

March
2021



Final

Environmental Stewardship Plan

**FENCE CONSTRUCTION PROJECT
IMPERIAL COUNTY,
EL CENTRO SECTOR, CALIFORNIA**

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



**U.S. Customs and
Border Protection**

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Cover Sheet

Final Environmental Stewardship Plan Fence Construction Project in Imperial County, El Centro Sector, California

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

Parties Consulted: Department of the Interior, including the Bureau of Land Management, Bureau of Reclamation, and U.S. Fish Wildlife Service; U.S. Environmental Protection Agency; U.S. Army Corps of Engineers; United States Section, International Boundary and Water Commission; California Department of Fish and Wildlife; California Environmental Protection Agency; California Office of Historic Preservation; state and local governments; local tribes; and local landowners.

Affected Location: U.S./Mexico international border in Imperial County, El Centro Sector, California.

Project Description: During the consultation period, CBP planned to construct and maintain approximately 10 miles of bollard wall along the U.S./Mexico international border in California. The scope has since been reduced to 3.2 miles; this change will be addressed in this Environmental Stewardship Plan. Additionally, CBP will install and maintain tactical infrastructure consisting of installation of a linear ground detection system, road construction or refurbishment, and the installation of lighting. The project begins approximately 25 miles west of the Calexico Port of Entry and continues west 3.2 miles through the Jacumba Wilderness.

Report Designation: Environmental Stewardship Plan (ESP).

Abstract: CBP is constructing approximately 3.2 miles of border barrier system. The project area lies within the USBP El Centro Sector. This ESP evaluates potential environmental impacts associated with the project. Protections and best management practices for considerations such as air quality, noise, land use and recreation, geological resources and soils, hydrology and water management, biological resources, cultural resources, socioeconomics, and hazardous materials and waste have been incorporated into the project design.

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FINAL

ENVIRONMENTAL STEWARDSHIP PLAN
FENCE CONSTRUCTION PROJECT
IN IMPERIAL COUNTY,
EL CENTRO SECTOR, CALIFORNIA

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

MARCH 2021

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Executive Summary

BACKGROUND

On March 16, 2020, the Secretary of the Department of Homeland Security (DHS), pursuant to Section 102(c) of the Illegal Immigration Reform and Immigrant Responsibility Act (IIRIRA) of 1996, as amended, issued a waiver to ensure the expeditious construction of barriers and roads in the United States Border Patrol's (USBP) El Centro Sector. Although the Secretary's waiver means that United States (U.S.) Customs and Border Protection (CBP) no longer has any specific legal obligations under the laws set aside by the waiver, DHS and CBP recognize the importance of responsible environmental stewardship. To that end, CBP has prepared this Environmental Stewardship Plan (ESP), which analyzes the potential environmental impacts associated with construction of tactical infrastructure in USBP's El Centro Sector. The ESP also discusses CBP's plans to potentially mitigate environmental impacts. The ESP will guide CBP's efforts going forward.

This report has been prepared from data collected prior to and during the initial phases of project construction. The data was compiled through field surveys, photo interpretation with ground truthing and use of data from prior surveys and other sources, as referenced. The report is an analysis of potential impacts on the resources discussed based on the initially planned project footprint. This is intended to be viewed as a baseline document and is not intended to capture all impacts during construction. Upon completion of the project, an additional report, called an Environmental Stewardship Summary Report (ESSR), will be prepared summarizing the observed actual impacts. This ESSR will review the baseline information provided in this ESP and be used to compare anticipated to actual impacts, so that a final new baseline of impacts is established for any potential future actions, including maintenance and repair activities. The ESSR will document the success of BMPs and any changes or improvements that could be required for the future. Additionally, the ESSR will summarize any significant modifications during construction that increased or reduced environmental impacts.

As it moves forward with the project described in this ESP, CBP will continue to work in a collaborative manner with local governments, state and Federal land managers, and the interested public to identify environmentally sensitive resources and develop appropriate best management practices (BMPs) to avoid or minimize adverse impacts resulting from the project.

GOALS AND OBJECTIVES OF THE PROJECT

The project will allow USBP agents to strengthen control of the U.S. border between ports of entry (POE) in the USBP El Centro Sector. The project will help deter illegal entries within the USBP El Centro Sector by improving enforcement efficiency, thus preventing terrorists and terrorist weapons, cross-border violators (CBVs), drugs, and other contraband from entering the U.S., while contributing to a safer environment for USBP agents and the public.

OUTREACH AND AGENCY COORDINATION

CBP coordinates with numerous government agencies and tribes regarding potential project impacts. Stakeholders with interests in the region include Department of the Interior (DOI),

including the Bureau of Land Management (BLM), Bureau of Reclamation (BOR), and U.S. Fish Wildlife Service (USFWS); U.S. Environmental Protection Agency (USEPA); U.S. Army Corps of Engineers (USACE); United States Section, International Boundary and Water Commission (USIBWC); California Department of Fish and Wildlife (CDFW); California Environmental Protection Agency (CalEPA); California Office of Historic Preservation (OHP); state and local governments; local tribes; and local landowners.

DESCRIPTION OF THE PROJECT

During the consultation period for this project, CBP planned to construct and maintain approximately 10 miles of bollard wall along the U.S/Mexico international border in California. The scope has since been reduced to 3.2 miles. On January 12, 2020, DHS, acting through CBP, sent DoD a request for assistance requesting that the Secretary of Defense, pursuant to 10 U.S.C. § 284(b)(7), assist by constructing fences, roads, and lighting in certain locations within six United States Border Patrol Sectors, including the El Centro Sector. On February 13, 2020, the Secretary of Defense concluded that the support requested by DHS satisfies the statutory requirements of 10 U.S.C. § 284(b)(7) and that DoD would provide such support. The Secretary of Defense approved for construction 31 border barrier projects, including a project in the El Centro Sector within Imperial County known as “El Centro A.” After the Secretary of Defense’s February 13, 2020, approval of El Centro A, and as a result of additional project planning by DHS and DoD, El Centro A was modified. Approximately seven miles of proposed barrier were removed from the project, thus reducing the scope of the project to an approximately three-mile segment of border barrier.

Additionally, CBP will install and maintain tactical infrastructure consisting of installation of a linear ground detection system, road construction or refurbishment, and the installation of lighting within USBP’s El Centro Sector in Imperial County, California. The project begins approximately 25 miles west of the Calexico POE and continues west 3.2 miles through the Jacumba Wilderness (the Project).

ENVIRONMENTAL IMPACTS AND BEST MANAGEMENT PRACTICES

The Project has the potential to result in impacts on several resource categories; however, BMPs are recommended to minimize or eliminate impacts on the discussed resources. Specific BMPs will be implemented to ensure minimal disturbance to the resources within the Project area.

Table ES-1 provides an overview of potential environmental impacts by specific resource area and a brief summary of associated BMPs. **Chapter 3** through **12** of this ESP provide the evaluation for these impacts and expand upon the BMPs.

Table ES-1. Summary of Environmental Impacts, Mitigation, and Best Management Practices

Resource Area	Effects of the Project	Best Management Practices/ Conservation Measures
Air Quality	Minor and temporary impacts on air quality have the potential to occur during construction; all calculated air	Bare soil will be wetted to suppress dust, and equipment will be maintained according to specifications.

Resource Area	Effects of the Project	Best Management Practices/ Conservation Measures
	emissions will remain below <i>de minimis</i> levels (emissions threshold levels that trigger Federal action).	Construction speed limits will not exceed 25 miles per hour on unpaved roads.
Noise	Noise from construction equipment and increased traffic has the potential to result in short-term, minor adverse impacts.	Mufflers and properly working construction equipment will be used to reduce noise. Generators will have baffle boxes, mufflers, or other noise abatement capabilities. Blasting mats will be used to minimize noise and debris.
Land Use, Recreation, and Aesthetics	Land use has the potential to remain the same, resulting in no adverse impacts. Visual interruption has the potential to result in short- and long-term, minor to moderate adverse impacts.	Environmental monitors will be present during construction to ensure construction activities remain within the Project footprint and impacts on BLM lands are minimized.
Geologic Resources and Soils	Permanent, moderate, adverse impacts on soils have the potential to occur as a result of the Project. Approximately 23 acres of soil within the Project footprint have the potential to be permanently disturbed. The majority of the impacts would involve only topsoil layers.	Construction-related vehicles will remain on established or existing roads as much as possible, and areas with highly erodible soils will be avoided where possible. Gravel or topsoil would be obtained from developed or previously used sources. Where grading is necessary, surface soils will be stockpiled and replaced following construction.
Groundwater	The Project has the potential to have minor to moderate, temporary adverse impacts on the availability of water resources in the region.	Equipment maintenance, staging, laydown, or fuel dispensing will occur upland to prevent runoff. A Storm Water Pollution Prevention Plan (SWPPP) and Spill Prevention, Control, and Countermeasure Plan (SPCCP) will be implemented as part of the Project.
Surface Waters and Waters of the United States	The Project does not have the potential to impact potential Waters of the U.S. jurisdictional waters.	Construction activities will stop during heavy rains. All fuels, oils, and solvents will be collected and stored. Stream crossings will not be located at bends to protect channel stability. Equipment maintenance, staging, laydown, or fuel dispensing will occur upland to prevent runoff. A SPCCP and SWPPP will be implemented as part of the Project.
Floodplains	The Project has the potential to impact 1.45 acres of floodplains as well as have short- and long-term, moderate permanent impacts from sedimentation, erosion, and accidental spills or leaks caused by construction.	Fence maintenance will include removing any accumulated debris on the fence after a rain event to avoid potential future flooding.

Resource Area	Effects of the Project	Best Management Practices/ Conservation Measures
Vegetation	Disturbance and clearing has the potential to result in short- and long-term, minor adverse impacts.	Construction equipment will be cleaned to minimize spread of non-native species. Removal of brush in federally protected areas will be limited to the smallest amount possible. Invasive plants that appear on Project Area will be removed. Fill material, if required, will be weed-free to the maximum extent practicable.
Wildlife and Aquatic Resources	Habitat conversion and fragmentation have the potential to result in short-term, minor adverse impacts.	Ground disturbance during migratory bird nesting season will require migratory bird nest survey and possible removal and relocation. To prevent entrapment of wildlife, all excavated holes or trenches will either be covered or provided with wildlife escape ramps. All vertical poles and posts that are hollow will be covered to prevent entrapment and discourage roosting. General BMPs will avoid and reduce impacts on wildlife and aquatic resources.
Protected Species and Critical Habitat	Loss of potential habitat, fragmentation, and elevated noise has the potential to result in short-term, minor adverse impacts.	General BMPs and BMPs will be implemented for flat-tailed horned lizard, barefoot banded gecko, burrowing owl, and Peninsular bighorn sheep.
Cultural Resources	No direct or indirect adverse impacts to cultural resources are anticipated. One National Register of Historic Places (NRHP)-eligible cultural resource has the potential to be negatively impacted by the Project. Avoidance measures are recommended.	All construction will be restricted to previously surveyed areas. If any cultural material is discovered during construction, all activities within the vicinity of the discovery will be halted until receipt of clearance to resume work by a qualified archaeologist.
Socioeconomics	Construction activities, increased employment, and new income have the potential to have direct and indirect short-term, minor beneficial impacts. Adverse impacts are not expected.	None required.
Hazardous Materials and Waste	Waste generation and use of hazardous materials and wastes have the potential to result in short-term, negligible adverse impacts.	All waste materials and other discarded materials will be removed from the Project Area as quickly as possible. Equipment maintenance, staging, laydown, or fuel dispensing will occur upland to prevent runoff.

CBP followed specially developed design criteria to reduce adverse environmental impacts, which include consulting with Federal and state agencies and other stakeholders to develop appropriate BMPs and minimize physical disturbance where practicable. BMPs include implementation of a Spill Prevention, Control, and Countermeasure Plan (SPCCP), Storm Water Pollution Prevention Plan (SWPPP), Environmental Protection Plan, Dust Control Plan, and Fire Prevention and Suppression Plan. CBP will have environmental monitors on site and impacts will be documented during construction to determine the extent and scope of mitigation measures necessary to reduce or offset adverse environmental impacts.

In addition to the design criteria and BMPs, CBP could implement mitigation measures. The scope or extent of CBP's mitigation will be based on the actual impacts from the Project and available funding. CBP will assess the actual impacts from the Project during and upon completion. CBP's assessment will be based on, among other things, feedback from environmental monitors and the final construction footprint. To the extent mitigation is warranted and funding is available, CBP will work with stakeholders to identify and implement appropriate mitigation measures.

The following definitions describe various impact characteristics:

- *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 impacts are those that occur only with respect to a particular activity or for a finite period or only during the time required for construction or installation activities. Long-term impacts are those that are more likely to be persistent and chronic.
- *Direct or indirect.* A direct impact is caused by an action and occurs contemporaneously at or near the location of the action. An indirect impact is caused by an action and might occur later in time or be farther removed in distance but is still a reasonably foreseeable outcome of the action.
- *Negligible, minor, moderate, or major.* These relative terms are used to characterize the magnitude or intensity of an adverse or beneficial impact. Negligible impacts are generally those that might be perceptible but are at the lower level of detection. A minor impact is slight, but detectable. A moderate impact is readily apparent. A major impact is severe.
- *Adverse or beneficial.* An adverse impact is one having unfavorable or undesirable outcomes on the man-made or natural environment. A beneficial impact is one having positive outcomes on the man-made or natural environment. A single act might result in adverse impacts on one environmental resource and beneficial impacts on another resource.

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1. GENERAL PROJECT DESCRIPTION

1.1 INTRODUCTION TO THE ENVIRONMENTAL STEWARDSHIP PLAN

The United States (U.S.) Customs and Border Protection (CBP) will construct and maintain approximately 3.2 miles of new bollard wall in the El Centro Area of Responsibility (AOR) within the U.S. Border Patrol (USBP) El Centro Sector (the Project) (see **Figure 1-1**). During the consultation period for this project, CBP planned to construct and maintain approximately 10 miles of bollard wall along the U.S./Mexico international border in California. The scope has since been reduced to 3.2 miles. On January 12, 2020, DHS, acting through CBP, sent DoD a request for assistance requesting that the Secretary of Defense, pursuant to 10 U.S.C. § 284(b)(7), assist by constructing fences, roads, and lighting in certain locations within six United States Border Patrol Sectors, including the El Centro Sector. On February 13, 2020, the Secretary of Defense concluded that the support requested by DHS satisfies the statutory requirements of 10 U.S.C. § 284(b)(7) and that DoD would provide such support. The Secretary of Defense approved for construction 31 border barrier projects, including a project in the El Centro Sector within Imperial County known as “El Centro A.” After the Secretary of Defense’s February 13, 2020, approval of El Centro A, and as a result of additional project planning by DHS and DoD, El Centro A was modified. Approximately seven miles of proposed barrier were removed from the project, thus reducing the scope of the project to an approximately three-mile segment of border barrier.

This new bollard fence design is critical to the El Centro Sector’s ability to prevent illegal entries and to achieve operational control of the border commensurate with Executive Order (EO) 13767. Under this EO, CBP is directed to “...secure the southern border of the United States through the immediate construction of a physical wall on the southern border, monitored and supported by adequate personnel so as to prevent illegal immigration, drug and human trafficking, and acts of terrorism.”

Section 102(b) of the Illegal Immigration Reform and Immigrant Responsibility Act (IIRIRA) mandates the Department of Homeland Security (DHS) to install and improve fencing, barriers, and roads along the U.S. border. In 2018, the Secretary of DHS, pursuant to Section 102(c), determined that it is necessary to waive certain laws, regulations, and other legal requirements to ensure expeditious construction of the barriers and roads along the border. Although the Secretary’s waiver means that CBP no longer has any specific legal obligations to do so, DHS and CBP are committed to continue to protect valuable natural and cultural resources through responsible environmental stewardship.

This Environmental Stewardship Plan (ESP) presents the analysis for the potential environmental impacts associated with replacement and construction activities for tactical infrastructure in the USBP El Centro Sector. This ESP also includes a summary of best management practices (BMPs) that have been developed to help CBP avoid, minimize, and mitigate for potential environmental impacts, and will guide the planning and execution of the Project.

This ESP is organized into 14 chapters plus appendices. **Chapter 1** provides a general Project description, discusses the background of USBP, identifies the goals and objectives of the Project, explains the stakeholder outreach process, and provides an overview of BMPs. **Chapter 2**

provides a detailed description of the Project. **Chapters 3** through **11** identify potential environmental impacts that could occur within each resource area. **Chapter 12** contains an analysis of related projects and potential effects. **Chapter 13** provides a list of references used to develop the ESP, and **Chapter 14** provides a list of abbreviations and acronyms used in the ESP. Finally, the appendices include other information pertinent to the development of the ESP.

This report has been prepared from data collected prior to and during the initial phases of project construction. The data was compiled through field surveys, photo interpretation with ground truthing and use of data from prior surveys and other sources, as referenced. The report is an analysis of potential impacts on the resources discussed based on the initially planned project footprint. This is intended to be viewed as a baseline document and is not intended to capture all impacts during construction. Upon completion of the project, an additional report, called an Environmental Stewardship Summary Report (ESSR), will be prepared summarizing the observed actual impacts. This ESSR will review the baseline information provided in this ESP and be used to compare anticipated to actual impacts, so that a final new baseline of impacts is established for any potential future actions, including maintenance and repair activities. The ESSR will document the success of BMPs and any changes or improvements that could be required for the future. Additionally, the ESSR will summarize any significant modifications during construction that increased or reduced environmental impacts.

Going forward, this ESP will guide CBP's efforts in the USBP El Centro Sector, as well as demonstrate CBP's commitment to environmental stewardship during the construction and replacement of the international border fence between the U.S. and Mexico.

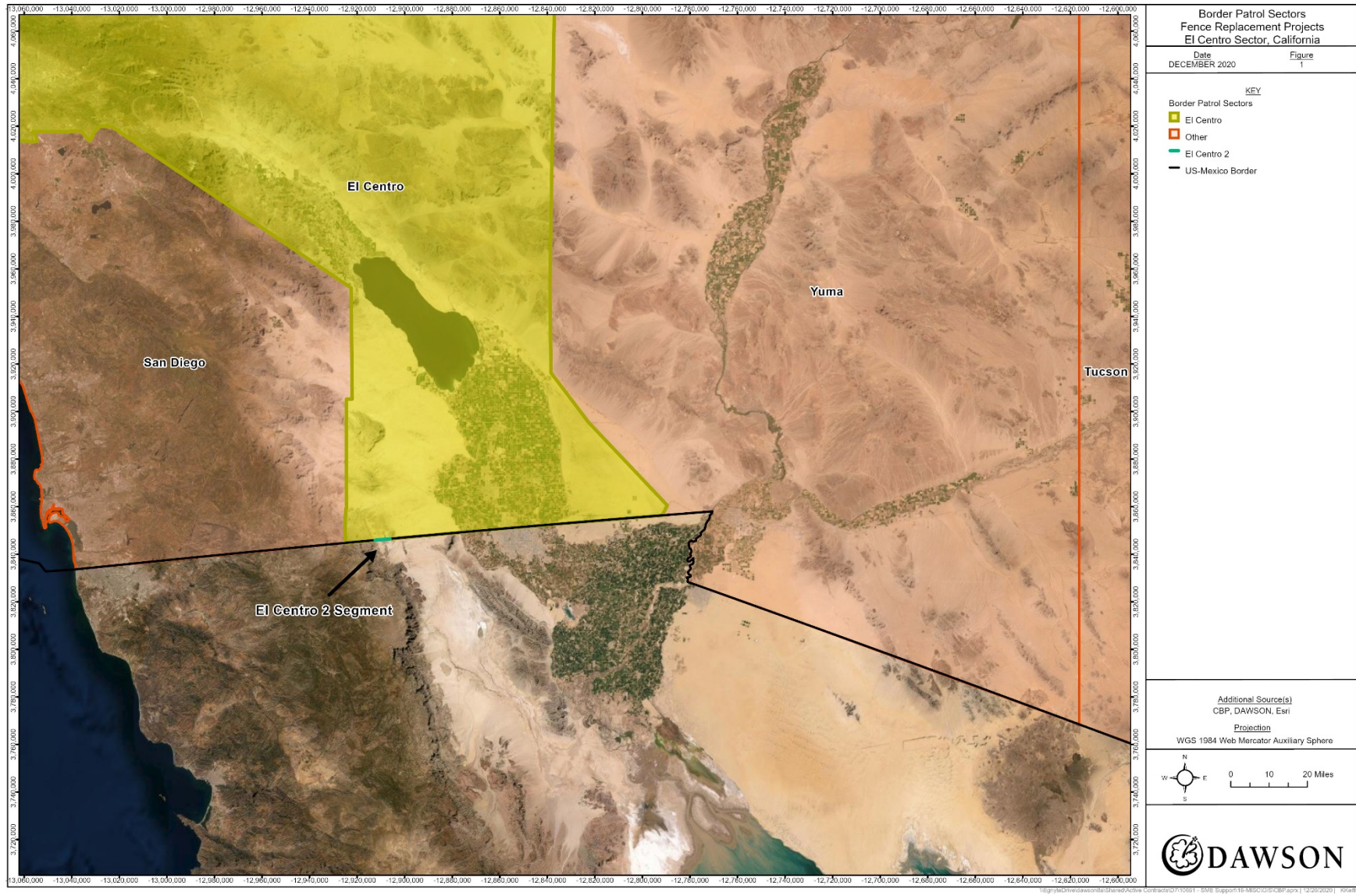
1.2 U. S. BORDER PATROL BACKGROUND

The mission of the USBP is to detect and prevent cross-border violators (CBVs), terrorists, and terrorist weapons from entering the U.S. and prevent illegal trafficking of people and contraband. 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 meeting the following mission requirements:

- Establishing substantial probability of apprehending terrorists and their weapons as they attempt to illegally enter between ports of entry (POE);
- Deterring illegal entries through improved enforcement; and
- Detecting, apprehending, and deterring smugglers of humans, drugs, and other contraband.

CBP's USBP administration is divided into nine different sectors, each responsible for border operations between the U.S. and Mexico within their respective AORs. The Project falls within the USBP El Centro Sector AOR.

Figure 1-1. USBP El Centro Sector Project Map



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1.3 GOALS AND OBJECTIVES OF THE PROJECT

The purpose of the Project is to ensure CBP can fulfill its mission to detect and prevent CBVs, terrorists, and terrorist weapons from entering the U.S. and therefore achieve effective control of our nation's borders. The Project will help to deter illegal entries within the USBP El Centro Sector by improving enforcement efficiency, thus preventing terrorists and terrorist weapons, CBVs, drugs, and other contraband from entering the U.S., while also contributing to a safer environment for USBP agents and the public.

1.4 STAKEHOLDER OUTREACH

CBP has notified numerous government agencies and tribes of their intent to replace the existing barrier fence with a new bollard wall. Stakeholders with interest in the region include the following:

- **Department of the Interior.** CBP has coordinated with the Department of the Interior (DOI) regarding design features and potential conflicts with DOI's planning goals. Coordination with specific bureaus and offices within the DOI include:
 - **Bureau of Land Management.** CBP has coordinated with the Bureau of Land Management (BLM) regarding design features and potential conflicts with BLM's planning goals, as well as to evaluate potential impacts on BLM land, including the Jacumba Wilderness.
 - **Bureau of Reclamation.** CBP has coordinated with Bureau of Reclamation (BOR) regarding design features and potential conflicts with BOR's planning goals.
 - **U.S. Fish and Wildlife Service.** CBP has coordinated with the U.S. Fish and Wildlife Service (USFWS) to identify listed species that have the potential to occur in the Project Area.
- **U.S. Environmental Protection Agency.** CBP has coordinated with the U.S. Environmental Protection Agency (USEPA) to obtain feedback regarding, among other issues, potential mitigation opportunities for unavoidable impacts, should mitigation be necessary, and to ensure appropriate SWPPP guidelines are implemented.
- **U.S. Army Corps of Engineers.** CBP has coordinated all activities with the U.S. Army Corps of Engineers (USACE) to identify potential jurisdictional Waters of the U.S., including wetlands, and to develop measures to avoid and minimize impacts on such resources.
- **U.S. Section of the International Boundary and Water Commission.** CBP has coordinated with the U.S. Section of the International Boundary and Water Commission (USIBWC) to ensure that any construction along the U.S./Mexico border does not adversely affect International Boundary Monuments or substantially impede floodwater conveyance within international drainages.

- ***State and Local Governments.*** CBP has coordinated with the various state and local government officials to alert them of the Project, including, but not limited to:
 - ***California Department of Fish and Wildlife.*** CBP has coordinated with the California Department of Fish and Wildlife (CDFW) regarding potential impacts on species within their jurisdiction.
 - ***California Office of Historic Preservation Office.*** CBP has coordinated with the California Office of Historic Preservation (OHP) regarding the protection and preservation of California's historic resources.
 - ***California Environmental Protection Agency.*** CBP has coordinated with the California Environmental Protection Agency (CalEPA) regarding potential mitigation opportunities for unavoidable impacts, to identify impaired waters, and to prepare implementation plans to achieve the needed pollution reductions in the watershed.
 - ***San Diego Regional Water Quality Control Board.*** CBP has coordinated with the San Diego Regional Water Quality Control Board regarding the prevention of adverse impacts to regional water quality and public health.

Tribes. CBP has coordinated with a number of tribes to alert them of the Project. Tribes on the notification list include the Agua Caliente Band of Cahuilla Indians, Augustine Band of Mission Indians, Barona Band of Mission Indians, Cahuilla Band of Mission Indians, Campo Kumeyaay Nation, Chemehuevi Indian Tribe, Ewiiapaayp Band of Kumeyaay Indians, Iipay Nation of Santa Ysabel, Inaja-Cosmit Band of Mission Indians, Jamul Indian Village, Kwaaymii Laguna Band of Mission Indians, La Jolla Band of Luiseno Indians, La Posta Band of Mission Indians, Los Coyotes Band of Mission Indians, Manzanita Band of Kumeyaay Nation, Mesa Grande Band of Mission Indians, Pala Band of Mission Indians, Rincon San Luiseno Band of Mission Indians, San Pasqual Band of Mission Indians, Santa Rosa Band of Cahuilla Indians, Soboba Band of Luiseno Indians, Sycuan Band of the Kumeyaay Nation, Tohono O'odham Nation, Torres-Martinez Desert Cahuilla Indians, and Viejas Band of Kumeyaay Indians.

1.5 BEST MANAGEMENT PRACTICES

It is CBP's policy to reduce impacts through the sequence of avoidance, minimization, and mitigation. BMPs vary based on location and resource type. Both general BMPs and species- and habitat-specific BMPs have been developed during the preparation of this ESP. CBP could also implement mitigation measures. The scope or extent of CBP's mitigation will be based on the actual impacts from the Project and available funding. Project impacts will be documented during construction and assessed through monitoring after Project construction is complete. CBP's mitigation assessment will be based on, among other things, feedback from environmental monitors and the final construction footprint.

The following sections describe those measures that could 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 will be potentially affected. The BMPs have been coordinated with the appropriate agencies and land managers or administrators.

1.5.1 General Design BMPs

The design-build contract will include design performance measures aimed at avoiding impacts prior to any construction. Designs will be evaluated on their ability to avoid and otherwise minimize environmental impacts by incorporating the following design BMPs:

- Maximum use of existing roads for construction access.
- Lands and roads disturbed by temporary impacts repaired/returned to pre-construction conditions.
- Early identification and protection of sensitive resource areas to be avoided.
- Restoration of grades, soils, and vegetation in temporarily disturbed areas.
- On-site retention of stormwater and runoff.

1.5.2 Air Quality

Measures will be incorporated to ensure that emissions of particulate matter less than or equal to 10 microns in diameter (PM₁₀) do not significantly impact the environment. These measures include dust suppression activities, such as wetting soils, to minimize airborne particulate matter generated during construction activities. Standard construction BMPs, such as minimized diesel idling and routine watering of the construction site and access roads, will be used to control fugitive dust emissions during the construction and maintenance phases of the Project. Additionally, all construction equipment and vehicles will be maintained in good operating condition to minimize exhaust emissions.

1.5.3 Noise

All Occupational Safety and Health Administration (OSHA) requirements will be followed by the contractor. The blasting contractor will provide further analysis of blasting techniques and measures to be taken to ensure negligible impacts from the blasting. Construction equipment will possess properly working mufflers and will be properly tuned to reduce backfires.

1.5.4 Geological Resources

Vehicular traffic associated with the construction, maintenance, and repair activities will remain on established roads to the maximum extent practicable. A SWPPP will be prepared prior to construction activities, and BMPs described in the SWPPP will be implemented to reduce erosion. Areas with highly erodible soils will be given special consideration when designing the Project to ensure incorporation of various BMPs, such as silt fences, straw bales, aggregate materials, wetting compounds, and rehabilitation, where possible, to decrease erosion. Materials such as gravel or topsoil will be obtained from existing developed or previously used sources and not from undisturbed areas adjacent to the Project corridor.

Erosion-control measures, such as water bars, gabions, straw bales, and revegetation, will be implemented during and after construction activities. Revegetation efforts will be needed to ensure long-term recovery of the area and to prevent soil erosion problems.

1.5.5 Water Resources

To address stormwater runoff, construction contractors will adopt and implement a SWPPP, which will include BMPs to reduce potential stormwater erosion and sedimentation effects on local drainages, as discussed in **Chapter 1.5.4**.

The changing of oil, refueling, and other actions that could result in a release of a hazardous substance should be restricted to designated staging areas that are a minimum of 100 feet from any surface drainage. 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.

Water storage within the Project Area should be maintained in closed, on-ground containers in upland areas, not in washes. Pumps, hoses, tanks, and other water storage devices will be cleaned and disinfected.

Groundwater extraction can occur with written approval by government. Groundwater wells should be metered daily and the data provided in a spreadsheet updated daily. Wells should be located within the Roosevelt Reservation at a minimum of five miles away from ponds or springs to minimize the effects of diminished artesian water levels. The use of wells at a distance less than five miles from ponds or springs should be approved by government prior to use.

Water for construction use is allowed from private and federally owned wells at the discretion of the landowner/land manager. However, at no time should the use of local groundwater have an adverse effect to natural surface water sources such as springs, riparian areas and aquatic, marsh, or riparian dwelling threatened and endangered species. If government determines adverse effects are occurring, treated water from outside the immediate Project area should be utilized. Identified new well locations and historic well locations on federally owned land should be approved by government prior to use.

1.5.6 Biological Resources

The following summary of general and species-specific biological BMPs will be implemented and are referenced in more detail in the Biological Survey Report (BSR) prepared for the Project (see **Appendix A**). This list has been ordered to follow a typical construction sequence and discusses species- and habitat-specific BMPs at the end. BMPs were developed in coordination with USFWS and BLM.

1.5.6.1 Biology General Measures Prior to Construction

Contractors will mark designated travel corridors with high visibility, removable or biodegradable markers, and minimize construction traffic through the corridor. No activities, ground disturbance, vegetation removal, or trimming will occur outside of the marked designated work area.

1.5.6.2 General Biology Measures During Construction

Construction equipment will be cleaned prior to entering and departing the Project corridor to minimize the spread and establishment of non-native invasive plant species.

If construction or clearing activities are scheduled during the nesting season (typically March 15 through September 15), the Government will perform a pre-construction survey for migratory bird species to identify active nests prior to the start of any construction or clearing activity. If construction activities will result in the disturbance or harm of a migratory bird, coordination with USFWS and CDFW will be required. Buffer zones around active nests will be established until nestlings have fledged and abandoned the nest.

The USBP will provide monitors for environmental and cultural resources throughout the duration of the construction contract.

1.5.6.3 Measures for Wildlife and Aquatic Resources

Areas that are hydro-seeded for temporary erosion-control measures must use only native plant species appropriate to surrounding habitat types. Removal of trees and brush in federally listed species habitats will be limited to the least amount needed to meet contract requirements.

Within the designated disturbance area, grading or topsoil removal will 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.

To prevent wildlife species entrapment during construction, all excavated, steep-walled holes or trenches more than 2 feet deep must be covered by plywood at the close of each working day or provided with one or more escape ramps. Each morning before the start of construction and before such holes or trenches are filled, they will be thoroughly inspected for trapped animals. Any animals discovered must be allowed to voluntarily escape, without harassment, before construction activities resume, or removed from the trench or hole by a Government biologist. Additionally, all vertical bollards that are hollow must be covered to prevent wildlife entrapment. Bollards should be covered from the time they are erected until the time they are filled.

Temporary light poles and other pole-like structures used for construction activities must have anti-perch devices to discourage roosting by birds.

1.5.6.4 Measures for Protected Species and Critical Habitats

Prior to ground-disturbing activities or vegetation removal or trimming, a qualified biologist will present an environmental awareness program to all on-site personnel. The program will contain, at a minimum, information regarding listed species including flat-tailed horned lizard, barefoot banded gecko, burrowing owl, and Peninsular bighorn sheep. This will include general species identification, habitat description, species sensitivity to human activity, and measures to avoid and protect the species during construction. Following the education program, photographs of the species must be posted in the office of the contractor and resident engineer, where they will remain

throughout the duration of the Project. The contractor is responsible for ensuring that employees are aware of the listed species.

To eliminate attraction of predators to protected animals, all food-related trash items such as wrappers, cans, bottles, and food scraps must be disposed in closed containers and removed daily from the Project site.

In areas of riparian vegetation, the size of the Project work area must be minimized to the extent possible. Vegetation within critical habitat or sensitive areas identified for removal and preservation must be clearly marked both in the field and on design plans, and otherwise communicated in the field to all workers.

When an individual of a federally listed species is found within the Project limits, work must cease in the area of the species. Any threatened and endangered species or species of concern must not be harmed, harassed, or disturbed to the extent possible by Project activities. Work may resume when the individual moves away on its own, or when a Government biologist safely removes the individual. Individuals of federally listed species found in the Project Area and requiring relocation will be relocated by the Government biologist.

Active burrowing owl burrows will be flagged for avoidance with a 250-foot buffer. Active burrows that cannot be avoided will be collapsed. If construction is during the nesting period (February 15 through September 15), the presence of eggs or young will be determined before owls are prevented from reentering and collapsing the burrows following established guidelines. If young are present, burrows will not be collapsed until they fledge.

If bighorn sheep are encountered during construction activities, the onsite environmental monitor must determine whether or not a work stop order should be given.

1.5.7 Cultural Resources

All construction will be restricted to previously surveyed areas. Any known cultural resources must be clearly flagged for avoidance during construction. CBP will be contacted to complete any necessary flagging efforts for cultural resource avoidance prior to ground-disturbing activities taking place. Should any archaeological artifacts or human remains be found during construction, all ground-disturbing activities in the vicinity of the discovery must stop, and the contractor must immediately notify the contracting officer. Work will not resume until receipt of clearance by a qualified archaeologist.

1.5.8 Hazardous Materials and Wastes

All fuels, waste oils, and solvents will be collected in tanks or drums within a secondary containment system. The refueling of machinery will be completed following accepted guidelines, and all vehicles will have drip pans during storage. All spills will be contained immediately using an absorbent (e.g., granular, pillow, sock) to absorb and contain the spill. Any spill of a hazardous or regulated substance will be immediately recorded by the contractor and reported to the monitor on-site. A Spill Prevention, Control, and Countermeasure Plan (SPCCP) will be implemented as part of the Project.

1.5.9 Potential Avoidance and Mitigation for Unavoidable Impacts

If unavoidable impacts result from Project construction, CBP could implement mitigation measures. The scope or extent of CBP's mitigation will be based on the actual impacts from the Project and available funding. CBP will assess the actual impacts from the Project after it is complete. CBP's assessment will be based on, among other things, feedback from environmental monitors and the final construction footprint.

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2. DESCRIPTION OF THE PROJECT

2.1 LOCATION

CBP will construct and maintain approximately 3.2 miles of new bollard wall in the El Centro AOR within the USBP El Centro Sector. Additionally, CBP will install and maintain tactical infrastructure consisting of installation of a linear ground detection system, road construction or refurbishment, and the installation of lighting within USBP’s El Centro Sector in Imperial County, California. The Project begins approximately 25 miles west of the Calexico POE and continues west 3.2 miles through the Jacumba Wilderness (the Project Area). **Table 2-1** lists the Project location data and **Figure 2-1** provides a general location map of the Project Area.

Table 2-1. Segment Location Data

Section	Latitude	Longitude
El Centro 2 Start	32.627206	-115.993953
El Centro 2 Stop	32.631467	-115.938608

The construction corridor is the width of the Roosevelt Reservation, the 60-foot-wide strip of land owned by the Federal Government along the U.S. side of the U.S./Mexico international border in California, New Mexico, and Arizona.

2.2 DESIGN

The current design features 30-foot, bollard-style fence composed of 6-inch diameter steel bollards spaced center to center 10 inches apart, forming a 4-inch gap between each bollard. The construction corridor will be 60 feet wide. The Project also includes repairs and improvements to the two existing access roads, and installation of a fiber-optic cable for communications, LED lighting, and electrical utilities to supply power to the communications cable and lighting. Border security lighting will illuminate the Project Area to allow for construction at night. In areas where border security lighting is not present, mobile light poles will be used during nighttime construction.

2.3 CONSTRUCTION ACCESS, MATERIALS DELIVERY, AND STAGING

The new bollards will be delivered to four storage yards totaling 12 acres adjacent to the Roosevelt Reservation, and fabricated prior to installation. Each panel will be 8- to 10-foot-wide and composed of eight to ten, 6-inch-square (5/16-inch thick) Core-10 steel bollards filled with cement and welded in place by a horizontal steel bar on the bottom and an approximately 5-foot-wide steel sheet across the top. The steel bollards will be spaced 4 inches apart to allow for cross-border visibility. Each panel is estimated to weigh approximately 3,500 pounds, excluding any below-ground materials or concrete. The storage yards will store large equipment and construction materials, establish batch plants for mixing concrete, and act as fabrication yards for panel assembly. Additionally, there will be a two-acre office/storage area and a two-acre yard for a lake tank, where water will be stored. Access to the Project corridor will use existing roads within the Project Area wherever possible, including Federal, state, county, and local roads.

2.4 SITE PREPARATION

Site preparation primarily consists of grading the two access roads and six staging areas, which will be located in previously disturbed areas whenever possible. Erosion-control measures will be necessary prior to ground disturbance activity, as will biological surveys, if construction takes place during the nesting season (from March 15 through September 15). BMPs will limit impacts on resources including wildlife, botanical, and cultural resources, among others (see **Section 1.5**). Specific BMPs will be implemented prior to and during construction activities to ensure minimal disturbance within the Project Area.

All activities associated with implementation of the Project have been designed pursuant to the constraints identified in the BSR (see **Appendix A**) prepared for the Project. These constraints to on-site preparation and construction ensure impacts on the biological resources present are minimized to the extent practicable.

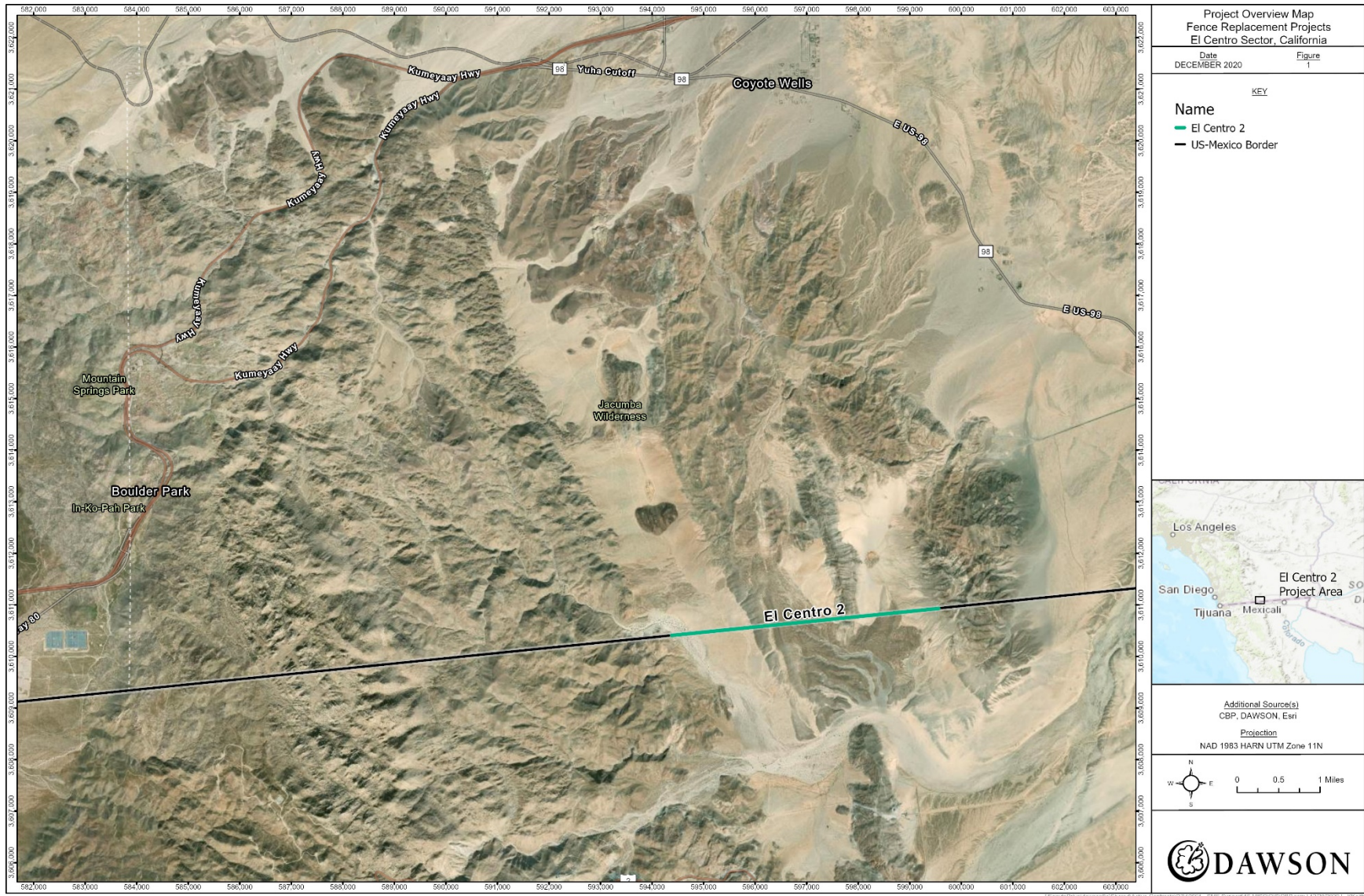
2.5 CONSTRUCTION SCHEDULE

Construction is expected to last from May to December 2020. The total duration for the Project is approximately 186 days. It is anticipated that construction will occur six days per week from 7:00 a.m. to 7:00 p.m., with some exceptions where work could be scheduled 24 hours per day.

2.6 ENVIRONMENTAL CONSIDERATIONS

Chapters 3 through **11** address numerous environmental factors to be considered during final design and implementation of the Project.

Figure 2-1. Project Overview Map



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3. AIR QUALITY

3.1 AFFECTED ENVIRONMENT

Definition of the Resource. Pursuant to the DHS Secretary’s waiver, CBP no longer has any specific legal obligations under the Clean Air Act (CAA). However, CBP recognizes the importance of environmental stewardship and has applied the appropriate standards and guidelines associated with the CAA as the basis for evaluating potential environmental impacts and implementing appropriate BMPs regarding air quality.

Air quality is defined by the concentration of various pollutants in the atmosphere at a given location. Under the CAA, the six principal pollutants defining air quality, called “criteria pollutants,” include carbon monoxide (CO), sulfur dioxide (SO₂), nitrogen dioxide (NO₂), ozone (O₃), suspended particulate matter (PM) (measured less than or equal to 10 microns in diameter [PM₁₀] and less than or equal to 2.5 microns in diameter [PM_{2.5}]), and lead. CO, SO₂, lead, and some particulates are emitted directly into the atmosphere from emissions sources. O₃, NO₂, and some particulates are formed through atmospheric chemical reactions that are influenced by weather, ultraviolet light, and other atmospheric processes. Volatile organic compounds (VOCs) and nitrogen oxides (NO_x) emissions are used to represent O₃ generation because they are precursors of O₃.

Federal Air Quality Standards. The USEPA established National Ambient Air Quality Standards (NAAQS) for specific pollutants determined to be of concern with respect to the health and welfare of the general public. Ambient air quality standards are classified as either primary or secondary. Primary standards protect against adverse health effects and secondary standards protect against welfare effects, such as damage to farm crops and vegetation and damage to buildings. NAAQS represent the maximum levels of background pollution that are considered safe, with an adequate margin of safety, to protect the public health and welfare. The NAAQS are included in **Table 3-1**.

Areas that are and have historically been in compliance with NAAQS or have not been evaluated for NAAQS compliance are designated as attainment areas. Areas that violate a Federal air quality standard are designated as nonattainment areas. Areas that have transitioned from nonattainment to attainment are designated as maintenance areas and are required to adhere to maintenance plans to ensure continued attainment. The USEPA General Conformity Rule applies to Federal actions occurring in nonattainment or maintenance areas when the total direct and indirect emissions of nonattainment pollutants (or their precursors) exceed specified thresholds. The emissions thresholds that trigger requirements for a conformity analysis (the process used to determine whether a Federal action meets the requirements of the General Conformity Rule) are called *de minimis* levels. *De minimis* levels (in tons per year [tpy]) vary by pollutant and depend on the severity of the nonattainment status for the air quality management area in question.

California Ambient Air Quality Standards. The State of California adopted the NAAQS and promulgated additional California Ambient Air Quality Standards (CAAQS) for criteria pollutants. The California standards are more stringent than the Federal primary standards. California law continues to mandate CAAQS, although attainment of the NAAQS has precedence

over attainment of the CAAQS due to Federal penalties for failure to meet Federal attainment deadlines. **Table 3-1** presents the primary and secondary USEPA NAAQS and CAAQS.

Table 3-1. Ambient Air Quality Standards

Pollutant	Primary Averaging Time	National Standards		California Standards
		Primary Standard Level ⁽¹⁰⁾	Secondary Standard Level ⁽¹³⁾	
Carbon Monoxide	8-hour ⁽¹⁾	9 ppm (10 mg/m ³)	-	9 ppm
	1-hour ⁽¹⁾	35 ppm (40 mg/m ³)	-	20 ppm
Lead	Rolling 3-month Average	0.15 µg/m ³ ⁽²⁾	Same as Primary	-
	Quarterly Average	1.5 µg/m ³	Same as Primary	-
	30 Day Average	-	-	1.5 µg/m ³
Nitrogen Dioxide	Annual (Arithmetic Average)	53 ppb ⁽³⁾	Same as Primary	0.030 ppm
	1-hour ⁽⁴⁾	100 ppb	-	0.18 ppm
Particulate Matter (PM₁₀)	Annual (Arithmetic Average)	-	-	20 µg/m ³
	24-hour ⁽⁵⁾	150 µg/m ³	Same as Primary	50 µg/m ³
Particulate Matter (PM_{2.5})	Annual (Arithmetic Average) ⁽⁶⁾	12 µg/m ³	15.0 µg/m ³	12 µg/m ³
	24-hour ⁽⁷⁾	35 µg/m ³	Same as Primary	-
Ozone	8-hour ⁽⁸⁾	0.07 ppm (2015 std)	Same as Primary	0.07 ppm
	1-hour ⁽⁹⁾	-	-	0.09 ppm
Sulfur Dioxide	24-hour	0.14 ppm (for certain areas) ⁽¹¹⁾	-	0.04 ppm
	1-hour	75 ppb ⁽¹²⁾	-	0.25 ppm
Visibility Reducing Particles ⁽¹⁴⁾	8-hour	No Federal Standards		See footnote 14
Sulfates	24-hour	No Federal Standards		25 µg/m ³
Hydrogen Sulfide	1-hour	No Federal Standards		0.03 ppm
Vinyl Chloride	24-hour	No Federal Standards		0.01 ppm

Sources: USEPA 2019a and CARB 2020.

Units of measure for the standards are parts per million (ppm) by volume, parts per billion (ppb - 1 part in 1,000,000,000) by volume, milligrams per cubic meter of air (mg/m³), and micrograms per cubic meter of air (µg/m³).

(1) Not to be exceeded more than once per year.

(2) Final rule signed October 15, 2008.

(3) The official level of the annual NO₂ standard is 0.053 ppm, equal to 53 ppb, which is shown here for the purpose of clearer comparison to the 1-hour standard

- (4) To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 100 ppb (effective January 22, 2010).
- (5) Not to be exceeded more than once per year on average over 3 years.
- (6) To attain this standard, the 3-year average of the weighted annual mean PM_{2.5} concentrations from single or multiple community-oriented monitors must not exceed 15.0 µg/m³.
- (7) To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 µg/m³ (effective December 17, 2006).
- (8) To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.070 ppm (effective December 28, 2015).
- (9) (a) USEPA revoked the 1-hour ozone standard in all areas, although some areas have continuing obligations under that standard (“anti-backsliding”).
- (b) The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is ≤ 1.
- (10) National Primary Standard Level: The level of air quality necessary, with an adequate margin of safety to protect the public health.
- (11) On June 2, 2010, a new 1-hour SO₂ standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO₂ national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.
- (12) Final rule signed June 2, 2010. To attain this standard, the 3-year average of the 99th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 75 ppb.
- (13) National Secondary Standard Level: The level of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
- (14) In 1989, the California Air Resources Board converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are “extinction of 0.23 per kilometer” and “extinction of 0.07 per kilometer” for the statewide and Lake Tahoe Air Basin standards, respectively.

Project Area. The USEPA designates the entire Imperial County as a marginal nonattainment area for 8-hour O₃, and portions of the County as serious nonattainment areas for PM₁₀ and moderate non-attainment areas for PM_{2.5}.

The California Air Resources Board (CARB) is the state agency that develops comprehensive State Implementation Plans that describe how each non-attainment area will attain national and state air quality standards. The Imperial County Air Pollution Control District (ICAPCD) shares responsibility with CARB for ensuring that all state and Federal ambient air quality standards are achieved and maintained within the county. The ICAPCD is responsible for monitoring ambient air quality and has the authority to regulate stationary sources and some area sources of emissions (CARB 2020).

3.2 ENVIRONMENTAL CONSEQUENCES

Temporary and minor increases in air pollution have the potential to occur during construction. The construction phase has the potential to generate air pollutant emissions as a result of transporting materials, grading, compacting, trenching, pouring concrete, and other various activities. Soil disturbance has the potential to contribute to increased fugitive dust emissions and could be greatest during the initial site preparation. Increased PM emissions from vehicles and other activities also have the potential to contribute to increased air pollution. Levels of fugitive dust have the potential to vary from day to day depending on the construction phase, level of activity, and prevailing weather conditions (e.g., wind speed and direction, precipitation). The following paragraphs describe the air calculation methodologies used to estimate air emissions produced by the Project.

USEPA’s Motor Vehicle Emission Simulator (MOVES) model was used to calculate emissions from construction equipment. Combustion emission calculations were made for standard construction equipment, such as front-end loaders, excavators, bulldozers, cranes, and cement trucks. Assumptions were made regarding the total number of days each piece of equipment will be used and the number of hours or miles per day each type of equipment will be used. Fugitive dust emissions were calculated using the emission factor of 0.22 ton per acre per month (Air Force Civil Engineer Center 2018).

Construction workers have the potential to temporarily increase combustion emissions in the airshed during their commute to and from the Project Area. Emissions from delivery trucks also have the potential to contribute to the overall air emission budget. Emissions from delivery trucks and construction worker commuters traveling to the job site were also calculated using the MOVES model.

Per 40 Code of Federal Regulations (CFR) Part 93, Chapter 153, a conformity determination is required for each criteria pollutant or precursor where the total of direct and indirect emissions from the criteria pollutant or precursors in a nonattainment or maintenance area caused by a Federal action will equal or exceed specified *de minimis* levels.

Table 3-2 provides a summary of emissions from the Project and a determination of their significance. The ICAPCD screening level thresholds do not apply to construction emissions and are, therefore, not included in **Table 3-2**. The total emissions from construction activity is demonstrated to be below the significance threshold levels established by the CFR. Therefore, the Project is unlikely to have significant impacts on ambient air quality. Construction personnel will continue to implement dust control measures, including watering roads, to maintain appropriate air quality levels. Air emissions calculations are provided in **Appendix B**.

Table 3-2. Total Air Emissions from the Project versus the *de minimis* Threshold Levels

Type of Emission	VOCs	CO	NO_x	SO₂	PM_{2.5}	PM₁₀
Project Emissions (tpy)	0.31298	2.50116	1.54972	0.00348	0.20094	0.55068
Significance Threshold for Nonattainment Areas (tpy)	50	100	100	100	Moderate: 100 Serious: 70	Moderate: 100 Serious: 70

4. NOISE

4.1 AFFECTED ENVIRONMENT

Sound is a physical phenomenon consisting of vibrations that travel through a medium, such as air, and are sensed by the human ear. Noise is defined as unwanted sound, which can be based on objective effects (i.e., hearing loss, damage to structures, etc.) or subjective judgments (e.g., community annoyance). Human response to increased sound levels varies according to the type, characteristics of the sound source, distance between source and receptor, receptor sensitivity, and time of day (for noise impacts on wildlife see **Chapter 8.2.2**). How an organism responds to the sound source determines whether the sound is judged as pleasing or as an annoying noise, or if it disturbs a normal behavior. Sound is usually represented on a logarithmic scale quantified in decibel (dB) units. Sound on the dB scale is referred to as a sound level. The threshold of human hearing is near 0 dB, and the threshold of discomfort or pain is around 120 dB.

Nighttime noise levels are generally viewed as a greater community annoyance than the same levels occurring during the day. It is generally given that people perceive a nighttime noise at 10 A-weighted decibels (dBA) louder than when that same noise is experienced during the day. This perception occurs largely because background environmental sound levels at night, in most areas, are also approximately 10 dBA lower than those during the day. As such, nighttime noise levels are often perceived as intrusive more often than the same noise level during the day. Below is a summary and definition of noise levels based on the U.S. Department of Housing and Urban Development noise program.

Acceptable (not exceeding 65 dB) – This noise exposure could be of some concern, but common building construction makes the indoor environment acceptable and the outdoor environment reasonably pleasant for recreation and play.

Normally Unacceptable (above 65 but not greater than 75 dB) – The noise exposure is significantly more severe. Barriers could be necessary between the site and prominent noise sources to make the outdoor environment acceptable. Special building construction could be necessary to ensure that people indoors are sufficiently protected from the outdoor noise.

Unacceptable (greater than 75 dB) – The noise exposure at the site is so severe that the construction costs to make the indoor noise environment acceptable could be prohibitive and the outdoor environment would still be unacceptable.

Generally, noise generated by a stationary noise source, or “point source,” will decrease by approximately 6 dBA over hard surfaces and 9 dBA over soft surfaces for each doubling of the distance. For example, if a noise source produces a noise level of 85 dBA at a reference distance of 50 feet over a hard surface, that noise level will be 79 dBA at a distance of 100 feet from the noise source, 73 dBA at a distance of 200 feet, and so on.

Table 4-1 depicts noise emissions levels for typical construction equipment, which range from 68 dBA to 104 dBA at 100 feet from the source (FHWA 2007).

Table 4-1. A-Weighted Sound Levels of Construction Equipment and Modeled Attenuation at Various Distances from Source

Noise Source	100 feet	200 feet	500 feet	1,000 feet	2,000 feet	3,000 feet
	dBA	dBA	dBA	dBA	dBA	dBA
Backhoe	72	66	58	52	46	43
Crane	75	69	61	55	49	46
Dump truck	70	64	56	50	44	41
Excavator	75	69	61	55	51	48
Front-end loader	73	67	59	53	47	44
Concrete mixer truck	73	67	59	53	47	44
Pneumatic tools	75	69	61	55	49	46
Auger drill rig	78	72	64	58	52	49
Bulldozer	76	70	62	56	50	47
Generator	75	69	61	55	49	46
Impact pile driver	104	98	90	84	78	75
Flatbed truck	68	62	54	48	42	39

Source: FHWA 2007

Notes: The dBA at 50 feet is a measured noise emission (FHWA 2007).

Under the Noise Control Act of 1972, OSHA established workplace standards for noise. The minimum requirement states that constant noise exposure must not exceed 90 dBA over an 8-hour period (OSHA 2018). The highest allowable sound level to which workers can be constantly exposed is 115 dBA and exposure to this level must not exceed 15 minutes within an 8-hour period (OSHA 2018). Furthermore, the standards limit instantaneous exposure, such as impact noise, to 140 dBA. If noise levels exceed these standards, employers are required to provide hearing protection equipment that reduce sound levels to acceptable limits.

For open space areas, the Federal Highway Administration (FHWA) noise regulations define a *de minimis* threshold. This regulation defines open space lands as “land on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.” The open space areas, as defined, have a *de minimis* threshold of 57 dBA (23 CFR 722, Table 1).

The Project traverses the Jacumba Mountains, a notably rural area of Imperial County, and falls within the Jacumba Wilderness, which includes Davies and Skull Valley. The Project will occur in a remote area, consisting largely of mountainous terrain. There are no sensitive noise receptors, including churches, schools, or hospitals, within 1,000 feet of Project Area.

4.2 ENVIRONMENTAL CONSEQUENCES

Noise within the Project Area has the potential to be created during the transportation of construction materials, operation of construction equipment, and numerous construction activities. Noise levels to receptors vary widely depending on several factors, such as climatic and soil conditions, topography, the equipment condition, and current ambient noise levels. Open space

areas that are less developed have a lesser ambient noise level than developed areas, making it much easier for an adverse noise impact to result in an open space area.

Construction noise has the potential to be temporary and only occur near work being performed. Additionally, most of the noise generated by the Project has the potential to occur during construction, and thus is not likely to contribute to ambient noise levels. Routine maintenance of the fence and roads has the potential to result in slight temporary increases in noise levels that could continue to sporadically occur over the long-term and have the potential to be similar to those of ongoing road maintenance within the Project Area. Using a worst-case scenario of 104 dBA, the noise model predicts that noise emissions from the impact pile driver (proposed construction equipment) will have to travel 3,000 feet before attenuating to levels below 75 dBA. The area encompassed within the 3,000 feet noise contour does not include sensitive receptors. Thus, the noise generated by the construction and maintenance of Project infrastructure has the potential to have a minor adverse effect.

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5. LAND USE, RECREATION, AND AESTHETICS

5.1 AFFECTED ENVIRONMENT

5.1.1 Land Use and Recreation

The Project will occur within the Roosevelt Reservation, a 60-foot-wide swath of Federal land immediately north of the U.S./Mexico international border that was set aside for border security uses. Therefore, CBP operations and tactical infrastructure construction within the Roosevelt Reservation is consistent with the purpose of the Reservation. Areas immediately outside of the Roosevelt Reservation fall within the Jacumba Wilderness, with the two dominating landforms being Davies and Skull Valley, which is owned by BLM (USGS 2020). The Project traverses the Jacumba Mountains, a notably rural area of Imperial County. The landscape within the Project Area is undisturbed, consisting largely of mountainous terrain. Certain areas of the Jacumba Wilderness are also identified for recreational use, including but not limited to hiking, camping, wildlife viewing, and climbing (BLM 2020).

5.1.2 Aesthetics

Aesthetic resources consist of natural and man-made landscape features that give a particular environment its visual characteristics. The majority of the Project segment is within areas previously undisturbed by human activity, consisting largely of mountainous terrain and wilderness area. Very little natural vegetation is present within the Project corridor, only five special-status plant species were observed during surveys.

5.2 ENVIRONMENTAL CONSEQUENCES

5.2.1 Land Use and Recreation

All new bollard wall will be constructed within the Roosevelt Reservation. Therefore, land use will remain the same as pre-Project and is consistent with the purpose of the Reservation which was set aside for border security uses. Land use has the potential to change; however, in areas where the Project Area extends beyond the Reservation.

Impacts on recreation have the potential to occur within the Jacumba Wilderness. Such impacts include the temporary closure of certain areas that the public could use for recreational purposes. Temporary closure of these areas has the potential to result in decreased public access to land for activities such as hiking, camping, wildlife viewing, and climbing.

5.2.2 Aesthetics

Currently no border barrier system exists in the area of construction. The landscape consists of mountainous terrain and wilderness area. Therefore, the new bollard fence has the potential to create a substantial new visual impediment interrupting the existing landscape. The current design features 30-foot, bollard-style fence composed of 6-inch diameter steel bollards spaced center to center 10 inches apart, forming a 4-inch gap between each bollard. While the transparent qualities

of the bollard fence have the potential to allow for USBP agents to see through the fence, which is beneficial in an operational sense, it has the potential to be a significant visual impediment constructed in a previously undisturbed landscape.

6. GEOLOGICAL RESOURCES AND SOILS

6.1 AFFECTED ENVIRONMENT

Geology is the study of Earth's composition and provides information on the structure and configuration of surface and subsurface features. Soils are the unconsolidated materials overlying bedrock or other parent material. Differences among soil types in terms of their structure, elasticity, strength, water absorption potential, and erosion potential affect the ability to support certain applications or uses.

Regional Geology. The Project Area is in the Jacumba Mountains of the Peninsular Range that run northwest southeast along the Pacific Coast of the U.S. The mountains are formed by Paleozoic and Mesozoic-era sedimentary and volcanic rock that cooled beneath the surface and eventually became exposed at the surface through millions of years of erosion (Oberbauer 2020). The Jacumba Mountains are a series of almost parallel ridges separated by valleys, with each valley successfully lower than the next. Elevations range from about 4,000 feet in the western part of the mountains to about 600 feet near the eastern front of the range. These faults have produced a rough stair-step topography in which fault-bounded blocks are progressively lower to the east (Todd et al. 1987).

Soils. A review of the California SoilWeb Survey and the Natural Resources Conservation Service Web Soil Survey shows that no soil survey data is available for the Project Area.

6.2 ENVIRONMENTAL CONSEQUENCES

Impacts on geology and soils are considered adverse if they alter the lithology (i.e., the character of a rock formation); stratigraphy (i.e., the layering of sedimentary rocks) and geological structures that dictate groundwater systems; change the soil composition, structure, or function within the environment; or increase the risk of geological hazards.

Regional Geology. Short- and long-term, moderate, adverse impacts on topography have the potential to occur from earthmoving and grading activities during construction. Topography has the potential to be altered using drill-and-shoot excavation and other ground-leveling techniques to provide flat surfaces for the construction of the pedestrian and vehicle barriers, ancillary support facilities and structures, and access roads.

Soils. Approximately 23 acres of undisturbed soil have the potential to experience permanent, moderate, adverse impacts from disturbance of ground surfaces, earthmoving activities, and grading within the proposed disturbance area during construction. These activities would excavate soils and expose rock materials, temporarily remove vegetation in some areas, and expose soils to erosion.

In general, accelerated erosion of soils has the potential to be short-term during construction activities and minimized by appropriately siting and designing facilities to account for soil limitations, employing construction and stabilization techniques appropriate for the soil and climate, and implementing BMPs and erosion-control measures. BMPs include the installation of silt fencing and sediment traps, application of water to disturbed soil to reduce dust, grading of

staging areas, and revegetation of disturbed areas as soon as possible following ground disturbance, as appropriate. Materials such as gravel or topsoil will be obtained from existing developed or previously used sources and not from undisturbed areas adjacent to the Project corridor. Pre- and post-construction BMPs have been developed and will be implemented to reduce or eliminate erosion and potential downstream sedimentation.

The potential exists for petroleum, oil, and lubricants (POLs) to be spilled during refueling of the construction equipment, adversely impacting soils; however, drip pans will be placed under all staged equipment, and secondary containment will be used when refueling equipment. A SWPPP and SPCCP have been prepared prior to construction activities and BMPs described in these plans will be implemented to reduce potential erosion and contamination.

7. HYDROLOGY AND WATER MANAGEMENT

7.1 AFFECTED ENVIRONMENT

Hydrology and water management relate to natural and man-made water resources that are available for use by, and for the benefit of, humans and the environment. Evaluation of hydrology and water resources examines the quantity and quality of the resource and its demand for various purposes.

Hydrology concerns the distribution of water-to-water resources, including surface waters and groundwater, through the processes of evapotranspiration, atmospheric transport, precipitation, surface runoff and flow, and subsurface flow. Groundwater consists of subsurface hydrologic resources and includes underground streams and aquifers. It is an essential resource that functions to recharge surface water and is used for drinking, irrigation, and industrial processes. Groundwater features include depth from land surface, aquifer or well capacity, quality, recharge rate, and surrounding geologic formations. Surface water includes natural, modified, and constructed water confinement and conveyance features above groundwater that could have a defined channel and discernable water flows. These features are generally classified as streams, springs, wetlands, natural and artificial impoundments (e.g., ponds, lakes), and constructed drainage canals and ditches.

7.1.1 Groundwater

The Project overlies the Davies Valley Groundwater Basin (see **Figure 7-1**). The basin is bound by unnamed faults on the east and west, and impermeable rock on the north and south. Groundwater surface elevations range 1,000 feet on the valley to 2,000 feet in the surrounding highlands. Surface drainage is north to northeast in the upper part of the basin and southward in the lower part of the basin. Little data is collected about the aquifer, and groundwater storage and capacity in the valley are unknown (CADWR 2004).

The Project also falls within the Ocotillo-Coyote Wells Sole Source Aquifer designated by the USEPA under the authority of Section 1424(e) of the Safe Drinking Water Act (61 FR 47752). The aquifer is the sole source of drinking water for the Ocotillo, Nomirage, Yuha Estates, and Coyote Wells and that this aquifer, if contaminated, would create a significant hazard to public health. The aquifer overlies an 87-square mile area in the southwestern corner of Imperial County.

7.1.2 Surface Water and Waters of the United States

The Project is in an arid desert climate characterized by high air and soil temperatures and high evaporation rates. Minimal groundcover and steep topography can lead to heavy runoff and high erosion during the infrequent precipitation events.

Waters of the United States. USACE regulates “Waters of the United States” (WOUS) under Section 404 of the Clean Water Act (CWA). WOUS is defined in the CFR as waters susceptible to use in commerce, including interstate waters and wetlands, all other waters (intrastate waterbodies, including wetlands), and their tributaries (33 CFR 328.3). Potential wetland areas

are identified by the presence of (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. Areas that are inundated at a sufficient depth and for a sufficient duration to exclude growth of hydrophytic vegetation are subject to Section 404 jurisdiction as “non-wetland waters” and are characterized by an Ordinary High-Water Mark (OHWM). Non-wetland waters generally include lakes, rivers, streams, and other open-water habitats.

A desktop analysis of wetlands and non-wetlands waters did not find any potentially jurisdictional waters within the Project Area.

Impaired Surface Waters. Water quality standards are regulated by USEPA, under the Safe Drinking Water Act and the CWA. Section 303(d) of the CWA requires states to identify and develop a list of impaired water bodies where technology-based and other required controls have not provided attainment of water quality standards. Section 305(b) of the CWA requires states to assess and report the quality of their water bodies. California’s State Water Resources Control Board works to achieve water quality standards and maintain beneficial uses in all of California’s surface waters.

The Project is not located near any USEPA-designated impaired water bodies (USEPA 2016).

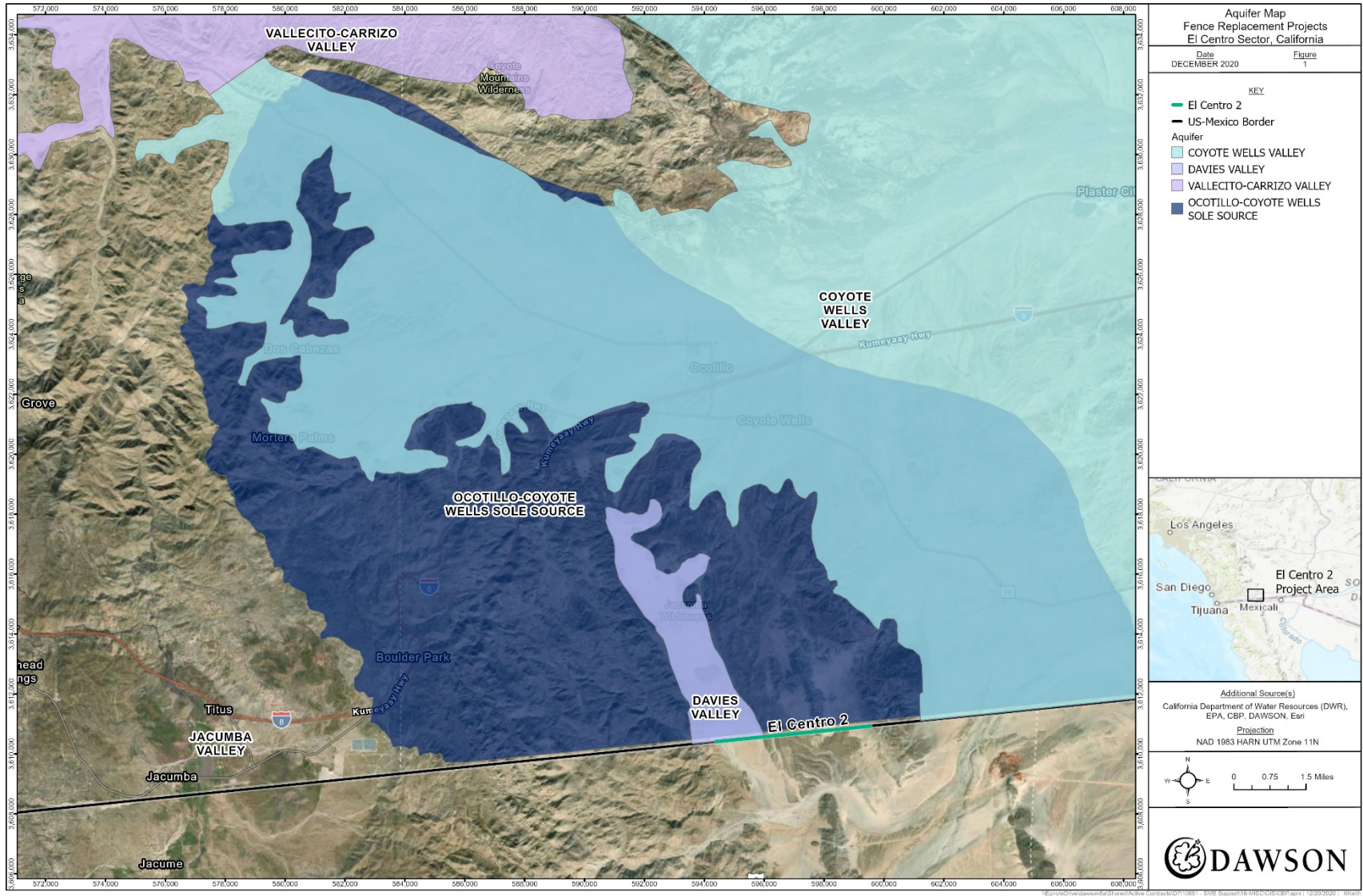
7.1.3 Floodplains

Floodplains are areas of low-level ground present along rivers, stream channels, large wetlands, or coastal waters. Floodplain ecosystem functions include natural moderation of floods, flood storage and conveyance, groundwater recharge, and nutrient cycling. Floodplains also help to maintain water quality and are often home to a diverse array of plants and animals. In their natural vegetated state, floodplains slow the rate at which the incoming overland flow reaches the main water body.

Flood potential is evaluated by the Federal Emergency Management Agency (FEMA), which defines the 100-year floodplain as the area that has a 1 percent chance of inundation by a flood event in any given year. Risk of flooding typically hinges on local topography, the frequency of precipitation events, and the size of the watershed above the floodplain. Certain facilities, such as hospitals, schools, or storage buildings for irreplaceable records, inherently pose too great a risk to be in either the 100- or 500-year floodplain. 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.

Floodplains are protected under EO 11988, *Floodplain Management*, which 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. If a Federal agency action encroaches within the floodplain and alters the flood hazards designated on a FIRM (e.g., changes to the floodplain boundary), an analysis reflecting any changes must be submitted to the FEMA. EO 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 EO 11988 outlined in the FEMA document *Further Advice on EO 11988*.

Figure 7-1. Aquifers near the Project Area



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All construction activities near the floodplain should be coordinated with the Floodplain Manager for the area FEMA office.

Floodplains in the Project Area. A review of the FIRM for Imperial County in California and unincorporated areas shows that parts of the Project Area occur within Zone A (Pinto Wash), which is defined by FEMA as a Special Flood Hazard Area subject to inundation by the 1 percent annual chance flood (FEMA 2020). Other parts are mapped as Zone X, which is defined as an area determined to be outside the 0.2 percent annual chance floodplain (FEMA 2020) (see **Figure 7-2**).

7.2 ENVIRONMENTAL CONSEQUENCES

7.2.1 Groundwater

The Project has the potential to have minor to moderate, temporary adverse impacts on the availability of water resources in the region. The Project requires water from the local supply for road construction, including pouring concrete, cut-and-fill operations, and fugitive dust suppression during construction activities.

This temporary demand is unlikely to have a permanent impact on the local water supply, which is drawn from a diverse set of water sources. If local groundwater pumping is found to have an adverse effect to aquatic, marsh, or riparian dwelling threatened and endangered species, treated water from outside the immediate area must be utilized.

Prior to drilling new wells or using existing ones, the contractor is required to receive approval for all proposed well locations from CBP. In order to use private wells, the contractor must receive permission from the individual landowner.

Groundwater contamination due to road improvements or fence installation is likely to be negligible due to the implementation of SWPPP measures and the natural filtration of soils overlying the aquifers in the Project corridor. Groundwater quality does not have the potential to be permanently impacted as a result of the Project.

7.2.2 Surface Water and Waters of the United States

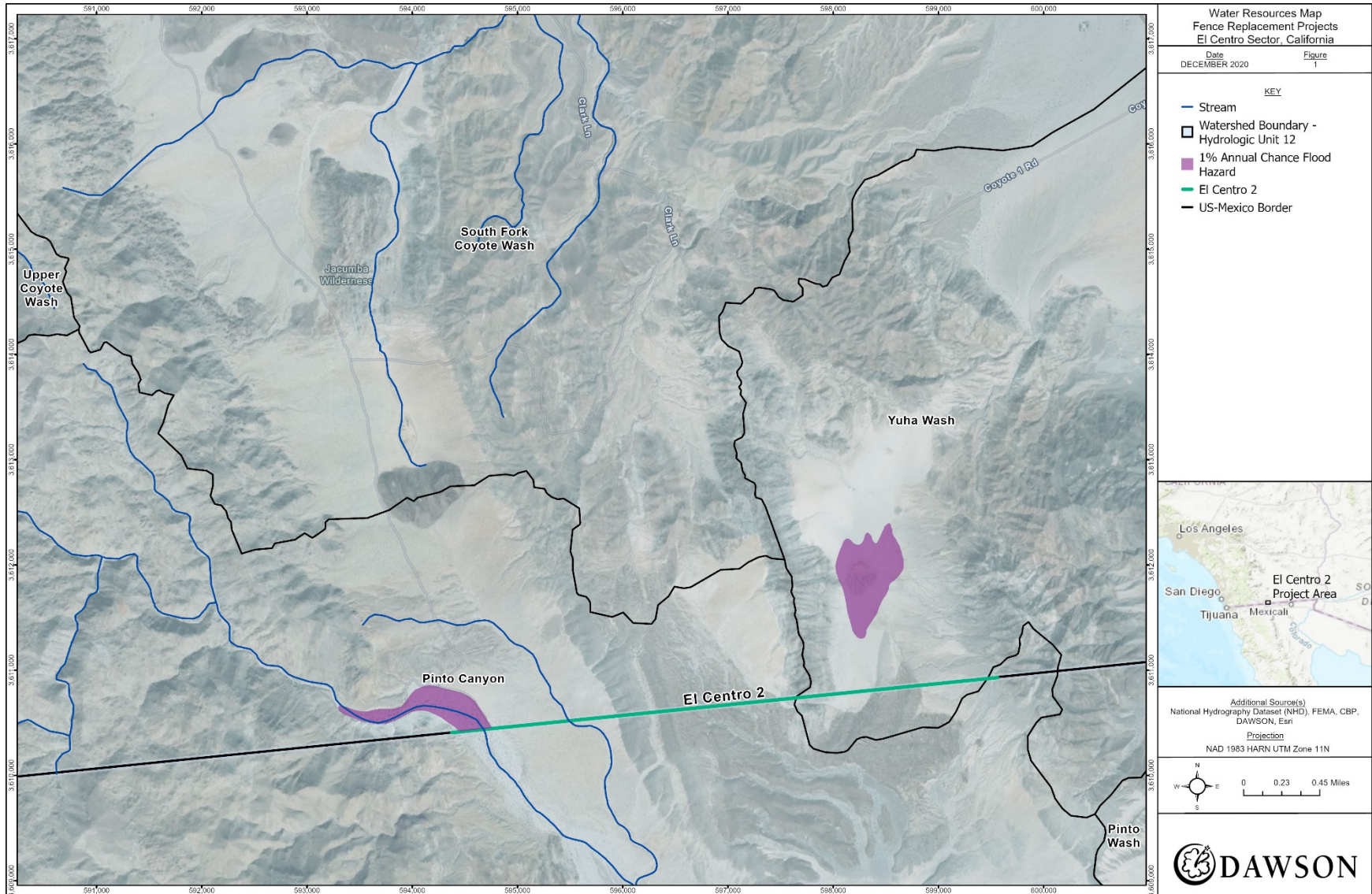
Construction of the barrier system does not have the potential to impact potentially jurisdictional waters within the Project Area.

7.2.3 Floodplains

The Project has the potential to result in moderate, short- and long-term permanent impacts on Zone A floodplains that are subject to inundation by the 1 percent annual chance flood. The estimated footprint to the 0.2-mile stretch of Zone A in the Project Area is approximately 1.45 acres (0.2-mile length multiplied by 60-foot corridor length). Some potential impacts of the border fence include increased risk of flooding due to increased runoff velocities from additional hard surfaces, potentially obstructed waterways, slightly reduced infiltration, and possibly minimal reductions in groundwater recharge. CBP will coordinate with the construction contractor to

consider these impacts and develop a barrier design that allows for continuous water flow and minimizes debris build-up during flood events. Erosion and sediment control and storm water management practices will be implemented during and after construction.

Figure 7-2. Floodplain Map of the Project Area



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8. BIOLOGICAL RESOURCES (VEGETATION, WILDLIFE, AQUATIC SPECIES, SPECIAL-STATUS SPECIES)

8.1 AFFECTED ENVIRONMENT

The Project is situated in the westernmost corner of Imperial County, California in the Jacumba Mountains. The Project Area is within the federal Roosevelt Reservation and Jacumba Wilderness. The Jacumba Wilderness is managed by BLM. The Survey Area has two dominating landforms, Davies and Skull valleys. The designated survey area was 100 feet north of the U.S./Mexico border and approximately 50 feet from the centerline for both access roads leading to the border, one in each valley (the Survey Area).

The Survey Area falls within the Sonoran Basin and Range Ecoregion and one Level IV Ecoregion, Western Sonoran Mountains (Griffith et al. 2016). North America is divided into 15 broad, Level I ecoregions, which are then divided into 50 Level II ecoregions intended to provide a more detailed description of the large ecological areas nested within the Level I ecoregions. Level III ecoregions are even smaller ecological areas nested within Level II regions; this trend continues to Level IV ecoregions. This Level IV Ecoregion, Western Sonoran Mountains, is characterized by exposed bedrock with sand and sediment filled basins dissecting the range. Monsoonal precipitation in summer months is common although less on average than mountainous regions to the east. The ecoregion generally supports Sonoran creosote bush scrub and transitions to succulent scrub across the valleys of the Project. Elevations range between 880 to 1,250 feet above mean sea level.

The literature search identified 64 special-status species whose potential occurrence needed to be evaluated within the Survey Area. Surveys were conducted in April 2020 to identify suitable habitat for special-status species. Habitat conditions observed in the Survey Area were used to evaluate the potential for occurrence of special-status species. The following sources were reviewed to determine which special-status plant and wildlife species have been documented to occur near the Survey Area:

- California Natural Diversity Database records (CNDDDB 2020);
- California Native Plant Society Inventory of Rare and Endangered Plants of California (CNPS 2020);
- United States Geological Survey 7.5-minute quadrangles In-ko-pah Gorge and Coyote Wells (USGS 1972);
- NatureServe (NatureServe 2020);
- U.S. Department of Agriculture Natural Resource Conservation Service Soil Survey Data (Soil Survey Staff 2020); and
- Bureau of Land Management California Special-Status Animal Species and Sensitive Species List (BLM 2014).

A general biological survey was conducted of the Project Area in April 2020. Vegetation types across the Survey Area were mapped using the United States National Vegetation Classifications Database (USNVC 2020) and habitats were mapped to the association level when possible (see **Appendix A**). Vegetation mapping was conducted with the use of a global positioning system and aerial photographs. During all surveys and site visits, biologists documented all plant and wildlife species observed incidentally.

8.1.1 Vegetation

Plant species observed in the Survey Area were identified using the Desert Jepson Manual (Baldwin et al. 2002) and the Jepson Flora Project (Jepson eFlora 2019). Vegetation within the Survey Area is continuous and generally undisturbed. Vegetation communities extend north from the Survey Area into the greater Jacumba Wilderness area. Small areas of disturbance prior to construction activities and road pioneering include off-road vehicle tracks, secondary two-track patrol roads, and vehicle turn around areas.

Vegetation within the Survey Area consists of native vegetation communities as follows: *Acacia [Senegalia] greggii* - *Hyptis emoryi* - *Justica californica* Desert Wash Scrub Alliance, *Acacia [Senegalia] greggii* Wash Shrubland Association, *Chilopsis linearis* - *Psoralea argophylla* Desert Wash Scrub Alliance, *Larrea tridentata* - *Ambrosia dumosa* - *Fouquieria splendens* Shrubland Association, *Larrea tridentata* - *Ambrosia dumosa* - *Krameria grayi* Association, *Larrea tridentata* - *Ambrosia dumosa* - *Pleuraphis rigida* Desert Shrubland, *Larrea tridentata* - *Encelia farinosa* - *Ambrosia dumosa* Desert Shrubland Association, *Larrea tridentata* - *Encelia farinosa* - *Fouquieria splendens* Shrubland Association, *Larrea tridentata* - *Encelia farinosa* Shrubland Association, and *Larrea tridentata* - *Fouquieria splendens* Upper Bajada and Rock Outcrop Desert Scrub Alliance.

Five special-status plant species were observed within the Survey Area during surveys and subsequent monitoring but a total of 26 special-status plant species have been documented to occur within three miles of the Survey Area. All special-status plant species listed in **Appendix A** were observed within the Survey Area or have the potential to occur in the Survey Area due to suitable soil, topographical, and/or vegetation communities observed during surveys.

8.1.2 Wildlife and Aquatic Resources

Seven special-status wildlife species were observed within the Survey Area during surveys and subsequent monitoring but a total of 38 special-status wildlife species have been documented to occur within three miles of the Survey Area. All special-status wildlife species listed in **Table 8-1** were observed during surveys. **Appendix A** lists all special-status wildlife species that have the potential to occur in the Survey Area due to suitable soil, topographical, and/or vegetation communities observed during surveys.

Table 8-1. Wildlife Observed in Survey Area

Species Name	Common Name
Reptiles	
<i>Uma notata</i>	Colorado Desert fringe-toed lizard
Birds	
<i>Aquila chrysaetos</i>	Golden eagle
<i>Falco mexicanus</i>	Prairie falcon
<i>Lanius ludovicianus</i>	Loggerhead shrike
<i>Polioptila melanura</i>	Black-tailed gnatcatcher
Mammals	
<i>Ovis canadensis nelsoni</i>	Peninsular desert bighorn sheep

8.1.2.1 Critical Habitat

Critical habitat has been designated for one special-status wildlife species in the region, Peninsular desert bighorn sheep (*Ovis canadensis nelsoni*), in the western portion of Davies Valley (USFWS 2020). Suitable vegetation and topography for Peninsular desert bighorn sheep does occur throughout the Survey Area including open Sonoran Desert scrub vegetation and rugged mountainous terrain. Peninsular desert bighorn sheep were not observed during surveys but have been observed on numerous occasions throughout subsequent monitoring activities in both Davies and Skull valleys.

8.2 ENVIRONMENTAL CONSEQUENCES

8.2.1 Vegetation

Construction of the new bollard wall along the U.S./Mexico international border with 30-foot bollard has the potential to cause both permanent and temporary impacts on the native vegetation communities listed in **Section 8.1.1**. Permanent impacts have the potential to occur in areas of the new bollard wall alignment, adjacent patrol road, infrastructure related to communications, and installation of LED lighting. Temporary impacts have the potential to occur in areas north of the alignment and patrol roads used for equipment and materials storage and staging, and laydown yards used to store equipment, materials, and conduct temporary activities in support of the Project.

Five special-status plant species are known to occur within the Survey Area and 26 additional special-status plant species have been documented to occur within three miles of the Survey Area. Therefore, direct adverse impacts on special-status plant species within the Survey Area have the potential to occur as a result of construction activities. Special-status plant species have the potential to be impacted through direct loss of individuals. Adverse impacts on special-status plant species found within the Survey Area could be mitigated by avoidance with guidance by a qualified biological monitor. BMPs will be implemented to minimize potential impacts on special-status plant species.

8.2.2 Wildlife and Aquatic Resources

The majority of wildlife likely to be found within the Project Area are common and widespread throughout the region. Mobile wildlife such as birds and larger mammals have the potential to

move away from the construction area toward nearby areas of similar habitat, while smaller, slow, or sedentary species such as reptiles, amphibians, and smaller mammals have the potential to be lost during construction. Therefore, direct negligible to minor, negative impacts on wildlife within the Project Area have the potential to occur. However, because construction will be temporary and much of the habitat will be restored, the potential for this Project to result in long-term or significant decreases in most wildlife populations in the region is unlikely. Migratory birds have the potential to be impacted through direct loss of habitat, including foraging, roosting, nesting, and escape cover. Adverse impacts on nesting birds within the Project footprint have the potential to be mitigated by avoidance or relocation by a qualified biologist. BMPs will be implemented to minimize potential impacts on migratory birds.

Critical habitat has been designated for one species in the region, Peninsular bighorn sheep, but it does not overlap with the Project Area. However, suitable vegetation and topography for Peninsular bighorn sheep, including open desert scrub vegetation and rugged mountainous terrain, does occur within the Project Area. No Peninsular bighorn sheep critical habitat will be impacted as a result of construction activities.

Construction-related noise has the potential to have short-term impacts on wildlife species within the Project 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). Because construction activities could take place 24 hours a day and the most active periods for most wildlife are between dusk and dawn, the Project noise-related impacts during construction have the potential to be moderate.

The use of portable construction lighting has the potential to affect wildlife. Light pollution can cause disorientation to wildlife by extending diurnal and crepuscular behaviors into the night. Some species have the potential to benefit from this, as it increases foraging potential for predators but decreases benefits for prey (Longcore and Rich 2004). Conversely, animals that forage at night have the potential to be negatively influenced due to the shortened nighttime hours or could move away from the area altogether.

Reproduction in certain species also has the potential to be affected; frogs, for example, have been documented to stop mating activity in the presence of nighttime light. The Project Area will be illuminated at night by permanent lighting for border enforcement activities, which has the potential to have a moderate impact on wildlife activities. However, all lighting will be shielded and directed down to minimize impacts on wildlife.

9. CULTURAL RESOURCES

9.1 AFFECTED ENVIRONMENT

“Cultural resources” is an umbrella term for many heritage-related resources defined in several Federal laws and executive orders, including the National Historic Preservation Act (NHPA), the Archeological and Historic Preservation Act, the American Indian Religious Freedom Act, the Archeological Resources Protection Act, and the Native American Graves Protection and Repatriation Act (NAGPRA). NHPA focuses on cultural resources such as prehistoric and historic sites, buildings and structures, districts, and other physical evidence of human activity considered important to a culture, subculture, or community for scientific, traditional, religious, or other reasons. Such resources might provide insight into the cultural practices of previous civilizations or retain cultural and religious significance to modern groups. Resources judged important under criteria established in NHPA are considered eligible for listing in NRHP. These resources are termed “historic properties” and protected under NHPA.

9.1.1 Project Location and Setting

Archaeologists completed a cultural resources survey of approximately 211 acres of Right of Way (ROW) for the Project. Topography for the survey areas included both alluvial fan and mountainous terrain. The ROW consists of a 4.02 miles of Border Wall segments ranging in width from 90ft. to 390ft. wide (109.35 acres), 17.19 miles of 40 ft. wide access road corridor (82.58 acres), and 19.30 acres of additional work space that included turnarounds, storage yards, and laydown yards.

The current area of investigation is located in the Colorado Desert, a subdivision of the Sonoran Desert. The Colorado Desert is characterized by its low elevation—mostly below 1,000 ft and some portions below sea level—and arid climate. The extent of the Colorado Desert is defined by the Peninsular Range on the west and the Colorado River on the east. To the south, the desert extends into northern Mexico. On the north, the Colorado Desert is bounded by the higher Mojave Desert. The geology of the area is heavily influenced by the forces that created the Salton Trough, which covers much of the area. This trough is the product of tectonic movements of the North American and Pacific plates. Soils in the Colorado Desert are largely alluvial and colluvial deposits derived from erosion of the surrounding mountains and deposition from the meanderings of the Colorado River.

Hot summers and mild winters typify the climate of the Colorado Desert. Temperatures during the summer average over 90 degrees Fahrenheit, with frequent peaks over 110 degrees Fahrenheit. Winter temperatures are mild, with freezes being uncommon. The Peninsular Range, on the west side of the Colorado Desert mostly restricts movement of storms from the west, resulting in low annual precipitation, generally below three inches per year. A monsoonal pattern in the summer can produce some precipitation, but typically most of the rain in the region comes in the winter.

Vegetation in the Colorado Desert is typical of the Lower Colorado River subdivision of the Sonoran Desert (Turner and Brown 1994). However, because of the exceptionally hot and arid conditions, vegetation is generally sparse in the area, with creosotebush being the predominant

plant type. Other plants include ocotillo, cholla, yucca, saltbush and other hardy species. In more mesic locations, mesquite, palo verde, smoketree, and ironwood can be found.

9.1.2 Cultural History

The Early Archaic Period (ca. 5000 Before Common Era (B.C.E.) – 2000 B.C.E.) is poorly represented in the archaeological record of the Colorado Desert (Schaefer et al. 2010), and it has been suggested (Schaefer 1994) that the California deserts were particularly inhospitable during this period. The Early Archaic period witnessed a transition to a more generalized economic pursuits and an increased use of milling stone (including manos and metates) and vegetal processing technology (Pigniolo et al. 2011). Distinctive stemmed projectile points (especially Pinto-style points), as well as notched varieties, were produced during this time.

The Late Archaic period (ca. 2000 B.C.E. – 500 Common Era (C.E.)) witnessed an increased use of ground stone technology (Porras 2017) and an increase in exotic (i.e., west coast) shell items and flaked stone lithic material suggesting the development of trade relationships between desert and coastal groups (Brock and Smith 2004; Chandler et al. 2003).

The adoption of bow-and-arrow technology at around 500 C.E. marks the beginning of the Late Prehistoric period (ca. 500 C.E. – 1540 C.E.). Ceramic technology was adopted approximately 300 years later (Cleland 1999). The period also witnesses the beginnings of floodplain horticultural practices along the lower Colorado River.

The Spanish Period in southern California began in 1540, when Hernando de Alarcón sailed up the lower Colorado River from the Gulf of California, making it at least as far as present-day Yuma (Schaefer et al. 2010). The Spanish introduced a variety of domesticated animals, including cattle, horses, sheep, goats, and chickens, as well as various economic plants. The Spanish established numerous missions in the region; these figure prominently in the early history of California, especially until their secularization in 1834.

The Mexican War of Independence lasted from 1810 until 1821, after which time southern California became part of the Mexican state of Alta California. Spanish laws were retained in Alta California for more than a decade after the end of Spanish rule. Cattle ranching predominated agricultural pursuits.

Mexico ceded California to the United States under the Treaty of Guadalupe Hidalgo in 1848. Shortly thereafter, gold was discovered in California, and the resulting rush of Americans (and others), spurred by the enactment of the Homestead Act of 1851, significantly diminished not only Spanish and Mexican cultural influence in southern California, but also decimated any remaining control that Native American groups retained over their ancestral lands.

The modern history of the Imperial Valley begins with the arrival of settlers in the early 1900s. Settlements established during this period include the urban center of El Centro and numerous other communities such as Seeley, Calexico, Brawley, Niland, and Holtville. According to a 2017 U.S. Census estimate, the El Centro Metropolitan Area, which encompasses all of Imperial County, is home to more than 180,000 residents.

9.1.3 Records Check and Survey Results

A search of the California Historic Resources Information System (CHRIS) from the South Coastal Information Center (SCIC) that included the entire proposed project area was requested. Results of the record search indicate that seven previous studies have been completed within 0.25 mile of the proposed project area (**Table 9-1**). Maps of previous projects are in **Appendix C**.

Table 9-1. Previous Cultural Resource Studies

Number	Short Reference	Project	Project Type	In Area of Potential Effect	Resources
IM-00203	Gallegos 1980	East Mesa and West Mesa Regions	Survey	No	–
M-00207	Davis 1980	East Mesa and West Mesa Regions	Survey	No	–
IM-00210	Von Werlhof and McNitt 1980	Republic Geothermal Field, East Mesa	Other	No	–
IM-00766	Schaefer et al. 1999	Extended Phase I Study of Eight Archaeological Sites (CA-IMP-1427, -3969, -6914, -6915, -6916, -6918, -6920, -6923) on State Route 98	Inventory	Yes	13-001427, 13-003969, 13-006914, 13-006915, 13-006916, 13-006920, 13-006923
M-01183	Cheever and Berryman 2008; U.S. INS 2002	Temporary Vehicle Barriers along the International Border near Calexico	Survey	No	13-009598; 13-009599; 13-009617
IM-01301	Barker et al. 1973	The Yuha Burial	Excavation	No	–
--	Marshal 2019	El Centro 1 Border Project	Survey	Yes	–

The records search also determined nine previously recorded resources are located within or immediately adjacent to the project boundaries (**Table 9-2**). In addition, 50 other cultural resources are located within 0.25 mile of the project area (**Table 9-3**). These include prehistoric archaeological sites, prehistoric isolates, and historic resources. Maps of previously recorded sites are in **Appendix C**.

Table 9-2. Previously Recorded Cultural Resources Within the Project Area

Primary No. (P-13-)	Site Type	Age	Location	USGS Topographic Map
000218	Limited Activity Area	Prehistoric	Skull Valley	Coyote Wells
001184	Artifact scatter	Unknown	Skull Valley	Coyote Wells
002164	Limited Activity Area	Prehistoric	Skull Valley Access Road	Coyote Wells
002166	Limited Activity Area	Historic	Wells Access Road	Coyote Wells
004307	Rock alignment/pile	Prehistoric	Skull Valley Border Segment	Coyote Wells
004320	Trail	Unknown	Skull Valley Access Road	Coyote Wells
004325	Limited Activity Area	Prehistoric	Skull Valley Access Road	Coyote Wells
004326	Subsistence	Unknown	Road to Laydown Option 1 & 2	In-Ko-Pah Gorge
007369	Unknown	Prehistoric	Davies Valley	In-Ko-Pah Gorge

Table 9-3. Previously Recorded Cultural Resources Within 0.25 Mile of the Project Area

PRIMARY No.	Trinomial	Description
Easy Pickins Mine	Unknown	Easy Pickins Mine
P-13-000020	Unknown	pottery scatter on a sand flat
P-13-000153	Unknown	No Information Available
P-13-000166	Unknown	No Information Available
P-13-000167	Unknown	occupation site with earth dams, chert midden
P-13-000168	Unknown	occupation site with earth dams, trails
P-13-000176	Unknown	possible campsite, mano, trails
P-13-000184	Unknown	trails, sleeping circles, slicks, porphyry and quartz points, mano
P-13-000219	Unknown	temporary campsite-porphry flakes, cores, thermal-fractured rocks, possible hearths or pits, sherds (oxidation, fine temper)
P-13-000223	Unknown	small localized cluster of core and flake debris, quartz
P-13-000224	Unknown	small scatter of cores, flakes, basaltic biface fragments, one felsite handaxe
P-13-000226	Unknown	scatter of pot sherds and flakes, 2 large mammal bone pieces found (possible human)
P-13-000274	Unknown	rock ring (agave pit), 2 round rocks on small flat rocks, 2 manos, potsherds, felsite flakes
P-13-000430	Unknown	large surface scatter of felsite and basalt core/flakes

PRIMARY No.	Trinomial	Description
P-13-000431	Unknown	felsite flakes, possible hand axe and scrapers, flakes
P-13-000435	Unknown	small concentrated lithic scatter of cores, flakes
P-13-000443	Unknown	28 knapping stations, debitage, cairn and rock ring
P-13-000458	Unknown	No Information Available
P-13-000725	Unknown	sherds, stone tools, hammerstone, mano, midden
P-13-000801	Unknown	two rock rings, charcoal
P-13-001164	Unknown	sherd and flake scatter with charcoal and burnt bone
P-13-001166	Unknown	roasting pit
P-13-001182	Unknown	felsite flakes and cores, potsherds-fire tempered
P-13-001188	Unknown	Unknown
P-13-001189	Unknown	Unknown
P-13-001190	Unknown	Unknown
P-13-001197	Unknown	scattered campsite with potsherds, scraper planes, felsite debitage, milling stone fragments
P-13-001200	Unknown	potsherds, flakes scattered over a wide area
P-13-001410	Unknown	rock alignment, rock ring
P-13-002162	Unknown	isolate potsherd
P-13-002168	Unknown	isolate potsherd
P-13-003689	Unknown	lithic scatter with cairns
P-13-004306	CA-IMP-004306	trail
P-13-004321	Unknown	cairn
P-13-004322	Unknown	house ring, trail, cairn
P-13-004323	Unknown	trail, cairn or shrine with stones piled onto each other, possibly built by passers
P-13-004324	Unknown	House ring
P-13-004327	Unknown	No Information Available
P-13-004328	Unknown	Rock ring
P-13-005236	Unknown	Geoglyph associated with cairn
P-13-006176	Unknown	No Information Available
P-13-006670	Unknown	No Information Available
P-13-007369	Unknown	No Information Available
Unknown	Unknown	Polygon Provided by BLM (Skull Valley)
Unknown	Unknown	Polygon Provided by BLM (Skull Valley)
Unknown	Unknown	Polygon Provided by BLM (Skull Valley)
Unknown	Unknown	Polygon Provided by BLM (Skull Valley)
Unknown	Unknown	Polygon Provided by BLM (Skull Valley)
Unknown	Unknown	Polygon Provided by BLM (Skull Valley)
Unknown	Unknown	Polygon Provided by BLM (Skull Valley)

In addition to the SCIC records search, a variety of sources were consulted to obtain information regarding the cultural context of the project area (**Table 9-4**). Sources included the NRHP, the California Register of Historic Resources (CRHR), California Historical Resources Inventory (CHRI), California Historical Landmarks (CHL), and California Points of Historical Interest (CPHI). Specific information about the project area, obtained from historic-era maps and aerial photographs, is presented in the Project Area History section.

Table 9-4. Additional Sources Consulted

Source	Results
National Register of Historic Places (NRHP; 1979-2002 & supplements)	None
Historic USGS Topographic Maps	All 7.5 USGS ca. 1940s to modern.
Historic US Department of Agriculture Aerial Photographs	None
California Register of Historical Resources (CRHR; 1992-2014)	None
California Historical Resources Inventory (CHRI; 1976-2014)	None
California Historical Landmarks (CHL; 1995 & supplements to 2014)	None
California Points of Historical Interest (CPHI; 1992 to 2014)	None
Caltrans Historic Bridge Inventory (2016)	None
Bureau of Land Management General Land Office Records	Several land patents across the El Centro 2 project area, none of which were associated with any known or newly recorded sites.

A total of 283.08 acres in 22 separate survey areas were surveyed between April 28 and May 1, 2020. Transect width was between 10 to 15 meters where possible, but some of the survey areas were heavily covered in vegetation, difficult terrain, or were not accessible due to steepness or lack of available roads. In difficult terrain, surveys were limited to narrow trails where available. Nikon Aculon A211 10x50 binoculars were used on inaccessible areas within line of sight. A Trimble GeoXH was used to record all pertinent GPS data. Survey and photo logs were maintained for each individual survey area. Maps of project results are located in **Appendix C**.

P-13-002164 represents a discreet low-density prehistoric artifact scatter. The site is likely associated with the other 10 sites previously plotted surrounding the prehistoric playa. These sites likely represent one larger site instead of 10 discreet sites. No diagnostic artifacts were identified during the current investigation of P-13-002164. Additionally, there is no evidence for buried cultural deposits in this location.

P-13-002166 is a prehistoric site with intact cultural features. The site has the potential for additional buried cultural deposits. The linear feature identified during the current survey is consistent with a water control feature suggestive of long-term occupation and habitation in the surrounding area. Its proximity to the dry lake bed and to numerous other previously recorded sites within Skull Valley may also contribute to the overall knowledge of prehistory within the valley and surrounding area.

P-13-004325 represents a moderate sizes camp site from an unknown temporal association. While no artifacts were identified within the site boundary a prehistoric occupation of this site cannot be ruled out based on the recording of prehistoric artifacts in the immediate vicinity and throughout the survey area. Field site 3 may be associated with this site however a direct association cannot be drawn at this time.

9.2 ENVIRONMENTAL CONSEQUENCES

Although the Secretary's waiver means that CBP does not have any specific obligations under NHPA, DHS and CBP recognize the importance of responsible environmental stewardship. CBP has therefore applied the general standards and guidelines associated with NHPA as the basis for evaluating potential environmental impacts and appropriate BMPs.

Of the nine previously recorded archaeological resources that were noted in or immediately adjacent to the Project area, four were relocated during the current survey. Twelve newly recorded sites were documented within or near the project area. None of these newly recorded sites will be impacted by the proposed undertaking or do not warrant any further investigation.

P-13-002164 is recommended ineligible for inclusion in the NRHP. The site will not be impacted by the proposed road construction and no further archaeological investigation is warranted at this time.

Based on the current survey P-13-002166 is recommended eligible for inclusion in NRHP under Criterion D (information potential). P-13-002166 was tested by Cogstone archaeologists following this survey in May of 2020, subsequently exhausting the site of any further research potential. The results of this testing project at P-13-002166 will be presented in a forthcoming testing report. No further work is warranted at P-13-002166.

The eligibility of P-13-004325 remains unevaluated at this time. The soils within the site indicate the potential for buried deposits. In order to determine eligibility future subsurface testing should be completed to investigate the potential for buried cultural deposits. Currently the site is located outside of the project area and will not be impacted by the proposed construction. No further archaeological investigation of P-13-004325 is warranted for the proposed undertaking.

Additionally, 25 isolated occurrences (IOs) or isolated features (IFs) were documented during the current survey. The IOs ranged from single historic artifacts to small clusters of prehistoric artifacts which do not meet the criteria necessary to qualify as a site. The IFs that were documented are primarily historic USGS survey marker caps, secondary international boundary markers, isolated historic and prehistoric rock features. None of the resources are considered eligible for inclusion in either the NRHP or the CRHR.

In the event of any unanticipated cultural resource discoveries during the current undertaking, all finds should be immediately reported to CBP personnel for further evaluation and mitigation responses. If human remains are encountered during construction activity, construction should stop, and the proper authorities from CBP must also be notified as would occur under NAGPRA. With the implementation of these recommendations, in conjunction with the BMPs listed in

Section 1.5.7, the Project does not have the potential to have any direct or indirect adverse impact on known cultural resources.

10. SOCIOECONOMICS

10.1 AFFECTED ENVIRONMENT

Socioeconomics is defined as the basic attributes and resources associated with the human environment, particularly population and economic activity. While population and demographic data are relatively straightforward and maintained by the Census Bureau, there are many factors that can be used as indicators of economic conditions for a geographic area, such as employment and unemployment rates, employment by business sector, and median household income.

The Project includes the installation of new bollard wall along the U.S./Mexico international border west of Calexico, California, in Imperial County, California, and north of Mexicali, Mexico. The Project will occur in a rural/undeveloped area in the United States. For the purposes of this ESP, the Region of Influence (ROI) includes census tract 123.01 in Imperial County, California. Census tracts are designed to be relatively homogenous units with respect to population characteristics, economic status, and living conditions at the time of establishment. The demographics of the ROI, county, and state are listed in **Table 10-1**. The racial mix of the ROI is greater than Imperial County as a whole, with 58.7 percent listed as some other race, followed by black or African American at 18 percent. Two-thirds of the population is Hispanic or Latino, which, while lower than the total Hispanic population of Imperial County, is much higher than the state average of 38.9 percent (U.S. Census Bureau 2020a).

Table 10-1. Demographics by County

Location	Total Population, 2018	Caucasian (%)	Some Other Race	Black/African American	American Indian/Native Alaskan	Asian	Native Hawaiian/Pacific Island	2+ Races	Hispanic/Latino *
ROI	4,944	16.2%	58.7%	18%	1.5%	1.9%	0.3%	3.4%	67.5%
Imperial	180,216	64.3%	26.3%	2.5%	1.0%	1.5%	0.2%	4.2%	83.8%
California	39,148,760	60.1%	13.8%	5.8%	0.8%	14.3%	0.4%	4.8%	38.9%

*Percentage not included as part of demographic total.
Source: U.S. Census Bureau 2020a.

Employment types in the ROI vary (see **Table 10-2**). The largest employment type in the ROI is Management, business, science, and arts occupations (35.4 percent), while in Imperial County and California it is educational, health, and social services (26.3 percent and 21 percent, respectively). In 2018, the ROI had an unemployment rate of 11.3 percent, compared to 15.3 percent for Imperial County and 6.7 percent for the state (U.S. Census Bureau 2020b)

Residents, businesses, and industry in Mexicali, Baja California, Mexico, could also be affected by the Project, given the longstanding economic ties between the two countries. The commercial exchange between Baja California and San Diego and Imperial counties is valued at \$6.2 billion annually (WTC San Diego 2018). The population of Mexicali is approximately 1 million and is where numerous international businesses are located, such as the diversified “maquiladora” industry (assembly plants) and other cultural facilities. In 2019, crossings of people through the

California-Baja California border accounted for 32 percent of all crossings into the U.S. via land POEs (SANDAG 2020).

Table 10-2. Employment Data

Location	Civilians Employed	Top Industries	Unemployment Rate
ROI	457	Management, business, science, and arts occupations (35.4%); service occupations (22.8%); production, transportation, and material moving occupations (17.7%)	11.3%
Imperial	59,919	Educational services, and health care and social assistance (26.3%); Retail trade (14%); Agriculture, forestry, fishing and hunting, and mining (9.8%)	15.3%
California	18,309,012	Educational services, and health care and social assistance (21%); Professional, scientific, and management, and administrative and waste management services (13.4%); Retail trade (10.6%)	6.7%

Source: U.S. Census Bureau 2020b.

In 2018, Imperial County had a per capital personal income (PCPI) of \$36,974, which was only 58 percent of the state average of \$63,557 (BEA 2020). Total personal income (TPI) of an area is the income that is received by, or on behalf of, all the individuals who live in that area. In 2018, the TPI for Imperial County was \$6.7 billion. The income for Imperial County and California is listed in **Table 10-3**.

Table 10-3. County Income Comparison

Location	PCPI ¹	TPI ¹	Median Household Income ²
Imperial County	\$36,974	\$6.2 billion	\$45,834
California	\$63,557	\$2.63 trillion	\$71,228
United States	\$54,446	\$18.6 trillion	\$60,293

¹Source: BEA 2020.

²Source: U.S. Census Bureau 2020b.

10.2 ENVIRONMENTAL CONSEQUENCES

The Project is not likely to have impacts, direct or indirect, on long-term population or employment. Legal traffic across the border will continue at the Calexico POE. The Project is anticipated to hire local construction crews and contractors for the duration of construction, reducing the need for new employees or relocation of employees. No potential employees would be required to relocate to Imperial County; therefore, population and demographics of the County have the potential to remain the same as preconstruction conditions. The nature of the work associated with the construction phase would be temporary and would not have the potential to result in additional long-term employment. Additionally, it is possible that a portion of the required supplies would be bought from the businesses in the vicinity of the Study Area. The Project has

the potential to result in an increase in local spending on food and other incidentals. Although the Project has the potential to result in a short-term beneficial impact to the economy through the provision of temporary jobs and purchasing materials and other personal expenses from local businesses, any increase in economic activity would not likely be sustained to permanently alter the economic status of the residents and/or businesses in the immediate vicinity.

Imperial County has the potential to benefit from the Project in the long term, since the construction of the primary fence and installation of complimentary security facilities will provide additional protection from illegal traffic across the border.

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11. HAZARDOUS MATERIALS AND WASTE

11.1 AFFECTED ENVIRONMENT

Hazardous materials and wastes have a chemical composition or other properties that make them toxic or otherwise capable of causing illness, death, or otherwise harmful effect on humans or the environment when mismanaged or released.

USEPA maintains a list of hazardous waste sites, particularly waste storage/treatment facilities or former industrial manufacturing sites in the United States. The chemical contaminants released into the environment (e.g., air, soil, groundwater) from hazardous waste sites could include organic compounds, solvents, and other chemicals. The potential adverse impact of hazardous waste sites on human health is a considerable source of concern to the general public, as well as government agencies and health professionals.

Solid and hazardous wastes are regulated in California by a combination of mandated laws promulgated by the Federal, state, and regional Councils of Government. A search of USEPA's Envirofacts Data Warehouse showed no superfund sites near the Project Area (USEPA 2019b). Furthermore, the Project Area has no structures, therefore, ACMs, LBP, and PCBs in building materials do not exist on the site.

In addition to the laws and regulations previously mentioned, EO 12088, *Federal Compliance with Pollution Control Standards*, as amended, directs Federal agencies to (1) comply with "applicable pollution control standards," in the prevention, control, and abatement of environmental pollution; and (2) consult with USEPA, state, and local agencies concerning the best techniques and methods available for the prevention, control, and abatement of environmental pollution.

11.2 ENVIRONMENTAL CONSEQUENCES

Soils in the Project Area have the potential to be impacted by hazardous or toxic materials in the event of an accidental spill, which could lead to groundwater contamination. To minimize the potential for release of hazardous materials into the environment, BMPs will be implemented during construction activities to avoid a release to the environment and to anticipate capture requirements in advance of any potential release. To prevent contamination of the Project Area, care will be taken to avoid impacting the Project Area with hazardous substances (e.g., anti-freeze, fuels, oils, lubricants) used during construction. POLs will be stored at designated temporary staging areas to maintain and refuel construction equipment. These activities include primary and secondary containment measures; a SPCCP will be in place prior to the start of construction, and all personnel will be briefed on the implementation and responsibilities of this plan.

Cleanup materials (e.g., oil mops), in accordance with the Project's SPCCP, will also be maintained at the site to allow immediate action in case an accidental spill occurs. Drip pans will be provided for the power generators and other stationary equipment to capture any POLs accidentally spilled during maintenance activities or leaks from the equipment. A concrete washout containment system will be established to ensure concrete washout is safely managed and disposed of properly.

Sanitation facilities will be provided during construction activities, and waste products will be collected and disposed of by licensed contractors. No gray water will be discharged to the ground. Disposal contractors will use only established roads to transport equipment and supplies; all waste will be disposed of in strict compliance with Federal, state, and local regulations, in accordance with the contractor's permits. All construction waste will be disposed in compliance with Federal, state, and local regulations. Due to the proper permits being obtained by the licensed contractor tasked to handle any unregulated solid waste, and because all of the unregulated solid waste will be handled in the proper manner, no hazards to the public have the potential to occur through the transport, use, or disposal of unregulated solid waste.

12. RELATED PROJECTS AND POTENTIAL EFFECTS

12.1 CUMULATIVE AFFECTED ENVIRONMENT

This chapter of the ESP addresses the potential combined impacts associated with the implementation of the Project and other projects/programs that are planned for the region. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time by various agencies (Federal, state, and local) or individuals. Informed decision making is served by consideration of cumulative impacts resulting from projects that are planned, under construction, recently completed, or anticipated to be implemented in the reasonably foreseeable future.

This cumulative impacts analysis summarizes expected environmental effects from the combined impacts of past, current, and reasonably foreseeable future projects. 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 is very narrow and focused on the location of the resource. The scope of air quality, wildlife and sensitive species, visual resources, and socioeconomics is much broader and considers more county or region-wide activities. Projects that were considered for this analysis were identified by reviewing USBP documents, news releases, and published media reports, as well as through coordination with planning and engineering departments of local governments and state and Federal agencies, although only projects on the U.S. side of the border were possible to evaluate. Projects that do not occur in close proximity (i.e., within several miles) to the Project will not contribute to a cumulative impact (or are not possible to evaluate if they are south of the border) and are generally not evaluated further.

USBP has been conducting law enforcement actions along the border since its inception in 1924 and has continually transformed its methods as new missions, CBV modes of operation, agent needs, and national enforcement strategies have evolved. Development and maintenance of training ranges, station and sector facilities, detention facilities, and roads and fences have affected thousands of acres, with synergistic and cumulative impacts on soil, wildlife habitats, water quality, and noise. Beneficial effects have resulted from the construction and use of these roads and fences as well, including but not limited to: increased employment and income for border regions and surrounding communities, protection and enhancement of sensitive resources north of the border, reduction in crime within urban areas near the border, increased land value in areas where border security has increased, and increased knowledge of the biological communities and pre-history of the region through numerous biological and cultural resource surveys and studies.

With continued funding and implementation of CBP's environmental conservation measures, including environmental education and training of its agents, use of biological and archaeological monitors, and restoration of wildlife water systems and other habitats, adverse impacts from ongoing and future projects will be prevented or minimized. However, recent, ongoing, and reasonably foreseeable proposed projects will result in cumulative impacts. General descriptions of these types of activities are discussed in the following paragraphs.

12.2 CUMULATIVE FENCING ALONG THE SOUTHWESTERN BORDER

CBP has been identified to construct approximately 738 total miles of border barrier system, including approximately 659 miles of primary barriers and approximately 63 miles of secondary barriers on the southwestern border (CBP 2020b). As of December 11, 2020, approximately 430 miles of new primary and secondary border barrier system have been constructed. A summary of past, present, and reasonably foreseeable future actions near the Project Area are presented below.

12.3 PAST ACTIONS

Past actions include projects that have occurred in the relatively recent past that are within the cumulative effects analysis areas of this ESP. The effects of these past actions are generally described throughout the previous sections. For example, the existing vehicle and pedestrian fence, the Calexico POE, the existing access roads, and the previously developed border infrastructure system (BIS) have all contributed to the existing environmental conditions of the area.

12.4 PRESENT ACTIONS

Present actions include current or funded construction projects, USBP or other agency actions in close proximity to the fence locations, and current resource management programs and land use activities within the cumulative effects analysis area. Ongoing actions considered in the cumulative effects analysis include the following:

- **CBP-Funded Border Barrier** – In June 2019, CBP began construction of approximately 11 miles of primary replacement border barrier system along the U.S./Mexico international border in Imperial County, California. It is composed of two sections on either side of the Calexico POE: the first starts approximately 2 miles west of the Calexico POE and extends approximately 7.8 miles to the west, and the second is just east of the Calexico POE and extends approximately 2.7 miles to the east. This new bollard wall is currently under construction.
- **Department of Defense 10 U.S.C. § 284 Counter-Narcotics-Funded Border Barrier** – In 2019, the Department of Defense (DOD) identified funding to assist DHS and CBP with construction of 15.25 miles of replacement border barrier in Imperial County, California.
- **Revegetation Projects** – A variety of revegetation projects have recently been completed as part of previous construction projects (such as Comprehensive Tactical Infrastructure Maintenance and Repair [CTIMR] and tower installations) and additional work is planned to minimize Project-related impacts and to restore habitat along the border.

A review of the California Department of Transportation website, Governor's Office of Planning and Research, and Imperial County Planning and Development Services did not yield any results for additional construction projects to consider.

12.5 REASONABLY FORESEEABLE FUTURE ACTIONS

Reasonably foreseeable future actions consist of activities that have been approved and can be evaluated with respect to their effects. The following projects are reasonably foreseeable actions that are likely to occur in the El Centro Sector:

- **DOD 10 U.S.C. § 2808 Military Construction-Funded Border Barrier** – In 2019, DOD identified funding to assist DHS and CBP with construction of 13 miles of secondary pedestrian fence system in Imperial County, California. Construction has not yet started.

USBP might be required to implement other activities and operations that are currently not foreseen or mentioned in this document. These actions could be in response to national emergencies or security events, or to changes in the mode of operations of CBVs.

Plans by other agencies that will also affect the region's natural and human environment include various road improvements by California Department of Transportation and Imperial County Transportation. The majority of these projects will be expected to occur along existing corridors and within previously disturbed areas. The magnitude of the impacts depends upon the length and width of the road right-of-way and the conditions within and adjacent to the right-of-way. However, currently no large state or county projects are ongoing or near completion within the vicinity of the Project corridor.

Other organizations, such as BLM, routinely prepare or update Resource Management Plans for the resources they manage. A summary of the anticipated cumulative impacts relative to the Project (i.e., construction of the all-weather road and installation of the secondary fence) is presented below. These discussions are presented for each of the resources previously described.

12.6 ENVIRONMENTAL CONSEQUENCES

12.6.1 Air Quality

The emissions generated during and after the replacement of the legacy pedestrian and vehicle fence have the potential to be short-term and minor. There is the potential for cumulative adverse construction impacts on air quality from the current or foreseeable wall replacement projects discussed above. The emissions associated with these actions also have the potential to result in short-term and minor impacts on the airshed, even when combined with the other proposed developments in the border region. CBP will minimize air quality impacts by using standard BMPs, such as dust suppression, during construction. Deterrence of and improved response time to illegal border crossings created by the construction of infrastructure have the potential to lead to improved control of the border. A potential result of this improved control could be a reduction in the number of off-road enforcement actions that are currently necessary by USBP agents, thus potentially reducing dust generation and serving to benefit overall air quality as well.

12.6.2 Noise

Most of the noise generated by the Project has the potential to occur during construction and thus is not likely to contribute to cumulative impacts of ambient noise levels. Routine maintenance of

the primary pedestrian fence and roads has the potential to result in slight temporary increases in noise levels that could sporadically occur over the long-term and have the potential to be similar to those of ongoing road maintenance within the Project Area. Potential sources of noise from other projects are not significant enough (temporally or spatially) to increase ambient noise levels above 75 dBA at the Project sites. Thus, the noise generated by the construction and maintenance of Project infrastructure, when considered with the other existing and proposed projects in the region, has the potential to have minor cumulative adverse effects.

12.6.3 Land Use, Recreation, and Aesthetics

The Project has the potential to primarily affect lands in the Roosevelt Reservation, which was set aside specifically for border control actions. This Project is therefore consistent with the authorized land use and, when considered with other potential alterations of land use, does not have the potential to have a major cumulative adverse impact. Similarly, the open space opportunities they provide would not likely be affected by the Project and do not have the potential to be negatively impacted when considered with other present and foreseeable projects in the region.

There is the potential for visually apparent changes within the viewsheds that currently include no border barrier system. The addition of a new fence has the potential to cause major, adverse impacts on visual resources within the Project Area and when considered with other USBP projects, it has the potential to degrade the existing visual character of the region. Thus, cumulative impacts have the potential to be considered moderate and CBP will minimize impacts on resources to the maximum extent feasible.

Areas north of the border within the construction corridors have the potential to experience beneficial, indirect cumulative impacts on aesthetics and habitat through the reduction of trash, soil erosion, and creation of trails by illegal pedestrian traffic.

12.6.4 Geological Resources and Soils

The Project does not have the potential to create any dangerous or unstable conditions within any geologic unit, nor expose people or structures to potential substantial adverse effects. Further, no geologic resource is exclusively within the Project Area. The Project impact on previously disturbed lands, when combined with past and proposed projects in the region, will have the potential to have minor, cumulative adverse impacts on geological resources.

The Project, when combined with other USBP projects, will not have the potential to permanently reduce prime farmland soils or agricultural production. Pre- and post-construction SWPPP measures will be implemented to control soil erosion. The permanent impact of approximately 23 acres for legacy fence replacement combined with the other USBP projects, has the potential to have a moderate cumulative adverse impact.

12.6.5 Hydrology and Water Management

As a result of the Project, when combined with other USBP projects, increased temporary erosion during construction has the potential to occur. Pre- and post-construction SWPPP measures for

this and other projects will be implemented to control erosion. Water withdrawal from domestic water supplies or regional groundwater basins for dust suppression and other construction/maintenance activities, for this and other related projects in the region, have the potential to result in cumulatively considerable impacts. Additionally, these short-term activities have the potential to affect long-term water supplies or the quantity of groundwater in the region. Although the volume of water withdrawn is not likely to affect the public drinking water supplies, it has the potential to indirectly contribute to aquifer contamination from surface runoff. With the implementation of appropriate BMPs, the Project is not anticipated to substantially affect water quality.

12.6.6 Biological Resources (Vegetation, Wildlife, Aquatic Species, Special-Status Species)

The Project has the potential to have minimal impacts on native vegetation communities, but as discussed in **Chapter 8**, some direct negative impacts on wildlife within the Project Area have the potential to occur including impacts to migration corridors. Other direct negative impacts have the potential to occur due to erosion, noise, lighting, or conflict with construction equipment. However, because construction has the potential to be temporary and impacts will be minimized through implementing appropriate BMPs for the protection of general plants and wildlife, these combined projects are unlikely to result in any long-term or significant decreases in wildlife populations in the region.

12.6.7 Cultural Resources

Construction of the Project has the potential to impact one NRHP-eligible cultural resource site; however, with the implementation of monitoring and other avoidance measures, as described in **Chapter 9**, the Project has the potential to result in minimal, if any, adverse impacts. Therefore, this action, when combined with other existing and proposed projects in the region, has the potential to have negligible cumulative impacts on cultural resources.

12.6.8 Socioeconomics

Construction of the Project, when combined with other USBP projects, has the potential to result in temporary, minor, and beneficial impacts on the region's economy. No impacts on populations, minorities, or low-income families have the potential to occur. When practicable, materials and other Project expenditures will predominantly be obtained through merchants in the local community. Local construction crews will also be employed to complete the Project. Safety buffer zones will be designated around all construction sites to ensure public health and safety. Long-term, cumulative effects of the projects on the regional economy have the potential to be beneficial by reducing smuggling and other illegal activity in the area. Legal border crossings and international trade have the potential to continue unaffected by the Project. When combined with other ongoing or currently planned projects within the region, there is the potential for minor cumulative, temporary beneficial impacts on the region's socioeconomics.

12.6.9 Hazardous Materials and Waste

The use of hazardous substances will be required in small amounts within the Project Area during the construction phase. With the inclusion of BMPs listed in **Chapter 1.5.8**, impacts resulting

from the use of hazardous materials during this phase have the potential to be avoided or minimized. Similarly, only minor temporary increases in the use of hazardous materials would potentially be experienced from construction associated with other projects in the region. Removal of the existing fence could generate waste, but most of the existing steel plate and mesh material is valuable as a recyclable material. Therefore, the Project, when combined with other ongoing and proposed projects in the region, does not have the potential to have a major cumulative impact on the generation of waste nor the potential for release of hazardous materials.

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14. ABBREVIATIONS AND ACRONYMS

AOR	Area of Responsibility
B.C.E.	Before Common Era
BEA	Bureau of Economic Analysis
BIS	Border Infrastructure System
BLM	Bureau of Land Management
BMP	Best Management Practice
BOR	Bureau of Reclamation
BSR	Biological Survey Report
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEPA	California Environmental Protection Agency
CARB	California Air Resources Board
CBP	U.S. Customs and Border Protection
CBV	Cross-border violator
C.E.	Common Era
CHRIS	California Historic Resources Information System
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CDFW	California Department of Fish and Wildlife
CHL	California Historical Landmarks
CHRI	California Historical Resources Inventory
CFR	Code of Federal Regulations
CO	Carbon monoxide
CPHI	California Points of Historical Interest
CRHR	California Register of Historic Resources
CTIMR	Comprehensive Tactical Infrastructure Maintenance and Repair
CWA	Clean Water Act
dB	Decibels
dBA	A-Weighted decibel
DHS	Department of Homeland Security
DOD	Department of Defense
DOI	Department of the Interior

E.O.	Executive Order
ESP	Environmental Stewardship Plan
FCC	Federal Communications Commission
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRMs	Flood Insurance Rate Maps
ICAPCD	Imperial County Air Pollution Control District
IF	isolated feature
IIRIRA	Illegal Immigration Reform and Immigrant Responsibility Act
IO	isolated occurrence
mg/m ³	Milligram per cubic meter
MOVES	Motor Vehicle Emission Simulator
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NHPA	National Historic Preservation Act
NO ₂	Nitrogen dioxide
NO _x	Total nitrogen oxides
NRHP	National Register of Historic Places
O ₃	Ozone
OHP	California Office of Historic Preservation Office
OHWM	Ordinary High Water Mark
OSHA	Occupational Safety and Health Administration
PCPI	Per capita personal income
PM	Particulate matter
POE	Port of Entry
POLs	Petroleum, oil, and lubricants
ppb	Parts per billion
ppm	Parts per million
ROI	Region of Influence
SCIC	South Coastal Information Center
SO ₂	Sulfur dioxide
SPCCP	Spill Prevention, Control, and Countermeasure Plan
SWPPP	Storm Water Pollution Prevention Plan

TPI	Total personal income
tpy	Tons per year
U.S.	United States
USACE	U.S. Army Corps of Engineers
USBP	U.S. Border Patrol
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
USIBWC	U.S. Section, International Boundary and Water Commission
USNVC	United States National Vegetation Classifications
VOC	Volatile organic compound
WOUS	Waters of the U.S.
$\mu\text{g}/\text{m}^3$	micrograms per cubic meter
°F	Degrees Fahrenheit

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APPENDIX A

Biological Survey Report



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APPENDIX B

Air Emissions Calculations



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APPENDIX C

Cultural Resources Survey Report



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