and access the proposed improvements. Please contact DPR for more information on this.
5. The Environmental Assessment (EA) should consider findings made in the Phase 2 Resource Management Plan Update regarding section 3.2.5.1 County of San Diego Infrastructure and construction of public facilities or projects, such as circulation element roads and public infrastructure facilities. Particularly, the EA should ensure that any habitat protection or take of covered species is consistent with the County's BMO. Measures may include:
  - a. The facility or project is consistent with the County General Plan, the MSCP Plan and the County's MSCP Subarea Plan, as approved by the Board of Supervisors.

- b. All feasible mitigation measures have been incorporated into the facility or project and there are no feasible, less environmentally damaging locations, alignments or non-structural alternatives that would meet project objectives;
  - c. Where the facility or project encroaches into a wetland or floodplain, mitigation measures are required that result in a net gain in wetland and/or riparian habitat.
  - d. Where the facility or project encroaches into steep slopes, native vegetation will be used to revegetate, and landscape cut and fill areas;
  - e. No mature riparian woodland is destroyed or reduced in size due to otherwise allowed encroachments;
  - f. All Critical Populations of Sensitive Plant Species within the County's MSCP Subarea (Attachment C of Document No. 0769999 on file with the Clerk of the Board), Rare, Narrow Endemic Animal Species within the County's MSCP Subarea (Attachment D of Document No. 0769999 on file with the Clerk of the Board), Narrow, Endemic Plant Species within the County's MSCP's Subarea (Attachment E of Document No. 0769999 on file with the Clerk of the Board), and San Diego County Sensitive Plant Species, as defined herein will be avoided as required by, and consistent with, the terms of the County's MSCP Subarea Plan (County of San Diego 2012).
6. DPR respectfully requests the CBP reach out and contact DPR as it relates to any proposed improvements within our Otay Ranch POM facilities. Additionally, DPR requests and appreciates early discussions as it relates to any needed agreements between Agencies to maintain and access the proposed improvements. Please contact DPR for more information on this.

## TRAFFIC

1. The Project proposes road improvements to Firebreak Road starting at Otay Lakes Road. Otay Lakes Road is a public County- maintained road. Please coordinate with the County Department of Public Works to obtain an encroachment permit when constructing improvements within the Otay Lakes Road right-of-way.

## WATERSHED PROTECTION PROGRAM

1. The proposed Project may generate potential pollutant and hydromodification impacts to adjacent private parcels and local receiving waters located in the unincorporated County. Therefore, the project may need to consider the following items:
  - a. San Diego Municipal Storm Water Permit Order No. R9-2013-0001, (as amended by Order Nos. R9-2015-0001 and R9-2015-0100). It is recommended that the project implement permanent Site Design, Source Control, Pollutant Control, and Hydromodification Management practices in accordance with the County of San Diego Model Best Management Practice (BMP) Design Manual ([http://www.sandiegocounty.gov/content/sdc/dpw/watersheds/DevelopmentandConstruction/BMP\\_Design\\_Manual.html](http://www.sandiegocounty.gov/content/sdc/dpw/watersheds/DevelopmentandConstruction/BMP_Design_Manual.html)). County staff is available as a resource to assist in project design to minimize impacts from stormwater runoff leaving the project site.

Mr. Petrilla  
May 30, 2019  
Page 4

- b. Construction BMPs and associated plans for conformance with the State of California's Construction General Permit.

The County appreciates the opportunity to comment on this Project. We look forward to receiving future documents related to this Project and providing additional assistance, at your request. If you have any questions regarding these comments, please contact Timothy Vertino, Land Use / Environmental Planner, at (858) 495-5468, or via e-mail at [timothy.vertino@sdcounty.ca.gov](mailto:timothy.vertino@sdcounty.ca.gov).

Sincerely,



Eric Lardy, AICP  
Chief, Advance Planning Division  
Planning & Development Services

E-mail cc: Victor Avina, Policy Advisor, Board of Supervisors, District 1  
Adam Wilson, Policy Advisor, Board of Supervisors, District 2  
Mel Millstein, Group Program Manager, LUEG  
Lara Barrett, CAO Staff Officer, LUEG  
Peter Eichar, Planning Manager, PDS  
Jeff Kashak, Land Use/Environmental Planner, DPW  
Emmet Aquino, Park Project Manager, DPR

**From:** [Nicolas Frederick](#)  
**To:** [Hannah Kopydlowski](#)  
**Subject:** FW: Request for Formal Section 7 Consultation for the Improvement of the 1418 Firebreak Road  
**Date:** Thursday, September 3, 2020 1:34:04 PM  
**Attachments:** [BA SDC CHU 1418 Firebreak Road Improvement.pdf](#)  
[LTR SDC CHU 1418 Firebreak Road Section 7 Consultation signed.pdf](#)

---

Can you add this to the project folder?

**Nicolas Frederick**

Senior Project Manager

**DAWSON**

Mobile: 919.698.8060

---

**From:** PETRILLA, JOHN <[JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov)>  
**Sent:** Thursday, September 3, 2020 11:57 AM  
**To:** rod dossey <[rod@bio-studies.com](mailto:rod@bio-studies.com)>; Diana Saucedo <[Diana@bio-studies.com](mailto:Diana@bio-studies.com)>; Nicolas Frederick <[nfrederick@dawson8a.com](mailto:nfrederick@dawson8a.com)>  
**Cc:** DEYOUNG, DONNA J. (CTR) <[donna.j.deyoung@cbp.dhs.gov](mailto:donna.j.deyoung@cbp.dhs.gov)>; SACOMAN, DANA (CTR) <[DANA.SACOMAN@associates.cbp.dhs.gov](mailto:DANA.SACOMAN@associates.cbp.dhs.gov)>; WALLS, DAVID (CTR) <[david.walls@associates.cbp.dhs.gov](mailto:david.walls@associates.cbp.dhs.gov)>; BARNES, MICHELLE L <[MICHELLE.L.BARNES@cbp.dhs.gov](mailto:MICHELLE.L.BARNES@cbp.dhs.gov)>  
**Subject:** FW: Request for Formal Section 7 Consultation for the Improvement of the 1418 Firebreak Road

Hi all,

I sent the BA for 1418 to USFWS yesterday. Please see attached and below and add to the project record. Thank you.

Regards,

John

**John Petrilla**

Acting Environmental Branch Chief

Border Patrol & Air and Marine Program Management Office

U.S. Customs and Border Protection

Office: (949) 643-6385

Mobile: (949) 278-0353

[john.p.petrilla@cbp.dhs.gov](mailto:john.p.petrilla@cbp.dhs.gov)

---

**From:** PETRILLA, JOHN  
**Sent:** Wednesday, September 2, 2020 2:28 PM  
**To:** Sobiech, Scott <[scott\\_sobiech@fws.gov](mailto:scott_sobiech@fws.gov)>  
**Cc:** ENRIQUEZ, PAUL <[paul.enriquez@cbp.dhs.gov](mailto:paul.enriquez@cbp.dhs.gov)>; Zoutendyk, David <[David\\_Zoutendyk@fws.gov](mailto:David_Zoutendyk@fws.gov)>; [Patrick\\_Gower@fws.gov](mailto:Patrick_Gower@fws.gov); Terp, Jill <[jill\\_terp@fws.gov](mailto:jill_terp@fws.gov)>  
**Subject:** Request for Formal Section 7 Consultation for the Improvement of the 1418 Firebreak Road

Mr. Sobiech,

Please see attached request for formal Section 7 consultation and Biological Assessment for a U.S. Customs and Border Protection proposal to improve the 1418 Firebreak Road in San Diego County, California.

If you have any questions or concerns, please let me know. Thank you.

Regards,  
John

**John Petrilla**  
Acting Environmental Branch Chief  
Border Patrol & Air and Marine Program Management Office  
U.S. Customs and Border Protection  
Office: (949) 643-6385  
Mobile: (949) 278-0353  
[john.p.petrilla@cbp.dhs.gov](mailto:john.p.petrilla@cbp.dhs.gov)



U.S. Customs and  
Border Protection

September 2, 2020

Scott Sobiech  
Field Supervisor, Carlsbad Fish and Wildlife Office  
U.S. Fish and Wildlife Service  
2177 Salk Avenue, Suite 250  
Carlsbad, CA 92008  
Sent via email to: [scott\\_sobiech@fws.gov](mailto:scott_sobiech@fws.gov)

SUBJECT: Request for Formal Section 7 Consultation for the 1418 Firebreak Road  
Improvement Project, San Diego County, California

Dear Mr. Sobiech:

U.S. Customs and Border Protection (CBP), under the Department of Homeland Security (DHS), is proposing to improve approximately 4,885-feet (0.92 miles) of 1418 Firebreak Road on Otay Mountain, in San Diego County, within the U.S. Border Patrol (USBP) San Diego Sector, Chula Vista Station (Proposed Action). Road improvement on 1418 Firebreak Road would be done in order to facilitate USBP patrol interdiction, and emergency response north of the border to deter and prevent illegal cross-border activity.

Enclosed is the Biological Assessment prepared for the 1418 Firebreak Road Improvement Project, San Diego County, California.

The project proposes to improve 1418 Firebreak Road from an existing unimproved road to a 10-foot wide all-weather roadway. As the road crosses through the San Diego National Wildlife Refuge (SDNWR), road improvements would be limited to the existing road footprint, with the exception of areas where drainage issues require placement of water bars.

Based on known occurrences and presence of suitable habitat in the immediate vicinity of the Proposed Action, the Biological Assessment evaluates the effect of the Proposed Action on the following federally listed wildlife species and their critical habitat, where applicable: San Diego fairy shrimp (*Branchinecta sandiegonensis*), Quino checkerspot butterfly (*Euphydryas editha quino*), coastal California gnatcatcher (*Polioptila californica californica*), and least Bell's vireo (*Vireo bellii pusillus*).

Based on the analysis concerning the effects of the Proposed Action on these species, and after considering the cumulative effects, CBP made the effects determinations shown below for each of the potentially affected species. These determinations represent the net effect of all positive and negative influences associated with the Proposed Action. They represent the overall finding concerning the need to consult, pursuant to Section 7 of the federal Endangered Species Act of 1973.

Mr. Sobiech

Page 2

**May Affect, Not Likely to Adversely Affect**

- coastal California gnatcatcher
- least Bell's vireo

**May Affect, Likely to Adversely Affect**

- San Diego fairy shrimp
- Quino checkerspot butterfly

We appreciate your assistance. If you have any questions or concerns, please contact Mr. John Petrilla by telephone at (949) 643-6385 or by email at [john.p.petrilla@cbp.dhs.gov](mailto:john.p.petrilla@cbp.dhs.gov).

Sincerely,



Paul Enriquez  
Acquisition, Real Estate and Environmental Director  
Infrastructure Program  
Program Management Office Directorate  
U.S. Border Patrol

cc (via email):

John Petrilla, CBP  
Jill Terp, USFWS, SDNWR  
Patrick Gower, USFWS, Carlsbad Fish and Wildlife Office  
David Zoutendyk, USFWS, Carlsbad Fish and Wildlife Office

Enclosure  
1418 Firebreak Road Improvement Project Biological Assessment



# 1418 FIREBREAK ROAD IMPROVEMENT PROJECT BIOLOGICAL ASSESSMENT

Task Order 34  
FME Contract: 433  
August 2020

**Prepared For:**

John Petrilla  
Environmental Protection Specialist  
Real Estate, Environmental, and Leasing Division  
Border Patrol & Air and Marine Program Management Office  
U.S. Customs and Border Protection  
[john.petrilla@dhs.gov](mailto:john.petrilla@dhs.gov)

Bio-Studies





This Page Left Intentionally Blank

# 1418 Firebreak Road Improvement Project Biological Assessment

## Table of Contents

ES. Executive Summary.....	1
1. Introduction .....	2
2. Project Description .....	5
2.1. Proposed Action .....	5
2.2. Project Components.....	6
3. Avoidance and Minimization Measures Proposed to Minimize Effects to Listed Species Incorporated into the Proposed Action .....	8
3.1. Listed Species Measures .....	8
3.2. Federal Migratory Bird Treaty Act.....	10
3.3. Biological Resource Measures .....	11
4. Existing Conditions and Description of the Project Area Affected by the Action.....	13
4.1. Surrounding Land Use.....	13
4.2. Habitat Types/Vegetation Community Classification .....	14
5. Description of Listed Species and Critical Habitat that may be Affected by the Action.	15
5.1. San Diego Fairy Shrimp .....	15
5.2. Quino checkerspot butterfly.....	17
5.3. Coastal California Gnatcatcher.....	20
5.4. Least Bell's Vireo.....	22
6. Analysis of Effects the Proposed Action may have on Listed Species .....	25
6.1. San Diego Fairy Shrimp .....	25
6.2. Quino Checkerspot Butterfly and Critical Habitat.....	25
6.3. Coastal California Gnatcatcher and Critical Habitat.....	26
6.4. Least Bell's Vireo and Critical Habitat.....	27
6.5. Cumulative Effects.....	28
6.6. Interrelated and Interdependent Effects .....	28
7. Conclusion .....	29
8. List of Preparers.....	31
9. References.....	32

## Tables

Table ES-1: Effect Determinations .....	1
Table 2-1: Vegetation Community Anticipated - Proposed Action.....	7
Table 4-1: Land Ownership in the Proposed Action Area .....	13
Table 4-2: Vegetation Communities in the Project Survey Area .....	14

## Appendices

Appendix A: Figures	
Appendix B: Agency Correspondence	
Appendix C: San Diego Fairy Shrimp Mitigation Area	
Appendix D: Quino Checkerspot Butterfly Mitigation Areas	

## Abbreviations

BA	Biological Assessment
BLM	Bureau of Land Management
BMP	Best Management Practices
BO	Section 7 Biological Opinion
BSR	Biological Survey Report
CAGN	California gnatcatcher ( <i>Polioptila californica californica</i> )
CBP	Customs and Border Protection
CDFW	California Department of Fish and Wildlife
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Data Base
DHS	U.S. Department of Homeland Security
EA	Environmental Assessment
ESA	Endangered Species Act
FC	Functional Classification
IPaC	Information for Planning and Consultation
LBVI	Least Bell's Vireo ( <i>Vireo bellii pusillus</i> )
MBTA	Migratory Bird Treaty Act of 1918
MSCP	Multiple Species Conservation Plan
OHV	Off-Highway Vehicle
OMER	Otay Mountain Ecological Reserve
PCE	Primary Constituent Element
POE	Port of Entry
QCB	Quino Checkerspot Butterfly ( <i>Euphydryas editha quino</i> )
RSFS	Riverside Fairy Shrimp ( <i>Streptocephalos woottoni</i> )
SDC	San Diego Sector
SDFS	San Diego Fairy Shrimp ( <i>Branchinecta sandiegonensis</i> )
SDNWR	San Diego National Wildlife Refuge
SR	State Route
USBP	United States Border Patrol
USC	United States Code
USFWS	United States Fish and Wildlife Service

## ES. Executive Summary

U.S. Customs and Border Protection (CBP) proposes to improve, maintain, and repair 1418 Firebreak Road in the western part of the U.S, Border Patrol (USBP) San Diego Sector (SDC) to support USBP operations in San Diego County. This is an existing road in poor condition due to the lack of routine maintenance. The objective of the Proposed Action is to improve existing unimproved 1418 Firebreak Road to an all-weather roadway. The roads crosses through San Diego National Wildlife Reserve (SDNWR) land on Otay Mountain.

The proposed road improvements would include importing roadway material to build a road cap, reshaping the road crown, and re-pitch/slope road to establish better drain lines to direct water flow; minor realignments; armoring eroded road edges with riprap to combat erosion; installing water bars at low water crossings; and applying a soil stabilizer, such as SoilTac™, to the finished road surface, and the use of staging areas for equipment. The improvements will establish an on average 10-foot wide all-weather roadway with drainage features.

This Biological Assessment (BA) has been prepared in accordance with the legal requirements set forth under regulations implementing Section 7 of the federal Endangered Species Act [ESA] (50 Code of Federal Regulations [CFR 402]; 16 United States Code [U.S.C.] 1536 (c)). The purpose of this BA is to review the proposed project in sufficient detail to determine if the proposed action may affect any federal threatened or listed endangered species and critical habitat.

CBP has determined that the project ‘may affect, likely to adversely affect’ San Diego fairy shrimp (*Branchinecta sandiegonensis*) and Quino checkerspot butterfly (*Euphydryas editha quino*) and its critical habitat. Mitigation has been proposed for these species. CBP has determined that the project ‘may affect, not likely to adversely affect’ coastal California gnatcatcher (*Polioptila californica californica*) and its critical habitat and least Bell’s vireo (*Vireo belli pusillus*) and its critical habitat; best management practices for both species have been proposed (Table ES-1). All four species are covered in detail in this Biological Assessment.

**Table ES-1: Effect Determinations**

Species	Scientific Name	Listing Status	Determination
San Diego fairy shrimp	<i>Branchinecta sandiegonensis</i>	Endangered with critical habitat	May affect, likely to adversely affect, species only
Quino checkerspot butterfly	<i>Euphydryas editha quino</i>	Endangered with critical habitat	May affect, likely to adversely affect
Coastal California gnatcatcher	<i>Polioptila californica californica</i>	Threatened with critical habitat	May affect, not likely to adversely affect
Least Bell’s vireo	<i>Vireo belli pusillus</i>	Endangered with critical habitat	May affect, not likely to adversely affect

## 1. Introduction

This Biological Assessment (BA) has been prepared in consideration of activities proposed by U.S. Customs and Border Protection (CBP) for the improvement and maintenance of 1418 Firebreak Road, located in southern San Diego, County. This BA provides support for Section 7 Consultation between the CBP and U.S. Fish and Wildlife Service (USFWS). The objective of the proposed project is to improve 1418 Firebreak Road from a Functional Classification 4 (FC-4), two track road to an all-weather roadway.

The proposed project Action Area is in Proctor Valley, San Diego County, California, located north of Otay Mountain and east of Lower Otay Lake (**Appendix A: Figure 1**). The 1418 Firebreak Road connects to a larger dirt road south of a gated junction with Otay Lakes Road. There are four owners of the land that the entirety of 1418 Firebreak Road crosses: California Department of Fish and Wildlife (CDFW), USFWS, Bureau of Land Management (BLM), and the City of Chula Vista (**Appendix A: Figure 2**). The closest international border crossing is approximately 6.75 miles southwest of the southern terminus of 1418 Firebreak Road at the San Ysidro Port of Entry (POE). The western portion of the 1418 Firebreak Road is on the USFWS SDNWR and is located within the proposed project Action Area. The Proposed Action's staging area and the access road from Otay Lakes Road is located on the CDFW -owned Otay Mountain Ecological Reserve (OMER). An additional section of the road crosses BLM administered land designated as the Otay Mountain Wilderness area, and land under the ownership of the City of Chula Vista. This section of road was evaluated during biological surveys but is not within the proposed Action Area. The road is currently used by CBP, the SDNWR staff, and the general public.

The biological and protocol surveys for the proposed project included a 50-foot Survey Area corridor from the road centerline, totaling a 100-foot wide boundary along the entire length of 1418 Firebreak Road. All biological resources within the Project Action Area were comprehensively described in the *Biological Survey Report for the 1418 Firebreak Road Improvement Project* (Bio-Studies 2019) submitted to CBP and used to support the preparation of the *Draft Environmental Assessment Addressing the Proposed Improvement, Maintenance, and Repair of 1418 Firebreak Road in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol, San Diego Sector, California* (CBP 2020).

The proposed project Action will upgrade a section of 1418 Firebreak Road for approximately 4,885 feet to an all-weather road. The improvement of the road has the potential to adversely affect four federal listed species: San Diego fairy shrimp (*Branchinecta sandiegonensis*), Quino checkerspot butterfly (*Euphydryas editha quino*), coastal California gnatcatcher (*Polioptila californica californica*) and least Bell's vireo (*Vireo bellii pusillus*). No federal threatened or endangered listed plant species are anticipated to be adversely affected by the project.

### 1.1. Listed Species Evaluation

This BA addresses the following listed wildlife species and their critical habitat, based on known occurrences, presence of suitable habitat, and/or location of designated critical habitat and primary constituent elements (PCE):

- San Diego fairy shrimp, endangered

- Quino checkerspot butterfly, endangered
- Coastal California gnatcatcher, threatened; and,
- Least Bell's vireo, endangered.

Critical habitat has been designated for all four species by USFWS. Critical habitat for the San Diego fairy shrimp does not occur within the Action Area for the project, however critical habitat for Quino checkerspot butterfly, the coastal California gnatcatcher and Least Bell's vireo is overlapping and/or adjacent to the Action Area. Suitable habitat within the Action Area does not occur for federal endangered least Bell's vireo, however, one historic California Natural Diversity Database (CNDDDB 2020) occurrence has been identified in the Campo Creek riparian corridor immediately north and west of the Action Area, where suitable habitat for this species is present .

## 1.2. Biological Surveys

The USFWS Information for Planning and Consultation (IPaC) planning tool consulted by Bio-Studies in October 2018 was used to inform timing and scope of biological surveys by Bio-Studies. Biological surveys were completed to identify areas with threatened and endangered species in Spring 2019. These include general biological resources surveys, protocol surveys for Coastal California gnatcatcher, a QCB habitat assessment, vegetation mapping, and QCB focused surveys (Bio-Studies 2019a; Bio-Studies 2019c; SummitWest 2019). A wetland delineation was completed to identify hydrologic features within the construction footprint and to avoid these areas to the maximum extent possible (Bio-Studies 2019b). No jurisdictional features were mapped within the Action Area.

Quino checkerspot butterfly habitat is present in the Action Area and approximately 25 individuals were observed during protocol surveys between February 24 and March 26, 2019.

Bio-Studies (2019a) conducted baselines surveys in the proposed action area and focused surveys for Coastal California gnatcatcher in 2019. Two federal listed avian species were detected during surveys, coastal California gnatcatcher and least Bell's vireo. Coastal California gnatcatcher typically occur in coastal sage scrub and chaparral habitats. There is suitable habitat for coastal California gnatcatcher within the Survey Area and two individuals were observed during protocol surveys between March 23 and April 26, 2019. Least Bell's vireo was observed northwest of the Survey Area within riparian woodland habitat.

Wet season protocol and dry season sampling surveys for Fairy Shrimp were conducted on 1418 Firebreak Road during the 2019/2020 season (SummitWest 2020a). No other listed fairy shrimp species was observed within a number of road pools along the entirety of 1418 Firebreak Road during general biological surveys, occurring inside and outside of the Action Area. Wet season surveys confirmed the presence of San Diego fairy shrimp presence within road pools, in addition versatile fairy shrimp (*Branchinecta lindahli*) (SummitWest 2020a).

## 1.3. USFWS Consultation History

CBP, as the federal action agency on the project, began communication with U.S. Fish and Wildlife (USFWS) regarding the project area beginning in October 2018. USFWS reserve managers were invited to initial on-site project assessment conducted by CBP and Bio-Studies at 1418 Firebreak Road at that time.

Project related notifications and survey reports are detailed below:

- Notifications for wet season fairy shrimp protocol surveys were sent to USFWS on November 20, 2019.
- The results of the coastal California gnatcatcher surveys are described in the *Coastal California Gnatcatcher Protocol Survey Report for the 1418 Firebreak Road Improvement Project* report (Bio-Studies 2019a).
- The results of the Quino checkerspot butterfly surveys are summarized in the *Results of the Quino Checkerspot Butterfly Surveys for 1418 Firebreak Road Improvement Project* report (SummitWest 2019). Bio-Studies submitted QCB reports to USFWS in December 2019 on behalf of CBP.

USFWS and CBP consulted on road improvement and other projects, including 1418 Firebreak Road on April 28, May 27, and July 7, 2020. A field visit to the Arnie's Point Vernal Pool Restoration Area proposed for use as mitigation in this BA was conducted on July 29, 2020. Formal consultation correspondence is included in **Appendix B**.



## 2. Project Description

The mission of CBP is to detect and prevent cross-border violators, terrorists, and terrorist weapons from entering the United States, and prevent illegal trafficking of people and contraband. In many areas, tactical infrastructure, of which roads are considered an important component, is a critical element of border security, and contributes as a force multiplier for controlling and preventing illegal border intrusion. To achieve effective control of our nation's borders, CBP uses a multi-prong approach including a combination of personnel, technology, and infrastructure; the mobilization and rapid deployment of people and resources; and the fostering of partnerships with other law enforcement agencies. CBP must ensure that tactical infrastructure functions as intended, which includes facilitation of meeting the following mission requirements:

Establishing substantial probability of apprehending terrorists and their weapons as they attempt to illegally enter between the Ports of Entry (POEs)

- Deterring illegal entries through improved enforcement
- Detecting, apprehending, and deterring smugglers of humans, drugs, and other contraband.

Well-maintained tactical infrastructure allows ready access to the U.S./Mexico international border and environs for rapid response to detected threats and facilitates the ability to adjust quickly to changing threats.

### 2.1. Proposed Action

CBP proposes to improve, maintain, and repair 1418 Firebreak Road located in the USBP SDC Chula Vista Station (CHU) Area of Responsibility near Proctor Valley to support USBP operations. This is an existing unpaved access road in poor condition due to the lack of routine maintenance. The objective of the planned action is to improve 1418 Firebreak Road to an FC-2 all-weather roadway from its current condition as an FC-4, two track dirt road. The proposed project Action Area includes all the areas affected directly or indirectly by the proposed project.

The proposed road improvements include importing roadway material to achieve a 6-inch deep, well-graded roadbed shaped with a defined crown section, establishment of a cross-slope to provide a drainage gradient, installation of parallel ditches to direct water flow, and installation of water bars in locations where washouts occur (CBP 2020). A soil stabilizer, such as SoilTac™, would be applied to the finished road surface.

Four potential alternatives were evaluated by CBP (2020) in the Draft Environmental Assessment (DEA). For this BA, the evaluation of effect on listed species for the Action Area is limited to the Proposed Action – Alternative 3, Improvement without Widening (Proposed Action). CBP would improve the road to a partial FC-2 standard for 4,885 ft from Otay Lakes Road to a point where the road enters the Otay Mountain Wilderness on BLM property (Action Area, **Appendix A: Figures 4a-4c**). However, 1418 Firebreak Road would not be widened, but only drainage improvements made. Five water bars would be installed in locations where washouts occur to allow the agents to drive on the designated road rather than seek an alternate route during flood events. All activity would be confined to the current road footprint. Where turnouts and passing lanes would be required, CBP would use currently disturbed areas (e.g., locations where a secondary trail has been created due to impassable road conditions), to the maximum extent practicable, and restore all such areas upon

completion. The addition of material to the road would be kept to the minimum amount needed to achieve the proposed objective. This alternative minimizes ground disturbance and would not change the existing footprint, which is the preferred approach for activity on reserve land.

## 2.2. Project Components

Construction of approximately 4,885 feet (0.92 miles) to partial FC-2 all-weather road along 1418 Firebreak Rd confined to existing roadbed width (under 10 feet wide on average). The Proposed Action (Alternative 3) would include the following project components:

- Staging area and access points for vehicles and equipment in existing disturbed areas
- Constructing turnouts and passing lanes in disturbed areas
- Conducting dust and erosion control
- Importing roadway material to build a road cap and defined road crown
- Re-pitching the slope road to establish drain lines to direct water flow
- Water bar placement in washout areas
- Application of soil stabilizer, such as SoilTac™, to the finished road surface
- Site cleanup

### 2.2.1. Road Improvement Activities

Under the Proposed Action (Alternative 3), 1418 Firebreak Road would be improved to a partial FC-2 level, all-weather roadway for 4,885 feet (ft) from Otay Lakes Road to the point where the road enters the Otay Mountain Wilderness on BLM property (Appendix A: Figure 2; CBP 2020). All necessary materials such as gravel, topsoil, or fill would be from existing developed or previously used sources, not from undisturbed areas adjacent to the project area.

One turnout would be added, and five water bars would be installed in locations where washouts occur to allow the agents to drive on the designated road rather than seek an alternate route during flood events. Water bars are frequently spaced, constructed drainage devices that use road material mounded in the road surface to interrupt the flow of water and divert it off the road surface. The frequency of water bar placement is determined by the road gradient within the impacted area. In road areas with an approximate 5 percent slope, the interval would typically be 125 ft. Under the Proposed Action, the water bars would be designed to be drivable by high clearance vehicles. The finished road would be a reinforced roadbed with a soil stabilizer (e.g., Lignin, SoilTac™, or some other suitable soil stabilizer) applied during the late summer/early fall months to avoid impacts on federal listed species habitat. Proper use of a non-toxic road stabilizer helps to avoid impacts on federal listed species habitat by minimizing road run-off and is neither toxic nor harmful to sensitive species.

Maintenance and repair of the road would include reactive maintenance and repair activities and preventive/scheduled maintenance and repair activities designed to ensure ongoing operability and environmental stewardship. All activity would be confined to the current road footprint. As with the Proposed Action, locations where a secondary trail has been created due to impassable road conditions would be restored upon completion of the project. The addition of material to the road would be kept to the minimum amount needed to achieve the proposed objective.

Heavy equipment would be needed for activities such as grading, filling, and compacting. Equipment staging would occur on the existing road footprint or at existing CBP laydown yards. All equipment would be hauled into sites as needed. Required equipment may include dump trucks, road graders, backhoes, bulldozers, drum roller/compactors, and water trucks.

### 2.2.2. Maintenance Activities

CBP maintenance and repair requirements for FC-2 classified roads include clean out, repair and/or replacement of blocked or non-functional drainage; maintenance of road surface smoothness; repair of road foundation base; debris removal; vegetation management to maintain road visibility and clearance; and removal of overgrown road blockages.

Road maintenance and repair would include reactive maintenance and repair activities (e.g. resolving damage from use or severe weather events) and preventive/scheduled maintenance and repair activities designed to ensure ongoing operability and environmental sustainability (e.g., soil erosion preventive measures). All maintenance and repair would occur via a periodic work plan based on anticipated situations within each sector and funding availability. Maintenance and repair requirements could change over time based on changes in usage or priority but would likely occur at least annually and would not exceed the scope of the Proposed Action.

Maintenance and repair would consist of grading and resurfacing existing areas of the roads that have been eroded by surface water flows, filling potholes, and removing protruding boulders. Trees and other vegetation within, or overhanging, the existing roadway would be trimmed, grubbed, or cut back to facilitate safe vehicle passage. Any vegetation that has established within the existing road would be removed, cleared, or trampled.

### 2.2.3. Vegetation Community Effect Areas

Temporary and permanent land disturbances associated with repair and improvement of 4,885 ft (0.92 mi) of 1418 Firebreak Road are shown in **Table 2-1**. The Proposed Action would permanently affect 1.16 acres of habitat along the 1418 Firebreak Road corridor. The project's expected effects on communities that provide habitat for federal listed species are described in detail in Section 5.

**Table 2-1: Vegetation Community Anticipated Impacts - Proposed Action**

<b>Vegetation Community Name (Holland)</b>	<b>Acres in Survey Area</b>	<b>Acres in Action Area</b>
Chamise Chaparral	11.98	0.02
Coastal Sage Scrub	4.38	0.01
Disturbed	4.64	1.11
Native Grassland	0.36	-
Non-Native Grassland/ Coastal Sage Scrub	0.06	0.02
Southern Interior Cypress Forest	0.67	-
<b>Total</b>	<b>30.26</b>	<b>1.16</b>

### 3. Avoidance and Minimization Measures Proposed to Minimize Effects to Listed Species Incorporated into the Proposed Action

CBP is committed to avoiding or minimizing project related environmental effects to the greatest extent possible. As part of this commitment, specific Listed Species Measures and best management practices (BMPS) have been included into the Proposed Action to ensure that potential adverse impacts from road improvement are avoided (if possible), minimized, or mitigated to acceptable levels.

The Proposed Action includes measures that are designed to avoid and minimize direct and indirect harm or injury to federal listed species and designated habitat. Permanent impacts to San Diego fairy shrimp will be mitigated off-site. Temporarily impacted areas would be revegetated with native plants or seeds and are expected to function again as suitable Quino checkerspot butterfly and coastal California gnatcatcher habitat after restoration is complete. Mitigation for permanent impacts to Quino checkerspot butterfly, coastal California gnatcatcher, and other special-status species habitats would be consistent with the San Diego Multiple Species Conservation Plan (MSCP) mitigation guidelines.

The following sections describe measures that may be implemented to reduce or eliminate potential adverse impacts on specific aspects of the human and natural environment. Many of these measures have been incorporated by CBP as standard operating procedures based on past projects. Below is a summary of BMPs for each resource category that would be potentially affected.

#### 3.1. Listed Species Measures

There are no federal listed plant, fish, reptile, or mammal species with potential to occur in the Action Area. The following general measures will apply to the Proposed Action:

- 1) All access routes within the Action Area would be marked prior to construction
- 2) All activities (including off-road driving and ground disturbing activities) outside of the marked access routes and Action Area will be avoided.
- 3) A qualified biologist would be present on a full-time basis during construction and maintenance to document the implementation of all Best Management Practices (BMPs).
- 4) Clearing and grubbing in suitable habitat of threatened or endangered species would be limited to the minimum necessary to maintain drivable access roads.

##### 3.1.1. San Diego Fairy Shrimp

- 1) For impacts to road pools supporting SDFS as a result of the Proposed Action, a mitigation ratio of 3:1 has been proposed given the lack of surrounding vernal pool habitat and the disturbed quality of the road pools.
- 2) Mitigation will be achieved through vernal pool restoration and enhancement and conservation at Arnie's Point Vernal Pool Restoration Area within CBP property on Otay Mesa (**Appendix B**). Mitigation efforts will include:
  - 1) Preparation of a Vernal Pool Enhancement and Monitoring plan for approval by USFWS
  - 2) Implementation of Vernal Pool Enhancement and Monitoring Plan
  - 3) Placement of conserved vernal pool and associated watershed habitat into a conservation easement

### 3.1.2. Quino Checkerspot Butterfly

The following measures will be implemented to minimize the effects of the Proposed Action on the Quino checkerspot butterfly:

- 1) A designated biological monitor would be present during all road improvement activities to minimize impacts to QCB and associated larval host plants.
- 2) For permanent impacts to QCB habitat as a result of the Proposed Action, a mitigation ratio of 2:1 has been proposed to address impacts, through a combination of closure of excess access roads and habitat restoration. CBP has identified five roads in the vicinity of 1418 Firebreak Road on CDFW and USFWS SDNWR land that may be closed to create QCB habitat, with approval from CDFW and USFWS. The roads proposed for closure and their relative distance from 1418 Firebreak Road are illustrated in **Appendix C**. A total of 12,675 linear feet are available to meet the 9,770 linear feet required for mitigation. The following tasks are recommended to support road closure activity:
  - a) Survey the roads proposed for closure and map surrounding QCB habitat and erosion conditions.
  - b) Stop access to the roads by constructing a vehicle barrier (barrier should visually fit into the context of the SDNWR. The barrier may need to extend as much as 150' either side of the closed road to prevent people going around the barrier) similar to a buck and rail or split rail fence placed at 8 locations (length will vary).
  - c) Prepare a Mitigation Management Plan for the road closure, addressing any erosion issues. Included in the Plan would be a map of treatment area locations and dimensions by type and a full description of treatment types. Current conditions can be mapped into four categories:
    - High quality QCB habitat
    - Native habitat but low quality QCB habitat
    - Combined native and non-native habitat
    - Non-native habitat, i.e. non-native grassland
  - d) Prepare a Mitigation Management Plan, detailing each treatment depending on the habitat quality in the roads:
    - High quality QCB habitat would require no actions except for monitoring.
    - Native habitat but low quality QCB habitat would be treated by creating pockets for hill topping opportunities that may involve removing some cover and opening up clearings by removing shrubs.
    - Combined native and non-native habitat would be treated by hand removal of exotics and using the removals to create clearings for hill topping or seeding of host plants and possible planting of flat-topped buckwheat (*Eriogonum fasciculatum*).
    - Non-native habitat would be treated by herbicide or mechanical removal to control non-native species, followed by seeding with host plant species and possible planting of flat-topped buckwheat.

- e) Commence a five-year maintenance and monitoring period after the mitigation is installed to ensure success of treatment, remove any non-native cover, and monitor shrub canopy cover. Maintenance and monitoring would be taken over by land managers after success criteria established in the Plan have been met and not to exceed a specified period.

### 3.1.3. Coastal California Gnatcatcher

Spring surveys were conducted for coastal California gnatcatcher across the Survey Area, which is defined by a 50-foot buffer on either side of the road centerline. Coastal California gnatcatcher were observed within and near the Action Area. Measures recommended to minimize impacts to coastal California gnatcatcher are as follows:

- 1) Conduct pre-construction nest surveys if construction is between February 15 and August 15, to determine if CAGN are nesting within 300 feet of construction activities.
- 2) A designated biological monitor would be present during all road improvement activities to minimize impacts to CAGN.
- 3) If a nest is found, establish either an 8-foot tall plywood sound wall as far from the nest as possible, but no less than 50 feet between construction and the nest, or conduct sound analysis and monitoring to demonstrate that noise does not exceed 60 Db sustained for an hour at the nest site during project activities.
- 4) Avoid impacts to areas of perennial vegetation to the extent practicable. Where vegetation impacts cannot be avoided, salvage overstory shrubs, and stockpile the top 6 inches of topsoil and any grubbed vegetation stockpiled to assist in revegetation.
- 5) For permanent impacts to coastal California gnatcatcher habitat as a result of the Proposed Action, a mitigation ratio of 2:1 has been proposed to address impacts, achieved through restoration of 0.1-acre of coastal sage scrub habitat within disturbed roadways identified by USFWS (refer to Section 3.1.2.4).

### 3.1.4. Least Bell's vireo

To minimize disturbance to least Bell's vireo, the following measures will apply to work conducted adjacent to riparian habitat:

- 1) Conduct pre-construction surveys between February 15 and August 15, to determine if LBVI are nesting within 300 feet of construction activities.
- 2) If a nest is found, establish either an 8-foot tall plywood sound wall as far from the nest as possible, but no less than 50 feet between construction and the nest, or conduct sound analysis and monitoring to demonstrate that noise does not exceed 60 Db sustained for an hour at the nest site during project activities.

## 3.2. Federal Migratory Bird Treaty Act

To prevent impacts to avian species covered under the MBTA, clearing and grubbing should take place in fall and winter to avoid impacts to nesting birds. If work cannot be avoided during the breeding season (February 15 to September 15), one week prior to starting work a biologist would survey for nesting birds and identify any nests. An appropriate buffer for avoidance would be established around any nesting birds until the young have fledged or the nest is no longer being used.

- Eagle and raptor nests - 300-foot buffer,



- Special-status bird species - 100-foot buffer and;
- Migratory birds - 25-foot buffer.

### 3.3. Biological Resource Measures

The following minimization and avoidance measures will be implemented in order to limit the effects of construction on biological resources:

- 1) The limits of construction will be demarcated with stakes or orange construction fencing to clearly identify areas of disturbance.
- 2) A designated biological monitor would be present during all activities on or near the Survey Area. A separate report should be prepared and submitted to CBP immediately if/when an impact occurs outside of the approved Project limits. The biologist would also submit a final report to CBP within 60 days of Project completion that includes an overlay of impacted areas and other relevant information documenting that authorized impacts were not exceeded and that general compliance with conservation measures was achieved.
- 3) Existing roads would be used to access the construction area and no traffic would be allowed outside of those areas. All construction vehicles, equipment, and personally owned vehicles would be parked in the approved disturbance area. Access routes, parking areas, and staging areas would be designated with easily observed removable or biodegradable markers.
- 4) All contractors and maintenance personnel would operate within the designated and approved disturbance area.
- 5) Use flagging or orange fencing to create an avoidance buffer around sensitive plant species or vegetation communities within the disturbance area.
- 6) Institute environmental awareness training for employees and contractors. The training would include at a minimum a description of the resource and purpose for its protection, the conservation measures that must be implemented, and environmentally responsible construction practices.
- 7) Construction speed limits would not exceed 15 mph on unpaved roads (graded with ditches on both sides).
- 8) Limit vehicle refueling and maintenance to upland areas with established spill prevention equipment in place (e.g., straw wattles, lined or paved areas, areas with no direct drains).
- 9) Maintain stores of chemicals and hazardous materials in proper containers and within spill retention basins large enough to capture and hold the chemicals being housed.
- 10) Maintain spill clean-up kits and drip pans during construction of the facility.
- 11) Implement a fugitive dust control plan during construction.
- 12) Follow the CBP protocol for cleaning vehicles and equipment to avoid the spread of invasive species.
- 13) Incorporate designs that minimize runoff or use of pesticides.
- 14) Design artificial topography in disturbance area to take advantage of natural rain runoff, and apply surface materials (e.g., mulch) to retain moisture in the soil.

- 15) Develop and implement a fire prevention and suppression plan for all activities that require welding or otherwise have a risk of ignition (e.g., use of string trimmers, edgers or chainsaws).
- 16) If vegetation must be cleared, allow natural regeneration of native plants by cutting vegetation with hand tools, mowing, trimming, or other clearing methods that allow root systems to remain intact. Vegetation targeted for retention would be flagged to reduce the likelihood of being treated.
- 17) Within the designated disturbance area, grading or topsoil removal would be limited to areas of necessity and within the limit of grading to provide required ground conditions for construction and maintenance activities. Minimizing the disturbance footprint minimizes impacts and restoration requirements. The top six inches of topsoil would be stockpiled for use in revegetation whenever feasible. Stockpiles would not exceed 3.5 feet in height and if necessary, would be covered with natural materials such as burlap. No plastic is permitted due to the heat's sterilization effect on the topsoil.
- 18) All areas temporarily impacted by Project improvement and maintenance would be revegetated with native plant species following a USFWS approved restoration plan. Restoration plans and activities would be completed by restoration firms with at least five years of experience in conducting successful comprehensive ecological restoration in southern California.
- 19) Materials used for construction and on-site erosion control would be biodegradable and free of non-native plant seeds and other non-native plant parts to limit potential for infestation. Some natural materials cannot be fully certified as weed-free, and if used, follow-up monitoring and control to limit establishment of non-native plants would be implemented to prevent introduction. Erosion control blankets and wattles would use biodegradable netting. Borrow areas for fill materials such as rock, gravel, or topsoil would be obtained from existing developed or previously used sources, not from undisturbed areas within or adjacent to the Survey Area.
- 20) To eliminate attracting predators of protected animals, all food-related trash items such as wrappers, cans, bottles, and food scraps would be disposed of in closed containers and removed daily from the Project site.
- 21) Waste contaminated with construction materials or from cleaning equipment carrying oils, toxic materials, or other contaminants would be stored in closed containers on-site until removed for disposal. Concrete wash water would not be dumped on the ground but would be collected and moved off-site for disposal. This wash water is toxic to aquatic life.



## 4. Existing Conditions and Description of the Project Area Affected by the Action

### 4.1. Surrounding Land Use

The Proposed Action Area is in Proctor Valley, San Diego County (see **Appendix A: Figure 2**). Proctor Valley is located north of Otay Mountain and east of Lower Otay Lake. Otay Ranch, approximately 4 miles to the west, is the nearest suburban area. Land-use and ownership in and around the proposed action area includes public land, federal state, and local jurisdiction land and vacant and undeveloped land. The City of San Diego MSCP has protected areas in and near the Action Area. The MSCP is not intended to limit CBP or other law enforcement activities. The MSCP provides CBP an exemption for the CBP activities, with the preference that CBP, to the extent possible, use existing infrastructure in order to minimize impacts to established protected areas.

Land ownership within the Proposed Action Area is listed in **Table 4-1**.

**Table 4-1: Land Ownership in the Proposed Action Area**

Name	Owner/Agency	Survey Area (Acres)	Type
Otay Mountain Ecological Reserve	California Department of Fish and Wildlife (State)	2.88	State Conservation Area
San Diego National Wildlife Refuge	U.S. Fish and Wildlife Service (Federal)	8.22	National Wildlife Refuge
Otay Mountain Wilderness	Bureau of Land Management (Federal, managed by Palm Springs/South Coast Field Office)	12.86	National Public Lands
Otay Ranch Preserve	City of Chula Vista (managed by County of San Diego)	5.84	Local Conservation Area

Source: CBP (2020).

The Action Area crosses over land in the Otay Mountain Ecological Reserve and the San Diego NWR (SDNWR). The OMER is a public reserve of about 1,200 acres that hosts many sensitive species and habitats and is managed by CDFW. Permitted uses of land in the OMER include hiking, wildlife viewing, and hunting with valid licenses. The SDNWR is managed by USFWS and is part of a USFWS contribution to the MSCP, a landscape-wide habitat conservation plan to preserve habitat and species while allowing for appropriate development. Permitted uses of the land include hiking, wildlife viewing, bike riding, and horseback riding.

Outside of the Action Area, 1418 Firebreak Road crosses over portions of the Otay Mountain Wilderness. Otay Mountain Wilderness and Otay Mountain is predominantly under BLM ownership. BLM is responsible for managing public lands and resources for multiple uses. BLM land within and around the project area is used for recreational purposes, such as hunting, hiking, horseback riding, camping, wildlife viewing, and other wilderness activities.

## 4.2. Habitat Types/Vegetation Community Classification

Vegetation communities found within the Project Area include chamise chaparral, coastal sage scrub, disturbed habitat, southern Interior cypress forest, non-native grassland/coastal sage scrub, native grassland, non-native grassland (**Table 4-2**). Within the Project Area vegetation communities vary in species composition and levels of anthropogenic disturbance, from relatively undisturbed chamise chaparral and coastal sage scrub communities throughout the Project Area, to non-native grassland dominated communities along access road edges and at the southern terminus of 1418 Firebreak Road. Vegetation communities were identified in the field during the spring and September 2019 site visits and mapped to the association level where possible using field verified aerial photographs.

**Table 4-2: Vegetation Communities in the Project Survey Area**

<b>Vegetation Community Name (Holland)</b>	<b>Acres in Survey Area</b>
Chamise Chaparral	11.98
Coastal Sage Scrub	4.38
Disturbed (access roads)	4.64
Native Grassland	0.36
Non-Native Grassland/ Coastal Sage Scrub	0.06
Southern Interior Cypress Forest	0.67
<b>Total</b>	<b>30.26</b>

## 5. Description of Listed Species and Critical Habitat that may be Affected by the Action

Based on known occurrences or presence of suitable habitat on or in the immediate vicinity of the Proposed Action, this BA evaluates the following federal listed species: San Diego fairy shrimp, Quino checkerspot butterfly, coastal California gnatcatcher, and least Bell's vireo. Site assessments including a jurisdictional assessment, coastal California gnatcatcher and Quino checkerspot butterfly protocol surveys, rare plant surveys and general biological surveys, were conducted between February 24 and September 10, 2019 (Bio-Studies 2019c). Wet and dry season fairy shrimp protocol surveys were also conducted from November 2019 to May 2020 (SummitWest 2020a).

Designated critical habitat for three species is adjacent and/or overlapping the Action Area: Quino checkerspot butterfly, least Bell's vireo, and coastal California gnatcatcher (**Appendix A: Figure 5**). No critical habitat for San Diego fairy shrimp overlaps the Action Area. No federal threatened or endangered plant species have been observed within the Action Area.

### 5.1. San Diego Fairy Shrimp

The San Diego Fairy shrimp (SDFS) was listed as federal endangered by USFWS on February 3, 1997. Critical habitat was designated for the species on October 23, 2000 and revised on January 11, 2008 (USFWS 2007a).

#### 5.1.1. Description and Taxonomy

San Diego fairy shrimp is a small aquatic crustacean of the genus Branchinectidae, in the order Anostraca, that inhabits ephemeral bodies of water within southern California and northwestern Baja California, Mexico. Males of the species are between 9 and 16 mm in length and can be distinguished from females by a much larger set of secondary antennae that are specialized for grasping the female during copulation (USFWS 1997a). Differences in the distal tips of these enlarged antennae also distinguish male SDFS from males of other species. Female SDFS are between 8 and 14 mm in length and are distinguished from male con-specifics and females of other species by the shape and length of the brood sac, as well as the presence of paired dorsolateral spines on several abdominal segments (Fugate 1993).

In 2005, mitochondrial DNA analysis indicated the presence of two genetically distinct clades within SDFS, referred to as Clade A and Clade B. While genetic evidence indicates a deep split between these clades, the research also suggests that as it is known, SDFS represents a "good species" and does not require taxonomic reclassification (Bohonak 2005).

#### 5.1.2. Life History

San Diego fairy shrimp inhabit vernal pools that are below 2,300 ft in elevation and within 40 miles of the Pacific Ocean (USFWS 1997a). Vernal pools typically occur in Mediterranean climates, where shallow depressions fill with water during fall and winter rains before evaporating in the spring and summer. Soil type has a role in determining whether a vernal pool will form, as an impervious clay pan, hard pan, or volcanic stratum layer is necessary to prevent downward percolation (USFWS 1997a). Multiple vernal pools typically form within proximity of each other, creating vernal pool complexes, exchanging water as they flood and ebb throughout the season. The surrounding watershed sustains vernal pool complexes by collecting and directing additional rainwater and is a critical component of the vernal pool habitat type (USFWS 2007a). Suitable vernal pool habitats exist in southwestern coastal California and northwestern Baja California, Mexico.

San Diego fairy shrimp eggs, or “cysts,” hatch between January and March, although hatching season may extend if seasonal rains continue and vernal pools persist or reappear. Newly hatched SDFS reach reproductive maturity between seven days and two weeks and usually disappear a month after hatching. Cysts are either deposited on the pool floor or remain in the female’s brood sac when she dies and sinks (USFWS 1997a). The vernal pool dries out when seasonal rains diminish but cysts remain viable, capable of withstanding prolonged drought until they can hatch during the next seasonal rains. Hatching is triggered by a series of environmental stimuli that includes a period of dryness followed by re-wetting (USFWS 2008). Not all SDFS will hatch at every opportunity, and cyst banks in the soil include cysts from multiple breeding seasons (Donald 1983 as cited in USFWS 1997a). If a vernal pool dries out before the next generation can be laid, the unhatched cyst bank remains in the soil and allows the population to avoid extirpation from the area. This buildup of multigenerational cysts enables populations to withstand the pressures of their extremely variable environments and is important for the species’ long-term survival (Ripley et al. 2004).

### 5.1.3. Distribution and Habitat Considerations

San Diego fairy shrimp are habitat specialists, surviving only in vernal pools that fit particular size and water chemistry requirements. SDFS occur in pools between five and 30 cm deep, with water temperatures of 50 to 68 degrees Fahrenheit (USFWS 1997). Sodium and alkalinity are also limiting factors; SDFS is unable to regulate its internal ion levels and requires low sodium concentration (less than 60 millimoles per liter) and low alkalinity (less than 1000 milligrams per liter) (USFWS 2008). Neutral pH (around 7) is also necessary for survival. Perennial water sources are also unsuitable for SDFS, as they do not allow cysts to undergo the necessary dry-to-wet transition required for hatching (USFWS 2008).

San Diego fairy shrimp distribution is limited to vernal pools in San Diego County, Orange County, and extreme northwestern Baja California (USFWS 2007a). At the time of federal listing in 1997, the vernal pool habitat type was classified as G1-S1 by CDFW, meaning that less than 800 ha occurred globally (USFWS 1997a). Southern California vernal pools and associated watersheds have been significantly impacted by urban development, agricultural conversion, livestock grazing, off highway vehicle (OHV) activity, and alterations of vernal pool hydrology (USFWS 2007a). San Diego county, which contains the majority of known SDFS populations, has experienced an estimated cumulative loss of 90 to 97 percent vernal pool habitat loss. Remaining habitat in San Diego county accounts for 131 of 137 known occupied vernal pool complexes (USFWS 2008). Five complexes are known in Orange County and one was identified in Baja California, Mexico during surveys conducted prior to the USFWS 5-year species review. Survey data obtained between 1997 and the completion of the latest 5-year review in 2008 indicates that SDFS distribution has not increased or decreased since listing (USFWS 2008). The road pools on 1418 Firebreak road are a new location not previously known to have SDFS.

### 5.1.4. Critical Habitat

On January 11, 2008, USFWS formally designated 3,082 acres in San Diego and Orange Counties as critical habitat for San Diego fairy shrimp. This decision marked an almost 1000-acre reduction of previously designated habitat in 2000. Primary constituent elements (PCEs) of critical habitat were described by USFWS (2008a):

- 1) Small to large vernal pools with shallow to moderate depths that hold water for sufficient lengths of time necessary for San Diego fairy shrimp incubation and reproduction, but not necessarily every year.

- 2) Associated watershed(s) and hydrology for vernal pool basins and their related vernal pool complexes.
- 3) Ephemeral depressional wetlands, flat or gently sloping topography, and any soil type with a clay component and/or an impermeable surface or subsurface layer known to support vernal pool habitat.

There is no SDFS critical habitat within or directly adjacent to the proposed Action Area. The closest critical habitat is Unit 5: San Diego, Southern Coastal Mesa (1,785 acres) from the base of Otay Mountain to the coast, including Otay Mesa, Lower Otay Reservoir and Marron Valley (USFWS 2007a).

### 5.1.5. Occurrence in the Action Area

The project area falls within the known range of San Diego fairy shrimp, and while there are no vernal pools within the surrounding areas, there are road pools in the access road that pond long enough for fairy shrimp from nearby pools to colonize and use. Road pools were identified in spring 2019 during general biological surveys (Bio-Studies 2019c). The pools within the Survey Area occur within the roadway in natural dips and ruts, which may be influenced by OHV. The habitat surrounding the dirt roads is exclusively chaparral.

The 2019 surveys identified a total of 13 inundated road pools and an additional four pools were added during focused wet season surveys along the entire extent of 1418 Firebreak Road (SummitWest 2020a). Focused wet seasons surveys were conducted between November 2019 and May 2020 (SummitWest 2020a). Dry season sampling was also conducted to determine the presence or absence of additional fairy shrimp species (SummitWest 2020a).

Fourteen pools remained inundated and were monitored throughout the season. Of those 14, four were positive for SDFS and versatile fairy shrimp (*B. lindahli*): Pool 1, Pool 7, Pool 8, and Pool 9 (SummitWest 2020a). Pool 1 is the only road pool occurring in the Action Area and supports SDFS as well as other aquatic invertebrates (SummitWest 2020a, Appendix A: Figure 6a and 6b). Overall, the pools supporting SDFS were larger and deeper in size than other pools and remained inundated for a minimum of three weeks. Dry season sampling surveys did not reveal additional pools supporting SDFS or Riverside fairy shrimp (*Streptocephalos woottoni*) (SummitWest 2020).

## 5.2. Quino checkerspot butterfly

The Quino checkerspot butterfly (QCB) was federal listed as endangered under the ESA on January 16, 1997 (62 CFR 2313-2322). Critical Habitat for the QCB was designated in April 2002 and revised in June 2009 and includes 62,125 acres (25.14 hectares) in 10 areas, or Critical Habitat Units, in Riverside and San Diego counties (74 CFR 28777-28861).

### 5.2.1. Description and Taxonomy

Quino checkerspot butterfly (QCB) is a medium sized, brush-footed butterfly (Family Nymphalidae). The butterfly has a wingspan of approximately 1.5 inches (4 centimeters) and wings have a distinctive wing red/orange, black, and cream-colored checkered pattern (USFWS 2003). The abdomen of the QCB has orange stripes, distinguishing it from other common checkerspot by the lack of white spots. The QCB is a subspecies of the more widespread Edith's checkerspot butterfly (*Euphydryas editha*) and represents the southwestern most Edith's checkerspot butterfly subspecies (Mattoni et al. 1997).

### 5.2.2. Life History

The full life cycle of a QCB includes egg, larva, pupa, and adult with larval stages divided into five to seven or more in-stars (periods between molt) (USFWS 2003). Larvae begin to feed upon host plants immediately after hatching. Winter rainfall and temperature influence host plant germination, growth, and senescence, which in turn affect development rate and survivorship of larvae. Early instar larvae (first two or three instars) are most susceptible to mortality because of their dependence on annual food plants that senesce rapidly following the last rain of the season (USFWS 2007b).

Typically, there is one generation of adult butterflies per year, with a four- to six-week flight period in March and April. Depending on elevation, precipitation, and temperatures, adults could emerge from January through early April and fly as late as early May, although the timing of the flight period can vary depending on weather conditions, particularly temperature (Emmel and Emmel 1973; USFWS 2003; Faulkner and Klein 2008). The average adult QCB life span, approximately 10 to 14 days, is spent searching for mates, feeding on nectar, defending territories, basking in the sun (USFWS 2002). Adult males patrol suitable habitat for females, perching intermittently on the ground or vegetation and engage in hilltopping activity, during which hilltops or ridges are guarded against other males. (USFWS 2002). Females usually mate on the day they emerge from pupae and spend time searing for sites to lay their eggs, which hatch in 7 to 10 days (Murphy et al. 1983).

The most common larval host plant species below 3,000-foot (or roughly 1,000-meter) elevation in San Diego County is dot-seed plantain (*Plantago erecta*) (Pratt et al. 2001; USFWS 2002; USFWS 2003). All known species of host plant may act as primary or secondary host plants depending on location (USFWS 2003). Other host plants used for egg laying and larval feeding include other plantain species (e.g., *Plantago ovata*, *P. bigelovii*), Coulter's (white) snapdragon (*Antirrhinum coulterianum*), purple owl's clover (*Castilleja exserta*), Chinese houses (*Collinsia concolor* and *C. heterophylla*), thread-leaved bird's beak (*Cordylanthus rigidus*), and southwestern plantain (*Plantago patagonica*) (Pratt et al. 2001, USFWS 2003, USFWS 2010a, Pratt and Pierce 2010). Southwestern plantain and white snapdragon were identified as major larval food plants at higher elevations, and are thought to be the primary larval host plant species for the QCB in parts of Riverside County and eastern San Diego County at elevations where dot-seed plantain is absent (Pratt et al. 2001). Recent findings indicate that Chinese houses may also be important in these higher elevation areas (Pratt and Pierce 2010).

At the time of host plant senescence, if larvae are old enough and have accumulated sufficient reserves, larva enter an obligatory diapause. The larvae remain in diapause throughout summer, fall and into mid-winter, and which may be broken after adequate fall or winter rains (Murphy and White 1984; Faulkner and Klein 2008; Pratt and Emmel 2009). While in diapause, larvae are much less sensitive to climatic extremes and can tolerate temperatures from over 120 degrees Fahrenheit (49 degrees Celsius) to below freezing (USFWS 2003). Diapausing Edith's checkerspot butterfly larvae have been observed curled up under rocks or sticks or within the lower branches of flat-topped buckwheat (Pratt and Emmel 2009) and enclosed in light webbing (USFWS 2003). Extended periods of diapause may occur during times of drought (USFWS 2007b; Faulkner and Klein 2008; Pratt and Emmel 2009).

### 5.2.3. Distribution and Habitat Considerations

Historically, the distribution of the Quino checkerspot butterfly included much of coastal California from Ventura, Los Angeles, and southwestern San Bernardino counties south through Orange, western Riverside, and San Diego counties into northern Baja California, Mexico. QCB are currently known to occur in portions of southwestern Riverside County, southern San Diego County, and northern Baja California (Mattoni et al. 1997; USFWS 2003; USFWS 2009), indicating an almost 75 percent loss of



historic range (USFWS 2009b). The species' distribution and abundance has been dramatically reduced due to agricultural and urban development, and other land uses in southern California such as, conversion of native habitat, invasion of non-native species, habitat fragmentation, and fire management practices (USFWS 1997). At the time of listing, QCB was considered to have been reduced by more than 95 percent range wide (USFWS 2009b).

Fluctuations in QCB population density are driven by major weather pattern variations and it is considered a climate-sensitive species, that experiences exponential increases in abundance every 5-20 years, followed by a drop to a lower abundance over time (USFWS 2009b). These fluctuations make it highly sensitive to impacts from combined human induced and naturally occurring events in the environment.

QCB is known to occur in association with a variety of plant communities, soil types, and elevations. The QCB is found in clay soil meadows, open grasslands, coastal sage scrub, chamise chaparral, red shank chaparral, juniper woodlands, and semi-desert scrub where high densities of host plant species occur (USFWS 1997). In these community types, QCB is found in openings within the dominant plant community where sufficient cover of larval food (host) plants co-occurs with adult nectar sources (USFWS 2007b). QCB is closely associated with the presence of flat-topped buckwheat, which has been found in all occupied QCB habitat documented to date (Pratt 2001; USFWS 2003; Faulkner and Klein 2008). QCB is also associated with clay soils that possess cryptogamic crusts, which favor dot-seed plantain growth, and vernal pools (Faulkner and Klein 2008, USFWS 2002).

Studies of QCB, and similar butterflies, indicate that QCB may be capable of long-distance dispersal (White and Levin 1981; Harrison 1989; USFWS 2003, 2009). A reasonable flight distance for an observed Quino checkerspot butterfly is accepted to be approximately 0.6 mile (1 kilometer [km]) from the habitat associated with the observed butterfly and is supported by USFWS 'occurrence complexes,' which uses the radius to define population proximity (USFWS 2003, 2009). Quino checkerspot butterflies tend to fly low to the ground, avoiding flying over trees, buildings, or other objects taller than about 7 feet (2 meters) (USFWS 2003). This requires relatively open areas and corridors, areas of widely spaced tall vegetation, or areas dominated by low-growing vegetation for flight dispersal.

#### 5.2.4. Critical Habitat

On April 15, 2002, USFWS formally designated 171,605 acres in San Diego and Riverside Counties as critical habitat for Quino checkerspot butterfly.

Primary constituent elements (PCEs) of critical habitat were described by USFWS (2002) as:

- 1) Habitat that supports biological needs of larval diapause, feeding, pupation, oviposition, nectaring, roosting and basking, dispersal, genetic exchange and shelter occurring in primary undeveloped areas supporting various open canopy woody and herbaceous plant communities
- 2) Habitat where primary and secondary host plant species are documented, such as coastal sage scrub, open chaparral, grasslands, and similar vegetation communities, often associated with cryptogamic crusts and fine-textured clay soils that support host plant species.
- 3) Host plant species include dwarf plantain, woolly plantain, white snapdragon, and thread-leaved bird's beak
- 4) Prevalence of nectar species such as lomatium, yarrow, golden star, popcorn flower, gilia, flat-topped buckwheat, onion and yerba santa

- 5) Topographic features, such as hilltops, ridges, and openings in habitat, that provide opportunities for ‘hilltopping’ behavior critical to reproduction of local populations

QCB critical habitat is mapped at the northern terminus and middle section of 1418 Firebreak Road, extending for approximately 1 mile (see Appendix A: Figure 5). Approximately 4.75 acres of QCB critical habitat is found within the Proposed Action Area.

### 5.2.5. Occurrence in the Action Area

The Action Area supports coastal sage scrub, non-native grassland, chamise chaparral, non-native grassland/coastal sage scrub, and non-native grassland habitat. Primary host plant species dot seed plantain and purple owl’s clover were present throughout the Survey Area. Approximately 25 individuals were observed during protocol surveys between February 24 and March 26, 2019 along 1418 Firebreak Road. Ten of the QCB observations occurred within the Action Area (**Appendix A: Figure 7a-7c**). Quino checkerspot butterfly host plants including dot-seed plantain, purple owl’s clover and thread-leaf bird’s beak were observed in the proposed project corridor during QCB habitat assessment and focused surveys. Dot-seed plantain is evenly dispersed along 1418 Firebreak and purple owl’s clover was mapped in the central portions of the road on north facing slopes in chamise chaparral. Thread-leaf bird’s beak was limited to a few occurrences at the southern end of the road. Potential nectar sources in the area where the QCB was observed included popcorn flower (*Cryptantha* spp. and *Plagiobotrys* spp.), red-maids (*Calandrinia ciliata*), blue-dicks (*Dichelostemma capitatum*), and baby blue eyes (*Nemophila menziesii*).

QCB and host plant are not present within the sage scrub and grassland habitat in the Action Area, and it is considered marginally suitable for QCB, due to the presence of dense non-native herbaceous cover within open areas. Coastal sage scrub habitat in the Action Area consists of patchy native shrubs with dense patches of native and non-native grasses and annual wildflowers. Coastal sage scrub habitat is dominated by California sagebrush (*Artemisia californica*), flat-topped buckwheat, and deerweed (*Acemison glaber*).

The chamise chaparral, while dense, is low-growing and has openings supporting host plants, including the road itself, which allows for Quino use and dispersal. Additionally, the Survey Area supports open areas of clay soil and high-quality nectar sources. Given its relative isolation, presence of primary host plant species and openings on hilltops and within the roadway, overall, the Survey Area is conserved good quality QCB habitat (SummitWest 2019). The chamise chaparral is dominated by chamise (*Adenostoma fasciculata*), mountain lilac (*Ceanothus oliganthus*), mission manzanita (*Xylococcus biolcor*), Munz’s sage (*Salvia munzii*). The non-native Grassland areas contained *Bromus* spp., needlegrass (*Stipa* sp.), San Diego goldenstar (*Bloomeria clevelandii*), blue dicks, and redmaids.

## 5.3. Coastal California Gnatcatcher

The coastal California gnatcatcher (CAGN) was listed as federal threatened on March 30, 1993 (USFWS 1993)

### 5.3.1. Description and Taxonomy

The coastal California gnatcatcher is a small, slate-colored bird with a long, black tail that is edged and tipped with white, which it flicks erratically as it perches. The bird has a distinct kitten-like mewing call, which along with tail morphology distinguishes the coastal California gnatcatcher from the black-tailed gnatcatcher (*Polioptila melanura*) (Atwood and Bontrager 2001).

### 5.3.2. Life History



The coastal California gnatcatcher is a non-migratory songbird found on the coastal slopes of southern California. It ranges from Ventura County south to northwest Baja California, Mexico (Atwood 1990; Jones and Ramirez 1995). The breeding season of CAGN extends from late February through August, with the peak of nesting occurring from mid-March through mid-May. The breeding territory size of the coastal California gnatcatcher ranges from 2 to 14 acres, with home ranges expanding from 13 to 39 acres during the non-breeding season (USFWS 1993). Nest parasitism by brown-headed cowbirds (*Molothrus ater*) has been documented (Unitt 2004). Typically, there is a high rate of nest failure each breeding season. This is offset by rapid and persistent re-nesting efforts; a breeding pair may attempt to nest as many as 10 times in a year, producing up to three successful broods in a season (Atwood and Bontrager 2001). There is evidence that this bird is also susceptible to nest predation by various animals such as snakes, coyotes, foxes, rodents, and other birds, such as western scrub-jays (Atwood 1990).

The typical time frame when molting occurs in CAGN is one to two months after the first major rainfall. At this time, black caps appear on males. Nest building begins about two weeks after the first molt (Grishaver et. al. 1998). During the nesting season, both male and female gnatcatchers participate in nest building (Grishaver et. al. 1998). Female gnatcatchers generally spend the most time brooding young and incubating, while males typically chose the nest location and spent more time nest building (Grishaver et. al. 1998). California gnatcatchers take up to 10 days to build the nest (USFWS 2010). There are usually four eggs per clutch, with two weeks of incubation and 16 days of brooding (USFWS 2010). California gnatcatchers can begin nesting as early as February, and lay eggs as late as July (unit 2004). They do not migrate and are territorial within their breeding area (USFWS 2010).

### 5.3.3. Distribution and Habitat Considerations

Population estimates for the coastal California gnatcatcher vary. Atwood (1992) estimated that 1,811 to 2,291 pairs of coastal California gnatcatchers existed in 1992 throughout its range in southern California. In 1996, the USFWS estimated the population in San Diego County at 3,000 pairs, excluding pairs located on sites where habitat loss had already been approved (Atwood and Bontrager 2001). According to a 1999 population estimate in San Diego and other southern California counties, the USFWS estimated the population in San Diego County at 1,917 pairs, Orange County at 643 pairs, Los Angeles County at 144 pairs, San Bernardino County at 27 pairs, and Ventura County at 4 pairs (Atwood and Bontrager 2001).

The CAGN is associated with coastal sage scrub habitats below 820 feet in coastal areas and between 820 and 1,640 feet in inland areas (Atwood and Bolsinger 1992); however, not all types of coastal sage scrub communities are used or preferred. This bird appears to be most abundant in areas dominated by California sagebrush and flat-topped buckwheat (Unitt 2004). The bird's numbers are generally low in coastal habitats dominated by black sage (*Salvia mellifera*), white sage (*Salvia apiana*), or lemonadeberry (*Rhus integrifolia*); in inland areas, habitats dominated by black sage may be used more regularly (Atwood and Bontrager 2001). While coastal California gnatcatchers are mostly restricted to coastal sage scrub habitat, they also use riparian habitats which occur adjacent to coastal sage scrub habitat (Atwood et al. 1998).

Coastal sage scrub vegetation occurs on the gentle coastal slopes and mesas of southern California, which are also prime locations for agriculture and development. Overall, it is estimated that between 1945 and 1990, 58 to 61 percent of the coastal sage scrub habitat within the geographic range of the coastal California gnatcatcher had been lost (USFWS 1993).

Although habitat with California sagebrush is ideal for coastal California gnatcatcher nesting, the coastal California gnatcatcher utilizes other shrubs as well including flat-top buckwheat, California

sunflower (*Helianthus californicus*), and broom baccharis (*Baccharis sarathroides*) (Unitt 2004). The California gnatcatcher prefers to nest in habitats that contain gaps in vegetation, usually with 20-60% cover surrounding the nest (Unitt 2004).

#### 5.3.4. Critical Habitat

Critical habitat for the coastal California gnatcatcher is designated in Ventura, San Bernardino, Los Angeles, Riverside, Orange, and San Diego counties and totals approximately 197,303 acres (USFWS 2007c).

According to USFWS (2007), the two PCEs for suitable foraging, sheltering, and breeding habitat for the coastal California gnatcatcher are:

- 1) Dynamic and successional sage scrub habitats: Ventura coastal sage scrub, Diegan coastal sage scrub, Riversidean sage scrub, maritime succulent scrub, Riversidean alluvial fan scrub, southern coastal bluff scrub, and coastal sage-chaparral scrub in Ventura, Los Angeles, Orange, Riverside, San Bernardino, and San Diego Counties that provide space for individual and population growth, normal behavior, breeding, reproduction, nesting, dispersal and foraging; and
- 2) Non-sage scrub habitats such as chaparral, grassland, riparian areas, in proximity to sage scrub habitats as described for PCE 1 above that provide space for dispersal, foraging, and nesting.

Approximately 2.13 acres of coastal California gnatcatcher critical habitat is found within the proposed action area. It is mapped from the intersection of Otay Lakes Road with the northernmost portion of 1418 Firebreak Road and continues south approximately 1 mile.

#### 5.3.5. Occurrence within the Action Area

There is suitable habitat for coastal California gnatcatcher within the Survey Area and individuals were observed in two separate locations along 1418 Firebreak Road between March 23 and April 26, 2019 (**Appendix A: Figures 8a-8c**, Bio-Studies 2019a). The results of the coastal California gnatcatcher surveys can be found in the *Coastal California Gnatcatcher Protocol Survey Report for the 1418 Firebreak Road Improvement Project* report (Bio-Studies 2019a). One pair was observed during protocol surveys and a family group was observed outside of the protocol survey period by biologists conducting additional project surveys (Bio-Studies 2019b).

Both CAGN observations were made in low growing chaparral habitat adjacent to the Action Area. However, the coastal sage scrub adjacent to the Action Area represents potential quality breeding, foraging, and dispersal habitat. The Action Area is expected to support CAGN given proximity to appropriate habitat for the species.

### 5.4. Least Bell's Vireo

The least Bell's vireo (LBVI) was listed as endangered by CDFW on 27 June 1980, and federal classified as endangered on 2 May 1986 (USFWS 1994). An official recovery plan was developed in 1998, but never finalized (USFWS 2006).

#### 5.4.1. Description and Taxonomy

The least Bell's vireo is a small, grayish songbird with rounded wings, white wing bars, and subtle white eye rings (USFWS 1994). Juveniles are distinguished from adults by more prominent wing bars and lighter, whitish plumage. This nondescript species is most easily identified by its distinct song and other vocalizations. LBVI is one of four Bell's vireo subspecies; all of which are geographically

isolated from one another during breeding and wintering seasons. The LBVI occupies the most western range of any subspecies (Kus 2002).

#### 5.4.2. Life History

The least Bell's vireo is a seasonal migrant, arriving in its southern California breeding grounds during mid-to-late March and departing for Baja California between July and September. Occasional instances of LBVI overwintering in the U.S have been recorded, most occurring in the southern-most extent of their breeding range (Kus 2002).

Nesting season for LBVI typically begins in March; males establish territories between 0.5 and 7.5 acres (Kus 2002). Nests are placed in trees, shrubs, or forbs between three to six feet from the ground, usually near the edges of dense riparian vegetation. Willows (*Salix* spp) are commonly used for nesting, although preference may be based on relative abundance within a habitat. California wild rose (*Rosa californica*) and coast live oak (*Quercus agrifolia*) are also often selected for nest placement (USFWS 1998). Nests contain three to five eggs, which hatch after an incubation period of 14 days. Nestlings fledge between 10 and 12 days and may remain in natal territories for up to 40 days. LBVI pairs have been known to raise up to four broods per season, although one is typical (Franzreb 1989). Brood parasitism by the brown-headed cowbird (*Molothrus ater*) represents a significant threat to LBVI populations and is responsible for a large portion of nest failures (USFWS 2006).

Lower growing riparian areas featuring dense canopy cover are most frequently utilized by LBVI populations. Willows and other canopy vegetation provide nest concealment, while shrubby lower levels support the true bugs, beetles, grasshoppers and caterpillars that comprise the LBVI's diet (Franzreb 1989). Habitats such as chaparral and coastal sage scrub adjacent to riparian areas are used for foraging and even nesting, and thus provide another potentially important habitat component (Kus and Miner 1989). Insectivorous LBVI forage primarily in riparian and upland areas, although individuals have been documented extending their foraging behavior up to 900 feet (300 m) into surrounding chaparral habitat (Keeney 1985 in USFWS 1994).

#### 5.4.3. Distribution and Habitat Considerations

Historically, LBVI were abundant and widely distributed throughout the interior of northern California, from Red Bluff near Tehama county to the Central valley and Sierra Nevada foothills. Coastally, LBVI ranged from Santa Clara to near San Fernando Valley in Baja California, Mexico. Populations also occurred in Owen's valley, Death Valley, and numerous oases of the Mojave Desert (USFWS 2006). Degradation of riparian habitats resulting from agricultural conversion, urban expansion, and construction of flood control measures has dramatically reduced the LBVI modern range. Surveys conducted in 1987 found that the LBVI had been extirpated from central California, which once supported between 60 and 80 percent of the breeding population. Rising brown-headed cowbird density in agricultural areas also negatively impacted LBVI populations. At the time of listing in 1986, fewer than 300 LBVI breeding pairs were known in the United States, with LBVI occupying only 46 of 150 historically known territories (RECON 1989, Franzreb 1989).

The LBVI's modern breeding range is limited to Southern California, which has experienced 95-97 percent loss of riparian habitat due to flood management and other development (USFWS 2006). LBVI populations have been observed from Santa Barbara county to Baja California, with populations also present in desert habitats of San Diego county. Conservation measures enacted after the LBVI listing in 1986 included riparian habitat preservation, as well as wide-spread cowbird trapping initiatives. Apparently in response to these measures, the LBVI population has rebounded since listing, showing an overall 10-fold increase from 291 to 2,968 nesting pairs in 2006 (USFWS 2006).

Although more than 99 percent of nesting LBVI remain in Southern California, evidence gathered in 2006 suggests that the LBVI's range is becoming more evenly distributed. Survey data also indicates a slight northward drift in the LBVI's general distribution between 1986 and 2006, with counties at the northern extent of their range experiencing proportionally greater population growth (USFWS 2006).

#### 5.4.4. Critical Habitat

As designated by USFW service in 1994, critical habitat for the LBVI consists of 38,000 acres in 10 localities within southern California's Santa Barbara, Ventura, Los Angeles, San Bernardino, Riverside, and San Diego counties. Approximately 49% of the current U.S LBVI population inhabits riparian habitat along the Santa Ynez, Santa Clara, Santa Ana, Santa Margarita, San Luis Rey, Tijuana Rivers, and San Diego's Coyote and Jamul-Dulzura creeks (USFWS 1994).

Primary constituent elements (PCEs) of critical habitat, as described by the USFWS (1994) critical habitat designation are as listed:

- 1) Riparian woodland vegetation that generally contains both canopy and shrub layers and includes some associated upland habitats. Vireos meet their survival and reproductive needs (food, cover, nest sites, nestling and fledgling protection) within the riparian zone in most areas. In some areas they also forage in adjacent upland habitats; and
- 2) Riverine and floodplain habitats (particularly willow-dominated riparian woodland with dense understory vegetation maintained, in part, in a non-climax stage by periodic floods or other agents) and adjacent coastal sage scrub, chaparral, or other upland plant communities.

Least Bell's vireo critical habitat is mapped west of the northernmost terminus of 1418 Firebreak Road, at the intersection with Otay Lakes Road (see **Appendix A: Figure 5**). While the critical habitat overlaps with the proposed Action Area, no riparian habitat used by least Bell's vireo is present within the proposed Action Area.

#### 5.4.5. Occurrence in the Action Area

The project area does not contain suitable nesting or foraging riparian habitat for least Bell's vireo, and none have been detected immediately within the project area during survey efforts. Occupied habitat for this species does exist nearby, within the Otay River riparian corridor approximately 100 ft west of the northern terminus of the Action Area. This species does not occur within the Action Area but was detected by biologists during protocol surveys for California gnatcatcher (Bio-Studies 2019a).

## 6. Analysis of Effects the Proposed Action may have on Listed Species

Direct effects are those effects that immediately impact a species or its habitat. Primarily, direct permanent impacts would primarily occur from loss of habitat. Indirect effects are those effects that are expected to occur later in time but are reasonably certain to occur.

The effects described are the minimum possible impacts for the existing 1418 Firebreak Road alignment from Otay Lakes Road for a total of 4,885 feet, for a permanent width of 10 feet (on average) with hardening agent, such as SoilTac™ maintained along the road. This includes the disturbed area near Otay Lakes Road for use as an equipment staging area. Other alternatives have been analyzed, resulting in greater effects; however, this analysis represents the preferred alternative for the Proposed Action.

### 6.1. San Diego Fairy Shrimp

#### 6.1.1. Direct Effects

**Species Effects:** Implementation of the Proposed Action will result in direct impact to one 170 square foot road pool occupied by San Diego fairy shrimp (**Appendix A: Figures 9a and 9b**). This includes loss of SDFS individuals and cysts. No other occupied road pools will be affected by project implementation under the Proposed Action. Road improvements will ensure that there will not be any future opportunities for road ruts to form within the road in the Action Area, therefore precluding SDFS from becoming reestablished through transfer of cysts on OHV tires.

**Critical Habitat Effects:** No critical habitat for SDFS is mapped within the Action Area, therefore no adverse effects to critical habitat are anticipated to occur due to the Proposed Action.

#### 6.1.2. Indirect Effects

**Species Effects:** Indirect effects to SDFS result from changes to the surrounding vegetation, soils, topography, and watershed due to project implementation. Indirect effects may occur to road pools located on 1418 Firebreak Road located outside of the Action Area (i.e. further south) through continued use of the road, however, they are not anticipated to be adversely affected by the Proposed Action as construction traffic will be limited to the Action Area only.

**Critical Habitat Effects:** No critical habitat for SDFS is mapped within the Action Area and no indirect effects to critical habitat are anticipated as a result of the Proposed Action.

#### 6.1.3. Mitigation

CBP proposes to mitigate for impacts to SDFS at a 3:1 mitigation ratio through preservation and enhancement of 510 square feet of occupied vernal pools at Arnie's Point Vernal Pool Restoration Area on Otay Mesa as described in Section 3.1.1. Restoration efforts will be conducted in accordance with the USFWS biological opinion issued as a result of formal consultation and under a USFWS approved restoration and enhancement plan.

### 6.2. Quino Checkerspot Butterfly and Critical Habitat

#### 6.2.1. Direct Effects

**Species Effects:** The Proposed Action will result in direct effects to the Quino checkerspot butterfly through removal of 1.16 acres of habitat and designated critical habitat (**Appendix A: Figures 10a and 10b**). The majority of the affected area, approximately 1.11 acres, considered habitat for QCB is within the roadbed itself. The native habitat within and surrounding the Action Area is considered high quality habitat for QCB and supports an active population. Impacts to host plants and other



vegetation within the 0.05-acre native habitat adjacent to the road may result in direct effects to QCB in larval stages.

If ground clearing occurs during active period for QCB, there may be direct impacts from vehicles to adult individuals who use the roadbed or surrounding areas. Additionally, impacts from construction such as impacts from SoilTac™ to stabilize erosion control and minimize dust and an increase in human activity in breeding habitat may displace or kill adult QCB.

**Critical Habitat Effects:** A total of 4.75 acres of critical habitat for QCB occurs within the Action Area. Approximately 1.16 acres of permanent impacts to critical habitat, 1.11 acre of which is disturbed roadbed, will occur as a result of the Proposed Action.

### 6.2.2. Indirect Effects

**Species and Critical Habitat Effects:** Indirect effects from construction use of the access roads include dust impacts on individuals and habitat that would extend beyond the boundaries of the Action Area. Increased settling of dust on larval host species and on nectar-providing species for the adults could reduce palatability of larval host plants and reduce availability of nectar to adults. Additional indirect effects may include introduction of non-native species and the increased risk of fire from maintenance activities. The implementation of BMPs would reduce potential indirect effects during construction and maintenance activities.

### 6.2.3. Mitigation

CBP proposes to implement BMPs for avoidance and minimization and to mitigate for the permanent direct impacts to QCB habitat preserving and restoring habitat in the vicinity of the Action Area, at a 2:1 ratio. Section 3.1.2 details the closure of dirt roads in the vicinity of the Action Area for the benefit of QCB. Restoration efforts will be conducted in accordance with the USFWS biological opinion issued as a result of formal consultation and under a USFWS approved mitigation and management plan.

## 6.3. Coastal California Gnatcatcher and Critical Habitat

### 6.3.1. Direct Effects

**Species Effects:** The Proposed Action may affect, but not adversely affect the coastal California gnatcatcher through removal of 0.05 acre of suitable coastal sage scrub and chaparral habitat within the Action Area (**Appendix A: Figures 11a-11c**). One pair has been observed within habitat adjacent to the Action Area.

**Critical Habitat Effects:** Approximately 2.13 acres of CAGN critical habitat with PCEs occurs within the Action Area; approximately 0.05-acre (2,180 square feet) of which may be impacted by the Proposed Action.

### 6.3.2. Indirect Effects

**Species Effects:** Construction activities and increased human presence in the vicinity of coastal California gnatcatchers and their habitat may result in indirect effects to this species. Indirect impacts may include increased noise and dust especially at the urban/natural edge. These incremental increases are not expected to adversely affect coastal California gnatcatcher foraging, mating, or breeding behaviors or reduce the quality of any gnatcatcher habitat components. Indirect effects will be minimized as described in Section 3.1.3.

Construction-related noise could have short-term impacts on wildlife species both within and near the Survey Area. Anthropogenic noise has been found to increase physiological stress, compromise predator/prey detection, affect mating signals and territorial defense, decrease foraging efficiency, and alter temporal or movement patterns in wildlife, although the intensity of behavioral responses due to noise varies among species as well as individuals within a species (Francis and Barber 2013). Sound barriers, analyses, or monitoring may be used alone or in combination to address impacts to coastal California gnatcatcher nests if observed near the Action Area.

Additional indirect effects may include introduction of non-native species and the increased risk of fire from maintenance activities. The implementation of BMPs would reduce potential indirect effects during construction and maintenance activities.

**Critical Habitat Effects:** The increase in human activity during construction may allow for trespassing into critical habitat. Installation construction fencing may minimize any new trespass into the critical habitat. It is anticipated that such trespassing will not significantly alter the habitat, resulting in no adverse indirect effect on the species.

### 6.3.3. Mitigation

CBP proposes to implement BMPs for avoidance and minimization and to mitigate for the permanent impacts to CAGN habitat through closure of access roads in the area, at MSCP appropriate ratios for a total of 0.1 acre. Restoration efforts will be conducted in accordance with the USFWS biological opinion issued as a result of formal consultation and under a USFWS approved mitigation and management plan.

## 6.4. Least Bell's Vireo and Critical Habitat

### 6.4.1. Direct Effects

**Species Effects:** No direct effects to Least Bell's vireo are anticipated to occur as a result of the Proposed Action. There is no riparian habitat present within the Action Area. Known occurrences of LBVI are a least 100 feet or more away from the staging area for the Proposed Action on Otay Lakes Road. Given that adverse effects on LBVI are unlikely to occur, no mitigation is being proposed for least Bell's vireo. Minimization and avoidance measures are described Section 3.1.4.

**Critical Habitat Effects:** No critical habitat for Least Bell's vireo is present within the Action Area. No direct effects to LBVI critical habitat are expected to occur as a result of the Proposed Action.

### 6.4.2. Indirect Effects

**Species Effects:** Construction-related noise could have short-term impacts on wildlife species both within and near the Survey Area. Anthropogenic noise has been found to increase physiological stress, compromise predator/prey detection, affect mating signals and territorial defense, decrease foraging efficiency, and alter temporal or movement patterns in wildlife, although the intensity of behavioral responses due to noise varies among species as well as individuals within a species (Francis and Barber 2013). Sound barriers placed around the western edges of the staging area would reduce these potential impacts to off-site least Bell's vireo individuals. Additional indirect effects may include introduction of non-native species and the increased risk of fire from maintenance activities. The implementation of BMPs would reduce potential indirect effects during construction and maintenance activities. Indirect effects will be minimized as described in Section 3.1.4.

**Critical Habitat Effects:** No indirect effects related to the Proposed Action are anticipated to affect least Bell's vireo critical habitat.

## 6.5. Cumulative Effects

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the Action Area would be considered in this BA. The Action Area occurs within preserve land managed by CDFW and USFWS. No State or local government entities have proposed projects within the Action Area. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to Section 7 of the Act.

## 6.6. Interrelated and Interdependent Effects

CBP (2020) identified a number of past, current, and future projects related to their mission within in the vicinity of the proposed Action Area. Section 7 of the federal ESA defines interrelated actions as “those that are part of a larger action and depend on the larger action for their justification.” The ESA also defines interdependent actions as “those that have no independent utility apart from the action under consideration.” The USFWS Section 7 Handbook states that the “but for” test should be applied to determine if an action is interrelated or interdependent. Under the “but for” test:

... [t]he biologist should ask whether another activity in question would occur ‘but for’ the proposed action under consultation. If the answer is, “no the activity in question would not occur, but for the Proposed Action”, then the activity is interrelated or interdependent and need should be analyzed with the effects of the action. If the answer is ‘yes,’ that the activity in question would occur regardless of the Proposed Action under consultation, then the activity is not interrelated or interdependent and would not be analyzed with the effects of the action under consultation (USFWS and NMFS 1998).

When applied to the list of CBP projects identified below, the “but for” test is not met. The improvements to 1418 Firebreak Road within the Action Area would occur regardless of whether the other projects identified by CBP occurred. None of the following identified projects are considered to be interrelated or interdependent:

*Cable and Rope Roads Improvement.* CBP proposes to improve Cable and Rope Roads in southeastern San Diego County from FC-4 to FC-2 all-weather roads. The road is critical to USBP’s ability to maintain visual surveillance and communications capabilities in the vicinity of the project, and the road improvements were needed to ensure that the road is passable and to ensure officers’ safety. The project will improve approximately 1.9 miles of Cable Road and 1.3 miles of Rope Road.

*Repair/Rebuild to FC-2 Minnewawa Road.* The rebuilding and restoration of Minnewawa Road was designed to enhance officer safety by providing a more reliable and safe driving surface. The road is critical to USBP’s ability to maintain visual surveillance and communications capabilities in the vicinity of the project, and the road improvements were needed to ensure that the road is passable and to ensure officers’ safety. The entire 5.23 miles of roadway was rebuilt to FC-2 condition. Activities began November 2016 and the project was completed in November 2017 (CBP 2020).

*Improvement of Otay Truck Trail.* Otay Truck Trail East Road was an FC-2 level all-weather road not regularly maintained by CBP. The road had washed out in a number of locations, had lost much of the drain-line ditches, and had a number of potholes as a result of water erosion and road washout. The improvement included repairs to 57 existing culverts of either 12, 18, or 24 inches in diameter of corrugated pipe. Some culverts were old and rusted, especially those 12 inches in diameter, and other culverts were clogged and/or collapsed. Activities began in September 2018 and the project was completed in January 2019 (CBP 2020).



*Improvement and Widening of A-1 West Access Road.* The project consisted of improving the westernmost 1,800 feet of the existing access road to an A-1 fence and border road. The project improved the road to a 24-foot-wide, all-weather road with appropriate drainage structures, including a low-water crossing and three culverts. The project required minor cut and fill work, grading, and adding an aggregate road base. A new turnaround area and the alignment shift in some sections of the road both caused disturbance outside of the existing road alignment.

*Improvement of the A-1 Border Road.* The project consisted of improving approximately 5.4 miles of existing FC-3 road to a FC-2 all-weather road. The project also included cleaning out existing drainage ditches adjacent to the A-1 border road and repairing/replacing existing drainage ditches, rip-rap lining at inlet and outlet structures, and other ancillary drainage structures. T

*Construction of 14-Mile San Diego Border Fence Replacement.* The project replaced approximately 12.5 miles of existing secondary border wall, constructed approximately 1.5 miles of new secondary border wall (14 total miles), installed fiber-optic cable, and constructed an all-weather road along the southwestern border of the United States. The new taller and more substantial bollard-style wall that replaced the secondary wall is critical to prevent illegal entries into the United States and to achieve operational control of the border. The project included design, site preparation and material delivery, removal and replacement of the existing secondary wall, removal and replacement of existing motorized vehicle gates, installation of new fiber-optic cable, installation of grouted rip-rap, and construction of a 40-foot-wide all-weather road with electrical and lighting along 1.5 miles of new section of wall.

*Construction of Brown Field Border Patrol Station.* CBP proposed to construct, operate, and maintain a new USBP Brown Field Border Patrol Station on a 125.2-acre government-owned property in Dulzura, San Diego County, California. The project includes construction of a main Border Patrol Station building designed to accommodate up to 400 CBP agents and staff, as well as ancillary support facilities and structures including a vehicle maintenance/all-terrain vehicle storage facility, outdoor tactical support areas, government and privately owned vehicle parking areas, vehicle wash rack, fuel island, canine kennel, communications tower, septic system and leach field, water supply facility, stormwater management system, helipad, roadways, emergency generators, and utilities.

## **7. Conclusion**

Federal listed species, the San Diego fairy shrimp, Quino checkerspot butterfly, coastal California gnatcatcher, and least Bell's vireo, are known to occur within or adjacent to the Action Area.

### **7.1. San Diego Fairy Shrimp**

The improvement and maintenance of the 1418 Firebreak Road Improvement Project will result in the removal of occupied San Diego Fairy shrimp habitat and the potential taking of San Diego fairy shrimp. As such, CBP has determined that the project “may affect, is likely to adversely affect” SDFS as a species. Critical habitat for SDFS will not be affected. CBP has incorporated minimization and mitigation measures as described in Section 3.1.1.

### **7.2. Quino Checkerspot Butterfly**

The improvement and maintenance of the 1418 Firebreak Road Improvement Project will result in the removal of QCB habitat, host plants, and the potential taking of QCB. As such, CBP has determined that the project “may affect, is likely to adversely affect” QCB and its critical habitat CBP has incorporated minimization and mitigation measures as described in Section 3.1.2.

### **7.3. Coastal California Gnatcatcher**

The improvement and maintenance of the 1418 Firebreak Road Improvement Project will result in the removal of Coastal California gnatcatcher habitat and the potential taking of Coastal California gnatcatcher. As such, CBP has identified that the project “may affect, is not likely to adversely affect” California gnatcatcher with mitigation. CBP has incorporated minimization and mitigation measures as described in Section 3.1.3.

### **7.4. Least Bell’s Vireo**

The improvement and maintenance of the 1418 Firebreak Road Improvement Project will not result in the removal of Least Bell’s vireo habitat and the potential taking of Least Bell’s vireo. However, occupied Least Bell’s vireo habitat and critical habitat is present within 100 feet of the Action Area. As such, CBP has identified that the project “may affect, is not likely to adversely affect” Least Bell’s vireo with implementation of avoidance and minimization measures. CBP has incorporated minimization and mitigation measures as described in Section 3.1.4.

## 8. List of Preparers

### **Diana Saucedo**

Senior Biologist

Years of Experience: 20

### **Rod Dossey**

Senior Biologist

Years of Experience: 25

### **Stephanie Sherwood**

GIS Manager

Years of Experience: 26

## 9. References

Reference	Citation
Atwood 1990	Atwood, J. L. 1990. Status Review of the California Gnatcatcher ( <i>Polioptila californica</i> ). Unpublished technical report, Manomet Bird Observatory, Manomet, MA.
Atwood 1992	Atwood, J. L. 1992. Elevational Distribution of California Gnatcatchers in the United States. <i>Journal of Field Ornithology</i> . Spring 1992.
Atwood and Bontrager 2001	Atwood, J.L., and D.R. Bontrager. 2001. California gnatcatcher ( <i>Polioptila californica</i> ). In <i>The Birds of North America</i> , No. 574 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA.
Atwood et. al 1998	Atwood, J. L, Bontrager, D. R., Fugagli, M. R., Hirsch, R., Kamada, D., Madden, M., Reynolds, C. H., Tsai, S., and Bowler, P. A. 1998. Population dynamics, dispersal, and demography of California Gnatcatchers and Cactus Wrens in coastal southern California (1997 progress report). Manomet Center Cons. Sci. and Univ. Calif., Irvine (available from Wilson Ornithol. Soc., Mus. Zool., Univ. of Mich., Ann Arbor, MI 48109-1079).
Bio-Studies 2019a	Bio-Studies, Inc. 2019. <i>Coastal California Gnatcatcher Protocol Survey Report for the 1418 Firebreak Road Improvement Project</i> . San Diego, California.
Bio-Studies 2019b	Bio-Studies, Inc. 2019. <i>Jurisdictional Assessment Report for the 1418 Firebreak Road Improvement Project</i> . San Diego, California.
Bio-Studies 2019c	Bio-Studies, Inc. 2019. <i>Biological Survey Report for the 1418 Firebreak Road Improvement Project</i> . San Diego, California.
Bohonak 2005	Bohonak, A. J. 2005. Conservation Genetics of the Endangered Fairy Shrimp Species <i>Branchinecta sandiegonensis</i> . MSCP Vernal Pool Inventory. San Diego, CA USFWS. August 2005.
Caltrans 2016	Caltrans. 2016. SR-94 Improvement Project Fact Sheet. May 2016. Online: <a href="https://dot.ca.gov/caltrans-near-me/district-11">https://dot.ca.gov/caltrans-near-me/district-11</a> . Accessed March 30, 2020.
CBP 2020	U.S. Customs and Border Protection. 2020. Draft Environmental Assessment Addressing the Proposed Improvement, Maintenance, and Repair of 1418 Firebreak Road in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol, San Diego Sector, California. Department of Homeland Security, U.S. Customs and Border Protection, U.S. Border Patrol, July.

Reference	Citation
CDFW 2020	California Department of Fish and Wildlife (CDFW). 2019. Natural Communities. <a href="https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities#sensitive%20natural%20communities">https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities#sensitive%20natural%20communities</a> Accessed online September 2019.
Eriksen and Belk 1999	Eriksen, C. and D. Belk 1999. Fairy Shrimps of California's Puddles, Pools, and Playas. Mad River Press, Inc., Eureka, California.
Francis and Barber 2013	Francis, C.R. and J.R. Barber. 2013. A framework for understanding noise impacts on wildlife: an urgent conservation priority. August 8, 2013. <a href="https://doi.org/10.1890/120183">https://doi.org/10.1890/120183</a> [Accessed online: September 2019]
Franzreb 1989	Franzreb, K. E. 1989. Ecology and Conservation of the Endangered Least Bell's Vireo. U.S Fish and Wildlife Service, Biological Report 89(1).
Fugate 1993	Fugate, M. 1993. <i>Branchinecta sandiegonensis</i> , a new species of fairy shrimp (Crustacea: Anostraca) from western North America. Proceedings of the Biological Society of Washington 106: 296-304.
Fugate 1993	Fugate, M. 1993. <i>Branchinecta Sandiegonensis</i> , A New Species of Fairy Shrimp (Crustacea: Anostraca) From Western North America. Proceedings of the Biological Society of Washington. 106(2): 296-304. 1993.
Grishaver et. al. 1998	<u>Grishaver, M.A., P.A. Mock, and K.L. Preston. 1998. Breeding Behavior of the California Gnatcatcher in San Diego County, California. Western Birds 29: 299-322. July. Available online: <a href="https://sora.unm.edu/sites/default/files/journals/wb/v29n04/p0299-p0322.pdf">https://sora.unm.edu/sites/default/files/journals/wb/v29n04/p0299-p0322.pdf</a> [Accessed July 16, 2020]</u>
Harrison 1989	Harrison, S. 1989. Long-Distance Dispersal and Colonization in the Bay Checkerspot Butterfly, <i>Euphydryas editha bayensis</i> . Ecology 70:1236-1243.
Jones and Ramirez 1995	Jones, C. A., and R. S. Ramirez. 1995. A 1995 Sighting of the California Gnatcatcher in Ventura County. Abstract. CalGnat '95: Symposium on the Biology of the California Gnatcatcher. University of California, Riverside, September 15-16.
Kus 2002	Kus, B. 2002. Least Bell's Vireo ( <i>Vireo bellii pusillus</i> ). In The Riparian Bird Conservation Plan: a strategy for reversing the decline of riparian-associated birds in California. California Partners in Flight.

Reference	Citation
Kus and Miner 1989	Kus, Barbara E.; Miner, Karen L. 1989. Use of Non-Riparian Habitats by Least Bell's Vireos. In: Abell, Dana L., Technical Coordinator. 1989. Proceedings of the California Riparian Systems Conference: protection, management, and restoration for the 1990s; 1988 September 22-24; Davis, CA. Gen. Tech. Rep. PSW-GTR-110. Berkeley, CA: Pacific Southwest Forest and Range Experiment Station, Forest Service, U.S. Department of Agriculture; p. 299-304
Mattoni et al. 1997	Mattoni, R., G.F. Pratt, T.R. Longcore, J.F. Emmel, and J.N. George. 1997. "The Endangered Quino Checkerspot Butterfly, <i>Euphydryas editha quino</i> (Lepidoptera: Nymphalidae)." <i>Journal of Research on the Lepidoptera</i> . 34:99–118.
Murphy and White 1984	Murphy, D.D., and R.R. White. 1984. "Rainfall, Resources, and Dispersal in Southern Populations of <i>Euphydryas editha</i> (Lepidoptera: Nymphalidae)." <i>Pan-Pacific Entomologist</i> 60:350–354.
Murphy et al. 1983	Murphy, D.D., A.E. Launer and P.R. Ehrlich. 1983. The role of adult feeding in egg production and population dynamics of the checkerspot butterfly <i>Euphydryas editha</i> . <i>Oecologia</i> . doi:10.1007/BF00379699
Osborne 1998	Osborne, K. H. 1998. Microhabitat conditions associated with the distribution of post diapause larvae of <i>Euphydryas editha quino</i> and its host, <i>Plantago erecta</i> (Chapter 4). In: A description of arthropod community structure in southern Californian coastal sage scrub. Master's thesis, University of California, Riverside, California.
Pratt 2001	Pratt, G. 2001. The Quino checkerspot: Its biology and life history. Final Section 6 grant research report submitted to the California Department of Fish and Game, account title CDFG Fg7182ES LUCK 6/98.
Pratt 2010	Pratt, G. F. 2010. A New Larval Food Plant, <i>Collinsia concolor</i> , for the Endangered Quino Checkerspot, <i>Euphydryas editha quino</i> . <i>J. of Lepid. Soc.</i> 64(1):36–37.
Pratt and Emmel 2009	Pratt, G.F. and J.F. Emmel. 2009. Sites chosen by diapausing or quiescent stage Quino checkerspot butterfly, <i>Euphydryas editha quino</i> , (Lepidoptera: Nymphalidae) larvae. <i>Journal of Insect Conservation</i> , published online June 26.
Pratt and Pierce 2009	Pratt, G.F., and Pierce C.L. 2009. "A New Larval Food Plant, <i>Collinsia concolor</i> , for the Endangered Quino Checkerspot, <i>Euphydryas editha quino</i> ." <i>Journal of the Lepidopterists' Society</i> 64(1):36–37. <a href="https://doi.org/10.18473/lepi.v64i1.a6">https://doi.org/10.18473/lepi.v64i1.a6</a> Accessed online September 2019.

Reference	Citation
Pratt and Pierce 2010	Pratt, G.F. and C.L. Pierce. 2010. A New Larval Food Plant, <i>Collinsia concolor</i> , for the Endangered Quino Checkerspot, <i>Euphydryas editha quino</i> . <i>Journal of the Lepidopterist's Society</i> 64(1) 3637.
RECON 1989	RECON (Regional Environmental Consultants). 1989. Comprehensive species management plan for the least Bell's vireo ( <i>Vireo bellii pusillus</i> ).
Ripley 2004	Ripley, B., J Holtz, M. A. Simovich. 2004. Cyst Bank Life-History Model for a Fairy Shrimp from Ephemeral Ponds. <i>Freshwater Biology</i> . 2004(49): 221-231.
SummitWest 2019	SummitWest Environmental, Inc. 2019. <i>Results of Quino Checkerspot Butterfly Surveys for the 1418 Firebreak Road Improvement Project</i> . August 2019. San Diego, California.
SummitWest 2020	SummitWest 2020. <i>Results of Vernal Pool Brachiopod Surveys for the 1418 Firebreak Road Improvement Project</i> . Prepared for Bio-Studies. July.
Unitt 2004	Unitt, P. A. 2004. <i>San Diego County Bird Atlas</i> . Proceedings of the San Diego Society of Natural History, No. 39. San Diego Natural History Museum.
USFWS 1993	U.S. Fish and Wildlife Service (USFWS). 1993. Endangered and Threatened Wildlife and Plants: Threatened Coastal California Gnatcatcher. Final Rule and Proposed Special Rule. March 30, 1993. <i>Federal Register</i> , 58: 16742-16757.
USFWS 1994	Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Least Bell's Vireo. <i>Federal Register</i> 59(22):4845-4867, February 2.
USFWS 1997	United States Fish and Wildlife Service (USFWS). 1997. Coastal California Gnatcatcher ( <i>Polioptila californica californica</i> ) Presence/Absence Survey Guidelines. February 28, 1997.
USFWS 1997	U.S. Fish and Wildlife Service. 1997. Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for the Laguna Mountains Skipper and Quino Checkerspot Butterfly, Final Rule. <i>Federal Register</i> 62(11):2313-2322. January 16.
USFWS 1997a	US Fish and Wildlife Service. 1997a. Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for the San Diego Fairy Shrimp. Final Rule. <i>Federal Register</i> 62(22): 4925-4939. February 3.
USFWS 1998	United States Fish and Wildlife Service (USFWS). 1998. Draft Recovery Plan for the Least Bell's Vireo. Portland, OR.



Reference	Citation
USFWS 2002	U.S. Fish and Wildlife Service. 2002. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Quino Checkerspot Butterfly ( <i>Euphydryas editha quino</i> ), Final Rule. <i>Federal Register</i> 67 (72):18356-18395. April 15.
USFWS 2003	United States Fish and Wildlife Service (USFWS). 2003. <i>Recovery Plan for the Quino Checkerspot Butterfly</i> ( <i>Euphydryas editha quino</i> ). Portland, Oregon: USFWS. August 2003.
USFWS 2006	United States Fish and Wildlife Service (USFWS). 2006. Least Bell's Vireo ( <i>Vireo bellii pusillus</i> ) 5-Year Review Summary and Evaluation. Carlsbad, CA.
USFWS 2007a	US Fish and Wildlife Service. 2007. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the San Diego Fairy Shrimp ( <i>Branchinecta sandiegonensis</i> ), Final Rule. <i>Federal Register</i> 72(238): 70647-70714. December 12.
USFWS 2007b	U.S. Fish and Wildlife Service. 2007. San Diego County Post-2003 Fire Quino Checkerspot Butterfly Monitoring Burned Area Emergency Rehabilitation Plan Final Accomplishment Report. Carlsbad Fish and Wildlife Office, Carlsbad, California.
USFWS 2007c	United States Fish and Wildlife Service (USFWS). 2007. Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for the Coastal California Gnatcatcher ( <i>Polioptila californica californica</i> ). December 19, 2007. Final Rule. <i>Federal Register</i> 72: 72010-72213.
USFWS 2008	US Fish and Wildlife Service. 2008a. San Diego Fairy Shrimp ( <i>Branchinecta sandiegonensis</i> ). 5-Year Review: Summary and Evaluation. February.
USFWS 2009	U.S. Fish and Wildlife Service. 2009. Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for the Quino Checkerspot Butterfly ( <i>Euphydryas editha quino</i> ), Final Rule. <i>Federal Register</i> 74(115): 28775-28862. June 17.
USFWS 2010	United States Fish and Wildlife Service (USFWS). 2010. Coastal California Gnatcatcher ( <i>Polioptila californica californica</i> ) 5-Year Review. Carlsbad Fish and Wildlife Office, Carlsbad, CA. September 29. Available online: <a href="https://www.fws.gov/carlsbad/SpeciesStatusList/5YR/20100929_5YR_CAGN.pdf">https://www.fws.gov/carlsbad/SpeciesStatusList/5YR/20100929_5YR_CAGN.pdf</a> [Accessed July 2020]
USFWS 2014	United States Fish and Wildlife Service (USFWS). 2014. <i>Quino Checkerspot Butterfly Survey Guidelines</i> . USFWS, Carlsbad Field Office. Carlsbad, California: USFWS. December 15, 2014



Reference	Citation
USFWS and NMFS 1998	U.S. Fish and Wildlife Service and National Marine Fisheries (NMFS). 1998. Endangered Species Consultation Handbook: Procedures for Conducting Consultation and Conference Activities Under Section 7 of the Endangered Species Act, Final. March.
White and Levin 1981	White, R.R. and M.P. Levin. 1981. Temporal variation in vagility: Implications for evolutionary studies. American Midland Naturalist 105: 348-357.

**Appendix A:**  
**Figures**

Figure 1: Regional Location of Action Area





Figure 2: Aerial View of Action Area

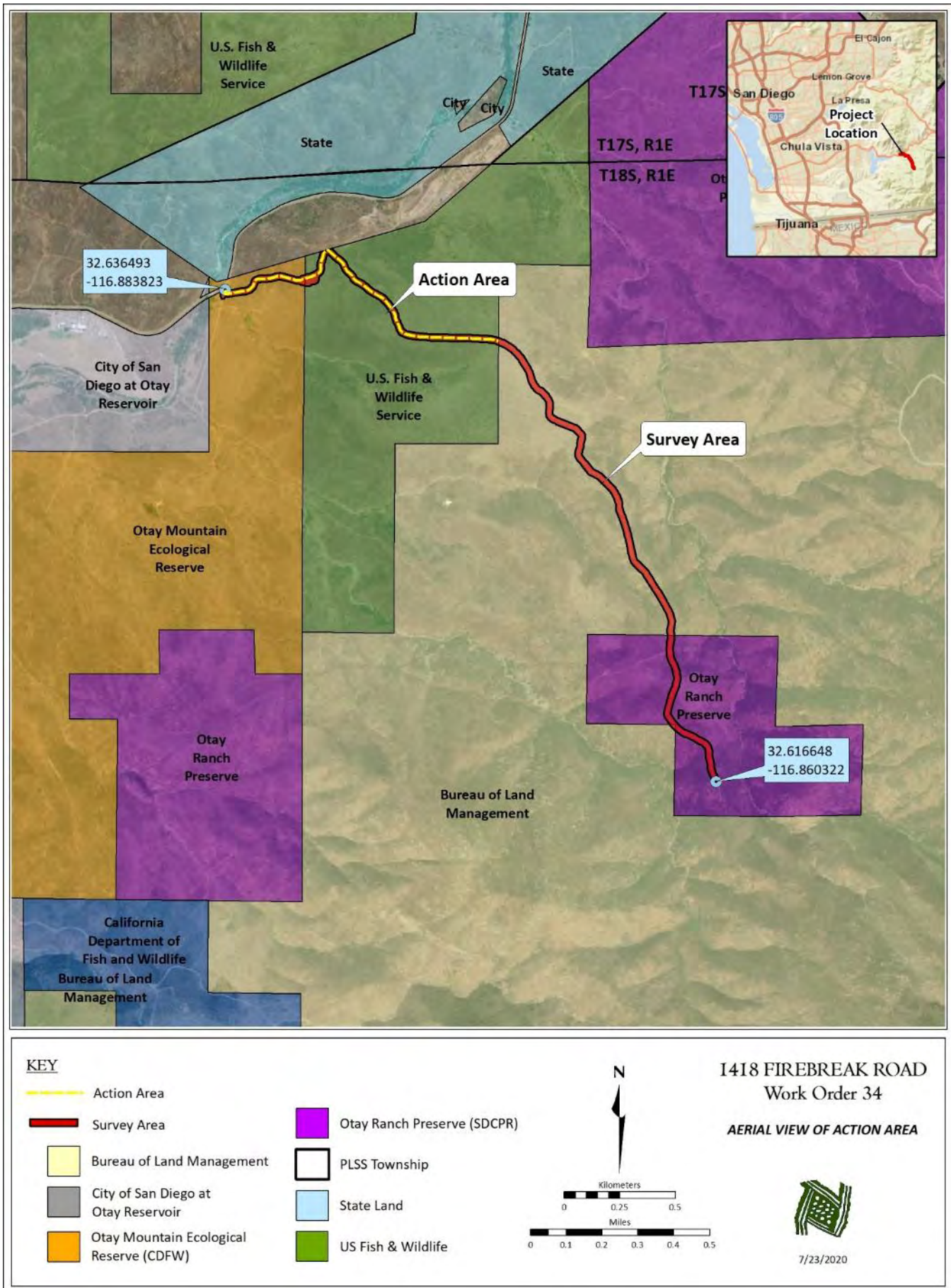




Figure 3: Proposed Project Alternatives

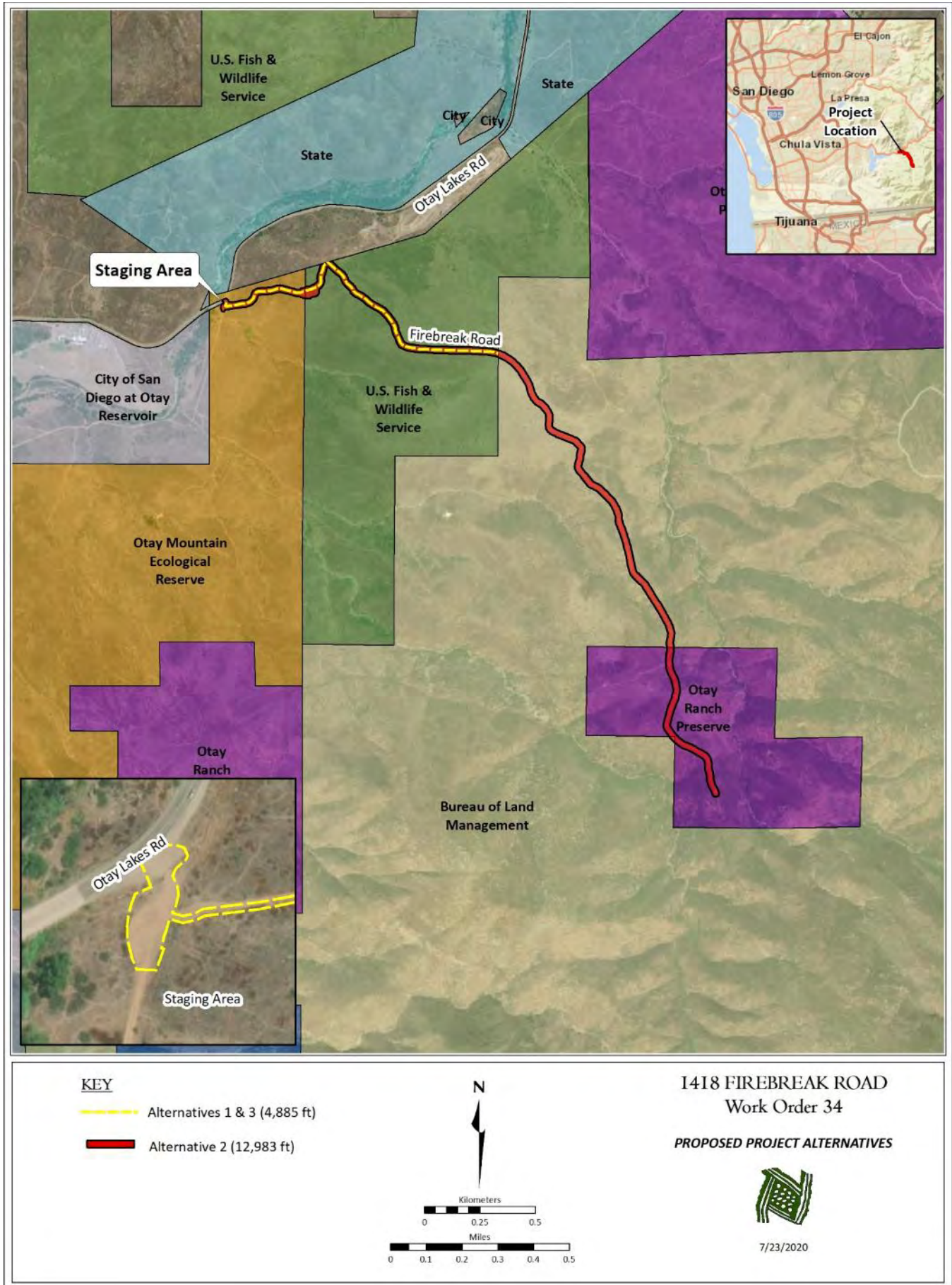




Figure 4a: Proposed Action Area

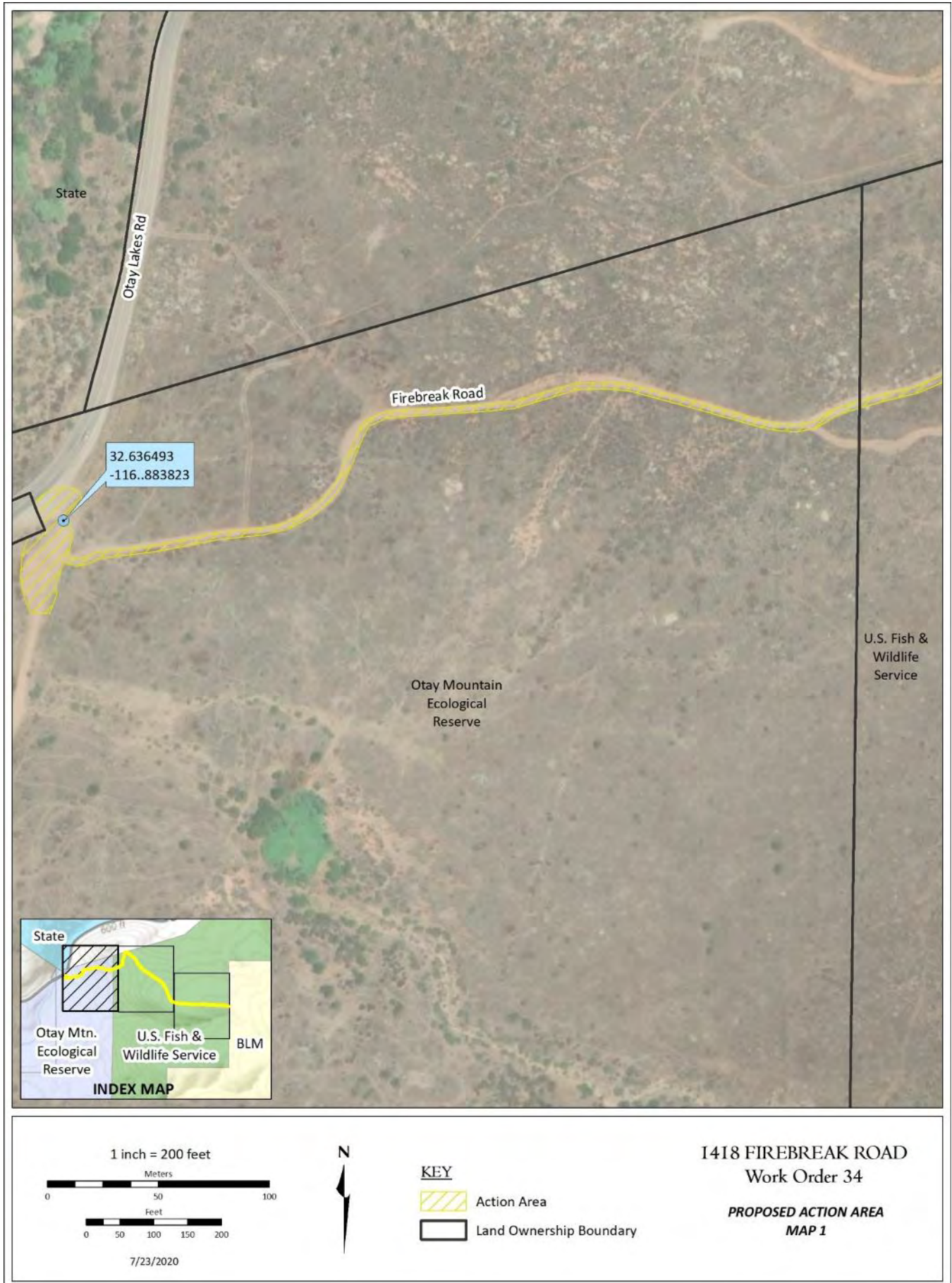




Figure 4b: Proposed Action Area





Figure 4c: Proposed Action Area

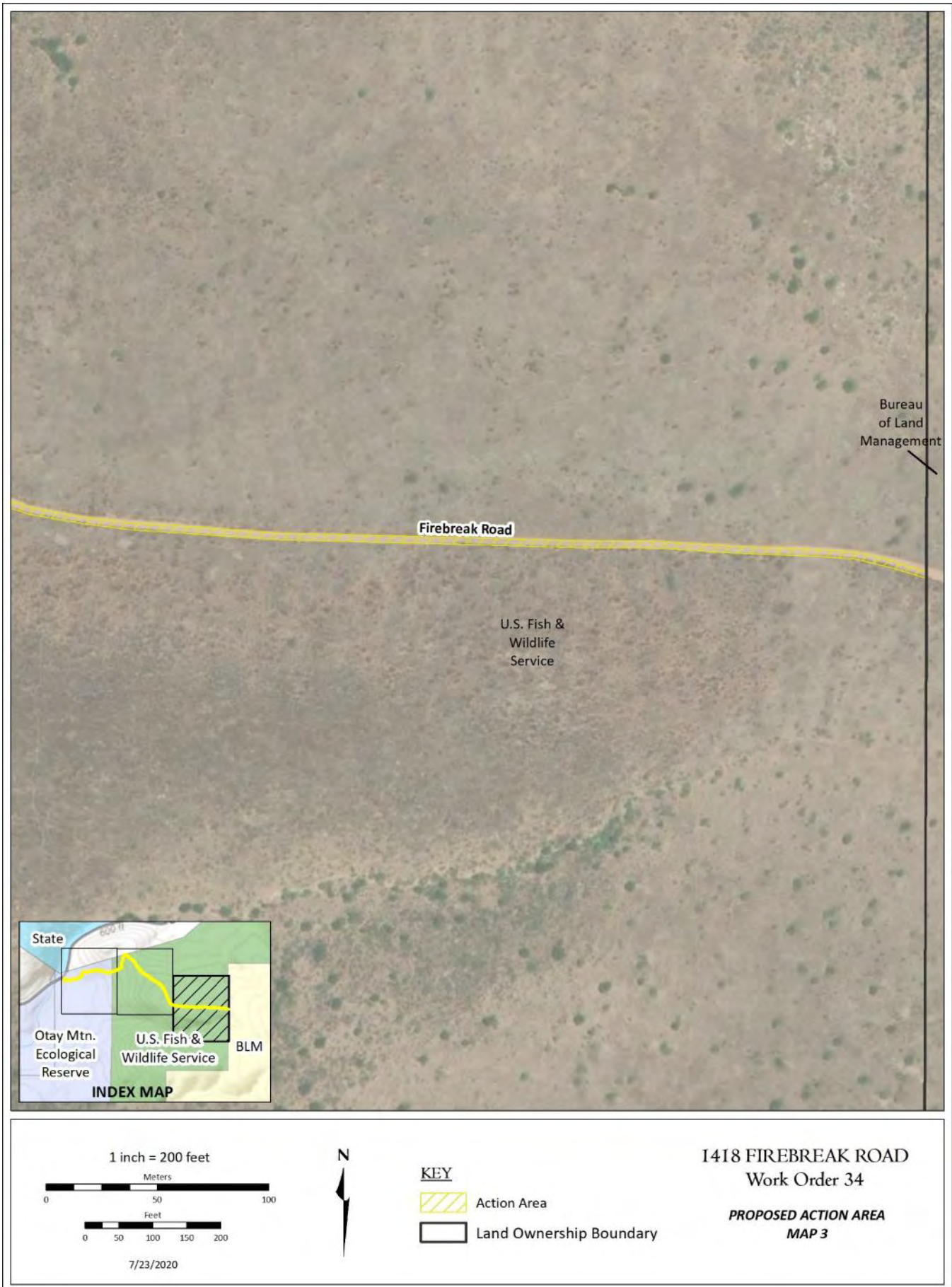




Figure 5: Critical Habitat in the Action Area

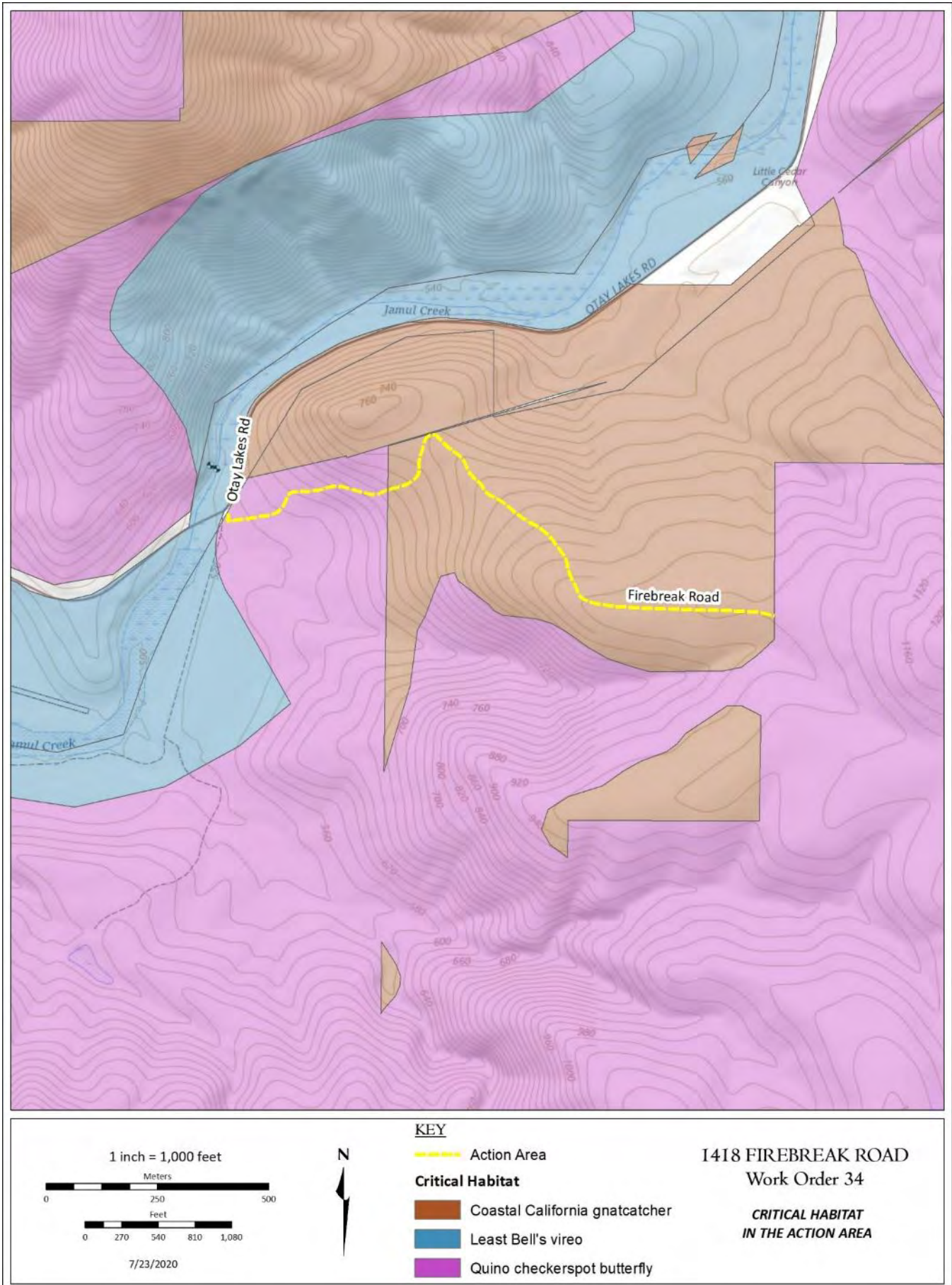




Figure 6a: San Diego Fairy Shrimp Habitat and Occurrence

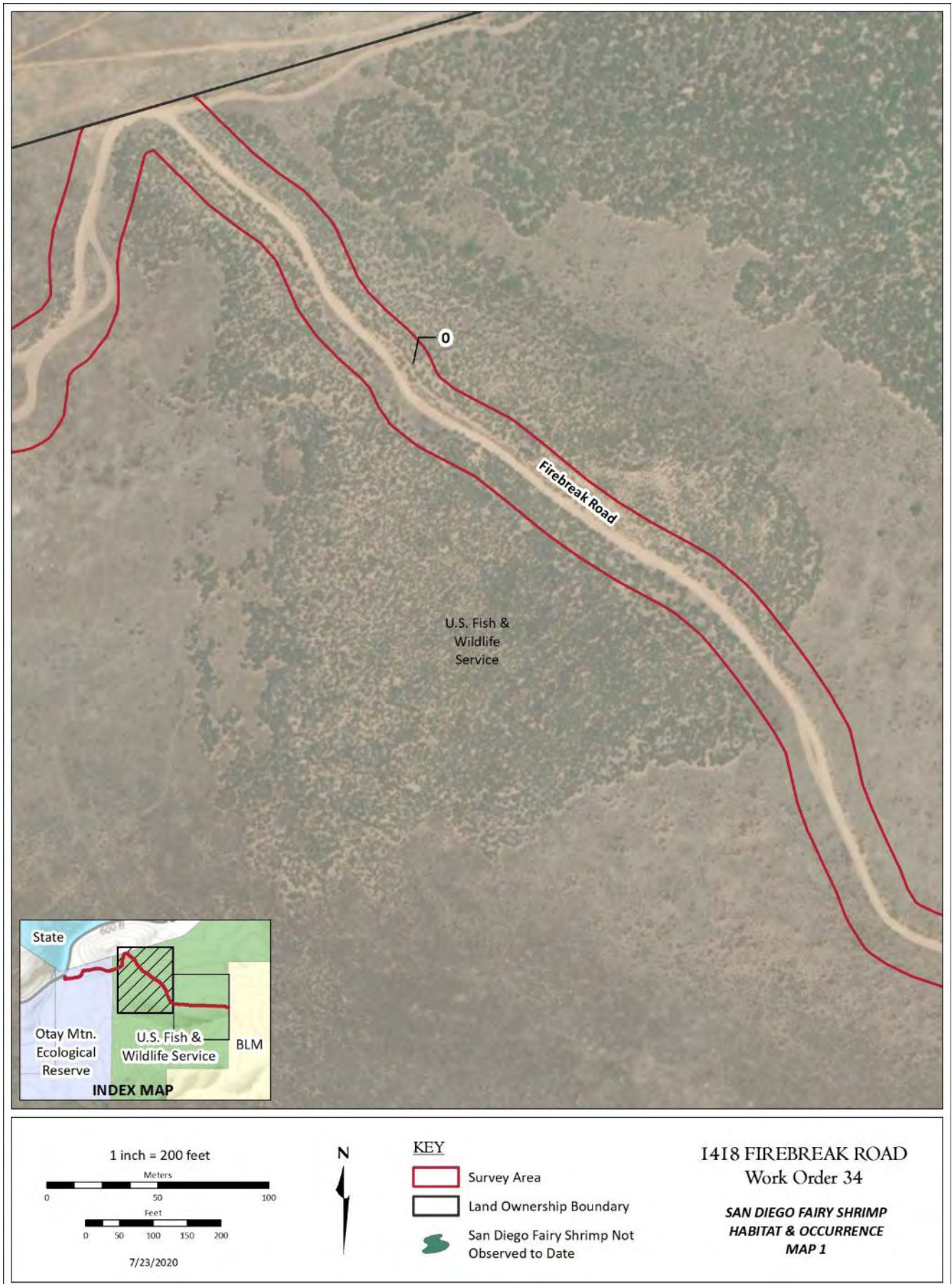




Figure 6b: San Diego Fairy Shrimp Habitat and Occurrence





Figure 7a: QCB Habitat and Occurrence

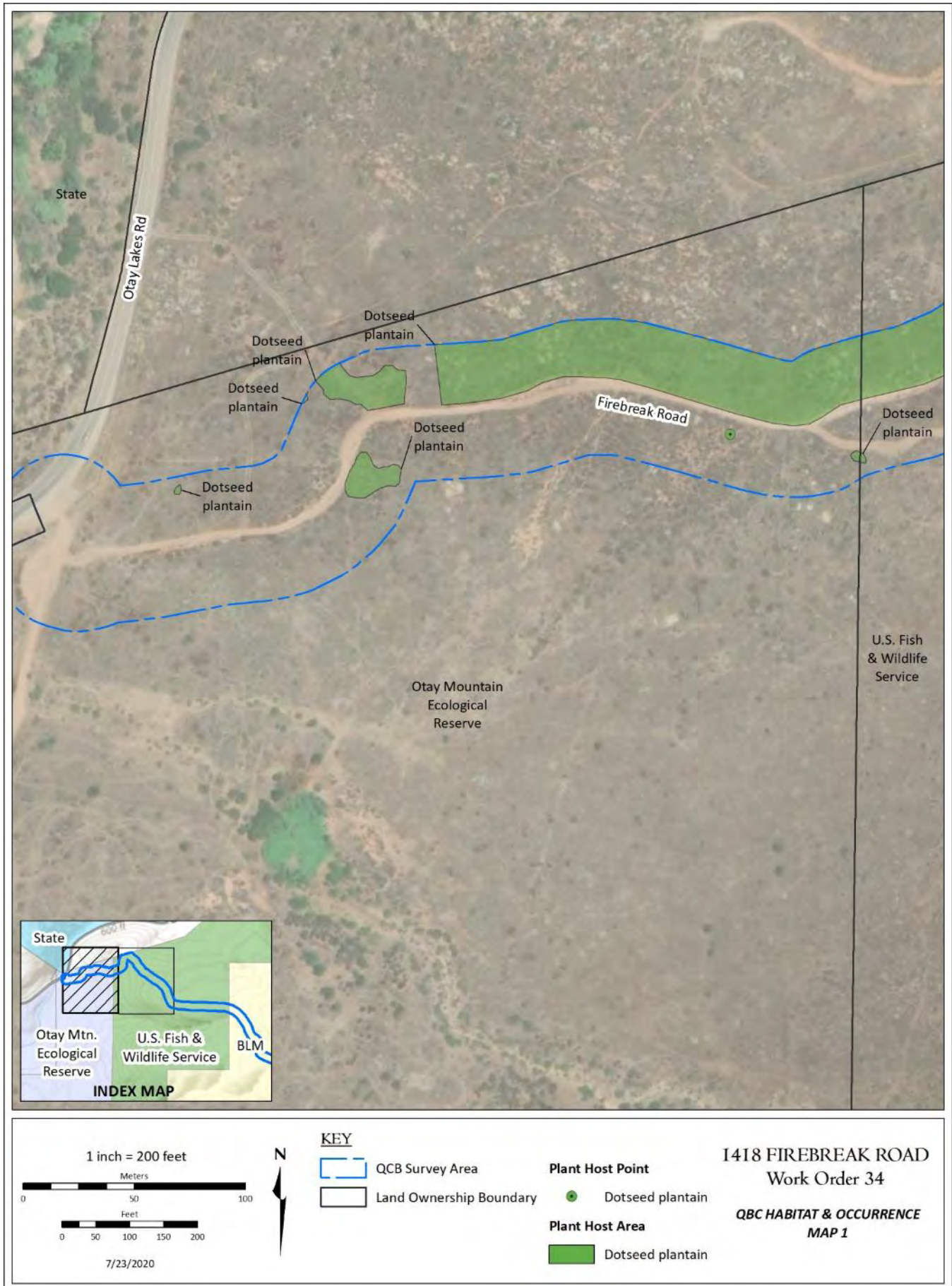




Figure 7b: QCB Habitat and Occurrence

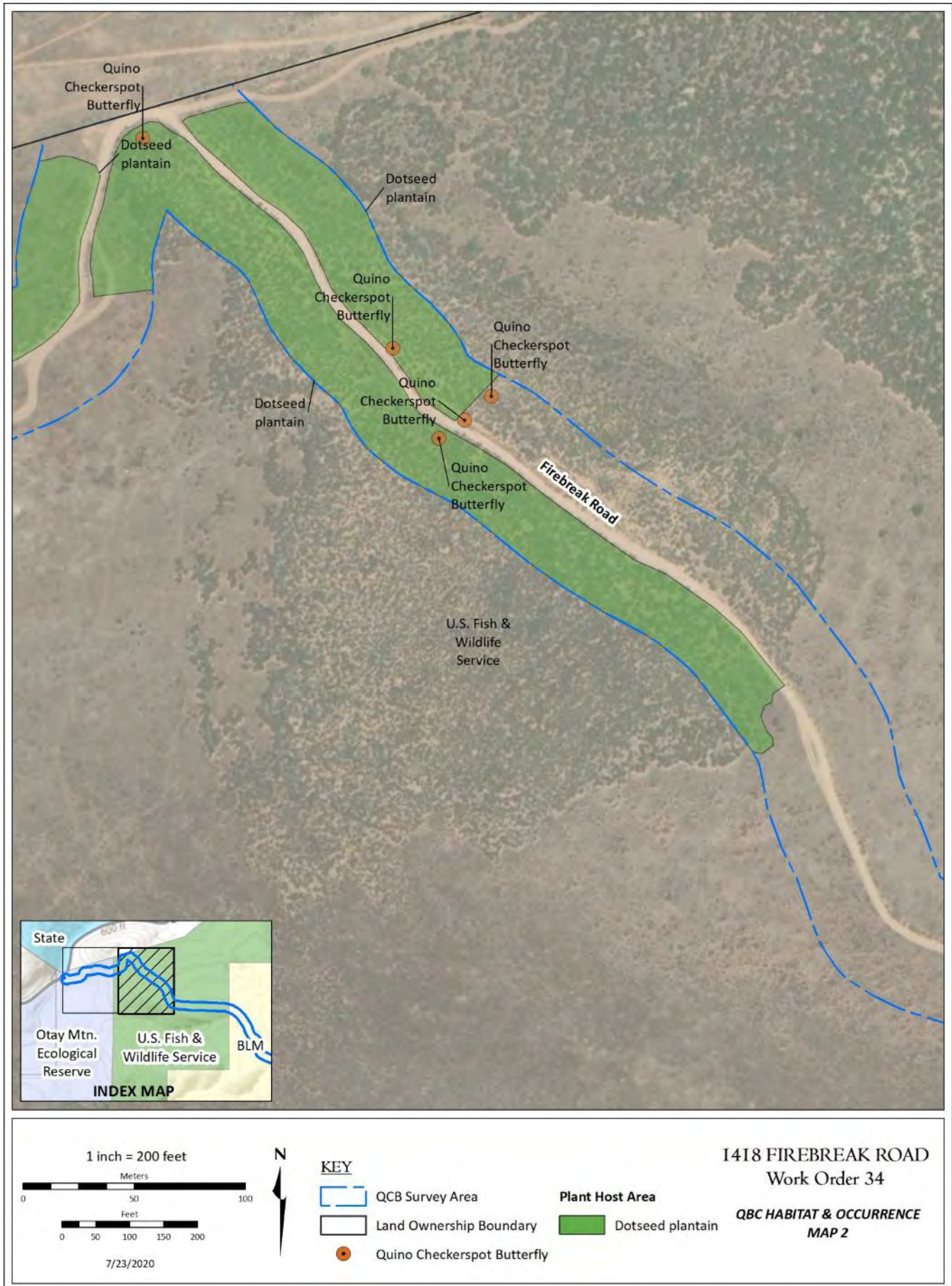




Figure 8a: CAGN Habitat and Occurrence

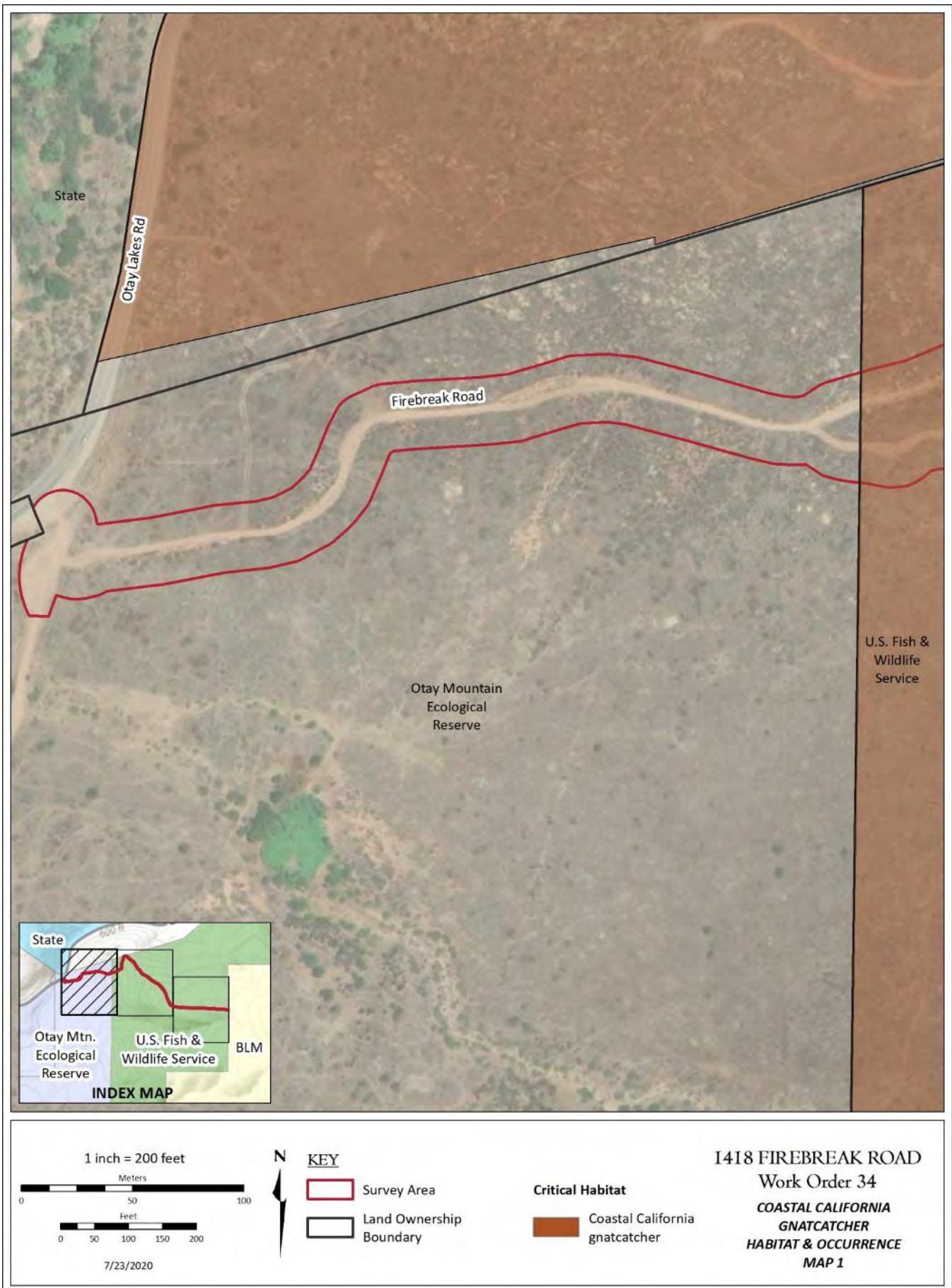


Figure 8b: CAGN Habitat and Occurrence

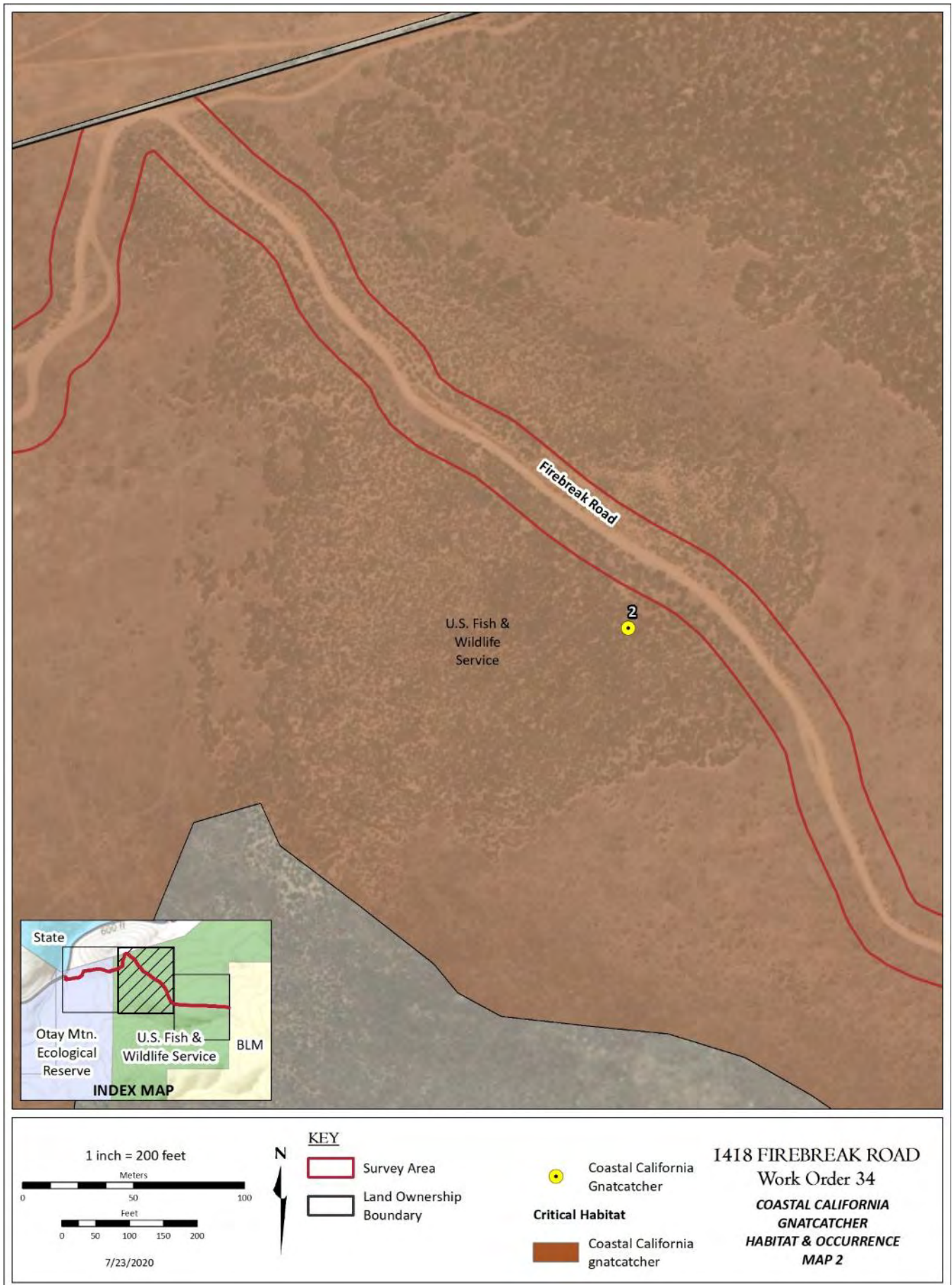




Figure 8c: CAGN Habitat and Occurrence

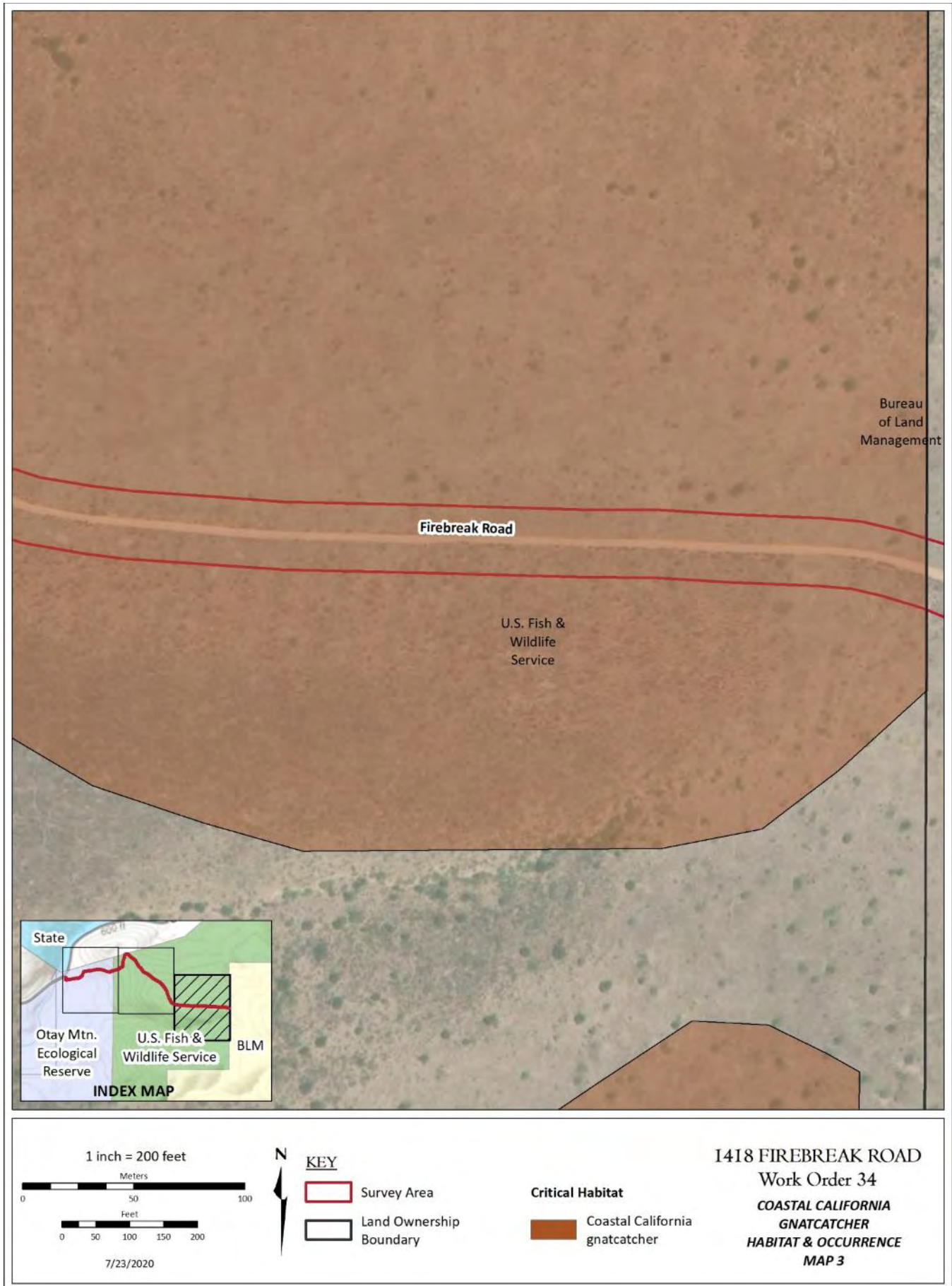




Figure 9a: Analysis of Effects to San Diego Fairy Shrimp





Figure 9b: Analysis of Effects to San Diego Fairy Shrimp





Figure 10a: Analysis of Effects to Quino Checkerspot Butterfly and Critical Habitat

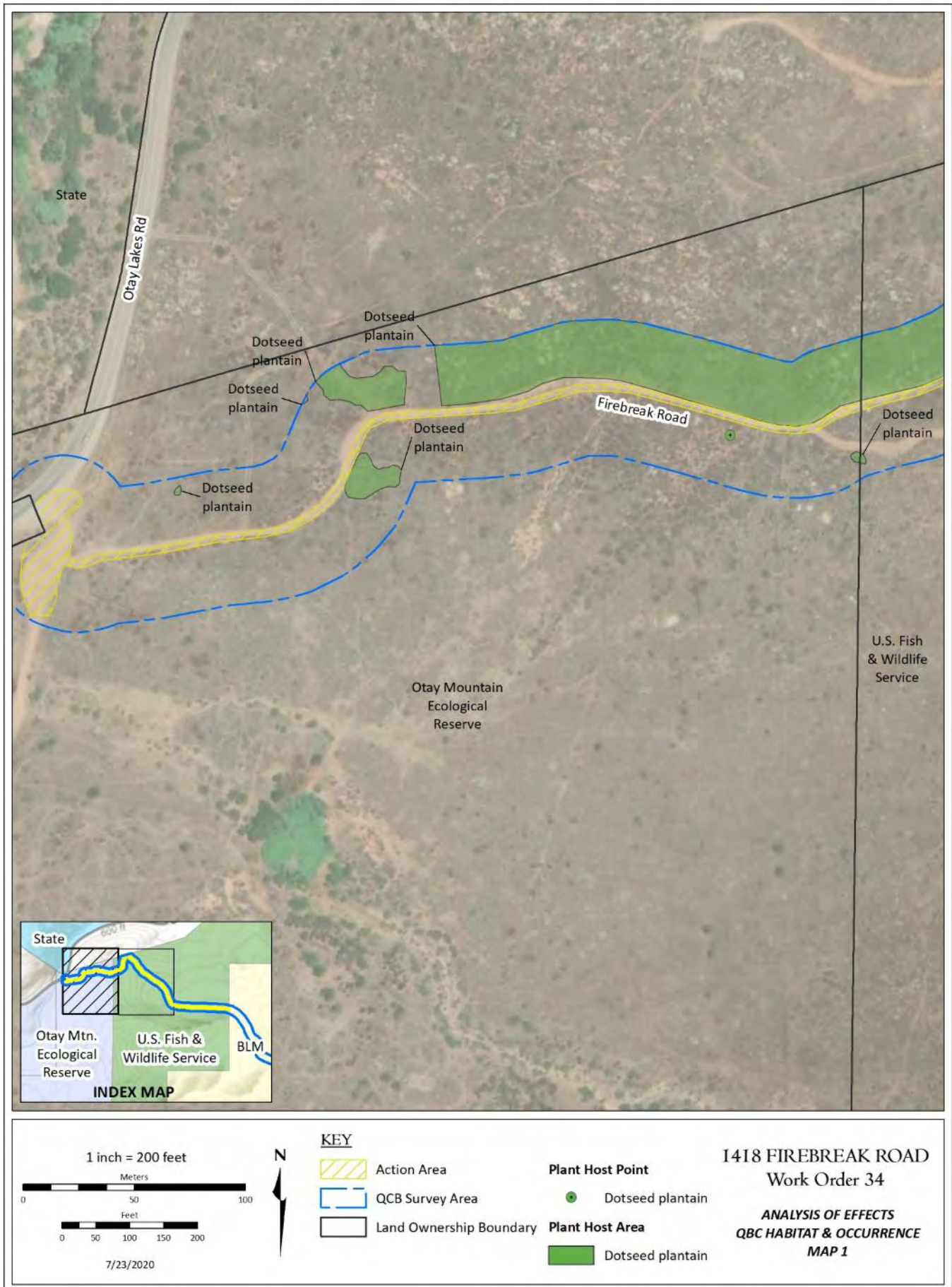




Figure 10b: Analysis of Effects to Quino Checkerspot Butterfly and Critical Habitat

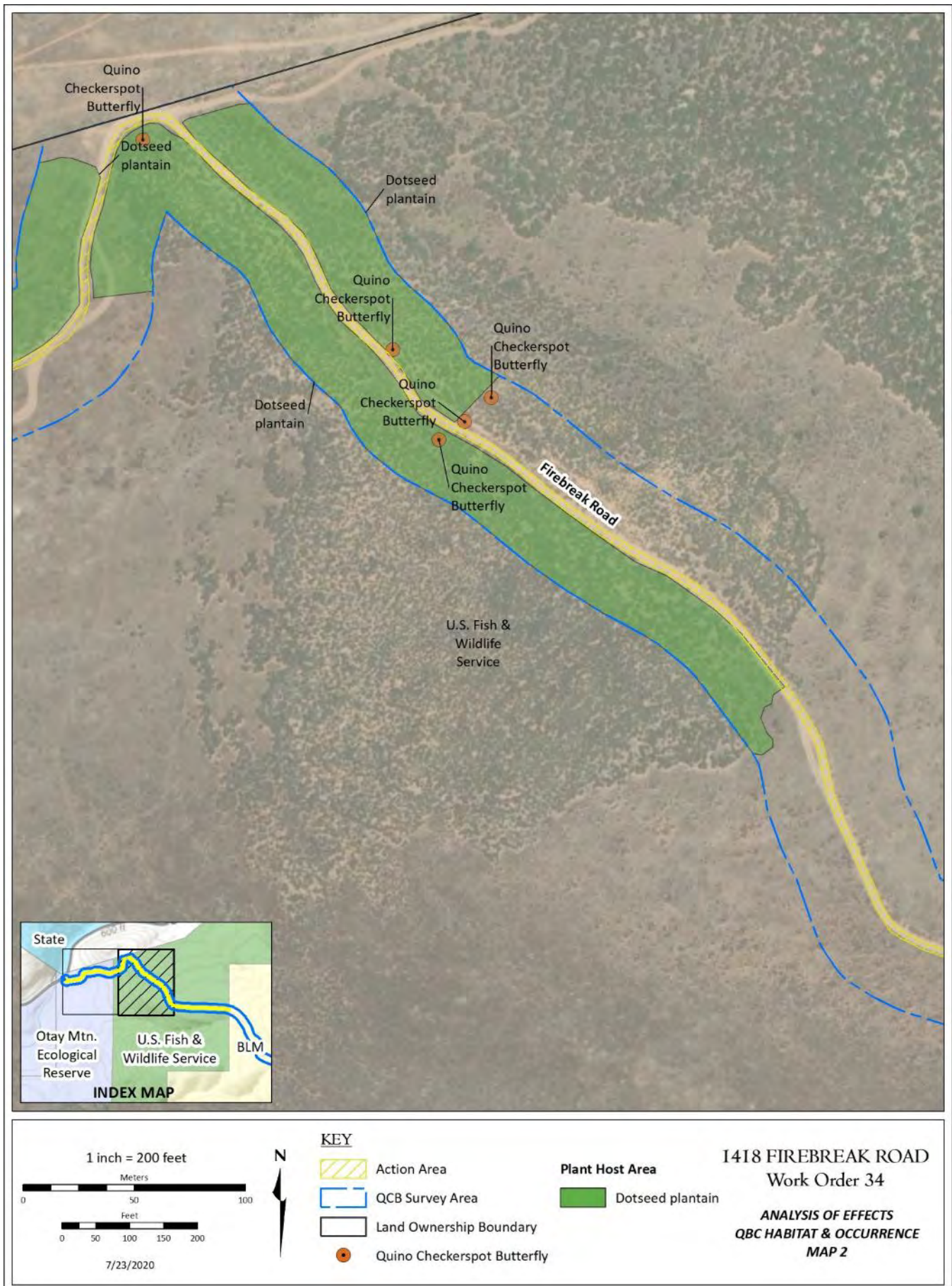




Figure 11a: Analysis of Effects to California Gnatcatcher and Critical Habitat

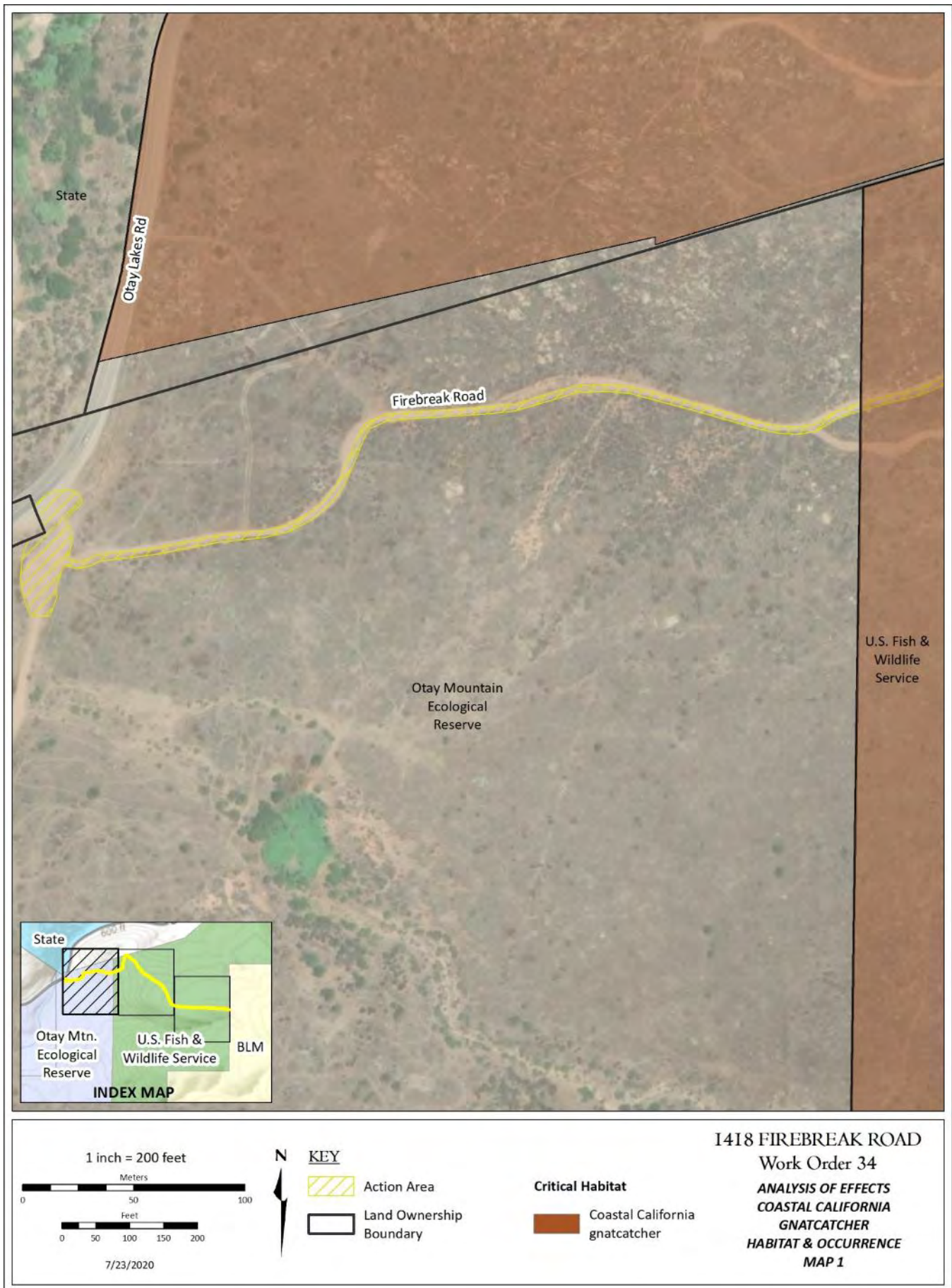


Figure 11b: Analysis of Effects to California Gnatcatcher and Critical Habitat

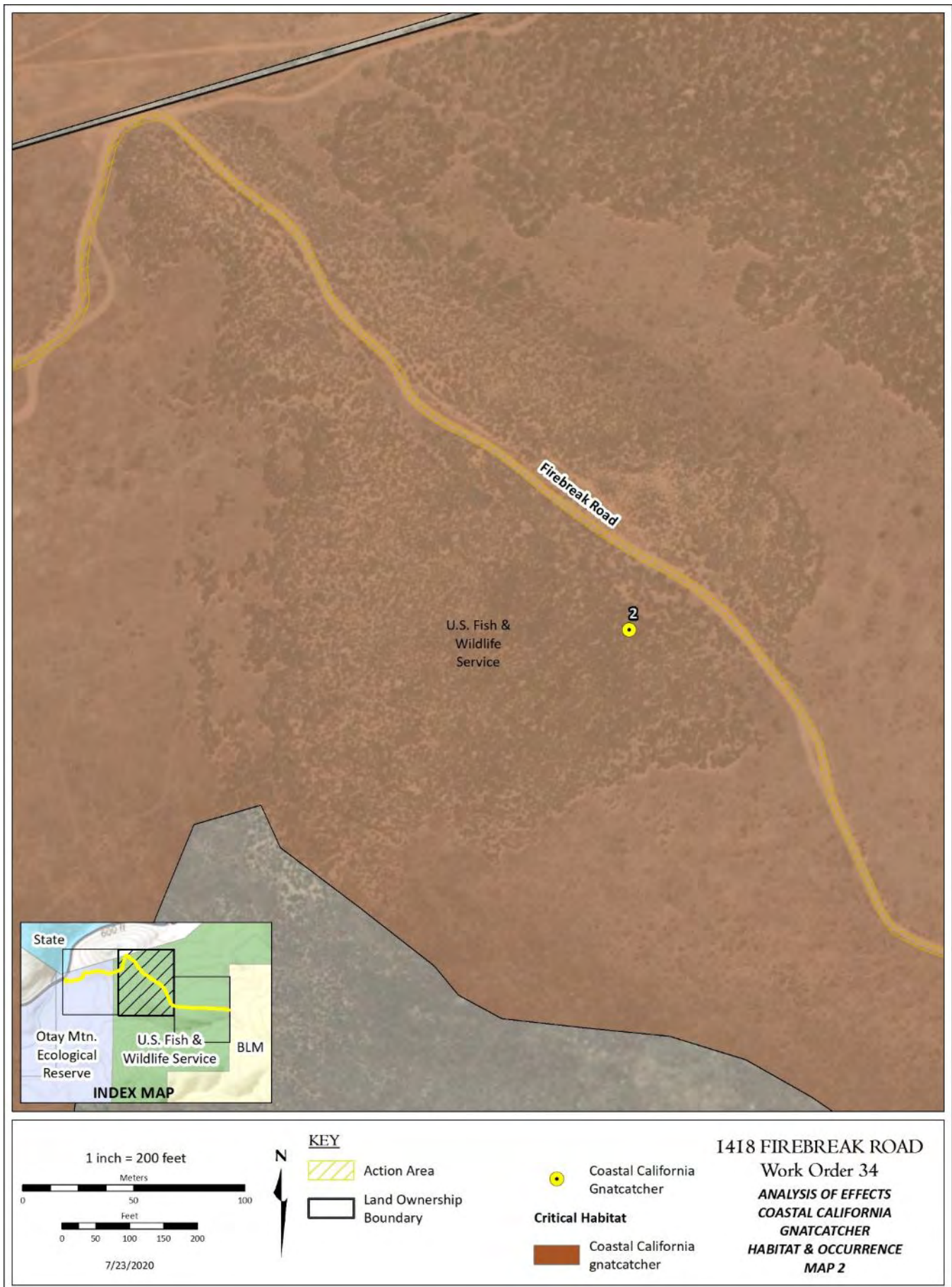
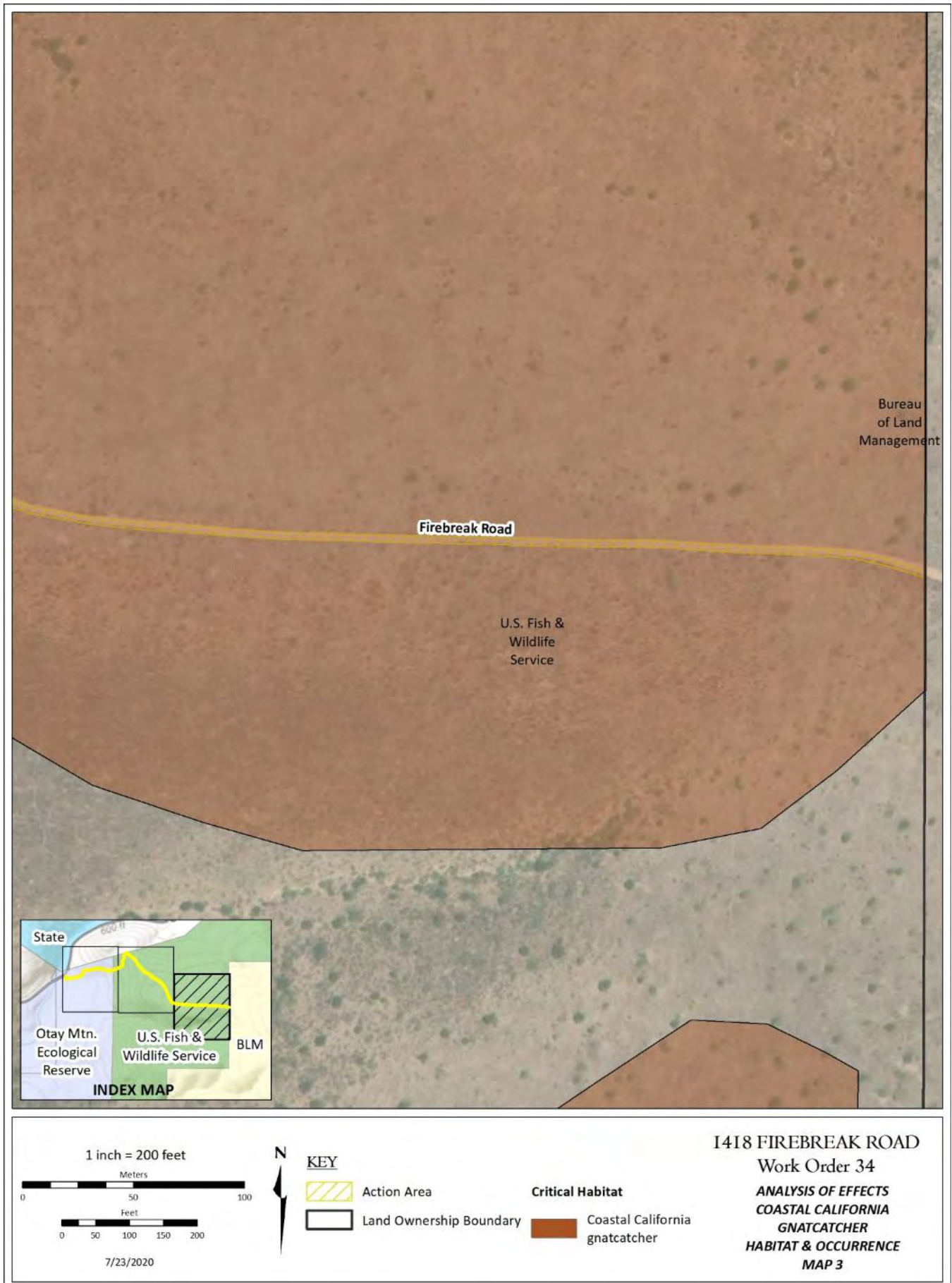




Figure 11c: Analysis of Effects to California Gnatcatcher and Critical Habitat





**APPENDIX B:**  
**AGENCY CORRESPONDENCE**

1300 Pennsylvania Avenue NW  
Washington, DC 20229



**U.S. Customs and  
Border Protection**

August 10, 2020

David Zoutendyk  
Division Chief  
City of San Diego, Coastal and Inland San Diego Cities  
United States Fish and Wildlife Service  
Carlsbad Field Office  
2177 Salk Avenue Suite 250  
Carlsbad, CA 92008-7385

SUBJECT: Arnie's Point Vernal Pool Restoration Plan and Schedule

Dear Mr. Zoutendyk:

This letter continues Section 7 consultation between Customs and Border Protection (CBP) and the United States Fish and Wildlife Service (USFWS) relative to potential impacts to federally listed species pursuant to proposed CBP projects at Otay Mesa and Firebreak Road.

The enclosure summarizes the events of our meeting of July 28, 2020 and defines action items and schedules for vernal pool restoration at Arnie's Point (Otay Mesa-San Diego County) as potential mitigation for anticipated impacts to occupied San Diego fairy shrimp (*Branchinecta sandiegonensis*) habitat elsewhere on CBP property.

The enclosure further defines a mitigation area summary, and a draft restoration plan map of enhancement, creation, and preservation areas.

The correspondence and proposed restoration map will also be enclosed with the draft Biological Assessment for the Persistent Surveillance and Detection System project to be submitted under separate cover to USFWS for formal Section 7 consultation.

The enclosed plan and schedule represents CBP's good faith commitment to mitigate for impacts to Fairy Shrimp.

Should you have any questions or require additional information please feel free to contact David Walls at 571-230-4476, [david.walls@associates.cbp.dhs.gov](mailto:david.walls@associates.cbp.dhs.gov). Please address written correspondence to: US Customs and Border Protection, Border Patrol HQ, 1300 Pennsylvania Ave NW 6.5E Mail Stop 1039, Washington, D.C. 20229 Attn: *Paul Enriquez*. We also request you provide an electronic copy of any correspondence to Mr. Walls at [david.walls@associates.cbp.dhs.gov](mailto:david.walls@associates.cbp.dhs.gov).

Mr. Zoutendyk, USFWS

Page 2

Respectfully,

A handwritten signature in blue ink, appearing to read "Paul Enriquez".

Paul Enriquez

Director

Acquisitions, Real Estate, and Environmental

Program Management Office Directorate

United States Border Patrol

USFWS Field Meeting – Arnie's Point  
July 28, 2020

#### Attending:

- USFWS – David Zoutendyk and Pat Gower
- CBP – Amber Craig and Paul Enriquez
- Bio-Studies – Rod Dossey and Diana Saucedo

#### Outcomes:

- **Action Item:** USFWS will review past Arnie's Point BOs and restoration plans to determine concurrence with Bio-Studies' assessment of available mitigation as shown on mitigation assessment handout provided at the meeting (enclosed).
  - o CBP is proposing to mitigate for 0.4-acre of impacts to occupied San Diego fairy shrimp habitat from the PSDS and 1418 Firebreak Road projects at Arnie's Point, for a total of 0.81-acre of vernal pool mitigation.
- **Action Item:** If vernal pool mitigation is available at Arnie's Point to cover the PSDS and 1418 Firebreak Road projects as proposed, USFWS would like to verify that restoration success criteria was met. This information would be contained in the Year 5 maintenance and monitoring report for Arnie's Point Vernal Pool Restoration Area B prepared by Helix and ERC (2008).
  - o USFWS also will endeavor to assess why the entire 23 acres of the vernal pool restoration area were not restored, i.e. did unmonitored pools receive treatment of any kind and why weren't all pools mapped?
- USFWS and Bio-Studies identified areas within Arnie's Point Restoration Site and Goat Mesa that have potential for restoration/enhancement
- **Action Item:** Bio-Studies will provide an assessment map of areas that were identified in the field as having potential for restoration or additional enhancement (enclosed)
- **Action Item:** Bio-Studies will provide a proposed timeline for concurrent project and restoration implementation (enclosed)
- CBP identified that a contract needs to be in place for 1418 Firebreak with a pre-con meeting before September 30. USFWS indicated they would try and meet that schedule.
- USFWS indicated that incorporating QCB host plants in upland seed pallet into restoration is welcome. Native grassland species were seeded into Area B, but never took off, possibly due to prevalence of dense non-native grassland.

#### Documents Bio-Studies Requires for Background Information

If USFWS has copies of these documents, Bio-Studies would appreciate the opportunity to scan or copy them.

1. Area B Restoration Plan – prepared by Chuck Black
2. Area B Maintenance and Monitoring Report (Year 1 as built, Year 2) - prepared by HELIX

#### Conceptual Restoration Plan

A conceptual restoration plan map has been prepared and is attached below. The map highlights three treatment areas for the restoration site based on enhancement, creation, and preservation. These areas were reviewed on-site with USFWS and areas are based on potential for creation and enhancement identified by USFWS.

USFWS Field Meeting – Arnie's Point  
July 28, 2020

### Proposed Phased Approach

#### Enhancement Areas

Enhancement Areas (E1-E3) support 0.82-acre of vernal pool habitat that will be used to mitigate for impacts from 1418 Firebreak Road and the PSDS Project, in accordance with conservation measures listed in each draft Biological Assessment and corresponding USFWS Section 7 Biological Opinions (BO). Enhancement Areas (E4-E7) support vernal pools that have been previously treated under past maintenance and monitoring plans, as well as extant pools that were left untreated during previous efforts.

#### Creation Areas

Creation areas (C1-C10) provide opportunities for future vernal pool creation and enhancement. These areas may have extant vernal pools or historic vernal pools.

#### Preservation Areas

Preservation Areas (P1-P3) are existing mitigation areas covered under BO FWS-SDG-1089.12 and FWS-SDG-1089.17. These areas will be subject to routine maintenance in accordance with restoration plan maintenance and monitoring prescriptions.



USFWS Field Meeting – Arnie’s Point  
July 28, 2020

Arnie’s Point Conceptual Vernal Pool Restoration Timeline

DELIVERABLE	SCHEDULE
1) Draft Biological Assessment – 1418 Firebreak Road	Submitted to CBP on Monday July 27, 2020
2) Field Visit with USFWS	Tuesday July 28, 2020
3) Draft Biological Assessment – PSDS Project	Submitted to CBP August 5, 2020 CBP Comments Due NLT August 14, 2020
4) Draft Conceptual Vernal Pool Restoration Plan	Friday August 14, 2020  - Identification of phased restoration approach beginning with areas for restoration and/or enhancement for 1418 Firebreak Road and PSDS impacts. - A final Restoration Plan cannot be completed until full extent of vernal pools within Area B are mapped. Current mapping only shows vernal pools treated as part of previous restoration efforts, but field visits and historic mapping indicate more pools are present and have the potential for restoration.
5) First Treatment at Arnie’s Point	Between August 30 and September 15  - De-thatch Arnie’s Point Vernal Pool Restoration Areas A and B [or Phase I areas as indicated in Conceptual Restoration Plan) - Aerial LIDAR or similar topographical assessment of area (0.5-foot contours) or less - Repair fencing where required
6) Final Biological Assessment	Two weeks after receipt of comments on Draft Biological Assessment and Conceptual Vernal Pool Restoration Plan – September 15, 2020
o ESA Section 7 Consultation Letters	Two weeks after receipt of comments on Draft Biological Assessment
7) 1418 Firebreak Road – last day to sign contract/pre-con meeting	September 30
8) Mapping of vernal pools	Late fall or early winter
9) Draft Vernal Pool Restoration Plan	December 1, 2020 or sooner depending on rainfall
10) Protocol Fairy Shrimp Surveys	2020/2021 – wet season  - Survey of all pools within Arnie’s Point, including previously mapped ‘unmonitored

USFWS Field Meeting – Arnie's Point  
 July 28, 2020

DELIVERABLE	SCHEDULE
	pools' and any new pools mapped as a result of topographical assessment
11) Final Restoration Plan	January 15-February 15, 2021
12) Vernal Pool Rare Plant Surveys	Spring – Summer 2021 <ul style="list-style-type: none"> <li>- Map of vernal pool plant species, including listed plant species, to determine treatment areas</li> <li>- Determine the status of native grassland species within the treatment area</li> </ul>
13) Restoration/enhancement of vernal pools as needed for current mitigation	June – July 2021 <ul style="list-style-type: none"> <li>- Location depending on Option chosen</li> <li>- Grading and recontouring of basins for fairy shrimp</li> <li>- Inoculum placed in new or extant pools without fairy shrimp</li> </ul>



Mitigation Potential Summary for Arnie's Point  
(PSDS and 1418 Firebreak Road)

Arnie's Point Property Vernal Pools

TABLE 1 - ARNIE'S POINT VERNAL POOL RESTORATION AREA

Area	Square Feet (sq. ft.)	Acres
Area A	103,965	2.38
Area B	907,313	20.82
<b>TOTAL AREA</b>	<b>1,011,278</b>	<b>23.22</b>

TABLE 2 - ARNIE'S POINT RESTORATION AREA POOLS - AREA B

Pool Type	Square Feet (sq. ft.)	Acres
*Control Pool (3 pools)	11,0596	0.25
SDFS/RFS Habitat	56,272	1.29
SDFS Habitat	21,809	0.50
*Vernal Pool – Unmonitored	14,409	0.33
<b>TOTAL AREA B POOLS</b>	<b>103,550</b>	<b>2.37</b>

\*Assumed to be part of mitigation (Source: Figure 3, HELIX and ERS 2008.)

TABLE 3 – TOTAL VERNAL POOL MITIGATION POTENTIAL - ARNIE'S POINT

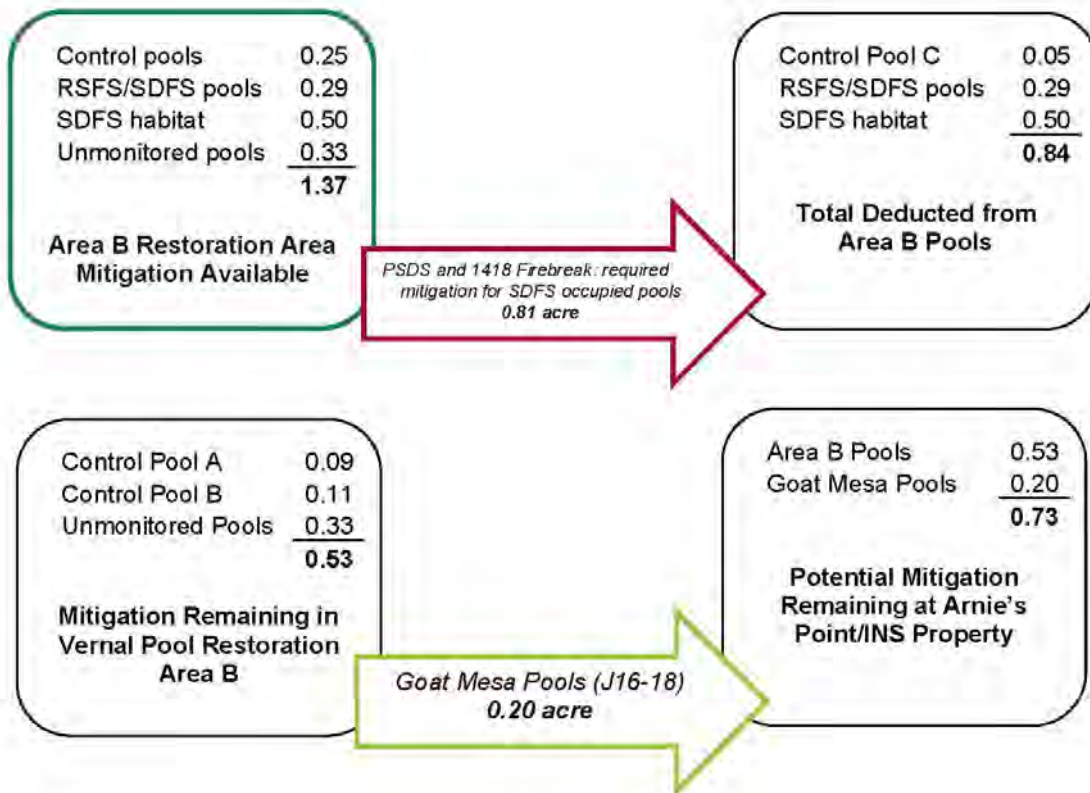
Project	Square Feet (sq. ft)	Acres
Area B Restoration Pools	103,550	2.37
<i>Area II Project (BO 1-6-01-1089.17)</i>	<i>43,560</i>	<i>1.0</i>
<b>Area B Restoration Pools Remaining</b>	<b>59,990</b>	<b>1.37</b>
Goat Mesa Pools (J16-18)	8,712	0.20
<b>Total Mitigation Potential Remaining</b>	<b>68,702</b>	<b>1.57</b>

Mitigation Potential Summary for Arnie's Point  
(PSDS and 1418 Firebreak Road)

CBP Mitigation Requirements

TABLE 4 - ANTICIPATED CBP PROJECT MITIGATION NEEDS

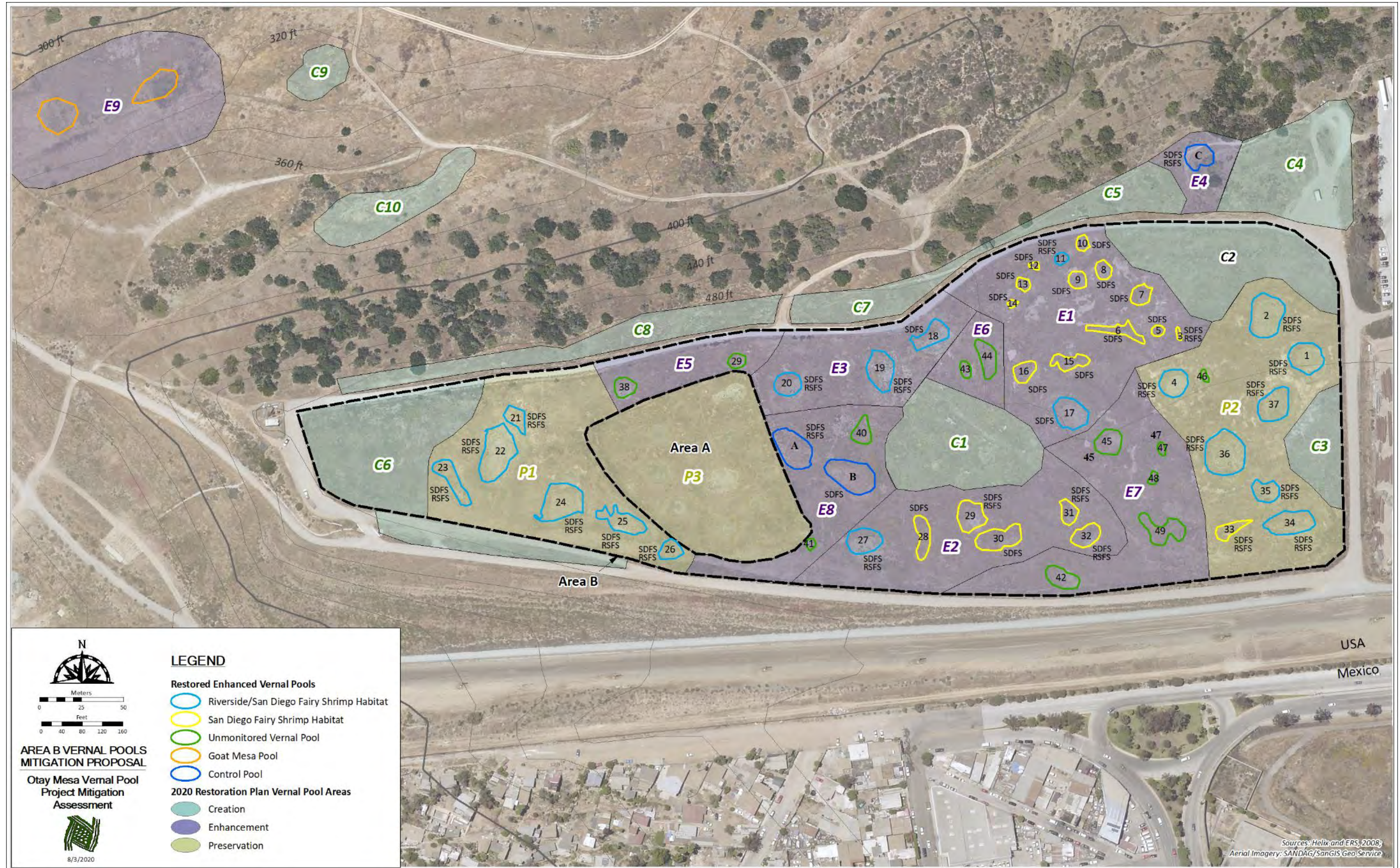
Vernal Pool/Mitigation	PSDS <sup>1</sup>		1418 Firebreak <sup>2</sup>	
	Acres	Square feet	Acres	Square feet
Current occupied* area	0.40	17,434	0.00	170
Minimum mitigation required	0.80	34,848	0.01	510



**APPENDIX C:**  
**SAN DIEGO FAIRY SHRIMP MITIGATION AREA**



# AREA B VERNAL POOLS MITIGATION PROPOSED





**APPENDIX D:**  
**Quino Checkerspot Butterfly Mitigation Areas**

# Roads Proposed for Closure on OMER and SDNWR







**From:** [Nicolas Frederick](#)  
**To:** [Hannah Kopydlowski](#)  
**Subject:** FW: USFWS San Diego NWR Complex Comments on CBP Draft EA for 1418 Firebreak Road Project  
**Date:** Tuesday, September 15, 2020 9:07:30 AM  
**Attachments:** [FWS Comments on 1418 Fire Break Road Project EA 20200911 AY Signed 09-11-20.pdf](#)  
[FWS Comments on EA for CBP 1418 Fuelbreak Road Project 20200911.xlsx](#)  
[1418 Fire Break Road Conservation Measures from CFWO for BP 20200911.docx](#)

---

For our records

**Nicolas Frederick**

Senior Project Manager

**DAWSON**

Mobile: 919.698.8060

---

**From:** PETRILLA, JOHN <[JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov)>  
**Sent:** Monday, September 14, 2020 7:31 PM  
**To:** Nicolas Frederick <[nfrederick@dawson8a.com](mailto:nfrederick@dawson8a.com)>; FREDERICK, NICOLAS B (CTR) <[NICOLAS.B.FREDERICK@associates.cbp.dhs.gov](mailto:NICOLAS.B.FREDERICK@associates.cbp.dhs.gov)>  
**Subject:** FW: USFWS San Diego NWR Complex Comments on CBP Draft EA for 1418 Firebreak Road Project

Hi Nic,  
Please see comments from FWS on the 1418 Firebreak Road.

Regards,  
John

---

**From:** Terp, Jill <[Jill\\_Terp@fws.gov](mailto:Jill_Terp@fws.gov)>  
**Sent:** Friday, September 11, 2020 4:45 PM  
**To:** PETRILLA, JOHN <[JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov)>  
**Cc:** ENRIQUEZ, PAUL <[paul.enriquez@cbp.dhs.gov](mailto:paul.enriquez@cbp.dhs.gov)>; BARNES, MICHELLE L <[MICHELLE.L.BARNES@cbp.dhs.gov](mailto:MICHELLE.L.BARNES@cbp.dhs.gov)>; CRAIG, AMBER L <[AMBER.L.CRAIG@CBP.DHS.GOV](mailto:AMBER.L.CRAIG@CBP.DHS.GOV)>; Gower, Patrick <[patrick\\_gower@fws.gov](mailto:patrick_gower@fws.gov)>; Zoutendyk, David <[David\\_Zoutendyk@fws.gov](mailto:David_Zoutendyk@fws.gov)>; Binns, Dwane A <[dwane\\_binns@fws.gov](mailto:dwane_binns@fws.gov)>; Martin, John A <[john\\_a\\_martin@fws.gov](mailto:john_a_martin@fws.gov)>; Yuen, Andy <[andy\\_yuen@fws.gov](mailto:andy_yuen@fws.gov)>  
**Subject:** USFWS San Diego NWR Complex Comments on CBP Draft EA for 1418 Firebreak Road Project

**CAUTION:** This email originated from outside of DHS. DO NOT click links or open attachments unless you recognize and/or trust the sender. Contact the [CBP Security Operations Center](#) with questions or concerns.

Hi John:  
Attached is our cover letter and Refuge Complex comments on the subject EA.  
Also attached are conservation measures for the project as provided to us by the Carlsbad Ecological Services Office.  
Thank you for the opportunity to comment and please let us know if you have any questions

about our comments.

Sincerely, Jill

\*\*\*\*\*

Jill Terp, Deputy Project Leader

she/her/hers

San Diego National Wildlife Refuge Complex

US Fish and Wildlife Service

1080 Gunpowder Point Drive

Chula Vista, California 91910

619-719-8579 cell

[jill\\_terp@fws.gov](mailto:jill_terp@fws.gov)

[https://www.fws.gov/refuge/San\\_Diego\\_Bay/About\\_the\\_Complex.html](https://www.fws.gov/refuge/San_Diego_Bay/About_the_Complex.html)

Region 8 - Lower Colorado Basin. Region 8 consists of the entirety of Arizona; Clark County, Nevada; and the portion

of California that includes the counties of San Bernardino, Los Angeles, Ventura, Santa Barbara, and those counties lying to the south.

\*\*\*\*\*

---

**From:** PETRILLA, JOHN <[JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov)>

**Sent:** Monday, August 17, 2020 1:46 PM

**To:** Terp, Jill <[Jill\\_Terp@fws.gov](mailto:Jill_Terp@fws.gov)>; Gower, Patrick <[patrick\\_gower@fws.gov](mailto:patrick_gower@fws.gov)>; Nelson, Tracie@Wildlife <[Tracie.Nelson@wildlife.ca.gov](mailto:Tracie.Nelson@wildlife.ca.gov)>; [cgoddard@chulavistaca.gov](mailto:cgoddard@chulavistaca.gov) <[cgoddard@chulavistaca.gov](mailto:cgoddard@chulavistaca.gov)>; Hernandez, Victoria L <[vhernandez@blm.gov](mailto:vhernandez@blm.gov)>; Ortiz, Danielle D <[ddortiz@blm.gov](mailto:ddortiz@blm.gov)>; Price, Jennifer <[Jennifer.Price@sdcounty.ca.gov](mailto:Jennifer.Price@sdcounty.ca.gov)>; Dulaney, Ashley <[Ashley.Dulaney@sdcounty.ca.gov](mailto:Ashley.Dulaney@sdcounty.ca.gov)>

**Cc:** ENRIQUEZ, PAUL <[paul.enriquez@cbp.dhs.gov](mailto:paul.enriquez@cbp.dhs.gov)>; BARNES, MICHELLE L <[MICHELLE.L.BARNES@cbp.dhs.gov](mailto:MICHELLE.L.BARNES@cbp.dhs.gov)>; CRAIG, AMBER L <[AMBER.L.CRAIG@CBP.DHS.GOV](mailto:AMBER.L.CRAIG@CBP.DHS.GOV)>

**Subject:** [EXTERNAL] CBP Draft EA and FONSI for 1418 Firebreak Road Improvement Available for Review



**This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.**

Hi all,

I wanted to share with you that the draft EA and FONSI for improvement of the 1418 Firebreak Road is available for review and comment. The document is available on the CBP Website under the California section on the right sidebar: <https://www.cbp.gov/about/environmental-management-sustainability/documents/docs-review>. Comments will be accepted through September 14. Others in your organizations should have received an email notice of availability directly from our contractor last Friday, but please pass along the link as you see fit.

If you have trouble accessing the document or have questions, please let me know.

Regards,

John

**John Petrilla**

Acting Environmental Branch Chief

Border Patrol & Air and Marine Program Management Office

U.S. Customs and Border Protection

Office: (949) 643-6385

Mobile: (949) 278-0353

[john.p.petrilla@cbp.dhs.gov](mailto:john.p.petrilla@cbp.dhs.gov)



# United States Department of the Interior



FISH AND WILDLIFE SERVICE  
San Diego National Wildlife Refuge Complex  
1080 Gunpowder Point Drive  
Chula Vista, CA 91910  
Phone (619) 476-9150; Fax (619) 476-9149

September 11, 2020

John P. Petrilla  
U.S. Border Patrol  
Border Patrol and Air & Marine Program Management Office  
24000 Avila Road, Suite 5020  
Laguna Niguel, California 92677

Subject: U.S. Fish and Wildlife Service comments on the 1418 Fire Break Road Project  
Draft Environmental Assessment

Dear Mr. Petrilla:

Thank you for the opportunity to provide comments on the 1418 Fire Break Road Project Draft Environmental Assessment (EA). This road crosses the San Diego National Wildlife Refuge (Refuge), and has been the subject of discussion between our agencies for over a decade.

Our primary comment is that Alternative 3 would be preferred by our agency over what is described in the EA as the proposed action of Alternative 1. Alternative 3 would have a much smaller road width and thus a smaller impact area to the Refuge and adjacent State of California lands. This alternative reduces impacts to federally listed threatened and endangered species and their designated Critical Habitats. Reducing impacts also reduces overall project costs and the conservation measures that Border Patrol would carry out to offset the project impacts.

We appreciate the close coordination between our agencies and look forward to continued work on this and other projects or concerns. Please let us know if you have any questions about our comments by contacting Jill Terp, Deputy Project Leader, at [Jill\\_Terp@fws.gov](mailto:Jill_Terp@fws.gov) or 619-719-8579.

Sincerely,

Andrew Yuen  
Project Leader

Enclosures – Specific comments on EA

The following recommendations are based on our review of proposed Best Management Practices (BMPs) provided by Customs and Border Protection (CBP) on August 2020, species occurrence information available in our records and our knowledge of sensitive and declining vegetation communities in San Diego County. The BMPs contain detailed measures to address environmental impacts during construction and will contribute to avoiding and minimizing impacts to some of the sensitive species listed above. In addition, if possible, we recommend that CBP consider the following additional measures to avoid and minimize potential impacts to the sensitive species and critical habitats that occur in the project area.

### **General Measures**

- CM 1. Project construction will occur during daylight hours. However, if temporary night work is required, night lighting will be of the lowest illumination necessary for human safety, selectively placed, shielded and directed away from natural habitats.
- CM 2. The applicant will ensure that the following conditions are implemented during project construction:
  - a. Employees will strictly limit their activities, vehicles, equipment, and construction materials to the fenced project footprint and designated staging areas and routes of travel. The construction area(s) will be the minimal area necessary to complete the project and will be specified in construction plans;
  - b. To avoid attracting predators of the gnatcatcher, the project site will be kept as clean of debris as possible. All food related trash items will be enclosed in sealed containers and regularly removed from the site;
  - c. Disposal or temporary placement of excess fill, brush or other debris will not be allowed in waters of the United States or their banks;
  - d. Pets of project personnel will not be allowed on the project site; and
  - e. Impacts from fugitive dust will be avoided and minimized through watering and other appropriate measures

### **Quino checkerspot butterfly**

- CM 3. CBP will temporarily fence the limits of the project footprint including staging areas and access routes, to prevent additional habitat impacts and install erosion control devices to prevent the spread of silt from the construction zone into adjacent habitats to be avoided. Erosion control devices, (e.g., fiber rolls and bonded fiber matrix) will be made from biodegradable materials such as jute, with no plastic mesh, to avoid creating a wildlife entanglement. Fencing and erosion control devices will be installed in a manner that does not impact habitats to be avoided. CBP will submit to the Service for approval, at least 14 days prior to initiating project impacts, the final plans for initial clearing/grubbing of

habitat and project construction. These final plans will include photographs that show the temporary fencing and erosion control devices. If work occurs beyond the fenced limits of impact, all work will cease until the problem has been remedied to the satisfaction of the Service. Any habitat impacts that occur beyond the approved fenced will be offset at a minimum 5:1 ratio. Temporary fencing and erosion control devices will be removed upon project completion.

- CM 4. Initial vegetation clearing/grubbing and project construction will occur outside the Quino reproduction season (February 15 to August 31). If these activities are necessary between February 15 and August 31, CBP will conduct Quino and host plant surveys as outlined in 3.c. in the impact area within 1 week prior to impacts.
- CM 5. CBP will staff a Quino biologist<sup>1</sup> who will be responsible for monitoring and reporting compliance with avoidance and minimization measures for biological resources during work activities addressed in the biological opinion. The Quino biologist will perform the following:
- a. Be on site during all vegetation clearing/grubbing and project construction within 500 feet of habitat to be avoided;
  - b. Oversee installation of and inspect the fencing and erosion control measures a minimum of once per week and daily during all rain events to ensure that any breaks in the fence or erosion control measures are repaired immediately;
  - c. Conduct Quino and host plant surveys in the impact area within 1 week prior to impacts. If found, host plants will be flagged and avoided to the maximum extent practicable. If host plants cannot be avoided, the Quino biologist will survey for Quino adults, larvae, and eggs within the impact area. The Quino biologist will salvage and/or relocate any Quino adults, larvae, and host plants containing eggs and larvae found in the impact area to a location supporting suitable Quino habitat that will not be impacted. The Service will be notified of any Quino relocation within 24 hours following relocation.
  - d. Periodically monitor the work area to ensure that work activities do not generate excessive amounts of dust;
  - e. Train all contractors and construction personnel on the biological resources associated with this project and ensure that training is implemented by construction personnel. At a minimum, training will include: (i) the purpose for resource protection; (ii) a description of the sensitive species found on site and their habitat(s); (iii) the conservation measures that should be implemented during project construction to conserve sensitive species, including strictly limiting activities, vehicles, equipment, and construction materials to the disturbance area

---

<sup>1</sup> The Quino biologist will have at least 2 years of experience working with all stages of Quino including adults, eggs, all larval instars, larval webbing, and pupae; and ability to identify Quino larval host and nectar plants in the field.



to avoid sensitive resource areas in the field (i.e., avoided areas delineated on maps or on the project site by fencing); (iv) environmentally responsible construction practices as outlined in measure 7; (v) the protocol to resolve conflicts that may arise at any time during the construction process; (vi) the general provisions of the Act, the need to adhere to the provisions of the Act, the penalties associated with violating the Act;

- f. Halt work, if necessary, and confer with the Service to ensure the proper implementation of species and habitat protection measures. The biologist will report any violation to the Service within 24 hours of its occurrence;
- g. Submit weekly email reports (including photographs of impact areas) to the Service during vegetation clearing and/or project construction within 500 feet of avoided habitat. The weekly reports will document that authorized impacts were not exceeded, work did not occur within the 500 foot setback except as approved by the Service and general compliance with all conditions. The reports will also outline the duration of monitoring, the location of construction activities, the type of construction which occurred, and equipment used. These reports will specify numbers, locations, and sex of sensitive species observed and remedial measures employed to avoid, minimize, and mitigate impacts to sensitive species. Raw field notes should be available upon request by the Service; and
- h. Submit a final report to the Service within 60 days of project completion that includes: as-built construction drawings with an overlay of habitat that was impacted and avoided, photographs of habitat areas that were to be avoided, and other relevant summary information documenting that authorized impacts were not exceeded and that general compliance with all conditions of this consultation was achieved.

CM 6. If soil binding agents will be used equip road water trucks with calibrated soil stabilizer spray bars that minimizes the potential for overspray onto adjacent vegetation and pooling of soil stabilizer liquid within the roadway.

### **Coastal California Gnatcatcher and Least Bell's vireo**

CM 7. Initial clearing/grubbing of vegetation, and to the maximum extent practicable project construction within 500 feet of avoided gnatcatcher and vireo habitat, will occur between September 15 and February 14 to avoid the gnatcatcher and vireo breeding seasons (or sooner if surveys determine that all nesting is complete). If project construction within 500 feet of avoided gnatcatcher and vireo habitat is necessary between February 15 and September 15, CBP will conduct gnatcatcher and vireo nest surveys as outlined in CM 3.b.

CM 8. A gnatcatcher and vireo biologist will be onsite during: (a) initial clearing/grubbing of vegetation; and (b) project construction within 500 feet of avoided gnatcatcher and vireo habitat to ensure compliance with applicable conservation measures for gnatcatcher and vireo. The biologist must be knowledgeable of gnatcatcher and vireo biology and

ecology. CBP will submit the biologist's name, address, telephone number, and work schedule on the project to the Service at least 14 days prior to initiating project impacts. The biologist will perform the following duties:

- a. Perform a minimum of three focused surveys, on separate days, to determine the presence of gnatcatchers outside the gnatcatcher breeding season. Surveys will begin a maximum of 7 days prior to performing vegetation clearing/grubbing, and one survey will be conducted the day immediately prior to the initiation of clearing/grubbing. If any gnatcatchers are found within the disturbance area, the biologist will direct construction personnel to begin vegetation clearing/grubbing in an area away from the gnatcatchers. It will be the responsibility of the biologist to ensure that gnatcatchers are not in the vegetation to be cleared/grubbed. The biologist will also record the number and location of gnatcatchers disturbed by vegetation clearing/grubbing. CBP will notify the Service at least 7 days prior to vegetation clearing/grubbing to allow the Service to coordinate with the biologist on bird flushing activities;
- b. Perform a minimum of three focused surveys, on separate days, to determine the presence of gnatcatcher and vireo nest building activities, egg incubation activities, or brood rearing activities within 500 feet of any project construction during the gnatcatcher and vireo breeding seasons. The surveys will begin a maximum of 7 days prior to vegetation clearing/grubbing or project construction and one survey will be conducted the day immediately prior to the initiation of work. Additional surveys will be done once a week during project construction in the breeding season. These additional surveys may be suspended as approved by the Service. CBP will notify the Service at least 7 days prior to the initiation of surveys and within 24 hours of locating any gnatcatchers.
- c. If an active gnatcatcher or vireo nest is found in or within 500 feet of project construction, the biologist will postpone work within 500 feet of the nest and contact the Service to discuss: (i) the best approach to avoid/minimize impacts to nesting birds (e.g., sound walls); and (ii) a nest monitoring program acceptable to the Service. Subsequent to these discussions, work may be initiated subject to implementation of the agreed upon avoidance/minimization approach and nest monitoring program. Nest success or failure will be established by regular and frequent trips to the site, as determined by the biologist and through a schedule approved by the Service. The biologist will determine whether bird activity is being disrupted. If the biologist determines that bird activity is being disrupted, CBP will stop work and coordinate with the Service to review the avoidance/minimization approach. Coordination between CBP and Service to review the avoidance/minimization approach will occur within 48 hours. Upon agreement as to the necessary revisions to the avoidance/minimization approach, work may resume subject to the revisions and continued nest monitoring. Nest monitoring will continue until fledglings have dispersed or the nest has been determined to be a failure, as approved by the Service;

- d. Oversee installation of and inspect temporary fencing and erosion control measures within or up-slope of avoided and/or preserved areas a minimum of once per week during installation and daily during all rain events until established to ensure that any breaks in the fence or erosion control measures are repaired immediately.
- e. Periodically monitor the work area to ensure that work activities do not generate excessive amounts of dust.
- f. Train all contractors and construction personnel a maximum of 14 days prior to project construction on the biological resources associated with the projects and ensure that training is implemented by construction personnel. At a minimum, training will include: (i) the purpose for resource protection; (ii) a description of the gnatcatcher and vireo and their habitats; (iii) the conservation measures given in the biological opinion that should be implemented during project construction to conserve the sensitive resource, including strictly limiting activities, vehicles, equipment, and construction materials to the fenced project footprint to avoid sensitive resource areas in the field (i.e., avoided areas delineated on maps or on the project site by fencing); (iv) environmentally responsible construction practices; (v) the protocol to resolve conflicts that may arise at any time during the construction process; and, (vi) the general provisions of the Act, the need to adhere to the provisions of the Act, and the penalties associated with violating the Act.
- g. Halt work, if necessary, and confer with the Service to ensure the proper implementation of gnatcatcher and vireo and habitat protection measures. The project biologist will report any violation to the Service within 24 hours of its occurrence.
- h. Submit weekly letter reports (including photographs of impact areas) via regular or electronic mail (email) to the Service during initial clearing/grubbing of vegetation and/or project construction within 500 feet of avoided gnatcatcher and vireo habitat, or unless otherwise authorized by the Service if requested by the applicant to cease weekly monitoring prior to completion of project construction. The weekly reports will document that authorized impacts were not exceeded, work did not occur within the 500-foot buffer or otherwise Service approved setback, and general compliance with all conditions. The reports will also outline the duration of gnatcatcher monitoring, the location of construction activities, the type of construction that occurred, and equipment used. These reports will specify numbers and locations of gnatcatchers and vireos and nests, sex of gnatcatchers and vireos, observed gnatcatcher and vireo behavior (especially in relation to construction activities), and remedial measures employed to avoid, minimize, and mitigate impacts to gnatcatchers and vireos and nests. Raw field notes should be available upon request by the Service.

- i. Submit a final report to the Service within 60 days of project completion that includes: (i) as-built construction drawings with an overlay of habitat that was impacted and avoided, (ii) photographs of habitat areas that were to be avoided, and (iii) summary of all gnatcatcher and vireo and nest observations, and iv) other relevant summary information documenting that authorized impacts were not exceeded and that general compliance with all CMs was achieved.

CM 9. The Mitigation Management Plan will include the following information and conditions:

- a. All final specifications and topographic-based grading, planting and irrigation plans. All habitat restoration sites will be prepared for planting by decompacting the top soil in a way that mimics natural habitat top soil to the maximum extent practicable while maintaining slope stability. Topsoil and plant materials salvaged from the habitat areas to be impacted will be transplanted to, and/or used as a seed/cutting source for, the habitat restoration areas to the maximum extent practicable as approved by the Service. Planting and irrigation will not be installed until the Service has approved of upland habitat restoration site grading. All planting will be installed in a way that mimics natural plant distribution, and not in rows. Planting will include pockets of coastal sage scrub surrounded by more herbaceous annuals associated with Quino habitat;
- b. Planting palettes (plant species, size and number/acre) and seed mix (plant species and pounds/acre). The upland plant palette proposed in the draft plans will include native species specifically associated with the habitat type(s). Unless otherwise approved by the Service, only locally native species (no cultivars) obtained within as close to the project area as possible will be used. The source and proof of local origin of all plant material and seed will be provided;
- c. Container plant survival will be 80 percent of the initial plantings for the first 5 years. At the first and second anniversary of plant installation, all dead plants will be replaced unless their function has been replaced by natural recruitment;
- d. A final implementation schedule that indicates when all upland habitat impacts, as well as restoration/enhancement grading, planting and irrigation will begin and end. Upland habitat restoration/enhancement grading, planting and irrigation will be completed during the concurrent or next planting season (i.e., late fall to early spring) after finishing grading within the restoration/enhancement area. Any temporal loss of upland habitat caused by delays in restoration/enhancement will be offset through upland habitat restoration/enhancement at a 0.5:1 ratio for every 6 months of delay (i.e., 1:1 for 12 months delay, 1.5:1 for 18 months delay, etc.). In the event that CBP is wholly or partly prevented from performing obligations under the final plans (causing temporal losses due to delays) because of unforeseeable circumstances or causes beyond their reasonable control, and without the fault or negligence of CBP, CBP will be excused by such unforeseeable cause(s);

- e. Restoration maintenance will be conducted outside the Quino reproduction season (February 15 to August 31). If maintenance is needed between February 15 and August 31, a Quino biologist will conduct host plants surveys within the maintenance area within 1 week prior to work. If found, host plants will be flagged and avoided.
- f. Five years of success criteria for restoration areas including: a total of no more than 50 percent absolute cover of shrub species; evidence of natural recruitment of multiple species; 0 percent coverage for Cal-IPC List A and B species, and no more than 10 percent coverage for other exotic/weed species;
- g. A qualitative and quantitative vegetation monitoring plan with a map of proposed sampling locations. Photo points will be used for qualitative monitoring and stratified-random sampling will be used for all quantitative;
- h. Contingency measures in the event of restoration/enhancement failure; and
- i. Annual mitigation maintenance and monitoring reports will be submitted to the Service after the maintenance and monitoring period and no later than December 1 of each year.

### **Vernal pool restoration**

- CM 10. CBP will submit a final vernal restoration/enhancement plan to the Service for approval 60 days prior to initiating project impacts. The final plan will include the following information and conditions:
- a) Implementation of the restoration/enhancement will be conducted under the direction of a qualified biologist (vernal pool restoration specialist) with at least three years of vernal pool restoration experience, to be approved by the Service;
  - b) To avoid impacts to any extant vernal pools, all conservation measures required at the project construction site to avoid and minimize impacts to adjacent vernal pools and their watersheds should also be implemented at the restoration/enhancement site and thus specified in the restoration/enhancement plan.
  - c) All vernal pools to be avoided and their watersheds will be enhanced as appropriate to achieve the same success criteria as the restored pools and surrounding uplands. Enhancement activities will include addition of vernal pool plant species and addition of coastal sage scrub/native grassland plant species in the surrounding uplands. All plant material used for enhancement will be collected from local sources as close to the site as feasible;
  - d) All restoration/enhancement activities will commence the first summer-fall season prior to or concurrently with the initiation of project impacts;

- e) All final specifications and topographic-based grading, planting and watering plans for the vernal pools, watersheds and surrounding uplands (including adjacent mima mounds) at the restoration sites. Grading plans will have 0.1-foot contours. Vernal pool size and depth will be similar to extant pools closest to the restoration area. The grading plans will also show the watersheds of extant vernal pools, and overflow pathways that hydrologically connect the restored pools in a way that mimics natural vernal pool complex topography/hydrology;
- f) A hydraulic analysis that shows each proposed vernal pool and its watershed, the vernal pool to watershed ratio, and hydrologic connection between the pools. The vernal pool to watershed ratio will be similar to extant pools closest to the restoration area. Restored pools and their watersheds will not impact the watersheds of any extant pools except where needed to establish hydrologic connections;
- g) If inoculum will be used for restoration/enhancement, the plan will identify any proposed donor pools and include documentation that they are free of versatile fairy shrimp (*Branchinecta lindahli*). No more than 5 percent of the basin area of any donor pool will be used for collection of inoculum. Collection of inoculum from Agency approved donor pools will be consistent with Conservation Measure 8;
- h) Inoculum and planting will not be installed until the Service has approved of habitat restoration site grading. All planting will be installed in a way that mimics natural plant distribution, and not in rows. Inoculum will not be introduced into the restored pools until after they have been demonstrated to retain water for the appropriate amount of time to support San Diego fairy shrimp and have been surveyed for versatile fairy shrimp to the satisfaction of the Service. If versatile fairy shrimp are detected in the restored or enhanced pools, inoculum will not be introduced until measures approved by the Service are implemented in attempt to remove the versatile fairy shrimp from the pools. Inoculum will be spread evenly over the surface, no more than 0.25 inch deep. If there is any ponding water at the time of soil inoculation, the soil will only be placed on the wet soil adjacent to the ponded areas. Inoculum will be placed into the bottoms of the restored/enhanced pools in a manner that preserves, to the maximum extent possible, the orientation of the fairy shrimp cysts and plant seeds within the surface layer of soil (e.g., collected inoculum will be shallowly distributed within the pond so that cysts have the potential to be brought into solution upon inundation)
- i) Plant palettes (species, size and number/acre) and seed mix (species and pounds/acre) will be included in the restoration/enhancement plan. The plant palette will include native species specifically associated with the on-site habitat type(s). The source and proof of local origin of all plant material and seed will be provided;



- j) Native plants and animals will be established within the restored/enhanced pools, their watersheds and surrounding uplands. This can be accomplished by redistributing topsoil containing seeds, spores, bulbs, eggs, and other propagules from affected pools and adjacent vernal pool and upland habitats; by the translocation of propagules of individual species; and by the use of commercially available native plant species. Any vernal pool inoculum or plant material from an off-site source must be approved by the Service. Topsoil and plant materials from the native habitats to be affected on-site will be applied to the watersheds of the restored/enhanced pools to the maximum extent practicable. Exotic weed control will be implemented within the restoration/enhancement areas to protect and enhance habitat remaining on-site;
- k) In the event that natural rain is inadequate to support plant establishment, artificial watering of the restored/enhanced pools and their watersheds may be done upon approval by the Service. Any artificial watering will be done in a manner that prevents ponding in the pools. Any water to be used will be identified and documented to be free of contaminants that could harm the pools;
- l) Use of herbicides within and immediately adjacent to restored/enhanced pools will only be used under conditions authorized by the Service. All herbicide and pesticide use will be under the direction of a licensed pest control advisor and will be applied by a licensed applicator, under the supervision of a vernal pool restoration specialist. Glyphosate-based herbicides, such as RoundUp or Aquamaster, will be applied on all areas that have been dethatched. Herbicide will only be applied when wind speed is less than 5 miles per hour to reduce the potential for drift. Spray nozzles will be of a design to maximize the size of droplets and thus reduce the potential for drift of herbicide to nontarget plants. A 10-foot buffer will be maintained around concentrations of any sensitive plant species. Application of herbicide will not occur if rain is projected within 24 hours of the scheduled application activity. When vernal pools are ponding or close to saturation, only hand herbicide application will be used in the pools. Herbicide spraying will be permitted, but applicators will stay at least 3 feet from the edge of the vernal pools. The saturated glove technique will be used around the edges of pools that are ponded by specially trained herbicide applicators under the direct supervision of the vernal pool restoration specialist. If weeds are not completely controlled by herbicide, then weed populations will be removed by weed trimming. Weed trimming will be used on the specific patches of sensitive plants to establish a buffer around the populations. Hand weeding will generally only be used around the vernal pools and other sensitive resources;
- m) A final implementation schedule that indicates when all vernal pool impacts, as well as vernal pool restoration/enhancement grading and planting will begin and end. A temporal loss of vernal pools should be avoided by initiating the restoration work prior to or concurrent with impacts. This will minimize the length of time inoculum is kept in storage and ensure that there is appropriate habitat to translocate it to.

- n) Five years of monitoring and success criteria for vernal pool and upland habitat restoration/enhancement areas that includes quantitative hydrological, vegetation transects, viable cyst, hatched fairy shrimp, and gravid female measurements, and complete floral and fauna inventories, and photographic documentation. To minimize impacts to the vernal pool's soil surface during monitoring, cobbles should be oriented within the restored vernal pools to serve as stepping stone;
- o) Restoration success for fairy shrimp will be determined by measuring the ponding of water, and density of viable cysts, hatched fairy shrimp, and gravid females, within the restored pools. Water measurements will be taken in the restored pools to determine the depth, duration and quality (e.g., pH, temperature, total dissolved solids, and salinity) of ponding. Dry samples will be taken in the restored pools to determine the density of viable cysts in the soils. Wet samples will also be taken in the restored pools to determine the density of hatched fairy shrimp and gravid females. The pools must pond for a period of time similarly to reference vernal pools during an average rainfall year and at an appropriate depth and quality to support fairy shrimp. The hatched fairy shrimp, and gravid female density of the restored pools must not differ significantly ( $p < 0.05$ ) from reference pools for, at least, three wet seasons before a determination of success can be made. The average viable cyst density of the restored pools must not differ significantly ( $p < 0.05$ ) from reference pools at the end of the monitoring period before a determination of success can be made. Vernal pools selected as reference or control pools for evaluating restoration success will be identified and described in the restoration plan. Alternate methods of determining success may be used upon approval by the Service;
- p) Monitoring and success criteria for vernal pool and upland restoration/enhancement areas will include: coastal sage scrub/native grassland species richness and cover criteria for all five years of monitoring; 0 percent cover for weed species categorized as High or Moderate in the Cal-IPC Invasive Plant Inventory and relative cover of all other weed species is no more than 5 percent and 10 percent coverage in the pools basins and watersheds, respectively, for other exotic/weed species for all five years of the monitoring period. Container plant survival will be 80 percent of the initial plantings for the first five years. At the first and second anniversary of plant installation, all dead plants will be replaced unless their function has been replaced by natural recruitment. The method used for monitoring will be described and a map of proposed sampling locations will be included. Photo points will be used for qualitative monitoring and stratified-random sampling will be used for all quantitative monitoring;
- q) Verification that restoration/enhancement of vernal pool is complete will require written sign-off by the Service. If a performance criterion is not met for any of the restored/enhanced vernal pools or upland habitat in any year, or if the final success criteria are not met, CBP will prepare an analysis of the cause(s) of failure and, if deemed necessary by the Service, propose remedial actions for approval. If any of the restored/enhanced vernal pools or upland habitat have not

met a performance criterion during the initial five-year period, CBP's maintenance and monitoring obligations will continue until the Service deems the restoration/enhancement successful, or contingency measures must be implemented. Restoration/enhancement will not be deemed successful until at least two years after any significant contingency measures are implemented, as determined by the Service;

- r) Annual reports will be submitted the Service by December 1 of each year that assess both the attainment of yearly success criteria and progress toward the final success criteria. The reports will also summarize the project's compliance with all Service biological opinion conservation measures and terms and conditions. The first annual report will include as built grading, planting, and watering plans for the vernal pool restoration;

Page	Paragraph, Line	Comment
iii	2	Affected Location - and elsewhere in the document. The project location is NOT in Proctor Valley. Proctor Valley is about 3 straightline miles away. Suggest using an alternate description - possibly East of Lower Otay Reservoir or east of Jamul Creek.
1-2	2, 7	Suggest change "CDFW-managed Ecological Reserve" to CDFW Otay Mountain Ecological Reserve (OMER)."
1-2	2, 8	Suggest change "on a CDFW/USFWS National Wildlife Refuge (NWR)" to "crosses CDFW OMER and USFWS San Diego National Wildlife Refuge (NWR)."
1-2	2, 10	Suggest change of "owned by the City of Chula Vista and managed by the County of San Diego" to "Otay Ranch Preserve, jointly managed by the City of Chula Vista and County of San Diego through a Joint Powers Agreement." Background - On March 6, 1996 (6), the San Diego County Board of Supervisors authorized the formation of a Preserve Owner/Manager (POM) (made up of the District 1 Supervisor and the Mayor of Chula Vista) through the execution of a Joint Powers Agreement between the City of Chula Vista and the County. The POM is responsible for management of resources, restoration of habitat and enforcement of open space restrictions for the Otay Ranch Preserve once the Preserve is formally established and title to the land conveyed to the POM.
1-2	3, 8	Suggest adding to description of FC-4 that the current road is 10-12 feet wide through most of its length. Realize that this road class is described in Appx A.
1-2	3, 12	Suggest change "The road has received very little maintenance, although there is evidence of infrequent surface blading activity." to "The road has received no maintenance in over 10 years; some prior blading activity is still evident."
1-2	3, 12	Suggest adding here that the road has deteriorated to the extent that drivers have widened the existing route and also created a section of new route to avoid the extreme erosion.
2-1	2	2.2 Screening Criteria for Alternatives - suggest that this section (and Purpose/Need description in Section 1.3) add a bullet "Minimize and/or avoid current and future impacts to the environment" as a screening criteria, in the spirit of Section 7(a)(1) of the Endangered Species Act.
2-1	3, 4	Suggest that the width of the road be more explicitly described; that is, the total roadway driving width will be 24 feet with XXX additional width for parallel drainage ditches. Please apply the same comment for the other build alternatives.

Page	Paragraph, Line	Comment
2-1	3, 8	Parallel drainage ditches are described regarding their slope; however, there is no description of their width. This description, along with impacts from any inlet/outlet and energy dissipation areas is imperative to understanding the area of direct impacts of the project.
2-1	3, 12	"All necessary materials such as gravel, topsoil, or fill would be from existing developed or previously used sources, not from undisturbed areas adjacent to the project area." Suggest removing this sentence and replacing it with "All necessary materials such as gravel, topsoil, or fill would be imported to the site. No on-site materials will be used except for the material within the existing roadway." There really is not much "material" remaining on the steep slope section of the road where it's down to bedrock.
2-1	Alternative 1, general	Add discussion of construction duration - how many weeks/months will construction take? When will it occur? This has implications for effects to resources.
2-1 to 2-3	Alternative 1 Description	EA should discuss in greater detail the permanent and temporary impacts that are anticipated by the action. The project description lists linear feet of the project, but is inexact regarding the area of permanent impacts, including the area of the adjacent drainage ditch that is beyond the proposed 24' wide road surface and water bars where there is no description of any energy dissipation features that would be needed (other than Figure 2-2 that has "Exit to stable or armored ground" in the figure) and will impact additional area. These areas need to be calculated into the permanent impacts. Likewise, the description is vague as to the extent of temporary impacts for construction and maintenance. The project description should reference or use information presented in Appendix G. However, without better description of the parallel drainage ditches, the area assumed in the acreage calculations of 25-foot wide total impact may not capture the totality of the permanent impacts. The timing of the road work, as well as the maintenance/repairs, should be discussed and impacts to sensitive breeding/flight season times avoided for vegetation removal and new ground disturbance. Again, a reference to Appendix G would help, or bringing its information forward would increase the robustness of the project description. Same comment applies to other built alternatives.

Page	Paragraph, Line	Comment
2-1 to 2-3	Alternative 1 Description	Post construction, the road's improved surface will facilitate increased speed by vehicles. In addition to this being a BMP as suggested in Appendix G on page G-3, suggest adding a post construction posted 15 MPH speed limit to reduce potential for road-killed wildlife, and fugitive dust that smothers adjacent vegetation. See Otay Truck Trail east of Alta Road for example of where road dust has settled on vegetation along that road, decreasing photosynthetic capacity of the plants.
2-2	2	Suggest adding information on supplies and equipment spill and leak containment for the staging area since this area drains directly into drinking water source by referencing Appendix G BMPs.
2-2, Appx D, 2-7, Figure 3-2 on p3-40	3	This paragraph describes water bars but doesn't mention "water cutouts". These are noted in Appendix D and photo 2-2 on page 2-7 and figure 302 on page 3-40, but should be discussed here if the plans include them.
2-2	4, 1	This paragraph mentions a soil stabilizer with examples; however on page 2-3 paragraph 2, the use of "Soiltac" is specifically mentioned. Will the project use Soiltac?
2-2	5	Discussion of maintenance and repairs. Suggest the description include a requirement for coordination with the landowners prior to any maintenance/non-emergency repairs per Appendix G, and that such work be done in the season outside of the breeding/flight season for the listed species present.
2-4	Alternative 3	Per our recent phone conversations about this project with Border Patrol staff, and conversations over the last at least 10 years with prior BP staff, the Refuge prefers Alternative 3, where the road would not be widened, over the Agency Proposed Action Alternative 1. Widening the road to 24 feet plus adjacent drainage requirements seems excessive based on the amount of use of this out-and-back road. This road has fairly limited traffic that is mostly BP; it is <u>not</u> like other roads that lead to or are along the border on the south/east side of Otay Mountain. We realize that passing locations or turn outs may be beneficial and we would want to work with BP (especially tapping the knowledge of agents that use the road) to identify those locations and include those areas in the project description. The wider Alternative 1 road increases permanent impacts to listed species' habitat and designated Critical Habitat and increases offset/mitigation that BP would be required to implement. Alternative 3 reduces those impacts, mitigation needs and is more in keeping with the typical traffic needs on this road. Recommend that this is selected as the preferred alternative, with the addition of water control features as in Alternative 1.



Page	Paragraph, Line	Comment
2-8	Table 2-1	Suggest that areas of permanent and temporary impacts (acres) be added to this table with information taken from Appx G.
2-9	Table 2-1	Suggest that our recommended addition to purpose/need to support the Endangered Species Act 7(a)(1) be added here as a row.
3-4	5	Replace "Permitted uses of the land include hiking, wildlife viewing, bike riding, and horseback riding." with "This parcel is currently closed to all public access; however, permitted uses on other portions of the Refuge include hiking, wildlife viewing, bike riding, and horseback riding." Just as FYI but not for inclusion - in the future, the southern portion of the parcel will be opened to limited hunting.
3-5	Under Regulatory Setting and in Appendix C	Suggest adding: National Wildlife Refuge System Administration Act of 1966; National Wildlife Refuge System Improvement Act of 1997 (the Improvement Act) (Public Law 105-57). Refuges are guided by the purposes of the individual refuge, the mission and goals of the Refuge System, Service policy, various Federal laws, and international treaties. Relevant guidance includes the Refuge Recreation Act of 1962 (16 U.S.C. 460k-460k-4), the National Wildlife Refuge System Administration Act of 1966 (Refuge Administration Act), which was significantly amended by the National Wildlife Refuge System Improvement Act of 1997 (Improvement Act, 16 U.S.C. 668dd-668ee), and selected portions of the Code of Federal Regulations and the U.S. Fish and Wildlife Service Manual (Service Manual). Refuges are also governed by a variety of other Federal laws, Executive orders (EOs), treaties, interstate compacts, regulations, and policies pertaining to the conservation and protection of natural and cultural resources.
3-10, 3-11	3.3.3.1 Alt. 1 Soils	Erosion of the road itself is discussed for construction and maintenance but not erosion caused by the road's own runoff at waterbars and water cutouts. Suggest adding language as to how runoff from the road will not increase erosion away from the road. Discuss energy dissipaters that should be part of the waterbar/cutouts/drains to reduce erosion into the adjacent habitat.
3-13	1, 4	Table 3.1 says 8.22 acres of ownership in the project area for USFWS and 2.88 acres for CDFW - but here says "7.66-acre project area". Please explain difference and correct numbers if needed.
3-18	3	States herbicides would not be uses for maintenance activities and thus wont be discussed further. However, on 3-27in the T&E Speices, second bullet, states "Non-native habitat would be treated by herbicide or mechanical removal..." under Prepare a Mitigation Management Plan. Clarify use of herbicides and discuss if being used.

Page	Paragraph, Line	Comment
3-18	7, 3	"Negligible to minor, direct, adverse effects on vegetation, such as crushing, could occur when required vehicles and equipment access, park at, and maneuver around areas requiring maintenance. All maintenance activities are expected to occur within or adjacent to existing footprints of the roadway; as such, these impacts would be negligible to minor." Suggest that Border Patrol consider that all future maintenance take place within the permanent disturbance area (roadbed and drainage features) and that no heavy equipment be allowed outside of that footprint for maintenance.
3-26	2, 2	For CFWO - is 2:1 offset ratio typical for permanent loss of QCB habitat and CH?
3-27	Last sentence CAGN measure #1	Ensure that any new clearing of habitat takes place between Sept 1 and Feb 14 to avoid removing habitat during breeding season. Suggest that work take place at this same time of year if at all possible.
3-28	2, CAGN measure #3	Suggest that the construction of a sound wall may be just as disturbing as the sound of the construction equipment. What will happen if there are CAGN nesting within 50' of the road? Will project stop?
3-29	Fairy Shrimp measure 2a	What entity(ies) would hold the conservation easement?
3-31	4, 2	"While it is possible to avoid impacts on Quino checkerspot butterfly individuals with the implementation of mitigation measures and BMPs, the avoidance of host and food plants also found in the project area would likely be inevitable." This should be changed to read "While it is possible to avoid impacts to <b>adult</b> Quino checkerspot butterfly individuals with the implementation of mitigation measures and BMPs, <b>the impact to host and food plants also found in the project area would be inevitable.</b> " Also suggest that there could be impacts to adult butterflies from use of the road post-construction and during maintenance; will these impacts be discussed?
3-31	5	Suggest change to "BMPs would be implemented to minimize these direct and indirect effects on Quino checkerspot butterfly adults, eggs, and larvae that occur within the proposed disturbance area." It's been established that QCB are in the area.

Page	Paragraph, Line	Comment
3-33	1st, 2nd, 3rd paragraphs under 3.6.3.3, and elsewhere where Alt 3 is expected to have higher maintenance and repairs required.	Disagree that "Impacts due to the implementation of Alternative 3 would be expected to be greater than Alternative 1 due to the potential for a high frequency of maintenance and repair activities." If Alternative 3 included similar drainage features as Alternative 1, with a reduced road width, that alternative would have similar maintenance and repair, and reduce the overall permanent impacts to each of these species and any Critical Habitat, and reduce the mitigation needs for the project.
3-34	3.6.3.4 Alt 4 No action	Disagree that "No impacts on threatened or endangered species would be expected." Continued use of the road impacts fairy shrimp in road pools. If current road and other route created further deteriorate, other routes in currently undisturbed habitat could be driven in by vehicles.
3-42	3.9.2 Affected Env.	Suggest that the northern access is within 300' of Jamul Creek rather than Otay River per USGS topo maps.
3-43	2, 4	Discusses increased flow and flow speed from road project. We would hope that energy dissipaters (rock/small riprap) at drain inlets/outlets would be sufficient to slow runoff such that the nearby Creek and floodplain do not have any significant increased flow.
3-43	4, 5	Disagree that impacts with Alt 3 would be greater than Alt 1 if Alt 3 includes proper drainage features. Denuded area of roadway would be smaller and should have less runoff.
3-47	Table 3-4	Confusing - why are Alt 1 and Alt 3 same total length but different Air Quality acres?
3-61	3.13.2 Recreation Affected Environment	This road and area of SDNWR is not currently open to any public access.
4-4	4.2.4 Cumulative Analysis - Vegetation and 4.2.5 Terrestrial Wildlife Resources	"However, Alternative 1 does not involve new development activities, and effects on vegetation are generally limited to the existing footprint of the roadway." Effects will not be limited to the existing footprint under Alternative 1. That alternative is likely to double the width of the road. Suggest that this statement better applies to Alternative 3 for both Vegetation and Terrestrial Wildlife Resources
G-1	1.2 Geology and Soils #5	No materials should be used from the area other than from the existing or future footprint of road and drain features.
G-2	1.2 Vegetation #17	Is there any "development landscaping" planned for this project? If so, where would it be and what type of plantings?
G-3	1.4 Terrestrial/Aquatic #4	Suggest that the road have a permanent 15mph speed limit posted.
G-3	1.4 Terrestrial/Aquatic #7	Remove "Construction workers" from this; only bio monitors should participate in this activity.
G-2, G-3	1.3 #20 and 1.4 #8	Suggest consistency between dates for avian breeding season.
G3, 4	1.3 #8	What will happen with the project if breeding is detected within 50' of work? Will work halt in that area?

Page	Paragraph, Line	Comment
G-4	1.3 #11	Suggest a fugitive dust control program for the road post construction as well. See comment above about dust on Otay TT that is visible on vegetation alongside the road.
G-4	1.3 #13	Presume this is generic BMP and not applicable to this road project; no lighting should be needed for construction or operations.
G-5	1.5.1.2 #2	Suggest acres rather than linear feet be used for impacts/offsets.
G-5	1.5.1.2 #2d second bullet	Suggest that this bullet be revised or removed; altering existing native habitat may negatively affect other wildlife/habitat needs and may not change the location into more suitable QCB habitat.
G-5	1.5.1.2 #2e	What will success criteria be? What is the maximum period CBP will agree to? Success can be very dependent on weather conditions (drought).
G-7	1.5.1.3 #4	Suggest removing "perennial" as unnecessary impacts to any vegetation should be avoided.
G-7	1.5.1.4 #2a	Who will be conservation easement holder?
G-7	1.5.2, 2nd bullet	Discusses 100' buffer for special status birds, but in CAGN above has 50' for sound wall - consistency needed?
G-9	#13	When would pesticides be used? Does this refer to use of herbicides in maintenance or establishment of restoration sites?
G-10	1.6 Hydrology #5	This should be achieved also with energy dissipaters at inlet/outlets of drain features.
G-12	1.11 Cultural Resources #5	Add notification to the landowner in the event of discovery of human remains. Realize this bullet recognizes Federal agency but State should be notified if on their lands.
G-15	Alternative 1 Description (and Alternative 2 description)	Suggest that road be better described in width to include the parallel drainage ditches. This table assumes 25' total width of impact; this seems like a minimum for the roadbed and doesn't fully consider the drainage feature(s).
Last page of Appendix G	Map showing road closures, remaining roads	For the road segment in green on San Diego NWR, does CBP plan to do any repairs to that road? It has significant deterioration.

**From:** [Nicolas Frederick](#)  
**To:** [Hannah Kopydlowski](#)  
**Subject:** FW: 1418 Firebreak Road  
**Date:** Wednesday, September 9, 2020 9:37:37 AM  
**Attachments:** [image001.jpg](#)

---

For our records.

**Nicolas Frederick**  
Senior Project Manager  
**DAWSON**  
Mobile: 919.698.8060

---

**From:** PETRILLA, JOHN <JOHN.P.PETRILLA@cbp.dhs.gov>  
**Sent:** Tuesday, September 8, 2020 7:19 PM  
**To:** Nicolas Frederick <nfrederick@dawson8a.com>  
**Subject:** FW: 1418 Firebreak Road

FYI. Please keep for draft EA responses and the project record. Thank you!

Regards,  
John

**John Petrilla**  
Acting Environmental Branch Chief  
Border Patrol & Air and Marine Program Management Office  
U.S. Customs and Border Protection  
Office: (949) 643-6385  
Mobile: (949) 278-0353  
[john.p.petrilla@cbp.dhs.gov](mailto:john.p.petrilla@cbp.dhs.gov)

---

**From:** PETRILLA, JOHN  
**Sent:** Tuesday, September 8, 2020 4:18 PM  
**To:** 'Ray Teran' <[rteran@viejas-nsn.gov](mailto:rteran@viejas-nsn.gov)>  
**Cc:** Ernest Pingleton <[epingleton@viejas-nsn.gov](mailto:epingleton@viejas-nsn.gov)>  
**Subject:** RE: 1418 Firebreak Road

Hi Ray and Ernest,

Sorry for not responding to Ray's email sooner. Thank you for taking time to review the project information and providing feedback. We will adhere to the two bullet point requests.

With regard to avoiding sites sacred to the Kumeyaay people, what is the best way for us to accomplish it for this project? Should we establish physical buffers in the field in locations that you could show us or is it simpler and safer to ensure the presence of a Kumeyaay monitor during construction? Thank you!

Regards,  
John

**John Petrilla**

Acting Environmental Branch Chief  
Border Patrol & Air and Marine Program Management Office  
U.S. Customs and Border Protection  
Office: (949) 643-6385  
Mobile: (949) 278-0353  
[john.p.petrilla@cbp.dhs.gov](mailto:john.p.petrilla@cbp.dhs.gov)

---

**From:** Ray Teran <[rteran@viejas-nsn.gov](mailto:rteran@viejas-nsn.gov)>  
**Sent:** Saturday, August 22, 2020 12:39 PM  
**To:** PETRILLA, JOHN <[JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov)>  
**Cc:** Ernest Pingleton <[epingleton@viejas-nsn.gov](mailto:epingleton@viejas-nsn.gov)>  
**Subject:** 1418 Firebreak Road

**CAUTION:** This email originated from outside of DHS. DO NOT click links or open attachments unless you recognize and/or trust the sender. Contact the [CBP Security Operations Center](#) with questions or concerns.

In reviewing the above referenced project the Viejas Band of Kumeyaay Indians (“Viejas”) would like to comment at this time.

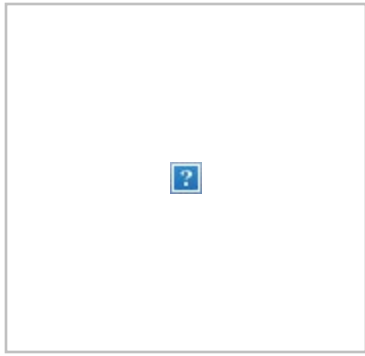
The project area may contain many sacred sites to the Kumeyaay people. We request that these sacred sites be avoided with adequate buffer zones.

Additionally, Viejas is requesting, as appropriate, the following:

- All NEPA/CEQA/NAGPRA laws be followed
- Immediately contact Viejas on any changes or inadvertent discoveries.

Please call Ernest Pingleton at 619-659-2314 or email, [epingleton@viejas-nsn.gov](mailto:epingleton@viejas-nsn.gov), for additional information. Thank you.

*Ray Teran*  
**Viejas Tribal Government**  
**Resource Management Director**  
**619-659-2312**  
[rteran@viejas-nsn.gov](mailto:rteran@viejas-nsn.gov)





## Hannah Kopydlowski

---

**From:** Nicolas Frederick  
**Sent:** Wednesday, November 18, 2020 11:40 AM  
**To:** Hannah Kopydlowski  
**Subject:** FW: 1418 Firebreak Road Project in Chula Vista

For the admin record.

**Nicolas Frederick**  
Senior Project Manager  
**DAWSON**  
Mobile: 919.698.8060

---

**From:** PETRILLA, JOHN <JOHN.P.PETRILLA@cbp.dhs.gov>  
**Sent:** Monday, November 2, 2020 9:14 PM  
**To:** Nicolas Frederick <nfrederick@dawson8a.com>  
**Cc:** BARNES, MICHELLE L <MICHELLE.L.BARNES@cbp.dhs.gov>; WALLS, DAVID (CTR) <david.walls@associates.cbp.dhs.gov>; SACOMAN, DANA (CTR) <DANA.SACOMAN@associates.cbp.dhs.gov>; Coron, Jeffrey <jeffrey.coron@lmi.org>  
**Subject:** FW: 1418 Firebreak Road Project in Chula Vista

FYI

---

**From:** PETRILLA, JOHN  
**Sent:** Monday, November 2, 2020 6:12 PM  
**To:** Angelina Gutierrez <[angelinag@sanpasqualtribe.org](mailto:angelinag@sanpasqualtribe.org)>; [Thpo@sanpasqualtribe.org](mailto:Thpo@sanpasqualtribe.org)  
**Subject:** RE: 1418 Firebreak Road Project in Chula Vista

Hi Angelina,  
Thank you very much for your letter. Sorry I'm just responding – last week was unusually busy.

I have attached a copy of the redacted cultural resource report for the project. You should have receive a hardcopy of the un-redacted version with our initial letter. If you didn't receive it, please let me know and I will work with the BLM and our contractor to get you a copy. Also attached for your reference is a set of design plans that shows the locations of the proposed drainage improvements.

Please let me know if you would like to set up a conference call meeting to receive an overview of the proposed project and discuss ways to mitigate any adverse impacts from it. Otherwise we can continue to correspond by email, whichever you prefer.

Regards,  
John

John Petrilla  
Acting Environmental Branch Chief  
Border Patrol & Air and Marine Program Management Office  
U.S. Customs and Border Protection  
Office: (949) 643-6385  
Mobile: (949) 278-0353

---

**From:** Angelina Gutierrez <[angelinag@sanpasqualtribe.org](mailto:angelinag@sanpasqualtribe.org)>  
**Sent:** Tuesday, October 27, 2020 9:42 AM  
**To:** PETRILLA, JOHN <[JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov)>  
**Subject:** 1418 Firebreak Road Project in Chula Vista

**CAUTION:** This email originated from outside of DHS. DO NOT click links or open attachments unless you recognize and/or trust the sender. Contact the [CBP Security Operations Center](#) with questions or concerns.

Please see attach file thank you.

Regards

Angelina Gutierrez  
THPO Monitor Supervisor  
San Pasqual Environmental Department  
[angelinag@sanpasqualtribe.org](mailto:angelinag@sanpasqualtribe.org)  
Phone (760) 651-5219  
Cell: (760) 803-5648





## SAN PASQUAL BAND OF MISSION INDIANS

### SAN PASQUAL RESERVATION

October 27, 2020

John P. Petrilla  
Or Paul Enrique U.S. Border Patrol

#### TRIBAL COUNCIL

Stephen W. Cope  
Chairman

Justin Quis Quis  
Vice Chairman

Tilda M. Green  
Secretary-Treasurer

David L. Toler  
Councilman

Joe Chavez  
Councilman

RE: 1418 Firebreak Road Project in Chula Vista station area of responsibility of the U.S. border patrol San Diego sector, San Diego County, California

Sent via E-mail- Due to COVID -19

Dear Mr. Petrilla,

The San Pasqual Band of Mission Indians Tribal Historic Preservation Office has received your notification of the project referenced above. This letter constitutes our response on behalf of David L. Toler THPO Officer.

We have consulted our maps and determined that the project as described is not within the boundaries of the recognize San Pasqual Indian Reservation. The project is within the boundaries of the territory that the tribe considers its Traditional Use Area (TUA). Furthermore, we would like to engage in formal government to government consultation under Section 106 of the NHPA so that San Pasqual can have a voice in the developing the measures that will be taken to protect these sites and mitigate any adverse impacts. We would appreciate being given access to any cultural resource reports that have been or will be generated during the environmental review process so we can contribute most effectively to the consultation process. Also San Pasqual can provide monitoring services for this project. We appreciate involvement with your initiative and look forward to working with you on future efforts. If you have questions or need additional information, please do not hesitate to contact me by telephone 760-651-5142 or by e-mail at

[Thpo@sanpasqualtribe.org](mailto:Thpo@sanpasqualtribe.org) please CC: [Angelinag@sanpasqualtribe.org](mailto:Angelinag@sanpasqualtribe.org) thank you.

Respectfully,

Angelina Gutierrez  
Tribal Historic Preservation Office, Monitor Supervisor  
San Pasqual Band of Mission Indians

**From:** [Nicolas Frederick](#)  
**To:** [Hannah Kopydlowski](#)  
**Subject:** FW: Copy of response letter (1418 Firebreak Road SHPO Concurrence)  
**Date:** Wednesday, December 16, 2020 4:04:23 PM  
**Attachments:** [CBP\\_2020\\_1005\\_001 - 1418 Firebreak Road project, San Diego County \(CBP's Itr of 09-25-2020\)...pdf](#)

---

FYI. I thought I had forwarded this along but must not have!

---

**From:** PETRILLA, JOHN <[JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov)>  
**Sent:** Tuesday, December 1, 2020 4:07 PM  
**To:** Nicolas Frederick <[nfrederick@dawsonohana.com](mailto:nfrederick@dawsonohana.com)>; Ami Barrera <[ami@northlandresearch.com](mailto:ami@northlandresearch.com)>; BARNES, MICHELLE L <[MICHELLE.L.BARNES@cbp.dhs.gov](mailto:MICHELLE.L.BARNES@cbp.dhs.gov)>  
**Cc:** Coron, Jeffrey <[jeffrey.coron@lmi.org](mailto:jeffrey.coron@lmi.org)>; SACOMAN, DANA (CTR) <[DANA.SACOMAN@associates.cbp.dhs.gov](mailto:DANA.SACOMAN@associates.cbp.dhs.gov)>; WALLS, DAVID (CTR) <[david.walls@associates.cbp.dhs.gov](mailto:david.walls@associates.cbp.dhs.gov)>; JOHNSON, CHRIS (CTR) <[CHRIS.JOHNSON@associates.cbp.dhs.gov](mailto:CHRIS.JOHNSON@associates.cbp.dhs.gov)>  
**Subject:** FW: Copy of response letter (1418 Firebreak Road SHPO Concurrence)

Hi Nic,

Attached is the SHPO concurrence for the 1418 Firebreak Road. Please update the final EA with the status of the consultation and the commitment to have a Kumeyaay monitor present during ground-disturbing activity and include this letter in the appendix with correspondence. Please also add this file to the project record.

Regards,  
John

**John Petrilla**  
Acting Environmental Branch Chief  
Border Patrol & Air and Marine Program Management Office  
U.S. Customs and Border Protection  
Office: (949) 643-6385  
Mobile: (949) 278-0353  
[john.p.petrilla@cbp.dhs.gov](mailto:john.p.petrilla@cbp.dhs.gov)

---

**From:** Marti, Duane@Parks <[Duane.Marti@parks.ca.gov](mailto:Duane.Marti@parks.ca.gov)>  
**Sent:** Wednesday, November 25, 2020 12:30 PM  
**To:** ENRIQUEZ, PAUL <[paul.enriquez@cbp.dhs.gov](mailto:paul.enriquez@cbp.dhs.gov)>; PETRILLA, JOHN <[JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov)>  
**Cc:** Negrete, Susan H@Parks <[Susan.Negrete@parks.ca.gov](mailto:Susan.Negrete@parks.ca.gov)>; Carroll, Ed@Parks <[Ed.Carroll@parks.ca.gov](mailto:Ed.Carroll@parks.ca.gov)>  
**Subject:** Copy of response letter

**CAUTION:** This email originated from outside of DHS. DO NOT click links or open attachments unless you recognize and/or trust the sender. Contact the [CBP Security Operations Center](#) with questions or concerns.

John,

Effective October 29, 2020, the SHPO's agency lead for CBP changed from Ed Carroll to Susan Hogue Negrete. Her contact information is

[Susan.Negrete@parks.ca.gov](mailto:Susan.Negrete@parks.ca.gov)

916-445-7042

In the future, if you have any questions or concerns, please contact Susan.

Duane Marti

Archaeologist

Office of Historic Preservation

1725 23<sup>rd</sup> Street, Suite 100

Sacramento, CA 95816

Telephone: 916-445-7030



September 25, 2020

Julianne Polanco  
State Historic Preservation Officer  
1725 23rd Street, Suite 100  
Sacramento, CA 95816-7100

**SUBJECT:** Request for Concurrence on the Class III Cultural Resources Survey for the Proposed Improvement, Maintenance, and Repair of the 1418 Firebreak Road Project in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol San Diego Sector, San Diego County, California

Dear Dr. Polanco:

U.S. Customs and Border Protection (CBP) is initiating consultation with the California Department of Parks and Recreation, Office of Historic Preservation pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations at 36 CFR Part 800 regarding U.S. Customs and Border Protection's (CBP) plan to improve, maintain, and repair approximately 2.5 miles of the 1418 Firebreak Road located in the western part of the CBP San Diego Sector to support CBP operations. The existing road is in poor condition due to the lack of routine maintenance. The objective of this Project would be to improve the 1418 Firebreak Road to a FC-2 roadway.

#### **Description of the Undertaking**

The proposed work for the road improvements includes importing roadway material to build a road cap, reshape the road crown, and re-pitch/slope the road to establish better drain lines to direct water flow. New culverts would be installed. Eroded edges of the roads would be armored with riprap to combat erosion, and French drains would be installed in locations that have low water crossings and not enough elevation to install culverts. A soil stabilizer, either Lignin or Soiltac, would be applied to the finished road surface.

#### **Area of Potential Effect**

The APE comprises a 100- foot-wide corridor centered on the approximately 2.5-mile-long segment of road. The APE also encompasses the cultural resource site boundaries identified within the APE and discussed below. The APE totals 170.65 acres. The maximum vertical depth of all activities is not expected to exceed 15 feet below ground level.

#### **Identification and Evaluation of Historic Properties**

The California Historic Resources Information System (CHRIS) identified a total of 55 cultural resources within a one-mile radius of the APE, but only seven of these have been recorded within the boundaries of the APE and include: P-37-010027 (CA-SDI-010027), P-37-011355 (CA-SDI-11355), P-37-011356 (CASDI-011356), P-37-011357 (P-37-11357), P-37-012150 (CA-SDI-12150H), P-37-019019 (CASDI-13713/H), P-37-029431 (CA-SDI-18839). Due to the overlap in site boundaries, previous studies as well as the current study have attempted to

combine sites based on their temporal association. Attempts were made to locate each previously identified cultural resource. The DPR for each resource was updated and confirmed or corrected information on each resource's location, spatial extent, general characteristics, and eligibility status. As a result, only three sites are currently identified within the Project APE.

P-37-019019 consists of five previously identified sites, none of which appear significant individually or together based on data collected during the original recording of the site, this current evaluation, and through additional analysis and historical research. They are part of the Otay Ranch corral and pasture lands. As no potential for intact cultural deposits were identified, the site is seen as being of limited significance and is recommended as not eligible for listing on the NRHP or CRHR. No further cultural resources work is recommended.

P-37-10027 was previously identified as having five lithic quarry loci but the majority of the potential cultural material is found by the current survey to be the result of natural fracturing. This is consistent with previous observation in 1996 that naturally fractured material may have been misidentified as cultural material during the initial 1991 investigations. The few confirmed prehistoric artifacts and the historic trash scatter have little significance. Additional background and historical research have not revealed any pertinent information regarding the significance of the site. Through this recording, the data potential for this site has been exhausted. This site is recommended as not eligible for listing on the NRHP or CRHR and no further cultural resources work is recommended.

No cultural elements were identified at P-37-029431 during this survey. The site was initially recorded as a lithic scatter with one milling station containing two milling slicks. None of the lithic scatters were re-identified and the milling station previously recorded did not contain two milling slicks, but rather two natural water eroded depressions on the felsite boulder. All of the material observed was natural fracturing and exfoliation which looked cultural but had no diagnostic features. Dense scrub and tall grasses provided very poor visibility; however, the roadway and shoulders provided 100 percent visibility where the majority of features were recorded, and no intact deposits or artifacts were identified within the APE. As this site does not appear to be related to human activity, it cannot satisfy any NRHP or CRHR criteria and is therefore recommended as not eligible for listing on the NRHP or CRHR. No further cultural resources work is recommended.

### **Conclusion – No Adverse Effect**

Based on the results of the current investigation, CBP has determined that no previously or newly recorded historic properties of significance would be affected by this undertaking pursuant to Section 800.4(d)(1). As a result, no further work is recommended. Supporting evidence for these determinations can be found in the enclosed cultural resources technical report.

We request your concurrence with our determination. If no response is received within 30 days a concurrence will be presumed. If you have any questions please feel free to contact John Petrilla at (949) 278-0353 or via email at [JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov). We also request you provide an electronic copy of your response to Mr. Petrilla at [JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov).



**List of Native American Tribes Consulted**

Barona Group of the Capitan Grande, Diegueno  
Campo Band of Diegueno Mission Indians, Diegueno  
Ewiiapaayp Tribe, Diegueno  
Iipay Nation of Santa Ysabel, Diegueno  
Inaja-Cosmit Band of Indians, Diegueno  
Jamul Indian Village, Diegueno  
Kwaaymii Laguna Band of Mission Indians, Kwaaymii Diegueno  
La Posta Band of Diegueno Mission Indians, Diegueno  
Manzanita Band of Kumeyaay Nation, Diegueno  
Mesa Grande Band of Diegueno Mission Indians, Diegueno  
San Pasqual Band of Diegueno Mission Indians, Diegueno  
Sycuan Band of the Kumeyaay Nation, Kumeyaay  
Viejas Band of Kumeyaay Indians, Diegueno

Sincerely,



Paul Enriquez  
Acquisition, Real Estate and Environmental Director  
Infrastructure Program  
Program Management Office Directorate  
U.S. Border Patrol  
[Paul.enriquez@cbp.dhs.gov](mailto:Paul.enriquez@cbp.dhs.gov)

Enclosure:

Class III Cultural Resources Survey for the Proposed Improvement, Operation, Maintenance, and Repair of the 1418 Firebreak Road Project in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol San Diego Sector, San Diego County, California



October 1, 2020

Edwin Romero, Chairperson  
Barona Group of the Capitan Grande  
1095 Barona Road  
Lakeside, CA 92040

**SUBJECT:** Request for Concurrence on the Class III Cultural Resources Survey for the Proposed Improvement, Maintenance, and Repair of the 1418 Firebreak Road Project in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol San Diego Sector, San Diego County, California

Dear Mr. Romero:

U.S. Customs and Border Protection (CBP) is initiating consultation with the California Department of Parks and Recreation, Office of Historic Preservation pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations at 36 CFR Part 800 regarding U.S. Customs and Border Protection's (CBP) plan to improve, maintain, and repair approximately 2.5 miles of the 1418 Firebreak Road located in the western part of the CBP San Diego Sector to support CBP operations. The existing road is in poor condition due to the lack of routine maintenance. The objective of this Project would be to improve the 1418 Firebreak Road to a FC-2 roadway.

### **Description of the Undertaking**

The proposed work for the road improvements includes importing roadway material to build a road cap, reshape the road crown, and re-pitch/slope the road to establish better drain lines to direct water flow. New culverts would be installed. Eroded edges of the roads would be armored with riprap to combat erosion, and French drains would be installed in locations that have low water crossings and not enough elevation to install culverts. A soil stabilizer, either Lignin or Soiltac, would be applied to the finished road surface.

### **Area of Potential Effect**

The APE comprises a 100- foot-wide corridor centered on the approximately 2.5-mile-long segment of road. The APE also encompasses the cultural resource site boundaries identified within the APE and discussed below. The APE totals 170.65 acres. The maximum vertical depth of all activities is not expected to exceed 15 feet below ground level.

### **Identification and Evaluation of Historic Properties**

The California Historic Resources Information System (CHRIS) identified a total of 55 cultural resources within a one-mile radius of the APE, but only seven of these have been recorded within the boundaries of the APE and include: P-37-010027 (CA-SDI-010027), P-37-011355 (CA-SDI-11355), P-37-011356 (CASDI-011356), P-37-011357 (P-37-11357), P-37-012150 (CA-SDI-12150H), P-37-019019 (CASDI-13713/H), P-37-029431 (CA-SDI-18839). Due to the overlap in site boundaries, previous studies as well as the current study have attempted to

combine sites based on their temporal association. Attempts were made to locate each previously identified cultural resource. The DPR for each resource was updated and confirmed or corrected information on each resource's location, spatial extent, general characteristics, and eligibility status. As a result, only three sites are currently identified within the Project APE.

P-37-019019 consists of five previously identified sites, none of which appear significant individually or together based on data collected during the original recording of the site, this current evaluation, and through additional analysis and historical research. They are part of the Otay Ranch corral and pasture lands. As no potential for intact cultural deposits were identified, the site is seen as being of limited significance and is recommended as not eligible for listing on the NRHP or CRHR. No further cultural resources work is recommended.

P-37-10027 was previously identified as having five lithic quarry loci but the majority of the potential cultural material is found by the current survey to be the result of natural fracturing. This is consistent with previous observation in 1996 that naturally fractured material may have been misidentified as cultural material during the initial 1991 investigations. The few confirmed prehistoric artifacts and the historic trash scatter have little significance. Additional background and historical research have not revealed any pertinent information regarding the significance of the site. Through this recording, the data potential for this site has been exhausted. This site is recommended as not eligible for listing on the NRHP or CRHR and no further cultural resources work is recommended.

No cultural elements were identified at P-37-029431 during this survey. The site was initially recorded as a lithic scatter with one milling station containing two milling slicks. None of the lithic scatters were re-identified and the milling station previously recorded did not contain two milling slicks, but rather two natural water eroded depressions on the felsite boulder. All of the material observed was natural fracturing and exfoliation which looked cultural but had no diagnostic features. Dense scrub and tall grasses provided very poor visibility; however, the roadway and shoulders provided 100 percent visibility where the majority of features were recorded, and no intact deposits or artifacts were identified within the APE. As this site does not appear to be related to human activity, it cannot satisfy any NRHP or CRHR criteria and is therefore recommended as not eligible for listing on the NRHP or CRHR. No further cultural resources work is recommended.

### **Conclusion – No Adverse Effect**

Based on the results of the current investigation, CBP has determined that no previously or newly recorded historic properties of significance would be affected by this undertaking pursuant to Section 800.4(d)(1). As a result, no further work is recommended. Supporting evidence for these determinations can be found in the enclosed cultural resources technical report.

We request your concurrence with our determination. If no response is received within 30 days a concurrence will be presumed. If you have any questions please feel free to contact John Petrilla at (949) 278-0353 or via email at [JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov). We also request you provide an electronic copy of your response to Mr. Petrilla at [JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov)

Edwin Romero, Chairperson

Page 3

Sincerely,

A handwritten signature in blue ink that reads "Paul Enriquez". The signature is fluid and cursive, with the first name "Paul" being larger and more prominent than the last name "Enriquez".

Paul Enriquez

Acquisition, Real Estate and Environmental Director

Infrastructure Program

Program Management Office Directorate

U.S. Border Patrol

[Paul.enriquez@cbp.dhs.gov](mailto:Paul.enriquez@cbp.dhs.gov)

Enclosure:

Class III Cultural Resources Survey for the Proposed Improvement, Maintenance, and Repair of the 1418 Firebreak Road Project in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol San Diego Sector, San Diego County, California



October 1, 2020

Ralph Goff, Chairperson  
Campo Band of Diegueno Mission Indians  
36190 Church Road Suite 1  
Campo, CA 91906

**SUBJECT:** Request for Concurrence on the Class III Cultural Resources Survey for the Proposed Improvement, Maintenance, and Repair of the 1418 Firebreak Road Project in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol San Diego Sector, San Diego County, California

Dear Mr. Goff:

U.S. Customs and Border Protection (CBP) is initiating consultation with the California Department of Parks and Recreation, Office of Historic Preservation pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations at 36 CFR Part 800 regarding U.S. Customs and Border Protection's (CBP) plan to improve, maintain, and repair approximately 2.5 miles of the 1418 Firebreak Road located in the western part of the CBP San Diego Sector to support CBP operations. The existing road is in poor condition due to the lack of routine maintenance. The objective of this Project would be to improve the 1418 Firebreak Road to a FC-2 roadway.

### **Description of the Undertaking**

The proposed work for the road improvements includes importing roadway material to build a road cap, reshape the road crown, and re-pitch/slope the road to establish better drain lines to direct water flow. New culverts would be installed. Eroded edges of the roads would be armored with riprap to combat erosion, and French drains would be installed in locations that have low water crossings and not enough elevation to install culverts. A soil stabilizer, either Lignin or Soiltac, would be applied to the finished road surface.

### **Area of Potential Effect**

The APE comprises a 100- foot-wide corridor centered on the approximately 2.5-mile-long segment of road. The APE also encompasses the cultural resource site boundaries identified within the APE and discussed below. The APE totals 170.65 acres. The maximum vertical depth of all activities is not expected to exceed 15 feet below ground level.

### **Identification and Evaluation of Historic Properties**

The California Historic Resources Information System (CHRIS) identified a total of 55 cultural resources within a one-mile radius of the APE, but only seven of these have been recorded within the boundaries of the APE and include: P-37-010027 (CA-SDI-010027), P-37-011355 (CA-SDI-11355), P-37-011356 (CASDI-011356), P-37-011357 (P-37-11357), P-37-012150 (CA-SDI-12150H), P-37-019019 (CASDI-13713/H), P-37-029431 (CA-SDI-18839). Due to the overlap in site boundaries, previous studies as well as the current study have attempted to

combine sites based on their temporal association. Attempts were made to locate each previously identified cultural resource. The DPR for each resource was updated and confirmed or corrected information on each resource's location, spatial extent, general characteristics, and eligibility status. As a result, only three sites are currently identified within the Project APE.

P-37-019019 consists of five previously identified sites, none of which appear significant individually or together based on data collected during the original recording of the site, this current evaluation, and through additional analysis and historical research. They are part of the Otay Ranch corral and pasture lands. As no potential for intact cultural deposits were identified, the site is seen as being of limited significance and is recommended as not eligible for listing on the NRHP or CRHR. No further cultural resources work is recommended.

P-37-10027 was previously identified as having five lithic quarry loci but the majority of the potential cultural material is found by the current survey to be the result of natural fracturing. This is consistent with previous observation in 1996 that naturally fractured material may have been misidentified as cultural material during the initial 1991 investigations. The few confirmed prehistoric artifacts and the historic trash scatter have little significance. Additional background and historical research have not revealed any pertinent information regarding the significance of the site. Through this recording, the data potential for this site has been exhausted. This site is recommended as not eligible for listing on the NRHP or CRHR and no further cultural resources work is recommended.

No cultural elements were identified at P-37-029431 during this survey. The site was initially recorded as a lithic scatter with one milling station containing two milling slicks. None of the lithic scatters were re-identified and the milling station previously recorded did not contain two milling slicks, but rather two natural water eroded depressions on the felsite boulder. All of the material observed was natural fracturing and exfoliation which looked cultural but had no diagnostic features. Dense scrub and tall grasses provided very poor visibility; however, the roadway and shoulders provided 100 percent visibility where the majority of features were recorded, and no intact deposits or artifacts were identified within the APE. As this site does not appear to be related to human activity, it cannot satisfy any NRHP or CRHR criteria and is therefore recommended as not eligible for listing on the NRHP or CRHR. No further cultural resources work is recommended.

### **Conclusion – No Adverse Effect**

Based on the results of the current investigation, CBP has determined that no previously or newly recorded historic properties of significance would be affected by this undertaking pursuant to Section 800.4(d)(1). As a result, no further work is recommended. Supporting evidence for these determinations can be found in the enclosed cultural resources technical report.

We request your concurrence with our determination. If no response is received within 30 days a concurrence will be presumed. If you have any questions please feel free to contact John Petrilla at (949) 278-0353 or via email at [JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov). We also request you provide an electronic copy of your response to Mr. Petrilla at [JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov)

Ralph Goff, Chairperson  
Page 3

Sincerely,

A handwritten signature in blue ink that reads "Paul Enriquez". The signature is fluid and cursive, with the first name "Paul" being larger and more prominent than the last name "Enriquez".

Paul Enriquez  
Acquisition, Real Estate and Environmental Director  
Infrastructure Program  
Program Management Office Directorate  
U.S. Border Patrol  
[Paul.enriquez@cbp.dhs.gov](mailto:Paul.enriquez@cbp.dhs.gov)

Enclosure:

Class III Cultural Resources Survey for the Proposed Improvement, Maintenance, and Repair of the 1418 Firebreak Road Project in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol San Diego Sector, San Diego County, California





October 1, 2020

Robert Pinto, Chairperson  
Ewiiapaayp Tribe  
4054 Willows Road  
Alpine, CA 91901

**SUBJECT:** Request for Concurrence on the Class III Cultural Resources Survey for the Proposed Improvement, Maintenance, and Repair of the 1418 Firebreak Road Project in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol San Diego Sector, San Diego County, California

Dear Mr. Pinto:

U.S. Customs and Border Protection (CBP) is initiating consultation with the California Department of Parks and Recreation, Office of Historic Preservation pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations at 36 CFR Part 800 regarding U.S. Customs and Border Protection's (CBP) plan to improve, maintain, and repair approximately 2.5 miles of the 1418 Firebreak Road located in the western part of the CBP San Diego Sector to support CBP operations. The existing road is in poor condition due to the lack of routine maintenance. The objective of this Project would be to improve the 1418 Firebreak Road to a FC-2 roadway.

### **Description of the Undertaking**

The proposed work for the road improvements includes importing roadway material to build a road cap, reshape the road crown, and re-pitch/slope the road to establish better drain lines to direct water flow. New culverts would be installed. Eroded edges of the roads would be armored with riprap to combat erosion, and French drains would be installed in locations that have low water crossings and not enough elevation to install culverts. A soil stabilizer, either Lignin or Soiltac, would be applied to the finished road surface.

### **Area of Potential Effect**

The APE comprises a 100- foot-wide corridor centered on the approximately 2.5-mile-long segment of road. The APE also encompasses the cultural resource site boundaries identified within the APE and discussed below. The APE totals 170.65 acres. The maximum vertical depth of all activities is not expected to exceed 15 feet below ground level.

### **Identification and Evaluation of Historic Properties**

The California Historic Resources Information System (CHRIS) identified a total of 55 cultural resources within a one-mile radius of the APE, but only seven of these have been recorded within the boundaries of the APE and include: P-37-010027 (CA-SDI-010027), P-37-011355 (CA-SDI-11355), P-37-011356 (CASDI-011356), P-37-011357 (P-37-11357), P-37-012150 (CA-SDI-12150H), P-37-019019 (CASDI-13713/H), P-37-029431 (CA-SDI-18839). Due to the overlap in site boundaries, previous studies as well as the current study have attempted to

combine sites based on their temporal association. Attempts were made to locate each previously identified cultural resource. The DPR for each resource was updated and confirmed or corrected information on each resource's location, spatial extent, general characteristics, and eligibility status. As a result, only three sites are currently identified within the Project APE.

P-37-019019 consists of five previously identified sites, none of which appear significant individually or together based on data collected during the original recording of the site, this current evaluation, and through additional analysis and historical research. They are part of the Otay Ranch corral and pasture lands. As no potential for intact cultural deposits were identified, the site is seen as being of limited significance and is recommended as not eligible for listing on the NRHP or CRHR. No further cultural resources work is recommended.

P-37-10027 was previously identified as having five lithic quarry loci but the majority of the potential cultural material is found by the current survey to be the result of natural fracturing. This is consistent with previous observation in 1996 that naturally fractured material may have been misidentified as cultural material during the initial 1991 investigations. The few confirmed prehistoric artifacts and the historic trash scatter have little significance. Additional background and historical research have not revealed any pertinent information regarding the significance of the site. Through this recording, the data potential for this site has been exhausted. This site is recommended as not eligible for listing on the NRHP or CRHR and no further cultural resources work is recommended.

No cultural elements were identified at P-37-029431 during this survey. The site was initially recorded as a lithic scatter with one milling station containing two milling slicks. None of the lithic scatters were re-identified and the milling station previously recorded did not contain two milling slicks, but rather two natural water eroded depressions on the felsite boulder. All of the material observed was natural fracturing and exfoliation which looked cultural but had no diagnostic features. Dense scrub and tall grasses provided very poor visibility; however, the roadway and shoulders provided 100 percent visibility where the majority of features were recorded, and no intact deposits or artifacts were identified within the APE. As this site does not appear to be related to human activity, it cannot satisfy any NRHP or CRHR criteria and is therefore recommended as not eligible for listing on the NRHP or CRHR. No further cultural resources work is recommended.

### **Conclusion – No Adverse Effect**

Based on the results of the current investigation, CBP has determined that no previously or newly recorded historic properties of significance would be affected by this undertaking pursuant to Section 800.4(d)(1). As a result, no further work is recommended. Supporting evidence for these determinations can be found in the enclosed cultural resources technical report.

We request your concurrence with our determination. If no response is received within 30 days a concurrence will be presumed. If you have any questions please feel free to contact John Petrilla at (949) 278-0353 or via email at [JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov). We also request you provide an electronic copy of your response to Mr. Petrilla at [JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov)

Robert Pinto, Chairperson

Page 3

Sincerely,

A handwritten signature in blue ink that reads "Paul Enriquez". The signature is fluid and cursive, with the first name "Paul" being larger and more prominent than the last name "Enriquez".

Paul Enriquez

Acquisition, Real Estate and Environmental Director

Infrastructure Program

Program Management Office Directorate

U.S. Border Patrol

[Paul.enriquez@cbp.dhs.gov](mailto:Paul.enriquez@cbp.dhs.gov)

Enclosure:

Class III Cultural Resources Survey for the Proposed Improvement, Maintenance, and Repair of the 1418 Firebreak Road Project in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol San Diego Sector, San Diego County, California



October 1, 2020

Michael Garcia, Vice Chairperson  
Ewiiapaayp Tribe  
4054 Willows Road  
Alpine, CA 91901

**SUBJECT:** Request for Concurrence on the Class III Cultural Resources Survey for the Proposed Improvement, Maintenance, and Repair of the 1418 Firebreak Road Project in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol San Diego Sector, San Diego County, California

Dear Mr. Garcia:

U.S. Customs and Border Protection (CBP) is initiating consultation with the California Department of Parks and Recreation, Office of Historic Preservation pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations at 36 CFR Part 800 regarding U.S. Customs and Border Protection's (CBP) plan to improve, maintain, and repair approximately 2.5 miles of the 1418 Firebreak Road located in the western part of the CBP San Diego Sector to support CBP operations. The existing road is in poor condition due to the lack of routine maintenance. The objective of this Project would be to improve the 1418 Firebreak Road to a FC-2 roadway.

### **Description of the Undertaking**

The proposed work for the road improvements includes importing roadway material to build a road cap, reshape the road crown, and re-pitch/slope the road to establish better drain lines to direct water flow. New culverts would be installed. Eroded edges of the roads would be armored with riprap to combat erosion, and French drains would be installed in locations that have low water crossings and not enough elevation to install culverts. A soil stabilizer, either Lignin or Soiltac, would be applied to the finished road surface.

### **Area of Potential Effect**

The APE comprises a 100- foot-wide corridor centered on the approximately 2.5-mile-long segment of road. The APE also encompasses the cultural resource site boundaries identified within the APE and discussed below. The APE totals 170.65 acres. The maximum vertical depth of all activities is not expected to exceed 15 feet below ground level.

### **Identification and Evaluation of Historic Properties**

The California Historic Resources Information System (CHRIS) identified a total of 55 cultural resources within a one-mile radius of the APE, but only seven of these have been recorded within the boundaries of the APE and include: P-37-010027 (CA-SDI-010027), P-37-011355 (CA-SDI-11355), P-37-011356 (CASDI-011356), P-37-011357 (P-37-11357), P-37-012150 (CA-SDI-12150H), P-37-019019 (CASDI-13713/H), P-37-029431 (CA-SDI-18839). Due to the overlap in site boundaries, previous studies as well as the current study have attempted to

combine sites based on their temporal association. Attempts were made to locate each previously identified cultural resource. The DPR for each resource was updated and confirmed or corrected information on each resource's location, spatial extent, general characteristics, and eligibility status. As a result, only three sites are currently identified within the Project APE.

P-37-019019 consists of five previously identified sites, none of which appear significant individually or together based on data collected during the original recording of the site, this current evaluation, and through additional analysis and historical research. They are part of the Otay Ranch corral and pasture lands. As no potential for intact cultural deposits were identified, the site is seen as being of limited significance and is recommended as not eligible for listing on the NRHP or CRHR. No further cultural resources work is recommended.

P-37-10027 was previously identified as having five lithic quarry loci but the majority of the potential cultural material is found by the current survey to be the result of natural fracturing. This is consistent with previous observation in 1996 that naturally fractured material may have been misidentified as cultural material during the initial 1991 investigations. The few confirmed prehistoric artifacts and the historic trash scatter have little significance. Additional background and historical research have not revealed any pertinent information regarding the significance of the site. Through this recording, the data potential for this site has been exhausted. This site is recommended as not eligible for listing on the NRHP or CRHR and no further cultural resources work is recommended.

No cultural elements were identified at P-37-029431 during this survey. The site was initially recorded as a lithic scatter with one milling station containing two milling slicks. None of the lithic scatters were re-identified and the milling station previously recorded did not contain two milling slicks, but rather two natural water eroded depressions on the felsite boulder. All of the material observed was natural fracturing and exfoliation which looked cultural but had no diagnostic features. Dense scrub and tall grasses provided very poor visibility; however, the roadway and shoulders provided 100 percent visibility where the majority of features were recorded, and no intact deposits or artifacts were identified within the APE. As this site does not appear to be related to human activity, it cannot satisfy any NRHP or CRHR criteria and is therefore recommended as not eligible for listing on the NRHP or CRHR. No further cultural resources work is recommended.

### **Conclusion – No Adverse Effect**

Based on the results of the current investigation, CBP has determined that no previously or newly recorded historic properties of significance would be affected by this undertaking pursuant to Section 800.4(d)(1). As a result, no further work is recommended. Supporting evidence for these determinations can be found in the enclosed cultural resources technical report.

We request your concurrence with our determination. If no response is received within 30 days a concurrence will be presumed. If you have any questions please feel free to contact John Petrilla at (949) 278-0353 or via email at [JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov). We also request you provide an electronic copy of your response to Mr. Petrilla at [JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov)

Michael Garcia, Vice Chairperson  
Page 3

Sincerely,

A handwritten signature in blue ink that reads "Paul Enriquez". The signature is fluid and cursive, with the first name "Paul" being larger and more prominent than the last name "Enriquez".

Paul Enriquez  
Acquisition, Real Estate and Environmental Director  
Infrastructure Program  
Program Management Office Directorate  
U.S. Border Patrol  
[Paul.enriquez@cbp.dhs.gov](mailto:Paul.enriquez@cbp.dhs.gov)

Enclosure:

Class III Cultural Resources Survey for the Proposed Improvement, Maintenance, and Repair of the 1418 Firebreak Road Project in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol San Diego Sector, San Diego County, California



October 1, 2020

Virgil Perez, Chairperson  
Iipay Nation of Santa Ysabel  
PO Box 130  
Santa Ysabel, CA 92070

**SUBJECT:** Request for Concurrence on the Class III Cultural Resources Survey for the Proposed Improvement, Maintenance, and Repair of the 1418 Firebreak Road Project in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol San Diego Sector, San Diego County, California

Dear Mr. Perez:

U.S. Customs and Border Protection (CBP) is initiating consultation with the California Department of Parks and Recreation, Office of Historic Preservation pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations at 36 CFR Part 800 regarding U.S. Customs and Border Protection's (CBP) plan to improve, maintain, and repair approximately 2.5 miles of the 1418 Firebreak Road located in the western part of the CBP San Diego Sector to support CBP operations. The existing road is in poor condition due to the lack of routine maintenance. The objective of this Project would be to improve the 1418 Firebreak Road to a FC-2 roadway.

### **Description of the Undertaking**

The proposed work for the road improvements includes importing roadway material to build a road cap, reshape the road crown, and re-pitch/slope the road to establish better drain lines to direct water flow. New culverts would be installed. Eroded edges of the roads would be armored with riprap to combat erosion, and French drains would be installed in locations that have low water crossings and not enough elevation to install culverts. A soil stabilizer, either Lignin or Soiltac, would be applied to the finished road surface.

### **Area of Potential Effect**

The APE comprises a 100- foot-wide corridor centered on the approximately 2.5-mile-long segment of road. The APE also encompasses the cultural resource site boundaries identified within the APE and discussed below. The APE totals 170.65 acres. The maximum vertical depth of all activities is not expected to exceed 15 feet below ground level.

### **Identification and Evaluation of Historic Properties**

The California Historic Resources Information System (CHRIS) identified a total of 55 cultural resources within a one-mile radius of the APE, but only seven of these have been recorded within the boundaries of the APE and include: P-37-010027 (CA-SDI-010027), P-37-011355 (CA-SDI-11355), P-37-011356 (CASDI-011356), P-37-011357 (P-37-11357), P-37-012150 (CA-SDI-12150H), P-37-019019 (CASDI-13713/H), P-37-029431 (CA-SDI-18839). Due to the overlap in site boundaries, previous studies as well as the current study have attempted to



combine sites based on their temporal association. Attempts were made to locate each previously identified cultural resource. The DPR for each resource was updated and confirmed or corrected information on each resource's location, spatial extent, general characteristics, and eligibility status. As a result, only three sites are currently identified within the Project APE.

P-37-019019 consists of five previously identified sites, none of which appear significant individually or together based on data collected during the original recording of the site, this current evaluation, and through additional analysis and historical research. They are part of the Otay Ranch corral and pasture lands. As no potential for intact cultural deposits were identified, the site is seen as being of limited significance and is recommended as not eligible for listing on the NRHP or CRHR. No further cultural resources work is recommended.

P-37-10027 was previously identified as having five lithic quarry loci but the majority of the potential cultural material is found by the current survey to be the result of natural fracturing. This is consistent with previous observation in 1996 that naturally fractured material may have been misidentified as cultural material during the initial 1991 investigations. The few confirmed prehistoric artifacts and the historic trash scatter have little significance. Additional background and historical research have not revealed any pertinent information regarding the significance of the site. Through this recording, the data potential for this site has been exhausted. This site is recommended as not eligible for listing on the NRHP or CRHR and no further cultural resources work is recommended.

No cultural elements were identified at P-37-029431 during this survey. The site was initially recorded as a lithic scatter with one milling station containing two milling slicks. None of the lithic scatters were re-identified and the milling station previously recorded did not contain two milling slicks, but rather two natural water eroded depressions on the felsite boulder. All of the material observed was natural fracturing and exfoliation which looked cultural but had no diagnostic features. Dense scrub and tall grasses provided very poor visibility; however, the roadway and shoulders provided 100 percent visibility where the majority of features were recorded, and no intact deposits or artifacts were identified within the APE. As this site does not appear to be related to human activity, it cannot satisfy any NRHP or CRHR criteria and is therefore recommended as not eligible for listing on the NRHP or CRHR. No further cultural resources work is recommended.

### **Conclusion – No Adverse Effect**

Based on the results of the current investigation, CBP has determined that no previously or newly recorded historic properties of significance would be affected by this undertaking pursuant to Section 800.4(d)(1). As a result, no further work is recommended. Supporting evidence for these determinations can be found in the enclosed cultural resources technical report.

We request your concurrence with our determination. If no response is received within 30 days a concurrence will be presumed. If you have any questions please feel free to contact John Petrilla at (949) 278-0353 or via email at [JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov). We also request you provide an electronic copy of your response to Mr. Petrilla at [JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov)

Virgil Perez, Chairperson

Page 3

Sincerely,

A handwritten signature in blue ink that reads "Paul Enriquez". The signature is fluid and cursive, with the first name "Paul" being larger and more prominent than the last name "Enriquez".

Paul Enriquez

Acquisition, Real Estate and Environmental Director

Infrastructure Program

Program Management Office Directorate

U.S. Border Patrol

[Paul.enriquez@cbp.dhs.gov](mailto:Paul.enriquez@cbp.dhs.gov)

Enclosure:

Class III Cultural Resources Survey for the Proposed Improvement, Maintenance, and Repair of the 1418 Firebreak Road Project in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol San Diego Sector, San Diego County, California



October 1, 2020

Clint Linton, Director of Cultural Resources  
Iipay Nation of Santa Ysabel  
PO Box 507  
Santa Ysabel, CA 92070

**SUBJECT:** Request for Concurrence on the Class III Cultural Resources Survey for the Proposed Improvement, Maintenance, and Repair of the 1418 Firebreak Road Project in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol San Diego Sector, San Diego County, California

Dear Mr. Clinton:

U.S. Customs and Border Protection (CBP) is initiating consultation with the California Department of Parks and Recreation, Office of Historic Preservation pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations at 36 CFR Part 800 regarding U.S. Customs and Border Protection's (CBP) plan to improve, maintain, and repair approximately 2.5 miles of the 1418 Firebreak Road located in the western part of the CBP San Diego Sector to support CBP operations. The existing road is in poor condition due to the lack of routine maintenance. The objective of this Project would be to improve the 1418 Firebreak Road to a FC-2 roadway.

### **Description of the Undertaking**

The proposed work for the road improvements includes importing roadway material to build a road cap, reshape the road crown, and re-pitch/slope the road to establish better drain lines to direct water flow. New culverts would be installed. Eroded edges of the roads would be armored with riprap to combat erosion, and French drains would be installed in locations that have low water crossings and not enough elevation to install culverts. A soil stabilizer, either Lignin or Soiltec, would be applied to the finished road surface.

### **Area of Potential Effect**

The APE comprises a 100-foot-wide corridor centered on the approximately 2.5-mile-long segment of road. The APE also encompasses the cultural resource site boundaries identified within the APE and discussed below. The APE totals 170.65 acres. The maximum vertical depth of all activities is not expected to exceed 15 feet below ground level.

### **Identification and Evaluation of Historic Properties**

The California Historic Resources Information System (CHRIS) identified a total of 55 cultural resources within a one-mile radius of the APE, but only seven of these have been recorded within the boundaries of the APE and include: P-37-010027 (CA-SDI-010027), P-37-011355 (CA-SDI-11355), P-37-011356 (CASDI-011356), P-37-011357 (P-37-11357), P-37-012150 (CA-SDI-12150H), P-37-019019 (CASDI-13713/H), P-37-029431 (CA-SDI-18839). Due to the overlap in site boundaries, previous studies as well as the current study have attempted to

combine sites based on their temporal association. Attempts were made to locate each previously identified cultural resource. The DPR for each resource was updated and confirmed or corrected information on each resource's location, spatial extent, general characteristics, and eligibility status. As a result, only three sites are currently identified within the Project APE.

P-37-019019 consists of five previously identified sites, none of which appear significant individually or together based on data collected during the original recording of the site, this current evaluation, and through additional analysis and historical research. They are part of the Otay Ranch corral and pasture lands. As no potential for intact cultural deposits were identified, the site is seen as being of limited significance and is recommended as not eligible for listing on the NRHP or CRHR. No further cultural resources work is recommended.

P-37-10027 was previously identified as having five lithic quarry loci but the majority of the potential cultural material is found by the current survey to be the result of natural fracturing. This is consistent with previous observation in 1996 that naturally fractured material may have been misidentified as cultural material during the initial 1991 investigations. The few confirmed prehistoric artifacts and the historic trash scatter have little significance. Additional background and historical research have not revealed any pertinent information regarding the significance of the site. Through this recording, the data potential for this site has been exhausted. This site is recommended as not eligible for listing on the NRHP or CRHR and no further cultural resources work is recommended.

No cultural elements were identified at P-37-029431 during this survey. The site was initially recorded as a lithic scatter with one milling station containing two milling slicks. None of the lithic scatters were re-identified and the milling station previously recorded did not contain two milling slicks, but rather two natural water eroded depressions on the felsite boulder. All of the material observed was natural fracturing and exfoliation which looked cultural but had no diagnostic features. Dense scrub and tall grasses provided very poor visibility; however, the roadway and shoulders provided 100 percent visibility where the majority of features were recorded, and no intact deposits or artifacts were identified within the APE. As this site does not appear to be related to human activity, it cannot satisfy any NRHP or CRHR criteria and is therefore recommended as not eligible for listing on the NRHP or CRHR. No further cultural resources work is recommended.

### **Conclusion – No Adverse Effect**

Based on the results of the current investigation, CBP has determined that no previously or newly recorded historic properties of significance would be affected by this undertaking pursuant to Section 800.4(d)(1). As a result, no further work is recommended. Supporting evidence for these determinations can be found in the enclosed cultural resources technical report.

We request your concurrence with our determination. If no response is received within 30 days a concurrence will be presumed. If you have any questions please feel free to contact John Petrilla at (949) 278-0353 or via email at [JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov). We also request you provide an electronic copy of your response to Mr. Petrilla at [JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov)

Sincerely,

A handwritten signature in blue ink that reads "Paul Enriquez". The signature is fluid and cursive, with the first name "Paul" being larger and more prominent than the last name "Enriquez".

Paul Enriquez  
Acquisition, Real Estate and Environmental Director  
Infrastructure Program  
Program Management Office Directorate  
U.S. Border Patrol  
[Paul.enriquez@cbp.dhs.gov](mailto:Paul.enriquez@cbp.dhs.gov)

Enclosure:

Class III Cultural Resources Survey for the Proposed Improvement, Maintenance, and Repair of the 1418 Firebreak Road Project in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol San Diego Sector, San Diego County, California



October 1, 2020

Rebecca Osuna, Chairperson  
Inaja-Cosmit Band of Indians  
2005 S Escondido Blvd  
Escondido, CA 92025

**SUBJECT:** Request for Concurrence on the Class III Cultural Resources Survey for the Proposed Improvement, Maintenance, and Repair of the 1418 Firebreak Road Project in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol San Diego Sector, San Diego County, California

Dear Ms. Osuna:

U.S. Customs and Border Protection (CBP) is initiating consultation with the California Department of Parks and Recreation, Office of Historic Preservation pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations at 36 CFR Part 800 regarding U.S. Customs and Border Protection's (CBP) plan to improve, maintain, and repair approximately 2.5 miles of the 1418 Firebreak Road located in the western part of the CBP San Diego Sector to support CBP operations. The existing road is in poor condition due to the lack of routine maintenance. The objective of this Project would be to improve the 1418 Firebreak Road to a FC-2 roadway.

### **Description of the Undertaking**

The proposed work for the road improvements includes importing roadway material to build a road cap, reshape the road crown, and re-pitch/slope the road to establish better drain lines to direct water flow. New culverts would be installed. Eroded edges of the roads would be armored with riprap to combat erosion, and French drains would be installed in locations that have low water crossings and not enough elevation to install culverts. A soil stabilizer, either Lignin or Soiltac, would be applied to the finished road surface.

### **Area of Potential Effect**

The APE comprises a 100- foot-wide corridor centered on the approximately 2.5-mile-long segment of road. The APE also encompasses the cultural resource site boundaries identified within the APE and discussed below. The APE totals 170.65 acres. The maximum vertical depth of all activities is not expected to exceed 15 feet below ground level.

### **Identification and Evaluation of Historic Properties**

The California Historic Resources Information System (CHRIS) identified a total of 55 cultural resources within a one-mile radius of the APE, but only seven of these have been recorded within the boundaries of the APE and include: P-37-010027 (CA-SDI-010027), P-37-011355 (CA-SDI-11355), P-37-011356 (CASDI-011356), P-37-011357 (P-37-11357), P-37-012150 (CA-SDI-12150H), P-37-019019 (CASDI-13713/H), P-37-029431 (CA-SDI-18839). Due to the overlap in site boundaries, previous studies as well as the current study have attempted to

combine sites based on their temporal association. Attempts were made to locate each previously identified cultural resource. The DPR for each resource was updated and confirmed or corrected information on each resource's location, spatial extent, general characteristics, and eligibility status. As a result, only three sites are currently identified within the Project APE.

P-37-019019 consists of five previously identified sites, none of which appear significant individually or together based on data collected during the original recording of the site, this current evaluation, and through additional analysis and historical research. They are part of the Otay Ranch corral and pasture lands. As no potential for intact cultural deposits were identified, the site is seen as being of limited significance and is recommended as not eligible for listing on the NRHP or CRHR. No further cultural resources work is recommended.

P-37-10027 was previously identified as having five lithic quarry loci but the majority of the potential cultural material is found by the current survey to be the result of natural fracturing. This is consistent with previous observation in 1996 that naturally fractured material may have been misidentified as cultural material during the initial 1991 investigations. The few confirmed prehistoric artifacts and the historic trash scatter have little significance. Additional background and historical research have not revealed any pertinent information regarding the significance of the site. Through this recording, the data potential for this site has been exhausted. This site is recommended as not eligible for listing on the NRHP or CRHR and no further cultural resources work is recommended.

No cultural elements were identified at P-37-029431 during this survey. The site was initially recorded as a lithic scatter with one milling station containing two milling slicks. None of the lithic scatters were re-identified and the milling station previously recorded did not contain two milling slicks, but rather two natural water eroded depressions on the felsite boulder. All of the material observed was natural fracturing and exfoliation which looked cultural but had no diagnostic features. Dense scrub and tall grasses provided very poor visibility; however, the roadway and shoulders provided 100 percent visibility where the majority of features were recorded, and no intact deposits or artifacts were identified within the APE. As this site does not appear to be related to human activity, it cannot satisfy any NRHP or CRHR criteria and is therefore recommended as not eligible for listing on the NRHP or CRHR. No further cultural resources work is recommended.

### **Conclusion – No Adverse Effect**

Based on the results of the current investigation, CBP has determined that no previously or newly recorded historic properties of significance would be affected by this undertaking pursuant to Section 800.4(d)(1). As a result, no further work is recommended. Supporting evidence for these determinations can be found in the enclosed cultural resources technical report.

We request your concurrence with our determination. If no response is received within 30 days a concurrence will be presumed. If you have any questions please feel free to contact John Petrilla at (949) 278-0353 or via email at [JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov). We also request you provide an electronic copy of your response to Mr. Petrilla at [JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov)



Rebecca Osuna, Chairperson

Page 3

Sincerely,

A handwritten signature in blue ink that reads "Paul Enriquez". The signature is fluid and cursive, with the first name "Paul" being larger and more prominent than the last name "Enriquez".

Paul Enriquez

Acquisition, Real Estate and Environmental Director

Infrastructure Program

Program Management Office Directorate

U.S. Border Patrol

[Paul.enriquez@cbp.dhs.gov](mailto:Paul.enriquez@cbp.dhs.gov)

Enclosure:

Class III Cultural Resources Survey for the Proposed Improvement, Maintenance, and Repair of the 1418 Firebreak Road Project in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol San Diego Sector, San Diego County, California



October 1, 2020

Erica Pinto, Chairperson  
Jamul Indian Village  
PO Box 612  
Jamul, CA 91935

**SUBJECT:** Request for Concurrence on the Class III Cultural Resources Survey for the Proposed Improvement, Maintenance, and Repair of the 1418 Firebreak Road Project in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol San Diego Sector, San Diego County, California

Dear Ms. Pinto:

U.S. Customs and Border Protection (CBP) is initiating consultation with the California Department of Parks and Recreation, Office of Historic Preservation pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations at 36 CFR Part 800 regarding U.S. Customs and Border Protection's (CBP) plan to improve, maintain, and repair approximately 2.5 miles of the 1418 Firebreak Road located in the western part of the CBP San Diego Sector to support CBP operations. The existing road is in poor condition due to the lack of routine maintenance. The objective of this Project would be to improve the 1418 Firebreak Road to a FC-2 roadway.

### **Description of the Undertaking**

The proposed work for the road improvements includes importing roadway material to build a road cap, reshape the road crown, and re-pitch/slope the road to establish better drain lines to direct water flow. New culverts would be installed. Eroded edges of the roads would be armored with riprap to combat erosion, and French drains would be installed in locations that have low water crossings and not enough elevation to install culverts. A soil stabilizer, either Lignin or Soiltac, would be applied to the finished road surface.

### **Area of Potential Effect**

The APE comprises a 100- foot-wide corridor centered on the approximately 2.5-mile-long segment of road. The APE also encompasses the cultural resource site boundaries identified within the APE and discussed below. The APE totals 170.65 acres. The maximum vertical depth of all activities is not expected to exceed 15 feet below ground level.

### **Identification and Evaluation of Historic Properties**

The California Historic Resources Information System (CHRIS) identified a total of 55 cultural resources within a one-mile radius of the APE, but only seven of these have been recorded within the boundaries of the APE and include: P-37-010027 (CA-SDI-010027), P-37-011355 (CA-SDI-11355), P-37-011356 (CASDI-011356), P-37-011357 (P-37-11357), P-37-012150 (CA-SDI-12150H), P-37-019019 (CASDI-13713/H), P-37-029431 (CA-SDI-18839). Due to the overlap in site boundaries, previous studies as well as the current study have attempted to

combine sites based on their temporal association. Attempts were made to locate each previously identified cultural resource. The DPR for each resource was updated and confirmed or corrected information on each resource's location, spatial extent, general characteristics, and eligibility status. As a result, only three sites are currently identified within the Project APE.

P-37-019019 consists of five previously identified sites, none of which appear significant individually or together based on data collected during the original recording of the site, this current evaluation, and through additional analysis and historical research. They are part of the Otay Ranch corral and pasture lands. As no potential for intact cultural deposits were identified, the site is seen as being of limited significance and is recommended as not eligible for listing on the NRHP or CRHR. No further cultural resources work is recommended.

P-37-10027 was previously identified as having five lithic quarry loci but the majority of the potential cultural material is found by the current survey to be the result of natural fracturing. This is consistent with previous observation in 1996 that naturally fractured material may have been misidentified as cultural material during the initial 1991 investigations. The few confirmed prehistoric artifacts and the historic trash scatter have little significance. Additional background and historical research have not revealed any pertinent information regarding the significance of the site. Through this recording, the data potential for this site has been exhausted. This site is recommended as not eligible for listing on the NRHP or CRHR and no further cultural resources work is recommended.

No cultural elements were identified at P-37-029431 during this survey. The site was initially recorded as a lithic scatter with one milling station containing two milling slicks. None of the lithic scatters were re-identified and the milling station previously recorded did not contain two milling slicks, but rather two natural water eroded depressions on the felsite boulder. All of the material observed was natural fracturing and exfoliation which looked cultural but had no diagnostic features. Dense scrub and tall grasses provided very poor visibility; however, the roadway and shoulders provided 100 percent visibility where the majority of features were recorded, and no intact deposits or artifacts were identified within the APE. As this site does not appear to be related to human activity, it cannot satisfy any NRHP or CRHR criteria and is therefore recommended as not eligible for listing on the NRHP or CRHR. No further cultural resources work is recommended.

### **Conclusion – No Adverse Effect**

Based on the results of the current investigation, CBP has determined that no previously or newly recorded historic properties of significance would be affected by this undertaking pursuant to Section 800.4(d)(1). As a result, no further work is recommended. Supporting evidence for these determinations can be found in the enclosed cultural resources technical report.

We request your concurrence with our determination. If no response is received within 30 days a concurrence will be presumed. If you have any questions please feel free to contact John Petrilla at (949) 278-0353 or via email at [JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov). We also request you provide an electronic copy of your response to Mr. Petrilla at [JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov)

Erica Pinto, Chairperson  
Page 3

Sincerely,

A handwritten signature in blue ink that reads "Paul Enriquez". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Paul Enriquez  
Acquisition, Real Estate and Environmental Director  
Infrastructure Program  
Program Management Office Directorate  
U.S. Border Patrol  
[Paul.enriquez@cbp.dhs.gov](mailto:Paul.enriquez@cbp.dhs.gov)

Enclosure:

Class III Cultural Resources Survey for the Proposed Improvement, Maintenance, and Repair of the 1418 Firebreak Road Project in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol San Diego Sector, San Diego County, California



October 1, 2020

Carmen Lucas,  
Kwaaymii Laguna Band of Mission Indians  
PO Box 775  
Pine Valley, CA 91962

**SUBJECT:** Request for Concurrence on the Class III Cultural Resources Survey for the Proposed Improvement, Maintenance, and Repair of the 1418 Firebreak Road Project in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol San Diego Sector, San Diego County, California

Dear Ms. Lucas:

U.S. Customs and Border Protection (CBP) is initiating consultation with the California Department of Parks and Recreation, Office of Historic Preservation pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations at 36 CFR Part 800 regarding U.S. Customs and Border Protection's (CBP) plan to improve, maintain, and repair approximately 2.5 miles of the 1418 Firebreak Road located in the western part of the CBP San Diego Sector to support CBP operations. The existing road is in poor condition due to the lack of routine maintenance. The objective of this Project would be to improve the 1418 Firebreak Road to a FC-2 roadway.

### **Description of the Undertaking**

The proposed work for the road improvements includes importing roadway material to build a road cap, reshape the road crown, and re-pitch/slope the road to establish better drain lines to direct water flow. New culverts would be installed. Eroded edges of the roads would be armored with riprap to combat erosion, and French drains would be installed in locations that have low water crossings and not enough elevation to install culverts. A soil stabilizer, either Lignin or Soiltac, would be applied to the finished road surface.

### **Area of Potential Effect**

The APE comprises a 100- foot-wide corridor centered on the approximately 2.5-mile-long segment of road. The APE also encompasses the cultural resource site boundaries identified within the APE and discussed below. The APE totals 170.65 acres. The maximum vertical depth of all activities is not expected to exceed 15 feet below ground level.

### **Identification and Evaluation of Historic Properties**

The California Historic Resources Information System (CHRIS) identified a total of 55 cultural resources within a one-mile radius of the APE, but only seven of these have been recorded within the boundaries of the APE and include: P-37-010027 (CA-SDI-010027), P-37-011355 (CA-SDI-11355), P-37-011356 (CASDI-011356), P-37-011357 (P-37-11357), P-37-012150 (CA-SDI-12150H), P-37-019019 (CASDI-13713/H), P-37-029431 (CA-SDI-18839). Due to the overlap in site boundaries, previous studies as well as the current study have attempted to

combine sites based on their temporal association. Attempts were made to locate each previously identified cultural resource. The DPR for each resource was updated and confirmed or corrected information on each resource's location, spatial extent, general characteristics, and eligibility status. As a result, only three sites are currently identified within the Project APE.

P-37-019019 consists of five previously identified sites, none of which appear significant individually or together based on data collected during the original recording of the site, this current evaluation, and through additional analysis and historical research. They are part of the Otay Ranch corral and pasture lands. As no potential for intact cultural deposits were identified, the site is seen as being of limited significance and is recommended as not eligible for listing on the NRHP or CRHR. No further cultural resources work is recommended.

P-37-10027 was previously identified as having five lithic quarry loci but the majority of the potential cultural material is found by the current survey to be the result of natural fracturing. This is consistent with previous observation in 1996 that naturally fractured material may have been misidentified as cultural material during the initial 1991 investigations. The few confirmed prehistoric artifacts and the historic trash scatter have little significance. Additional background and historical research have not revealed any pertinent information regarding the significance of the site. Through this recording, the data potential for this site has been exhausted. This site is recommended as not eligible for listing on the NRHP or CRHR and no further cultural resources work is recommended.

No cultural elements were identified at P-37-029431 during this survey. The site was initially recorded as a lithic scatter with one milling station containing two milling slicks. None of the lithic scatters were re-identified and the milling station previously recorded did not contain two milling slicks, but rather two natural water eroded depressions on the felsite boulder. All of the material observed was natural fracturing and exfoliation which looked cultural but had no diagnostic features. Dense scrub and tall grasses provided very poor visibility; however, the roadway and shoulders provided 100 percent visibility where the majority of features were recorded, and no intact deposits or artifacts were identified within the APE. As this site does not appear to be related to human activity, it cannot satisfy any NRHP or CRHR criteria and is therefore recommended as not eligible for listing on the NRHP or CRHR. No further cultural resources work is recommended.

### **Conclusion – No Adverse Effect**

Based on the results of the current investigation, CBP has determined that no previously or newly recorded historic properties of significance would be affected by this undertaking pursuant to Section 800.4(d)(1). As a result, no further work is recommended. Supporting evidence for these determinations can be found in the enclosed cultural resources technical report.

We request your concurrence with our determination. If no response is received within 30 days a concurrence will be presumed. If you have any questions please feel free to contact John Petrilla at (949) 278-0353 or via email at [JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov). We also request you provide an electronic copy of your response to Mr. Petrilla at [JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov)

Carmen Lucas,  
Page 3

Sincerely,

A handwritten signature in blue ink that reads "Paul Enriquez". The signature is fluid and cursive, with the first name "Paul" being larger and more prominent than the last name "Enriquez".

Paul Enriquez  
Acquisition, Real Estate and Environmental Director  
Infrastructure Program  
Program Management Office Directorate  
U.S. Border Patrol  
[Paul.enriquez@cbp.dhs.gov](mailto:Paul.enriquez@cbp.dhs.gov)

Enclosure:

Class III Cultural Resources Survey for the Proposed Improvement, Maintenance, and Repair of the 1418 Firebreak Road Project in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol San Diego Sector, San Diego County, California





October 1, 2020

Javaughn Miller, Tribal Administrator  
La Posta Band of Diegueno Mission Indians  
8 Crestwood Road  
Boulevard, CA 91905

**SUBJECT:** Request for Concurrence on the Class III Cultural Resources Survey for the Proposed Improvement, Maintenance, and Repair of the 1418 Firebreak Road Project in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol San Diego Sector, San Diego County, California

Dear Ms. Miller:

U.S. Customs and Border Protection (CBP) is initiating consultation with the California Department of Parks and Recreation, Office of Historic Preservation pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations at 36 CFR Part 800 regarding U.S. Customs and Border Protection's (CBP) plan to improve, maintain, and repair approximately 2.5 miles of the 1418 Firebreak Road located in the western part of the CBP San Diego Sector to support CBP operations. The existing road is in poor condition due to the lack of routine maintenance. The objective of this Project would be to improve the 1418 Firebreak Road to a FC-2 roadway.

### **Description of the Undertaking**

The proposed work for the road improvements includes importing roadway material to build a road cap, reshape the road crown, and re-pitch/slope the road to establish better drain lines to direct water flow. New culverts would be installed. Eroded edges of the roads would be armored with riprap to combat erosion, and French drains would be installed in locations that have low water crossings and not enough elevation to install culverts. A soil stabilizer, either Lignin or Soiltac, would be applied to the finished road surface.

### **Area of Potential Effect**

The APE comprises a 100- foot-wide corridor centered on the approximately 2.5-mile-long segment of road. The APE also encompasses the cultural resource site boundaries identified within the APE and discussed below. The APE totals 170.65 acres. The maximum vertical depth of all activities is not expected to exceed 15 feet below ground level.

### **Identification and Evaluation of Historic Properties**

The California Historic Resources Information System (CHRIS) identified a total of 55 cultural resources within a one-mile radius of the APE, but only seven of these have been recorded within the boundaries of the APE and include: P-37-010027 (CA-SDI-010027), P-37-011355 (CA-SDI-11355), P-37-011356 (CASDI-011356), P-37-011357 (P-37-11357), P-37-012150 (CA-SDI-12150H), P-37-019019 (CASDI-13713/H), P-37-029431 (CA-SDI-18839). Due to the overlap in site boundaries, previous studies as well as the current study have attempted to

combine sites based on their temporal association. Attempts were made to locate each previously identified cultural resource. The DPR for each resource was updated and confirmed or corrected information on each resource's location, spatial extent, general characteristics, and eligibility status. As a result, only three sites are currently identified within the Project APE.

P-37-019019 consists of five previously identified sites, none of which appear significant individually or together based on data collected during the original recording of the site, this current evaluation, and through additional analysis and historical research. They are part of the Otay Ranch corral and pasture lands. As no potential for intact cultural deposits were identified, the site is seen as being of limited significance and is recommended as not eligible for listing on the NRHP or CRHR. No further cultural resources work is recommended.

P-37-10027 was previously identified as having five lithic quarry loci but the majority of the potential cultural material is found by the current survey to be the result of natural fracturing. This is consistent with previous observation in 1996 that naturally fractured material may have been misidentified as cultural material during the initial 1991 investigations. The few confirmed prehistoric artifacts and the historic trash scatter have little significance. Additional background and historical research have not revealed any pertinent information regarding the significance of the site. Through this recording, the data potential for this site has been exhausted. This site is recommended as not eligible for listing on the NRHP or CRHR and no further cultural resources work is recommended.

No cultural elements were identified at P-37-029431 during this survey. The site was initially recorded as a lithic scatter with one milling station containing two milling slicks. None of the lithic scatters were re-identified and the milling station previously recorded did not contain two milling slicks, but rather two natural water eroded depressions on the felsite boulder. All of the material observed was natural fracturing and exfoliation which looked cultural but had no diagnostic features. Dense scrub and tall grasses provided very poor visibility; however, the roadway and shoulders provided 100 percent visibility where the majority of features were recorded, and no intact deposits or artifacts were identified within the APE. As this site does not appear to be related to human activity, it cannot satisfy any NRHP or CRHR criteria and is therefore recommended as not eligible for listing on the NRHP or CRHR. No further cultural resources work is recommended.

### **Conclusion – No Adverse Effect**

Based on the results of the current investigation, CBP has determined that no previously or newly recorded historic properties of significance would be affected by this undertaking pursuant to Section 800.4(d)(1). As a result, no further work is recommended. Supporting evidence for these determinations can be found in the enclosed cultural resources technical report.

We request your concurrence with our determination. If no response is received within 30 days a concurrence will be presumed. If you have any questions please feel free to contact John Petrilla at (949) 278-0353 or via email at [JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov). We also request you provide an electronic copy of your response to Mr. Petrilla at [JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov)

Javaughn Miller, Tribal Administrator  
Page 3

Sincerely,

A handwritten signature in blue ink that reads "Paul Enriquez". The signature is fluid and cursive, with the first name "Paul" being larger and more prominent than the last name "Enriquez".

Paul Enriquez  
Acquisition, Real Estate and Environmental Director  
Infrastructure Program  
Program Management Office Directorate  
U.S. Border Patrol  
[Paul.enriquez@cbp.dhs.gov](mailto:Paul.enriquez@cbp.dhs.gov)

Enclosure:

Class III Cultural Resources Survey for the Proposed Improvement, Maintenance, and Repair of the 1418 Firebreak Road Project in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol San Diego Sector, San Diego County, California



October 1, 2020

Gwendolyn Parada, Chairperson  
La Posta Band of Diegueno Mission Indians  
8 Crestwood Road  
Boulevard, CA 91905

**SUBJECT:** Request for Concurrence on the Class III Cultural Resources Survey for the Proposed Improvement, Maintenance, and Repair of the 1418 Firebreak Road Project in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol San Diego Sector, San Diego County, California

Dear Ms. Parada:

U.S. Customs and Border Protection (CBP) is initiating consultation with the California Department of Parks and Recreation, Office of Historic Preservation pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations at 36 CFR Part 800 regarding U.S. Customs and Border Protection's (CBP) plan to improve, maintain, and repair approximately 2.5 miles of the 1418 Firebreak Road located in the western part of the CBP San Diego Sector to support CBP operations. The existing road is in poor condition due to the lack of routine maintenance. The objective of this Project would be to improve the 1418 Firebreak Road to a FC-2 roadway.

### **Description of the Undertaking**

The proposed work for the road improvements includes importing roadway material to build a road cap, reshape the road crown, and re-pitch/slope the road to establish better drain lines to direct water flow. New culverts would be installed. Eroded edges of the roads would be armored with riprap to combat erosion, and French drains would be installed in locations that have low water crossings and not enough elevation to install culverts. A soil stabilizer, either Lignin or Soiltac, would be applied to the finished road surface.

### **Area of Potential Effect**

The APE comprises a 100- foot-wide corridor centered on the approximately 2.5-mile-long segment of road. The APE also encompasses the cultural resource site boundaries identified within the APE and discussed below. The APE totals 170.65 acres. The maximum vertical depth of all activities is not expected to exceed 15 feet below ground level.

### **Identification and Evaluation of Historic Properties**

The California Historic Resources Information System (CHRIS) identified a total of 55 cultural resources within a one-mile radius of the APE, but only seven of these have been recorded within the boundaries of the APE and include: P-37-010027 (CA-SDI-010027), P-37-011355 (CA-SDI-11355), P-37-011356 (CASDI-011356), P-37-011357 (P-37-11357), P-37-012150 (CA-SDI-12150H), P-37-019019 (CASDI-13713/H), P-37-029431 (CA-SDI-18839). Due to the overlap in site boundaries, previous studies as well as the current study have attempted to

combine sites based on their temporal association. Attempts were made to locate each previously identified cultural resource. The DPR for each resource was updated and confirmed or corrected information on each resource's location, spatial extent, general characteristics, and eligibility status. As a result, only three sites are currently identified within the Project APE.

P-37-019019 consists of five previously identified sites, none of which appear significant individually or together based on data collected during the original recording of the site, this current evaluation, and through additional analysis and historical research. They are part of the Otay Ranch corral and pasture lands. As no potential for intact cultural deposits were identified, the site is seen as being of limited significance and is recommended as not eligible for listing on the NRHP or CRHR. No further cultural resources work is recommended.

P-37-10027 was previously identified as having five lithic quarry loci but the majority of the potential cultural material is found by the current survey to be the result of natural fracturing. This is consistent with previous observation in 1996 that naturally fractured material may have been misidentified as cultural material during the initial 1991 investigations. The few confirmed prehistoric artifacts and the historic trash scatter have little significance. Additional background and historical research have not revealed any pertinent information regarding the significance of the site. Through this recording, the data potential for this site has been exhausted. This site is recommended as not eligible for listing on the NRHP or CRHR and no further cultural resources work is recommended.

No cultural elements were identified at P-37-029431 during this survey. The site was initially recorded as a lithic scatter with one milling station containing two milling slicks. None of the lithic scatters were re-identified and the milling station previously recorded did not contain two milling slicks, but rather two natural water eroded depressions on the felsite boulder. All of the material observed was natural fracturing and exfoliation which looked cultural but had no diagnostic features. Dense scrub and tall grasses provided very poor visibility; however, the roadway and shoulders provided 100 percent visibility where the majority of features were recorded, and no intact deposits or artifacts were identified within the APE. As this site does not appear to be related to human activity, it cannot satisfy any NRHP or CRHR criteria and is therefore recommended as not eligible for listing on the NRHP or CRHR. No further cultural resources work is recommended.

### **Conclusion – No Adverse Effect**

Based on the results of the current investigation, CBP has determined that no previously or newly recorded historic properties of significance would be affected by this undertaking pursuant to Section 800.4(d)(1). As a result, no further work is recommended. Supporting evidence for these determinations can be found in the enclosed cultural resources technical report.

We request your concurrence with our determination. If no response is received within 30 days a concurrence will be presumed. If you have any questions please feel free to contact John Petrilla at (949) 278-0353 or via email at [JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov). We also request you provide an electronic copy of your response to Mr. Petrilla at [JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov)

Gwendolyn Parada, Chairperson

Page 3

Sincerely,

A handwritten signature in blue ink that reads "Paul Enriquez". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Paul Enriquez

Acquisition, Real Estate and Environmental Director

Infrastructure Program

Program Management Office Directorate

U.S. Border Patrol

[Paul.enriquez@cbp.dhs.gov](mailto:Paul.enriquez@cbp.dhs.gov)

Enclosure:

Class III Cultural Resources Survey for the Proposed Improvement, Maintenance, and Repair of the 1418 Firebreak Road Project in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol San Diego Sector, San Diego County, California



October 1, 2020

Angela Elliott Santos, Chairperson  
Manzanita Band of Kumeyaay Nation  
PO Box 1302  
Boulevard, CA 91905

**SUBJECT:** Request for Concurrence on the Class III Cultural Resources Survey for the Proposed Improvement, Maintenance, and Repair of the 1418 Firebreak Road Project in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol San Diego Sector, San Diego County, California

Dear Mrs. Santos:

U.S. Customs and Border Protection (CBP) is initiating consultation with the California Department of Parks and Recreation, Office of Historic Preservation pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations at 36 CFR Part 800 regarding U.S. Customs and Border Protection's (CBP) plan to improve, maintain, and repair approximately 2.5 miles of the 1418 Firebreak Road located in the western part of the CBP San Diego Sector to support CBP operations. The existing road is in poor condition due to the lack of routine maintenance. The objective of this Project would be to improve the 1418 Firebreak Road to a FC-2 roadway.

### **Description of the Undertaking**

The proposed work for the road improvements includes importing roadway material to build a road cap, reshape the road crown, and re-pitch/slope the road to establish better drain lines to direct water flow. New culverts would be installed. Eroded edges of the roads would be armored with riprap to combat erosion, and French drains would be installed in locations that have low water crossings and not enough elevation to install culverts. A soil stabilizer, either Lignin or Soiltac, would be applied to the finished road surface.

### **Area of Potential Effect**

The APE comprises a 100- foot-wide corridor centered on the approximately 2.5-mile-long segment of road. The APE also encompasses the cultural resource site boundaries identified within the APE and discussed below. The APE totals 170.65 acres. The maximum vertical depth of all activities is not expected to exceed 15 feet below ground level.

### **Identification and Evaluation of Historic Properties**

The California Historic Resources Information System (CHRIS) identified a total of 55 cultural resources within a one-mile radius of the APE, but only seven of these have been recorded within the boundaries of the APE and include: P-37-010027 (CA-SDI-010027), P-37-011355 (CA-SDI-11355), P-37-011356 (CASDI-011356), P-37-011357 (P-37-11357), P-37-012150 (CA-SDI-12150H), P-37-019019 (CASDI-13713/H), P-37-029431 (CA-SDI-18839). Due to the overlap in site boundaries, previous studies as well as the current study have attempted to



combine sites based on their temporal association. Attempts were made to locate each previously identified cultural resource. The DPR for each resource was updated and confirmed or corrected information on each resource's location, spatial extent, general characteristics, and eligibility status. As a result, only three sites are currently identified within the Project APE.

P-37-019019 consists of five previously identified sites, none of which appear significant individually or together based on data collected during the original recording of the site, this current evaluation, and through additional analysis and historical research. They are part of the Otay Ranch corral and pasture lands. As no potential for intact cultural deposits were identified, the site is seen as being of limited significance and is recommended as not eligible for listing on the NRHP or CRHR. No further cultural resources work is recommended.

P-37-10027 was previously identified as having five lithic quarry loci but the majority of the potential cultural material is found by the current survey to be the result of natural fracturing. This is consistent with previous observation in 1996 that naturally fractured material may have been misidentified as cultural material during the initial 1991 investigations. The few confirmed prehistoric artifacts and the historic trash scatter have little significance. Additional background and historical research have not revealed any pertinent information regarding the significance of the site. Through this recording, the data potential for this site has been exhausted. This site is recommended as not eligible for listing on the NRHP or CRHR and no further cultural resources work is recommended.

No cultural elements were identified at P-37-029431 during this survey. The site was initially recorded as a lithic scatter with one milling station containing two milling slicks. None of the lithic scatters were re-identified and the milling station previously recorded did not contain two milling slicks, but rather two natural water eroded depressions on the felsite boulder. All of the material observed was natural fracturing and exfoliation which looked cultural but had no diagnostic features. Dense scrub and tall grasses provided very poor visibility; however, the roadway and shoulders provided 100 percent visibility where the majority of features were recorded, and no intact deposits or artifacts were identified within the APE. As this site does not appear to be related to human activity, it cannot satisfy any NRHP or CRHR criteria and is therefore recommended as not eligible for listing on the NRHP or CRHR. No further cultural resources work is recommended.

### **Conclusion – No Adverse Effect**

Based on the results of the current investigation, CBP has determined that no previously or newly recorded historic properties of significance would be affected by this undertaking pursuant to Section 800.4(d)(1). As a result, no further work is recommended. Supporting evidence for these determinations can be found in the enclosed cultural resources technical report.

We request your concurrence with our determination. If no response is received within 30 days a concurrence will be presumed. If you have any questions please feel free to contact John Petrilla at (949) 278-0353 or via email at [JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov). We also request you provide an electronic copy of your response to Mr. Petrilla at [JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov)

Angela Elliott Santos, Chairperson  
Page 3

Sincerely,

A handwritten signature in blue ink that reads "Paul Enriquez". The signature is fluid and cursive, with the first name "Paul" being larger and more prominent than the last name "Enriquez".

Paul Enriquez  
Acquisition, Real Estate and Environmental Director  
Infrastructure Program  
Program Management Office Directorate  
U.S. Border Patrol  
[Paul.enriquez@cbp.dhs.gov](mailto:Paul.enriquez@cbp.dhs.gov)

Enclosure:

Class III Cultural Resources Survey for the Proposed Improvement, Maintenance, and Repair of the 1418 Firebreak Road Project in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol San Diego Sector, San Diego County, California



October 1, 2020

Michael Linton, Chairperson  
Mesa Grande Band of Diegueno Mission Indians  
PO Box 270  
Santa Ysabel, CA 92070

**SUBJECT:** Request for Concurrence on the Class III Cultural Resources Survey for the Proposed Improvement, Maintenance, and Repair of the 1418 Firebreak Road Project in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol San Diego Sector, San Diego County, California

Dear Mr. Linton:

U.S. Customs and Border Protection (CBP) is initiating consultation with the California Department of Parks and Recreation, Office of Historic Preservation pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations at 36 CFR Part 800 regarding U.S. Customs and Border Protection's (CBP) plan to improve, maintain, and repair approximately 2.5 miles of the 1418 Firebreak Road located in the western part of the CBP San Diego Sector to support CBP operations. The existing road is in poor condition due to the lack of routine maintenance. The objective of this Project would be to improve the 1418 Firebreak Road to a FC-2 roadway.

### **Description of the Undertaking**

The proposed work for the road improvements includes importing roadway material to build a road cap, reshape the road crown, and re-pitch/slope the road to establish better drain lines to direct water flow. New culverts would be installed. Eroded edges of the roads would be armored with riprap to combat erosion, and French drains would be installed in locations that have low water crossings and not enough elevation to install culverts. A soil stabilizer, either Lignin or Soiltac, would be applied to the finished road surface.

### **Area of Potential Effect**

The APE comprises a 100- foot-wide corridor centered on the approximately 2.5-mile-long segment of road. The APE also encompasses the cultural resource site boundaries identified within the APE and discussed below. The APE totals 170.65 acres. The maximum vertical depth of all activities is not expected to exceed 15 feet below ground level.

### **Identification and Evaluation of Historic Properties**

The California Historic Resources Information System (CHRIS) identified a total of 55 cultural resources within a one-mile radius of the APE, but only seven of these have been recorded within the boundaries of the APE and include: P-37-010027 (CA-SDI-010027), P-37-011355 (CA-SDI-11355), P-37-011356 (CASDI-011356), P-37-011357 (P-37-11357), P-37-012150 (CA-SDI-12150H), P-37-019019 (CASDI-13713/H), P-37-029431 (CA-SDI-18839). Due to the overlap in site boundaries, previous studies as well as the current study have attempted to

combine sites based on their temporal association. Attempts were made to locate each previously identified cultural resource. The DPR for each resource was updated and confirmed or corrected information on each resource's location, spatial extent, general characteristics, and eligibility status. As a result, only three sites are currently identified within the Project APE.

P-37-019019 consists of five previously identified sites, none of which appear significant individually or together based on data collected during the original recording of the site, this current evaluation, and through additional analysis and historical research. They are part of the Otay Ranch corral and pasture lands. As no potential for intact cultural deposits were identified, the site is seen as being of limited significance and is recommended as not eligible for listing on the NRHP or CRHR. No further cultural resources work is recommended.

P-37-10027 was previously identified as having five lithic quarry loci but the majority of the potential cultural material is found by the current survey to be the result of natural fracturing. This is consistent with previous observation in 1996 that naturally fractured material may have been misidentified as cultural material during the initial 1991 investigations. The few confirmed prehistoric artifacts and the historic trash scatter have little significance. Additional background and historical research have not revealed any pertinent information regarding the significance of the site. Through this recording, the data potential for this site has been exhausted. This site is recommended as not eligible for listing on the NRHP or CRHR and no further cultural resources work is recommended.

No cultural elements were identified at P-37-029431 during this survey. The site was initially recorded as a lithic scatter with one milling station containing two milling slicks. None of the lithic scatters were re-identified and the milling station previously recorded did not contain two milling slicks, but rather two natural water eroded depressions on the felsite boulder. All of the material observed was natural fracturing and exfoliation which looked cultural but had no diagnostic features. Dense scrub and tall grasses provided very poor visibility; however, the roadway and shoulders provided 100 percent visibility where the majority of features were recorded, and no intact deposits or artifacts were identified within the APE. As this site does not appear to be related to human activity, it cannot satisfy any NRHP or CRHR criteria and is therefore recommended as not eligible for listing on the NRHP or CRHR. No further cultural resources work is recommended.

### **Conclusion – No Adverse Effect**

Based on the results of the current investigation, CBP has determined that no previously or newly recorded historic properties of significance would be affected by this undertaking pursuant to Section 800.4(d)(1). As a result, no further work is recommended. Supporting evidence for these determinations can be found in the enclosed cultural resources technical report.

We request your concurrence with our determination. If no response is received within 30 days a concurrence will be presumed. If you have any questions please feel free to contact John Petrilla at (949) 278-0353 or via email at [JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov). We also request you provide an electronic copy of your response to Mr. Petrilla at [JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov)

Michael Linton, Chairperson

Page 3

Sincerely,

A handwritten signature in blue ink that reads "Paul Enriquez". The signature is fluid and cursive, with the first name "Paul" being larger and more prominent than the last name "Enriquez".

Paul Enriquez

Acquisition, Real Estate and Environmental Director

Infrastructure Program

Program Management Office Directorate

U.S. Border Patrol

[Paul.enriquez@cbp.dhs.gov](mailto:Paul.enriquez@cbp.dhs.gov)

Enclosure:

Class III Cultural Resources Survey for the Proposed Improvement, Maintenance, and Repair of the 1418 Firebreak Road Project in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol San Diego Sector, San Diego County, California



October 1, 2020

Allen Lawson, Chairperson  
San Pasqual Band of Diegueno Mission Indians  
PO Box 365  
Valley Center, CA 92082

**SUBJECT:** Request for Concurrence on the Class III Cultural Resources Survey for the Proposed Improvement, Maintenance, and Repair of the 1418 Firebreak Road Project in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol San Diego Sector, San Diego County, California

Dear Mr. Lawson:

U.S. Customs and Border Protection (CBP) is initiating consultation with the California Department of Parks and Recreation, Office of Historic Preservation pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations at 36 CFR Part 800 regarding U.S. Customs and Border Protection's (CBP) plan to improve, maintain, and repair approximately 2.5 miles of the 1418 Firebreak Road located in the western part of the CBP San Diego Sector to support CBP operations. The existing road is in poor condition due to the lack of routine maintenance. The objective of this Project would be to improve the 1418 Firebreak Road to a FC-2 roadway.

### **Description of the Undertaking**

The proposed work for the road improvements includes importing roadway material to build a road cap, reshape the road crown, and re-pitch/slope the road to establish better drain lines to direct water flow. New culverts would be installed. Eroded edges of the roads would be armored with riprap to combat erosion, and French drains would be installed in locations that have low water crossings and not enough elevation to install culverts. A soil stabilizer, either Lignin or Soiltac, would be applied to the finished road surface.

### **Area of Potential Effect**

The APE comprises a 100- foot-wide corridor centered on the approximately 2.5-mile-long segment of road. The APE also encompasses the cultural resource site boundaries identified within the APE and discussed below. The APE totals 170.65 acres. The maximum vertical depth of all activities is not expected to exceed 15 feet below ground level.

### **Identification and Evaluation of Historic Properties**

The California Historic Resources Information System (CHRIS) identified a total of 55 cultural resources within a one-mile radius of the APE, but only seven of these have been recorded within the boundaries of the APE and include: P-37-010027 (CA-SDI-010027), P-37-011355 (CA-SDI-11355), P-37-011356 (CASDI-011356), P-37-011357 (P-37-11357), P-37-012150 (CA-SDI-12150H), P-37-019019 (CASDI-13713/H), P-37-029431 (CA-SDI-18839). Due to the overlap in site boundaries, previous studies as well as the current study have attempted to

combine sites based on their temporal association. Attempts were made to locate each previously identified cultural resource. The DPR for each resource was updated and confirmed or corrected information on each resource's location, spatial extent, general characteristics, and eligibility status. As a result, only three sites are currently identified within the Project APE.

P-37-019019 consists of five previously identified sites, none of which appear significant individually or together based on data collected during the original recording of the site, this current evaluation, and through additional analysis and historical research. They are part of the Otay Ranch corral and pasture lands. As no potential for intact cultural deposits were identified, the site is seen as being of limited significance and is recommended as not eligible for listing on the NRHP or CRHR. No further cultural resources work is recommended.

P-37-10027 was previously identified as having five lithic quarry loci but the majority of the potential cultural material is found by the current survey to be the result of natural fracturing. This is consistent with previous observation in 1996 that naturally fractured material may have been misidentified as cultural material during the initial 1991 investigations. The few confirmed prehistoric artifacts and the historic trash scatter have little significance. Additional background and historical research have not revealed any pertinent information regarding the significance of the site. Through this recording, the data potential for this site has been exhausted. This site is recommended as not eligible for listing on the NRHP or CRHR and no further cultural resources work is recommended.

No cultural elements were identified at P-37-029431 during this survey. The site was initially recorded as a lithic scatter with one milling station containing two milling slicks. None of the lithic scatters were re-identified and the milling station previously recorded did not contain two milling slicks, but rather two natural water eroded depressions on the felsite boulder. All of the material observed was natural fracturing and exfoliation which looked cultural but had no diagnostic features. Dense scrub and tall grasses provided very poor visibility; however, the roadway and shoulders provided 100 percent visibility where the majority of features were recorded, and no intact deposits or artifacts were identified within the APE. As this site does not appear to be related to human activity, it cannot satisfy any NRHP or CRHR criteria and is therefore recommended as not eligible for listing on the NRHP or CRHR. No further cultural resources work is recommended.

### **Conclusion – No Adverse Effect**

Based on the results of the current investigation, CBP has determined that no previously or newly recorded historic properties of significance would be affected by this undertaking pursuant to Section 800.4(d)(1). As a result, no further work is recommended. Supporting evidence for these determinations can be found in the enclosed cultural resources technical report.

We request your concurrence with our determination. If no response is received within 30 days a concurrence will be presumed. If you have any questions please feel free to contact John Petrilla at (949) 278-0353 or via email at [JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov). We also request you provide an electronic copy of your response to Mr. Petrilla at [JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov)



Allen Lawson, Chairperson

Page 3

Sincerely,

A handwritten signature in blue ink that reads "Paul Enriquez". The signature is fluid and cursive, with the first name "Paul" being larger and more prominent than the last name "Enriquez".

Paul Enriquez

Acquisition, Real Estate and Environmental Director

Infrastructure Program

Program Management Office Directorate

U.S. Border Patrol

[Paul.enriquez@cbp.dhs.gov](mailto:Paul.enriquez@cbp.dhs.gov)

Enclosure:

Class III Cultural Resources Survey for the Proposed Improvement, Maintenance, and Repair of the 1418 Firebreak Road Project in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol San Diego Sector, San Diego County, California



October 1, 2020

John Flores, Environmental Coordinator  
San Pasqual Band of Diegueno Mission Indians  
PO Box 365  
Valley Center, CA 92082

**SUBJECT:** Request for Concurrence on the Class III Cultural Resources Survey for the Proposed Improvement, Maintenance, and Repair of the 1418 Firebreak Road Project in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol San Diego Sector, San Diego County, California

Dear Mr. Flores:

U.S. Customs and Border Protection (CBP) is initiating consultation with the California Department of Parks and Recreation, Office of Historic Preservation pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations at 36 CFR Part 800 regarding U.S. Customs and Border Protection's (CBP) plan to improve, maintain, and repair approximately 2.5 miles of the 1418 Firebreak Road located in the western part of the CBP San Diego Sector to support CBP operations. The existing road is in poor condition due to the lack of routine maintenance. The objective of this Project would be to improve the 1418 Firebreak Road to a FC-2 roadway.

### **Description of the Undertaking**

The proposed work for the road improvements includes importing roadway material to build a road cap, reshape the road crown, and re-pitch/slope the road to establish better drain lines to direct water flow. New culverts would be installed. Eroded edges of the roads would be armored with riprap to combat erosion, and French drains would be installed in locations that have low water crossings and not enough elevation to install culverts. A soil stabilizer, either Lignin or Soiltac, would be applied to the finished road surface.

### **Area of Potential Effect**

The APE comprises a 100- foot-wide corridor centered on the approximately 2.5-mile-long segment of road. The APE also encompasses the cultural resource site boundaries identified within the APE and discussed below. The APE totals 170.65 acres. The maximum vertical depth of all activities is not expected to exceed 15 feet below ground level.

### **Identification and Evaluation of Historic Properties**

The California Historic Resources Information System (CHRIS) identified a total of 55 cultural resources within a one-mile radius of the APE, but only seven of these have been recorded within the boundaries of the APE and include: P-37-010027 (CA-SDI-010027), P-37-011355 (CA-SDI-11355), P-37-011356 (CASDI-011356), P-37-011357 (P-37-11357), P-37-012150 (CA-SDI-12150H), P-37-019019 (CASDI-13713/H), P-37-029431 (CA-SDI-18839). Due to the overlap in site boundaries, previous studies as well as the current study have attempted to

combine sites based on their temporal association. Attempts were made to locate each previously identified cultural resource. The DPR for each resource was updated and confirmed or corrected information on each resource's location, spatial extent, general characteristics, and eligibility status. As a result, only three sites are currently identified within the Project APE.

P-37-019019 consists of five previously identified sites, none of which appear significant individually or together based on data collected during the original recording of the site, this current evaluation, and through additional analysis and historical research. They are part of the Otay Ranch corral and pasture lands. As no potential for intact cultural deposits were identified, the site is seen as being of limited significance and is recommended as not eligible for listing on the NRHP or CRHR. No further cultural resources work is recommended.

P-37-10027 was previously identified as having five lithic quarry loci but the majority of the potential cultural material is found by the current survey to be the result of natural fracturing. This is consistent with previous observation in 1996 that naturally fractured material may have been misidentified as cultural material during the initial 1991 investigations. The few confirmed prehistoric artifacts and the historic trash scatter have little significance. Additional background and historical research have not revealed any pertinent information regarding the significance of the site. Through this recording, the data potential for this site has been exhausted. This site is recommended as not eligible for listing on the NRHP or CRHR and no further cultural resources work is recommended.

No cultural elements were identified at P-37-029431 during this survey. The site was initially recorded as a lithic scatter with one milling station containing two milling slicks. None of the lithic scatters were re-identified and the milling station previously recorded did not contain two milling slicks, but rather two natural water eroded depressions on the felsite boulder. All of the material observed was natural fracturing and exfoliation which looked cultural but had no diagnostic features. Dense scrub and tall grasses provided very poor visibility; however, the roadway and shoulders provided 100 percent visibility where the majority of features were recorded, and no intact deposits or artifacts were identified within the APE. As this site does not appear to be related to human activity, it cannot satisfy any NRHP or CRHR criteria and is therefore recommended as not eligible for listing on the NRHP or CRHR. No further cultural resources work is recommended.

### **Conclusion – No Adverse Effect**

Based on the results of the current investigation, CBP has determined that no previously or newly recorded historic properties of significance would be affected by this undertaking pursuant to Section 800.4(d)(1). As a result, no further work is recommended. Supporting evidence for these determinations can be found in the enclosed cultural resources technical report.

We request your concurrence with our determination. If no response is received within 30 days a concurrence will be presumed. If you have any questions please feel free to contact John Petrilla at (949) 278-0353 or via email at [JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov). We also request you provide an electronic copy of your response to Mr. Petrilla at [JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov)

John Flores, Environmental Coordinator  
Page 3

Sincerely,

A handwritten signature in blue ink that reads "Paul Enriquez". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Paul Enriquez  
Acquisition, Real Estate and Environmental Director  
Infrastructure Program  
Program Management Office Directorate  
U.S. Border Patrol  
[Paul.enriquez@cbp.dhs.gov](mailto:Paul.enriquez@cbp.dhs.gov)

Enclosure:

Class III Cultural Resources Survey for the Proposed Improvement, Maintenance, and Repair of the 1418 Firebreak Road Project in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol San Diego Sector, San Diego County, California



October 1, 2020

Kristie Orosco, Kumeyaay Resource Specialist  
Sycuan Band of the Kumeyaay Nation  
1 Kwaaypaay Court  
El Cajon, CA 92019

**SUBJECT:** Request for Concurrence on the Class III Cultural Resources Survey for the Proposed Improvement, Maintenance, and Repair of the 1418 Firebreak Road Project in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol San Diego Sector, San Diego County, California

Dear Ms. Orosco:

U.S. Customs and Border Protection (CBP) is initiating consultation with the California Department of Parks and Recreation, Office of Historic Preservation pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations at 36 CFR Part 800 regarding U.S. Customs and Border Protection's (CBP) plan to improve, maintain, and repair approximately 2.5 miles of the 1418 Firebreak Road located in the western part of the CBP San Diego Sector to support CBP operations. The existing road is in poor condition due to the lack of routine maintenance. The objective of this Project would be to improve the 1418 Firebreak Road to a FC-2 roadway.

### **Description of the Undertaking**

The proposed work for the road improvements includes importing roadway material to build a road cap, reshape the road crown, and re-pitch/slope the road to establish better drain lines to direct water flow. New culverts would be installed. Eroded edges of the roads would be armored with riprap to combat erosion, and French drains would be installed in locations that have low water crossings and not enough elevation to install culverts. A soil stabilizer, either Lignin or Soiltec, would be applied to the finished road surface.

### **Area of Potential Effect**

The APE comprises a 100- foot-wide corridor centered on the approximately 2.5-mile-long segment of road. The APE also encompasses the cultural resource site boundaries identified within the APE and discussed below. The APE totals 170.65 acres. The maximum vertical depth of all activities is not expected to exceed 15 feet below ground level.

### **Identification and Evaluation of Historic Properties**

The California Historic Resources Information System (CHRIS) identified a total of 55 cultural resources within a one-mile radius of the APE, but only seven of these have been recorded within the boundaries of the APE and include: P-37-010027 (CA-SDI-010027), P-37-011355 (CA-SDI-11355), P-37-011356 (CASDI-011356), P-37-011357 (P-37-11357), P-37-012150 (CA-SDI-12150H), P-37-019019 (CASDI-13713/H), P-37-029431 (CA-SDI-18839). Due to the overlap in site boundaries, previous studies as well as the current study have attempted to

combine sites based on their temporal association. Attempts were made to locate each previously identified cultural resource. The DPR for each resource was updated and confirmed or corrected information on each resource's location, spatial extent, general characteristics, and eligibility status. As a result, only three sites are currently identified within the Project APE.

P-37-019019 consists of five previously identified sites, none of which appear significant individually or together based on data collected during the original recording of the site, this current evaluation, and through additional analysis and historical research. They are part of the Otay Ranch corral and pasture lands. As no potential for intact cultural deposits were identified, the site is seen as being of limited significance and is recommended as not eligible for listing on the NRHP or CRHR. No further cultural resources work is recommended.

P-37-10027 was previously identified as having five lithic quarry loci but the majority of the potential cultural material is found by the current survey to be the result of natural fracturing. This is consistent with previous observation in 1996 that naturally fractured material may have been misidentified as cultural material during the initial 1991 investigations. The few confirmed prehistoric artifacts and the historic trash scatter have little significance. Additional background and historical research have not revealed any pertinent information regarding the significance of the site. Through this recording, the data potential for this site has been exhausted. This site is recommended as not eligible for listing on the NRHP or CRHR and no further cultural resources work is recommended.

No cultural elements were identified at P-37-029431 during this survey. The site was initially recorded as a lithic scatter with one milling station containing two milling slicks. None of the lithic scatters were re-identified and the milling station previously recorded did not contain two milling slicks, but rather two natural water eroded depressions on the felsite boulder. All of the material observed was natural fracturing and exfoliation which looked cultural but had no diagnostic features. Dense scrub and tall grasses provided very poor visibility; however, the roadway and shoulders provided 100 percent visibility where the majority of features were recorded, and no intact deposits or artifacts were identified within the APE. As this site does not appear to be related to human activity, it cannot satisfy any NRHP or CRHR criteria and is therefore recommended as not eligible for listing on the NRHP or CRHR. No further cultural resources work is recommended.

### **Conclusion – No Adverse Effect**

Based on the results of the current investigation, CBP has determined that no previously or newly recorded historic properties of significance would be affected by this undertaking pursuant to Section 800.4(d)(1). As a result, no further work is recommended. Supporting evidence for these determinations can be found in the enclosed cultural resources technical report.

We request your concurrence with our determination. If no response is received within 30 days a concurrence will be presumed. If you have any questions please feel free to contact John Petrilla at (949) 278-0353 or via email at [JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov). We also request you provide an electronic copy of your response to Mr. Petrilla at [JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov)

Kristie Orosco, Kumeyaay Resource Specialist  
Page 3

Sincerely,

A handwritten signature in blue ink that reads "Paul Enriquez". The signature is fluid and cursive, with the first name "Paul" being larger and more prominent than the last name "Enriquez".

Paul Enriquez  
Acquisition, Real Estate and Environmental Director  
Infrastructure Program  
Program Management Office Directorate  
U.S. Border Patrol  
[Paul.enriquez@cbp.dhs.gov](mailto:Paul.enriquez@cbp.dhs.gov)

Enclosure:

Class III Cultural Resources Survey for the Proposed Improvement, Maintenance, and Repair of the 1418 Firebreak Road Project in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol San Diego Sector, San Diego County, California





October 1, 2020

Cody Martinez, Chairperson  
Sycuan Band of the Kumeyaay Nation  
1 Kwaaypaay Court  
El Cajon, CA 92019

**SUBJECT:** Request for Concurrence on the Class III Cultural Resources Survey for the Proposed Improvement, Maintenance, and Repair of the 1418 Firebreak Road Project in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol San Diego Sector, San Diego County, California

Dear Mr. Martinez:

U.S. Customs and Border Protection (CBP) is initiating consultation with the California Department of Parks and Recreation, Office of Historic Preservation pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations at 36 CFR Part 800 regarding U.S. Customs and Border Protection's (CBP) plan to improve, maintain, and repair approximately 2.5 miles of the 1418 Firebreak Road located in the western part of the CBP San Diego Sector to support CBP operations. The existing road is in poor condition due to the lack of routine maintenance. The objective of this Project would be to improve the 1418 Firebreak Road to a FC-2 roadway.

### **Description of the Undertaking**

The proposed work for the road improvements includes importing roadway material to build a road cap, reshape the road crown, and re-pitch/slope the road to establish better drain lines to direct water flow. New culverts would be installed. Eroded edges of the roads would be armored with riprap to combat erosion, and French drains would be installed in locations that have low water crossings and not enough elevation to install culverts. A soil stabilizer, either Lignin or Soiltac, would be applied to the finished road surface.

### **Area of Potential Effect**

The APE comprises a 100- foot-wide corridor centered on the approximately 2.5-mile-long segment of road. The APE also encompasses the cultural resource site boundaries identified within the APE and discussed below. The APE totals 170.65 acres. The maximum vertical depth of all activities is not expected to exceed 15 feet below ground level.

### **Identification and Evaluation of Historic Properties**

The California Historic Resources Information System (CHRIS) identified a total of 55 cultural resources within a one-mile radius of the APE, but only seven of these have been recorded within the boundaries of the APE and include: P-37-010027 (CA-SDI-010027), P-37-011355 (CA-SDI-11355), P-37-011356 (CASDI-011356), P-37-011357 (P-37-11357), P-37-012150 (CA-SDI-12150H), P-37-019019 (CASDI-13713/H), P-37-029431 (CA-SDI-18839). Due to the overlap in site boundaries, previous studies as well as the current study have attempted to

combine sites based on their temporal association. Attempts were made to locate each previously identified cultural resource. The DPR for each resource was updated and confirmed or corrected information on each resource's location, spatial extent, general characteristics, and eligibility status. As a result, only three sites are currently identified within the Project APE.

P-37-019019 consists of five previously identified sites, none of which appear significant individually or together based on data collected during the original recording of the site, this current evaluation, and through additional analysis and historical research. They are part of the Otay Ranch corral and pasture lands. As no potential for intact cultural deposits were identified, the site is seen as being of limited significance and is recommended as not eligible for listing on the NRHP or CRHR. No further cultural resources work is recommended.

P-37-10027 was previously identified as having five lithic quarry loci but the majority of the potential cultural material is found by the current survey to be the result of natural fracturing. This is consistent with previous observation in 1996 that naturally fractured material may have been misidentified as cultural material during the initial 1991 investigations. The few confirmed prehistoric artifacts and the historic trash scatter have little significance. Additional background and historical research have not revealed any pertinent information regarding the significance of the site. Through this recording, the data potential for this site has been exhausted. This site is recommended as not eligible for listing on the NRHP or CRHR and no further cultural resources work is recommended.

No cultural elements were identified at P-37-029431 during this survey. The site was initially recorded as a lithic scatter with one milling station containing two milling slicks. None of the lithic scatters were re-identified and the milling station previously recorded did not contain two milling slicks, but rather two natural water eroded depressions on the felsite boulder. All of the material observed was natural fracturing and exfoliation which looked cultural but had no diagnostic features. Dense scrub and tall grasses provided very poor visibility; however, the roadway and shoulders provided 100 percent visibility where the majority of features were recorded, and no intact deposits or artifacts were identified within the APE. As this site does not appear to be related to human activity, it cannot satisfy any NRHP or CRHR criteria and is therefore recommended as not eligible for listing on the NRHP or CRHR. No further cultural resources work is recommended.

### **Conclusion – No Adverse Effect**

Based on the results of the current investigation, CBP has determined that no previously or newly recorded historic properties of significance would be affected by this undertaking pursuant to Section 800.4(d)(1). As a result, no further work is recommended. Supporting evidence for these determinations can be found in the enclosed cultural resources technical report.

We request your concurrence with our determination. If no response is received within 30 days a concurrence will be presumed. If you have any questions please feel free to contact John Petrilla at (949) 278-0353 or via email at [JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov). We also request you provide an electronic copy of your response to Mr. Petrilla at [JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov)

Cody Martinez, Chairperson  
Page 3

Sincerely,

A handwritten signature in blue ink that reads "Paul Enriquez". The signature is fluid and cursive, with the first name "Paul" being larger and more prominent than the last name "Enriquez".

Paul Enriquez  
Acquisition, Real Estate and Environmental Director  
Infrastructure Program  
Program Management Office Directorate  
U.S. Border Patrol  
[Paul.enriquez@cbp.dhs.gov](mailto:Paul.enriquez@cbp.dhs.gov)

Enclosure:

Class III Cultural Resources Survey for the Proposed Improvement, Maintenance, and Repair of the 1418 Firebreak Road Project in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol San Diego Sector, San Diego County, California



October 1, 2020

Ernest Pingleton, Tribal Historic Officer  
Viejas Band of Kumeyaay Indians  
1 Viejas Grade Road  
Alpine, CA 91901

**SUBJECT:** Request for Concurrence on the Class III Cultural Resources Survey for the Proposed Improvement, Maintenance, and Repair of the 1418 Firebreak Road Project in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol San Diego Sector, San Diego County, California

Dear Mr. Pingleton:

U.S. Customs and Border Protection (CBP) is initiating consultation with the California Department of Parks and Recreation, Office of Historic Preservation pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations at 36 CFR Part 800 regarding U.S. Customs and Border Protection's (CBP) plan to improve, maintain, and repair approximately 2.5 miles of the 1418 Firebreak Road located in the western part of the CBP San Diego Sector to support CBP operations. The existing road is in poor condition due to the lack of routine maintenance. The objective of this Project would be to improve the 1418 Firebreak Road to a FC-2 roadway.

### **Description of the Undertaking**

The proposed work for the road improvements includes importing roadway material to build a road cap, reshape the road crown, and re-pitch/slope the road to establish better drain lines to direct water flow. New culverts would be installed. Eroded edges of the roads would be armored with riprap to combat erosion, and French drains would be installed in locations that have low water crossings and not enough elevation to install culverts. A soil stabilizer, either Lignin or Soiltac, would be applied to the finished road surface.

### **Area of Potential Effect**

The APE comprises a 100- foot-wide corridor centered on the approximately 2.5-mile-long segment of road. The APE also encompasses the cultural resource site boundaries identified within the APE and discussed below. The APE totals 170.65 acres. The maximum vertical depth of all activities is not expected to exceed 15 feet below ground level.

### **Identification and Evaluation of Historic Properties**

The California Historic Resources Information System (CHRIS) identified a total of 55 cultural resources within a one-mile radius of the APE, but only seven of these have been recorded within the boundaries of the APE and include: P-37-010027 (CA-SDI-010027), P-37-011355 (CA-SDI-11355), P-37-011356 (CASDI-011356), P-37-011357 (P-37-11357), P-37-012150 (CA-SDI-12150H), P-37-019019 (CASDI-13713/H), P-37-029431 (CA-SDI-18839). Due to the overlap in site boundaries, previous studies as well as the current study have attempted to

combine sites based on their temporal association. Attempts were made to locate each previously identified cultural resource. The DPR for each resource was updated and confirmed or corrected information on each resource's location, spatial extent, general characteristics, and eligibility status. As a result, only three sites are currently identified within the Project APE.

P-37-019019 consists of five previously identified sites, none of which appear significant individually or together based on data collected during the original recording of the site, this current evaluation, and through additional analysis and historical research. They are part of the Otay Ranch corral and pasture lands. As no potential for intact cultural deposits were identified, the site is seen as being of limited significance and is recommended as not eligible for listing on the NRHP or CRHR. No further cultural resources work is recommended.

P-37-10027 was previously identified as having five lithic quarry loci but the majority of the potential cultural material is found by the current survey to be the result of natural fracturing. This is consistent with previous observation in 1996 that naturally fractured material may have been misidentified as cultural material during the initial 1991 investigations. The few confirmed prehistoric artifacts and the historic trash scatter have little significance. Additional background and historical research have not revealed any pertinent information regarding the significance of the site. Through this recording, the data potential for this site has been exhausted. This site is recommended as not eligible for listing on the NRHP or CRHR and no further cultural resources work is recommended.

No cultural elements were identified at P-37-029431 during this survey. The site was initially recorded as a lithic scatter with one milling station containing two milling slicks. None of the lithic scatters were re-identified and the milling station previously recorded did not contain two milling slicks, but rather two natural water eroded depressions on the felsite boulder. All of the material observed was natural fracturing and exfoliation which looked cultural but had no diagnostic features. Dense scrub and tall grasses provided very poor visibility; however, the roadway and shoulders provided 100 percent visibility where the majority of features were recorded, and no intact deposits or artifacts were identified within the APE. As this site does not appear to be related to human activity, it cannot satisfy any NRHP or CRHR criteria and is therefore recommended as not eligible for listing on the NRHP or CRHR. No further cultural resources work is recommended.

### **Conclusion – No Adverse Effect**

Based on the results of the current investigation, CBP has determined that no previously or newly recorded historic properties of significance would be affected by this undertaking pursuant to Section 800.4(d)(1). As a result, no further work is recommended. Supporting evidence for these determinations can be found in the enclosed cultural resources technical report.

We request your concurrence with our determination. If no response is received within 30 days a concurrence will be presumed. If you have any questions please feel free to contact John Petrilla at (949) 278-0353 or via email at [JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov). We also request you provide an electronic copy of your response to Mr. Petrilla at [JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov)

Sincerely,

A handwritten signature in blue ink that reads "Paul Enriquez". The signature is fluid and cursive, with the first name "Paul" being larger and more prominent than the last name "Enriquez".

Paul Enriquez  
Acquisition, Real Estate and Environmental Director  
Infrastructure Program  
Program Management Office Directorate  
U.S. Border Patrol  
[Paul.enriquez@cbp.dhs.gov](mailto:Paul.enriquez@cbp.dhs.gov)

Enclosure:

Class III Cultural Resources Survey for the Proposed Improvement, Maintenance, and Repair of the 1418 Firebreak Road Project in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol San Diego Sector, San Diego County, California



October 1, 2020

John Christman, Chairperson  
Viejas Band of Kumeyaay Indians  
1 Viejas Grade Road  
Alpine, CA 91901

**SUBJECT:** Request for Concurrence on the Class III Cultural Resources Survey for the Proposed Improvement, Maintenance, and Repair of the 1418 Firebreak Road Project in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol San Diego Sector, San Diego County, California

Dear Mr. Christman:

U.S. Customs and Border Protection (CBP) is initiating consultation with the California Department of Parks and Recreation, Office of Historic Preservation pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations at 36 CFR Part 800 regarding U.S. Customs and Border Protection's (CBP) plan to improve, maintain, and repair approximately 2.5 miles of the 1418 Firebreak Road located in the western part of the CBP San Diego Sector to support CBP operations. The existing road is in poor condition due to the lack of routine maintenance. The objective of this Project would be to improve the 1418 Firebreak Road to a FC-2 roadway.

### **Description of the Undertaking**

The proposed work for the road improvements includes importing roadway material to build a road cap, reshape the road crown, and re-pitch/slope the road to establish better drain lines to direct water flow. New culverts would be installed. Eroded edges of the roads would be armored with riprap to combat erosion, and French drains would be installed in locations that have low water crossings and not enough elevation to install culverts. A soil stabilizer, either Lignin or Soiltec, would be applied to the finished road surface.

### **Area of Potential Effect**

The APE comprises a 100-foot-wide corridor centered on the approximately 2.5-mile-long segment of road. The APE also encompasses the cultural resource site boundaries identified within the APE and discussed below. The APE totals 170.65 acres. The maximum vertical depth of all activities is not expected to exceed 15 feet below ground level.

### **Identification and Evaluation of Historic Properties**

The California Historic Resources Information System (CHRIS) identified a total of 55 cultural resources within a one-mile radius of the APE, but only seven of these have been recorded within the boundaries of the APE and include: P-37-010027 (CA-SDI-010027), P-37-011355 (CA-SDI-11355), P-37-011356 (CASDI-011356), P-37-011357 (P-37-11357), P-37-012150 (CA-SDI-12150H), P-37-019019 (CASDI-13713/H), P-37-029431 (CA-SDI-18839). Due to the overlap in site boundaries, previous studies as well as the current study have attempted to



combine sites based on their temporal association. Attempts were made to locate each previously identified cultural resource. The DPR for each resource was updated and confirmed or corrected information on each resource's location, spatial extent, general characteristics, and eligibility status. As a result, only three sites are currently identified within the Project APE.

P-37-019019 consists of five previously identified sites, none of which appear significant individually or together based on data collected during the original recording of the site, this current evaluation, and through additional analysis and historical research. They are part of the Otay Ranch corral and pasture lands. As no potential for intact cultural deposits were identified, the site is seen as being of limited significance and is recommended as not eligible for listing on the NRHP or CRHR. No further cultural resources work is recommended.

P-37-10027 was previously identified as having five lithic quarry loci but the majority of the potential cultural material is found by the current survey to be the result of natural fracturing. This is consistent with previous observation in 1996 that naturally fractured material may have been misidentified as cultural material during the initial 1991 investigations. The few confirmed prehistoric artifacts and the historic trash scatter have little significance. Additional background and historical research have not revealed any pertinent information regarding the significance of the site. Through this recording, the data potential for this site has been exhausted. This site is recommended as not eligible for listing on the NRHP or CRHR and no further cultural resources work is recommended.

No cultural elements were identified at P-37-029431 during this survey. The site was initially recorded as a lithic scatter with one milling station containing two milling slicks. None of the lithic scatters were re-identified and the milling station previously recorded did not contain two milling slicks, but rather two natural water eroded depressions on the felsite boulder. All of the material observed was natural fracturing and exfoliation which looked cultural but had no diagnostic features. Dense scrub and tall grasses provided very poor visibility; however, the roadway and shoulders provided 100 percent visibility where the majority of features were recorded, and no intact deposits or artifacts were identified within the APE. As this site does not appear to be related to human activity, it cannot satisfy any NRHP or CRHR criteria and is therefore recommended as not eligible for listing on the NRHP or CRHR. No further cultural resources work is recommended.

### **Conclusion – No Adverse Effect**

Based on the results of the current investigation, CBP has determined that no previously or newly recorded historic properties of significance would be affected by this undertaking pursuant to Section 800.4(d)(1). As a result, no further work is recommended. Supporting evidence for these determinations can be found in the enclosed cultural resources technical report.

We request your concurrence with our determination. If no response is received within 30 days a concurrence will be presumed. If you have any questions please feel free to contact John Petrilla at (949) 278-0353 or via email at [JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov). We also request you provide an electronic copy of your response to Mr. Petrilla at [JOHN.P.PETRILLA@cbp.dhs.gov](mailto:JOHN.P.PETRILLA@cbp.dhs.gov)

John Christman, Chairperson

Page 3

Sincerely,

A handwritten signature in blue ink that reads "Paul Enriquez". The signature is fluid and cursive, with the first name "Paul" being larger and more prominent than the last name "Enriquez".

Paul Enriquez

Acquisition, Real Estate and Environmental Director

Infrastructure Program

Program Management Office Directorate

U.S. Border Patrol

[Paul.enriquez@cbp.dhs.gov](mailto:Paul.enriquez@cbp.dhs.gov)

Enclosure:

Class III Cultural Resources Survey for the Proposed Improvement, Maintenance, and Repair of the 1418 Firebreak Road Project in the Chula Vista Station Area of Responsibility of the U.S. Border Patrol San Diego Sector, San Diego County, California

## **APPENDIX C**

### Applicable Laws, Regulations, and Executive Orders



*This page left intentionally blank*

## APPENDIX C

### Applicable Laws, Regulations, and Executive Orders

**Table C-1. Applicable Laws and Executive Orders <sup>1</sup>**

Title, Citation	Summary
American Indian Religious Freedom Act, 42 U.S.C. § 1996	Requires policies of all governmental agencies to eliminate interference with the free exercise of Native American religions, based upon the First Amendment to the United States Constitution, and to accommodate access to, and use of, Native American religious sites to the extent that the use is practicable and is consistent with an agency's essential functions. Also acknowledges the prior violation of that right.
Archaeological Resources Protection Act, 16 U.S.C. §§ 470aa–470mm	Regulates access to archaeological resources on Federal and Indian lands. Forbids excavating or removing archaeological resources from Federal or Indian land without a permit from a land managing agency as well as forbidding any sales, purchase, exchange, transport, or receipt of resources.
Archeological and Historic Preservation Act, 16 U.S.C.469-469c	Protects and preserves historical and archaeological data. Requires Federal agencies to identify and recover data from archaeological sites threatened by a proposed action(s).
California Code, Public Resources Code, PRC § 5097.98	States when the commission receives notification of a discovery of Native American human remains from a county coroner pursuant to subdivision (c) of Section 7050.5 of the Health and Safety Code, it shall immediately notify those persons it believes to be most likely descended from the deceased Native American.
California Endangered Species Act, Fish and Game Code Sections 2050-2116	States all native species of fishes, amphibians, reptiles, birds, mammals, invertebrates, and plants, and their habitats, threatened with extinction and those experiencing a significant decline which, if not halted, would lead to a threatened or endangered designation, will be protected or preserved.
California Environmental Quality Act, California Public Resources Code Sections 21000–21177 40 CFR Part 1508.27	Requires the State of California and local agencies to identify significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible. Applies to any discretionary action by a state or local agency and projects that have the potential to result in a physical change to the environment or that might be subject to several discretionary approvals by governmental agencies, including construction activities, clearing of or grading land, improvements to existing structures, and activities or equipment involving the issuance of a permit.
Clean Air Act, 42 U.S.C. 7401–7671q, as amended	Establishes Federal standards for air pollutants. Prevents significant deterioration in areas of the country where air quality fails to meet Federal standards.
Clean Water Act, 33 U.S.C. 1251–1387	Comprehensively restores and maintains the chemical, physical, and biological integrity of the nation’s waters. Implemented and enforced by the U.S. Environmental Protection Agency (USEPA).

Title, Citation	Summary
Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. 9601–9675	Provides for liability, compensation, cleanup, and emergency response for hazardous substances released into the environment and cleanup of inactive hazardous substance disposal sites. Establishes a fund financed by hazardous waste generators to support cleanup and response actions.
E.O. 11990, <i>Protection of Wetlands</i> , May 24, 1977, 42 FR 26961	States to the extent possible the short- and long-term, adverse impacts associated with the destruction or modification of wetlands should be avoided as well as direct or indirect support of new construction in wetlands wherever there is a practicable alternative.
E.O. 12088, <i>Federal Compliance with Pollution Control Standards</i> , as amended, October 13, 1978, 43 FR 47707	Directs Federal agencies to (1) comply with “applicable pollution control standards,” in the prevention, control, and abatement of environmental pollution; and (2) consult with the U.S. Environmental Protection Agency (USEPA), state, interstate, and local agencies concerning the best techniques and methods available for the prevention, control, and abatement of environmental pollution.
E.O. 13514, <i>Federal Leadership in Environmental, Energy, and Economic Performance</i> , October 5, 2009, 74 FR 52117	Directs Federal agencies to improve water use efficiency and management; implement high performance sustainable Federal building design, construction, operation, and management; and advance regional and local integrated planning by identifying and analyzing impacts from energy usage and alternative energy sources.
E.O. 11988, <i>Floodplain Management</i> , May 24, 1977, 42 FR 26971	Requires Federal agencies to determine whether a proposed action would occur within a floodplain and directs Federal agencies to avoid such floodplains unless the agency determines that there is no practicable alternative.
Endangered Species Act of 1973, 16 U.S.C. 1531–1543, as amended	Protects threatened, endangered, and candidate species of fish, wildlife, and plants and their designated critical habitats. Prohibits Federal action that jeopardizes the continued existence of endangered or threatened species. Requires consultation with U.S. Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration (NOAA) Fisheries and a biological assessment when such species are present in an area affected by Federal government activities.
Farmland Protection Policy Act, 7 U.S.C. 4201 et seq, as amended	Minimized the effect of Federal programs on the unnecessary and irreversible conversion of farmland to nonagricultural uses.
Federal Insecticide, Fungicide, and Rodenticide Act, 40 CFR Parts 150–189	Provides for Federal regulation of pesticide distribution, sale, and use.
Guidelines for Implementation of the CEQA, California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000–15387	Ensures that decisions are made in accordance with the policies and procedures of the California Environmental Quality Act (CEQA).
Health and Safety Code, Section 7050.5	States that any person who knowingly mutilates or disinters, wantonly disturbs, or willfully removes any human remains in or from any location other than a dedicated cemetery without authority of law is guilty of a misdemeanor.

Title, Citation	Summary
Implementing the National Environmental Policy Act, Instructional Manual 023-01-001-01, Rev. 01	Ensures that decisions are made in accordance with the policies and procedures of the National Environmental Policy Act (NEPA) of 1969, as amended.
Migratory Bird Treaty Act, 16 U.S.C. 703–712	Implements various treaties for protecting migratory birds; the taking, killing, or possession of migratory birds is unlawful.
National Environmental Policy Act of 1969, 42 U.S.C. 4321–4347, as amended	Requires Federal agencies to use a systematic approach when assessing environmental impacts of government activities. Proposes an interdisciplinary approach in a decision-making process designed to identify unacceptable or unnecessary impacts to the environment.
National Historic Preservation Act, 16 U.S.C. 470–470x-6	Requires Federal agencies to consider the effect of any federally assisted undertaking or licensing on any district, site, building, structure, or object eligible for inclusion, or listed in the National Register of Historic Places (NRHP). Provides for the nomination, identification (through NRHP listing), and protection of significant historical and cultural properties.
Native American Graves Protection and Repatriation Act, 25 U.S.C. 3001-3013	Provides a process for museums and Federal agencies to return certain Native American cultural items—human remains, funerary objects, sacred objects, or objects of cultural patrimony—to lineal descendants, and culturally affiliated Indian tribes and Native Hawaiian organizations.
Noise Control Act of 1972, 42 U.S.C. 4901–4918	Establishes a national policy to promote an environment free from noise that jeopardizes health and welfare. Authorizes the establishment of Federal noise emissions standards and provides relevant information to the public.
Otay Mountain Wilderness Act of 1999, Public Law 106 - 145	Recognizes that, because of the Wilderness Area's proximity to the U.S.-Mexican international border, drug interdiction, border operations, and wildland fire management operations need to continue so long as they are conducted in accordance with the Wilderness Act and any conditions the Secretary of the Interior considers appropriate. Declares that such designation is not intended to lead to the creation of protective buffer zones around the Wilderness.
Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act, 40 CFR Parts 1500–1508	Provide regulations applicable to and binding on all Federal agencies for implementing the procedural provisions of the National Environmental Policy Act (NEPA) of 1969, as amended.
Regulations for Protection of Historic Properties, 36 CFR Part 800	Presents a process for Federal agencies to consult with the appropriate State Historic Preservation Officer (SHPO), Native American groups, other interested parties, and when appropriate, the Advisory Council on Historic Preservation (ACHP). Ensures that the impacts from the undertaking are adequately considered on historic properties.
Resource Conservation and Recovery Act, 42 U.S.C. 6901–6992k	Establishes requirements for safely managing and disposing of solid and hazardous waste and underground storage tanks.



Title, Citation	Summary
Rivers and Harbors Act of 1899 Section 10, 33 U.S.C. 403	Recognizes the act of discharging refuse matter of any kind into the navigable waters, or tributaries thereof, of the United States without a permit as a misdemeanor. Recognizes the act of excavating, filling, or altering the course, condition, or capacity of any port, harbor, channel, or other areas within the reach of the Act without a permit as a misdemeanor. States damming navigable streams without a license or permit from Congress is illegal.
San Diego County Code of Regulatory Ordinances relating to Noise Control and Abatement, Section 1. Title 3, Division 6, Chapter 4 of the San Diego County Code of Regulatory Ordinances	Establishes a policy to promote an environment free from noise that jeopardizes health and welfare in California.
Wilderness Act, 16 U.S.C. 1131 et seq.	Created the legal definition of wilderness in the United States and protected 9.1 million acres of Federal land.

Note:

1. This table only reflects those laws and EOs that might reasonably be expected to apply to the Proposed Action and alternatives addressed in this EA.

Other laws and Executive Orders potentially relevant to this EA include, but are not limited to, the following:

- San Diego County General Plan/Otay Subregional Plan
- San Diego County Zoning Ordinance
- San Diego County Board of Supervisors Policies

## **APPENDIX D**

### **Best Management Practices and Mitigation Measures**



*This page left intentionally blank*

## APPENDIX D

### Best Management Practices

---

The Proposed Action has the potential to result in adverse environmental impacts. However, the Proposed Action would be an environmentally acceptable action and overall would not result in major, adverse environmental impacts. If the Proposed Action were implemented, the following best management practices (BMP), measures, design techniques, and mitigation would be carried out by the U.S. Customs and Border Protection (CBP) for the proposed maintenance and repair of 1418 Firebreak Road.

#### 1.1 LAND USE

1. Notify and coordinate with all landowners with property adjacent to the proposed project site in advance of construction activities to discuss the construction schedule and any potential concerns.

#### 1.2 GEOLOGY AND SOILS

1. Implement erosion control measures, including those identified by San Diego County and the San Diego Regional Water Quality Control Board, to prevent movement of soil and sediment and to minimize turbidity increases in water. This includes measures such as installation and maintenance of silt fencing and sediment traps.
2. Implement routine road maintenance practices to avoid making windrows with the soils once grading activities are complete and use any excess soils on site to raise and shape the road surface.
3. Apply water to disturbed soil to reduce dust and re-vegetate disturbed areas as soon as possible following ground disturbance, as appropriate.
4. Plan construction activities and restrict construction traffic to specific areas and routes of travel to minimize soil compaction.
5. Obtain materials such as gravel, topsoil, or fill from sources that are compatible with the proposed project site, are from legally permitted sites, and are certified weed-free. Do not use materials from undisturbed areas adjacent to the proposed project site.

#### 1.3 VEGETATION

1. Limit vehicle refueling and maintenance to upland areas with established spill prevention equipment in place (e.g., straw wattles, lined or paved areas, areas with no direct drains).
2. Maintain stores of chemicals and hazardous materials in proper containers and within spill retention basins large enough to capture and hold the chemicals being housed.
3. Maintain spill clean-up kits and drip pans during construction of the facility.
4. Use flagging or orange fencing to create an avoidance buffer around sensitive plant species or vegetation communities within the disturbance area.

5. Institute environmental awareness training for employees and contractors.
6. Implement a fugitive dust control plan during construction.
7. Follow the CBP protocol for cleaning vehicles and equipment to avoid the spread of invasive species.
8. If irrigation of landscaped vegetation is necessary, restrict it to the landscaped areas and avoid native habitat.
9. Incorporate designs that minimize runoff.
10. Design artificial topography in disturbance area to take advantage of natural rain runoff, and apply surface materials (e.g., mulch) to retain moisture in the soil.
11. After construction, repair damage to landscaping caused by runoff and replace any dead landscaping plants with similar species. If a particular species dies repeatedly, a more suitable species should be sought.
12. Develop and implement a fire prevention and suppression plan for all activities that require welding or otherwise have a risk of ignition (e.g., use of string trimmers, edgers or chainsaws).
13. Existing roads would be used to access the construction area and no traffic would be allowed outside of those areas.
14. All construction vehicles, equipment, and personally owned vehicles would be parked in the approved disturbance area. Access routes, parking areas, and staging areas would be designated with easily observed removable or biodegradable markers.
15. All contractors and maintenance personnel would operate within the designated and approved disturbance area.
16. CBP would offset a portion of the permanent impacts and all of the temporary impacts on potential Quino checkerspot butterfly habitat by restoring Quino checkerspot butterfly habitat with shrubs and low-density habitat without shrubs.
17. CBP would ensure that development landscaping within 300 feet of on- or off-site habitat to be avoided/preserved does not include exotic plant species that may be invasive to native habitats. Exotic plant species not to be used include any species listed on the Cal-IPC "Invasive Plant Inventory" List. In addition, landscaping should not use plants that require intensive irrigation, fertilizers, or pesticides adjacent to preserve areas and water runoff from landscaped areas should be directed away from the biological conservation easement area and contained and/or treated within the development footprint. CBP would submit a draft list of species to be included in the landscaping to the U.S. Fish and Wildlife Service (USFWS) for approval at least 15 days prior to initiating project impacts. CBP would submit to USFWS the final list of species to be included in the landscaping within 30 days of receiving approval of the draft list of species.
18. If vegetation must be cleared, allow natural regeneration of native plants by cutting vegetation with hand tools, mowing, trimming, or other clearing methods that allow root systems to remain intact.
19. Vegetation targeted for retention would be flagged to reduce the likelihood of being treated.

20. Initial mechanical and chemical vegetation clearing, and subsequent mechanical vegetation control would be timed to avoid the migration, breeding, and nesting timeframe of migratory birds (February 15 to September 15). If initial mechanical and chemical vegetation clearing or subsequent mechanical vegetation control needs to be implemented during February 15 to September 15, a survey for nesting migratory birds would be conducted immediately prior to the start of activities. Clearing of riparian vegetation would be avoided within 100 ft of aquatic habitats to provide a buffer area to protect the habitat from sedimentation.
21. For all in-water work in streams, sediment barriers would be used to avoid downstream effects of turbidity and sedimentation.

#### 1.4 TERRESTRIAL AND AQUATIC WILDLIFE RESOURCES

1. CBP would ensure that the following conditions are implemented during project construction:
    - a. Employees would strictly limit their activities, vehicles, equipment, and construction materials to the disturbance area.
    - b. The proposed project site would be kept as clean of debris as possible. All food related trash items would be enclosed in sealed containers and regularly removed from the site.
    - c. Pets of project personnel would not be allowed in the proposed project site.
  2. Impacts from fugitive dust would be avoided and minimized through watering and other appropriate measures.
  3. Create and implement environmental awareness training for construction workers and personnel.
  4. Implement a 15-mile per hour speed limit on unpaved roads to reduce vehicle-wildlife collisions.
  5. Conduct construction within drainages when water is absent to avoid impacts to aquatic species downstream.
  6. Use flagging or orange fencing to create an avoidance buffer around sensitive plants or wildlife habitat (such as nests or dens) in the disturbance area.
  7. Biological monitors would inspect work areas and equipment for migratory bird nests every day. If a nest is identified, it would be destroyed before it contains eggs. If an active nest containing eggs or chicks is identified, an area of sufficient size would be flagged to create a buffer large enough to avoid direct and indirect effects; no work would occur within that flagged area without further consultation with the USFWS.
  8. If project construction (other than clearing and grubbing of sensitive habitats) occurs during the avian breeding season (March 15 to September 15, or sooner if a qualified biologist demonstrates to the satisfaction of USFWS that all nesting is complete), a qualified biologist would conduct pre-construction surveys in adjacent habitat (up to 500 feet away from the proposed disturbance area) to determine the location of any active bird nests in the area, including raptors and ground nesting birds. The survey should
-

begin not more than three days prior to the beginning of construction activities. USFWS would be notified if any nesting birds are found. During construction, no activity would occur within 300 feet of active nesting territories (500 feet for raptors or listed species), unless measures are implemented to minimize the noise and disturbance to those adjacent birds. Exceptions to this measure includes cases where surveys confirm that adjacent habitat is not occupied or where noise studies confirm that construction noise levels are below 60 dBA hourly Leq along the edge of adjacent habitat. If construction activities are not completed prior to the breeding season and noise levels exceed this threshold, noise barriers would be erected to reduce noise impacts to occupied habitat to below 60 dBA hourly Leq and/or the culpable activities would be suspended.

9. For maintenance of the proposed project site, time vegetation control outside of the breeding season or conduct nesting bird surveys prior to vegetation control or construction between February 15 (January 1 for raptors) and September 15.
10. Point floodlights used for construction and exterior lighting downward to illuminate the necessary areas and install perch deterrents on poles.
11. Implement a fugitive dust control plan during construction (e.g., wetting the ground surface, controlling vehicle access, rerouting).
12. For operations, keep all vehicular activity on existing and proposed roads.

## 1.5 THREATENED AND ENDANGERED SPECIES

### 1.5.1 Listed Species Measures

There are no federally listed plant, fish, reptile, or mammal species with potential to occur in the Action Area. There are, however, federally listed crustacean, insect, and bird species with the potential to occur in the Action Area. The following general measures will apply to the Proposed Action:

1. All access routes within the Action Area would be marked prior to construction.
2. All activities (including off-road driving and ground disturbing activities) outside of the marked access routes and Action Area will be avoided.
3. A qualified biologist would be present on a full-time basis during construction and maintenance to document the implementation of all BMPs.
4. Clearing and grubbing in suitable habitat of threatened or endangered species would be limited to the minimum necessary to maintain drivable access roads.
5. Limits of the construction/maintenance area, including construction/maintenance staging areas and access routes, will be temporarily fenced to prevent additional habitat impacts and erosion control devices will be installed to prevent the spread of silt from the construction zone into adjacent habitats to be avoided. Erosion control devices (e.g., fiber rolls and bonded fiber matrix) will be made from biodegradable materials such as jute, with



no plastic mesh, to avoid creating a wildlife entanglement. Fencing and erosion control devices will be installed in a manner that does not impact habitats to be avoided. The final plans for construction will be submitted to the Service for approval at least 14 days prior to initiating project impacts. These final plans will include photographs that show the temporary fencing and erosion control devices. If work occurs beyond the fenced limits of impact, all work will cease until the problem has been remedied to the satisfaction of the Service. Temporary fencing and erosion control devices will be removed upon project completion.

6. Road water trucks will be equipped with calibrated soil stabilizer spray bars that minimize or avoid impacts to adjacent vegetation from overspray and pooling of soil stabilizer liquid within the roadway.
7. Soiltac soil stabilizer will be applied when the temperature is a minimum of 40 degrees Fahrenheit and when there is a minimum of 72 hours before the next forecasted rain.
8. The following conditions will be implemented during project construction and maintenance:
  - a. Employees will strictly limit their activities, vehicles, equipment, and construction materials to the project area.
  - b. The project site will be kept as clean of debris as possible. All food related trash items will be enclosed in sealed containers and regularly removed from the site.
  - c. Pets of project personnel will not be allowed on the project site.
  - d. Impacts from fugitive dust during construction will be avoided and minimized through watering, limiting vehicle speeds to 15 miles per hour, controlling vehicle access, and other appropriate measures.
  - e. Materials such as gravel, topsoil, or fill will be obtained from sources that are compatible with the proposed project site, are from legally permitted sites, and are certified weed free. Materials from undisturbed areas adjacent to the project site will not be used.
  - f. Vehicle refueling and maintenance will be limited to upland areas with established spill prevention equipment in place (e.g., straw wattles, lined or paved areas, areas with no direct drains).
  - g. Chemicals and hazardous materials will be stored in proper containers and within spill containment.
  - h. Spill clean-up kits and drip pans will be maintained during construction and retention basins will be large enough to capture and hold the chemicals being housed.

- i. A 15-mile per hour speed limit will be the posted speed limit for all vehicles, to be posted at the beginning and along the road, in an effort to reduce vehicle-wildlife collisions.
  - j. A fire prevention and suppression plan will be developed and implemented for all activities that require welding or otherwise have a risk of ignition (e.g., use of string trimmers, edgers, or chainsaws).
  - k. The CBP protocol for cleaning vehicles and equipment will be followed to avoid the further spread of invasive species.
9. CBP will provide to the Service a work plan that specifies the maintenance activities that will occur, the project schedule and how the work will be implemented consistent with this formal consultation at least 60 days prior to initiating maintenance activities.

#### **1.5.1.1 Least Bell's Vireo**

To minimize disturbance to least Bell's vireo, the following measures will apply to work conducted adjacent to riparian habitat:

1. Conduct pre-construction surveys between February 15 and September 15, to determine if least Bell's vireo are nesting within 300 feet of construction activities.
2. If a nest is found, establish either an 8-foot tall plywood sound wall as far from the nest as possible, but no less than 50 feet between construction and the nest, or conduct sound analysis and monitoring to demonstrate that noise does not exceed 60 Db sustained for an hour at the nest site during project activities.

#### **1.5.1.2 Quino Checkerspot Butterfly**

The following measures would be implemented to minimize impacts to Quino checkerspot butterflies:

1. CBP would staff a biologist, approved by USFWS, who would be responsible for monitoring and reporting compliance with avoidance and minimization measures for biological resources during work activities addressed in the biological opinion. The biologist must be knowledgeable of Quino checkerspot butterfly biology and ecology. The biologist would perform the following duties:
  - a. Be on site during all vegetation clearing/grubbing and project construction within 500 feet of habitat to be avoided.
  - b. Oversee installation of and inspect the fencing and erosion control measures a minimum of once per week and daily during all rain events to ensure that any breaks in the fence or erosion control measures are repaired immediately.

- c. Conduct Quino checkerspot butterfly and host plant surveys in the impact area within one week prior to impacts. If found, host plants would be flagged and avoided to the maximum extent practicable. If host plants cannot be avoided, CBP would contact USFWS for further consultation.
  - d. Periodically monitor the work area to ensure that work activities do not generate excessive amounts of dust.
  - e. Train all contractors and construction personnel on the biological resources associated with this project and ensure that training is implemented by construction personnel. At a minimum, training would include: (i) the purpose for resource protection; (ii) a description of the sensitive species found on site and their habitat(s); (iii) the conservation measures that should be implemented during project construction to conserve sensitive species, including strictly limiting activities, vehicles, equipment, and construction materials to the project area to avoid sensitive resource areas in the field (i.e., avoided areas delineated on maps or on the project site by fencing); (iv) environmentally responsible construction practices; (v) the protocol to resolve conflicts that may arise at any time during the construction process; (vi) the general provisions of the ESA, the need to adhere to the provisions of the ESA, and the penalties associated with violating the ESA.
  - f. Halt work, if necessary, and confer with USFWS to ensure the proper implementation of species and habitat protection measures. The biologist would report any violation to USFWS within 24 hours of its occurrence.
  - g. Submit weekly email reports to USFWS during vegetation clearing and/or project construction. These weekly reports would document that authorized impacts were not exceeded and general compliance with all conditions. The reports would also outline the duration of monitoring, the location of construction activities, the type of construction which occurred, and equipment used. These reports would specify numbers, locations, and sex of sensitive species observed and remedial measures employed to avoid, minimize, and mitigate impacts to sensitive species. Raw field notes should be available upon request by USFWS.
  - h. Submit a final report to USFWS within 60 days of project completion that includes as-built construction drawings with an overlay of habitat that was impacted and avoided, photographs of habitat areas that were to be avoided, and other relevant summary information documenting that authorized impacts were not exceeded and that general compliance with all conditions of this consultation was achieved.
2. Offset impacts to 1.43 acres of Quino checkerspot butterfly critical habitat, including 0.02 acre of coastal sage scrub/chamise chaparral gnatcatcher habitat, 0.0012 acres of which is gnatcatcher critical habitat with physical or biological features, by closing 2.32 acres of unauthorized roads in the vicinity of 1418 Firebreak Road and restoring/enhancing the area for Quino checkerspot butterfly/gnatcatcher habitat. In addition, CBP would place reflective delineating markers where vegetation does not delineate the 10-foot-wide

roadbed in order to discourage use and allow passive vegetation restoration of the areas outside of the 10-foot-wide roadbed.

3. Project construction and maintenance would occur outside the Quino checkerspot butterfly reproduction season, December 1 to May 31.
4. CBP would submit a habitat restoration plan to USFWS for review and approval prior to initiating project impacts and would include the following information and conditions:
  - a. All specifications and topographic-based grading, planting, and irrigation plans. Topsoil and plant materials salvaged from the habitat areas to be impacted would be transplanted to, and/or used as a seed/cutting source for, the habitat restoration areas to the maximum extent practicable as approved by USFWS. Planting and irrigation would not be installed until USFWS has approved of upland habitat restoration site grading. All plantings would be installed in a way that mimics natural plant distribution. Planting would include pockets of coastal sage scrub surrounded by more herbaceous annuals associated with Quino checkerspot butterfly habitat.
  - b. Planting palettes (plant species, size, and number/acre) and seed mix (plant species and pounds/acre). The plant palettes would include Quino checkerspot butterfly host and nectar plants, other native annuals, and limited coastal sage scrub species. Seed would be collected from existing plants on site as much as possible. Unless otherwise approved by USFWS, only locally native species (no cultivars) obtained from as close to the project area as possible would be used. The source and proof of local origin of all plant material and seed would be provided.
  - c. An implementation schedule that indicates when all restoration grading, planting, and irrigation would begin and end. Upland habitat restoration grading, planting, and irrigation would be completed during the concurrent or next planting season (i.e., late fall to early spring) after finishing grading within the restoration area. Any temporal loss of upland habitat caused by delays in restoration would be offset through upland habitat restoration at a 0.5:1 ratio for every 6 months of delay (i.e., 1:1 for 12 months delay, 1.5:1 for 18 months delay, etc.). If CBP is wholly or partly prevented from performing obligations under the final plans (causing temporal losses due to delays) because of unforeseeable circumstances or causes beyond their reasonable control, and without the fault or negligence of CBP, CBP would be excused by such unforeseeable cause(s).
  - d. Restoration maintenance would be conducted outside the Quino checkerspot butterfly and gnatcatcher reproduction seasons (December 1 to August 31). If maintenance is needed between December 1 and May 31, a Quino checkerspot butterfly permitted biologist would conduct host plants surveys within the maintenance area within one week prior to work. If found, host plants would be flagged and avoided. If maintenance is necessary between February 15 and August 31, a biologist would survey for gnatcatchers within the maintenance area. Surveys

would consist of three visits within one week prior to work and one survey would be conducted the day immediately prior to the initiation of work. Work would be allowed to continue on site during the survey period. However, if gnatcatchers are found during any of the visits, CBP would notify and coordinate with USFWS to identify measures to avoid and/or minimize effects to the gnatcatcher (e.g., nests and an appropriate buffer would be flagged by the biologist and avoided by the maintenance work).

- e. Five years of success criteria for restoration areas including: a total of no more than 20 percent absolute cover of coastal sage scrub shrub species, evidence of natural recruitment of multiple species, 0 percent coverage for Cal-IPC List A and B species, and no more than 10 percent coverage for other exotic/weed species.
- f. A qualitative and quantitative vegetation monitoring plan with a map of proposed sampling locations. Photo points would be used for qualitative monitoring and stratified-random sampling would be used for all quantitative.
- g. Contingency measures in the event of restoration failure.
- h. Annual mitigation maintenance and monitoring reports would be submitted to USFWS after the maintenance and monitoring period and no later than December 1 of each year.

### 1.5.1.3 Coastal California Gnatcatcher

The following measures would be implemented to minimize impacts to Coastal California gnatcatchers:

- 1. A biologist approved by USFWS would be onsite during the initial clearing/grubbing of coastal sage scrub/chamise chaparral and project construction within 500 feet of least Bell's vireo and coastal California gnatcatcher habitat to ensure compliance with applicable mitigation measures. The biologist must be knowledgeable of least Bell's vireo and coastal California gnatcatcher biology and ecology. The biologist would perform the following duties:
  - a. Perform a minimum of three focused surveys, on separate days, to determine the presence of coastal California gnatcatchers in the disturbance area outside the coastal California gnatcatcher breeding season. Surveys would begin a maximum of 7 days prior to performing initial clearing/grubbing of coastal sage scrub/chamise chaparral and one survey would be conducted the day immediately prior to the initiation of clearing/grubbing. If any coastal California gnatcatchers are found within the disturbance area, the biologist would direct construction personnel to begin clearing/grubbing in an area away from the coastal California gnatcatchers. It would be the responsibility of the biologist to ensure that coastal California gnatcatchers are not in the area to be cleared/grubbed. The biologist would also record the number and location of coastal California gnatcatchers disturbed by

clearing/grubbing. CBP would notify USFWS at least 7 days prior to clearing/grubbing to allow USFWS to coordinate with the biologist on bird flushing activities.

- b. If project construction or maintenance is necessary during the least Bell's vireo and coastal California gnatcatcher breeding seasons, the biologist would perform a minimum of three focused surveys, on separate days, to determine the presence of least Bell's vireo and coastal California gnatcatcher nest building activities, egg incubation activities, or brood rearing activities in, or within, 500 feet of these areas. The surveys would begin a maximum of 7 days prior to project construction and one survey would be conducted the day immediately prior to the initiation of work. Additional surveys would be done once a week during project construction in the breeding season. These additional surveys may be suspended as approved by USFWS. CBP would notify USFWS at least 7 days prior to the initiation of surveys, and within 24 hours of locating any least Bell's vireos or coastal California gnatcatchers.
  - c. If a least Bell's vireo or coastal California gnatcatcher nest is found in or within 500 feet of project construction or maintenance, the biologist would postpone work within 500 feet of the nest and contact USFWS to discuss: (i) the best approach to avoid/minimize impacts to nesting birds (e.g., sound walls); and (ii) a nest monitoring program acceptable to USFWS. Subsequent to these discussions, work may be initiated subject to implementation of the agreed upon avoidance/minimization approach and nest monitoring program. Nest success or failure would be established by regular and frequent trips to the site, as determined by the biologist and through a schedule approved by USFWS. The biologist would determine whether bird activity is being disrupted. If the biologist determines that bird activity is being disrupted, CBP would stop work and coordinate with USFWS to review the avoidance/minimization approach. Coordination between CBP and USFWS to review the avoidance/minimization approach would occur within 48 hours. Upon agreement as to the necessary revisions to the avoidance/minimization approach, work may resume subject to the revisions and continued nest monitoring. Nest monitoring would continue until fledglings have dispersed or the nest has been determined to be a failure, as approved by USFWS.
2. If a nest is found, established either an 8-foot-tall plywood sound wall as far from the nest as possible, but no less than 50 feet between construction and the nest, or conduct sound analysis and monitoring to demonstrate that noise does not exceed 60 Db sustained for an hour at the nest site during project activities.
  3. Avoid impacts to areas of perennial vegetation to the extent practicable. Where vegetation impacts cannot be avoided salvage overstory shrubs and stockpile the top 6 inches of topsoil and any grubbed vegetation stockpiled to assist in revegetation.
  4. For permanent impacts to coastal California gnatcatcher habitat as a result of the Proposed Action, a mitigation ration of 2:1 has been proposed to address impacts, achieved through
-

restoration of 0.1-acre of coastal sage scrub habitat within disturbed roadways identified by USFWS.

5. Initial clearing/grubbing of coastal sage scrub/chamise chaparral, and project construction and maintenance within 500 feet of least Bell's vireo and coastal California gnatcatcher suitable habitat, would occur between September 16 and February 14 to avoid the least Bell's vireo and coastal California gnatcatcher breeding seasons (or sooner if surveys determine that all nesting is complete). If project construction or maintenance are necessary between February 15 and August 31, CBP would conduct least Bell's vireo and coastal California gnatcatcher nest surveys/monitoring.

#### 1.5.1.4 San Diego Fairy Shrimp

The following measures would be implemented to minimize impacts to San Diego fairy shrimp:

1. CBP would staff a biologist during the vernal pool restoration/enhancement who would be responsible for overseeing compliance with the mitigation measures and would be approved by USFWS. The biologist must be knowledgeable of fairy shrimp and vernal pool biology/ecology. The biologist would perform the following duties:
  - a. Be on site during work and/or grading to ensure compliance with all mitigation measures.
  - b. Oversee the installation and inspection of the project perimeter marking and erosion BMPs a minimum of once per week and daily during all rain events to ensure that any breaks in the fence or erosion control measures are repaired immediately.
  - c. Periodically monitor the work area to ensure that work activities do not generate excessive amounts of dust.
  - d. Allow salvage of live plants and collection of inoculum for transplant to pools, watersheds and surrounding uplands to be restored/enhanced as practicable and approved by USFWS.
  - e. Train all contractors and construction personnel on the biological resources associated with this project and ensure that training is implemented by construction personnel. At a minimum, training would include: (i) the purpose for resource protection; (ii) a description of the fairy shrimp and its habitat; (iii) the conservation measures given in the biological opinion that should be implemented during project construction to avoid and/or minimize impacts to the fairy shrimp; including strictly limiting activities, vehicles, equipment, and construction materials to the marked project footprint to avoid sensitive resource areas in the field (i.e., avoided areas delineated on maps or on the project site by fencing); (iv) the protocol to resolve conflicts that may arise any time during the construction process; and (v) the general provisions of the ESA, the need to adhere to the provisions of the ESA, and the penalties associated with non-compliance with the ESA.



- f. Halt work, if necessary, for any project activities that are not in compliance with the conservation measures committed to as part of the project and specified in this biological opinion. The biologist would report any non-compliance issues to USFWS within 24 hours of its occurrence and confer with USFWS to ensure the proper implementation of species and habitat protection measures.
      - g. Submit a final report to USFWS within 60 days of project completion that includes as-built construction drawings showing restored pools, photographs of the restored pools and uplands, and other relevant information documenting compliance with the mitigation measures.
  2. Offset impacts to a 0.004-acre road pool occupied by San Diego fairy shrimp in coordination with the Persistent Surveillance and Detection System Improvements Project by restoring 0.012 acre of new vernal pools occupied by San Diego fairy shrimp and enhance the existing vernal pools/uplands such that existing vernal pools and upland areas help to contribute to the success of vernal pool restoration at the Arnie's Point property on Otay Mesa.
  3. Prior to initiating vernal pool restoration, CBP would temporarily mark the limits of restoration impacts (including staging areas and access routes) and install BMPs (e.g., straw wattles, silt fencing, jute cloth) to prevent additional impacts and the spread of silt into extant vernal pools. No restoration activities, materials, or equipment would be permitted outside the marked project footprint. CBP would submit to USFWS for approval, at least 7 days prior to initiating project construction, final construction plans that include photographs of the marked limits of impact, BMPs, and all areas to be impacted or avoided. If work occurs beyond the marked limits of impact, all work would cease until the problem has been remedied to the satisfaction of USFWS. Temporary construction marking would be removed upon project completion.
  4. CBP would develop a vernal pool restoration/enhancement plan concurrently with the onset of project impacts and in coordination with the Persistent Surveillance and Detection System Improvements Project. CBP would submit final vernal pool restoration/enhancement plans to USFWS for approval. The restoration/enhancement would not begin until USFWS approves of the final plans. The restoration/enhancement plans would include the following information and measures:
    - a. All restoration/enhancement activities would commence the first summer-fall season after the initiation of project impacts.
    - b. All final specifications and topographic-based grading, planting, and watering plans for the vernal pools, watersheds, and surrounding uplands (including adjacent mima mounds) at the restoration sites. Grading plans would have 0.5-foot contours. Vernal pool size and depth would be similar to extant pools closest to the restoration area. The grading plans would also show the watersheds of extant vernal pools, and overflow pathways that hydrologically connect the restored pools in a way that mimics natural vernal pool complex topography/hydrology.
-

- c. A hydraulic analysis that shows each proposed vernal pool and its watershed, the vernal pool to watershed ratio, and hydrologic connection between the pools. The vernal pool to watershed ratio would be similar to extant pools closest to the restoration area. Restored pools and their watersheds would not impact the watersheds of any extant pools except where needed to establish hydrologic connections.
- d. A final implementation schedule that indicates when vernal pool restoration grading and planting would begin and end.
- e. Native plants and animals would be established within the restored/enhanced pools, their watersheds, and surrounding uplands. This can be accomplished by redistributing topsoil containing seeds, spores, bulbs, eggs, and other propagules from affected pools and adjacent vernal pools and upland habitats; by the translocation of propagules of individual species; and by the use of commercially available native plant species. Any vernal pool inoculum or plant material from an off-site source must be approved by USFWS. Topsoil and plant materials from the native habitats to be affected on-site would be applied to the watersheds of the restored/enhanced pools to the maximum extent practicable. Exotic weed control would be implemented within the restoration areas to protect and enhance habitat remaining on-site.
- f. Plant palettes (species, size, and number/acre) and seed mix (species and pounds/acre) would be included in the restoration plans. The plant palette would include native species specifically associated with the onsite habitat type(s). If native plant species (no cultivars) cannot be obtained on site, an alternate site would be used only upon approval by USFWS. The source and proof of local origin of all plant material and seed would be provided to USFWS.
- g. If inoculum would be used for restoration, the plan would identify any proposed donor pools and include documentation that they are free of versatile fairy shrimp (*Branchinecta lindahli*). No more than 5 percent of the basin area of any donor pool would be used for collection of inoculum. Inoculum would be collected from donor vernal pools when dry to avoid damaging or destroying fairy shrimp cysts and plant seeds. Whenever possible during collection of soil inoculum, a trowel would be used to pry up intact chunks of soil rather than loosening the soil by raking and shoveling which can damage the cysts and seeds. Soil inoculum would be kept separately for each donor pool, would be stored individually in labeled boxes that are adequately ventilated and kept out of direct sunlight to prevent the occurrence of fungus or excessive heating of the soil, and stored off site at an appropriate facility for vernal pool inoculum. No more than 5 percent of the basin area of any donor pool would be used for collection of inoculum. Soil inoculum would be spread out and raked into the bottoms of the restored/enhanced vernal pools.
- h. Inoculum and planting would not be installed until USFWS approves the habitat restoration site grading. All planting would be installed in a way that mimics natural

plant distribution and not in rows. Inoculum would not be introduced into the restored/enhanced vernal pools until after they have been demonstrated to retain water for the appropriate amount of time to support San Diego fairy shrimp [i.e., at least 30 days] and have been surveyed for versatile fairy shrimp to the satisfaction of USFWS. If versatile fairy shrimp are detected in the pools, inoculum would not be introduced until measures approved by USFWS are implemented to attempt to remove the versatile fairy shrimp from the pools. Inoculum would be placed in a manner that preserves, to the maximum extent possible, the orientation of the fairy shrimp cysts within the surface layer of soil (e.g., collected inoculum would be shallowly distributed within the pond so that cysts have the potential to be brought into solution upon inundation).

- i. A map depicting the location of the control pools and a table detailing basin size, depth, ponding duration, native cover, nonnative cover, and presence of listed species for each pool.
- j. If natural rain is inadequate to support plant establishment, artificial watering of the restored/enhanced vernal pools and their watersheds may be carried out as described in the restoration plan and agreed upon by USFWS. Any artificial watering would be conducted in a manner that prevents ponding in the pools. Artificial watering would not be used to germinate vernal pool plants, rather it would be used only as necessary to maintain any plants that germinated naturally but are at risk of dying before flowering and seed set. Any water to be used would be identified and documented to be free of contaminants that could affect the water quality of the pools and harm San Diego and Riverside fairy shrimp.
- k. Any planting stock to be brought onto the restoration sites would be inspected by a pest inspector to ensure it is free of pest species that could invade natural areas, including but not limited to, Argentine ants (*Linepithema humile*), fire ants (*Solenopsis invicta*), and other insect pests.
- l. All weeding personnel would be educated to distinguish between native and nonnative species so that local native plants are not inadvertently killed. All weeding within and immediately adjacent to the restored pools would be performed by hand. Use of weed trimmers and herbicides within and immediately adjacent to restored pools would only be used under conditions approved by USFWS. All herbicide and pesticide use would be under the direction of a licensed pest control advisor and would be applied by a licensed applicator, under the supervision of a vernal pool restoration specialist. Glyphosate-based herbicides, such as RoundUp or Aquamaster, would be applied on all areas that have been dethatched. Herbicide would only be applied when wind speed is less than 5 miles per hour, and spray nozzles would be of a design to maximize the size of droplets, to reduce the potential for drift of herbicide to non-target plants. A 10-foot buffer would be maintained around concentrations of any sensitive plant species. Application of herbicide would not occur if rain is projected within 24 hours of the scheduled application. When vernal pools are ponding or close to saturation, only hand

herbicide application (i.e., saturated glove technique) would be used in and around the edges of pools by specially trained herbicide applicators under the direct supervision of the vernal pool restoration specialist. When vernal pools are not ponding or close to saturation, herbicide may be sprayed but applicators must stay at least 3 feet from the edge of the pools.

- m. Five years of monitoring and success criteria for vernal pool and upland habitat restoration areas that includes quantitative hydrological, vegetation transects, viable cyst, hatched fairy shrimp, and gravid female measurements, and complete flora and fauna inventories, and photographic documentation. To minimize impacts to the vernal pool's soil surface during monitoring, cobbles should be oriented within the restored vernal pools to serve as stepping stones.
  - n. Verification that the restoration of the vernal pools is complete would require written sign-off by USFWS. If a performance criterion is not met for any of the restored/enhanced vernal pools or upland habitat in any year, or if the final success criteria are not met, CBP should prepare an analysis of the cause(s) of failure and, if deemed necessary by USFWS, propose remedial actions for approval. If any of the restored/enhanced vernal pools or upland habitat have not met a performance criterion during the initial 5-year period, CBP's maintenance and monitoring obligations would continue until USFWS deems the restoration successful, or contingency measures must be implemented. Restoration would not be deemed successful until at least 2 years after any significant contingency measures are implemented, as determined by USFWS.
  - o. Annual reports should be submitted to USFWS by December 1 of each year that assess both the attainment of yearly success criteria and progress toward the final success criteria. The reports should also summarize the project's compliance with all mitigation measures. The first annual report should include as built grading, planting, and watering plans for the vernal pool restoration.
5. Restoration grading activities would be timed to avoid wet weather to minimize potential impacts (e.g., siltation) to extant vernal pools unless the area to be graded is at an elevation below extant pools. To achieve this goal, grading would comply with the following:
- a. Grading would occur only when the soil is dry to the touch at the surface and 1 inch below. A visual check for color differences (i.e., darker soil indicating moisture) in the soil between the surface and 1 inch below indicates the soil is dry.
  - b. After a rain of greater than 0.2-inch, grading would occur only after the soil surface has dried sufficiently as described above, and no sooner than 2 days (48 hours) after the rain event ends.
  - c. Grading would commence only when no rain is forecast during the anticipated grading period.

- d. To prevent erosion and siltation from storm water runoff due to unexpected rains, BMPs (e.g., silt fences, straw wattles) would be implemented as needed during grading.
  - e. If rain occurs during grading, work would stop and resume only after soils are dry, as described above.
  - f. Grading would be conducted in a manner to prevent run-off or erosion from entering extant vernal pools.
6. The changing of oil, refueling, and other actions that could result in a release of a hazardous substance should be restricted to designated areas that are a minimum of 100 feet from the Arnie's Point vernal pool preserve and at a lower elevation if possible. Such designated areas should be surrounded with berms, sandbags, or other barriers to further prevent the accidental spill of fuel, oil, or chemicals. Any accidental spills should be immediately contained, cleaned up, and properly disposed of.
  7. CBP would plan for 5 years of maintenance and monitoring for vernal pool restoration/enhancement (including a 20 percent contingency to be added to the total costs) to help guarantee the successful implementation.
  8. CBP would implement long-term management, maintenance, and monitoring for the preservation of Arnie's Point. CBP would submit a draft long-term management plan for the onsite conservation area to USFWS for review and approval with 60 days of initiating project impacts. The long-term management plan would include, but not be limited to, the following: (a) measures for controlling invasive species; (b) an estimated cost of long-term management of Arnie's Point and funding mechanism; (c) to the extent CBP proposes to use contract personnel to implement the plan, the proposed land manager's name, qualifications, business address, and contact information or if such information is unavailable a commitment to provide such information when it does become available; (d) proposed methods of protecting the resources in perpetuity (e.g., conservation easement or other measures); (e) a monitoring schedule; (f) measures to prevent human and invasive species encroachment; (g) contingency measures should problems occur; and (h) a commitment that CBP would not permit easements or activities (e.g., cattle grazing, fuel modification zones, public trails, drainage facilities, walls, maintenance access roads, utility easements) that negatively impact the value of the Arnie's Point to listed species or result in soil disturbance and/or native vegetation removal within or on Arnie's Point. If CBP determines that it is necessary to use Arnie's Point in a manner that is inconsistent with the long-term management plan, then CBP would reinitiate consultation with USFWS.

## 1.5.2 Federal Migratory Bird Treaty Act

To prevent impacts to avian species covered under the Migratory Bird Treaty Act (MBTA), clearing and grubbing should take place in fall and winter to avoid impacts to nesting birds. If work cannot be avoided during the breeding season (February 15 to September 15), one week prior

to starting work a biologist would survey for nesting birds and identify any nests. An appropriate buffer for avoidance would be established around any nesting birds until the young have fledged or the nest is no longer being used.

- Eagle and raptor nests - 300-foot buffer,
- Special-status bird species - 100-foot buffer, and
- Migratory birds - 25-foot buffer.

### 1.5.3 Biological Resource Measures

The following minimization and avoidance measures will be implemented in order to limit the effects of construction on biological resources:

1. The limits of construction will be demarcated with stakes or orange construction fencing to clearly identify areas of disturbance.
2. A designated biological monitor would be present during all activities on or near the Project Area. A separate report should be prepared and submitted to CBP immediately if/when an impact occurs outside of the approved Project limits. The biologist would also submit a final report to CBP within 60 days of Project completion that includes an overlay of impacted areas and other relevant information documenting that authorized impacts were not exceeded and that general compliance with conservation measures was achieved.
3. Existing roads would be used to access the construction area and no traffic would be allowed outside of those areas. All construction vehicles, equipment, and personally owned vehicles would be parked in the approved disturbance area. Access routes, parking areas, and staging areas would be designated with easily observed removable or biodegradable markers.
4. All contractors and maintenance personnel would operate within the designated and approved disturbance area.
5. Use flagging or orange fencing to create an avoidance buffer around sensitive plant species or vegetation communities within the disturbance area.
6. Institute environmental awareness training for employees and contractors. The training would include at a minimum a description of the resource and purpose for its protection, the conservation measures that must be implemented, and environmentally responsible construction practices.
7. Construction speed limits would not exceed 15 mph on unpaved roads (graded with ditches on both sides). Night-time travel speeds would not exceed 15 mph and may be less based on visibility and other safety considerations.

8. Limit vehicle refueling and maintenance to upland areas with established spill prevention equipment in place (e.g., straw wattles, lined or paved areas, areas with no direct drains).
9. Maintain stores of chemicals and hazardous materials in proper containers and within spill retention basins large enough to capture and hold the chemicals being housed.
10. Maintain spill clean-up kits and drip pans during construction of the facility.
11. Implement a fugitive dust control plan during construction.
12. Follow the CBP protocol for cleaning vehicles and equipment to avoid the spread of invasive species.
13. Incorporate designs that minimize runoff or use of pesticides.
14. Design artificial topography in disturbance area to take advantage of natural rain runoff, and apply surface materials (e.g., mulch) to retain moisture in the soil.
15. After construction, repair damage to landscaping caused by runoff and replace any dead landscaping plants with similar species. If a particular species dies repeatedly, a more suitable species should be sought.
16. Develop and implement a fire prevention and suppression plan for all activities that require welding or otherwise have a risk of ignition (e.g., use of string trimmers, edgers or chainsaws).
17. If vegetation must be cleared, allow natural regeneration of native plants by cutting vegetation with hand tools, mowing, trimming, or other clearing methods that allow root systems to remain intact. Vegetation targeted for retention would be flagged to reduce the likelihood of being treated.
18. Within the designated disturbance area, grading or topsoil removal would be limited to areas of necessity and within the limit of grading to provide required ground conditions for construction and maintenance activities. Minimizing the disturbance footprint minimizes impacts and restoration requirements. The top six inches of topsoil would be stockpiled for use in revegetation whenever feasible. Stockpiles would not exceed 3.5 feet in height and if necessary, would be covered with natural materials such as burlap. No plastic is permitted due to the heat's sterilization effect on the topsoil.
19. All areas temporarily impacted by Project improvement and maintenance would be revegetated with native plant species following a USFWS approved restoration plan. Restoration plans and activities would be completed by restoration firms with at least five years of experience in conducting successful comprehensive ecological restoration in southern California.
20. Materials used for construction and on-site erosion control would be biodegradable and free of non-native plant seeds and other non-native plant parts to limit potential for



infestation. Some natural materials cannot be fully certified as weed-free, and if used, follow-up monitoring and control to limit establishment of non-native plants would be implemented to prevent introduction. Erosion control blankets and wattles would use biodegradable netting. Borrow areas for fill materials such as rock, gravel, or topsoil would be obtained from existing developed or previously used sources, not from undisturbed areas within or adjacent to the Project Area.

21. To eliminate attracting predators of protected animals, all food-related trash items such as wrappers, cans, bottles, and food scraps would be disposed of in closed containers and removed daily from the Project site.
22. Any night lighting for the construction of the Project would be selectively placed, shielded, and directed away from all native vegetative communities north of the Project footprint and the beach.
23. Waste contaminated with construction materials or from cleaning equipment carrying oils, toxic materials, or other contaminants would be stored in closed containers on-site until removed for disposal. Concrete wash water would not be dumped on the ground but would be collected and moved off-site for disposal. This wash water is toxic to aquatic life.

## 1.6 HYDROLOGY AND GROUNDWATER

1. Implement low-impact development standards and techniques for stormwater management to ensure that predevelopment hydrology is maintained and prevent a net increase in stormwater runoff.
2. Prepare and comply with the spill prevention plan.
3. Graded earthen roads would be slightly crowned and absent of windrows in the gutter line to avoid ponding and channeling within the road during rain events. Grading with the use of commercial grading equipment would restore an adequate surface.
4. The addition of material to the road would be kept to a minimum.
5. Any associated roadside drainage would be maintained to ensure that runoff is relieved from the road surface quickly and effectively without creating further erosion issues.

## 1.7 SURFACE WATERS AND WATERS OF THE UNITED STATES

1. Landscaping would use a no- or low-water system (drought tolerant plants) as indicated in the *Border Patrol Station Baseline Design Requirements: U.S. Border Patrol Facility Design Standard*.
2. Vehicle refueling and maintenance would be limited to upland areas with established spill prevention equipment in place (e.g., straw wattles that do not have plastic netting, lined or paved areas, areas with no direct drains).
3. Maintain chemicals and hazardous material storage in proper containers and within spill retention basins large enough to capture and hold the chemicals being housed.

4. Flag or mark potentially jurisdictional waters of the United States (surface waters/drainages) in the vicinity of construction.
5. Prepare a stormwater pollution prevention plan and implement applicable construction and post-construction BMPs, including sediment, erosion, pollution prevention control, and stormwater management measures, and associated plans for conformance with the NPDES Construction General Permit.
6. CBP would comply with all applicable requirements of Section 404/401 of the CWA, and EO 11990.
7. Implement BMPs identified in the *County of San Diego Guidelines for Determining Significance for Surface Water Quality*, and the *County of San Diego BMP Design Manual*, as practicable.
8. CBP would temporarily fence (erosion and sediment control devices) the limits of the proposed disturbance area (including construction staging areas and access routes) to prevent additional habitat impacts and prevent the spread of silt from the construction zone into adjacent habitats to be avoided. Erosion and sediment control devices, including fiber rolls and bonded fiber matrix, would be made from biodegradable materials such as jute, with no plastic mesh, to avoid creating a wildlife entanglement. Fencing would be installed in a manner that does not impact habitats to be avoided. CBP would submit to USFWS for approval, at least 14 days prior to initiating project impacts, the final plans for initial clearing and grubbing of habitat and project construction. These final plans would include photographs that show the fenced limits of impact and all areas (including riparian/wetland or coastal sage scrub) to be impacted or avoided. If work occurs beyond the fenced or demarcated limits of impact, all work would cease until the problem has been remedied to the satisfaction of USFWS. Any habitat impacts that occur beyond the approved fenced would be mitigated at a minimum 5:1 ratio. Temporary construction fencing would be removed upon project completion.
9. All equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other such activities would occur outside of WoUS within the proposed disturbance area. These activities would be located in previously compacted and disturbed areas to the maximum extent practicable and in such a manner as to prevent any runoff from entering WoUS. Fueling of equipment would take place in areas greater than 100 feet from WoUS. Contractor equipment would be checked for leaks prior to operation and repaired as necessary.

## 1.8 FLOODPLAINS

1. 1. Implement low impact development standards.

## 1.9 AIR QUALITY

1. Implement fugitive dust-control measures (e.g., wetting the ground surface, control of vehicle access, rerouting of vehicles).

2. Implement proper and routine maintenance of all vehicles and construction and maintenance equipment such that emissions are within the design standards of all vehicles and equipment prior to and during construction activities.

## 1.10 NOISE

1. All OSHA requirements would be followed with respect to noise impacts. Ensure all motorized equipment possess properly working mufflers and are kept properly tuned to reduce backfires.

## 1.11 CULTURAL RESOURCES

1. Prior to the initiation of construction or ground-disturbing activities, all personnel would receive training regarding the appropriate work practices necessary to effectively implement BMPs and comply with applicable environmental laws and regulations, including the potential for inadvertent discoveries. Training shall inform all personnel of the procedures to be followed upon the discovery or suspected discovery of archaeological materials, including human remains and their treatment.
2. A qualified archaeologist would attend preconstruction meetings, as necessary, and monitor all ground-disturbing activities within the proposed project site with a Native American monitor present. The role of the Native American monitor shall be to represent tribal concerns and communicate with the tribal council. The requirements for archaeological monitoring would be noted on the construction plans. The archaeologist's duties would include monitoring, evaluation of any finds, analysis of collected materials, and preparation of a monitoring results report.
3. Approved work areas would be established and construction crews would be instructed to stay within the approved work areas and avoid the disturbance of any culturally sensitive areas identified before or during construction.
4. In the event that cultural resources are discovered, the archaeologist would have the authority to divert or temporarily halt ground disturbance to allow evaluation of potentially significant cultural resources. The archaeologist would immediately notify the Project Manager at the time of the discovery, and the Project Manager would notify CBP. The archaeologist, in consultation with CBP, would determine the significance of the discovered resources. No work may proceed without the written authorization of CBP. CBP would work with consulting parties to identify locations where activity may continue as well as any restrictions or special requirements that must be adhered to while the post-review discovery is addressed. For significant cultural resources, a Research Design and Data Recovery Program may be carried out. CBP's established standard operating procedures for inadvertent discoveries (*Standard Operating Procedure for Post-Review Discovery of Cultural Materials or Human Remains*) would be adhered to in all cases.
5. In the event that human remains are inadvertently discovered or there are indications that human remains may be present, such as headstones, all ground-disturbing activity would cease immediately. The archaeologist would immediately notify the Project Manager at

the time of the discovery, and the Project Manager would notify CBP as well as the landowner. CBP would notify state police within 24 hours of the discovery and follow their directions for securing the site pending examination of a medical examiner/coroner. Law enforcement and the coroner would determine whether or not the discovery constitutes a crime scene. CBP would coordinate with the state police and the coroner regarding where construction activities can resume. No work may proceed without the written authorization of CBP. CBP would notify the Advisory Council on Historic Preservation, the appropriate SHPO or Tribal Historic Preservation Officer, any impacted Indian Tribe, and any impacted federal agency of the discovery in writing within two business days. After receipt of the medical examiner's findings, CBP shall notify all of the above agencies in writing within two business days. NAGPRA would be followed if the discovery is determined to be of Native American origin. CBP's established standard operating procedures for inadvertent discoveries would be adhered to in all cases.

6. All collected cultural materials would be cataloged and permanently curated with an appropriate institution. All artifacts would be analyzed to identify function and chronology as they relate to the history of the area. Faunal material would be identified as to species. CBP's established standard operating procedures for curation would be adhered to in all cases.
7. An archaeological monitoring results report conforming to Archaeological Resource Management Reports guidelines, describing the results analyses, and conclusions of the monitoring program would be prepared and submitted to CBP following termination of the Proposed Action. Any new cultural resources encountered would be recorded on standard Department of Parks and Recreation forms and submitted to the Southern California Information Center.

*This page left intentionally blank.*

**Alternative 1: Partial Road Improvement - Proposed Action**

**Summary:** Improve to FC-2 all-weather road from Otay Lakes Rd to beginning of BLM parcel

**Description from EA:** Alternative 1 is the Proposed Action. Under this alternative, 1418 Firebreak Road would be improved to a FC-2 level, all-weather roadway for 4,885 feet (ft) from Otay Lakes Road to a point where the road enters the Otay Mountain Wilderness on BLM property. Seven water bars and eight earthen low water crossings with rip rap outfall protection aprons would be installed in locations where washouts occur to allow the agents to drive through the road rather than seek an alternate route during flood events. To meet FC-2 design standards, the road width is required to be 24 ft in locations where that standard is not currently met. In locations where a secondary route has been created due to impassable conditions along the 1418 Firebreak Road, one route would be closed and actively revegetated. To offset impacts to vegetation and special-status species, closure and active revegetation of unnecessary dirt roads used by USBP or other administrative users would occur. All road closures would be in the vicinity of 1418 Firebreak Road.

**Bio-Studies assumptions:** Northern portion of road from Otay Lakes Rd to BLM Parcel included in below mitigation calculation. 25' wide impact area (12.5' off centerline) included for this alternative. Essentially mirroring veg impact calcs from BSR, but abbreviated as all BLM land is excluded.

Firebreak Road - Vegetation Mitigation	Veg Acreage within Survey Area	Veg Acreage within Impacts Limits	Habitat Acreage Considered for Mitigation	MSCP Tier	Mitigation Ratio	Acreage with ratio applied
Chamise Chaparral	2.587	0.347	0.347	Tier 3	1.5:1	0.52
Coastal Sage Scrub	3.789	0.478	0.478	Tier 2	2:1	0.96
Disturbed	1.893	1.752	0.000	n/a	n/a	0.00
Non-Native grassland	0.062	0.020	0.020	n/a	0.5:1	0.01
Non-Native Grassland/ Coastal Sage Scrub	3.694	0.519	0.519	Tier 2	2:1	1.04
<b>Total</b>	<b>12.03</b>	<b>3.12</b>	<b>1.36</b>			<b>2.52</b>

Firebreak Road - Quino Checkerspot Butterfly Mitigation	Veg Acreage within Survey Area	Veg Acreage within Impacts Limits	Habitat Acreage Considered for Mitigation	MSCP Tier	Mitigation Ratio	Acreage with ratio applied
Chamise Chaparral	2.587	0.347	0.347	Tier 3	1.5:1	0.52
Coastal Sage Scrub	3.789	0.478	0.478	Tier 2	2:1	0.96
Disturbed*	1.893	1.752	1.752	Tier 1	2:1**	3.50
Non-Native grassland	0.062	0.020	0.020	n/a	0.5:1	0.01
Non-Native Grassland/ Coastal Sage Scrub	3.694	0.519	0.519	Tier 2	2:1	1.04
<b>Total</b>	<b>12.03</b>	<b>3.12</b>	<b>3.12</b>			<b>6.03</b>

\*included in calculations, suitable QCB habitat

\*\*Mitigation at a rate of 2:1 would be achieved by permanent closure and active revegetation of other roads in the vicinity.

Alternative 1 Linear feet (feet)	Mitigation Ratio	Total Linear feet needed for Mitigation
4,885.00	2:1	<b>9,770.00</b>

Mitigation - Road Closure Areas	
Closure Area	Linear Feet
1	275.00
2	3,300.00
3	4,600.00
4	3,000.00
5	1,500.00
<b>Total</b>	<b>12,675.00</b>

Firebreak Road - Fairy Shrimp Mitigation	Road Pool Area Acreage	Road Pool Area Sq. Ft.	Area Considered for Mitigation (Sq. ft.)	MSCP Tier	Mitigation Ratio	Sq. Ft. with ratio applied	Acre total
Road pool 0	0.000	9.00	9.00	n/a	0.13	27.00	
Road pool 1	0.004	170.00	170.00	n/a	3:1	510.00	
Road pool 2	0.001	60.00	60.00	n/a	3:1	180.00	
Road pool 3	0.013	560.00	560.00	n/a	3:1	1,680.00	
<b>Total</b>	<b>0.018</b>	<b>799.00</b>	<b>799.00</b>			<b>2,397.00</b>	<b>0.06</b>
Road pool with ESA listed fairy shrimp confirmed							

Firebreak Road - Waters of the U.S. Mitigation^	Waters of U.S. Acres	Waters of U.S. Area Sq. Ft.	Area Considered for Mitigation (Sq. ft.)	MSCP Tier	Mitigation Ratio	Sq. Ft. with ratio applied	Acre total
Ephemeral drainage 1	0.048	2,082.53	0.00	n/a	n/a	0.00	
Ephemeral drainage 2 / road pool 12	0.003	140.00	0.00	n/a	n/a	0.00	
<b>Total</b>	<b>0.051</b>	<b>2,222.53</b>	<b>0.00</b>			<b>0.00</b>	<b>0.00</b>

^Both ephemeral drainages are outside this alternative area. No impact to ephemeral drainages with this alternative.



## **APPENDIX E**

### Water Bar and Water Cutout Location Photographs



*This page left intentionally blank*

APPENDIX E  
Water Bar and Water Cutout Location Photographs

1418 FIREBREAK ROAD - REFERENCE PHOTOS



Waterbar 1 (WB1)



Waterbar 2 (WB2)



Waterbar 3 (WB3)



Waterbar 4 (WB4)



Water Cutout 1 (WC1)



Waterbar 5 (WB5)

NOTES:

5/20/2020



## 1418 FIREBREAK ROAD - REFERENCE PHOTOS



Water Cutout (WC2)



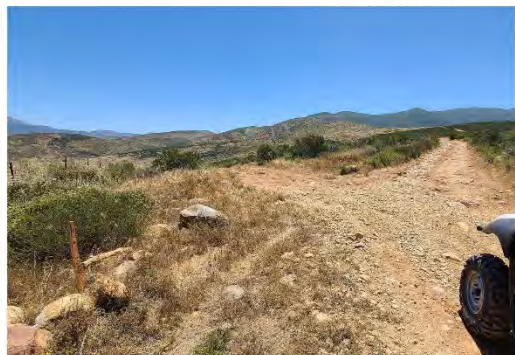
Passing Zone 1 (PZ1)



Water Cutout 3 (WC3)



Waterbar 6 (WB6)



Water Cutout 4 (WC4)



Water Cutout 5 (WC5)

NOTES:

5/20/2020



## 1418 FIREBREAK ROAD - REFERENCE PHOTOS



Waterbar (WB7)



Water Cutout (WC6)



Water Cutout 7 (WC7)



Passing Zone 2 (PZ2)



Water Cutout 8 (WC8)



Water Cutout 9 (WC9)

NOTES:

5/20/2020

*This page left intentionally blank.*

# APPENDIX F

## Soil Maps

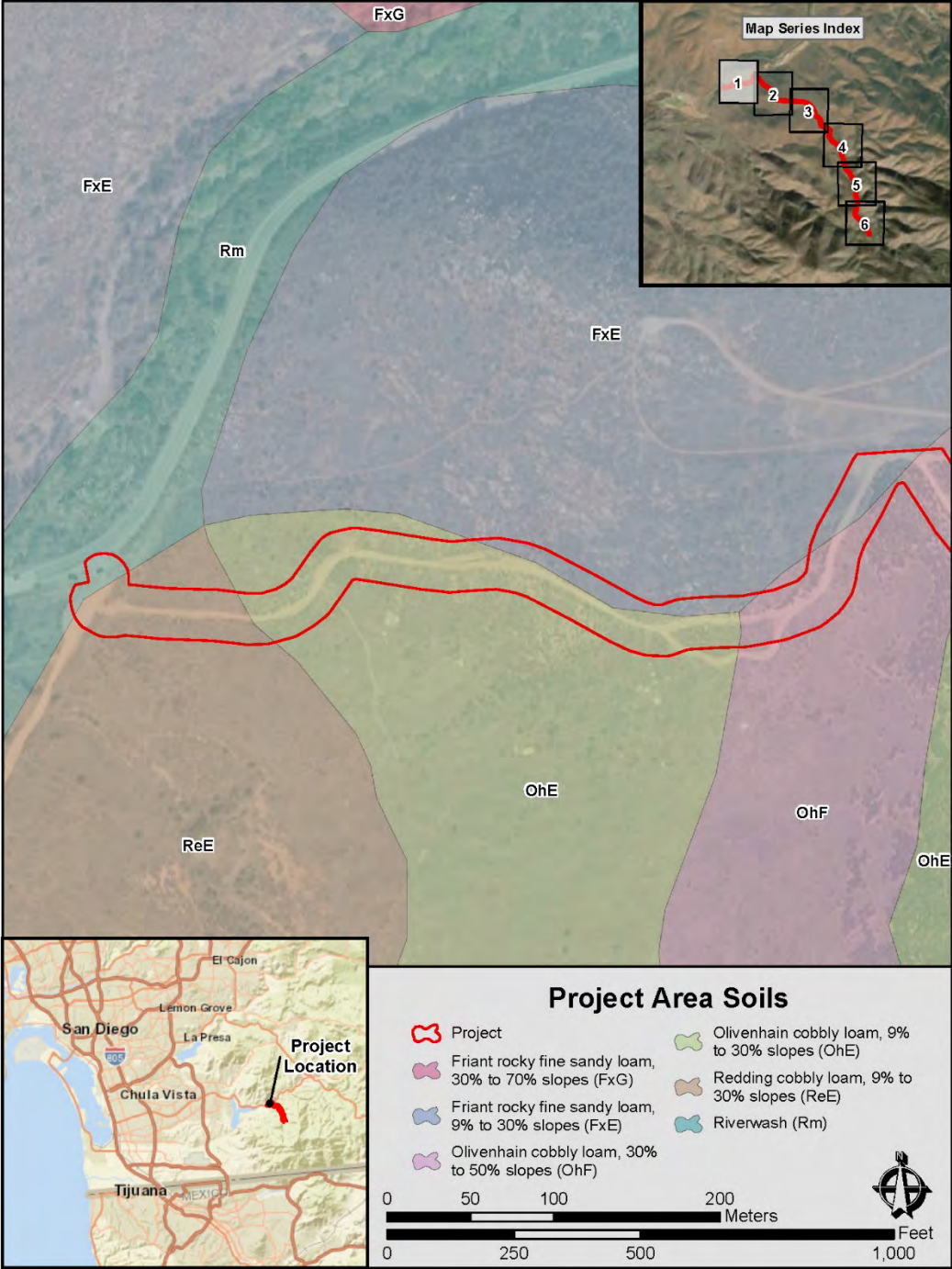


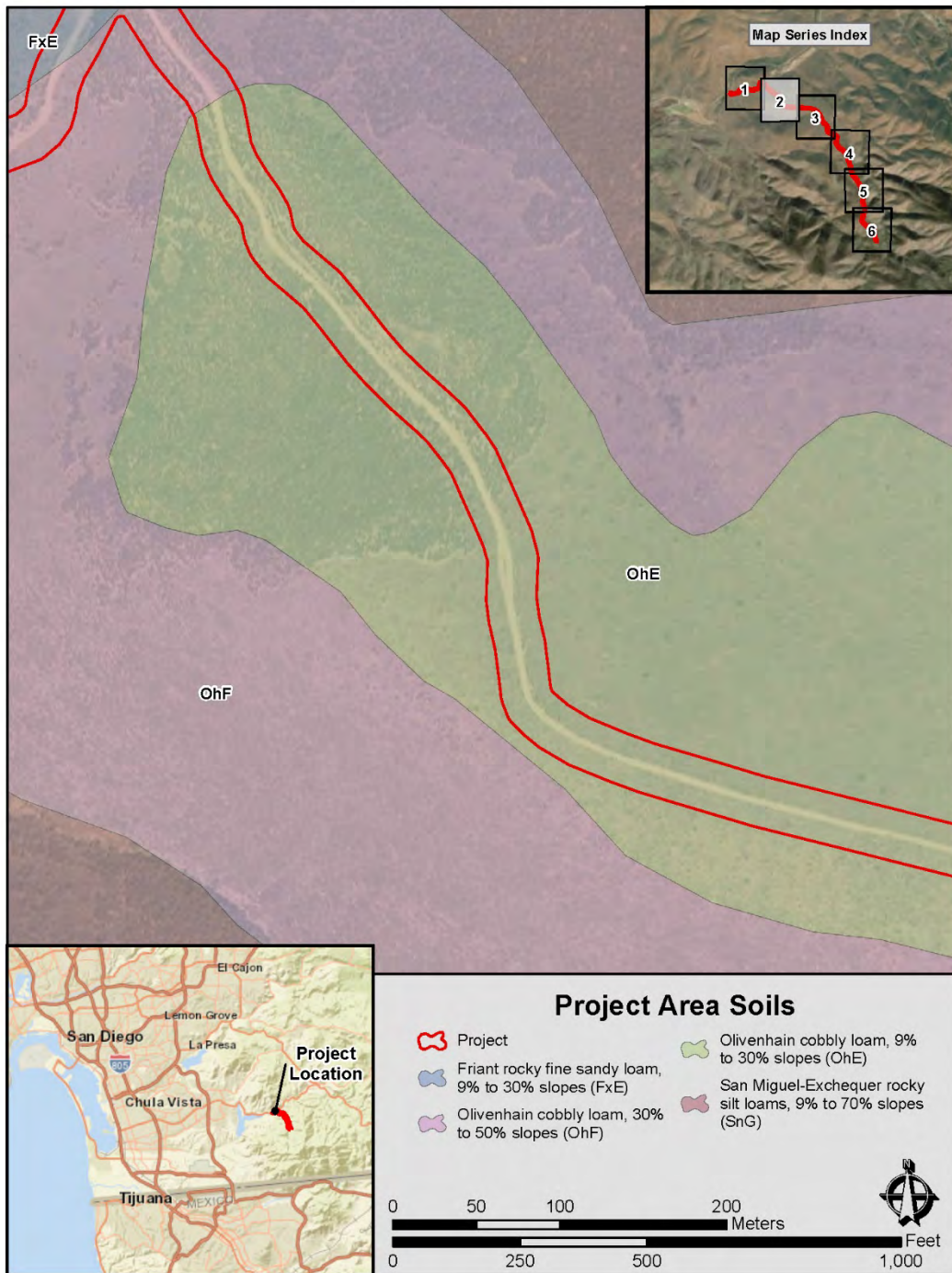


*This page left intentionally blank*

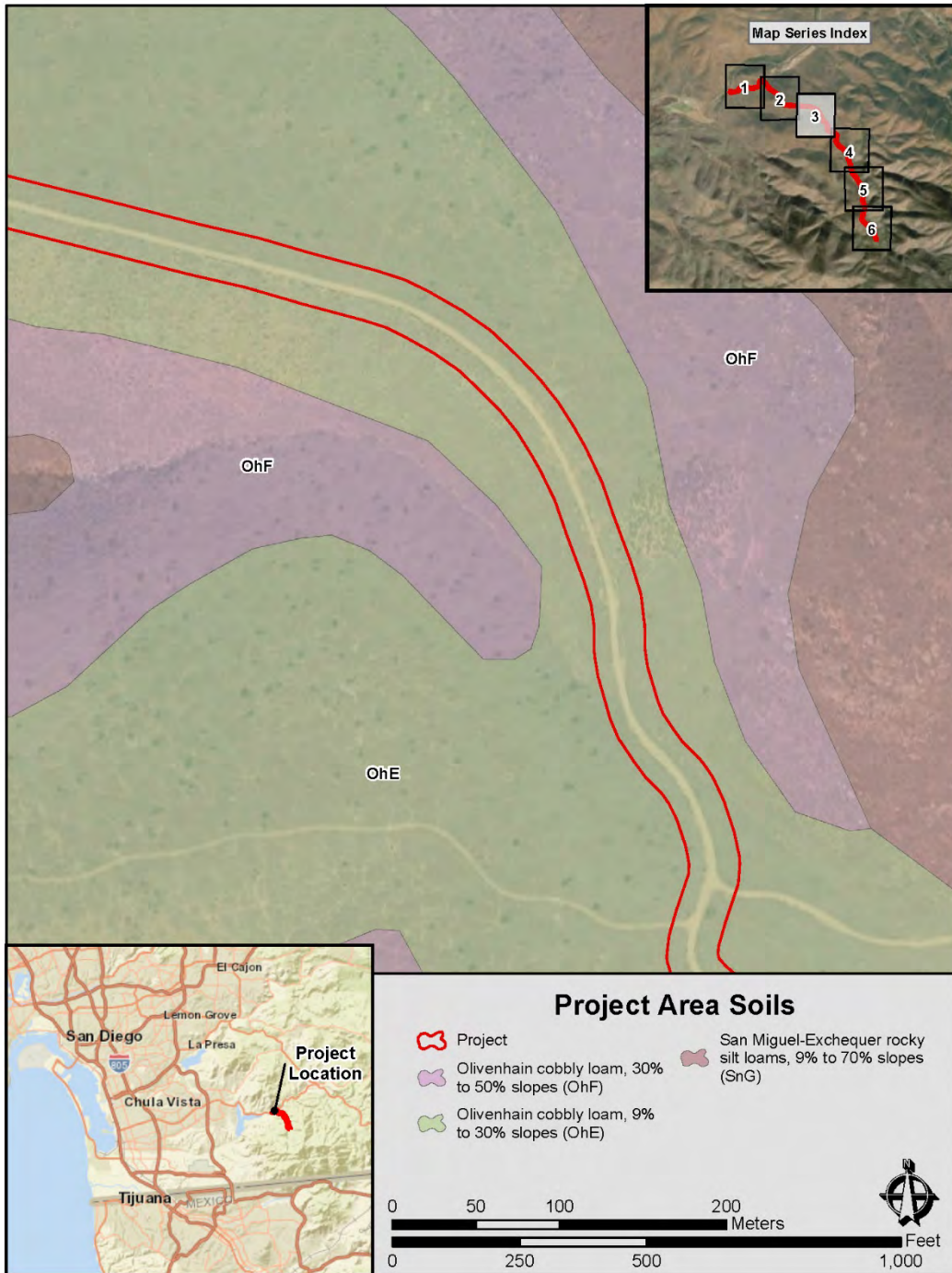
# APPENDIX F

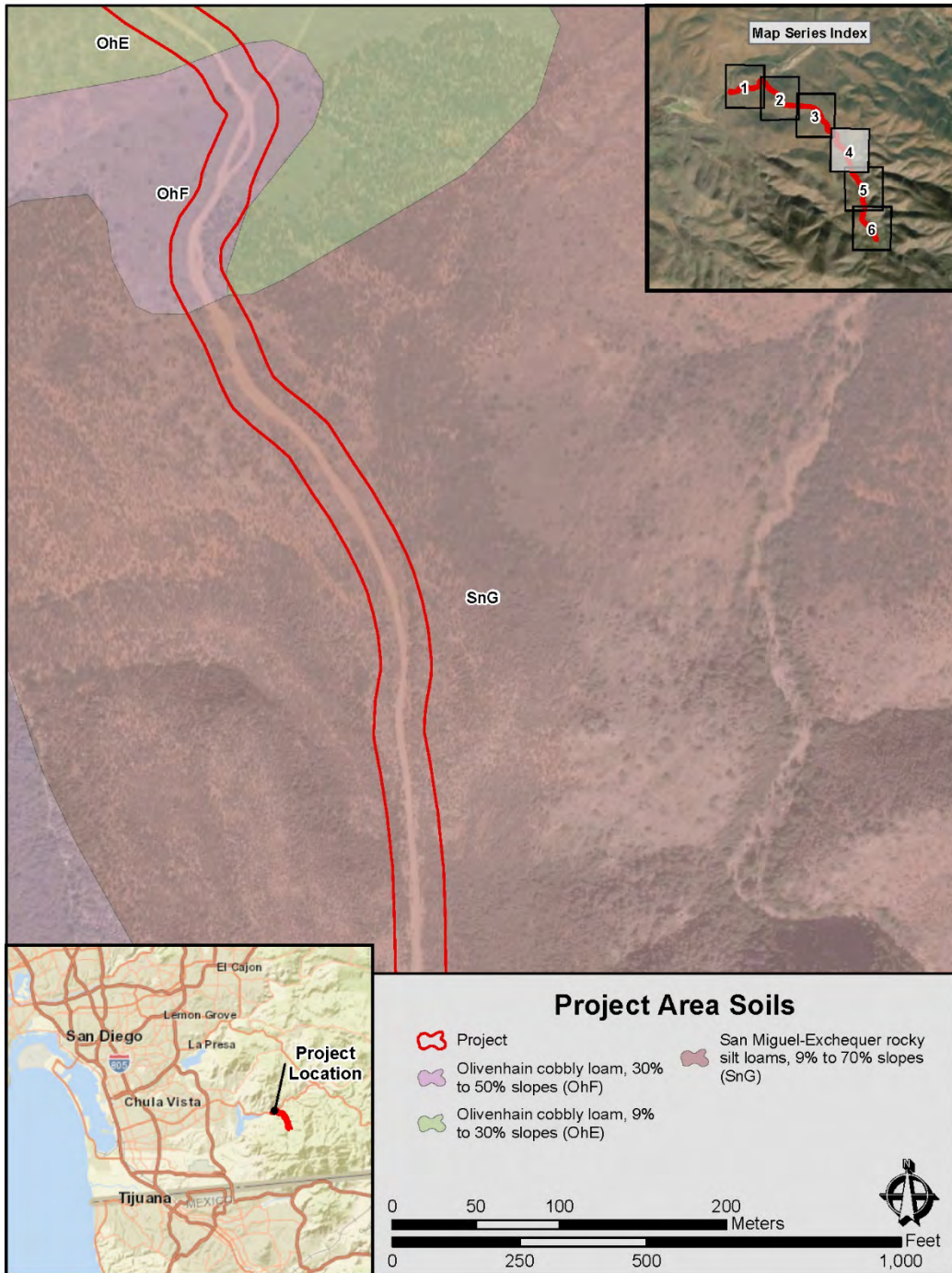
## Soils Maps



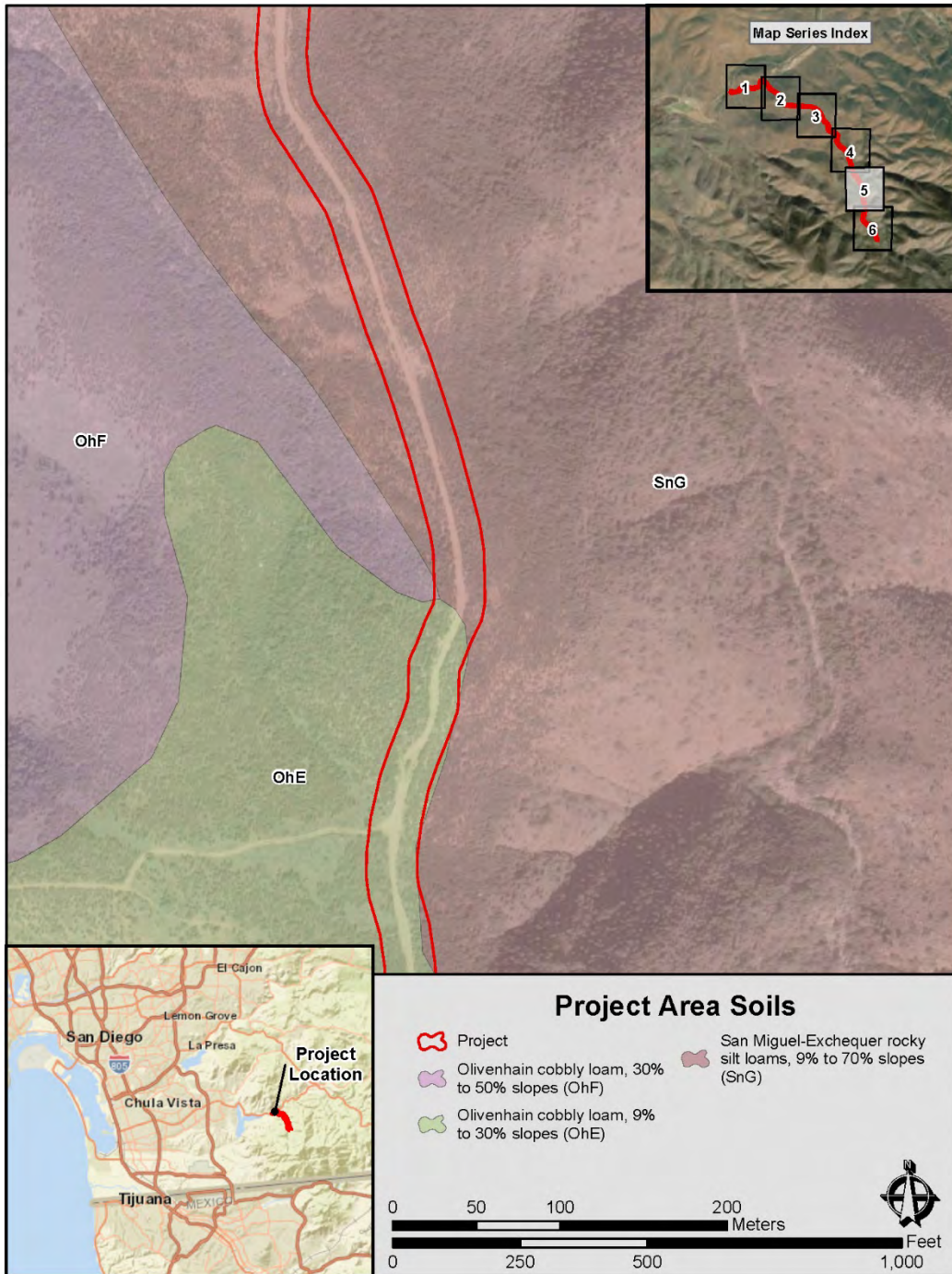


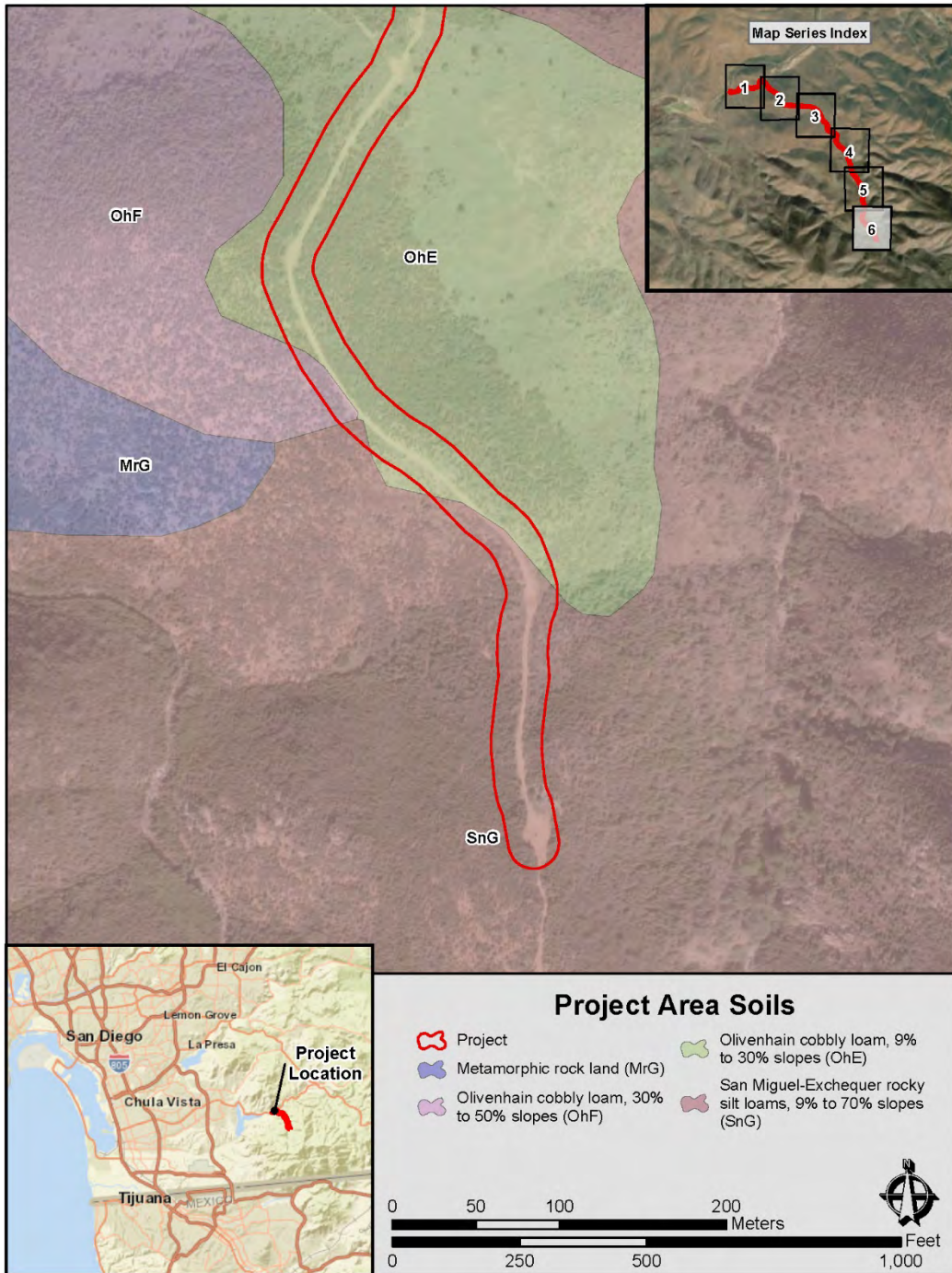














# APPENDIX G

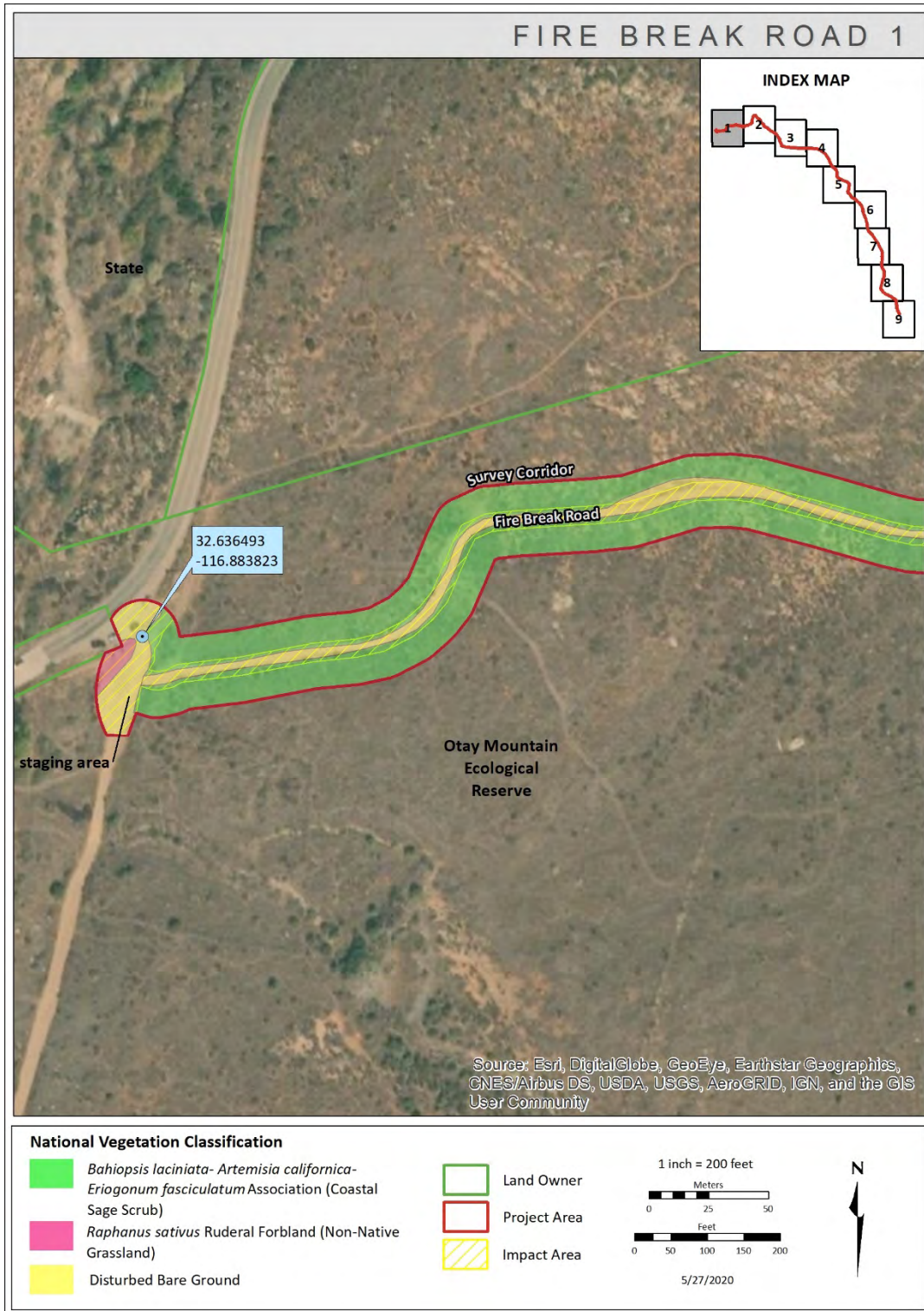
## Vegetative Community Maps



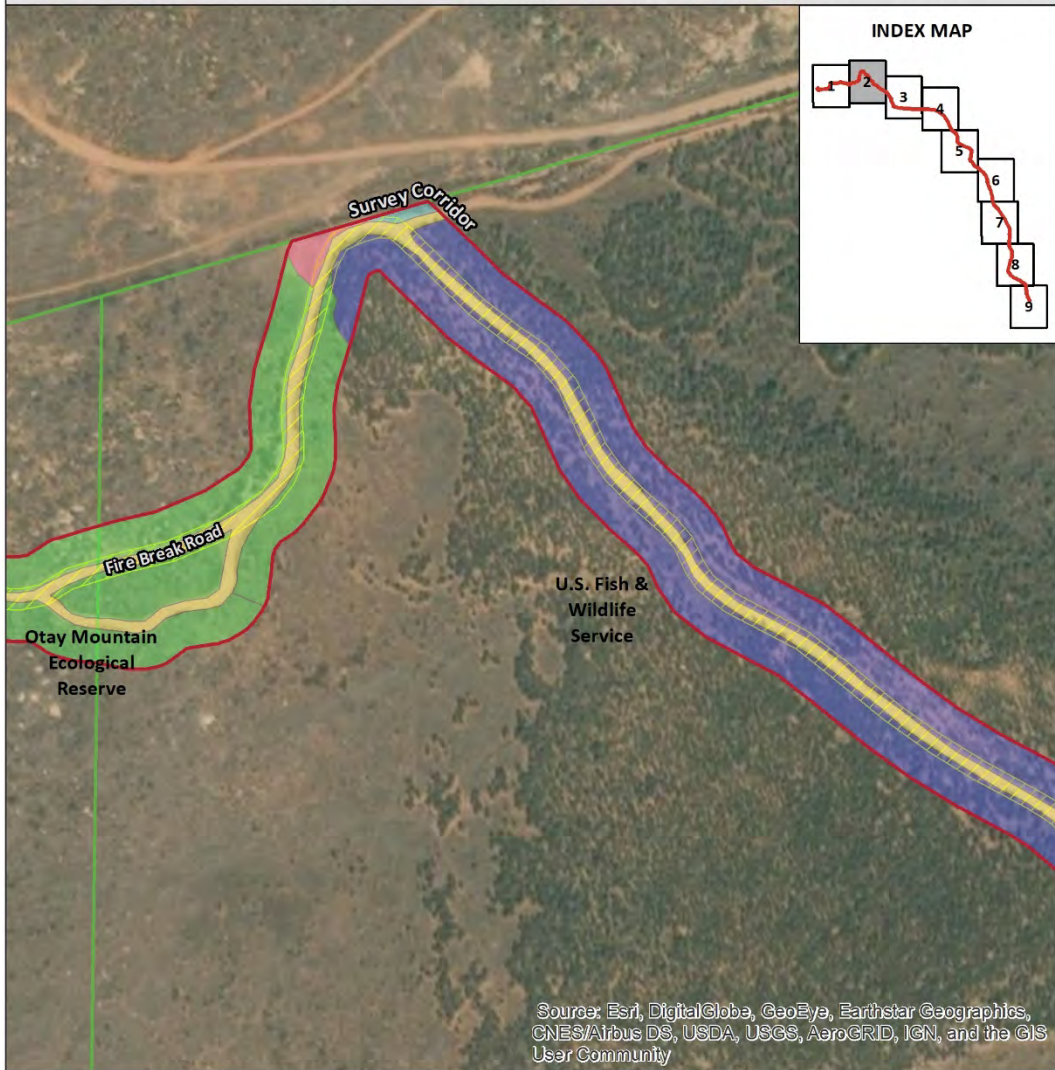
*This page left intentionally blank*

# APPENDIX G









## Vegetative Community Maps

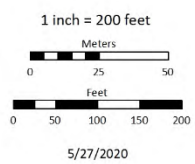


# FIRE BREAK ROAD 2



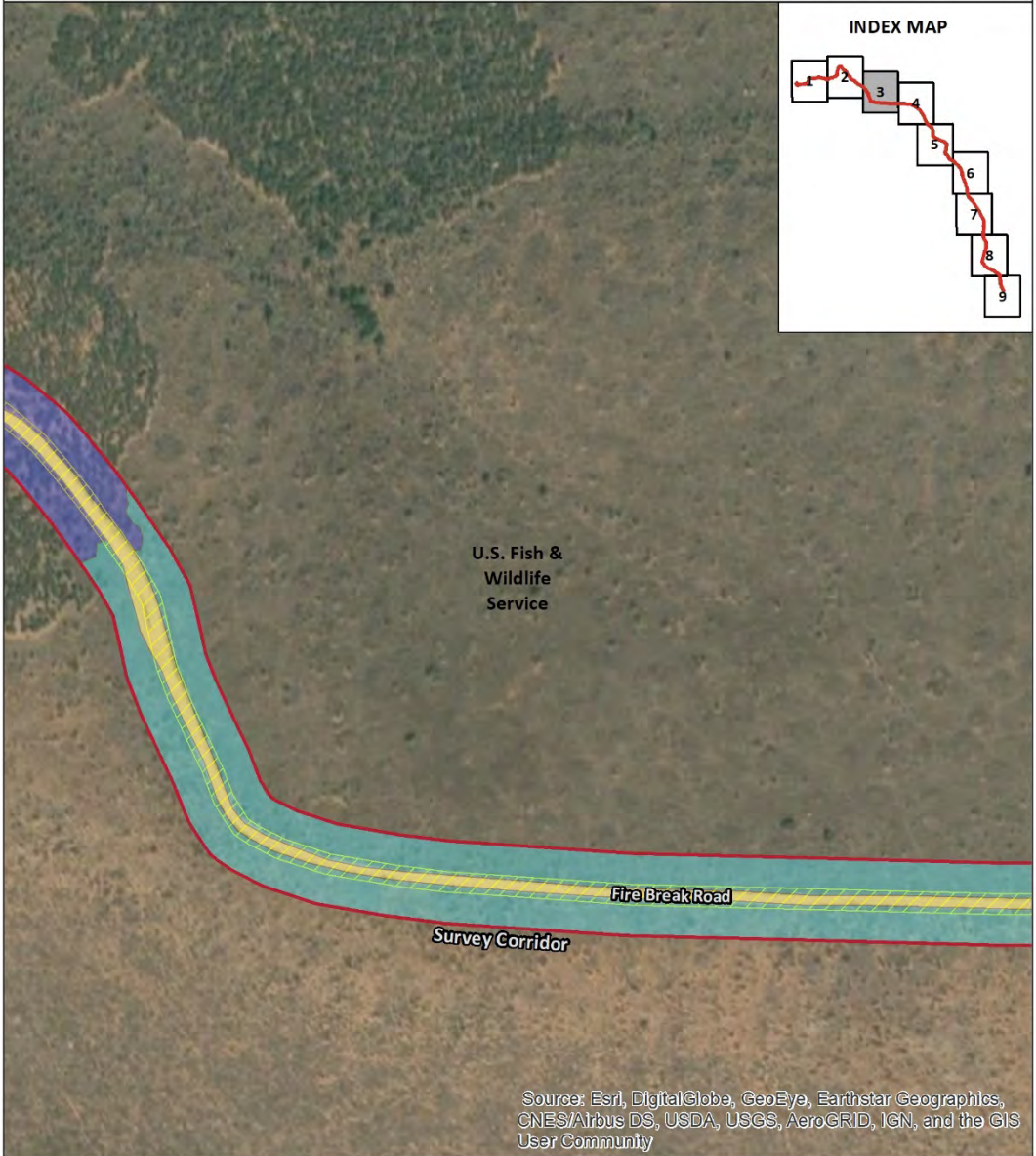
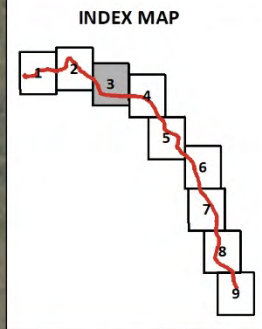
## National Vegetation Classification

- |   |   |   |                       |
|---|---|---|-----------------------|
|  | <i>Bahiopsis laciniosa- Artemisia californica- Eriogonum fasciculatum</i> Association (Coastal Sage Scrub)                          |  | Disturbed Bare Ground |
|  | <i>Adenostema fasciculatum- Xylococcus bicolor- Ceanothus tomentosus</i> Association (Chamise Chapparral)                           |  | Land Owner            |
|  | Mediterranean California Naturalized Annual and Perennial grassland Semi- Natural Stands (Non-Native Grassland/ Coastal Sage Scrub) |  | Project Area          |
|  | <i>Mediterranean California Naturalized Annual and Perennial grassland Semi- Natural Stands (Non-Native Grassland)</i>              |  | Impact Area           |






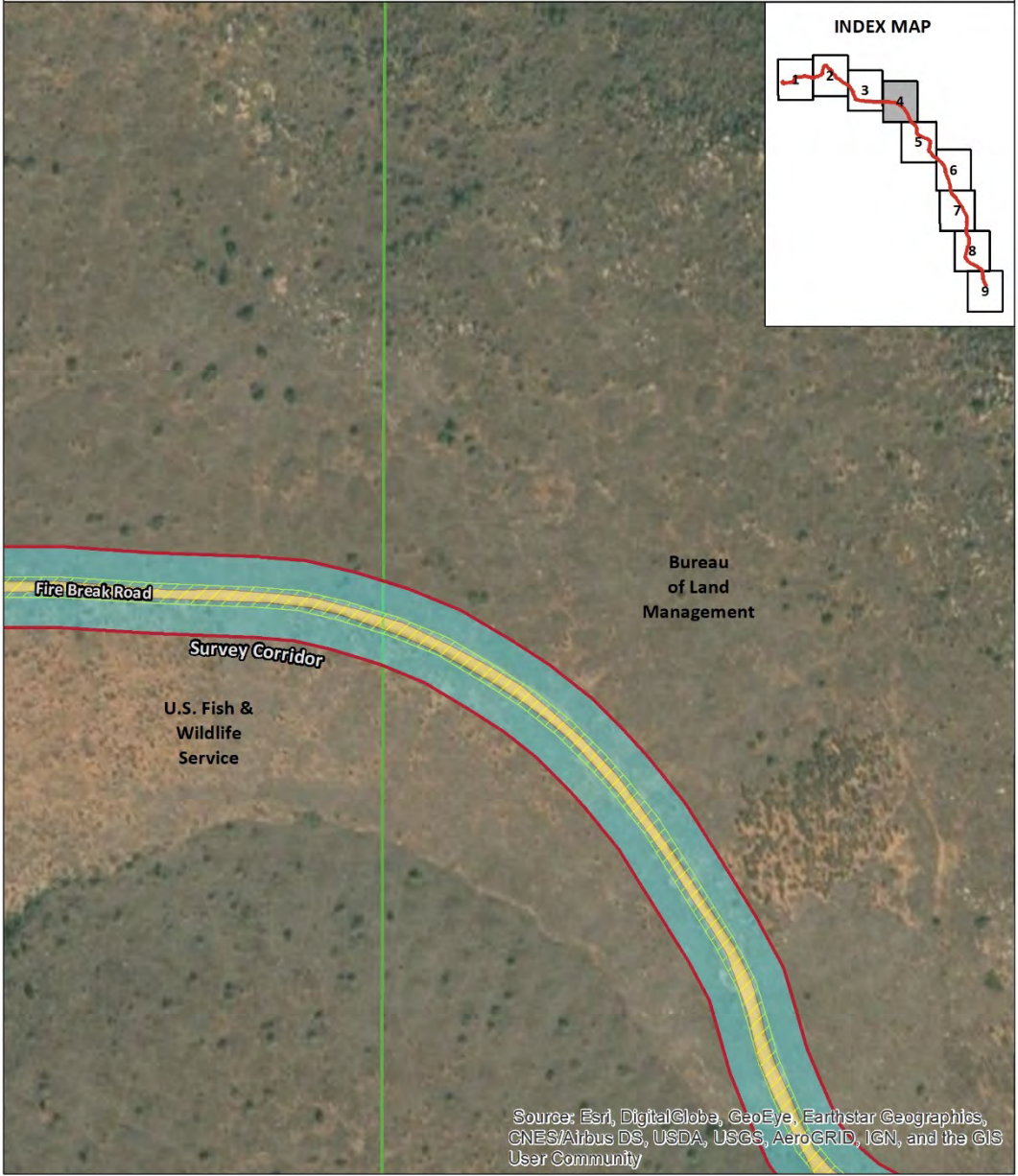
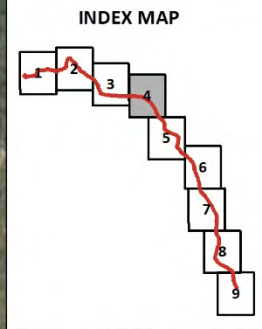
# FIRE BREAK ROAD 3



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

<b>National Vegetation Classification</b>		<p>1 inch = 200 feet</p> <p>Meters 0 25 50</p> <p>Feet 0 50 100 150 200</p> <p>5/27/2020</p>		
	<i>Adenostema fasciculatum- Xylococcus bicolor- Ceanothus tomentosus</i> Association (Chamise Chapparral)			 Land Owner
	Mediterranean California Naturalized Annual and Perennial grassland Semi- Natural Stands (Non-Native Grassland/ Coastal Sage Scrub)			 Project Area
	Disturbed Bare Ground	 Impact Area		

# FIRE BREAK ROAD 4

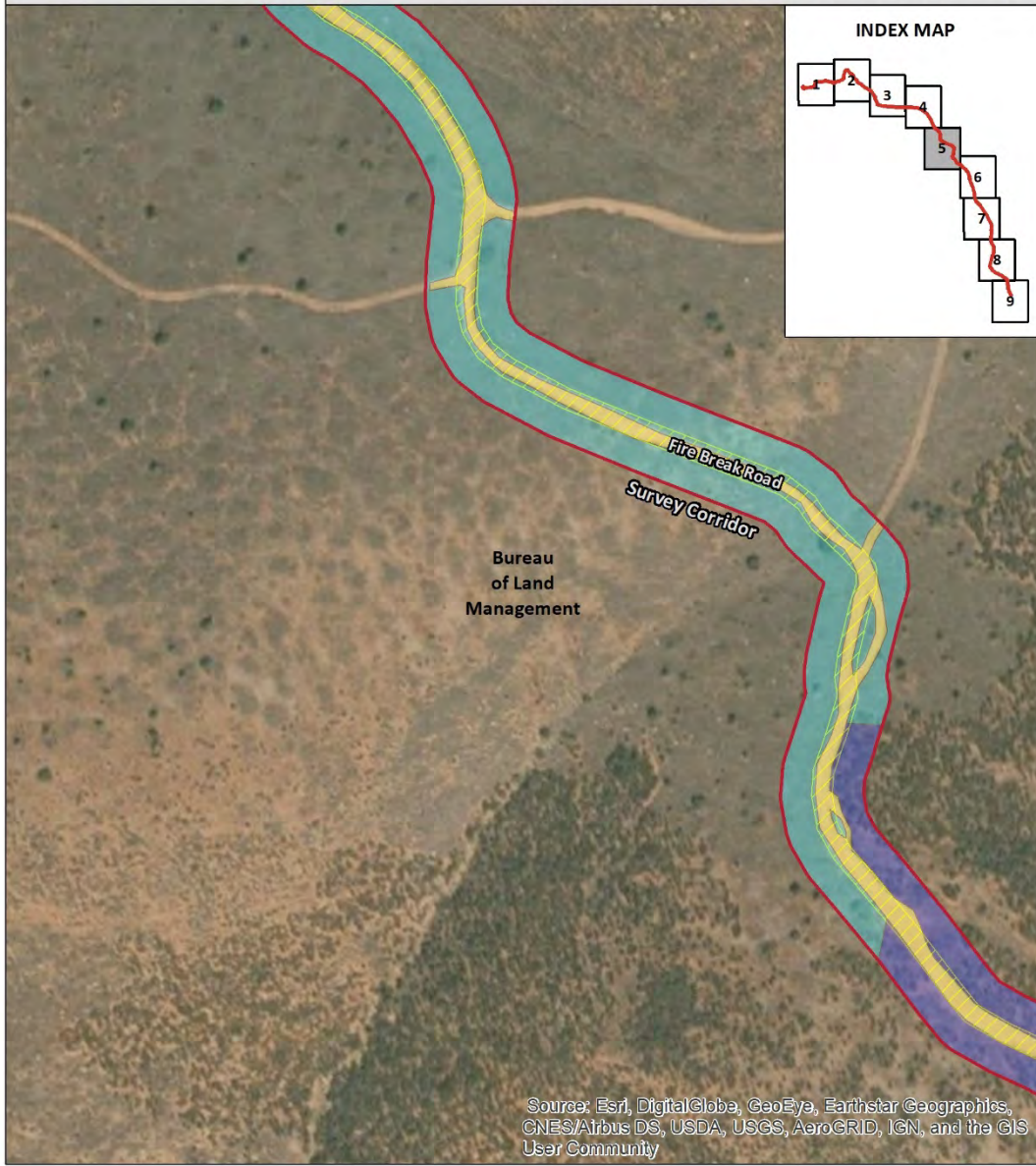


Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

<b>National Vegetation Classification</b>		<p>1 inch = 200 feet</p> <p>5/27/2020</p>	
	Mediterranean California Naturalized Annual and Perennial grassland Semi- Natural Stands (Non-Native Grassland/ Coastal Sage Scrub)		
	Disturbed Bare Ground		
	Land Owner		Project Area
			Impact Area



# FIRE BREAK ROAD 5

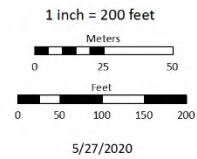


Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

## National Vegetation Classification

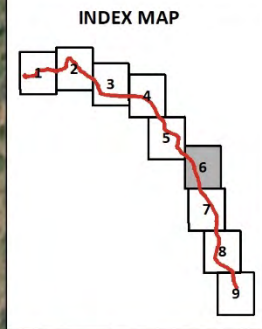
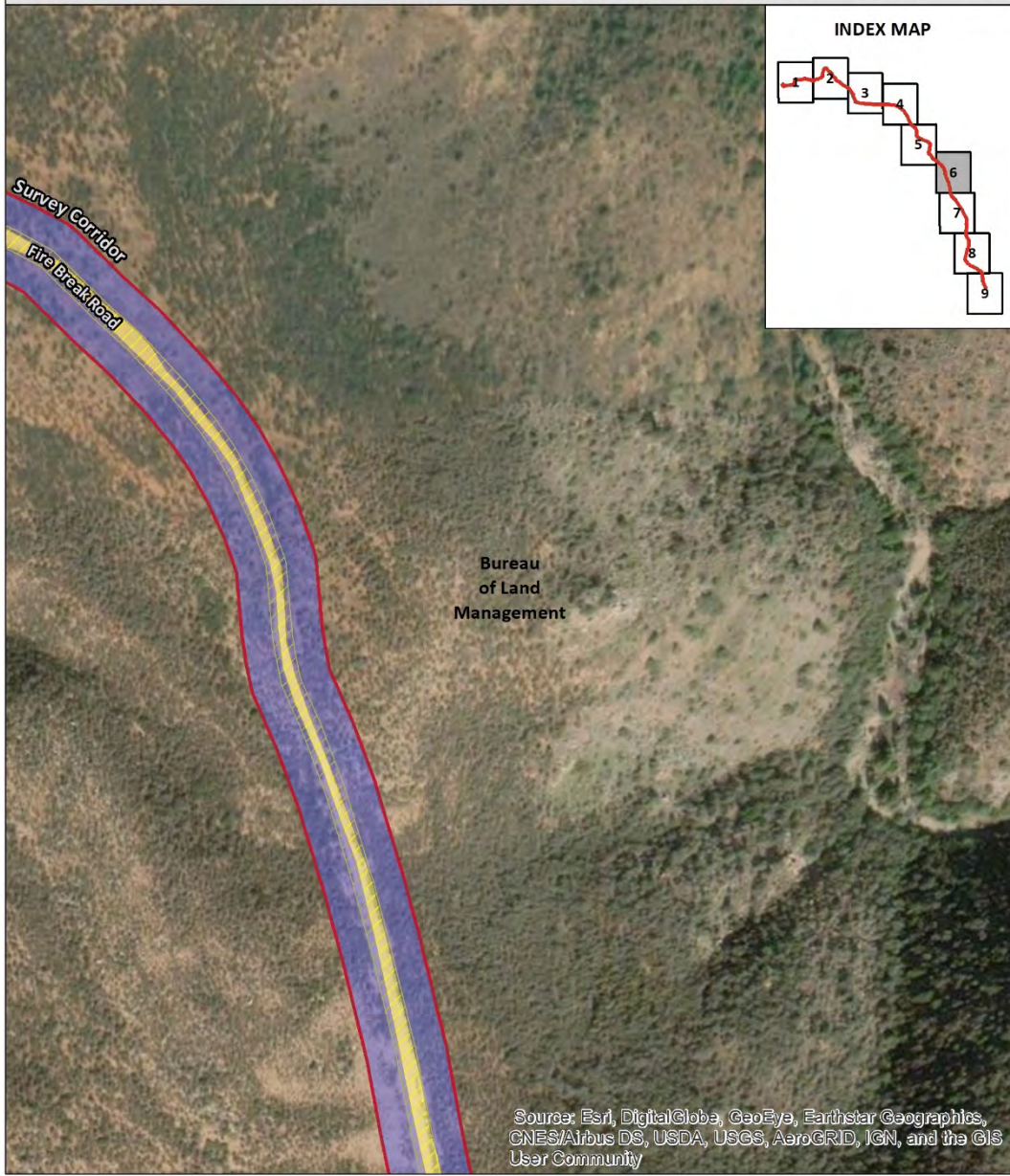
- Mediterranean California Naturalized Annual and Perennial grassland Semi- Natural Stands (Non-Native Grassland/ Coastal Sage Scrub)
- Adenostema fasciculatum*- *Xylococcus bicolor*- *Ceanothus tomentosus* Association (Chamise Chapparral)
- Disturbed Bare Ground

- Land Owner
- Project Area
- Impact Area





# FIRE BREAK ROAD 6

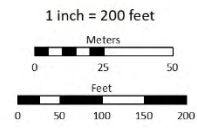


Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

## National Vegetation Classification

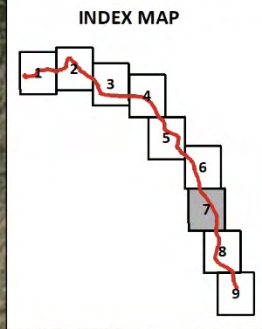
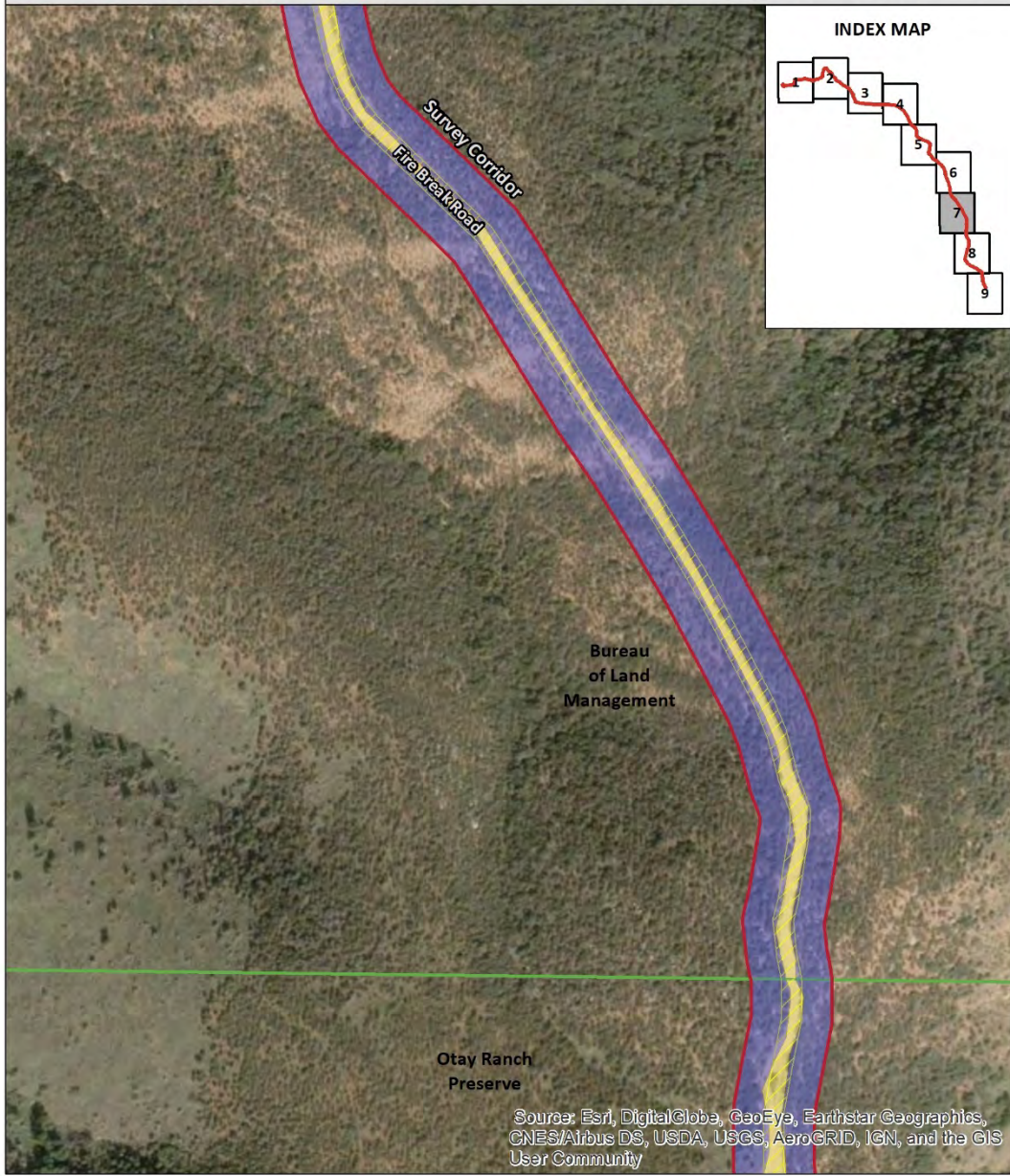
- Adenostema fasciculatum- Xylococcus bicolor- Ceanothus tomentosus* Association (Chamise Chapparral)
- Disturbed Bare Ground

- Land Owner
- Project Area
- Impact Area



5/27/2020

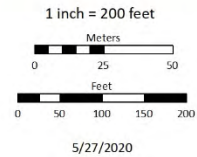
# FIRE BREAK ROAD 7



## National Vegetation Classification

- Adenostema fasciculatum- Xylococcus bicolor- Ceanothus tomentosus* Association (Chamise Chapparral)
- Disturbed Bare Ground

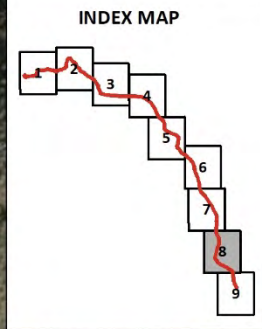
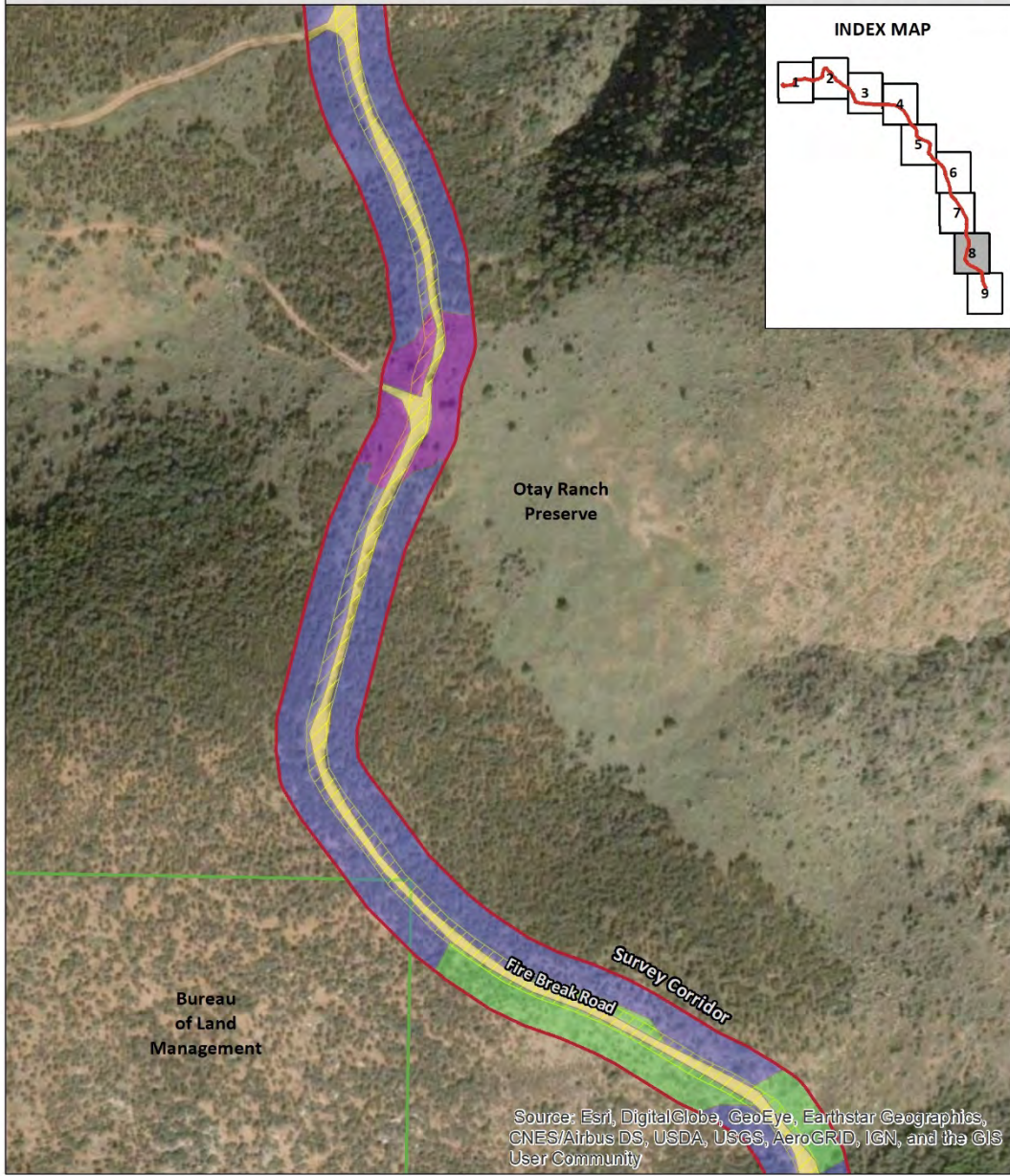
- Land Owner
- Project Area
- Impact Area



5/27/2020



# FIRE BREAK ROAD 8

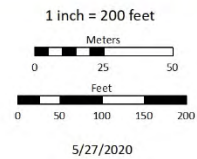


Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

## National Vegetation Classification

- Adenostoma fasciculatum*- *Xylococcus bicolor*-  
*Ceanothus tomentosus* Association (Chamise Chaparral)
- Nassella sp.* Association (Native Grassland)
- Bahiopsis lacinata*- *Artemisia californica*-  
*Eriogonium fasciculatum* Association (Coastal Sage Scrub)
- Disturbed Bare Ground

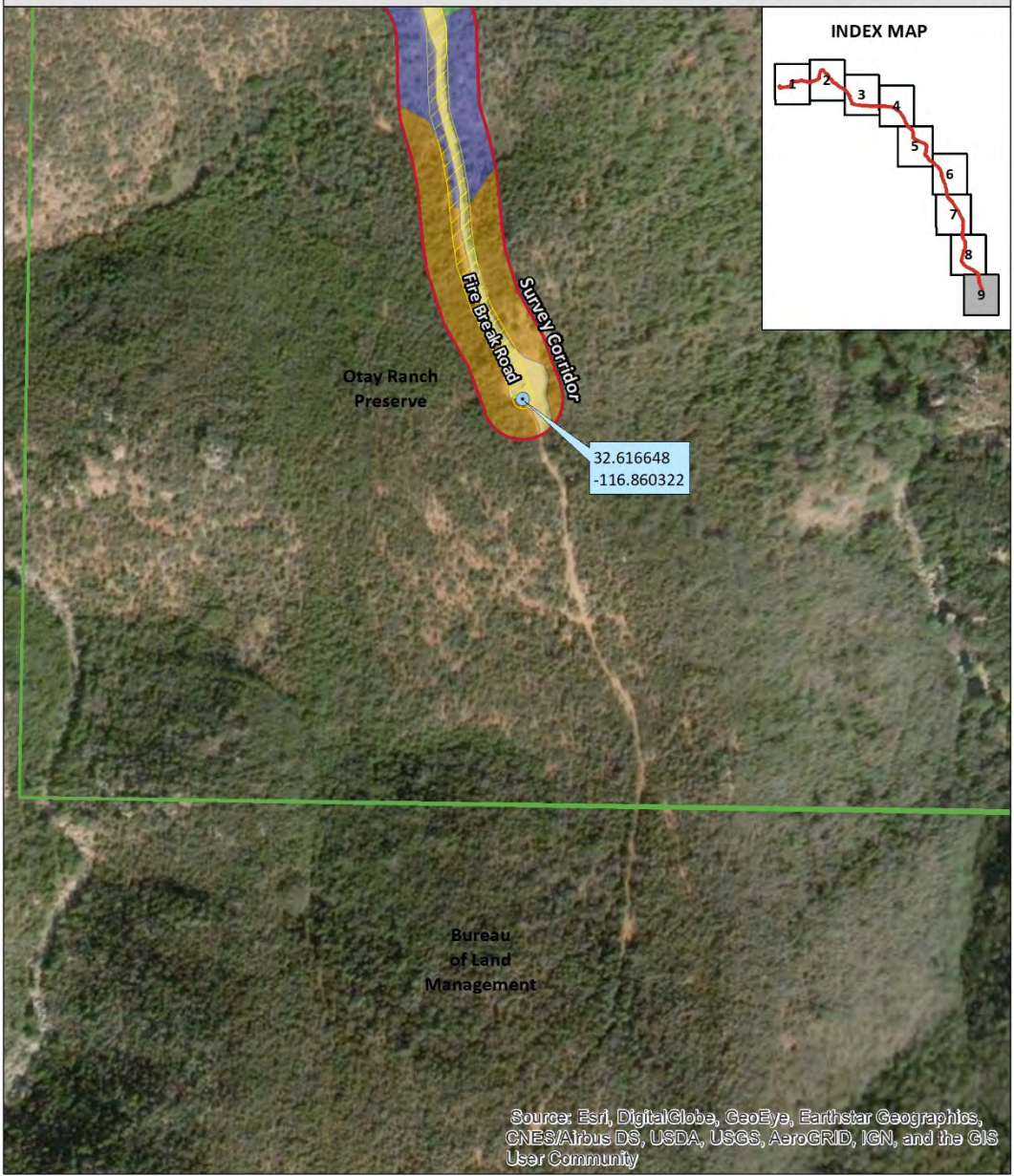
- Land Owner
- Project Area
- Impact Area



5/27/2020



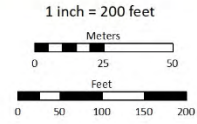
# FIRE BREAK ROAD 9



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

### National Vegetation Classification

- |   |  |   |              |
|---|--|---|--------------|
|  | <i>Adenostoma fasciculatum</i> - <i>Xylococcus bicolor</i> - <i>Ceanothus tomentosus</i> Association (Chamise Chaparral)   |  | Land Owner   |
|  | <i>Hesperocyparis forbesii</i> Alliance (Southern Interior Cypress Forest)   |  | Project Area |
|  | <i>Bahiopsis lacinata</i> - <i>Artemisia californica</i> - <i>Eriogonium fasciculatum</i> Association (Coastal Sage Scrub) |  | Impact Area  |
|  | Disturbed Bare Ground  |   |              |



5/27/2020

*This page left intentionally blank.*

# APPENDIX H

## Air Quality Emissions Calculations



*This page left intentionally blank*



# APPENDIX H

## Air Quality Emissions Calculations

---

### Worksheets in this Workbook:

<b>Summary</b>	Summarizes total emissions by calendar year for 2019 Roadway Construction Project - Firebreak Road
<b>Combustion</b>	Estimates emissions from non-road equipment exhaust.
<b>Fugitive</b>	Estimates particulate emissions from construction and demolition activities including earthmoving, vehicle traffic, and windblown dust.
<b>Grading</b>	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions.
<b>Haul Truck On-Road</b>	Estimates emissions from haul trucks hauling construction, paving, and fill materials to the job site.
<b>Construction Commuter</b>	Estimates emissions for construction workers commuting to the site.
<b>AQCR Tier Report</b>	Summarizes total emissions for the San Diego IntraState Control Region (AQCR 029) Tier report for 2014, to be used to compare 2019 Construction Project - Firebreak Road, to regional emissions.  Comparisons to local thresholds of significance and to General Conformity de minimis thresholds (if applicable) are made in the text.

*Summary  
Estimated Emissions for Firebreak Road Alternative 1*

**Air Emissions for 2019 Roadway Construction Project - Firebreak Road - Alternative 2**

<b>Construction Emissions</b>	<b>NO<sub>x</sub> (ton)</b>	<b>VOC (ton)</b>	<b>CO (ton)</b>	<b>SO<sub>2</sub> (ton)</b>	<b>PM<sub>10</sub> (ton)</b>	<b>PM<sub>2.5</sub> (ton)</b>	<b>CO<sub>2</sub> (ton)</b>
Combustion	0.337	0.020	0.136	0.029	0.021	0.020	41.50
Fugitive Dust	-	-	-	-	6.782	0.678	-
Haul Truck On-Road	0.215	0.019	0.071	0.001	0.008	0.008	58.92
Commuter	0.195	0.164	1.966	0.001	0.004	0.004	175.02
<b>TOTAL</b>	<b>0.75</b>	<b>0.20</b>	<b>2.17</b>	<b>0.03</b>	<b>6.82</b>	<b>0.71</b>	<b>275.43</b>

Note: Total PM<sub>10/2.5</sub> fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO <sub>2</sub> emissions converted to metric tons =	<b>250 metric tons</b>
State of California's CO <sub>2</sub> emissions from fuel combustion =	<b>358,600,000 metric tons (DOE 2017)</b>
Percent of California's Fuel Combustion CO <sub>2</sub> emissions =	<b>0.000%</b>
United States' CO <sub>2</sub> emissions =	<b>5,166,000,000 metric tons (DOE 2017)</b>
Percent of USA's CO <sub>2</sub> emissions =	<b>0.0000%</b>

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2017. *Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide)*. Available online <<http://www.eia.gov/environment/emissions/state/>>. 2017 data values are the most recent. Data accessed 01 December 2019.

Since future year budgets were not readily available, actual 2014 air emissions inventories for the county was used as an approximation of the regional inventory. Because the construction of Firebreak Road is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

<b>San Diego Intrastate Air Quality Control Region (AQCR 029)</b>						
<b>Point and Area Sources Combined</b>						
<b>Year</b>	<b>NO<sub>x</sub> (tpy)</b>	<b>VOC (tpy)</b>	<b>CO (tpy)</b>	<b>SO<sub>2</sub> (tpy)</b>	<b>PM<sub>10</sub> (tpy)</b>	<b>PM<sub>2.5</sub> (tpy)</b>
2014	33,871	118,864	229,143	1,236	32,592	12,488

Source: USEPA National Emissions Inventory (NEI) (<https://www.epa.gov/air-emissions-inventories/2014-national-emissions-inventory-nei-data>). Site visited

**Air Emissions from 2019 Roadway Construction Project - Firebreak Road**

<b>Point and Area Sources Combined</b>					
<b>NO<sub>x</sub> (tpy)</b>	<b>VOC (tpy)</b>	<b>CO (tpy)</b>	<b>SO<sub>2</sub> (tpy)</b>	<b>PM<sub>10</sub> (tpy)</b>	<b>PM<sub>2.5</sub> (tpy)</b>
33,871	118,864	229,143	1,236	32,592	12,488
1	0	2	0	7	1
0.0022%	0.0002%	0.0009%	0.0025%	0.0209%	0.0057%

Regional Emissions  
Emissions  
% of Regional

*Summary  
Estimated Emissions for Firebreak Road Alternative 1*

**Combustion Emissions**

Combustion Emissions of VOC, NO<sub>x</sub>, SO<sub>2</sub>, CO, PM<sub>2.5</sub>, PM<sub>10</sub>, and CO<sub>2</sub> due to Construction and Demolition

<b>General Construction and Demolition Activities</b>	<b>Area Disturbed</b>	
1.) Firebreak Road - Total paved area	117,240 ft <sup>2</sup>	Road construction assumed to be 24 ft by 12,983 ft for full segment of repair. Assuming construction activity would be limited to the final footprint of the road
2.) Firebreak Road - Construction Area	0 ft <sup>2</sup>	No general construction
Total Construction Area:	0 ft <sup>2</sup> 0.00 acres	
Total Demolition Area:	0 ft <sup>2</sup> 0.00 acres	No demolition
Total Pavement Demolition Area:	0 ft <sup>2</sup>	No demolition
Total Pavement Area:	0.00 acres 117,240 ft <sup>2</sup>	
Total Disturbed Area:	2.69 acres 117,240 ft <sup>2</sup> 2.69 acres	
Construction Duration:	12 months	It is likely that a project this size will take at least two years, but we have compressed all activities into a single year to assure a worst-case annual emission estimate.
Annual Construction Activity:	240 days	Assume 4 weeks per month, 5 days per week.

**Emission Factors Used for Construction Equipment**

References: Guide to Air Quality Assessment, SMAQMD, 2004; and U.S. EPA NONROAD Emissions Model, Version 2005.0.0  
 Factors provided are for the weighted average US fleet for CY2007.  
 Assumptions regarding the type and number of equipment are from SMAQMD Table 3-1 unless otherwise noted.

**Grading**

Equipment	No. Req <sup>d</sup> per 10 acres	NO <sub>x</sub> (lb/day)	VOC <sup>b</sup> (lb/day)	CO (lb/day)	SO <sub>2</sub> <sup>c</sup> (lb/day)	PM <sub>10</sub> (lb/day)	PM <sub>2.5</sub> (lb/day)	CO <sub>2</sub> (lb/day)
Bulldozer	1	13.60	0.96	5.50	1.02	0.89	0.87	1456.90
Motor Grader	1	9.69	0.73	3.20	0.80	0.66	0.64	1141.65
Water Truck	1	18.36	0.89	7.00	1.64	1.00	0.97	2342.98
<b>Total per 10 acres of activity</b>	<b>3</b>	<b>41.64</b>	<b>2.58</b>	<b>15.71</b>	<b>3.45</b>	<b>2.55</b>	<b>2.47</b>	<b>4941.53</b>

**Paving**

Equipment	No. Req <sup>d</sup> per 10 acres	NO <sub>x</sub> (lb/day)	VOC <sup>b</sup> (lb/day)	CO (lb/day)	SO <sub>2</sub> <sup>c</sup> (lb/day)	PM <sub>10</sub> (lb/day)	PM <sub>2.5</sub> (lb/day)	CO <sub>2</sub> (lb/day)
Paver	1	3.83	0.37	2.06	0.28	0.35	0.34	401.93
Roller	1	4.82	0.44	2.51	0.37	0.43	0.42	536.07
Truck	2	36.71	1.79	14.01	3.27	1.99	1.93	4685.95
<b>Total per 10 acres of activity</b>	<b>4</b>	<b>45.37</b>	<b>2.61</b>	<b>18.58</b>	<b>3.93</b>	<b>2.78</b>	<b>2.69</b>	<b>5623.96</b>

**Demolition**

Equipment	No. Req <sup>d</sup> per 10 acres	NO <sub>x</sub> (lb/day)	VOC <sup>b</sup> (lb/day)	CO (lb/day)	SO <sub>2</sub> <sup>c</sup> (lb/day)	PM <sub>10</sub> (lb/day)	PM <sub>2.5</sub> (lb/day)	CO <sub>2</sub> (lb/day)
Loader	1	13.45	0.99	5.58	0.95	0.93	0.90	1360.10
Haul Truck	1	18.36	0.89	7.00	1.64	1.00	0.97	2342.98
<b>Total per 10 acres of activity</b>	<b>2</b>	<b>31.81</b>	<b>1.89</b>	<b>12.58</b>	<b>2.58</b>	<b>1.92</b>	<b>1.87</b>	<b>3703.07</b>

**Building Construction**

Equipment <sup>d</sup>	No. Req <sup>d</sup> per 10 acres	NO <sub>x</sub> (lb/day)	VOC <sup>b</sup> (lb/day)	CO (lb/day)	SO <sub>2</sub> <sup>c</sup> (lb/day)	PM <sub>10</sub> (lb/day)	PM <sub>2.5</sub> (lb/day)	CO <sub>2</sub> (lb/day)
<b>Stationary</b>								
Generator Set	1	2.38	0.32	1.18	0.15	0.23	0.22	213.06
Industrial Saw	1	2.62	0.32	1.97	0.20	0.32	0.31	291.92
Welder	1	1.12	0.38	1.50	0.08	0.23	0.22	112.39
<b>Mobile (non-road)</b>								
Truck	1	18.36	0.89	7.00	1.64	1.00	0.97	2342.98
Forklift	1	5.34	0.56	3.33	0.40	0.55	0.54	572.24
Crane	1	9.57	0.66	2.39	0.65	0.50	0.49	931.93
<b>Total per 10 acres of activity</b>	<b>6</b>	<b>39.40</b>	<b>3.13</b>	<b>17.38</b>	<b>3.12</b>	<b>2.83</b>	<b>2.74</b>	<b>4464.51</b>

Note: Footnotes for tables are on following page

**Architectural Coatings**

Equipment	No. Req <sup>a</sup> per 10 acres	NO <sub>x</sub> (lb/day)	VOC <sup>b</sup> (lb/day)	CO (lb/day)	SO <sub>2</sub> <sup>c</sup>	PM <sub>10</sub> (lb/day)	PM <sub>2.5</sub> (lb/day)	CO <sub>2</sub> (lb/day)
Air Compressor	1	3.57	0.37	1.57	0.25	0.31	0.30	359.77
Total per 10 acres of activity	1	3.57	0.37	1.57	0.25	0.31	0.30	359.77

- a) The SMAQMD 2004 guidance suggests a default equipment fleet for each activity, assuming 10 acres of that activity, (e.g., 10 acres of grading, 10 acres of paving, etc.). The default equipment fleet is increased for each 10 acre increment in the size of the construction project. That is, a 26 acre project would round to 30 acres and the fleet size would be three times the default fleet for a 10 acre project.
- b) The SMAQMD 2004 reference lists emission factors for reactive organic gas (ROG). For the purposes of this worksheet ROG = VOC. The NONROAD model contains emissions factors for total HC and for VOC. The factors used here are the VOC factors.
- c) The NONROAD emission factors assume that the average fuel burned in nonroad trucks is 1100 ppm sulfur. Trucks that would be used for the Proposed Actions will all be fueled by highway grade diesel fuel which cannot exceed 500 ppm sulfur. These estimates therefore over-estimate SO<sub>2</sub> emissions by more than a factor of two.
- d) Typical equipment fleet for building construction was not itemized in SMAQMD 2004 guidance. The equipment list above was assumed based on SMAQMD 1994 guidance.

**PROJECT-SPECIFIC EMISSION FACTOR SUMMARY**

Source	Equipment Multiplier*	Project-Specific Emission Factors (lb/day)						
		NO <sub>x</sub>	VOC	CO	SO <sub>2</sub> **	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
Grading Equipment	1	41,641	2,577	15,710	3,449	2,546	2,469	4941,526
Paving Equipment	1	45,367	2,606	18,578	3,926	2,776	2,693	5623,957
Demolition Equipment	1	31,808	1,886	12,584	2,585	1,923	1,865	3703,074
Building Construction	1	39,396	3,130	17,382	3,116	2,829	2,744	4464,512
Air Compressor for Architectural Coating	1	3,574	0,373	1,565	0,251	0,309	0,300	359,773
Architectural Coating**			0,000					

\*The equipment multiplier is an integer that represents units of 10 acres for purposes of estimating the number of equipment required for the project.

\*\*Emission factor is from the evaporation of solvents during painting, per "Air Quality Thresholds of Significance", SMAQMD, 1994

Example: SMAQMD Emission Factor for Grading Equipment NO<sub>x</sub> = (Total Grading NO<sub>x</sub> per 10 acre)\*(Equipment Multiplier)

**Summary of Input Parameters**

	Total Area (ft <sup>2</sup> )	Total Area (acres)	Total Days	
Grading:	117,240	2.69	2	(from "Grading" worksheet)
Paving:	117,240	2.69	13	
Demolition:	0	0.00	0	
Building Construction:	0	0.00	0	
Architectural Coating	0	0.00	0	(per SMAQMD "Air Quality of Thresholds of Significance", 1994)

NOTE: The 'Total Days' estimate for paving is calculated by dividing the total number of acres by 0.21 acres/day, which is a factor derived from the 2005 MEANS Heavy Construction Cost Data, 19th Edition, for 'Asphaltic Concrete Pavement, Lots and Driveways - 6" stone base', which provides an estimate of square feet paved per day. There is also an estimate for 'Plain Cement Concrete Pavement', however the estimate for asphalt is used because it is more conservative. The 'Total Days' estimate for demolition is calculated by dividing the total number of acres by 0.02 acres/day, which is a factor also derived from the 2005 MEANS reference. This is calculated by averaging the demolition estimates from 'Building Demolition - Small Buildings, Concrete', assuming a height of 30 feet for a two-story building; from 'Building Footings and Foundations Demolition - 6" Thick, Plain Concrete'; and from 'Demolish, Remove Pavement and Curb - Concrete to 6" thick, rod reinforced'. Paving is double-weighted since projects typically involve more paving demolition. The 'Total Days' estimate for building construction is assumed to be 230 days, unless project-specific data is known.

**Total Project Emissions by Activity (lbs)**

	NO <sub>x</sub>	VOC	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
Grading Equipment	83.28	5.15	31.42	6.90	5.09	4.94	9,883
Paving	589.77	33.87	241.52	51.03	36.09	35.01	73,111
Demolition	-	-	-	-	-	-	0
Building Construction	-	-	-	-	-	-	0
Architectural Coatings	-	-	-	-	-	-	0
<b>Total Emissions (lbs):</b>	<b>673.06</b>	<b>39.03</b>	<b>272.94</b>	<b>57.93</b>	<b>41.18</b>	<b>39.94</b>	<b>82,994</b>

**Results: Total Project Annual Emission Rates**

	NO <sub>x</sub>	VOC	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
Total Project Emissions (lbs)	673.06	39.03	272.94	57.93	41.18	39.94	82,994
Total Project Emissions (tons)	0.337	0.020	0.136	0.029	0.021	0.020	41,497

**Construction Fugitive Dust Emissions**

**Construction Fugitive Dust Emission Factors**

	<b>Emission Factor</b>	<b>Units</b>	<b>Source</b>
Construction and Demolition Activities	0.19 ton	PM <sub>10</sub> /acre-month	MRI 1996; EPA 2001; EPA 2006
New Road Construction	0.42 ton	PM <sub>10</sub> /acre-month	MRI 1996; EPA 2001; EPA 2006

**PM<sub>2.5</sub> Emissions**

PM <sub>2.5</sub> Multiplier	0.10	(10% of PM <sub>10</sub> emissions assumed to be PM <sub>2.5</sub> )	EPA 2001; EPA 2006
------------------------------	------	--	--------------------

**Control Efficiency**

0.50	(assume 50% control efficiency for PM <sub>10</sub> and PM <sub>2.5</sub> emissions)	EPA 2001; EPA 2006
------	--	--------------------

**Project Assumptions**

**New Roadway Construction (0.42 ton PM<sub>10</sub>/acre-month)**

Duration of Construction Project	12 months	(from Project Combustion worksheet)
Area	2.69 acres	(from Project Combustion worksheet)

**General Construction and Demolition Activities (0.19 ton PM<sub>10</sub>/acre-month)**

Duration of Project	12 months	(from Project Combustion worksheet)
Area	0.00 acres	(from Project Combustion worksheet)

	<b>Project Emissions (tons/year)</b>			
	<b>PM<sub>10</sub> uncontrolled</b>	<b>PM<sub>10</sub> controlled</b>	<b>PM<sub>2.5</sub> uncontrolled</b>	<b>PM<sub>2.5</sub> controlled</b>
New Roadway Construction	13.565	6.782	1.356	0.678
General Construction Activities	0.000	0.000	0.000	0.000
<b>Total</b>	<b>13.565</b>	<b>6.782</b>	<b>1.356</b>	<b>0.678</b>



## Construction Fugitive Dust Emission Factors

### General Construction Activities Emission Factor

**0.19 ton PM<sub>10</sub>/acre-month** Source: MRI 1996; EPA 2001; EPA 2006

The area-based emission factor for construction activities is based on a study completed by the Midwest Research Institute (MRI) Improvement of Specific Emission Factors (BACM Project No. 1), March 29, 1996. The MRI study evaluated seven construction projects in Nevada and California (Las Vegas, Coachella Valley, South Coast Air Basin, and the San Joaquin Valley). The study determined an average emission factor of 0.11 ton PM<sub>10</sub>/acre-month for sites without large-scale cut/fill operations. A worst-case emission factor of 0.42 ton PM<sub>10</sub>/acre-month was calculated for sites with active large-scale earth moving operations. The monthly emission factors are based on 168 work-hours per month (MRI 1996). A subsequent MRI Report in 1999, Estimating Particulate Matter Emissions From Construction Operations, calculated the 0.19 ton PM<sub>10</sub>/acre-month emission factor by applying 25% of the large-scale earthmoving emission factor (0.42 ton PM<sub>10</sub>/acre-month) and 75% of the average emission factor (0.11 ton PM<sub>10</sub>/acre-month). The 0.19 ton PM<sub>10</sub>/acre-month emission factor is referenced by the EPA for non-residential construction activities in recent procedures documents for the National Emission Inventory (EPA 2001; EPA 2006). The 0.19 ton PM<sub>10</sub>/acre-month emission factor represents a refinement of EPA's original AP-42 area-based total suspended particulate (TSP) emission factor in Section 13.2.3 Heavy Construction Operations. In addition to the EPA, this methodology is also supported by the South Coast Air Quality Management District as well as the Western Regional Air Partnership (WRAP) which is funded by the EPA and is administered jointly by the Western Governor's Association and the National Tribal Environmental Council. The emission factor is assumed to encompass a variety of non-residential construction activities including building construction (commercial, industrial, institutional, governmental), public works, and travel on unpaved roads. The EPA National Emission Inventory documentation assumes that the emission factors are uncontrolled and recommends a control efficiency of 50% for PM<sub>10</sub> and PM<sub>2.5</sub> in PM nonattainment areas.

### New Road Construction Emission Factor

**0.42 ton PM<sub>10</sub>/acre-month** Source: MRI 1996; EPA 2001; EPA 2006

The emission factor for new road construction is based on the worst-case conditions emission factor from the MRI 1996 study described above (0.42 tons PM<sub>10</sub>/acre-month). It is assumed that road construction involves extensive earthmoving and heavy construction vehicle travel resulting in emissions that are higher than other general construction projects. The 0.42 ton PM<sub>10</sub>/acre-month emission factor for road construction is referenced in recent procedures documents for the EPA National Emission Inventory (EPA 2001; EPA 2006).

### PM<sub>2.5</sub> Multiplier

**0.10**

PM<sub>2.5</sub> emissions are estimated by applying a particle size multiplier of 0.10 to PM<sub>10</sub> emissions. This methodology is consistent with the procedures documents for the National Emission Inventory (EPA 2006).

### Control Efficiency for PM<sub>10</sub> and PM<sub>2.5</sub>

**0.50**

The EPA National Emission Inventory documentation recommends a control efficiency of 50% for PM<sub>10</sub> and PM<sub>2.5</sub> in PM nonattainment areas (EPA 2006). Wetting controls will be applied during project construction.

### References:

EPA 2001. *Procedures Document for National Emissions Inventory, Criteria Air Pollutants, 1985-1999*. EPA-454/R-01-006. Office of Air Quality Planning and Standards, United States Environmental Protection Agency. March 2001.

EPA 2006. *Documentation for the Final 2002 Nonpoint Sector (Feb 06 version) National Emission Inventory for Criteria and Hazardous Air Pollutants*. Prepared for: Emissions Inventory and Analysis Group (C339-02) Air Quality Assessment Division Office of Air Quality Planning and Standards, United States Environmental Protection Agency. July 2006.

MRI 1996. *Improvement of Specific Emission Factors (BACM Project No. 1)*. Midwest Research Institute (MRI). Prepared for the California South Coast Air Quality Management District, March 29, 1996.

**Grading Schedule**

Estimate of time required to grade a specified area.

Input Parameters

Construction area: 2.69 acres/yr (from Combustion Worksheet)  
 Qty Equipment: 3.00 (calculated based on 3 pieces of equipment for every 10 acres)

Assumptions

Terrain is mostly flat.  
 An average of 6" soil is excavated from one half of the site and backfilled to the other half of the site; no soil is hauled off-site or borrowed.  
 200 hp bulldozers are used for site clearing.  
 300 hp bulldozers are used for stripping, excavation, and backfill.  
 Vibratory drum rollers are used for compacting.  
 Stripping, Excavation, Backfill and Compaction require an average of two passes each.  
 Excavation and Backfill are assumed to involve only half of the site.

Calculation of days required for one piece of equipment to grade the specified area.

Reference: Means Heavy Construction Cost Data, 19th Ed., R. S. Means, 2005.

Means Line No.	Operation	Description	Output	Units	Acres per equip-day	equip-days per acre	Acres/yr (project-specific)	Equip-days per year
2230 200 0550	Site Clearing	Dozer & rake, medium brush	8	acre/day	8	0.13	2.69	0.34
2230 500 0300	Stripping	Topsoil & stockpiling, adverse soil	1,650	cu. yd/day	2.05	0.49	2.69	1.32
2315 432 5220	Excavation	Bulk, open site, common earth, 150' haul	800	cu. yd/day	0.99	1.01	1.35	1.36
2315 120 5220	Backfill	Structural, common earth, 150' haul	1,950	cu. yd/day	2.42	0.41	1.35	0.56
2315 310 5020	Compaction	Vibrating roller, 6" lifts, 3 passes	2,300	cu. yd/day	2.85	0.35	2.69	0.94
<b>TOTAL</b>								<b>4.51</b>

Calculation of days required for the indicated pieces of equipment to grade the designated acreage.

(Equip)(day)/yr: 4.51  
 Qty Equipment: 3.00  
 Grading days/yr: 1.50

**Haul Truck Emissions**

Emissions from hauling paving and excavated material are estimated in this spreadsheet.

Emission Estimation Method: AFCEE Air Emissions Factor Guide to Air Force Mobile Sources, Oct. 2014.

**Fill and Excavation Materials Assumptions:**

Haul trucks carry 20 cubic yards of soil per trip, but averaging in trucks carrying redi-mix concrete and other construction supplies, assume 10 cubic yards per truck. The average distance from the project site to Baltimore or northern DC metro area is 20 miles; therefore, a haul truck will travel 40 miles round trip. Estimated number of trips required by haul trucks = total amount of material/10 cubic yards per truck. This alternative includes an acre of trees that will likely need to be removed, including the heavy roots that must be removed so that they do not decompose and open voids beneath the pavement. If all the trees were mature trees, it would take about 50 trees to cover an acre. Therefore, 25 additional truck loads have been added to the standard truck trip calculation to account for hauling away the green waste.

Amount of Materials for Other Structures/Equipment =	0 cubic yards	Assume cubic yards of materials for other structures is based on the area of disturbance plus the area of demolition listed on Project Combustion tab, times 3 feet deep.
Amount of Excavation Material for Paving =	4,342 cubic yards	Paving area from Project Combustion tab, multiplied by depth of disturbance which is assumed to be 1 foot.
Amount of Paving Materials =	4,342 cubic yards	Paving area from Project Combustion tab, multiplied by 1 foot deep.
Number of trucks required =	893 heavy duty diesel haul truck trips.	calculated from the cubic yards above, plus 25 trips for an acre of trees.
Miles per round trip =	40 miles	

**Heavy Duty Diesel Vehicle (HDDV) Average Emission Factors (grams/mile)**

	NO <sub>x</sub>	VOC	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
HDDV	5.447	0.488	1.814	0.013	0.215	0.198	1495.6

Notes:

Emission factors for all pollutants are from Table 5-23 - On-Road Vehicle Emission Factors – 2018 - Maryland AFCEE Air Emissions Factor Guide to Air Force Mobile Sources, Jul 2016.

**HDDV Haul Truck Emissions**

	NO <sub>x</sub>	VOC	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
lbs	429.15	38.45	142.92	1.02	16.94	15.60	117833.90
tons	0.215	0.019	0.071	0.001	0.008	0.008	58.917

Any paving requires some sort of compacted uniform base. Assume that native soil will not do, so you will have to import about 6" of base. The thickness of the paving itself will range from 2 1/2" for a sidewalk or residential driveway, to 4" for a street or parking lot that carries trucks, to 6" for state/interstate highway that carries heavy trucks, to 1'-3' for runways and aprons that carry heavy aircraft. Note that any of these dimensions may double, depending upon local soil stability and expected unusual loads.

**Construction Commuter Emissions**

Emissions from construction workers commuting to the job site are estimated in this spreadsheet.

Emission Estimation Method: Emission factors are from the AFCEC Air Emissions Guide for Air Force Mobile Sources, July 2016.

Assumptions:

Light Duty Gasoline Truck (LDGT) vehicle emission factors for scenario year 2018 are used.  
 The average roundtrip commute for a construction worker = 30 miles  
 Number of construction days = 240 days (from Project Combustion worksheet)  
 Number of construction workers (daily) = 50 people

**On-Road Vehicle (LDGT) Emission Factors for Year 2018 (grams/mile)**

NO <sub>x</sub>	VOC	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
0.492	0.413	4.954	0.003	0.011	0.010	441

Emission factors for all pollutants are from Table 5-23 - On-Road Vehicle Emission Factors – 2018 - Maryland AFCEE Air Emissions Factor Guide to Air Force Mobile Sources, Jul 2016.

**Construction Commuter Emissions**

	NO <sub>x</sub>	VOC	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
lbs	390.5	327.8	3932	2.38	8.73	7.94	350036
tons	0.195	0.164	1.966	0.001	0.004	0.004	175.02

Example						
	0.492 g NO <sub>x</sub> /mi		30 miles roundtrip		50 workers	240 days/yr
				=	390.5	lb NO <sub>x</sub> /yr

**Worksheets in this Workbook:**

<b>Summary</b>	Summarizes total emissions by calendar year for 2019 Roadway Construction Project - Firebreak Road
<b>Combustion</b>	Estimates emissions from non-road equipment exhaust.
<b>Fugitive</b>	Estimates particulate emissions from construction and demolition activities including earthmoving, vehicle traffic, and windblown dust.
<b>Grading</b>	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions.
<b>Haul Truck On-Road</b>	Estimates emissions from haul trucks hauling construction, paving, and fill materials to the job site.
<b>Construction Commuter</b>	Estimates emissions for construction workers commuting to the site.
<b>AQCR Tier Report</b>	Summarizes total emissions for the San Diego Intrastate Control Region (AQCR 029) Tier report for 2011, to be used to compare 2019 Construction Project - Firebreak Road, to regional emissions.  Comparisons to local thresholds of significance and to General Conformity de minimis thresholds (if applicable) are made in the text.

**Air Emissions for 2019 Roadway Construction Project - Firebreak Road - Alternatives 2 and 3**

<b>Construction Emissions</b>	<b>NO<sub>x</sub> (ton)</b>	<b>VOC (ton)</b>	<b>CO (ton)</b>	<b>SO<sub>2</sub> (ton)</b>	<b>PM<sub>10</sub> (ton)</b>	<b>PM<sub>2.5</sub> (ton)</b>	<b>CO<sub>2</sub> (ton)</b>
Combustion	0.877	0.051	0.357	0.076	0.054	0.052	108.30
Fugitive Dust	-	-	-	-	18.026	1.803	-
Haul Truck On-Road	0.560	0.050	0.187	0.001	0.022	0.020	153.85
Commuter	0.195	0.164	1.966	0.001	0.004	0.004	175.02
<b>TOTAL</b>	<b>1.63</b>	<b>0.26</b>	<b>2.51</b>	<b>0.08</b>	<b>18.11</b>	<b>1.88</b>	<b>437.17</b>

Note: Total PM<sub>10/2.5</sub> fugitive dust emissions are assuming USEPA 50% control efficiencies.

CO <sub>2</sub> emissions converted to metric tons =	<b>397 metric tons</b>
State of California's CO <sub>2</sub> emissions from fuel combustion =	<b>358,600,000 metric tons (DOE 2017)</b>
Percent of California's Fuel Combustion CO <sub>2</sub> emissions =	<b>0.000%</b>
United States' CO <sub>2</sub> emissions =	<b>5,166,000,000 metric tons (DOE 2017)</b>
Percent of USA's CO <sub>2</sub> emissions =	<b>0.00001%</b>

Source: U.S. Department of Energy, Energy Information Administration (U.S. DOE/EIA). 2017. *Table 1. State Emissions by Year (Million Metric Tons of Carbon Dioxide)*. Available online <<http://www.eia.gov/environment/emissions/state/>>. 2017 data values are the most recent. Data accessed 01 December 2019.

Since future year budgets were not readily available, actual 2008 air emissions inventories for the counties were used as an approximation of the regional inventory. Because the construction of Firebreak Road is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

**Metropolitan Baltimore Intrastate Air Quality Control Region (AQCR 115)**

Year	Point and Area Sources Combined					
	NO <sub>x</sub> (tpy)	VOC (tpy)	CO (tpy)	SO <sub>2</sub> (tpy)	PM <sub>10</sub> (tpy)	PM <sub>2.5</sub> (tpy)
2011	73,437	77,712	316,599	25,410	27,416	11,061

Source: USEPA National Emissions Inventory (NEI) (<http://www.epa.gov/ttn/chief/net/2011inventory.html>). Site visited on 21 October 2015.

**Air Emissions from 2019 Roadway Construction Project - Firebreak Road**

	Point and Area Sources Combined					
	NO <sub>x</sub> (tpy)	VOC (tpy)	CO (tpy)	SO <sub>2</sub> (tpy)	PM <sub>10</sub> (tpy)	PM <sub>2.5</sub> (tpy)
Regional Emissions	73,437	77,712	316,599	25,410	27,416	11,061
Emissions	2	0	3	0	18	2
% of Regional	0.0022%	0.0003%	0.0008%	0.0003%	0.0660%	0.0170%

Regional Emissions  
Emissions  
% of Regional

*Summary  
Estimated Emissions for Firebreak Road Alternatives 2 and 3*

**Combustion Emissions**

Combustion Emissions of VOC, NO<sub>x</sub>, SO<sub>2</sub>, CO, PM<sub>2.5</sub>, PM<sub>10</sub>, and CO<sub>2</sub> due to Construction and Demolition

<b>General Construction and Demolition Activities</b>	<b>Area Disturbed</b>	
1.) Firebreak Road - Total paved area	311,592 ft <sup>2</sup>	Road construction assumed to be 24 ft by 12,983 ft for full segment of repair. Assuming construction activity would be limited to the final footprint of the road
2.) Firebreak Road - Construction Area	0 ft <sup>2</sup>	No general construction
Total Construction Area:	0 ft <sup>2</sup> 0.00 acres	
Total Demolition Area:	0 ft <sup>2</sup> 0.00 acres	No demolition
Total Pavement Demolition Area:	0 ft <sup>2</sup>	No demolition
Total Pavement Area:	0.00 acres 311,592 ft <sup>2</sup>	
Total Disturbed Area:	7.15 acres 311,592 ft <sup>2</sup> 7.15 acres	
Construction Duration:	12 months	It is likely that a project this size will take at least two years, but we have compressed all activities into a single year to assure a worst-case annual emission estimate.
Annual Construction Activity:	240 days	Assume 4 weeks per month, 5 days per week.



**Emission Factors Used for Construction Equipment**

References: Guide to Air Quality Assessment, SMAQMD, 2004; and U.S. EPA NONROAD Emissions Model, Version 2005.0.0  
 Emission factors are taken from the NONROAD model and were provided to e<sup>2</sup>M by Larry Landman of the Air Quality and Modeling Center  
 (Landman.Larry@epamail.epa.gov) on 12/14/07. Factors provided are for the weighted average US fleet for CY2007.  
 Assumptions regarding the type and number of equipment are from SMAQMD Table 3-1 unless otherwise noted.

**Grading**

Equipment	No. Req <sup>d</sup> per 10 acres	NO <sub>x</sub> (lb/day)	VOC <sup>b</sup> (lb/day)	CO (lb/day)	SO <sub>2</sub> <sup>c</sup> (lb/day)	PM <sub>10</sub> (lb/day)	PM <sub>2.5</sub> (lb/day)	CO <sub>2</sub> (lb/day)
Bulldozer	1	13.60	0.96	5.50	1.02	0.89	0.87	1456.90
Motor Grader	1	9.69	0.73	3.20	0.80	0.66	0.64	1141.65
Water Truck	1	18.36	0.89	7.00	1.64	1.00	0.97	2342.98
<b>Total per 10 acres of activity</b>	<b>3</b>	<b>41.64</b>	<b>2.58</b>	<b>15.71</b>	<b>3.45</b>	<b>2.55</b>	<b>2.47</b>	<b>4941.53</b>

**Paving**

Equipment	No. Req <sup>d</sup> per 10 acres	NO <sub>x</sub> (lb/day)	VOC <sup>b</sup> (lb/day)	CO (lb/day)	SO <sub>2</sub> <sup>c</sup> (lb/day)	PM <sub>10</sub> (lb/day)	PM <sub>2.5</sub> (lb/day)	CO <sub>2</sub> (lb/day)
Paver	1	3.83	0.37	2.06	0.28	0.35	0.34	401.93
Roller	1	4.82	0.44	2.51	0.37	0.43	0.42	536.07
Truck	2	36.71	1.79	14.01	3.27	1.99	1.93	4685.95
<b>Total per 10 acres of activity</b>	<b>4</b>	<b>45.37</b>	<b>2.61</b>	<b>18.58</b>	<b>3.93</b>	<b>2.78</b>	<b>2.69</b>	<b>5623.96</b>

**Demolition**

Equipment	No. Req <sup>d</sup> per 10 acres	NO <sub>x</sub> (lb/day)	VOC <sup>b</sup> (lb/day)	CO (lb/day)	SO <sub>2</sub> <sup>c</sup> (lb/day)	PM <sub>10</sub> (lb/day)	PM <sub>2.5</sub> (lb/day)	CO <sub>2</sub> (lb/day)
Loader	1	13.45	0.99	5.58	0.95	0.93	0.90	1360.10
Haul Truck	1	18.36	0.89	7.00	1.64	1.00	0.97	2342.98
<b>Total per 10 acres of activity</b>	<b>2</b>	<b>31.81</b>	<b>1.89</b>	<b>12.58</b>	<b>2.58</b>	<b>1.92</b>	<b>1.87</b>	<b>3703.07</b>

**Building Construction**

Equipment <sup>d</sup>	No. Req <sup>d</sup> per 10 acres	NO <sub>x</sub> (lb/day)	VOC <sup>b</sup> (lb/day)	CO (lb/day)	SO <sub>2</sub> <sup>c</sup> (lb/day)	PM <sub>10</sub> (lb/day)	PM <sub>2.5</sub> (lb/day)	CO <sub>2</sub> (lb/day)
<b>Stationary</b>								
Generator Set	1	2.38	0.32	1.18	0.15	0.23	0.22	213.06
Industrial Saw	1	2.62	0.32	1.97	0.20	0.32	0.31	291.92
Welder	1	1.12	0.38	1.50	0.08	0.23	0.22	112.39
<b>Mobile (non-road)</b>								
Truck	1	18.36	0.89	7.00	1.64	1.00	0.97	2342.98
Forklift	1	5.34	0.56	3.33	0.40	0.55	0.54	572.24
Crane	1	9.57	0.66	2.39	0.65	0.50	0.49	931.93
<b>Total per 10 acres of activity</b>	<b>6</b>	<b>39.40</b>	<b>3.13</b>	<b>17.38</b>	<b>3.12</b>	<b>2.83</b>	<b>2.74</b>	<b>4464.51</b>

Note: Footnotes for tables are on following page

**Architectural Coatings**

Equipment	No. Req <sup>a</sup> per 10 acres	NO <sub>x</sub> (lb/day)	VOC <sup>b</sup> (lb/day)	CO (lb/day)	SO <sub>2</sub> <sup>c</sup>	PM <sub>10</sub> (lb/day)	PM <sub>2.5</sub> (lb/day)	CO <sub>2</sub> (lb/day)
Air Compressor	1	3.57	0.37	1.57	0.25	0.31	0.30	359.77
Total per 10 acres of activity	1	3.57	0.37	1.57	0.25	0.31	0.30	359.77

- a) The SMAQMD 2004 guidance suggests a default equipment fleet for each activity, assuming 10 acres of that activity, (e.g., 10 acres of grading, 10 acres of paving, etc.). The default equipment fleet is increased for each 10 acre increment in the size of the construction project. That is, a 26 acre project would round to 30 acres and the fleet size would be three times the default fleet for a 10 acre project.
- b) The SMAQMD 2004 reference lists emission factors for reactive organic gas (ROG). For the purposes of this worksheet ROG = VOC. The NONROAD model contains emissions factors for total HC and for VOC. The factors used here are the VOC factors.
- c) The NONROAD emission factors assume that the average fuel burned in nonroad trucks is 1100 ppm sulfur. Trucks that would be used for the Proposed Actions will all be fueled by highway grade diesel fuel which cannot exceed 500 ppm sulfur. These estimates therefore over-estimate SO<sub>2</sub> emissions by more than a factor of two.
- d) Typical equipment fleet for building construction was not itemized in SMAQMD 2004 guidance. The equipment list above was assumed based on SMAQMD 1994 guidance.

**PROJECT-SPECIFIC EMISSION FACTOR SUMMARY**

Source	Equipment Multiplier*	Project-Specific Emission Factors (lb/day)						
		NO <sub>x</sub>	VOC	CO	SO <sub>2</sub> **	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
Grading Equipment	1	41,641	2,577	15,710	3,449	2,546	2,469	4941,526
Paving Equipment	1	45,367	2,606	18,578	3,926	2,776	2,693	5623,957
Demolition Equipment	1	31,808	1,886	12,584	2,585	1,923	1,865	3703,074
Building Construction	1	39,396	3,130	17,382	3,116	2,829	2,744	4464,512
Air Compressor for Architectural Coating	1	3,574	0,373	1,565	0,251	0,309	0,300	359,773
Architectural Coating**			0,000					

\*The equipment multiplier is an integer that represents units of 10 acres for purposes of estimating the number of equipment required for the project.

\*\*Emission factor is from the evaporation of solvents during painting, per "Air Quality Thresholds of Significance", SMAQMD, 1994

Example: SMAQMD Emission Factor for Grading Equipment NO<sub>x</sub> = (Total Grading NO<sub>x</sub> per 10 acre)\*(Equipment Multiplier)

**Summary of Input Parameters**

	Total Area (ft <sup>2</sup> )	Total Area (acres)	Total Days	
Grading:	311,592	7.15	4	(from "Grading" worksheet)
Paving:	311,592	7.15	35	
Demolition:	0	0.00	0	
Building Construction:	0	0.00	0	
Architectural Coating:	0	0.00	0	(per SMAQMD "Air Quality of Thresholds of Significance", 1994)

NOTE: The 'Total Days' estimate for paving is calculated by dividing the total number of acres by 0.21 acres/day, which is a factor derived from the 2005 MEANS Heavy Construction Cost Data, 19th Edition, for 'Asphaltic Concrete Pavement, Lots and Driveways - 6" stone base', which provides an estimate of square feet paved per day. There is also an estimate for 'Plain Cement Concrete Pavement', however the estimate for asphalt is used because it is more conservative. The 'Total Days' estimate for demolition is calculated by dividing the total number of acres by 0.02 acres/day, which is a factor also derived from the 2005 MEANS reference. This is calculated by averaging the demolition estimates from 'Building Demolition - Small Buildings, Concrete', assuming a height of 30 feet for a two-story building; from 'Building Footings and Foundations Demolition - 6" Thick, Plain Concrete'; and from 'Demolish, Remove Pavement and Curb - Concrete to 6" thick, rod reinforced'. Paving is double-weighted since projects typically involve more paving demolition. The 'Total Days' estimate for building construction is assumed to be 230 days, unless project-specific data is known.

**Total Project Emissions by Activity (lbs)**

	NO <sub>x</sub>	VOC	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
Grading Equipment	166.56	10.31	62.84	13.80	10.18	9.88	19,766
Paving	1,587.86	91.20	650.25	137.40	97.16	94.25	196,838
Demolition	-	-	-	-	-	-	0
Building Construction	-	-	-	-	-	-	0
Architectural Coatings	-	-	-	-	-	-	0
<b>Total Emissions (lbs):</b>	<b>1,754.42</b>	<b>101.51</b>	<b>713.08</b>	<b>151.20</b>	<b>107.35</b>	<b>104.13</b>	<b>216,605</b>

**Results: Total Project Annual Emission Rates**

	NO <sub>x</sub>	VOC	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
Total Project Emissions (lbs)	1,754.42	101.51	713.08	151.20	107.35	104.13	216,605
Total Project Emissions (tons)	0.877	0.051	0.357	0.076	0.054	0.052	108,302

**Construction Fugitive Dust Emissions**

**Construction Fugitive Dust Emission Factors**

	<b>Emission Factor</b>	<b>Units</b>	<b>Source</b>
Construction and Demolition Activities	0.19 ton	PM <sub>10</sub> /acre-month	MRI 1996; EPA 2001; EPA 2006
New Road Construction	0.42 ton	PM <sub>10</sub> /acre-month	MRI 1996; EPA 2001; EPA 2006

**PM<sub>2.5</sub> Emissions**

PM <sub>2.5</sub> Multiplier	0.10	(10% of PM <sub>10</sub> emissions assumed to be PM <sub>2.5</sub> )	EPA 2001; EPA 2006
------------------------------	------	--	--------------------

**Control Efficiency**

0.50	(assume 50% control efficiency for PM <sub>10</sub> and PM <sub>2.5</sub> emissions)	EPA 2001; EPA 2006
------	--	--------------------

**Project Assumptions**

**New Roadway Construction (0.42 ton PM<sub>10</sub>/acre-month)**

Duration of Construction Project	12 months	(from Project Combustion worksheet)
Area	7.15 acres	(from Project Combustion worksheet)

**General Construction and Demolition Activities (0.19 ton PM<sub>10</sub>/acre-month)**

Duration of Project	12 months	(from Project Combustion worksheet)
Area	0.00 acres	(from Project Combustion worksheet)

	<b>Project Emissions (tons/year)</b>			
	<b>PM<sub>10</sub> uncontrolled</b>	<b>PM<sub>10</sub> controlled</b>	<b>PM<sub>2.5</sub> uncontrolled</b>	<b>PM<sub>2.5</sub> controlled</b>
New Roadway Construction	36.052	18.026	3.605	1.803
General Construction Activities	0.000	0.000	0.000	0.000
<b>Total</b>	<b>36.052</b>	<b>18.026</b>	<b>3.605</b>	<b>1.803</b>

Project Fugitive  
Estimated Emissions for Firebreak Road Alternatives 2 and 3

## Construction Fugitive Dust Emission Factors

### General Construction Activities Emission Factor

**0.19 ton PM<sub>10</sub>/acre-month** Source: MRI 1996; EPA 2001; EPA 2006

The area-based emission factor for construction activities is based on a study completed by the Midwest Research Institute (MRI) Improvement of Specific Emission Factors (BACM Project No. 1), March 29, 1996. The MRI study evaluated seven construction projects in Nevada and California (Las Vegas, Coachella Valley, South Coast Air Basin, and the San Joaquin Valley). The study determined an average emission factor of 0.11 ton PM<sub>10</sub>/acre-month for sites without large-scale cut/fill operations. A worst-case emission factor of 0.42 ton PM<sub>10</sub>/acre-month was calculated for sites with active large-scale earth moving operations. The monthly emission factors are based on 168 work-hours per month (MRI 1996). A subsequent MRI Report in 1999, Estimating Particulate Matter Emissions From Construction Operations, calculated the 0.19 ton PM<sub>10</sub>/acre-month emission factor by applying 25% of the large-scale earthmoving emission factor (0.42 ton PM<sub>10</sub>/acre-month) and 75% of the average emission factor (0.11 ton PM<sub>10</sub>/acre-month). The 0.19 ton PM<sub>10</sub>/acre-month emission factor is referenced by the EPA for non-residential construction activities in recent procedures documents for the National Emission Inventory (EPA 2001; EPA 2006). The 0.19 ton PM<sub>10</sub>/acre-month emission factor represents a refinement of EPA's original AP-42 area-based total suspended particulate (TSP) emission factor in Section 13.2.3 Heavy Construction Operations. In addition to the EPA, this methodology is also supported by the South Coast Air Quality Management District as well as the Western Regional Air Partnership (WRAP) which is funded by the EPA and is administered jointly by the Western Governor's Association and the National Tribal Environmental Council. The emission factor is assumed to encompass a variety of non-residential construction activities including building construction (commercial, industrial, institutional, governmental), public works, and travel on unpaved roads. The EPA National Emission Inventory documentation assumes that the emission factors are uncontrolled and recommends a control efficiency of 50% for PM<sub>10</sub> and PM<sub>2.5</sub> in PM nonattainment areas.

### New Road Construction Emission Factor

**0.42 ton PM<sub>10</sub>/acre-month** Source: MRI 1996; EPA 2001; EPA 2006

The emission factor for new road construction is based on the worst-case conditions emission factor from the MRI 1996 study described above (0.42 tons PM<sub>10</sub>/acre-month). It is assumed that road construction involves extensive earthmoving and heavy construction vehicle travel resulting in emissions that are higher than other general construction projects. The 0.42 ton PM<sub>10</sub>/acre-month emission factor for road construction is referenced in recent procedures documents for the EPA National Emission Inventory (EPA 2001; EPA 2006).

### PM<sub>2.5</sub> Multiplier

**0.10**

PM<sub>2.5</sub> emissions are estimated by applying a particle size multiplier of 0.10 to PM<sub>10</sub> emissions. This methodology is consistent with the procedures documents for the National Emission Inventory (EPA 2006).

### Control Efficiency for PM<sub>10</sub> and PM<sub>2.5</sub>

**0.50**

The EPA National Emission Inventory documentation recommends a control efficiency of 50% for PM<sub>10</sub> and PM<sub>2.5</sub> in PM nonattainment areas (EPA 2006). Wetting controls will be applied during project construction.

### References:

EPA 2001. *Procedures Document for National Emissions Inventory, Criteria Air Pollutants, 1985-1999*. EPA-454/R-01-006. Office of Air Quality Planning and Standards, United States Environmental Protection Agency. March 2001.

EPA 2006. *Documentation for the Final 2002 Nonpoint Sector (Feb 06 version) National Emission Inventory for Criteria and Hazardous Air Pollutants*. Prepared for: Emissions Inventory and Analysis Group (C339-02) Air Quality Assessment Division Office of Air Quality Planning and Standards, United States Environmental Protection Agency. July 2006.

MRI 1996. *Improvement of Specific Emission Factors (BACM Project No. 1)*. Midwest Research Institute (MRI). Prepared for the California South Coast Air Quality Management District, March 29, 1996.

**Grading Schedule**

Estimate of time required to grade a specified area.

Input Parameters

Construction area: 7.15 acres/yr (from Combustion Worksheet)  
 Qty Equipment: 3.00 (calculated based on 3 pieces of equipment for every 10 acres)

Assumptions

Terrain is mostly flat.  
 An average of 6" soil is excavated from one half of the site and backfilled to the other half of the site; no soil is hauled off-site or borrowed.  
 200 hp bulldozers are used for site clearing.  
 300 hp bulldozers are used for stripping, excavation, and backfill.  
 Vibratory drum rollers are used for compacting.  
 Stripping, Excavation, Backfill and Compaction require an average of two passes each.  
 Excavation and Backfill are assumed to involve only half of the site.

Calculation of days required for one piece of equipment to grade the specified area.

Reference: Means Heavy Construction Cost Data, 19th Ed., R. S. Means, 2005.

Means Line No.	Operation	Description	Output	Units	Acres per equip-day	equip-days per acre	Acres/yr (project-specific)	Equip-days per year
2230 200 0550	Site Clearing	Dozer & rake, medium brush	8	acre/day	8	0.13	7.15	0.89
2230 500 0300	Stripping	Topsoil & stockpiling, adverse soil	1,650	cu. yd/day	2.05	0.49	7.15	3.50
2315 432 5220	Excavation	Bulk, open site, common earth, 150' haul	800	cu. yd/day	0.99	1.01	3.58	3.61
2315 120 5220	Backfill	Structural, common earth, 150' haul	1,950	cu. yd/day	2.42	0.41	3.58	1.48
2315 310 5020	Compaction	Vibrating roller, 6" lifts, 3 passes	2,300	cu. yd/day	2.85	0.35	7.15	2.51
<b>TOTAL</b>								<b>11.99</b>

Calculation of days required for the indicated pieces of equipment to grade the designated acreage.

(Equip)(day)/yr: 11.99  
 Qty Equipment: 3.00  
 Grading days/yr: 4.00

**Haul Truck Emissions**

Emissions from hauling paving and excavated material are estimated in this spreadsheet.

Emission Estimation Method: AFCEE Air Emissions Factor Guide to Air Force Mobile Sources, Oct. 2014.

**Fill and Excavation Materials Assumptions:**

Haul trucks carry 20 cubic yards of soil per trip, but averaging in trucks carrying redi-mix concrete and other construction supplies, assume 10 cubic yards per truck. The average distance from the project site to Baltimore or northern DC metro area is 20 miles; therefore, a haul truck will travel 40 miles round trip. Estimated number of trips required by haul trucks = total amount of material/10 cubic yards per truck. This alternative includes an acre of trees that will likely need to be removed, including the heavy roots that must be removed so that they do not decompose and open voids beneath the pavement. If all the trees were mature trees, it would take about 50 trees to cover an acre. Therefore, 25 additional truck loads have been added to the standard truck trip calculation to account for hauling away the green waste.

Amount of Materials for Other Structures/Equipment =	0 cubic yards	Assume cubic yards of materials for other structures is based on the area of disturbance plus the area of demolition listed on Project Combustion tab, times 3 feet deep.
Amount of Excavation Material for Paving =	11,540 cubic yards	Paving area from Project Combustion tab, multiplied by depth of disturbance which is assumed to be 1 foot.
Amount of Paving Materials =	11,540 cubic yards	Paving area from Project Combustion tab, multiplied by 1 foot deep.
Number of trucks required =	2333 heavy duty diesel haul truck trips.	calculated from the cubic yards above, plus 25 trips for an acre of trees.
Miles per round trip =	40 miles	

**Heavy Duty Diesel Vehicle (HDDV) Average Emission Factors (grams/mile)**

	NO <sub>x</sub>	VOC	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
HDDV	5.447	0.488	1.814	0.013	0.215	0.198	1495.6

Notes:

Emission factors for all pollutants are from Table 5-23 - On-Road Vehicle Emission Factors – 2018 - Maryland AFCEE Air Emissions Factor Guide to Air Force Mobile Sources, Jul 2016.

**HDDV Haul Truck Emissions**

	NO <sub>x</sub>	VOC	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
lbs	1120.66	100.40	373.21	2.67	44.23	40.74	307704.59
tons	0.560	0.050	0.187	0.001	0.022	0.020	153.852

Any paving requires some sort of compacted uniform base. Assume that native soil will not do, so you will have to import about 6" of base. The thickness of the paving itself will range from 2 1/2" for a sidewalk or residential driveway, to 4" for a street or parking lot that carries trucks, to 6" for state/interstate highway that carries heavy trucks, to 1'-3' for runways and aprons that carry heavy aircraft. Note that any of these dimensions may double, depending upon local soil stability and expected unusual loads.



**Construction Commuter Emissions**

Emissions from construction workers commuting to the job site are estimated in this spreadsheet.

Emission Estimation Method: Emission factors are from the AFCEC Air Emissions Guide for Air Force Mobile Sources, July 2016.

Assumptions:

Light Duty Gasoline Truck (LDGT) vehicle emission factors for scenario year 2018 are used.  
 The average roundtrip commute for a construction worker = 30 miles  
 Number of construction days = 240 days (from Project Combustion worksheet)  
 Number of construction workers (daily) = 50 people

**On-Road Vehicle (LDGT) Emission Factors for Year 2018 (grams/mile)**

NO <sub>x</sub>	VOC	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
0.492	0.413	4.954	0.003	0.011	0.010	441

Emission factors for all pollutants are from Table 5-23 - On-Road Vehicle Emission Factors – 2018 - Maryland AFCEE Air Emissions Factor Guide to Air Force Mobile Sources, Jul 2016.

**Construction Commuter Emissions**

	NO <sub>x</sub>	VOC	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
lbs	390.5	327.8	3932	2.38	8.73	7.94	350036
tons	0.195	0.164	1.966	0.001	0.004	0.004	175.02

Example						
	0.492 g NO <sub>x</sub> /mi		30 miles roundtrip		50 workers	240 days/yr
				=	390.5	lb NO <sub>x</sub> /yr