

October
2024



Final

Environmental Stewardship
Plan for the
Proposed Border Barrier
Construction in the
United States Border Patrol Rio
Grande Valley Sector, Texas

Starr County, Texas

*Department of Homeland Security
United States Customs and Border Protection*



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

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Cover Sheet

Final Environmental Stewardship Plan for the Proposed Border Barrier Construction in the United States Border Patrol Rio Grande Valley Sector, Texas Starr County, Texas

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

Affected Location: United States/Mexico International Border in Starr County, Texas.

Project Description: CBP will construct and maintain approximately 17 miles of border barrier in the USBP Rio Grande Valley (RGV) Sector in Starr County, Texas, to support USBP operations. The Project corridor (the Project) will begin just south of Falcon Dam and run southeast along the United States/Mexico international border to just west of Sullivan City.

Report Designation: Final Environmental Stewardship Plan (ESP).

Abstract: CBP proposes to construct and maintain approximately 17 miles of border barrier in the USBP RGV Sector in Starr County, Texas (i.e., Project Corridor), to support USBP operations. The Project Corridor will begin just south of Falcon Dam and run southeast along the United States/Mexico international border to just west of Sullivan City. The Project Corridor consists of multiple non-contiguous segments of various lengths.

The border barrier consists of 18-foot tall 4-inch diameter square steel bollards spaced approximately 4 inches apart and fitted with a 5-foot anti-climb plate embedded into a movable concrete jersey barrier-style base. CBP will also construct roads, which will be contained within a 150-foot-wide enforcement zone. In sensitive areas, to avoid resources, the enforcement zone and infrastructure including barrier and roads may be confined to a minimum of 50 feet in width. In addition to the enforcement zone construction, approximately eight staging areas will be established to support the project. Staging areas will be placed on existing disturbed land.

CBP will continue to survey the Project Corridor for sensitive resources and work collaboratively with local governments, state and federal land managers, and the interested public to identify environmentally sensitive resources and develop strategies and opportunities, including implementation of design features, project schedule, and additional appropriate best management practices to avoid or minimize adverse impacts resulting from the installation the barrier system and tactical infrastructure to the extent practicable. This ESP analyzes and documents environmental consequences associated with the Project.

The public could obtain additional copies of the ESP by written request to Mr. Paul Enriquez, Director Environment and Real Estate Infrastructure Program, U.S. Customs and Border Protection, Border Patrol HQ, 1300 Pennsylvania Ave NW 6.5E Mail Stop 1039, Washington, DC 20229

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FINAL

**ENVIRONMENTAL STEWARDSHIP PLAN FOR
THE PROPOSED BORDER BARRIER
CONSTRUCTION IN THE UNITED STATES
BORDER PATROL RIO GRANDE VALLEY
SECTOR, TEXAS**

STARR COUNTY, TEXAS

**DEPARTMENT OF HOMELAND SECURITY
UNITED STATES CUSTOMS AND BORDER PROTECTION
UNITED STATES BORDER PATROL**

OCTOBER 2024

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Executive Summary

BACKGROUND

CBP will construct physical barriers and roads in the vicinity of the United States/Mexico international border to prevent unlawful entries into the United States pursuant to Section 102 of the Illegal Immigration Reform and Immigrant Responsibility Act (IIRIRA) of 1996. On October 5, 2023, the Secretary of Homeland Security (the Secretary), pursuant to Section 102(c) of IIRIRA, as amended, issued a waiver to ensure the expeditious construction of the project as discussed below. Although the Secretary's waiver means that U.S. Customs and Border Protection (CBP) no longer has any specific legal obligations under the laws set aside by the waiver, the Department of Homeland Security (DHS) and CBP recognize the importance of responsible environmental stewardship. To that end, CBP has prepared this Environmental Stewardship Plan (ESP) to evaluate the potential environmental impacts associated with construction of approximately 17 miles of barrier in the U.S. Border Patrol's (USBP's) Rio Grande Valley (RGV) Sector (the Project; see **Figure 1-1** of **Appendix C**). The ESP identifies CBP's plans for avoiding or minimizing potential environmental impacts and will guide CBP's efforts going forward through the design, planning, construction, and close-out phases.

CBP will use the best available information to identify where sensitive resources exist and ensure that opportunities to avoid or minimize impacts are incorporated into the project for each segment. As it moves forward with the Project described in this ESP, CBP will continue to survey the Project corridor for sensitive resources. Additionally, CBP will work collaboratively with local governments, state and federal land managers, and the interested public to identify environmentally sensitive resources to implement design features, determine project schedule, and identify additional appropriate best management practices (BMPs) to avoid or minimize adverse impacts resulting from the Project.

Additional protected measures will be incorporated into the Project as it is designed and implemented, including reducing the width of the enforcement zone to a minimum of 50 feet where necessary and practical; aligning the enforcement zone corridor to minimize impacts on vegetation, cultural resources, and natural drainages and water flow; designing above-ground features to reduce wildlife impacts; and other measures.

GOALS AND OBJECTIVES OF THE PROJECT

The Project is being carried out pursuant to Section 102(a) of IIRIRA, which provides that the Secretary shall take such actions as may be necessary to install additional physical barriers and roads (including the removal of obstacles to better detect illegal entrants) in the vicinity of the United States border to deter illegal crossings. In Section 102(b) of IIRIRA, Congress has called for the installation of additional fencing, barriers, roads, lighting, cameras, and sensors on the southwestern border. Finally, in Section 102(c) of IIRIRA, Congress granted the Secretary the authority to waive all legal requirements as determined necessary to ensure the expeditious construction of barriers and roads authorized by Section 102 of IIRIRA.

The Secretary's waiver covers the construction of barriers and roads within the Project Corridor, which is situated in the USBP Rio Grande Valley Sector. The Project Corridor consists of 10

discontinuous segments ranging in length from 0.33 miles to 2.98 miles (approximately 17 miles total), including the following segments:

- Segment 1 & 8: Starting approximately one mile south of the Falcon Dam and extending southeast for approximately two miles.
- Segment 9: Starting at the southeastern boundary of the Arroyo Morteros tract of the Lower Rio Grande Valley (LRGV) National Wildlife Refuge (NWR) and extending southeast for approximately one mile.
- Segment 2: Starting at the northernmost boundary of the Las Ruinas tract of the LRGV NWR and extending north for approximately one mile.
- Segment 10: Starting at the eastern boundary of the Arroyo Ramirez tract of the LRGV NWR and extending east for approximately one-half mile.
- Segment 11 & 12: Starting one-half mile south of the intersection of Perez Road and U.S. Highway 83 and generally following the Rio Grande River to approximately one-quarter mile south and east of the intersection of Leos Road and U.S. Highway 83.
- Segment 3A & 3: Starting approximately three-quarters of a mile southeast of the intersection of North Redwoods Street and U.S. Highway 83 and extending southeast to the northwest boundary of the Los Velas West tract of the LRGV NWR.
- Segment 13: Starting approximately one-tenth of a mile south of the intersection of Trophy Street and Moonbeam Street and extending east to approximately one mile south of the intersection of Los Olmitos Road and Farm to Market Road 1430.
- Segment 14 & 4: Starting approximately one mile south of the intersection of Los Olmitos Road and Farm to Market Road 1430 and extending southeast to the northwestern boundary of the La Casita East Tract of the LRGV NWR.
- Segment 5: Starting approximately one mile south of the intersection of Mission Street and Old Military Highway and extending southeast for approximately one and three-quarters miles.
- Segment 6 & 7: Starting at the northeastern boundary of the Villareales Banco tract of the LRGV NWR and extending east to the western boundary of the of the Cuevitas tract of the LRGV NWR.

The Secretary's waiver means that CBP does not have any specific legal obligations under the laws that were included in the waiver, but just as was the case with past projects covered by a waiver, DHS and CBP recognize the importance of responsible environmental stewardship of natural and cultural resources.

OUTREACH AND AGENCY COORDINATION

CBP notified relevant federal, state, and local agencies of the Project and requested input on environmental concerns. CBP has coordinated with the Department of the Interior (DOI) and the U.S. Fish and Wildlife Service (USFWS); U.S. Army Corps of Engineers (USACE); U.S. Section of the International Boundary and Water Commission (USIBWC); Native American Heritage Commission; and various Native American tribes.

CBP considered and incorporated agency comments into this ESP. CBP conducted a comment period in February 2022 on potential border barrier development impacts in the general RGV area and a follow-up comment period for development in Starr County in August and September 2023.

A total of 223 commenters submitted input to CBP expressing concerns in the following areas: wildlife migration and conservation, flooding and erosion control, cultural history and sensitive resources, tribal coordination, and soil/revegetation. CBP has been, and will continue to consult with federal, state, local, and tribal governments and organizations, as well as other pertinent stakeholders, to identify potential natural and cultural resources present within the Project Corridor to avoid, minimize, or mitigate impacts to the greatest extent practicable while meeting USBP's operational needs and the Government's international treaty obligations.

DESCRIPTION OF THE PROJECT

CBP plans to construct and maintain approximately 17 miles of border barrier in Starr County, Texas, in the USBP RGV Sector (see **Table ES-1**). The RGV Sector of the United States/Mexico international border parallels the Rio Grande River; therefore, border enforcement activities are in an "enforcement zone" along the river. The enforcement zone is either distant from the river's riparian corridor, or in some cases, is in proximity or within the riparian corridor (see **Figures 2-1 to 2-8 in Appendix C**). Construction activities include approximately eight staging areas. The total enforcement zone, including the barrier and roads, will generally be contained within a 150-foot-wide enforcement zone to avoid cultural and natural resources in sensitive areas. Use of a moveable barrier base will reduce impacts on vegetation and soils. The barrier consists of 18-foot tall, 4-inch diameter square steel bollards spaced approximately 4 inches apart and fitted with a 5-foot anti-climb plate embedded into a movable concrete jersey barrier style base.

Environmental surveys have been conducted in each of the 10 discontinuous segments across the Project Corridor as part of a planning effort for biological surveys from October 2018 through November of 2022; however, due to private land restrictions, portions of three segments were not able to be surveyed. Real estate acquisition is in process for segments that occur on private land. Additional parcels within the Project Corridor that have not been surveyed previously will be surveyed for environmental resources including cultural and tribal resources.

Measures to avoid impacts on sensitive environmental resources are described in this ESP, and generally include conducting surveys/data collection; avoidance via realignment; confining the enforcement zone, restricting the seasonal or daily timing of construction activities and associated noise/dust, removing/relocating the resource; incorporating design features into the project installation, monitoring; and minimizing ground disturbance. (see **Appendix B**). CBP has an active and engaged environmental team and will incorporate these measures, as needed to protect the identified sensitive resources (e.g., cultural resources, migratory bird nests). CBP is committed to conducting additional environmental surveys across all segments of the Project Corridor as needed to ensure real-time information is incorporated regarding sensitive areas, in coordination with other federal agencies and stakeholders.

ENVIRONMENTAL IMPACTS AND BEST MANAGEMENT PRACTICES

Table ES-1 provides an overview of potential environmental impacts by specific resource area and a summary of associated recommendations to avoid or minimize impacts. In this ESP, specific actions that protect the environment are referred to as BMPs. **Sections 3.0** through **12.0** present potential impacts and expand upon BMPs. Segment-specific recommendations for project design will be informed by environmental surveys. CBP will incorporate recommendations into the project where possible and feasible for each segment while considering human safety and overall project objectives.

CBP will follow specially developed design criteria to reduce adverse environmental impacts. CBP will have environmental monitors on-site and impacts will be documented during construction to determine the extent and scope of any measures necessary to reduce or minimize adverse environmental impacts. Design criteria to reduce adverse environmental impacts included consulting with federal and state agencies and other stakeholders to develop appropriate BMPs and avoiding physical disturbance and construction of solid barriers in wetlands/riparian areas and streambeds, where practicable. BMPs will include implementation of Spill Prevention Control and Countermeasure Plan (SPCCP), Stormwater Pollution Prevention Plan (SWPPP), Environmental Protection Plans, Dust Control Plan, Fire Prevention and Suppression Plan, and Unanticipated Discovery Plan.

The following definitions describe characteristics that might relate to various impacts:

- *Short-term or long-term.* These characteristics are determined on a case-by-case basis and do not refer to any rigid period. In general, short-term impacts are those that will 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 terms are used to characterize the magnitude or intensity of an impact. Negligible impacts are 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 one that is adverse or beneficial.
- *Adverse or beneficial.* An adverse impact is one having adverse, 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 action might result in adverse impacts on one environmental resource and beneficial impacts on another resource.

Table ES-1. Summary of Environmental Impacts and BMPs

| Resource Area | Environmental Impacts of the Project | BMPs |
|---|---|--|
| Air Quality | The Project will result in short-term, minor, adverse impacts on air quality from temporary air pollutant emissions during construction and maintenance activities. All criteria pollutants except those with a particulate matter of less than 10 microns (PM ₁₀) in diameter will be below <i>de minimis</i> thresholds. The creation of two roads associated with this Project will generate air pollutant emissions through grading, filling, compacting, trenching, and other activities related to road construction. Clearing vegetation for an enforcement zone will also contribute air pollution emissions. | Bare soil will be wetted to suppress dust and equipment will be maintained according to specifications. |
| Noise | Short-term, negligible to minor, adverse impacts on the surrounding noise environment due to the increase of noise will occur from construction activity. Equipment and vehicle use for operation and maintenance of the new barrier system will produce temporary, minor, adverse noise impacts on the surrounding environment. | Equipment will be operated on an as-needed basis. Mufflers and properly maintained equipment will be used to reduce noise. All generators will be in baffle boxes, have an attached muffler, or use other noise-abatement methods in accordance with industry standards. |
| Land Use, Recreation, and Aesthetics | The Project will result in short- and long-term, minor to moderate, adverse effects on land use from changes in land use categories and land acquisition. | Environmental monitors will be present during construction to ensure construction activities remain within the Project footprint and impacts on the Project Corridor are minimized. |
| Geologic Resources and Soils | The Project will result in long-term, moderate, adverse impacts on the local topography and soil resources. | A SPCCP and SWPPP will be implemented as part of the Project. |
| Groundwater | Short- and long-term, negligible, adverse impacts will be expected during construction activities due to ground disturbance from the use of heavy equipment. No long-term effects will be expected. | A SPCCP and SWPPP will be implemented as part of the Project. |
| Surface Waters and Waters of the United States | Short- and long-term, moderate, adverse impacts on surface waters, including Waters of the United States (WOTUS) and wetlands, will be expected during implementation of the Project Corridor. Assuming a | A SPCCP and SWPPP will be implemented as part of the Project. |

| Resource Area | Environmental Impacts of the Project | BMPs |
|----------------------|---|--|
| | <p>corridor width of 150 feet, the Project could require filling wetlands and WOTUS features, which could impact up to 14.97 acres and 832 linear feet of wetlands. acres of open water, 9.08 acres of wetlands, and 2,726.75 linear feet of WOTUS features.</p> | |
| Floodplains | <p>The Project has the potential to result in short- and long-term, minor to moderate, adverse impacts on up to 294.97 acres of floodplains that are subject to inundation by the 1 percent annual chance flood. The Project will increase the number of permanent structures within the floodplain, which could be damaged during flooding events; and reduce vegetation, which could result in an increase in the volume and velocity of floodwater flow.</p> | <p>Fence maintenance will include removing any accumulated debris on the fence after a rain event to avoid potential future flooding.</p> |
| Vegetation | <p>The Project will result in short- and long-term, moderate, direct and indirect, adverse effects on vegetation will occur from clearing and construction activities.</p> <p>Approximately 16.38 acres of vegetation communities, primary composed mainly of Tamaulipan thornscrub and woodland, mesquite grassland, thornscrub, and woodland, mixed grasslands, scrub, and woodland habitat and agricultural areas will be impacted due to clearing and grubbing of the enforcement zone. These areas will be grassed, mowed, and maintained once construction activities are complete.</p> | <p>A monitor will be on-site during construction to ensure that BMPs are followed. Monitors will be familiar with Zapata bladderpod and prostrate milkweed.</p> <p>Materials used for on-site erosion control in un-infested, native habitats will be free of non-native plant seeds and other plant parts to limit potential for infestation. Since natural materials cannot be certified as completely weed-free, if such materials are used, there will be follow-up monitoring to document establishment of non-native plants and appropriate control measures should be implemented for a period of time to be determined in the site restoration plan.</p> <p>Invasive plants that appear on the site will be removed. Removal will be conducted in a manner that eliminate the entire plant and remove all plant parts to a disposal area. Herbicides can be used according to label directions if they are not toxic to threatened and</p> |

| Resource Area | Environmental Impacts of the Project | BMPs |
|---|---|---|
| | | endangered species that may be in the area. Training to identify non-native invasive will be provided for CBP personnel or contractors, as necessary. |
| Wildlife and Aquatic Resources | <p>The Project will have short- and long-term, moderate, direct and indirect, adverse effects on wildlife. A permanent loss of 16.83 acres of wildlife habitat will result from widening roads, levee expansion, and maintenance of 150-foot enforcement zone. An additional, 101.8 acres of agricultural land that may buffer wildlife from developed areas will be affected.</p> <p>Minor disruptions to migration and other wildlife activities may occur due to the presence of the barrier wall.</p> | Surveys of nesting migratory birds will be conducted, and migratory bird nests will be flagged and avoided if construction occurs during breeding/nesting season. |
| Protected Species and Critical Habitat | <p>The Project will result in short-term and long-term direct and indirect moderate, adverse effects on ocelot and Gulf Coast jaguarundi. Long-term, direct and indirect, moderate adverse effects to Zapata bladderpod populations and potential populations of prostrate milkweed and their critical habitat.</p> | <p>BMPs will be implemented as part of the Project to minimize impacts on these species. No herbicide or pesticide will be used in the vicinity of T&E habitat.</p> <p>A monitor will be on-site during construction to ensure that all BMPs are followed. Monitors will be familiar with Zapata bladderpod and prostrate milkweed.</p> <p>If a protected species is identified, work will cease in the area of the species until it moves away on its own or it will be relocated by a qualified biological monitor to a safe location outside the Project Corridor.</p> |
| Cultural Resources | <p>The Project has 14 archaeological sites eligible for the NRHP and 3 historic properties and cemeteries that could experience long-term, moderate, adverse impacts.</p> | <p>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.</p> |

| Resource Area | Environmental Impacts of the Project | BMPs |
|-----------------------|--|----------------|
| Socioeconomics | Short-term, negligible, beneficial impacts on the local socioeconomics will occur from local expenditures. | None required. |

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1.0 GENERAL PROJECT DESCRIPTION

1.1 INTRODUCTION TO THE ENVIRONMENTAL STEWARDSHIP PLAN

The principal mission requirements of the Department of Homeland Security (DHS) include border security and the detection and prevention of illegal entry into the United States. Congress has provided the Secretary of Homeland Security (the Secretary) with a number of authorities necessary to carry out DHS's border security mission. One of these authorities is found in Section 102 of the Illegal Immigration Reform and Immigrant Responsibility Act of 1996 (IIRIRA). Section 102(a) of IIRIRA provides that the Secretary shall take such actions as may be necessary to install additional physical barriers and roads (including the removal of obstacles to detection of illegal entrants) in the vicinity of the United States border to deter illegal crossings in areas of high illegal entry into United States lands. In Section 102(b) of IIRIRA, Congress has called for the installation of additional fencing, barriers, roads, lighting, cameras, and sensors on the southwestern border. Finally, in Section 102(c) of IIRIRA, Congress granted to the Secretary the authority to waive all legal requirements as determined necessary to ensure the expeditious construction of barriers and roads authorized by Section 102 of IIRIRA.

DHS has used the authority granted to it by Congress in Section 102 of IIRIRA to construct needed border infrastructure across the southwestern United States border. The U.S. Customs and Border Protection (CBP) is the DHS component with primary responsibility for such construction. CBP's construction of border infrastructure has been aided by the waiver authority set forth in Section 102(c) of IIRIRA. Although the waiver authority has facilitated the construction of border infrastructure, DHS and CBP have continually made a voluntary commitment to responsible environmental stewardship for projects covered by an IIRIRA waiver.

On October 5, 2023, the Secretary issued a waiver covering, among other things, the construction of approximately 17 miles of barrier system and subsurface tactical infrastructure in the U.S. Border Patrol (USBP) Rio Grande Valley (RGV) Sector (the Project). The Secretary's waiver means that CBP does not have any specific legal obligations under the laws that were included in the waiver, but just as was the case with past projects covered by a waiver, DHS and CBP recognize the importance of responsible environmental stewardship of our valuable natural and cultural resources. To work toward responsible environmental stewardship, CBP has completed environmental resource surveys, consulted with various stakeholders, and prepared this Environmental Stewardship Plan (ESP). The 2023 waiver is included as **Appendix A**.

The results of CBP's environmental review of the Project are being published in this ESP. The ESP includes a summary of the best management practices (BMPs) that have been developed to help CBP avoid or minimize potential environmental impacts (see **Appendix B**). The ESP and BMPs will guide CBP's efforts going forward through the design, planning, constructing, and close-out phases.

This ESP was prepared to evaluate potential impacts of the Project on natural and human resources and to assist CBP and USBP to the extent practicable, while still achieving their

security goals, in protecting critical resources during construction and operation of the tactical infrastructure (TI) being installed as a part of the Project. This ESP is designed to identify each affected resource and outline specific actions that can be taken to avoid or minimize impacts, as well as a process to ensure opportunities to avoid resource impacts are incorporated into the project. This ESP was not prepared to comply with specific laws or regulations; rather, it is a planning and guidance tool to facilitate construction in a manner that will minimize adverse impacts to the extent practicable. The Project corridor in this document refers to the area in which permanent or temporary impacts may occur from Project construction activities. These impacts will generally be restricted to the 150-foot corridor (the Project Corridor) near the United States/Mexico international border in Starr County, Texas.

Some resources within the Project's region of influence (ROI), which is Starr County, Texas, are not addressed in this ESP because they are either not relevant to the analyses or the impacts to such resources are negligible. The resources that are excluded from further analyses, and the reasons for eliminating them are as follows:

- *Climate.* On January 9, 2023, the Council on Environmental Quality (CEQ) issued interim guidance on consideration of greenhouse gas (GHG) emissions and climate change for NEPA projects (88 Federal Register [FR] 1196). The guidance states agencies should consider the potential effects of a proposed action on climate change, including by assessing both GHG emissions and reductions from the proposed action, and the effects of climate change on a proposed action and its environmental impacts.
- *Sustainability.* The Project will use minimal resources during construction and maintenance and there will be minimal changes in USBP operations. Therefore, the Project will have a negligible impact on sustainability.
- *Human Health and Safety.* Construction site safety is largely a matter of adherence to regulatory requirements imposed for the benefit of employees and implementation of operational practices that reduce risks of illness, injury, death, and property damage, and no workplace safety laws or regulations were included in the waiver. The Occupational Safety and Health Administration (OSHA) and U.S. Environmental Protection Agency (USEPA) issue standards that specify the amount and type of training required for industrial workers, the use of protective equipment and clothes, engineering controls, and maximum exposure limits with respect to workplace stressors. The Project will not introduce new or unusual safety risks and construction protocols are expected to be carefully followed. Furthermore, the Project will benefit the safety of USBP agents and the public in the vicinity of the border by increasing operational efficiency of border infrastructure and reducing the flow of weapons, illegal drugs, and other contraband into the United States. Since the only potential impacts of the Project on human safety are beneficial, this topic will not be reviewed in detail in the ESP.
- *Transportation Effects on Non-Federal Existing Roads.* Portions of the barrier and enforcement zone are on private lands. Private land acquisition is in process. The anticipated impacts of this limited and temporary use of access for construction (using existing roads) to install barrier fence is expected to be negligible.

1.2 U. S. BORDER PATROL BACKGROUND

CBP's mission is to safeguard the United States' borders, thereby protecting the public from dangerous people and materials while enhancing the Nation's global economic competitiveness by enabling legitimate trade and travel. In supporting CBP's mission, USBP is charged with establishing and maintaining operational control of the United States border between ports of entry (POEs). USBP's mission strategy consists of five main objectives:

1. Establish the requisite substantial probability of apprehending terrorists and their weapons as they attempt to enter illegally between POEs.
2. Deter cross-border violations through improved enforcement.
3. Detect, apprehend, and deter smugglers of humans, drugs, and other contraband.
4. Leverage "smart border" technology to multiply the effect of enforcement personnel.
5. Reduce crime in border communities and consequently improve quality of life and economic vitality of targeted areas.

CBP has nine administrative sectors responsible for border operations between the United States and Mexico. Of these nine sectors, the RGV Sector is responsible for border operations in the Project Corridor, which consists of several non-contiguous segments of border barrier within Starr County, Texas extending from Falcon Dam southeast towards Sullivan City.

1.3 GOALS AND OBJECTIVES OF THE PROJECT

The goal of the Project is to ensure CBP can fulfill its mission and prevent illegal entries into the United States. This Project will help to achieve operational control of the United States/Mexico international border.

The Project will help deter cross-border violations within the USBP RGV Sector by improving border infrastructure, preventing terrorists and weapons from entering the United States, reducing the flow of illegal drugs and other contraband, and thus providing a safer environment for USBP agents and the public.

1.4 STAKEHOLDER OUTREACH

CBP has notified numerous tribes, agencies, and non-profit organizations of their intent to construct barriers and roads in the Project Corridor. Stakeholders with interest in the region include the following:

- *U.S Section of the International Boundary and Water Commission (USIBWC)*. CBP has coordinated with USIBWC to ensure that any construction along the United States/Mexico international border does not adversely affect International Boundary Monuments or substantially impede floodwater conveyance within international drainages.

- *U.S. Army Corps of Engineers (USACE), Regulatory Division.* CBP has coordinated all activities with USACE to identify potential jurisdictional Waters of the United States (WOTUS), including wetlands, and to develop measures to avoid and minimize impacts to these resources.
- *U.S. Fish and Wildlife Service (USFWS).* CBP has coordinated with USFWS to identify listed species that have the potential to occur in the Project Corridor.
- *U.S. Environmental Protection Agency (USEPA).* CBP has coordinated with USEPA to obtain feedback regarding, among other things, potential mitigation opportunities for unavoidable impacts, should mitigation be necessary or possible, and to ensure appropriate Storm Water Pollution Prevention Plan (SWPPP) guidelines are implemented.
- *Tribes.* CBP has coordinated with federally recognized tribes to alert them of the Project.

From January to March 2022, CBP solicited comments on potential border barrier development impacts in the RGV area, which includes Starr County. From August to September 2023, CBP conducted a follow-up comment period, which closed on September 15, 2023. CBP sent informational materials to federal, state, and local agencies; landowners; environmental non-governmental organizations (NGOs); local tribes; academics; and the general public to solicit input on potential impacts. Comments were collected through both e-mail and traditional mail. The public was also invited to submit comments via the StoryMap project reporting tool. CBP staff participated in site visits, webinars, and phone meetings with land managers, environmental experts, tribal leaders, and other stakeholders. CBP staff plan to continue meeting with relevant stakeholders and knowledgeable individuals to ensure environmental impacts are avoided or minimized.

A total of 223 commenters submitted input to CBP. Comments were reviewed and categorized by their primary topic of concern: environmental, economic, cultural, or quality of life. Comments that included substantive information on multiple topics were included in each relevant category. The public comments reflect stakeholder concerns in the following areas: wildlife migration and conservation; flooding and erosion control; cultural history and resources, tribal coordination; and soil/revegetation.

As part of the planning for this project, CBP has been, and will continue to consult with federal, state, local, and tribal governments, and organizations, as well as other pertinent stakeholders, to identify potential resources present within the Project Corridor to avoid or minimize impacts to the greatest extent practicable while meeting USBP's operational needs and the Government's international treaty obligations. CBP would consult with USIBWC to ensure that the Project complies with any treaty obligations between the United States and Mexico concerning the Rio Grande floodplain.

1.5 BEST MANAGEMENT PRACTICES

It is CBP's policy to reduce impacts through the sequence of avoidance and minimization. During the design phase, areas where sensitive resources exist will be considered and avoided as much as possible. During the construction phase, BMPs will assist CBP to avoid and minimize impacts. BMPs vary based on location and resource type. Both general BMPs and species-

specific BMPs have been developed during the preparation of this ESP. CBP could also implement additional recommendations into the project design as more information becomes available. Project impacts will be documented during construction and assessed through monitoring after Project construction has been completed.

1.5.1 General Design BMPs

The design-build contract includes 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:

1. Use of existing roads for construction access as much as practicable.
2. Repair and return of lands and roads disturbed by temporary impacts to pre-construction conditions.
3. Early identification and protection of sensitive resource areas to be avoided.
4. Restoration of grades, soils, and vegetation in temporarily disturbed areas.
5. On-site retention of stormwater and runoff.

The following sections describe those measures that may be implemented to reduce or eliminate potential adverse impacts. 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 may be impacted. The BMPs have been coordinated with the appropriate agencies and land managers or administrators.

1.5.2 Air Quality

Measures will be incorporated to ensure that emissions of particulate matter less than 10 microns in size (PM₁₀) do not significantly impact the environment. Such measures will include dust suppression methods to minimize airborne particulate matter and diesel emissions generated during construction activities. Standard construction BMPs, such as minimized diesel idling and routine watering of the construction site and roads, will be used to control fugitive dust emissions during the construction 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

During the construction phase, short-term noise impacts are anticipated. All 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 have 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. 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. A SWPPP will be prepared prior to construction activities, and BMPs described in the SWPPP will be implemented to reduce 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 waterbars, 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 erosion that impacts the built environment.

1.5.5 Water Resources

Drainage flows will be designed to minimize the altering of natural water flows. With regard to managing stormwater flows, CBP will address the potential for sedimentation and erosion with appropriate BMPs. The SWPPP will be implemented by contractors performing work on the Project, which will also include BMPs to reduce potential stormwater erosion and sedimentation effects on local drainages.

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 of.

Recycled water will be used for dust suppression to the maximum extent possible. Water tankers will not discard unused water where it has the potential to enter any aquatic or marsh habitat. Water storage within the Project Corridor should be maintained in closed on-ground containers located on upland areas, not in washes. Pumps, hoses, tanks, and other water storage devices will be cleaned and disinfected.

All engineering designs and hydrology reports will be reviewed by USIBWC prior to the start of construction activities to ensure construction does not increase, concentrate, or relocate overland surface flows into sensitive areas, or into the United States or Mexico.

1.5.6 Biological Resources

General and species-specific biological resources BMPs will be implemented during execution of the Project. The following list of BMPs has been ordered to follow a typical construction sequence. CBP will work with USFWS and other appropriate agencies to address impacts to the greatest degree feasible, given that the Project is operating under the Secretary's waiver.

1. Pre-design surveys will be conducted within the Project Corridor to identify areas where minimization and/or avoidance of sensitive biological resources can be implemented.

Surveys will field-check and verify vegetation communities present within the Project Corridor.

2. Plant surveys and salvage operations will occur prior to fence and road construction. Removal of trees and brush in habitats of federally listed species will be limited to the smallest amount needed to meet Project objectives, as this activity is typically considered a permanent impact on habitat.
3. Areas already disturbed, or those to be disturbed later in the construction sequence, will be used for staging, parking, and storing equipment. Widening of existing or newly constructed roadbeds beyond approved designs will be prohibited. New roads will be properly sited and designed to limit erosion, especially in federally listed species habitat, and will also avoid containment of any surface flows due to site grading.
4. To prevent impacts on avian species covered under the Migratory Bird Treaty Act, clearing and grubbing should take place in fall and winter, if possible, to avoid impacts on nesting birds. If work cannot be avoided during the breeding season (typically April 15 to September 15), a preconstruction survey for migratory birds will be performed to identify active nests prior to the start of vegetation clearing or construction activity. Upon discovery of any active nests, buffer zones will be established around active nests until the young have fledged or the nest is no longer being used. If construction activities will result in the disturbance or harm of a migratory bird, CBP will coordinate with USFWS and the Texas Parks and Wildlife Department (TPWD).
5. Prior to habitat clearing, the perimeter of all areas to be disturbed and/or protected during construction or maintenance activities will be marked with high visibility, removable, or biodegradable markers. The marked boundaries will be maintained throughout the construction period. Disturbance outside of the construction perimeter will not be permitted. Construction travel should be constrained to previously disturbed areas wherever possible, using only designated roads and parking areas. This will limit the development of multiple roads and will limit impacts to federally listed habitats and WOTUS.
6. A designated biological monitor will be present during all activities that could impact federally listed species present on or near the Project Corridor (including listed plant species such as Zapata bladderpod), based on species location maps and/or results of surveys. The biologist will monitor construction activities within designated areas during critical times such as breeding seasons and vegetation removal and will ensure minimization measures are properly followed. The biologist will submit quarterly compliance reports (including photographs of impact areas) to CBP, which will document whether authorized impacts were exceeded and whether there was compliance with Project BMPs. A separate memorandum/report should be prepared and submitted to CBP immediately if/when an impact occurs outside of the approved Project limits. The biologist will also submit a final report to CBP within 60 days of project completion that includes as-built construction drawings with an overlay of impacted areas and other relevant information documenting that authorized impacts were not exceeded and that general compliance with conservation measures was achieved.

7. With the guidance of a biologist familiar with the potential species and habitats to be affected, CBP will develop a training plan regarding sensitive resources for CBP and construction personnel. This BMP does not apply to USBP operations. The training will include, at a minimum, descriptions of the resource and purpose for its protection, the conservation measures that must be implemented, and environmentally responsible construction practices.
8. 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. The top six inches of topsoil will be stockpiled for use in revegetation whenever feasible. Stockpiles will not exceed 3.5 feet in height and will be covered with natural materials such as burlap. No plastic is permitted due to the heat's sterilization effect on the topsoil.
9. Materials used for construction and on-site erosion control will be biodegradable and free of non-native plant seeds and other non-native plant parts to limit potential for invasive species establishment. Some natural materials cannot be fully certified as completely weed-free, and if such materials are used, follow-up monitoring and control to limit establishment of non-native plants will be implemented during the establishment period to ensure native plant materials provide effective erosion control cover. Erosion control blankets and wattles will use biodegradable netting.
10. All material sources will be inspected and approved prior to being brought on site. Borrow areas for fill materials such as rock, gravel, or topsoil will be obtained from existing developed or previously used sources, not from undisturbed areas within or adjacent to the Project Corridor.
11. To eliminate attracting predators of protected animals, all food-related trash items such as wrappers, cans, bottles, and food scraps will be disposed of in closed containers and removed daily.
12. Any night lighting for the construction of the Project will be selectively placed, shielded, and directed away from all native vegetation communities and wildlife (including insects, reptiles/amphibians, marsupials, fledging birds, and other nocturnal animals) north of the project footprint and wetland and/or riparian areas.
13. Waste from construction materials or cleaning equipment can have oils, toxic materials, or other contaminants. Contaminated wastewater will be stored in closed containers on site until removed for disposal. Concrete wash water will not be dumped on the ground but is to be collected and moved off site for disposal. This wash water is toxic to aquatic life.
14. Construction speed limits will not exceed 35 miles per hour on major unpaved roads (graded with ditches on both sides) and 25 miles per hour on all other unpaved roads. Travel speeds after dusk will not exceed 25 miles per hour and may be less based on visibility and other safety considerations.

15. To prevent entrapment of wildlife species, the ends of all hollow construction stock, such as vertical fence posts/bollards, including those that will later be filled, shall be covered to prevent wildlife from entering. Covers of all hollow construction stock will be in place upon arrival at the site and will be retained until such time the material is filled or otherwise closed to prevent entry by an animal. Construction (temporary or otherwise) of steep-walled pits is also to be avoided to prevent animal entrapment. Excavations more than 18 inches deep will be covered for safety or will provide a means of escape for small animals, such as a firmly placed board (8 inches or wider) or an earthen ramp at a slope no steeper than 4:1, to prevent animal entrapment.
16. During follow-up monitoring and during maintenance activities after construction is complete, invasive plants found on the site will be treated and removed. Chemical applications will be performed by a licensed applicator and herbicides will be used only according to label directions. The monitoring period will be defined in the site revegetation plan. Training to identify non-native invasive plants will be provided for CBP personnel or contractors, as necessary, who will perform post-construction monitoring and maintenance.

1.5.7 Cultural Resources

BMPs to protect cultural resources include:

1. Designated construction staging areas and transportation corridors will be identified to limit potential impacts on cultural resources. All construction vehicles and equipment are to stay within designated work areas.
2. If cultural resources are encountered, work must stop, and the monitors must be notified. The monitor(s) will coordinate with the on-site construction supervisor and with the CBP Project manager. An archaeologist will assess all findings and make recommendations to the CBP.
3. Archaeological material collected during the current Project will be cross analyzed with collections from earlier investigations for data recovery purposes.
4. All cultural resources should be treated with respect and dignity. No photographs will be taken of any human remains.

1.5.8 Hazardous Materials and Wastes

BMPs include proper handling, storage, and/or disposal of hazardous and/or regulated materials. The BMPs will include:

1. Recycling of old fence panels will be a part of the Project.
2. Non-hazardous waste materials and other discarded materials, such as construction waste, will be contained until removed from the construction site. Solid waste receptacles will be maintained at the staging areas, and non-hazardous solid waste (trash and waste construction materials) will be collected and deposited in on-site receptacles. Waste

materials and other discarded materials contained in these receptacles will be removed from the site as quickly as practicable.

3. All fuels, waste oils, and solvents will be collected and stored in tanks or drums within a secondary containment system that consists of an impervious floor and bermed sidewalls capable of containing the volume of the largest container stored therein.
4. The refueling of machinery will be completed following accepted industry guidelines, and all vehicles will have drip pans during storage to contain minor spills and drips.
5. Any spill of reportable quantities will be contained immediately within an earthen dike, and the application of an absorbent (e.g., granular, pillow, sock, etc.) will be used to absorb and contain the spill. All spills will be reported to the designated CBP point of contact for the Project as well as the appropriate federal and state agencies.
6. A Spill Prevention, Control, and Countermeasure Plan (SPCCP) will be in place prior to the start of operations, and all personnel will be briefed on the implementation and responsibilities of this plan.
7. All equipment maintenance, laydown, and dispensing of fuel, oil, or any other such activities will occur in the staging area identified for use in this ESP. The designated staging area will be located in such a manner as to prevent runoff from staging areas from entering waters of the United States, including wetlands. All used oil and solvents will be recycled if practicable. All non-recyclable hazardous and regulated wastes will be collected, characterized, labeled, stored, transported, and disposed of consistent with USEPA standards.

2.0 DESCRIPTION OF THE PROJECT

2.1 LOCATION

CBP proposes to construct and maintain approximately 17 miles of border barrier in USBP RGV Sector, Starr County, Texas to support USBP operations. The Project Corridor will begin just south of Falcon Dam and run southeast along the United States/Mexico international border to just west of Sullivan City. The Project Corridor consists of multiple, non-contiguous segments of various lengths (see **Figures 2-1 to 2-8** in **Appendix C**).

Table 2-1. Non-contiguous RGV Segment Details in Project Corridor

| Current RGV Segment Name | Miles |
|---------------------------------|--------------|
| Segment 1 | 1.50 |
| Segment 4 | 1.66 |
| Segment 3A | 1.11 |
| Segment 6 | 2.14 |
| Segment 7 | 1.14 |
| Segment 3 | 0.93 |
| Segment 5 | 1.39 |
| Segment 2 | 1.00 |
| Segment 8 | 0.59 |
| Segment 9 | 0.72 |
| Segment 10 | 0.33 |
| Segment 12 | 1.91 |
| Segment 11 | 1.07 |
| Segment 13 | 0.51 |
| Segment 14 | 0.83 |

Environmental surveys have been conducted in each of the segments across the Project Corridor as part of a planning effort for biological surveys from October 2018 through November of 2022; however, due to private land restrictions, portions of various segments were not able to be surveyed. Real estate acquisition is in process for segments that occur on private land; additional parcels within the Project corridor acquired that have not been surveyed previously will be surveyed for environmental resources at a later date.

2.2 DESIGN

The preliminary design meets the Project goals and has been informed by numerous technical studies such as engineering, constructability, and environmental evaluations, which included biological and cultural resource assessments. Streams and stormwater also flow through the Project Corridor, and improved drainage management has been incorporated into the design.

The barrier will consist of 18 foot high, 4-inch diameter bollards imbedded into a movable concrete jersey barrier style base. Stream crossings will require special designs to accommodate water flow while still preventing people from passing through the bollard wall.

Construction of these design elements will generate impacts mainly within the enforcement zone (see **Figure 2-1 in Appendix C**). For the purposes of this study, the enforcement zone is considered to be 150-foot wide; however, the zone can be reduced to 50 feet in width where necessary to reduce the area of impact. Temporary construction impacts may occur within or near the enforcement zone.

- *Enforcement Zone.* The enforcement zone would be between 50 feet and 150 feet wide and include the barrier itself as well as two parallel roads on either side of a cleared swath of vegetation on the river side of the border barrier. To avoid resources in sensitive areas, the enforcement zone and infrastructure including barrier and roads could be confined to 50 feet in width. The roads would be Functional Classification-2 (FC-2) or FC-3 maintenance roads approximately 20 or 16 feet wide, respectively.
- Easements on both the land and river side of the border barrier would include the necessary removal of structures and obstructions, vegetation clearing, earth-retaining systems, erosion control, and drainage improvements required to construct the border barrier and roads. Earth-retaining systems and erosion control could be needed to control grades and could include items such as concrete or block walls, erosion-control mats, and/or riprap. Drainage improvements would be anticipated to include, but not be limited to, concrete low-water crossings, reinforced concrete pipe culverts, reinforced concrete box culverts, bridges, drainage gates, and associated scour protection that could include concrete slope protection, grouted riprap, and sheet piles. The Project would also improve available access roads to FC-2 access road standards.
- *Gates.* Automated slide gates for access would be included where manually operated swing gates would be provided. Where necessary to minimize impacts on local drainage flow, the border barrier would include drainage swing gates. Furthermore, automated vertical lift gates to minimize Rio Grande River flood water impacts would be constructed where necessary.
- *Laydown Yards.* Laydown yards would be used to stage materials as well as for temporary concrete batch plants and aggregate sorting operations. In addition, laydown yards would include temporary work trailers with temporary utility hookups for the contractors. Laydown yard locations would be selected by the contractor as a best fit for their operations. In general, a laydown yard would be required approximately every five miles. To the maximum extent practicable, laydown yards would be returned to pre-construction conditions.
- *Roads.* Road maintenance and improvements would be implemented based on state and local requirements. CBP-designated roads would be used for access, as necessary. Roads would require gravel overlays, as needed.

For bridge locations, drilled piers could be needed, which would typically be expected to be 6 to 10 feet deep but could extend upwards of 75 feet depending on soil conditions. Piers would likely be of reinforced concrete and 3 to 4 feet in diameter.

Clearing of vegetation would be required within the enforcement zone to allow for appropriate visibility and detection of activity by agents. CBP would implement mechanical removal of vegetation during construction and chemical treatment during maintenance. While the goal is to install a 150-foot-wide enforcement zone, in some instances, the width of the enforcement zone would be reduced to avoid sensitive areas or major structures.

Construction work would be limited to daylight hours to the greatest extent possible.

Water for construction would be acquired through permitting with local irrigation districts or permitting with local landowners with water rights. All power would come from grid power and/or generators.

Maintenance for the proposed border barrier would be expected upon completion of construction. Maintenance activities could include routine upgrade, repair, and maintenance of the roads and physical barrier that would not result in a change in their functional use (e.g., resurfacing a road or replacing a gate component or lock).

2.3 CONSTRUCTION ACCESS, MATERIALS DELIVERY, AND STAGING

The new bollard barrier will be prefabricated off-site and then transported to the site by 18-wheel flatbed trucks using pre-approved haul routes. The new bollard barrier will arrive on-site as 8- to 10-foot-wide panels. Each truck will transport an estimated five panels at a time. Each panel will be comprised of eight to ten, 4-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 2-foot-wide steel sheet across the top. The steel bollards will be spaced approximately 6 inches apart to allow for cross-border visibility. Each panel is estimated to weigh approximately 3,500 pounds imbedded into a movable concrete jersey barrier style base.

Designated staging areas will be established for each Project Corridor to accept large fence panel deliveries, store larger equipment, and house construction materials. Staging areas and access routes will be selected during the project design. Staging areas will be sited on existing disturbed lands, and at locations that will minimize traffic and access conflicts with the surrounding landscape. It is estimated that approximately eight staging areas will be required for the Project.

2.4 SITE PREPARATION

Site preparation primarily consists of grading staging areas. Erosion control measures will be necessary, as will pre-construction bird nest surveys if construction takes place during the nesting season for migratory birds (from April 15 through September 15 every year). BMPs will limit impacts to all resources including (but not limited to) wildlife, botanical, cultural, water, and other resources. Specific BMPs, will be implemented prior to and during construction to ensure minimal disturbance to the Project Corridor.

All activities associated with implementation of the Project have been designed pursuant to the constraints identified in the Biological Survey Report prepared for the Project. These constraints

to on-site preparation and construction ensure impacts to the biological resources present are minimized to the extent practicable

2.5 CONSTRUCTION SCHEDULE

It is anticipated that construction will occur seven days per week from 7:00 am to 7:00 pm, with some exceptions where work may be scheduled 24 hours per day. Construction is expected to last from approximately August 2024 until May 2026. There is potential for nighttime construction to occur as well. Border security lighting exists throughout the Project Corridor and will light the area to allow for construction at night.

Construction will be timed, to the extent possible, to minimize or avoid impacts on sensitive resources (e.g., bloom times for sensitive plants, wildlife production times).

2.6 ENVIRONMENTAL CONSIDERATIONS

Sections 3.0 through **12.0** address numerous environmental resources to be considered during final design and implementation of the Project.

3.0 AIR QUALITY

3.1 AFFECTED ENVIRONMENT

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 with regard to air quality.

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; secondary standards protect against welfare effects, such as damage to farm crops and vegetation and damage to buildings. The major pollutants of concern, or criteria pollutants, are carbon monoxide (CO), sulfur dioxide (SO₂), nitrogen dioxide (NO₂), ozone (O₃), PM₁₀, particulate matter less than 2.5 microns in diameter (PM_{2.5}), and lead. 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 do not meet these NAAQS standards are called nonattainment areas; areas that meet both primary and secondary standards are known as attainment areas. The Federal Conformity Final Rule (40 Code of Federal Regulations [CFR] Parts 51 and 93) specifies criteria or requirements for conformity determinations for federal projects. The Federal Conformity Rule was first promulgated in 1993 by USEPA, following the passage of Amendments to the CAA in 1990. The rule mandates that a conformity analysis must be performed when a federal action generates air pollutants in a region designated as a nonattainment or maintenance area for one or more NAAQS.

A conformity analysis is the process used to determine whether a federal action meets the requirements of the general conformity rule. It requires the responsible federal agency to evaluate the nature of a Project and associated air pollutant emissions and calculate emissions resulting from the Project. If the emissions exceed established limits, known as *de minimis* thresholds, the proponent is required to implement appropriate mitigation measures. *De minimis* levels (in tons per year [tpy]) vary by pollutant and also depend on the severity of the nonattainment status for the air quality management area in question. As outlined in 40 CFR 93.153(b), the seven applicable *de minimis* thresholds for the major pollutants of concern listed above are 100 tpy in both maintenance and nonattainment areas.

The Project Corridor is within the Brownsville-Laredo Intrastate Air Quality Control Region (AQCR) (BLIAQCR) (40 CFR 81.135). The BLIAQCR is designated attainment by USEPA for all criteria pollutants (USEPA 2022b). Therefore, mitigation measures would not be required if *de minimis* thresholds are exceeded.

Table 3-1. National Ambient Air Quality Standards

| Pollutant | Primary Standard Level | Primary Averaging Time | Secondary Standard Level | Secondary Standard Averaging Time |
|---|---------------------------------------|--|--------------------------|--|
| Carbon Monoxide | 9 ppm (10 mg/m ³) | 8-hour ⁽¹⁾ | None | None |
| | 35 ppm (40 mg/m ³) | 1-hour ⁽¹⁾ | None | None |
| Lead | 0.15 µg/m ³ ⁽²⁾ | Rolling 3-month Average | Same as Primary | Same as Primary |
| | 1.5 µg/m ³ | Quarterly Average | Same as Primary | Same as Primary |
| Nitrogen Dioxide | 53 ppb ⁽³⁾ | Annual (Arithmetic Average) | Same as Primary | Same as Primary |
| | 100 ppb | 1-hour ⁽⁴⁾ | None | None |
| Particulate Matter (PM ₁₀) | 150 µg/m ³ | 24-hour ⁽⁵⁾ | Same as Primary | Same as Primary |
| Particulate Matter (PM _{2.5}) | 12.0 µg/m ³ | Annual (Arithmetic Average) ⁽⁶⁾ | 15.0 µg/m ³ | Annual (Arithmetic Average) ⁽⁶⁾ |
| | 35 µg/m ³ | 24-hour ⁽⁷⁾ | Same as Primary | Same as Primary |
| Ozone | 0.075 ppm (2008 std) | 8-hour ⁽⁸⁾ | Same as Primary | Same as Primary |
| | 0.070 ppm (2015 std) | 8-hour ⁽⁹⁾ | Same as Primary | Same as Primary |
| | 0.12 ppm | 1-hour ⁽¹⁰⁾ | Same as Primary | Same as Primary |
| Sulfur Dioxide | 75 ppb ⁽¹¹⁾ | 1-hour | 0.5 ppm | 3-hour |

Source: USEPA 2019a.

Notes: 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 0.075 ppm (effective May 27, 2008).

(9) 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).

(10) (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.

(11)(a) 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.

3.2 ENVIRONMENTAL CONSEQUENCES

Temporary and minor increases in air pollution are expected to occur during the construction of the Project. The construction phase will generate air pollutant emissions from transporting materials, grading, compacting, trenching, and other various activities. Soil disturbance will contribute to increased PM emissions from vehicles and other activities will result in fugitive dust emissions and will be greatest during the initial site preparation. Levels of fugitive dust will vary from day to day depending on the construction phase, level of activity, and prevailing weather conditions. The following paragraphs describe the air calculation methodologies used to estimate air emissions produced by the proposed Project (calculations are provided in **Appendix D**).

USEPA's NONROAD model was used to calculate emissions for most construction equipment while USEPA Motor Vehicle Emission Simulator and California Department of Transportation data were used for excavators. Combustion emission calculations were made for standard construction equipment, such as front-end loaders, excavators, bulldozers, and cranes. The quantity of each equipment type needed was based on the Sacramento Metropolitan Air Quality Management District's 2004 Guide to Air Quality Assessment. 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 0.42-ton PM₁₀ per acre per month for new road construction based on USEPA guidance documents (see **Appendix D**).

Construction workers will temporarily increase the combustion emissions in the airshed during their commute to and from the Project Corridor. Emissions from delivery trucks will also contribute to the overall air emission budget. Emissions from delivery trucks and construction worker commuters traveling to the job site were calculated using the Air Force Civil Engineer Center's Air Emissions Factor Guide to Air Force Mobile Sources 2021 guidance document.

The purpose of this assessment is to evaluate impacts on ambient air quality from the Project. Air quality impacts from the Project will be significant if the following changes in emissions would occur:

1. Increase ambient air pollution concentrations above the NAAQS;
2. Contribute to existing violations of the NAAQS;
3. Interfere with, or delay timely attainment of, the NAAQS;
4. Impair visibility within federally mandated Prevention of Significant Deteriorations Class I areas;
5. Result in the potential for any new stationary source to be considered a major source of emissions as defined in 40 CFR Part 52.21 (total emissions of any pollutant subject to regulations under the CAA that is greater than 250 tpy for attainment areas); or
6. For mobile source emissions, the increase in emissions to exceed 250 tpy for any pollutant.

Starr County is designated attainment in all areas for criteria pollutants; therefore, *de minimis* levels would not apply. In determining the significance of the Project, compounds would be compared to significance levels specified in (1) through (6), above.

Table 3-2 provides a summary of emissions from the Project Corridor and a determination of their significance. Criteria pollutant emissions from construction would be below the *de minimis* threshold of 100 tpy for most pollutants, except PM₁₀. Because Starr County is currently designated as attainment, meeting the *de minimis* thresholds is not required. All pollutants would be below the 40 CFR 52.21 250 tpy threshold for a major source of emissions for a new stationary source. Collectively, the Project is determined to have minimal, and temporary, impacts on air ambient quality. Air emissions calculations are provided in **Appendix D**.

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

| Pollutant | Total emissions (tons/year) | <i>de minimis</i> Thresholds | Major Emissions Threshold ² | Significant Impact? |
|-------------------|-----------------------------|------------------------------|--|---------------------|
| CO | 6.64 | 100 | 250 | No |
| VOC | 1.35 | 100 | 250 | No |
| NO _x | 14.59 | 100 | 250 | No |
| PM ₁₀ | 103.54 | 100 | 250 | No |
| PM _{2.5} | 11.14 | 100 | 250 | No |
| SO ₂ | 1.08 | 100 | 250 | No |
| CO _{2e} | 2,714.54 | NA | NA | NA |

4.0 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 and wildlife 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. How an organism responds to the sound source will determine whether the sound is judged as a 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 human perceived 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 (HUD) noise program.

- *Acceptable (not exceeding 65 dB).* This noise exposure may be of some concern, but common building construction will make 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 may be necessary between the site and prominent noise sources to make the outdoor environment acceptable; special building constructions may be necessary to ensure that people indoors are sufficiently protected from 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 may be prohibitive and the outdoor environment will 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.

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; exposure to this level must not exceed 15 minutes within an 8-

hour period (OSHA 2018). 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 Corridor includes Starr County along the northern bank of the Rio Grande River on the United States/Mexico international border. Much of the Project Corridor is buffered by agriculture and brushland, and residential, commercial, and industrial properties on both the United States and Mexico sides. Ambient noise level is the total of all noise present in a specific area excluding anthropogenic sources. Sensitive receptors in or near the Project Corridor include certain tracts of the Lower Rio Grande Valley (LRGV) National Wildlife Refuge (NWR) that are situated in or near the Project Corridor, current USBP agents, and wildlife living within or near the Project Corridor. Residential homes and businesses will not be considered sensitive noise receptors due to being approximately 1,000 feet or more outside of the Project corridor.

4.2 ENVIRONMENTAL CONSEQUENCES

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

Short-term, negligible to minor, adverse impacts on the surrounding noise environment due to the increase of noise from construction activities will be expected from the implementation of the Project. Construction of the border barrier will require the use of heavy construction equipment that can generate temporary increases in noise levels for the surrounding environment. Minor noise increases will also occur from truck activity, as road traffic is a common source of ambient noise in the USBP RGV Sector. Noise levels will vary depending on the type of equipment being used, the area the activity is taking place, and the distance of the receptor from the noise source.

Noise levels will fluctuate throughout construction activities due to the periodic use of heavy equipment. Most equipment will produce noise levels between approximately 70 and 100 dBA at a distance of 50 feet (see **Table 4-1**). Noise levels at the upper end of this range will be limited to intermittent spurts. Sound levels on the lower end of the range will be more constant during construction activities. Depending on the equipment used, associated noise levels will decrease to below 65 dBA between approximately 500 and 4,000 feet from the source (see **Table 4-1**).

Table 4-1. A-Weighted (dBA) Sound Levels of Construction Equipment and Modeled Attenuation at Various Distances from the 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 and GSRC 2022c.

Notes: The dBA at 50 feet is a measured noise emission (FHWA 2007). Results based on GSRC-modeled estimates.

In some instances, multiple pieces of construction equipment will be simultaneously required. When an additional piece of construction equipment is used with an identical noise level to another piece of equipment, approximately 3 dB will be added overall to the noise environment, which is barely perceptible by the human ear (TRS Audio 2017). Depending on the noise levels, the noise associated with operating multiple pieces of equipment at the same time will only add a few dB over the noisiest equipment to the overall noise environment.

The increase in noise generation will be temporary. All applicable noise regulations and guidelines will be followed to reduce the effects from noise produced by the construction activities. Construction workers will be required to use proper personal hearing protection to limit exposure and will use the appropriate noise attenuation equipment.

The nearest sensitive receptors to the Project Corridor, including wildlife within the LRGV NWR, will not be substantially or permanently impacted by the temporary construction noise. The construction noise levels will be mostly limited to the immediate vicinity of the Project Corridor, impacting the construction workers. Construction equipment noise impacts on sensitive receptors will be minor because of the minimal aggregate contribution of the construction equipment to existing ambient noise levels from traffic and the use of noise attenuation equipment to ensure that noise levels will not exceed an average of 75 dB over an 8-hour period.

While existing noise sources produce elevated noise levels intermittently, noise during construction will be more continuous (with temporary increases in noise levels from the use of the loudest equipment) during working hours. The nearest sensitive receptor is approximately within 1,000 feet of the Project Corridor. At that distance, the loudest construction equipment, a

jackhammer, will register at 55–72 dBA at 1,000 feet from the source. This is approximately the same sound level as a sewing machine or normal conversation (see **Table 4-1**).

Short-term, minor, adverse impacts on wildlife will occur as a result of temporary noise disturbances associated with construction activities. Loud noise can disturb wildlife, resulting in escape or avoidance behaviors; however, these effects will be temporary. Noise can also distort or mask animal communications signals and their ability to find prey or detect predators. If noise persists in a particular area, animals could leave their habitat and avoid it permanently.

Although construction will be limited to daylight hours as much as possible, nighttime construction activities could occur and further impact wildlife. Noise associated with construction will only be expected to affect individual animals within close proximity, 400 to 800 feet, to the noise sources. BMPs will be implemented to minimize impacts of construction noise on wildlife. Wildlife species will generally be expected to recover quickly from noise disturbance once the construction activities have ceased. As a result, population-level impacts will not be expected to occur.

Operation and maintenance of the new barrier will have the potential to generate noise levels in excess of ambient levels. Truck activity and the operation of gates will result in temporary minor noise increases for the surrounding environment. Additional maintenance activities could contribute to slightly increased noise levels; however, such occurrences will be temporary and conclude upon completion of such maintenance activities. Noise from the maintenance of the enforcement zone will not supersede the ambient noise levels of the Project Corridor. Therefore, operation and maintenance of the new barrier system will produce temporary, minor, adverse impacts on the surrounding environment.

5.0 LAND USE, RECREATION, AND AESTHETICS

5.1 AFFECTED ENVIRONMENT

Land use refers to real property classifications that indicate the type of human activity occurring in an area or the natural conditions that are present. Land use descriptions are typically codified in local zoning laws, yet there is no nationally recognized convention or terminology among adjacent land use parcels.

The Project Corridor runs through Starr County in southeastern Texas, north of the Rio Grande River on the United States/Mexico international border. Land use impacts are evaluated for those anticipated to occur in the United States. Currently, there are existing patrol roads within the Project Corridor. A combination of residential, commercial, industrial, recreational, lands used for conservation, and publicly managed properties is present within and beyond the Project Corridor (Starr County 2023). Certain tracts of the LRGV NWR are also within and beyond the Project Corridor. The majority parcels affected by the Project are owned by private owners. The United States and the City of Grulla also own parcels affected by the Project.

The Project Corridor will involve the construction and maintenance of barrier. The Project Corridor traverses federal, state, and private land. It will be necessary for CBP to acquire any land that is not currently federally owned prior to construction. The amount of land that will need to be acquired within the Project Corridor will depend on the final alignment of the approximately 17-miles of barrier that will be constructed within the Project Corridor. CBP will coordinate with landowners prior to construction. CBP's preference is to acquire land through voluntary acquisition. Where acquisition through voluntary acquisition is not possible, CBP will use eminent domain to acquire the needed property.

5.2 ENVIRONMENTAL CONSEQUENCES

Land clearing will be required within the enforcement zone where there is no permanent construction. The enforcement zone will have no vegetation aside from short, mowed, maintained grasses. Structures and obstructions within the entire barrier system Project footprint will require removal. Equipment, materials, and temporary construction work trailers will be staged at staging areas within the Project Corridor. Staging areas will also be used for operations. In general, staging areas are required within about 5 miles of construction. An estimated eight staging areas will be required. All areas will be on disturbed land, and distant from sensitive areas.

The Project will primarily affect lands in the 150-foot enforcement zone within the RGV. This Project is not expected to have a major cumulative adverse impact. It is also possible that existing access to riparian areas for fishing, boating, birdwatching, and other recreational purposes will be limited within the Project Corridor during construction. However, the inclusion of gates within the border barrier will allow continued access to riparian areas. Maintenance and repair of the barrier and roads will have no impact on land use since work will occur on existing infrastructure.

The Project will also result in changes to the overall aesthetic of the area. The addition of the 18-foot-tall barrier will add an obstruction to the horizon line.

Implementing the Project will result in short- and long-term, minor to moderate, adverse impacts on land use. Short-term impacts will result from the temporary use of staging areas, which will be restored to previous conditions upon completion of the Project Corridor. If LRGV NWR areas are affected by the Project Corridor, long-term adverse impacts will include loss of habitat and biodiversity (see **Section 8.0**). The land use near riparian areas within the LRGV NWR will change from public access land to restricted access, also resulting in long-term adverse impacts to approximately 0.88 acres of riparian areas. The Project Corridor could result in adverse impacts on property, particularly if land is converted from agricultural, commercial, industrial, or protected uses.

6.0 GEOLOGICAL RESOURCES AND SOILS

6.1 AFFECTED ENVIRONMENT

The RGV Sector is characterized by the Lower Rio Grande Alluvial Floodplain, which is Quaternary-aged alluvium comprised of sand, gravel, silt, and clay deposits (USGS 2014a; USGS 2022). In Starr County, the Goliad Formation, Jackson Group, and the Catahoula Formation and Frio Clay geologic units make up the majority of the geology of the area, with a cover of 53%, 17%, and 10%, respectively. The Goliad Formation is Miocene in age, comprised of clay, sandstone, marl, caliche, limestone, and conglomerates, and ranges from 100 to 500 feet in thickness. The Jackson Group is Oligocene and Eocene in age, comprises of clay, sandstone, siltstone, and tuff, and is about 875 feet in thickness. The Catahoula Formation and Frio Clay is Oligocene in age and consists of mudstone, sand, sandstone, claystone, pebbles, cobbles and foot-sized boulders, and dark greenish-gray massive rock, some gypsum and calcareous concretions, respectively. The Catahoula Formation ranges from 120 to 300 feet in thickness, and the Frio Clay is about 200 feet thick. The remaining geologic units that make up the RGV Sector include, sand sheet deposits, terrace deposits, alluvium, dune sand sheet deposits, Yegua Formation, Uvalde Gravel, Quaternary deposit, and the Laredo Formation. The Rio Grande silt loam is the largest soil group within the RGV Sector. The Reynosa silty clay loam soil unit is the second largest within the RGV Sector.

In the southwestern portion of Starr County, where the RGV Sector is located, the soils are gray to black cracking clay (see **Figures 6-1** through **6-8** in **Appendix C**). Other soils found within Starr County comprise of sandy or light-colored and loamy soils over very deep, reddish or mottled clayey subsoils, which can also be found in portions of the RGV Sector.

6.1.1 Regional Geology

The Project Corridor's footprint is within the Gulf Coastal Plains physiographical region, which includes three sub-provinces. From northwest to southeast, the Gulf Coastal Plains includes: Blackland Prairies, Interior Coastal Plains, and Coastal Prairies. The Project Corridor is in the Interior Coastal Plains sub-province (BEG 1996). The geological area of the Project Corridor is within the Lower Rio Grande Alluvial Floodplain, which is Quaternary-aged alluvium comprised of sand, gravel, silt, and clay deposits (USGS 2014a; USGS 2022).

6.1.2 Topography and Soils

Elevations along the Interior Coastal Plains within the border region gently decrease in the southeastern direction towards the Gulf of Mexico. The highest elevations are approximately 415 feet above sea level and lowest elevations are approximately 130 feet above sea level. There are parallel ridges and valleys with cherts and marls bedrock types in the Interior Coastal Plains physiographical region (BEG 1996).

Soil characteristics determine their potential for wind and water erosion, and the soil's suitability to site buildings, roads, and pipelines, which are important factors to consider when planning for construction and stabilization of removed areas. The soils generally consist of silty clays, clays, loams, and fine sands.

Table 6-1 outlines the soils within the Project Corridor.

Table 6-1. Soils in the Project Corridor

| Soil Name | Acres | Farmland Designation |
|--|-------|-----------------------------|
| Rio Grande silt loam, 0 to 1 percent slopes | 81.64 | Not prime farmland |
| Reynosa silty clay loam | 69.75 | Prime farmland if irrigated |
| Lagloria silt loam | 47.07 | Prime farmland if irrigated |
| Copita fine sandy loam, 0 to 3 percent slopes | 14.03 | Not prime farmland |
| Matamoros silty clay | 27.09 | Not prime farmland |
| Camargo silty clay loam, 0 to 1 percent slopes, rarely flooded | 6.87 | Not prime farmland |
| Jimenez-Quemado association | 5.91 | Not prime farmland |
| Grulla clay, depressional, frequently flooded and ponded | 19.07 | Not prime farmland |
| Rio Grande silty clay loam | 10.82 | Not prime farmland |
| Rio Grande silt loam, 1 to 3 percent slopes | 2.99 | Not prime farmland |
| Grulla clay, frequently flooded and ponded | 2.64 | Not prime farmland |
| Alluvial land | 7.24 | Not prime farmland |
| Catarina clay, association, 0 to 5 percent slopes | 6.42 | Not prime farmland |
| Camargo silty clay loam, 1 to 3 percent slopes | 2.82 | Not prime farmland |
| Zapata soils | 1.04 | Not prime farmland |

Source: USDA 2023

6.1.3 Farmland Designation

The Natural Resources Conservation Service (NRCS) bases important farmland soil determinations on the most recent soil survey for an area. The most recent soil survey for Starr County was completed in 2019 (USDA 2023). The Project Corridor contains approximately 116.82 acres of prime farmland if irrigated (Reynosa silty clay loam and Lagloria silt loam).

6.1.4 Geological Hazards

Landslides, rockfalls, sinkholes, and earthquakes are common in southwestern Texas. Landslides and rockfalls can occur when unstable rock suddenly collapses and moves downslope. All parts of Texas with exposed rock outcrops are subject to these gravity-driven geologic hazards (University of Texas 2021). Sinkholes are common in Texas from the dissolution of minerals at depth (University of Texas 2021). In southwestern Texas, Cretaceous aged carbonate strata and interbedded salts are dissolved over time, which can lead to sinkholes. Earthquakes can happen with rock strata on either side of a geologic fault move relative to one another. While earthquakes are common in Texas, they are generally minor and do not cause structural damage to buildings (University of Texas 2021).

6.2 ENVIRONMENTAL CONSEQUENCES

The Project will result in minor, localized effects on superficial geological features. Topography will be slightly altered within the Project corridor. However, physiography of the Project Corridor will not be affected.

6.2.1 Regional Geology

No impacts on regional geology would be expected. Activities associated with the construction, maintenance, and operation of the Project will not alter lithology, stratigraphy, or the geological structures that control the distribution of aquifers and confining beds.

6.2.2 Topography

Short- and long-term, minor, adverse impacts on topography will be expected from earthmoving and grading activities during construction. Topography will be altered to provide flat surfaces for the barrier and roads. Impacts will be minor because the Project Corridor does not contain substantially steep slopes and is generally level. Earthmoving and grading will not be required for maintenance and operations, other than minor improvements to roads; therefore, no impacts on topography will be expected from these activities post-construction.

6.2.3 Soils

Short-term, minor, adverse impacts on soils will result from temporary disturbance of ground surfaces, earthmoving activities, and grading within the Project Corridor during construction. These activities will excavate soils and expose rock materials, temporarily remove vegetation in some areas, and expose soils to erosion. The use of trucks and construction equipment will result in soil compaction, which could also lead to increased rates of erosion and alter soil structure. These activities have the potential to adversely affect natural soil characteristics such as water infiltration, storage, and nutrient levels, thereby reducing soil productivity. Specific construction limitations and considerations will depend on the type of construction activity and the specific subsurface composition encountered.

In general, accelerated erosion of soils will be short-term during construction activities. Erosion will be minimized by appropriately siting and designing facilities while taking into consideration soil limitations, employing construction and stabilization techniques appropriate for the soil and climate, and implementing BMPs and erosion-control measures. BMPs will include the installation of silt fencing and sediment traps, application of water to disturbed soil to reduce dust, and revegetation of disturbed areas as soon as possible following ground disturbance, as appropriate. BMPs are provided in **Appendix B**.

Construction materials will be appropriately stabilized with temporary erosion control measures during construction, and with long-term measures in accordance with the SWPPP and native plant revegetation plan during operation and maintenance of the Project. Impacts will be localized to the proposed disturbance area due to the implementation of these measures and BMPs. Therefore, short-term impacts will be minor.

6.2.4 Farmland Designation

Approximately 116.82 acres of NRCS prime farmland if irrigated (Reynosa silty clay loam and Lagoria silt loam) will be directly converted to non-agricultural use from barrier construction. However, the Project Corridor is highly disturbed from previous barrier system projects in the past. Therefore, no impacts will be made to important farmlands.

6.2.5 Geologic Hazards

Long-term, minor, negligible impacts could occur due to geological hazards. While earthquakes are common in Texas, they are generally minor and do not cause structural damage to buildings (University of Texas 2021).

While there are no slopes greater than 25 percent within the Project Corridor, implementation of BMPs and erosion-control measures, as well as other appropriate preventative measures identified by federal, state, and local agencies, will be implemented where applicable to minimize potential impacts from landslides. These preventative measures could include regular drain and culvert maintenance, drainage ditch and channel maintenance, vegetation maintenance, and implementation of roadside stabilization measures.

7.0 HYDROLOGY AND WATER MANAGEMENT

7.1 AFFECTED ENVIRONMENT

The Project Corridor falls within the South Texas Plains Ecoregion as characterized by TPWD and is transected by numerous arroyos and streams (TPWD 2022a). The average temperature is 73 degrees Fahrenheit, with an average annual rainfall ranging from 16 inches in the east to 30 inches in the west (CBP 2022, 2020b).

7.1.1 Groundwater

The Project Corridor falls within Groundwater Management Area (GMA) 13, which is overseen by the Texas Water Development Board (TWDB). GMAs were created to protect underlying groundwater reservoirs in the state and to control subsidence (Texas Water Code 35.001). There are four major and three minor aquifers recognized by the TWDB in GMA 13; however, only the Gulf Coast Aquifer and Yagua-Jackson Aquifer underlie the Project Corridor.

The Gulf Coast Aquifer parallels the Gulf of Mexico coastline from the Louisiana border to the Mexico border in a wide band covering 56 counties in Texas, including all of Hidalgo County and portions of Starr County (Bruun et al. 2016). Within the Gulf Coast Aquifer lie several other aquifers including the Jasper, Evangeline, and Chicot aquifers. These aquifers are composed of discontinuous sand, silt, clay, and gravel beds. The total annual flow is approximately 620,000 acre-feet, of which about 84 percent discharges into streams, and 16 percent discharges into the Gulf of Mexico (Bruun et al. 2016).

Water quality within the Gulf Coast Aquifer varies with depth and locality. It is generally high quality in the central and northeastern parts of the aquifer, but is more saline to the south, where total dissolved solids increase and where the productivity of the aquifer decreases (TWDB n.d.). Areas of increased salinity along the central and eastern Gulf Coast could be associated with saltwater intrusion into the aquifer via conduits and/or pore spaces in the bedrock and soils in the area.

A portion of the Project Corridor also overlies the Yagua-Jackson Aquifer. Within the Yagua-Jackson Aquifer, water quality varies greatly due to sediment composition in the aquifer formations, ranging from fresh in the northern parts of the aquifer to moderately saline in the southern parts.

7.1.2 Surface Water

Surface water is important to the water supply in Texas, since it accounts for two-thirds of the total existing water supply in the state (TWDB 2022a). The Project Corridor lies within the Rio Grande River basin, whose largest water source, the Rio Grande River, originates in Colorado and flows 1,896 miles to the Rio Grande Estuary, where it meets the Gulf of Mexico (TWDB 2022b). The Rio Grande River basin is approximately 182,000 square miles in size, of which 49,000 square miles are in Texas. A Section 303d list of impaired water bodies near the Project Corridor is provided in **Table 7-1**.

Table 7-1. Impaired Water Bodies near the Project Corridor

| Name/TCEQ Identification | Location | Suspected Causes of Impairment |
|---|---|--|
| Arroyo Los Olmos/Texas 2302A | From the Rio Grande River confluence near Rio Grande City upstream to a point near El Sauz | Bacteria in water, depressed dissolved oxygen in water |
| Rio Grande below Falcon Reservoir/Texas 2302_03 | From the Progresso International Bridge upstream to the McAllen International Bridge (U.S. Hwy 281) | Bacteria in water |

Source: USEPA 2022e, TCEQ 2022

Communities and municipalities along the border acquire drinking water supplies from both surface water and groundwater. Cities such as Rio Grande City use only surface water from the Rio Grande River and nearby reservoirs for drinking water supplies (Rio Grande City 2019).

The USACE regulates WOTUS under Section 404 of the Clean Water Act (CWA). WOTUS are 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, as defined in the USACE Wetlands Delineation Manual, 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 often characterized by an ordinary high-water mark. Non-wetland waters generally include lakes, rivers, streams, and other open-water habitats.

Between November 2018 and November 2020, CBP conducted a wetland delineation of a 200-foot corridor within the Project Corridor in accordance with *Section D, Subsection 2, of Technical Report Y-87-1, Corps of Engineers Wetlands Delineation Manual* and the *2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region* (USACE 1987, USACE 2010). This involved establishing sample plots within each observed vegetation community, which included excavating a soil boring pit within each sample plot. Dominant vegetation and wetland hydrology indicators were also recorded at each sample plot. Wetland delineation results are provided in **Appendix E**.

Within the Project Corridor, potentially jurisdictional wetlands and WOTUS features were found in every segment in the form of arroyos, resacas, intermittent tributaries, and open-water ponds that connect to the Rio Grande River. Potentially non-jurisdictional wetlands were also found in the form of isolated wetlands, man-made drainages, agricultural ditches, canals, and borrow pits.

7.1.3 Floodplains

Floodplains are low-lying areas adjacent to or within major watersheds that serve to contain excess water during rainfall events. The 100-year flood is generally the standard utilized in management of floodplains. If an area is in the 100-year floodplain, there is a 1 in 100 chance in any given year that the area will flood. Federal Emergency Management Agency (FEMA) Flood

Insurance Rate Maps (FIRMs) were reviewed to identify Project segments within mapped floodplains (FEMA 2012). The FIRMs are official maps of a community on which FEMA has delineated both special hazard areas and the risk premium zones applicable to the community.

The Rio Grande River is the major surface water in the Project Corridor associated with the floodplain. Numerous arroyos, streams, and resacas are also present in the region.

A review of the FIRMs shows that parts of the Project Corridor occur within a Special Flood Hazard Area (SFHA) subject to inundation by the 1 percent annual chance flood (100-year floodplain) (see **Figures 7-1** through **7-7** in **Appendix C**).

7.2 ENVIRONMENTAL CONSEQUENCES

The Project is not bound by Section 404 of the CWA and therefore CBP is not required to abide by its rules and regulations. Nevertheless, CBP recognizes the importance of environmental stewardship and will provide post-construction determinations of impacts to ascertain if and where additional stewardship may be necessary, given the availability of appropriate funds.

7.2.1 Groundwater

Short- and long-term, negligible, adverse impacts will be expected during construction activities due to ground disturbance from the use of heavy equipment. During construction activities, soil disturbances will lead to increased sediment transportation to downstream regions during rainfall events that could eventually enter groundwater through recharge points. BMPs and planning during construction could minimize such impacts by managing the flow of surface water runoff. BMPs could include using temporary construction of barriers such as fiber logs or silt fences, which will be installed based on site-specific evaluations on an as-needed basis.

Vehicles and equipment used during the implementation of the Project Corridor will increase the potential for petroleum or hazardous material spills, typically due to leaks or accidents at the work site. Any such leaks or spills could be transported to groundwater either by surface water runoff or by soil leaching. Proper housekeeping, maintenance of equipment, and containment of fuels and other potentially hazardous materials will be conducted to minimize the potential for a release of fluids. Due to the implementation of BMPs and minimal groundwater recharge in the area, implementing the Project will be expected to result in minor impacts on groundwater.

7.2.2 Surface Water

Short- and long-term, moderate, adverse impacts on surface waters, including WOTUS and wetlands, will be expected during implementation of the Project. The Project could transport sediment and other material into the nearby Rio Grande River, which is one of the primary drinking water supplies for nearby communities. Additionally, in low-lying areas near rivers, the Project will inhibit stormwater flow and increase debris build-up near the barrier during stormwater events.

Unmanaged stormwater flow also causes general erosion to occur, washing out complete sections of road and in many instances making roads impassable. However, better maintained roads, as are included in the Project, could result in a reduced need for agents to traverse off-

road, thereby reducing potential erosion/sedimentation. Erosion control and stormwater BMPs will be implemented to maintain runoff on-site and will minimize the potential for adverse effects on downstream water quality. Continued maintenance of the barrier will minimize the impacts of debris build-up.

Pertinent local, state, and federal permits will be obtained for any construction work, including work that could occur near surface water or ephemeral drainages. Due to the proximity of the Project Corridor to the international border and the Rio Grande River, it will be necessary to coordinate with the USIBWC prior to the implementation of the Project Corridor. A USIBWC out-grant application is necessary for any work that results in the use of USIBWC federal real property by lease, easement, license, or permit.

Implementation of the Project will require filling wetlands and WOTUS features (see **Figures 7-8** through **7-15** in **Appendix C**). The Project has the potential to impact up to 4 wetlands and features (approximately 2.09 acres), and 832.85 linear feet of WOTUS features within the 150-foot Project Corridor (see **Appendix E**). The type and number of drainages will be determined in the final design after contract award. Some of the features and wetlands will require drainage crossings. Drainage crossings will be designed as concrete low-water crossings, culverts, bridges, or a combination thereof. CBP designs drainage control per the most local standards available – if city or county standards are not available, CBP will use standards from the state, if the state lacks information, then federal standards will be used. Impacts on sensitive riparian and wetland areas will be avoided as much as possible.

7.2.3 Floodplains

Implementing the Project has the potential to result in short- and long-term, minor to moderate, adverse impacts on floodplains that are subject to inundation by the 1 percent annual chance flood. A floodplain development permit will be required prior to any construction or development within any SFHA that overlaps communities participating in the National Flood Insurance Program (44 CFR 60.3). The local government will issue the floodplain development permit.

Within the 150-foot corridor, the Project has the potential to impact 243.57 acres of floodplains subject to the 1 percent annual chance flood. The actual number of impacted acres will depend on the final design. The Project will increase the number of permanent structures within the floodplain, which could be damaged during flooding events. The development of the enforcement zone will require clearing vegetation, which will result in an increase in the volume and velocity of floodwater flow.

CBP will consult with USIBWC to ensure that the Project complies with any treaty obligations between the United States and Mexico concerning the Rio Grande floodplain. CBP will develop hydraulic models for proposed infrastructure in accordance with the methodologies and guidelines outlined in the USIBWC River Boundary Design Requirements. The models will need to demonstrate that the impacts of the proposed structures to be built within the floodplain will not exceed the rise in designated water surface elevation and deflection limits.

8.0 BIOLOGICAL RESOURCES

8.1 AFFECTED ENVIRONMENT

The Project Corridor fall within the South Texas Plains Ecoregion as characterized by TPWD (TPWD 2022a). The South Texas Plains Ecoregion is a diverse ecoregion with elements of three converging vegetative communities: Chihuahuan Desert to the west, Tamaulipan thornscrub and subtropical woodlands along the Rio Grande River to the south, and coastal grasslands to the east. It is transected by numerous arroyos and streams and is generally covered in low-growing thorny vegetation (TPWD 2022a). The average temperature is 73 degrees Fahrenheit, with an average annual rainfall ranging from 16 inches in the east to 30 inches in the west (CBP 2022, 2020b).

The Project Corridor spans the western portion of the South Texas Plains Ecoregion, between the Chihuahuan Desert to the west and Tamaulipan brushland and subtropical woodlands of the Rio Grande River and coastal grasslands to the east. The South Texas Plains Ecoregion is an area of high species diversity and is home to a number of rare plant and animal species. The Project Corridor is within the Southwest Plateau and Plains Steppe Dry and Shrub Province of the South Texas Plains Ecoregion (CBP 2022, TPWD 2022a).

8.1.1 Vegetation

Vegetation includes native, non-native, and naturalized plants and the vegetation communities in which they exist. This section includes a description of all plant species and vegetation communities occurring within the affected environment of the Project Corridor. Site-wide pedestrian surveys of most segments have been conducted by Gulf South Research Corporation (GSRC) (GSRC 2021, 2022a). The northwestern portion of Segment 9, the southern quarter mile of Segment 5, and the eastern one and one-half mile of Segment 6 were not accessible for survey. Vegetation communities defined within the Project Corridor are summarized in **Table 8-1** as interpreted from the most recent available mapping (see **Figures 8-1** through **8-7** in **Appendix C**). The following habitat types were identified within the corridor: grasslands, shrubland, mature shrubland, mid-successional and successional woodland, and deciduous, mixed, and mature forest.

Tamaulipan brushland, characterized by dense and thorny vegetation, and Tamaulipan woodland are the most common habitat type within the RGV Sector. Tamaulipan brushland is characterized by dense and thorny vegetation. High vegetation density is found in the riparian and scrub forests dominated by alluvial and mesic soils. In the upland regions, Tamaulipan brushland can be divided into mezquital and chaparral vegetation communities (GSRC 2021). The mezquital community consists of an open savannah-like bosque containing large honey mesquite (*Prosopis glandulosa*) and Texas ebony (*Ebenopsis ebano*) trees with a grassland/herbaceous understory with an understory of non-native grasses such as buffelgrass (*Cenchrus ciliaris*) and Guinea grass (*Urochloa maximus*), and encroaching brush and cacti. The chaparral community consists of thickets of stiff, xerophytic, usually evergreen brush. Tamaulipan brushland provides important habitat for a rich diversity of wildlife, some of which are endemic to the region.

Wetland habitat types include arroyos, disturbed riparian habitat, drainages, and wetlands (supporting native and non-native vegetation). These areas, including disturbed riparian areas, provide excellent habitat for wildlife species. Open-water habitat is characterized by drainage ditches, irrigation canals, rivers, and resacas.

Agricultural areas were characterized by uses such as abandoned agriculture, active agriculture, cultivated crops, pasture, and hay. Disturbed and developed areas consist of bare ground, barren land roads, and low to medium intensity urban areas.

Table 8-1. Vegetation Communities in the Project Corridor

| Vegetation Community | Total Area (in acres) |
|-------------------------------|-----------------------|
| Agriculture | |
| Abandoned Agriculture | 14.93 |
| Agriculture | 101.84 |
| Cultivated Crops | 9.51 |
| Pasture/Hay | 1.66 |
| Disturbed Habitat | |
| Bare Ground | 0.86 |
| Barren Land | 0.39 |
| Developed Areas | |
| Developed Low Intensity | 0.17 |
| Developed Medium Intensity | 0.01 |
| Developed Open Space | 0.29 |
| Grasslands | |
| Disturbed Grassland | 15.89 |
| Grassland/Herbaceous | 2.04 |
| Scrubland/Brushland | |
| Blackbrush Thornscrub | 5.19 |
| Shrub/Scrub | 4.79 |
| Mature Shrubland | 0.10 |
| Mesquite Thornscrub | 10.5 |
| Mesquite/Blackbush Thornscrub | 5.99 |
| Mid-Successional | 8.61 |
| Forest/Woodlands | |
| Deciduous Forest | 0.10 |
| Disturbed Mesquite Woodland | 26.27 |
| Disturbed Tamaulipan Woodland | 2.06 |
| Huisache Mesquite Woodland | 0.00 |
| Mature Forest | 4.90 |
| Mesquite Grassland/Savannah | 8.8 |
| Mesquite Woodland | 48.98 |

| Vegetation Community | Total Area (in acres) |
|----------------------------------|-----------------------|
| Mixed Forest | 0.32 |
| Ratama Savannah | 6.90 |
| Tamaulipan Mesquite | <0.0002 |
| Riparian Habitat/Wetlands | |
| Emergent Herbaceous Wetlands | 3.14 |
| Ratama Huisache Woodland | 1.52 |
| Riparian Medium Disturbance | 0.00 |
| Wetlands | 2.09 |
| Woody Wetlands | 6.99 |
| Grand Total | 289.97 |

Source: USFWS 2023.

8.1.2 Wildlife and Aquatic Resources

The diversity and quality of Tamaulipan brushland habitat within the Project Corridor supports a wide variety of terrestrial wildlife, including reptiles, amphibians, birds, mammals, and insects (GSRC 2021, GSRC 2022a). A total of 143 wildlife species were recorded within the vicinity of the Project Corridor during surveys of the various RGV segments (GSRC 2022a).

8.1.3 Protected Species and Critical Habitat

Agencies with primary responsibility for the conservation of plant and animal species in Texas are TPWD (land management) and USFWS (threatened and endangered species). These agencies maintain a list of plant and animal species that have been identified as, or listed as potential for classification, as threatened or endangered in the State of Texas. CBP has determined that 15 federally listed species have potential to occur within or adjacent to the Project Corridor (CBP 2022) (see **Table 8-2**).

8.1.3.1 Federally Listed Species

Federally listed plant species noted as occurring or having the potential to occur within the Project Corridor include Ashy dogweed (*Thymophylla tephroleuca*), star cactus (*Astrophytum asterias*), south Texas ambrosia (*Ambrosia cheiranthifolia*), Texas ayenia (*Ayenia limitaris*), Walker’s Manioc (*Manihot walkerae*), prostrate milkweed (*Asclepias prostrata*), and Zapata bladderpod (*Physaria thamnophila*). Critical habitat designations for the Zapata bladderpod and prostrate milkweed overlap with the Project Corridor.

Federally listed wildlife species noted as occurring or having the potential to occur within the Project Corridor include the Texas hornshell (*Popenaias popeii*), cactus ferruginous pygmy-owl (*Glaucidium brasilianum cactorum*), northern aplomado falcon (*Falco femoralis setentrionalis*), piping plover (*Charadrius melodus*), red knot (*Calidris canutus rufa*), least tern (*Sterna antillarum athalossos*), Gulf Coast jaguarundi (*Herpailurus yaguarondi*) and ocelot (*Leopardus pardalis*). Critical habitat designations for the piping plover overlap the Project Corridor. Per USFWS directive (USFWS 2022c), effects on piping plover and red knot do not need to be

discussed unless the proposed action concerns the development of a wind-energy generation facility in the species' flyway. Therefore, these two species will not be discussed further.

Two federally listed candidate species, the monarch butterfly (*Danaus plexippus*) and red-crowned parrot (*Amazona viridigenalis*), also have the potential to occur within the Project Corridor.

Table 8-2. Federally Listed Threatened and Endangered Species with Potential to Occur within the Project Corridor

| Common Name | Scientific Name | Status | Critical Habitat | Potential to Occur |
|------------------------------|---|------------|---|--|
| Mollusks | | | | |
| Texas hornshell | <i>Popenaias popeii</i> | Endangered | None | No. Unlikely to occur. |
| Mammals | | | | |
| Gulf coast jaguarundi | <i>Herpailurus yagouaroundi cacomitli</i> | Endangered | None | Yes, but unlikely due to rarity of confirmed sightings |
| Ocelot | <i>Leopardus pardalis</i> | Endangered | None | Yes, but unlikely; no known populations in the area |
| Birds | | | | |
| Cactus ferruginous pygmy-owl | <i>Glaucidium brasilianum cactorum</i> | Threatened | None | Yes |
| Piping plover | <i>Charadrius melodus</i> | Threatened | None | No |
| Red knot | <i>Calidris canutus rufa</i> | Threatened | None | No |
| Northern aplomado falcon | <i>Falco femoralis septentrionalis</i> | Endangered | None | Yes |
| Red-crowned parrot | <i>Amazona viridigenalis</i> | Candidate | None | No |
| Insects | | | | |
| Monarch butterfly | <i>Danaus plexippus</i> | Candidate | None | Yes |
| Plants | | | | |
| Ashy dogweed | <i>Thymophylla tephroleuca</i> | Endangered | None | No |
| Star cactus | <i>Astrophytum asterias</i> | Endangered | None | Yes |
| Texas ayenia | <i>Ayenia limitaris</i> | Endangered | None | Yes |
| Walker's manioc | <i>Manihot walkerae</i> | Endangered | None | No |
| Prostrate milkweed | <i>Asclepias prostrata</i> | Endangered | Yes; adjoining Segment 9 and near Segment 8 adjacent | Yes |
| Zapata bladderpod | <i>Physaria thamnophila</i> | Endangered | Yes; overlapping small portions of Segment 9 and 10 and near Segments 2 and 8. adjacent | Yes |

Source: USFWS 2023

Listed Plant Species

Ashy Dogweed (*Thymophylla tephroleuca*). Ashy dogweed was listed as a federally endangered species in July 1984. At the time of listing, ashy dogweed was only known from Starr County (USFWS 2011a) but additional populations have been identified in southern Webb and Zapata counties. Ashy dogweed is an erect perennial herb of the Sunflower Family (Asteraceae) numerous woolly stems up to 12 inches in height with oil-bearing cells that give off a pungent aroma when crushed. Flowers are yellow and consist of 30- to 70-disc flowers surrounded by 12- to 13-ray flowers in a typical sunflower-like arrangement. Ashy dogweed is restricted to sandy pockets of Maverick-Catarina, Copita-Zapata, and Nueces-Comita soils in Tamaulipan thornscrub vegetation communities of the South Texas Plans ecoregion.

No ashy dogweed was observed in the Project Corridor during biological surveys; however, suitable Tamaulipan thornscrub vegetation capable of supporting ashy dogwood is present within the Project Corridor, specifically in the Segment 1 near Salineno Wildlife Preserve and Falcon Dam (GSRC 2021). No critical habitat for this species has been designated.

Prostrate Milkweed (*Asclepias prostrata*). Prostrate milkweed is herbaceous perennial that grows from thick woody crowns. It is endemic to Starr and Zapata counties in Texas and in the Mexican state of Tamaulipas (Blackwell 1964). It prefers sand and fine sandy loam areas void of competition (Correll 1966) in subtropical, semiarid climate in sparsely vegetated habitats, including grasslands, savannas, and open areas of the Tamaulipan shrubland ecological region (USFWS 2022d). A weak competitor, prostrate milkweed is susceptible to the introduction of non-native grasses, such as buffelgrass, after disturbances (Poole et al 2013). The species is under threat due to habitat loss from agriculture, energy development, road and utility construction, and border enforcement activities.

No individuals were identified during surveys within the Project Corridor. Critical habitat has been designated for prostrate milkweed in Starr and Zapata counties in eight occupied areas of particular importance for the conservation of the species. Critical habitat for the prostrate milkweed adjoins Segment 9 and is near the southeastern end of Segment 8). No directed surveys were conducted in these segments nor have observations been recorded. The species has been identified south of Segment 2 and west of Segment 10.

Star Cactus (*Astrophytum asterias*). Star cactus is typically associated with low shrubs, grasses, and salt-tolerant plants on xeric upland sites (USFWS 2013a). The USFWS lists protection of star cactus habitat as a major action needed for its recovery (USFWS 2003). This species of cactus occurs on gravelly clay or loam soils that typically contain high levels of gypsum, salt, or other alkaline minerals. There are currently known populations of star cactus within Starr County, Texas. The closest known population to the site is approximately 5 miles from the Los Negros Creek to Este Road tract. Within all four counties in the Project Corridor, a large portion of suitable habitat has been lost to pasture, urban, and residential development. In addition, the species is incompatible with non-native competitive grasses, primarily buffelgrass (USFWS 2013a).

Star cactus is associated with species found within the Project Corridor, such as pincushion cactus (*Mammillaria heyderi*); however, no individuals were identified during surveys. No critical habitat has been designated for the species.

Texas Ayenia (*Ayenia limitaris*). Texas ayenia occupies dense subtropical woodland communities at low elevations. The current population occupies a Texas Ebony-Anaqua (*Pithecellobium ebano-Ehretia anacua*) plant community. This plant community occurs on well-drained riparian terraces with canopy cover close to 95 percent. Species found in this community include la coma (*Bumelia celastrina*), brasil (*Condalia hookeri*), granjeno (*Celtis pallida*), and snake-eyes (*Phaulothamnus spinescens*).

This plant is an endemic species of southern Texas and northern Mexico, whose historical range included Cameron and Hidalgo counties, Texas, and the states of Coahuila, Nuevo Leon, and Tamaulipas in Mexico. The only known populations of Texas ayenia in the United States are within Cameron, Hidalgo, and Willacy counties (USFWS 1994). Within the Project Corridor, NatureServe provides a record for six elemental occurrences of Texas ayenia within Cameron County and USGS topographic quadrangle maps East Brownsville, West Brownsville, Olmito, along with Hidalgo County and within quadrangle maps Progreso and Mercedes (NatureServe 2010). Habitat loss and degradation from agriculture or urban development have reduced the Texas Ebony-Anaqua vegetation community by greater than 95 percent. Texas ayenia has been reduced to one known population of 20 individuals that is extremely vulnerable to extinction (USFWS 2010b).

No individuals were identified during surveys; however, suitable habitat was present in the survey areas where Tamaulipan brushland is present. No critical habitat has been designated for the species (USFWS 2010).

Walker's Manioc (*Manihot walkerae*). Walker's manioc is perennial herb known to occur in Starr County, Texas, particularly within the LRGV NWR and on private property. This species usually grows among low shrubs, native grasses, and herbaceous plants, and prefers either full sunlight or the partial shade of shrub species (USFWS 2009). It is associated with some of the plant species that were found within the Project Corridor, such as blackbrush acacia and coyotillo (*Karwinskia humboldtiana*). Except for a single population found in shallow sandy soils overlying limestone, all known populations of Walker's manioc have occurred in sandy, calcareous soils overlying caliche of the Goliad Formation (USFWS 2009).

No individuals were identified during surveys within the Project Corridor and no critical habitat has been designated for this species. Soils associated with the Goliad Formation are not found within the Project Corridor (GSRC 2021, 2022a).

Zapata Bladderpod (*Physaria thamnophila*). Zapata bladderpod is a silvery-green herbaceous perennial plant with sprawling stems. It can be found growing in open thorn shrublands consisting of cenizo (*Leucophyllum frutescens*) and guajillo (*Acacia berlanderi*) on graveled to sandy loam upland terraces above the Rio Grande floodplain (USFWS 2004). Current populations occur in the Jimenez-Quemado soil association and Catarina series soils in Starr County and Zapata-Maverick soil association in Zapata County. Soils are generally well-drained with a calcareous sandstone and clays, shales, or gypsum.

Zapata bladderpod can be found in sparse vegetation communities or under a canopy of shrubs where the shrubs act as "nurse" plants, reducing the intensity of the sunlight or maintaining soil

moisture in the root area (USFWS 2004). Associated shrubs could also reduce soil erosion around bladderpod roots and deter browsing by native wildlife and livestock.

Critical habitat for the Zapata bladderpod is mapped overlapping with the western portion of Segment 10 and the northwestern portion of Segment 9. Critical habitat is within 100 feet of the southern end of Segment 8 and within 200 feet of the southern end of Segment 2. Two populations of Zapata bladderpod were mapped, one large population supporting approximately 500 to 600 individual plants within the Los Negros Creek to Este Road area, and two smaller populations containing 20 and 5 individual plants. These areas have been avoided by the current Project Corridor. No populations of Zapata bladderpod were identified within other project segments; however, critical habitat is mapped near the Salineño and Roma segments (GSRC 2022a). A recent survey for Zapata bladderpod was conducted by Landhawk for the “RGV Roads Phase 2 Segment B Project” relocated bladderpod populations around the Arroyo Morteros area located plants along the Project Corridor Segments 8 and 9 (GSRC and Landhawk 2023). The majority of the population occurs between Segments 8 and 9 and along the access roads/right of way north of Segment 9. Segment 2 was not covered by this data set. Zapata bladderpod is documented south Segment 10, but outside of the alignment. Approximately 375 seeds were collected from this effort and will be delivered to the U.S. Fish and Wildlife Service.

Listed Wildlife Species

Texas Hornshell (*Popenaias popeii*). The Texas hornshell is a medium-size freshwater mussel that formerly ranged throughout the Rio Grande drainage in the United States and Mexico and in Gulf Coast streams in Mexico. Five populations are known to exist in the United States (USFWS 2020).

The Texas hornshell has an olive green to dark brown exterior shell coloration and could reach a length of 4.5 inches, with a lifespan of up to 20 years. Texas hornshell had not been documented in the wild since the mid-1970s until a large population was discovered near Laredo. This population was estimated to contain approximately 8,000 individuals and is the largest population reported from the Rio Grande (USFWS 2020). Texas hornshell are found in “flow refuges” within river habitats that include crevices, undercut banks, travertine shelves and under large boulders where small-grained material, such as clay, silt, or sand gathers to provide substrata for anchoring. These flow refuges allow the mussel to remain secure during high-volume flow events. They are not known to live in water impoundments and low-head dams potentially restrict its habitat and distribution. Larval Texas hornshell are obligate parasites on fish where they attach to the gills, fins, or head of suitable host fish species and feed off the host’s body fluids. As adults, they are filter feeders like all adult freshwater muscles, and feed on bacteria, plankton, and organic and inorganic material siphoned from the water column (USFWS 2020).

Texas hornshell are considered extirpated from most of its historical range (USFWS 2020). Recent studies have not relocated the species below the Falcon Dam (TPWD 2014). It is unlikely to occur within the Project Corridor.

Cactus Ferruginous Pygmy-Owl (*Glaucidium brasilianum cactorum*). The cactus ferruginous pygmy-owl is a subspecies of the Ferruginous Pygmy-owl with a historic range within northern Mexico, the Sonoran Desert of southern Arizona, and the Rio Grande River Valley in Southeastern Texas. The pygmy-owl is a secondary cavity nested, using cavities of trees and

columnar cacti, depending on its geographical range. Historically common to the Rio Grande delta, significant habitat loss and fragmentation due to agricultural expansion and woodcutting has made the subspecies a rare occurrence in this area of Texas (USFWS 2023). The State of Texas lists the pygmy owl as threatened and it has recently been relisted by USFWS as threatened under the ESA. While the current loss of habitat is reduced when compared to historical levels in Texas, the subspecies and its habitat face additional threats from hurricanes, drought, wildfire, and freezes (USFWS 2023). The number and distribution in the RGV have declined since the late 1980s, like due to ongoing loss of riparian habitat along the river (Leslie 1988; USFWS 2023). Much of existing habitat occurs on private ranches subjecting the species to potential impacts associated with ongoing ranch activities and development of hunting facilities. The best available information does not indicate that current ranching practices are significantly affecting pygmy-owl habitat in Texas (USFWS 2023).

Areas supporting throbscrub and woodland habitat with mature trees in tropical dry forests and within riparian communities along ephemeral, intermittent, and perennial drainages have the potential to support the subspecies within RGV.

Suitable habitat for the pygmy-owl is present within the moderate-to high-quality woodland areas in the RGV. No surveys have been conducted for this species, nor were any incidental observations of the species made during pedestrian surveys within RGV. Surveys will be conducted prior to construction starting.

Monarch Butterfly (*Danaus plexippus*). The monarch butterfly was given federal candidate species status in December 2020 (USFWS 2022e) and has not yet been listed or proposed for listing. Adult monarch butterflies are large, conspicuous, and readily identified with orange wings with black and white borders and covered with black wing veins. Monarchs lay their eggs primarily on plants of the milkweed genus (*Asclepias* spp.). Larvae emerge from eggs after 2 to 5 days and develop through five larval instars over a 9- to 18-day period while feeding on milkweed vegetation. It is during this period of larval feeding that the larvae will build up appropriate levels of cardenolide chemicals from the milkweed host plants used as defense against predators.

Following larval development, a chrysalis is formed for the larvae to pupate. After a period of 6 to 14 days, an adult butterfly emerges from the chrysalis. Multiple generations of adult monarchs are produced during the breeding season, with each adult living approximately two to five weeks. Individuals overwintering as adults suspend reproductive activities and live six to nine months. Monarchs in warmer regions may breed year-round, but in temperate climates, like eastern and western North America, they will undertake a long-distance migration. Migrating monarchs live for a longer period and may travel as much as 1,800 miles over a period of two months to reach overwintering sites. In the spring, these same migrating adults return northward to their respective breeding grounds to start the seasonal cycle again.

No monarch butterflies were observed in the Project Corridor during biological surveys and no critical habitat is designated for the candidate species. Typical milkweed host plants of the genus *Asclepias* were not observed. Climbing milkweed (*Funastrum cynanchoides*) was noted during biological surveys and is also known to serve as a less common host plant species (Nature

Collective 2022). The Project Corridor does, however, contain nectar sources that could potentially support adult monarchs.

Northern Aplomado Falcon (*Falco femoralis setentrionalis*). The northern aplomado falcon is a subspecies of the aplomado falcon and is the only subspecies recorded in the United States. Its historic range extended from portions of Trans-Pecos Texas down to Nicaragua (USFWS 1990). The essential habitat elements for this species appear to be open terrain with scattered trees, relatively low ground cover, an abundance of insects and small- to medium-sized birds, and a supply of nest sites (e.g., abandoned stick platforms of corvids and other raptors). Re-introductions of this species in Texas began in 1993 (USFWS 2014), and productivity studies from 2013 indicate that northern aplomado falcons are successfully nesting in the Brownsville and Matagorda areas of Texas (USFWS 2014).

No northern aplomado falcons were identified during biological surveys and no critical habitat is currently designated for this species.

Red-Crowned Parrot (*Amazona viridigenalis*). The red-crowned parrot generally occurs in tropical lowlands and foothills, inhabiting tropical deciduous forest, gallery forest, evergreen floodplain forest, Tamaulipan thornscrub, and semi-open areas (USFWS 2011b). Red-crowned parrots occur in Hidalgo County, Texas, and in the cities of Brownsville, Los Fresnos, San Benito, and Harlingen in Cameron County, Texas. The species is known to prefer urban areas in its search for food and resources, and in the RGV, individuals are found extensively throughout urban habitats (Cornell University 2019). In cities where the species was introduced, areas with large trees that provide both food and nesting sites were preferred (USFWS 2011b).

No large trees are present within the Project Corridor that could support this species and it is not expected to occur. No critical habitat is currently designated for this species.

Gulf Coast Jaguarundi (*Puma yagouaroundi cacomitli*). The Gulf Coast subspecies of the jaguarundi was listed as an endangered species in 1976 (41 FR 24062). The jaguarundi is a small cat, with a slender build, long neck, short head, and a flattened head. It has a long tail that resembles that of a weasel (*Mustela* sp.) more than a cat (USFWS 2013b). The jaguarundi is a nocturnal species inhabiting lowland forest and brush habitats. In Mexico, it occurs in the eastern lowlands and has not been recorded in the Central Highlands. In southern Texas, jaguarundis use dense thorny shrublands (USFWS 2013b). The historic range of the jaguarundi in Texas has been limited to the southern portion of the state and includes Starr, Willacy, Hidalgo, and Cameron counties (USFWS 2013b).

Verified records of the Gulf Coast subspecies only occur in the extreme southern part of Texas; however, there is little historic information to determine the extent and abundance of the species (USFWS 2013b). The last confirmed sighting of a jaguarundi in the United States was in 1986 when a road-killed specimen was collected 2 miles east of Brownville, Texas. Numerous unconfirmed sightings have been reported, including sightings in Webb County in the mid-1980s and 1993 (USFWS 2013b). The closest known population of jaguarundi is in Nuevo Leon, Mexico.

Evidence of Gulf Coast jaguarundi was not reported from biological surveys, but suitable habitat could be present in Tamaulipan woodland and thornscrub vegetation communities.

Ocelot (*Leopardus pardalis*). The United States population of ocelot was listed as an endangered species on July 21, 1982, following an inadvertent oversight that omitted the United States population when foreign populations of ocelot were listed in 1972 (47 FR 31670). The ocelot is a medium-sized cat with a spotted fur pattern and nocturnal habits (USWFS 2016a). Up to 11 subspecies of ocelot range from the southwestern United States south to northern Argentina (USFWS 2016). Two subspecies range into the United States, the Arizona/Sonoran ocelot (*L.p. sonoriensis*), and the Texas/Tamaulipas ocelot (*L.p. albescens*).

Ocelots make use of a variety of vegetation communities throughout their range but are only linked to vegetation communities characterized by dense vegetative cover (USFWS 2016). Ocelots in southern Texas prefer shrub-dominated communities with greater than 95 percent canopy cover and avoid areas with less than 75 percent canopy cover (USFWS 2016). Another feature that characterizes preferred ocelot habitat is a canopy height of more than 7.8 feet with approximately 89 percent visual obscurity at a range of 3 to 6 feet. Ground cover has large amounts of woody debris with little herbaceous cover, which are the likely result of the dense canopy.

Between 1980 and 2010, ocelots have been verified from specimens or photographs in Cameron, Willacy, Kenedy, Hidalgo, and Jim Wells counties with a current estimated state population of approximately 50 individuals in two separate populations. One population is at the Laguna Atoscosa NWR, and the other is on private ranches in Willacy and Kenedy counties (USFWS 2016). Individuals observed outside of these locations are assumed to be dispersing individuals that are not part of a breeding population.

Potential habitat for ocelots could be present in dense Tamaulipan thornscrub, or potentially denser portions of mesquite savanna/woodlands. While it is unlikely that habitat within the Project Corridor would support permanent use by ocelots, they could support dispersing individuals moving to more distant suitable habitat from established populations in southern Texas.

8.1.3.2 Critical Habitat

The ESA calls for the conservation of designated critical habitat—the areas of land, water, and air space necessary for an endangered species to survive. Critical habitat includes such things as food and water, breeding sites, cover or shelter habitat, and sufficient areas of habitat to allow for normal population growth and behavior (see **Figures 8-8** through **8-16**).

Critical habitat has been designated for the Zapata bladderpod and prostrate milkweed. Critical habitat for Zapata bladderpod and prostrate milkweed occurs east of Segment 1 and between Segments 8 and 9 at Arroyo Morteros (see **Figure 8-9**). Zapata bladderpod critical habitat occurs south of Segment 2 (see **Figure 8-10**) and north of Segment 4 (see **Figure 8-14**, Rio Grande City/Roma) and on either side of Segment 10 (Roma) (see **Figure 8-11**). There is approximately 0.725 acres of overlap with Zapata bladderpod critical habitat within the 150-foot

enforcement zone near Segment 9 (Salineno) and Segment 10 (Roma). There is no overlap with prostrate milkweed critical habitat.

8.1.3.3 State Listed Species

TPWD lists 47 species of terrestrial wildlife in Starr County, as sensitive at the level of state listed threatened or endangered, or species of greatest conservation need (TPWD 2020, TPWD 2022b). Three Texas state species of concern, the Texas horned lizard (*Phrynosoma cornutum*), the Texas indigo snake (*Drymarchon melanurus*), and the Texas tortoise (*Gopherus berlandieri*), were observed within the Project Corridors (GSRC 2021). The Project Corridor can support a variety of aquatic wildlife, including amphibians, fish, and mollusks.

8.2 ENVIRONMENTAL CONSEQUENCES

8.2.1 Vegetation

The Project will have moderate, long-term impacts on vegetation within each segment of the Project Corridor. A total of 165.18 acres of native and non-native vegetation would be permanently impacted within the enforcement zone. Implementation of the Project would also result in the loss of 127.94 acres of agricultural lands and alteration of 2.34 acres of existing disturbed and/or developed lands.

Staging areas will be within the cleared enforcement zone and revegetated similarly to the rest of the enforcement zone upon completion of construction activities. General BMPs to minimize soil disturbance and erosion will be implemented. The anticipated reduction in illegal border foot traffic could potentially have a slight beneficial impact on vegetation in the region by reducing the trash/debris, trampling of vegetation, and creation of trails.

The direct disturbance of vegetation would result in a disturbed habitat edge at the lateral extents of the Project Corridor and could lead to the establishment of invasive plant species and a degradation or conversion of the habitat. However, appropriate BMPs would be implemented to minimize the potential for the introduction and establishment of new invasive species in the Project Corridor, or the expansion of existing invasive species populations resulting from the disturbance of habitat.

Localized habitat degradation could also occur through accidental release of petroleum products or other hazardous materials into terrestrial or aquatic habitats. However, all regulatory requirements for handling and storage of fuels, oils, and other hazardous materials (such as the development of a CBP-approved SWPPP) would be implemented. Thus, habitat degradation resulting from accidental releases of hazardous materials would be negligible.

Temporary, adverse effects could result from the erosion of sediment and subsequent siltation of aquatic habitats. These impacts would be minimized through the development and implementation of a CBP-approved SWPPP that identifies the use of appropriate sediment barriers to prevent construction-related sediment from entering adjacent aquatic habitats. The SWPPP will also define appropriate requirements for handling and storage of fuels, oils, and other hazardous materials.

8.2.2 Wildlife and Aquatic Resources

The loss of approximately 165.18 acres of wildlife habitat, including the 101.84 acres of agricultural lands as buffers from developed areas, would have a long-term, moderate impact on wildlife. Approximately 14.97 acres of that total impact includes wetlands and/or open water.

Soil disturbance and operation of heavy equipment could result in the direct loss of less mobile individuals such as lizards, snakes, and ground-dwelling species such as mice and rats. However, most wildlife would avoid any direct harm by escaping to surrounding habitat. The direct degradation and loss of habitat could also impact burrows and nests, as well as cover, forage, and other important wildlife resources. The loss of these resources would result in the displacement of individuals that would then be forced to compete with other wildlife for the remaining resources. Although this competition for resources could result in a reduced population size, such a reduction would be minor in relation to total population size and would not result in long-term effects on the sustainability of any wildlife species.

The loss of 165.18 acres of wildlife habitat would not adversely affect the population viability or fecundity of any wildlife species in the region. Upon completion of construction, all temporary disturbance areas and the enforcement zone would be revegetated with a mixture of native plant seeds and would be mowed and maintained.

To minimize effects on nesting migratory birds, CBP would conduct surveys prior to Project activities, to identify active nests of migratory bird species, and take appropriate steps to avoid disturbing these areas until migratory bird nesting activities at that location are complete.

Finally, construction activities would be limited primarily to daylight hours whenever possible; therefore, construction impacts on wildlife would be insignificant since the highest period of movement for most wildlife species occurs during night hours or low daylight hours. Nighttime work would be limited, and lights would be downshielded and oriented to illuminate only the work area.

Periodic noise from construction activities and subsequent operational activities would have moderate and intermittent impacts on the wildlife communities adjacent to the Project Corridor. However, because similar habitat is readily available, wildlife would easily relocate. Additionally, it is unlikely that the entire Project Corridor would be subject to Project activities at the same time. Project-specific, noise-reducing BMPs would be implemented to decrease impacts.

8.2.2.1 Federally Listed Species

Of the 13 federally listed species identified by USFWS (2022), only two (2) have the potential to occur within the Project Corridor.

Two federally listed plant species, prostrate milkweed and Zapata bladderpod, have designated critical habitat, which is in the vicinity of the Project Corridor and overlaps with the Project Corridor at Segment 9 between Arroyo Morteros and Salineno Segment 10, just east of Roma (see **Appendix C**), and nearby Segment 2, to the south.

CBP will identify appropriate avoidance and minimization measures to protect the Zapata bladderpod during construction access in the vicinity of roads accessing Segments 8 and 9, such as protective fencing or transplanting plants. In addition, a biological monitor familiar with both species will be present during construction to ensure no impacts to the species occurs. Any impacts on this species would be considered long-term and adverse. BMPs to limit the impact of construction activities on this species (e.g., biological monitor present at all times during construction, relocation of species whenever possible) will be implemented.

No impacts on star cactus would occur as this species does not occur within habitat associated with the Project Corridor. Texas ayenia is found in Tamaulipan brushland; however, no individuals were observed during biological surveys. As Tamaulipan brushland is regionally common throughout Starr County, the effect of the Project on Texas ayenia will be negligible to minor.

No impacts to ashy dogweed or Walker's manioc given the habitat preferred by these species is not present within the Project Corridor.

Tamaulipan brushland is the preferred habitat of the ocelot and jaguarundi for hunting and traveling. While some areas of Tamaulipan brushland may be removed during the Project, this habitat is regionally common throughout Starr County. As a result, the Project will result in a negligible to minor, long-term adverse effect to the ocelot and jaguarundi.

Mixed forest and mesquite woodland habitat is present within the Project Corridor and could be suitable for cactus ferruginous pygmy-owl. Protocol surveys for this species are recommended to determine presence of the species prior to construction. Any direct or indirect impact on cactus-ferruginous pygmy-owl or its habitat would result in moderate to major, long-term, adverse effects due to the potential extent of vegetation removal and overall habitat loss.

Northern aplomado falcon have the potential to be present within the Project Corridor. As the preferred habitat of the northern Aplomado falcon is regionally common in Starr County, the Project will result in a negligible to minor, long-term adverse effect.

No impacts to Texas hornshell are expected as the species has not been documented to occur below the Falcon Dam.

Per USFWS directive (USFWS 2022c), effects on piping plover and red knot do not need to be discussed unless the project concerns the development of a wind-energy generation facility in the species' flyway.

8.2.2.2 State Listed Species

The Project could have a minor to moderate impact on state listed species, such as Texas horned lizard, Texas indigo snake, Texas tortoise, known to occur in the Project Corridor. BMPs will be implemented to minimize the impact on these species resulting from the Project.

9.0 CULTURAL RESOURCES

9.1 AFFECTED ENVIRONMENT

A Secretary of the Interior (SOI)-qualified archaeologist conducted an online search of the Texas Historic Sites Atlas (Atlas), the Texas Historical Commission (THC) cultural resources database, for previous cultural resources surveys conducted in or adjacent to the Project Corridor. The records review indicated that there have been many investigations conducted within the Project Corridor from 1975 through 2021.

To account for possible visual effects from the undertaking on above-ground historic properties, CBP defines a one-half mile study corridor measured from the edge of the Project Corridor. There are 26 previously recorded above-ground resources within this study corridor (see **Table 9-1**). Four of these are listed in the NRHP Historic Districts. The Roma Historic District is listed both in the NRHP and as a National Historic Landmark (NHL). There are 21 recorded cemeteries within the study corridor, none of the cemeteries are NRHP listed. Thirty-three archaeological sites are in the Project Corridor (see **Table 9-2**). Four archaeological sites are historic in age, eight are prehistoric, seven are multi-component, and 14 are of unknown origin. Fourteen archaeological sites are considered eligible for, or are listed on, the NRHP. Two sites have undetermined eligibility and 17 are not eligible, or the portions of the site that occurs in the Project Corridor has been recommended not eligible. All archaeological sites are found within the Project Corridor.

Table 9-1. Previously Surveyed Above-Ground Resources within the Project Corridor

| Name | Site Number | Atlas Number | Type | Eligibility |
|--|----------------------------|--------------|-------------------|-------------|
| Unknown Cemetery (S. HWY 83) | SR-C070 | 7427007005 | Cemetery | Unevaluated |
| Cantu Cemetery | SR-C091 | 7427009103 | Cemetery | Unevaluated |
| Fort Ringgold Historic District | None | 2093000196 | Historic District | NRHP Listed |
| Longoria Cemetery | SR-C065 | 7427006505 | Cemetery | Unevaluated |
| Old Rio Grande City Cemetery | SR-C002 | 7427000205 | Cemetery | Unevaluated |
| Queen of Peace Memorial Park | SR-C084 | 7427008405 | Cemetery | Unevaluated |
| Rio Grande City Downtown Historic District | None | 2005000656 | Historic District | NRHP Listed |
| Roma City Cemetery | SR-CO48 | 7427004803 | Cemetery | Unevaluated |
| Roma Historic District NHL | Roma Historic District NHL | 2072001371 | Historic District | NRHP Listed |

| Name | Site Number | Atlas Number | Type | Eligibility |
|-----------------------------------|---------------------------|--------------|-------------------|-------------|
| Roma Historic District NR | Roma Historic District NR | 72001371 | Historic District | NRHP Listed |
| Ruben Solis Cemetery | SR-C086 | 7427008603 | Cemetery | Unevaluated |
| Salineño Cemetery | SR-C057 | 7427005705 | Cemetery | Unevaluated |
| San Antonio de Escobares Cemetery | SR-C042 | 7427004205 | Cemetery | Unevaluated |
| Chapeno Cemetery | SR-C053 | 7427005305 | Cemetery | Unevaluated |
| Los Arrierous Cemetery | SR-C058 | 7427005805 | Cemetery | Unevaluated |
| Los Barreras Cemetery | SR-C043 | 7427004305 | Cemetery | Unevaluated |
| Los Garzas Cemetery | SR-C045 | 7427004505 | Cemetery | Unevaluated |
| New Fronton | SR-C101 | 7427010103 | Cemetery | Unevaluated |
| Old Fronton Cemetery | SR-C046 | 7427004605 | Cemetery | Unevaluated |
| Unknown Grave (N. Los Garzas) | SR-C044 | 7427004405 | Cemetery | Unevaluated |
| Cuevitas | HG-C064 | 7215006405 | Cemetery | Unevaluated |
| Los Ebanos | HG-C065 | 7215006505 | Cemetery | Unevaluated |
| Los Velas Cemetery | SR-C060 | 7427006005 | Cemetery | Unevaluated |
| Los Velas Soldier's Cemetery | SR-C074 | 7427007403 | Cemetery | Unevaluated |
| South Los Olmos Cemetery | None | | Cemetery | Unevaluated |

Source: GSRC 2020b; THC 2023

Table 9-2. Previously Recorded Archaeological Resources within the Project Corridor

| Site Number/ Name | Atlas Number | Age | Type | Eligibility/ Recommendations |
|----------------------|--------------|-----------------|------------------|---|
| 41SR141 | Pending | Historic | Artifact Scatter | Unknown |
| 41SR281/283 | Pending | Prehistoric | Habitation | Eligible |
| 41SR390 | 9427039001 | Multi-component | Artifact Scatter | Eligible/Data Recovery |
| TS-ACS021 | Pending | Multi-component | Artifact Scatter | Eligible/Testing Recommended |
| TS-KIF036 | Pending | Prehistoric | Artifact Scatter | Eligible/Avoidance or data recovery recommended |
| TS-PJB050 | Pending | Prehistoric | Artifact Scatter | Ineligible |

| Site Number/ Name | Atlas Number | Age | Type | Eligibility/ Recommendations |
|----------------------|--------------|------------------------|--------------------------------|--|
| 41SR270 | Pending | Unknown | Unknown | Eligible/Data Recovery Recommended |
| 41SR271 | 9427027101 | Multi-component | Artifact Scatter | Unknown |
| 41SR272 | Pending | Multi-component | Artifact Scatter | Eligible/Data Recovery Recommended |
| 41SR293/Casa Blanca | 9427037201 | Historic | Ranching | NRHP Listed/Eligible/Data Recovery Recommended |
| 41SR392 | 9427039201 | Multi-component | Lithic Scatter | Eligible |
| 41SR403 | Pending | Prehistoric | Resource Procurement | Ineligible |
| 41SR442 | 9427037301 | Prehistoric | Lithic Scatter | Ineligible |
| 41SR473 | Pending | Multi-component | Artifact Scatter | Eligible/Data Recovery Recommended |
| 41SR484 | Pending | Prehistoric | Lithic Scatter | Ineligible |
| RGV-08-01 | Pending | Unknown Archaeological | Artifact Scatter | Ineligible |
| RGV-08-03 | Pending | Unknown Archaeological | Artifact Scatter | Ineligible |
| RGV-08-04 | Pending | Unknown Archaeological | Artifact Scatter | Ineligible |
| RGV-08-05 | Pending | Unknown Archaeological | Artifact Scatter | Ineligible |
| RGV-08-08 | Pending | Unknown Archaeological | Artifact Scatter | Ineligible |
| RGV-08-12 | Pending | Unknown Archaeological | Artifact Scatter | Ineligible |
| RGV-08-13 | Pending | Unknown Archaeological | Artifact Scatter | Ineligible |
| RGV-08-14 | Pending | Unknown Archaeological | Artifact Scatter | Ineligible |
| RGV-08-15 | Pending | Unknown Archaeological | Artifact Scatter | Ineligible |
| RGV-08-16 | Pending | Unknown Archaeological | Artifact Scatter, Shell Midden | Eligible/Data Recovery Recommended |

| Site Number/ Name | Atlas Number | Age | Type | Eligibility/ Recommendations |
|----------------------|--------------|---------------------------|------------------|--|
| RGV-08-17 | Pending | Unknown Archaeological | Artifact Scatter | Eligible/Data Recovery Recommended |
| RGV-08-18 | Pending | Unknown Archaeological | Artifact Scatter | Ineligible |
| RGV-08-22 | Pending | Unknown Archaeological | Artifact Scatter | Ineligible |
| TS-CFM026 | Pending | Historic | Artifact Scatter | Ineligible |
| 41HG235 | 9215023501 | Historic | Ranching | Ineligible |
| 41HG236 | 9215023601 | Prehistoric | Artifact Scatter | Eligible |
| 41SR372 | 9427037301 | Multi- component | Artifact Scatter | Eligible |
| 41SR373 | Pending | Prehistoric | Artifact Scatter | Eligibility Testing Recommended |

Source: GSRC 2020b; THC 2023

9.2 ENVIRONMENTAL CONSEQUENCES

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

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

Ground-disturbing activities associated with the implementation of the Project Corridor constitute the most relevant potential impacts on archaeological resources. Visual effects constitute the most relevant impacts on built environment resources. The barrier and roads within the Project Corridor can affect the visual integrity of these properties. In addition, construction activities including transportation of materials and labor can have short-term, minor, adverse impacts on historic properties. The movement of heavy construction equipment and vehicles can produce ground vibrations. These vibrations could, albeit is unlikely, affect delicate structures.

There are 14 archaeological sites eligible for the NRHP that will be impacted by the Project Corridor and three historic properties and cemeteries that could experience long-term, moderate, adverse impacts. The actual sites impacted will be determined once the 17-mile barrier system alignment is surveyed. Archaeological sites that could be impacted are as follows:

| | | | | | |
|---|----------------|----|------------------|----|---------------|
| 1 | 1. 41HG207 | 6 | 6. 41SR373 | 11 | 10. 41SR272 |
| 2 | 2. 41HG210 | 7 | 7. 41HG221 | 12 | 11. 41SR392 |
| 3 | 3. 41SR390 | 8 | 8. 41SR293/ Casa | 13 | 12. 41SR473 |
| 4 | 4. 41SR281/283 | 9 | Blanca | 14 | 13. RGV-08-16 |
| 5 | 5. 41SR372 | 10 | 9. 41SR141 | 15 | 14. RGV-08-17 |

The historic properties and cemeteries that could have visual impacts include the following:

1. Los Velas Cemetery
2. Los Velas Soldier’s Cemetery
3. Roma Historic District, NHL

Those archaeological sites that are currently unevaluated will be treated as eligible until testing can be conducted and their eligibility for the NRHP can be determined. Additional NRHP eligibility testing will be conducted on those sites before any ground-disturbing activities are conducted within their boundaries. If any of the sites are determined eligible for the NRHP and cannot be avoided, CBP will attempt to minimize impacts those sites through consultation with the THC prior to any ground-disturbing activities being conducted within those site boundaries.

Visual impacts will be minor to moderate for this Project. The barrier will be visible from several historic districts. In addition, construction activities could impact some of the more fragile properties. Minimization measures, such as installing temporary fencing to prevent construction impacts, will be considered. For historic districts, the barrier could be considered to be out of character with the setting of the district.

10.0 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 U.S. 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.

For the purposes of this socioeconomic analysis, three different spatial levels are used, as follows:

- The ROI encompassing six individual census tracts along the approximate 20-mile stretch of the Project,
- Starr County, Texas, and
- The state of Texas.

The ROI is comprised of the six individual census tracts within Starr County along the approximate 17-mile Project Corridor because most of the construction workers and supplies for the Project Corridor will likely come from those nearest residential and developed areas. The ROI best illustrates socioeconomic characteristics for where the most impacts from the Project Corridor will be expected because it encompasses the specific population associated with the Project Corridor. Additionally, all the proposed construction will occur in this area.

Data from Starr County and the state of Texas is provided below for comparison in **Tables 10-1** and **10-2**. The majority of census tracts did not have 2015 total population census data available due to census data collection not occurring in those tracts until the 2020 census. There is a total of five census tracts in Starr County.

Table 10-1. 2015 and 2020 Total Population in the Region of Influence

| Location | 2015 | 2020 | Percent Change |
|----------------------------|------------|------------|----------------|
| Starr County Census Tracts | NA | 14,169 | NA |
| Starr County | 62,648 | 64,032 | 2.2 |
| Texas | 26,538,614 | 28,635,442 | 7.9 |

Source: U.S. Census Bureau 2015, U.S. Census Bureau 2020.
Key: ROI = Region of Influence; NA = Not Available

Table 10-2. 2020 Demographics in the Region of Influence as Compared to Starr County and the State of Texas

| Categories | Starr County Census Tracts (ROI) | Starr County | Texas |
|--|----------------------------------|--------------|------------|
| Population 16 years and Older | 10,134 | 45,417 | 22,078,090 |
| Median Household Income (dollars) | 33,661 | 30,931 | 63,826 |
| Unemployment Rate (by percent) | 7.4 | 7.7 | 5.3 |
| Employment by Industry (by percent) | | | |
| Agriculture, forestry, fishing and hunting, and mining | 3.6 | 5.4 | 2.8 |
| Construction | 3.7 | 9.9 | 8.6 |
| Manufacturing | 3.6 | 3.5 | 8.4 |
| Wholesale trade | 0.2 | 0.9 | 2.8 |
| Retail trade | 5.8 | 10.2 | 11.3 |
| Transportation and warehousing, and utilities | 1.6 | 7.5 | 6.0 |
| Information | 0.0 | 0.5 | 1.7 |
| Finance and insurance, and real estate and rental and leasing | 1.0 | 3.3 | 6.8 |
| Professional, scientific, and management, and administrative and waste management services | 2.2 | 4.7 | 11.7 |
| Educational services, and health care and social assistance | 22.9 | 39.0 | 21.8 |
| Arts, entertainment, and recreation, and accommodation and food services | 2.2 | 7.0 | 9.0 |
| Other services, except public administration | 1.6 | 4.3 | 5.1 |
| Public administration | 1.8 | 3.8 | 4.0 |

Source: U.S. Census Bureau 2020
 Key: ROI = Region of Influence

Each county and the state of Texas had an increase in total population between 2015 and 2020, with the ROI having an unknown percent change due to census data collection not occurring in those tracts until the 2020 census (U.S. Census Bureau 2015, U.S. Census Bureau 2020).

The Project Corridor is in Starr County, Texas. Rio Grande City is the county seat for Starr County. Starr County has a population of 64,032, with almost a quarter of the population living in Rio Grande City. Rio Grande City has experienced an average growth of 1.93 percent since 2020 (Word Population Review 2022).

The 2020 American Community Survey (ACS) data shows the unemployment rate (percent) within the ROI tracts in Starr County was lower compared to Starr County but higher than the state of Texas. The median household income (dollars) for the Starr County ROI is higher than the Starr County median household income (U.S. Census Bureau 2020).

As of 2020, the ROI in each county of Starr 9.2 percent of the workforce (more than 16 years old and in the labor force) employed in construction. The industry that employed the lowest percentage of the workforce population for all spatial levels was Information. The Educational services, health care, and social services industry was the most common employer for all spatial levels (U.S. Census Bureau 2020).

10.2 ENVIRONMENTAL CONSEQUENCES

The Project Corridor will occur entirely within the ROI. There will be short- and long-term, negligible, beneficial effects on socioeconomic resources in the surrounding communities because of expenditures from the implementation of the proposed construction. There will be no measurable adverse impact, disproportionate or otherwise, on low-income or minority communities inside or outside any of the discussed community spatial levels, because the construction of new border barrier will enhance safety and security of USBP agents and the surrounding communities.

Short-term, negligible, beneficial effects on the local socioeconomics will be expected under the Project Corridor because of expenditures from the implementation of the selected construction to the border barrier. According to the 2020 ACS, the ROI area including all six census tracts along the approximate 20-mile stretch of border barrier, contains approximately 606 construction workers, which collectively should be adequate to meet the demands of the Project Corridor (U.S. Census Bureau 2020). If needed, any additional construction workers will come from outside the region. Short-term increases in local business volume and employment within the counties will be expected under the Project Corridor. The use of local construction workers will produce increases in local sales volumes, payroll taxes, and the purchases of goods and services resulting in short-term, indirect, minor, and beneficial increases in the local economy.

Substantial short-term population increases during construction will not be expected to occur because construction workers will likely be existing local residents, although a few construction workers could come from outside the region. Therefore, no impacts on social conditions, including property values, school enrollment, county or municipal expenditures, or crime rates due to population increases will be anticipated during construction.

No long-term population increases will occur as a result of the Project Corridor. Therefore, demand on housing, schools, libraries, and parks and recreational facilities in Starr County will not change due to the Project, and these services will not be affected because the existing capacity will continue to be sufficient to serve the local population. Therefore, these resources are not discussed further.

11.0 HAZARDOUS MATERIALS AND WASTE

11.1 AFFECTED ENVIRONMENT

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

The 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 (air, soil, groundwater) from hazardous waste sites may include heavy materials, 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.

Federal and state agencies regulate the management of hazardous substances, petroleum products, hazardous and petroleum wastes, pesticides, solid waste, asbestos-containing materials (ACMs), lead based paint (LBP), and polychlorinated biphenyls (PCBs). Each state has its own regulatory agency and associated regulations. The state agencies either adopt the federal regulations or have their own regulations that are more restrictive than the federal regulations. Likewise, the federal government and state agencies also have regulations for the handling, disposal, and remediation of special hazards.

The Waste Reduction Policy Act of 1991 was adopted by the Texas Legislature to prevent pollution in Texas. The Texas Council of Environmental Quality (TCEQ) adopted corresponding rules. In conducting infrastructure maintenance and repair activities as needed, USBP or its contractors store, transport, handle, use, generate, and dispose of various types and quantities of hazardous substances, petroleum products, and hazardous and petroleum wastes. These materials are used for or generated directly by the maintenance and repair activities. The primary hazardous substances and petroleum products likely include materials such as lead-acid batteries, motor oil, antifreeze, paint and paint thinners, cleaners, hydraulic oils, lubricants, and liquid fuels (diesel and gasoline). The hazardous substances, petroleum products, and hazardous and petroleum wastes are stored at various USBP or contractor maintenance shops and managed in accordance with each group's standard operating procedures for hazardous materials. The wastes are recycled or disposed of off-site in accordance with federal, state, and local regulations.

Limited environmental due diligence was conducted in accordance with the American Society for Testing and Materials (ASTM) using the methodologies put forth in ASTM E1528-14E1. Transaction screening level site inspections were conducted throughout the entire Project Corridor, which included an environmental database search to complete the records review. The database search was used to identify properties that may be listed in environmental agency records that are located within the ASTM-specified search radii.

The ASTM-specified search radii of various databases searches range in distance from the subject property to one mile radius from the subject property, depending on the database and industry standard set by ASTM. The search provides a summary of the number of potential

parcels that could store or contain hazardous or non-hazardous (regulated) materials, could have potential releases to the environment, or could be a Recognized Environmental Condition. Within the 20-mile Project Corridor, there are 15 databases where the subject property was listed, and 116 nearby properties identified within the search radii (GSRC 2020, GSRC 2022b). The site inspections and database records show numerous properties located within the 20-mile Project Corridor that should be further investigated to assess the potential for hazardous materials or hazardous waste (GSRC 2020, GSRC 2022b).

11.2 ENVIRONMENTAL CONSEQUENCES

Short-term, minor, adverse impacts due to hazardous materials and hazardous waste will be expected from implementing the Project Corridor. Impacts on the subject property that originate from topographically or hydraulically upgradient or hydraulically cross-gradient sources are not the responsibility of the subject property owner.

Construction in the Project Corridor will involve use of heavy construction equipment and there is a potential for the release of hazardous materials such as fuels, lubricants, hydraulic fluids, and other chemicals during construction activities. The impacts from hazardous materials spills during construction will be minimized by using BMPs during construction, such as fueling only in controlled and protected areas away from surface waters, maintaining emergency spill cleanup kits at all sites during fueling operations, and maintaining all equipment in good operating condition to prevent fuel and hydraulic fluid leaks.

Petroleum, oil, and liquids (POLs) will be stored at designated temporary staging areas to maintain and refuel construction equipment. Cleanup materials (e.g., oil mops) will be maintained on site, in accordance with the SPCCP, to allow for immediate action in the event of an accidental spill. Drip pans will be provided for stationary equipment to capture any POLs spilled during construction activities or in the event of equipment leaks. A concrete washout containment system will be established to ensure concrete washout is safely managed and properly disposed.

All hazardous and regulated wastes and substances generated by construction of proposed border barrier will be collected, characterized, labeled, stored, transported, and disposed of in accordance with all federal, state, and local regulations, including proper waste manifesting procedures. All other hazardous and regulated materials or substances will be handled according to materials safety data sheet instructions and will not affect water, soils, vegetation, wildlife, or the safety of USBP agents and staff. No impacts due to ACMs, LBP, or PCBs will be expected from the Project, as the proposed infrastructure is not anticipated to contain ACMs, LBP, or PCBs. No impacts on solid waste management will be expected from the Project. The volumes of solid waste produced during construction activities will be minimal and unlikely to increase.

Soils in the Project Corridor could be impacted by hazardous or toxic materials in the event of an accidental spill. However, BMPs will be implemented during construction activities to avoid any release into the environment as well as to anticipate capture requirements in advance of any potential release. To prevent contamination, care will be taken to avoid impacting the Project Corridor with hazardous substances (e.g., antifreeze, fuels, oils, lubricants) used during construction activities. These activities will include implementing primary and secondary

containment measures, developing a SPCCP prior to the start of construction, and briefing all personnel on the implementation and responsibilities of the SPCCP.

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. Proper permits will be obtained by the licensed contractor tasked to handle any unregulated solid waste. All waste will be disposed of in strict compliance with federal, state, and local regulations, in accordance with the contractor's permits. Therefore, no hazards to the public will be expected to occur through the transport, use, or disposal of unregulated solid waste.

As illegal foot traffic is reduced or eliminated within the Project Corridor, so will the solid waste that is associated with it, thus decreasing the current impacts on solid waste management.

12.0 RELATED PROJECTS AND POTENTIAL EFFECTS

12.1 PAST, PRESENT, AND REASONABLY FORESEEABLE FUTURE ACTIONS

Past actions are those within the cumulative impacts analysis areas that have occurred prior to the development of this ESP. The impacts of these past actions are generally described in **Sections 3.0 through 11.0**. Present actions include current or funded construction projects, CBP or other agency operations near the proposed site, and current resource management programs and land use activities within the cumulative impacts analysis areas. Reasonably foreseeable future actions consist of activities that have been approved and can be evaluated with respect to their effects. The following activities are present or reasonably foreseeable future actions:

Future Construction of Access Roads in RGV Sector. CBP proposes to upgrade 5.94 miles of existing dirt roads and construct 6.06 new road portions to create four all-weather road segments that would provide improved access for USBP agents to areas adjacent to the Rio Grande River. The roads would be constructed to meet FC-2 standards. Additionally, CBP would add water crossings and drainage improvements to allow for better all-weather use of the roads and minimize water damage from heavy rains.

Future Installation and Operation of Gates along the Border Barrier. CBP plans to construct, operate, and maintain 25 gates at gaps left during the initial installation of tactical infrastructure along the United States/Mexico international border in the USBP RGV Sector, Texas. The gates to be constructed will be automated and will range in size from 20 feet wide to 50 feet wide, depending on the types of vehicles (standard cars and trucks or large farm equipment) that will access the gate. Locations are based on the USBP RGV Sector assessment of local operational requirements where such infrastructure will assist USBP agents in reducing illegal cross-border activities.

CBP-USGS Border Barrier Mitigation. CBP, in coordination with USGS, is implementing a series of projects that would aim to mitigate the impacts of border barrier construction in RGV. The projects would include the following initiatives:

- Evaluate impacts on access to water sources and identify priorities and approaches for restoring or engineering water sources for wildlife
- Identify potential modifications to the current border wall design and lighting or altering future border wall construction to minimize negative impacts
- Identify potential approaches to alleviate the entrapment and mortality of wildlife along the barrier
- Develop propagation techniques to supplement threatened and endangered plant populations within established plant communities or establish new plant communities on suitable protected lands.

CBP-USFWS Border Barrier Mitigation. CBP, in coordination with USFWS, is implementing a series of projects that would aim to mitigate the impacts of border barrier construction in RGV. The projects would include the following initiatives:

- Restore 810 acres thornscrub forest in RGV
- Conduct ocelot recovery to include species translocations, breeding in captivity, conditioning and release, as well as research and monitoring
- Evaluate and mitigate for sensitive state threatened and endangered wildlife, such as the Texas tortoise, Texas indigo snake, and horned lizard
- Manage and monitor invasive species
- Perform research on impacts of border barrier construction on large mammal species.

12.2 CUMULATIVE AFFECTED ENVIRONMENT

This section 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 United States 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, cross-border violator 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 of future and ongoing 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.

12.3 CUMULATIVE ENVIRONMENTAL CONSEQUENCES

12.3.1 Air Quality

The emissions generated during and after construction will be short-term and minor. While there will be cumulative adverse construction impacts to air quality from each of the current or foreseeable wall development, maintenance, revegetation and mitigation projects discussed above, the emissions associated with all these actions will also result in short-term and minor impacts to the airshed, even when combined with the other proposed developments in the border region. CBP will minimize air quality impacts by the use of standard BMPs, such as dust suppression, during construction. Deterrence of and improved response time to illegal border crossings created by the construction of infrastructure will lead to improved control of the border. A result of this improved control will be a reduction in the number of off-road enforcement actions that are currently necessary by USBP agents, thus reducing dust generation and serving to benefit overall air quality as well.

12.3.2 Noise

Most of the noise generated by the Project will occur during construction and thus will not contribute to cumulative impacts of ambient noise levels. Routine maintenance of the primary pedestrian fence and roads will result in slight temporary increases in noise levels that will continue to sporadically occur over the long-term and will be similar to those of ongoing road maintenance within the Project Corridor. Potential sources of noise from other projects are not significant enough (temporally or spatially) to increase ambient noise levels above the 65 dBA range 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, is considered to have minor cumulative adverse effect.

12.3.3 Land Use, Recreation, and Aesthetics

The Project will primarily affect lands in the 50- to 150-foot-wide enforcement zone along each segment within the RGV. Lands were acquired 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, will not be expected to have a major cumulative adverse impact. Similarly, open space opportunities they provide will not be affected by the Project and will not be negatively impacted when considered with other present and foreseeable projects in the region.

There will be visually apparent changes within the viewsheds that currently do not include a barrier. Where a barrier is present nearby, or in urban and built areas, the additional border barrier does not constitute a major impact on visual resources. When considered with other development including other USBP projects, the proposed barrier will degrade the existing visual character of the region; thus, cumulative impacts will be considered moderate. CBP will minimize impacts to visual resources to the maximum extent feasible by screening the barrier and using lighting downward facing shields, and other methods.

Areas north of the border within the construction corridors will be expected to experience beneficial, indirect cumulative impacts to aesthetics and habitat through the reduction of trash, soil erosion, and creation of trails by cross-border pedestrian traffic.

12.3.4 Geological Resources and Soils

The Project will have long-term, minor effects on approximately 116.82 acres of prime farmland if irrigated. The Project Corridor is not on active farmlands and is not irrigated. The Project will not create any dangerous or unstable conditions within any geologic unit, nor will it expose people or structures to potential substantial adverse effects. Further, no geologic resource is located exclusively within the Project Corridor. The impact of the Project, when combined with past and proposed projects in the region, will be considered to have minor cumulative adverse impacts on geological resources.

The Project, when combined with other USBP projects, will not 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 17 miles of border barrier system and infrastructure, combined with the other USBP projects, will constitute a minor to moderate cumulative adverse impact.

12.3.5 Hydrology and Water Management

As a result of the Project, when combined with other USBP projects, increased temporary erosion during construction will occur; however, increased sedimentation and turbidity will have minimal cumulative impacts on water quality. Pre- and post-construction SWPPP measures for this and other projects will be implemented to control erosion. 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, could result in cumulatively considerable impacts. Although the volume of water withdrawn will not affect the public drinking water supplies, it may indirectly contribute to aquifer contamination from surface runoff. With the implementation of appropriate BMPs, the Project will not substantially alter existing drainage patterns or substantially affect water quality. When combined with past and planned projects in the region, indirect effects of altered surface drainage and potential consequent erosion will have adverse cumulative impacts on surface water quality, but revegetation and restoration projects will serve as a beneficial and mitigating force on the area's water resources through improved erosion control and prevention.

12.3.6 Biological Resources

The loss of approximately 165.18 acres of wildlife habitat, including the 101.84 acres of agricultural lands as buffers from developed areas, would have a long-term, moderate impact on wildlife. Approximately 14.97 acres of that total impact includes wetlands and/or open water (WOTUS). These adverse impacts will be cumulatively more significant when considered alongside other current and foreseeable projects in the region. However, because construction will be temporary, much of the habitat will be restored, and impacts will be minimized through implementation of appropriate BMPs for the protection of federally listed species as well as for general plants, aquatic resources, wildlife, and habitats, these projects combined are unlikely to result in any long-term or significant decreases in wildlife populations in the region.

12.3.7 Cultural Resources

Construction of the proposed Project has the potential to impact 14 archaeological sites that are eligible for the NRHP and 3 historic properties and cemeteries that could experience long-term, moderate, adverse impacts; however, implementation of monitoring and other avoidance measures, as described in **Section 9.0**, will result in minimal, if any, adverse impacts. Therefore, this action, when combined with other existing and proposed projects in the region, will have negligible cumulative impacts on cultural resources.

12.3.8 Socioeconomics

Construction of the Project, when combined with other USBP projects, will result in temporary, minor, and beneficial impacts on the region's economy. No impacts on populations, minorities, or low-income families will 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 proposed 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 economy of the region should be beneficial by reducing smuggling and other illegal activity in the area. Legal border crossings and international trade will continue unaffected by the Project. When combined with the other projects currently planned or ongoing projects within the region, they will have minor cumulative, temporary beneficial impacts on the region's socioeconomics.

12.3.9 Hazardous Materials and Waste

The use of hazardous substances will be required in small amounts during the construction phase. It is anticipated, with the inclusion of BMPs listed in **Section 1.5.8**, that impacts resulting from the use of hazardous materials during this phase will be avoided or minimized. Similarly, only minor temporary increases in the use of hazardous materials will potentially be experienced from construction associated with other projects in the region. Therefore, the Project, in combination with other proximal projects, is not expected to have a major cumulative impact on the generation of waste nor the potential for release of hazardous materials.

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14.0 ABBREVIATIONS AND ACRONYMS

| | |
|---------|---|
| ACEC | Areas of Critical Environmental Concern |
| ACHP | Advisory Council on Historic Preservation |
| ACM | asbestos-containing material |
| AIRFA | American Indian Religious Freedom Act |
| AOR | Area of Responsibility |
| APCD | Air Pollution Control District |
| AQCR | air quality control region |
| ARHA | Archaeological and Historic Preservation Act |
| ATV | all-terrain vehicle |
| BLM | Bureau of Land Management |
| BMPs | Best Management Practices |
| CAA | Clean Air Act |
| Cal/EPA | California Environmental Protection Agency |
| CARB | California Air Resources Board |
| CBP | U.S. Customs and Border Protection |
| CDFW | California Department of Fish and Wildlife |
| CEQ | Council on Environmental Quality |
| CEQA | California Environmental Quality Act |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| CFR | Code of Federal Regulations |
| CHU | Chula Vista Station |
| CO | Carbon dioxide |
| CWA | Clean Water Act |
| dB | Decibels |
| dBA | Weighted decibel |
| DHS | Department of Homeland Security |
| DNL | Day-Night Level |
| DOD | U.S. Department of Defense |
| DTSC | Department of Toxic Substances Control |
| EA | Environmental Assessment |
| EIA | U.S. Energy Information Administration |

| | |
|-----------------|--|
| EIS | Environmental Impact Statement |
| EO | Executive Order |
| ESA | Endangered Species Act |
| ESCPs | Erosion-and-sediment-control plans |
| FC | Functional Classification |
| FEMA | Federal Emergency Management Agency |
| FIFRA | Federal Insecticide, Fungicide, and Rodenticide Act |
| FIRMS | Flood Insurance Rate Maps |
| FONSI | Finding of No Significant Impact |
| FPPA | Farmland Protection Policy Act |
| ft | feet |
| FY | Fiscal year |
| GHG | Greenhous gas |
| HAP | hazardous air pollutant |
| HUD | U.S. Department of Housing and Urban Development |
| LBP | Lead-based paint |
| MSCP | Multiple Species Conservation Program |
| NAAQS | National Ambient Air Quality Standards |
| NAGPRA | Native American Graves Protection and Repatriation Act |
| NEPA | National Environmental Policy Act |
| NHPA | National Historic Preservation Act |
| NO _x | Total nitrogen oxides |
| NO ₂ | Nitrogen dioxide |
| NPDES | National Pollutant Discharge Elimination System |
| NRCS | Natural Resources Conservation Service |
| NRHP | National Register of Historic Places |
| NWR | National Wildlife Refuge |
| O ₃ | ozone |
| OEHHA | Office of Environmental Health Hazard Assessment |
| OMER | Otay Mountain Ecological Reserve |
| OMW | Otay Mountain Wilderness |
| OSHA | Occupational Safety and Health Administration |
| PA | Programmatic Agreement |

| | |
|-------------------|---|
| PCB | Polychlorinated biphenyl |
| PSD | Prevention of Significant Deterioration |
| RCRA | Resource Conservation and Recovery Act |
| RMP | Resource Management Plan |
| RWQCB | Regional Water Quality Control Board |
| SDC | San Diego Sector |
| SDIAQCR | San Diego Intrastate AQCR |
| SHPO | State Historic Preservation Officer |
| SIP | State Implementation Plan |
| SO _x | Sulfur oxides |
| SOP | Standard Operating Procedures |
| SPL | Sound pressure levels |
| SQG | small-quantity generator |
| SSPP | Strategic Sustainability Performance Plan |
| TI | Tactical Infrastructure |
| TSCA | Toxic Substances Control Act |
| µg/m ³ | micrograms per cubic meter |
| 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 |
| VOC | volatile organic compound |