

Draft
Environmental Assessment



Alamo River Vegetation Control

Department of Homeland Security
U.S. Customs and Border Protection
U.S. Border Patrol, El Centro Sector



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ABBREVIATIONS AND ACRONYMS

APE	Area of Potential Effect
BMP	best management practice
CAA	Clean Air Act
Cal-IPC	California Invasive Plant Council
CBP	Customs and Border Protection
CBV	cross-border violators
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
cfs	cubic feet per second
CWA	Clean Water Act
DHS	Department of Homeland Security
EO	Executive Order
EEMD	Energy and Environmental Management Division
FONSI	Finding of No Significant Impact
MBTA	Migratory Bird Treaty Act
NAGPRA	Native American Graves Protection and Repatriation Act
NAHC	Native American Heritage Commission
National Register	National Register of Historic Places
NEPA	National Environmental Policy Act
PMO	Program Management Office
Project Area	Alamo River
Proposed Action	Alamo River Vegetation Control
RWQCB	Regional Water Quality Control Board
SCIC	Southern California Information Center
USACE	U.S. Army Corps of Engineers
USBP	U.S. Border Patrol
USC	U.S. Code

1.0 INTRODUCTION

U.S. Customs and Border Protection (CBP), under the Department of Homeland Security (DHS), prepared this Draft Environmental Assessment (EA) for the proposed Alamo River Vegetation Control (Proposed Action) Project. The Proposed Action would implement a combination of minimally intrusive mechanical removal (mowing) and herbicide treatment in areas where non-native invasive species are prevalent. The Proposed Action would preserve line of sight for U.S. Border Patrol (USBP) agents in the El Centro Sector and reduce hiding opportunities of cross-border violators (CBV) within the Alamo River (Project Area). The Project Area is under private and public ownership, including the U.S. Bureau of Reclamation and four private ownership groups.

This EA is divided into seven sections plus appendices. **Section 1.0** provides background information on DHS, CBP, and USBP missions, identifies the purpose of and need for the Proposed Action, describes the framework for analysis, and explains the public involvement process. **Section 2.0** provides a detailed description of the Project Area and the Proposed Action and alternatives considered, including the No Action Alternative. **Section 3.0** describes existing environmental conditions in the areas where the Proposed Action would occur and identifies potential environmental impacts that could occur within each resource area under the alternatives evaluated in detail. **Section 4.0** discusses potential cumulative impacts and other impacts that might result from implementation of the Proposed Action, combined with foreseeable future actions. **Section 5.0** lists best management practices (BMPs) that would be implemented to reduce or eliminate potential adverse impacts on the human and natural environment. **Section 6.0** provides the references for the EA, and **Section 7.0** provides a list of preparers.

1.1 U.S. CUSTOMS AND BORDER PROTECTION BACKGROUND

On May 28, 1924, Congress passed the Labor Appropriation Act of 1924, officially establishing the USBP, which would report directly to the Secretary of Labor. USBP was established for the purpose of securing the borders between inspection stations. In 1925, its duties were expanded to patrol the seacoast. In 1933, the Bureau of Immigration (created in 1895) and Bureau of Naturalization (created in 1906) were united into a single agency, the Immigration and Naturalization Service (INS). INS was under the purview of the Department of Labor between 1933 and 1940, and under the Department of Justice between 1940 and 2002. Congress transferred all INS responsibilities to the newly created DHS with the passage of the Homeland Security Act of 2002 (Public Law 107-296) on November 25, 2002. The USBP law enforcement organization and responsibilities were transferred to the CBP component of DHS on March 1, 2003. The mission of CBP is to safeguard U.S. borders, thereby protecting the public from dangerous people and materials while enhancing the nation's global economic competitiveness by enabling legitimate trade and travel. The priority mission of the USBP is preventing terrorists and terrorist weapons, including weapons of mass destruction, from entering the United States.

1.2 PURPOSE AND NEED

The purpose of the Proposed Action is to reduce vegetative obstruction to sightlines to enable CBP to maintain surveillance across the Project Area indefinitely in order to maintain effective control of the border and enhance the safety of USBP agents. The Project Area contains a high proportion of non-native plants, which obstruct the view of USBP agents and hinders their ability to detect people illegally crossing the border in the vicinity of the Alamo River. The Project Area is an area of consistent CBV traffic. CBVs use the tall and dense vegetation in the Project Area to hide from USBP agents before submerging into the water of the Alamo River north of the Project Area to elude detection. CBVs hiding in the brush create an agent safety issue, being able to use the concealment of the vegetation to ambush USBP agents.

The need for the Proposed Action is to increase visibility and enhance patrol capabilities to increase security at the U.S./Mexico border in the Project Area.

1.3 FRAMEWORK FOR ANALYSIS

This EA includes an analysis of direct, indirect, and cumulative effects that would result from implementing the Proposed Action or any reasonable alternatives carried forward for consideration. The potentially affected biological and human environment would include resources in the undeveloped land of the Alamo River located in the southernmost edge of Imperial County, near the city of Calexico. Most potential effects would be limited to the Proposed Action site and immediately adjacent resources.

This EA has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 (42 U.S. Code [USC] 4321-4347), the Council on Environmental Quality (CEQ) regulations for implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508), the DHS Instructional Manual 023-01-001-01, Rev. 1., and other pertinent Federal environmental statutes, regulations, and compliance requirements.

1.4 PUBLIC INVOLVEMENT

CBP is committed to communicating with the public to help ensure that potentially affected communities and other interested parties understand CBP's Proposed Action and are given opportunities to participate in decisions that may affect them. CBP invites public participation in the NEPA process. Consideration of the views and information of all interested persons promote open communication and enable better decision making. CBP urges all agencies, organizations, Indian nations, and members of the public having a potential interest in the Proposed Action to participate in the decision-making process.

DHS Instructional Manual 023-01-001-01, Rev.1., guides public participation opportunities with respect to this EA and decision making on the Proposed Action.

If CBP determines that there will be no significant impacts from the Proposed Action, CBP will incorporate comments received on the draft EA and draft Finding of No Significant Impact (FONSI) into the final EA and final FONSI, as appropriate. CBP will prepare a synopsis of the public comments received and responses to substantive comments, and include them as an appendix. CBP may then execute the FONSI and proceed to implement the Proposed Action.

Otherwise, if CBP determines that implementing the Proposed Action would result in significant impacts, CBP will: (a) publish in the Federal Register a Notice of Intent to prepare an environmental impact statement; (b) commit to mitigation actions sufficient to reduce the impacts below significance levels; or, (c) not take the Proposed Action.

The following is a list of Federal and state agencies and stakeholder groups that have been consulted during the NEPA process. Landowners within the Project Area are indicated below.

Federal Agencies:

- Bureau of Reclamation (landowner)
- U.S. Fish and Wildlife Service (USFWS) (Appendix A)
- U.S. Army Corps of Engineers (USACE), Regulatory Division

State Agencies:

- California Department of Fish and Wildlife
- Office of Historic Preservation
- California Regional Water Quality Control Board (RWQCB)
- California Environmental Protection Agency (EPA)
- California State Clearing House
- Native American Heritage Commission (NAHC)

Local Agencies:

- Imperial County
- City of Calexico

Culturally Affiliated Tribes (Native American Heritage Commission 2018; Appendix B):

- Barona Group of the Capitan Grande
- Campo Band of Mission Indians
- Cocopah Indian Reservation
- Ewiiapaayp Tribal Office
- Iipay Nation of Santa Ysabel
- Inaja Band of Mission Indians
- Jamul Indian Village
- Kwaaymii Laguna Band of Mission Indians
- La Posta Band of Mission Indians
- Manzanita Band of Kumeyaay Nation
- Mesa Grande Band of Mission Indians
- Quechan Tribe of the Fort Yuma Indian Reservation (Arizona and California)

- San Pasqual Band of Mission Indians
- Sycuan Band of the Kumeyaay Nation
- Viejas Band of Kumeyaay Indians

Non-governmental Agencies/Stakeholders:

- MFC Imperial I LLC (landowner)
- Tierra Management, LLC (landowner)
- Zone 15 Investment LLC (landowner)
- Aggregate Products Inc. (landowner)

Scoping (Appendix C): CBP initiated public scoping for the Proposed Action by providing a 30-day review period from July 9, 2018 to August 7, 2018. A letter was distributed to approximately 37 potentially interested federal, state, and local agencies; Native American tribes; and other stakeholder groups or individuals (Appendix C). Additionally, a scoping notice was submitted to the California State Clearinghouse. All scoping comments received were considered during preparation of the Draft EA.

ESA Section 7 Informal Consultation (Appendix A): CBP consulted with the USFWS regarding the Yuma Ridgeway's rail. Based on the biological assessment, the USFWS concurred with the determination that the proposed vegetation removal activities are not likely to adversely affect the Yuma Ridgeway's rail (USFWS Concurrence Letter dated September 28, 2018).

National Historic Preservation Act Section 106 Consultation (Appendix B): Coordination letters were sent to all culturally affiliated Native American tribes (April 9, 2018), the Native American Heritage Commission and the California State Historic Preservation Officer (July 9, 2018). Based on the findings of the records review, site survey, and coordination, CBP has made a determination of no historic properties present or affected for the Proposed Action. Furthermore, CBP has determined that, in accordance with Stipulation IV of the *Programmatic Agreement Regarding CBP Undertakings in States Located along the Southwest Border of the United States* (CBP 2014), this undertaking is within the scope of Stipulation VI.D.3 and is therefore exempted from further review. No further consultation with Native American tribes or the California State Historic Preservation Officer is required at this time.

Public Review Draft: The Draft EA and FONSI are available for public review for 30 days. The Notice of Availability was published in the Imperial Valley Press and Imperial Valley News on November 1, 2018. A copy of the Notice of Availability text will be included in the Final EA. The Draft EA and FONSI are also available electronically at: www.cbp.gov/about/environmental-cultural-stewardship/nepa-documents/docs-review

2.0 PROPOSED ACTION AND ALTERNATIVES

2.1 INTRODUCTION

This section describes the Proposed Action, the No Action Alternative, and one additional alternative. A summary of the potential impacts of these alternatives are presented in Table 1. The NEPA process evaluates potential environmental consequences associated with the Proposed Action and considers alternative courses of action. Reasonable alternatives must satisfy the purpose of and need for a Proposed Action, which are defined in **Section 1.2**. CEQ regulations specify the inclusion of a No Action Alternative against which potential effects can be compared.

2.1.1 Project Setting and Background

The Project Area for the Proposed Action is located along the Alamo River near the city of Calexico in the southernmost edge of Imperial County, California (Figure 1). The Project Area consists of 12.93 acres of the Alamo River bordered to the south by the U.S./Mexico border, to the east by irrigated agricultural fields, and to the west by a sand and gravel business and irrigated agricultural fields (Figure 2). The Project Area is under private and public ownership, including the U.S. Bureau of Reclamation and four private ownership groups.

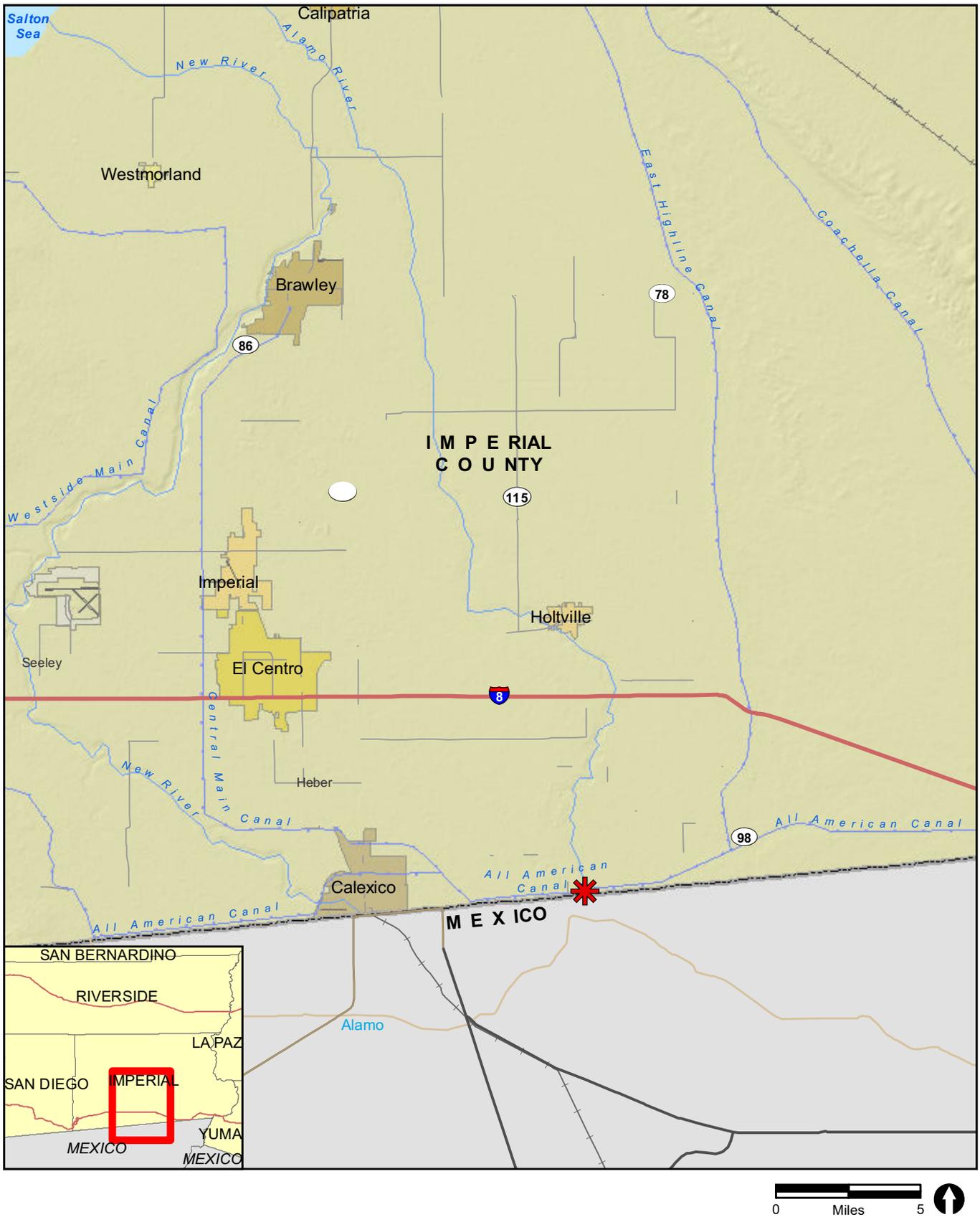
The Alamo River originates in Mexico about 2 miles south of the U.S./Mexico border. Water within the river is dominated by agricultural return flows from the Imperial Valley. The Colorado River Basin Regional Water Quality Control Board calculates the flow of the Alamo River at the border to be 3 to 4 cubic feet per second (cfs), increasing to up to 1,000 cfs at the river's terminus at the southeast end of the Salton Sea (U.S. Geological Survey 2002).

Dominant vegetation within the Project Area consists of arrowweed (*Pluchea serica*), common reed (*Phragmites australis*), tamarisk (*Tamarix* spp.), and saltbush (*Atriplex canescens*).

Historical vegetation control (vegetation removal) occurred within the Project Area until 2014. No vegetation control activities have occurred in the Project Area since 2014. The vegetation within the Project Area is tall and dense, which provides CBVs cover upon crossing the border before entering the water within the river allowing them to elude detection from USBP agents.

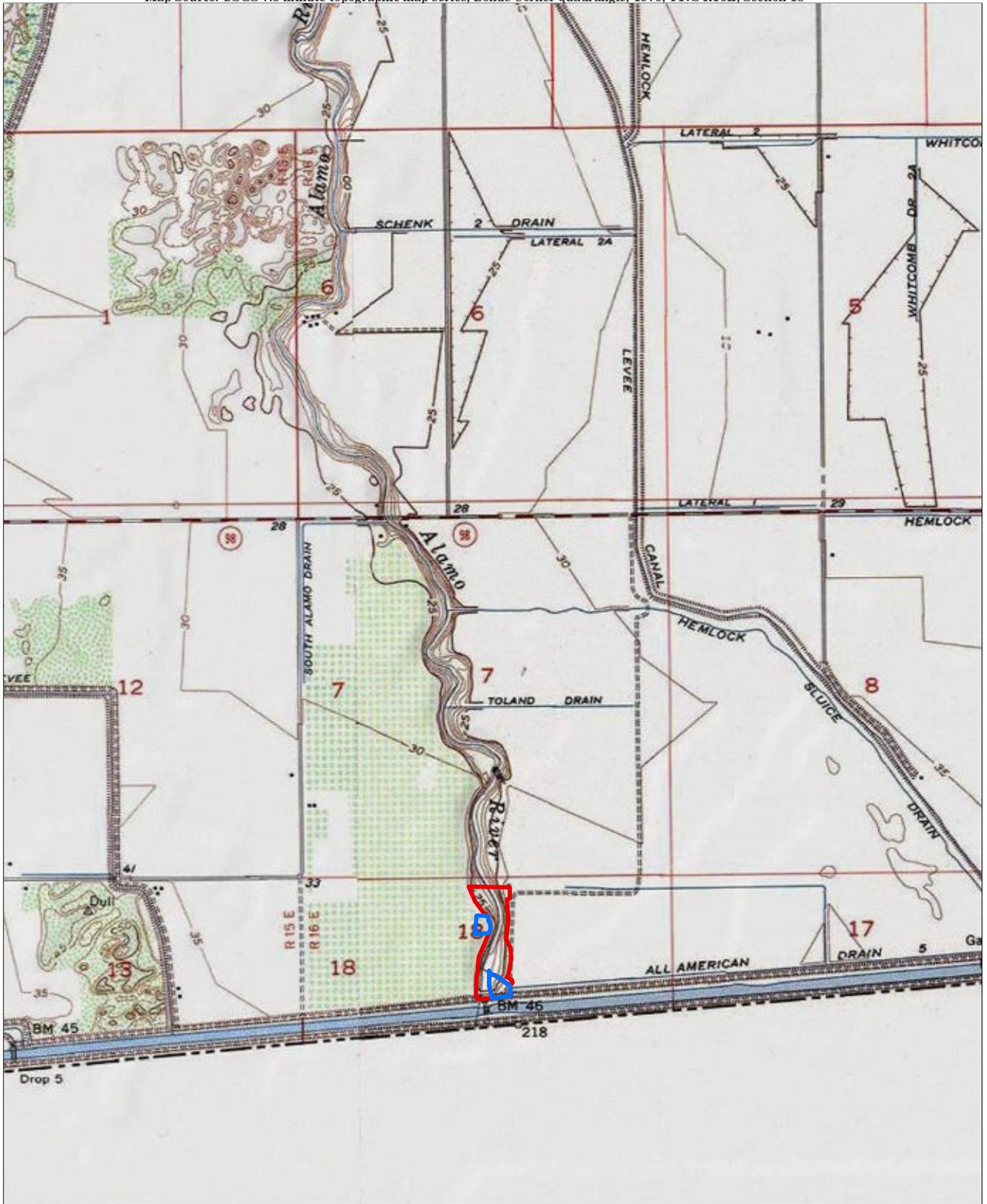
**Table 1
Summary of Potential Impacts by Alternative**

Resource	Alternative 1: No Action Alternative	Alternative 2: Proposed Action Alternative	Alternative 3: Mechanical Removal Only
Aesthetics and Visual Resources	No impacts	Negligible short-term degradation of the aesthetic value during mechanical removal. No impacts to sensitive land uses or viewers.	Negligible to minor impacts to the aesthetic and visual value during mechanical removal activities. No impacts to sensitive or viewers.
Air Quality	No impacts	No adverse air quality impacts.	No adverse air quality impacts.
Biological Resources	Adverse impacts to vegetation due to invasive species spread. No other impacts	Minor, direct, and adverse impact on vegetation communities. Short- and long-term, negligible to minor, direct and indirect, adverse effects to migratory birds. Negligible long-term indirect impact to common wildlife species. Short- and long-term, minor, direct, and indirect adverse impacts to Yuma Ridgeway's rail potential habitat. No impacts to Yuma Ridgeway's rail Critical Habitat would occur.	Minor, direct impacts to vegetation communities. Short- and long-term, negligible to minor, direct and indirect, adverse effects to migratory birds. Negligible to minor long-term indirect impact to common wildlife species. Short- and long-term, minor, direct, and indirect adverse impacts to Yuma Ridgeway's rail potential habitat. No impacts to Yuma Ridgeway's rail Critical Habitat would occur.
Cultural Resources	No potential to affect historic properties	No potential to affect historic properties	No potential to affect historic properties
Floodplains	Long-term adverse impacts may occur due to dense vegetation clogging the Alamo River channel.	Not likely result in adverse impacts to the floodplain. Minor long-term beneficial impacts would occur due to improved water flow from vegetation removal	Negligible long-term adverse impacts to the project area floodplain may occur due to higher frequency of mechanical equipment presence. Minor long-term beneficial impacts would occur due to improved water flow from vegetation removal
Geology and Soils	Long-term direct and indirect adverse impacts to soils due to the presence and continued spread of invasive species	Negligible short-term adverse impacts on soils during vegetation removal and herbicide application	Minor short- and long-term impacts to soil due to increased mechanical removal needed and potential for soil erosion
Groundwater	No impacts	Short-term negligible, indirect adverse impacts to groundwater	Short-term negligible, indirect adverse impacts to groundwater
Hazardous Materials and Waste Management	No impacts	Potential negligible short-term indirect adverse impacts	Potential negligible short-term indirect adverse impacts
Surface Waters and Waters of the United States	No impacts	Short- or long-term, direct, indirect adverse effects	Short-term, negligible, direct adverse impacts



 Project Location

FIGURE 1
Regional Location



- Project Area
- Staging Areas



FIGURE 2
Project Location on USGS Map

2.2 ALTERNATIVE 1: NO ACTION ALTERNATIVE

CEQ regulations for implementing NEPA require that an agency “include the alternative of no action” as one of the alternatives it considers in a Draft EA. The No Action Alternative serves as a baseline against which the impacts of the Proposed Action and any alternatives are compared.

Under the No Action Alternative, CBP would not conduct vegetation removal or control within the Project Area. Existing vegetation would remain and no measures would be taken to remove or reduce vegetation in the future. Under the No Action Alternative, existing native and non-native vegetation within the Project Area would continue to obstruct USBP agents’ view and hinder their ability to detect people illegally crossing the border in the vicinity of the Alamo River. In addition to blocking visibility, many of the plants are tall and robust enough to impede movement of USBP agents. The No Action Alternative would perpetuate continued risk to agent safety. The No Action Alternative does not meet minimum CBP mission needs and prevents CBP from fulfilling their mission.

2.3 ALTERNATIVE 2: PROPOSED ACTION ALTERNATIVE (MECHANICAL REMOVAL AND HERBICIDE APPLICATION)

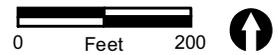
Alternative 2 (Proposed Action) would implement a combination of minimally intrusive mechanical removal and herbicide treatments in areas where non-native invasive species are prevalent. Mechanical removal and herbicide treatment methods are described below.

2.3.1 Mechanical Removal

Under Alternative 2, the Proposed Action, CBP proposes to conduct mechanical removal of vegetation (vegetation clearance) within the 12.93-acre Project Area (Figure 3). Mechanical removal is an effective first step in controlling tall-growing plant species that reduce sightlines within the Project Area.

The Proposed Action would remove all vegetation within the 12.93-acre Project Area. All equipment and construction materials throughout implementation of the Proposed Action would be staged on either an existing roadway or a small, designated, agriculture site (see Figure 3). The existing roadway staging area consists of approximately 1.74 acres located at the southern boundary of the Project Area. The small, designated, agricultural site staging area consists of approximately 1.12 acres located along the western border of the Project Area. The western staging area includes agricultural land use and would require securing right of entry from land owners.

Mechanical removal would consist of mowing, cutting of vegetation (clipping at grade), and use of heavy equipment to remove non-native vegetation twice a year, or as required by CBP for surveillance purposes. No discing or up-rooting would occur under this alternative. CBP proposes to use an articulating flail arm mowing attachment to remove vegetation to the ground surface. The attachment also mulches vegetation as it goes.



-  Project Area
-  Staging Areas

FIGURE 3

Project Location on Aerial Photograph

The mulched vegetation would be spread evenly and left on-site. Some mulched vegetation would fall on the banks and some could fall into the water of the Alamo River. The attachment extends approximately 30 feet off to the side of a heavy-duty vehicle, which would traverse the perimeter of the Project Area on previously disturbed access roads where possible. If the vehicle must enter the Project Area to reach vegetation, the number of trips and routes traveled would be planned to minimize potential impacts. All vehicle refueling would occur off-site or at a designated upland staging area.

Mechanical removal of vegetation would be followed by herbicide treatment to maintain vegetation clearance, as described in **Section 2.3.2**.

Removal of native vegetation would be conducted between October 1 and February 28, outside the nesting season for most bird species, to the extent practicable. If removal of native vegetation would occur during the nesting season, a qualified biologist would conduct a pre-activity survey to identify, flag, and establish a buffer around occupied nests, and buffer areas would be avoided.

2.3.2 Herbicide Application

Under the Proposed Action, CBP proposes to supplement mechanical removal with herbicide application. Currently no chemicals, specifically herbicides, are used by the CBP to control vegetation within the Project Area. Herbicides are chemicals that damage or kill plants.

Herbicide application must comply with the U.S. EPA label directions as well as California EPA, and California Department of Pesticide Regulation (DPR) label standards.

Within the Project Area, specific herbicides that are compatible with wetlands and water bodies would be used, including RoundUp Custom® and Rodeo®, Garlon 3A®, Polaris Herbicide®, or equivalent herbicides. Use of other herbicides that are readily dispersed into aquatic habitats and that can cause damage to aquatic species would not be used.

Herbicide application could occur up to four times a year, depending on the extent and composition of species requiring management. Staging areas would be sited in previously disturbed areas such as unimproved roads, shoulders, graded areas, or sites with compacted soil that do not support vegetation adjacent to the Project Area.

Herbicide would be thoroughly applied in the manner appropriate for the particular herbicide and plant species being treated, and crew members would ensure that all appropriate portions of the treated plants in each stand are well sprayed. The manufacturer-recommended rate of application for each targeted species would be followed. All crew members would have the proper personal protective equipment when handling herbicides (e.g., safety glasses, rubber gloves, and long-sleeve shirts and pants), and as previously mentioned, all applicators would be appropriately trained in accordance with DPR mandates. Work would be supervised by an individual with a Qualified Applicator's License. Work crews would only mix herbicide and refill sprayers within the staging areas to minimize impacts to non-target vegetation.

Application of chemical controls is most effective on new sprouts that typically emerge after removal of aboveground biomass by mechanical methods. For several invasive species found in the Project Area, mechanical treatment followed by herbicide application is the most effective means to control and eliminate regrowth. Mechanical treatment followed by herbicide application and monitoring to determine the need for re-application has been shown to be the most effective means of control of invasive species over time (California Department of Water Resources 2016). This control method can also reduce the frequency of treatments needed, reduce amounts of herbicide treatment, reduce maintenance costs, and reduce the number of trips required for treatment activities.

Herbicide application would include the implementation of BMPs that would further reduce any indirect impacts. These include managing time of application and monitoring ambient temperature during herbicide application to minimize the volatilization of certain chemicals during spray; setting wind speed thresholds, to minimize drift of herbicide to adjacent areas; and ensuring the application is done to avoid overspray, which would maximize uptake within the vegetative material and minimize any input into the river and banks.

Combining herbicide application with mechanical removal practices would reduce the quantities of herbicide needed for subsequent control, due to the reduction in unwanted vegetation masses needing treatment. Re-sprouting species would require a series of follow-up applications of herbicide both within the initial removal period and in subsequent years to be fully eliminated. Conversely, the combination of these methods would also reduce the amount of biomass that would result from each mechanical treatment, thereby reducing the amount of material mulched on-site.

No aquatic plants were detected during the biological survey and wetland delineation; however, if any aquatic plants were subsequently detected, their presence may require preparation of an Aquatic Pesticide Application Plan as part of this alternative. The Aquatic Pesticide Application Plan may be required for coverage under the State Water Resources Control Board, Statewide General National Pollutant Discharge Elimination System Permit for Residual Aquatic Pesticide Discharges to Waters of the U.S. from Algae and Aquatic Weed Control Applications, Water Quality Order 2013-0002-DWQ. If an Aquatic Pesticide Application Plan is needed, the plan may require supplemental NEPA analysis of the Proposed Action.

2.4 ALTERNATIVE 3: MECHANICAL REMOVAL ONLY

Under Alternative 3, mechanical removal of vegetation as described under Alternative 2 (Proposed Action) would be conducted, three to four times per year, or as needed to meet the project purpose and need. Methods such as mowing, cutting of vegetation, and use of heavy equipment to remove vegetation would be implemented as required by CBP for surveillance purposes. No herbicide application would occur under Alternative 3.

Treatment of vegetation through only mechanical means is most effective if areas are treated three to four times per year, at a minimum. Root systems remain after mechanical treatment occurs and requires regular removal/mowing to reduce the systems energy

reserves that allow vegetation to regrow. If regular and repeated mechanical treatment does not occur, vegetation would return and root systems reestablish (California Department of Water Resources 2016). In addition, natural recruitment of plants from upstream and adjacent areas would further increase the vegetative load requiring mechanical removal.

Under Alternative 3, mechanical removal would be implemented three to four times per year, or as required for surveillance purposes and to provide safety for USBP agents.

2.5 ALTERNATIVES SUMMARY

Table 2 summarizes the alternatives carried forward for analysis and if they meet the purpose and need for the Proposed Action.

Purpose and Need	Alternative 1: No Action Alternative	Alternative 2: Proposed Action Alternative	Alternative 3: Mechanical Removal Only
Would the alternative reduce vegetative obstruction to sightlines that enable CBP to maintain surveillance across the Project Area indefinitely?	No	Yes	Yes
Would the alternative increase visibility and enhance patrol capabilities to increase security at the U.S./Mexico border in the Project Area	No	Yes	Yes

2.6 ALTERNATIVE CONSIDERED BUT ELIMINATED

Another alternative considered was vegetation conversion to a native species vegetation community that is low enough in stature and cover density as to eliminate sightline obstruction. However, it would be challenging to establish or maintain a suitable vegetation composition given that the current native species known from the area are pervasive and fast-growing, and would quickly grow to a height and density as to create the same obstruction to sightlines currently posed by the mix of non-native and native vegetation. Due to the topography and Alamo River banks, vegetation would continue to cause sightline obstructions at 12 inches in height, thus vegetation conversion within the Project Area would require regular maintenance similar to the methods described above for mechanical and herbicide treatment in order to both manage the height and density of the native species.

Additionally, this type of ecosystem restoration is particularly prone to invasion, as the restoration process results in disturbance and increased resource availability (D'Antonio and Meyerson 2002; DeMeester and Richter 2009). Operational feasibility of maintaining native vegetation adjacent to areas containing non-native vegetation that would likely spread back into revegetated native areas would also be a concern. Frequent (minimum of four times per year) treatment of non-native vegetation would be required, which would also increase the need for ongoing maintenance activities within the area. This alternative would be time consuming, labor intensive, and not financially viable. Therefore, this

alternative would not meet the stated purpose and need of the Proposed Action and is not carried forward for analysis in the Draft EA.

2.7 IDENTIFICATION OF THE PREFERRED ALTERNATIVE

CBP has identified its Preferred Alternative as Alternative 2, the Proposed Action. Implementation of the Proposed Action would best meet CBP's purpose and need as described in **Section 1.2**. The Proposed Action is also preferred because mechanical treatment followed by herbicide application and monitoring would reduce the frequency of treatments needed, reduce amounts of herbicide needed over time, reduce long-term costs of vegetation control, and reduce the number of trips to the Project Area required for treatment activities.

3.0 AFFECTED ENVIRONMENT AND CONSEQUENCES

This section of the EA describes the natural and human environment that exists within the Project Area and region of influence, and the potential impacts of the No Action Alternative (Alternative 1), Proposed Action (Alternative 2), and Alternative 3 outlined in **Section 2.0** of this document. The region of influence for the Project is the southern portion of Imperial County. Only those resources with the potential to be affected by the Proposed Action are described, per CEQ regulation (40 CFR 1501.7 [3]). The impact analysis presented in this EA is based upon existing regulatory standards, scientific and environmental knowledge, and best professional opinions.

Impacts (consequence or effect) can be either beneficial or adverse, and can be either directly related to the action or indirectly caused by the action. Direct impacts are those effects that are caused by the action and occur at the same time and place (40 CFR 1508.8[a]). Indirect impacts are those effects that are caused by the action and are later in time or further removed in distance, but are still reasonably foreseeable (40 CFR 1508.8[b]). Cumulative and other effects are discussed in **Section 4**. All potentially relevant resource areas were initially considered in this EA. Some were eliminated from detailed examination because of their inapplicability to this Proposed Action. General descriptions of the eliminated resources and the basis for elimination are described in **Section 3.1**.

The following discussion elaborates on the nature of the characteristics that might relate to impacts on resources.

- **Short-term or long-term.** These characteristics are determined on a case-by-case basis and do not refer to any rigid time period. In general, short-term effects are those that would occur only with respect to a particular activity or for a finite period or only during the time required for vegetation control activities. Long-term effects are those that are more likely to be persistent and chronic.
- **Direct or indirect.** A direct effect is caused by, and occurs, contemporaneously at or near the location of the action. An indirect effect is caused by a Proposed Action and might occur later in time or be farther removed in distance but still be a reasonably foreseeable outcome of the action. For example, a direct effect would occur on soils during the mechanical removal of vegetation (such as discing or grubbing), whereas an indirect effect would occur on soils after herbicide application due to changes in soil temperature and moisture from loss of plant (weed) cover.
- **Negligible, minor, moderate, or major.** These relative terms are used to characterize the magnitude or intensity of an impact. Negligible effects are generally those that might be perceptible but are at the lower level of detection. A minor effect is slight, but detectable. A moderate effect is readily apparent. A major effect is one that is severely adverse or exceptionally beneficial.

- **Adverse or beneficial.** An adverse effect is one having unfavorable, or undesirable outcomes on the man-made or natural environment. A beneficial effect is one having positive outcomes on the man-made or natural environment. A single act might result in adverse effects on one environmental resource and beneficial effects on another resource.
- **Significance.** Significant effects are those that, in their context and due to their intensity (severity), meet the thresholds for significance set forth in CEQ regulations (40 CFR Part 1508.27).
- **Context.** The context of an effect can be localized or more widespread (e.g., regional).
- **Intensity.** The intensity of an effect is determined through consideration of several factors, including whether an alternative might have an adverse impact on the unique characteristics of an area (e.g., historical resources, ecologically critical areas), public health or safety, or endangered or threatened species or designated critical habitat. Effects are also considered in terms of their potential for violation of Federal, state, or local environmental law; their controversial nature; the degree of uncertainty or unknown effects, or unique or unknown risks; if there are precedent-setting effects; and their cumulative effects (see **Section 4.0**).

3.1 RESOURCE AREAS NOT REQUIRING DETAILED IMPACT ANALYSIS

This section presents the characteristics of the affected environment and an analysis of the potential direct and indirect impacts each alternative would have on the affected environment. Cumulative impacts are discussed in **Section 4.0**. All potentially relevant resource areas were initially considered in this EA. In accordance with NEPA CEQ regulations, and DHS Instruction Manual 023-01-001-01, Rev. 1., the following evaluation of environmental effects focuses on those resources and conditions potentially subject to effects, on potentially significant environmental issues deserving of study, and deemphasizes insignificant issues.

Some environmental resources and issues that are often analyzed in an EA have been omitted from detailed analysis in this EA, specifically: human health and safety, land use, noise, roadways and traffic, utilities and infrastructure, wild and scenic rivers, socioeconomics, environmental justice and protection of children. The following provides the basis for such exclusions.

3.1.1 Human Health and Safety

Human health and safety is largely a matter of adherence to regulatory requirements imposed for the benefit of personnel and implementation of operational practices that reduce risks of illness, injury, death, and property damage. The Occupational Safety and Health Administration and the U.S. EPA issue standards that specify the amount and type of training required for industrial workers, the use of protective equipment and clothing, engineering controls, and maximum exposure limits with respect to workplace stressors.

Project personnel would be exposed to safety risks from the inherent dangers of traversing the site, operating tools and equipment, and herbicide application. Contractors would be required to establish and maintain safety protocol, including appropriate handling of tools and equipment. All crew members would have the appropriate personal protective equipment when handling herbicides. As the Proposed Action would not introduce new or unusual safety risks, and assuming all safety protocols would be followed and implemented, a detailed examination of safety is not included in this EA. These activities would have a negligible short-term impact on human health and safety in the Project Area. Removal of obstructions to sightlines for USBP agents and reducing concealment opportunities for CBVs would result in long-term beneficial impacts to the safety of USBP agents as well as public safety.

3.1.2 Land Use

The Project Area is located within Imperial County zone S-2 Open Space/Preservation (Imperial County 2015). The Project Area is under private and public ownership, including the U.S. Bureau of Reclamation and four private ownership groups. Land use in the area consists of agricultural fields to the east, and mineral material (sand and gravel) processing and open space areas to the west.

Under the Proposed Action, no change in land use would occur, and no effects on land use plans or policies would be expected. The Proposed Action would be compatible with the existing land use categories and therefore would not result in any changes to land use plans or policies.

3.1.3 Noise

Noise from the Proposed Action (e.g., operation of tools and equipment) would occur in a relatively remote location that is more than five miles from sensitive noise receptors (such as residential areas, parks, hospitals, and schools). The city of Calexico is the closest community and is buffered from the Project Area by an industrial park and agricultural fields. Due to the topography and remote location of the Project Area away from sensitive noise receptors, noise impacts would not be expected to occur as a result of the Proposed Action.

3.1.4 Prime and Unique Farmland

No prime or unique farmland, as defined by the Farmland Protection Policy Act of 1981, is located within the Project Area (California Department of Conservation 2018). The Project Area is identified as “other land” or “vacant or disturbed land.” There are prime and unique farmlands located adjacent to (east of) the Project Area (California Department of Conservation 2018). These farmlands would not be disturbed during proposed vegetation control activities. A roadway is located between the Project Area and farmlands and would serve as a buffer to vegetation control activities. Impacts to prime and unique farmlands located adjacent to the Project Area would not be expected to occur as a result of the Proposed Action.

3.1.5 Roadways and Traffic

State Route 98 is located approximately one mile north and State Route 7 is located approximately one mile west of the Project Area. The Project Area would likely be accessed from State Route 98 to Gunterman Road (a rural road accessing the agricultural fields in the area). Traffic resulting from the Proposed Action would be limited to site access and hauling of minimal equipment and materials. The Proposed Action would result in a negligible short-term adverse impact on traffic, and no long-term adverse impacts would occur.

3.1.6 Utilities and Infrastructure

There are no known utility lines or infrastructure within the Project Area. Any utilities and infrastructure located in the Project Area vicinity would be completely avoided by the Proposed Action, and thus impacts on utilities and infrastructure would not be expected. The Proposed Action would not require municipal power, water supply, or sanitary sewer system infrastructure. No impacts related to utility delivery would occur.

3.1.7 Wild and Scenic Rivers

The Alamo River is not designated as a Wild and Scenic River and there are no designated Wild and Scenic Rivers within 50 miles of the Project Area (National Wild and Scenic Rivers System 2018). Therefore, the Proposed Action would not affect any reach of a designated Wild and Scenic River.

3.1.8 Socioeconomic Resources, Environmental Justice, and Protection of Children

The Project Area is located in a rural portion of the Imperial Valley and there are no socioeconomic sensitive receptors, such as low-income and minority neighborhoods, within more than five miles (Imperial County 2018). Due to the location of the Project Area, the Proposed Action would not have an impact on demographics or economic activity. No residential or commercial displacements would occur. The Proposed Action would not affect employment or household income in the general area.

Furthermore, the Project is buffered from residential and commercial development by the farmland and industrial uses. When completed, the Proposed Action would not have any new effect on socioeconomic resources. Because the Proposed Action would be located in a rural, agricultural, and industrial area with no adjacent residential land use, no displacement of existing developments and no disproportionate effects on minority and low-income communities under Executive Order (EO) 12898 would occur. Similarly, the Proposed Action would not pose a disproportionate environmental health risk or safety risk to children, as protected by EO 13045.

3.2 AESTHETICS AND VISUAL RESOURCES

Aesthetic resources are evaluated according to the visual context of the Project Area and whether or not the project would improve or diminish the visual character of the site, setting, and/or quality of life in the area. Visual resources are the various elements of the

landscape that contribute to the visual character of a place, either natural or human-made, including the natural character of the landscape, buildings and objects, designated scenic resources such as vistas, parks and highways, and the results of human activity.

3.2.1 Affected Environment

The Project Area is located east of the community of Calexico along the United States/Mexico International Border. The area is characterized as an agricultural landscape with generally level topography. Visual features surrounding the Project Area include irrigated agricultural fields to the east, the All-American Canal and the United States/Mexico border to the south, a sand and gravel business to the west, and industrial buildings and undeveloped disturbed areas to the west and north. The Alamo River flows to the north from its beginning approximately one mile south of the United States/Mexico border.

There are no sensitive land uses, such as parks, scenic highways, residential area, schools, and recreational areas, within two miles of the Project Area. There are no known recreational trails or other recreational activities occurring within in adjacent to the Project Area.

The vegetation within the Project Area is tall and dense non-native invasive plants interspersed with some native plants, which reduce sightlines within the Project Area. Historical vegetation control (vegetation removal) occurred within the Project Area until 2014. No vegetation control activities have occurred in the Project Area since 2014.

There are no known sensitive land uses in the Project Area or vicinity, such as: residential areas; designated parks, recreation, and natural areas; major transportation systems, and designated scenic roads.

3.2.2 Environmental Consequences

3.2.2.1 Alternative 1: No Action Alternative

Under the No Action Alternative, mechanical or herbicide vegetation removal activities would not occur. There would be no new impacts, either beneficial or adverse, to aesthetic and visual resources within the Project Area under this alternative.

3.2.2.2 Alternative 2: Mechanical Removal and Herbicide Application

Under the Proposed Action Alternative, CBP would conduct mechanical removal of vegetation within the 12.93-acre Project Area, followed by herbicide treatment to maintain vegetation clearance. The Project Area is located adjacent to the U.S./Mexico border, which has been heavily degraded due to local/agricultural vehicle use, illegal vehicle and foot traffic, and subsequent CBP actions required to monitor and halt illegal activities in the area. Adjacent land uses are aggregate production facilities and agricultural areas with minimal undisturbed vegetation communities. The majority of the Project Area consists of developed/disturbed areas and non-native Tamarisk stands.

Tamarisk stands are monotypical and offer minimal visual character and quality. Defoliated and dead tamarisk stems create an adverse visual contrast with typically greener native riparian vegetation (Hultine et al. 2009). Vegetation upstream of the Project Area is similar in character, non-native invasive species dominant with minimal native riparian species. The concrete-lined All-American Canal is located downstream and adjacent to the Project Area. Minimal vegetation is found along the canal edges and there are no scenic views. The majority of the developed and disturbed areas within and adjacent to the Project Area consist of graded dirt roads that provide access to the All-American Canal. These roads run parallel along the eastern and western borders, and provide access to adjacent agricultural and the aggregate production facilities. Under the Proposed Action Alternative, negligible short-term degradation of the aesthetic value of the Project Area would occur during mechanical removal and herbicide treatment from the presence of construction equipment and removal of vegetation. Vegetation consists primarily of non-native invasive plant species that provide minimal aesthetic value. There are no sensitive land uses or viewers (such as recreationists or residents) in the vicinity of the Project Area that would be affected by the change in viewshed due to vegetation removal; therefore, no impacts to aesthetic and visual value of these resources would occur.

3.2.2.3 Alternative 3: Mechanical Removal Only

Under Alternative 3, only the mechanical removal of vegetation as described under the Proposed Action would be conducted. Impacts under this alternative would be similar to the Proposed Action; however, mechanical removal equipment would be present more frequently than under Alternative 2 due to the need to remove/mow vegetation at least three to four times per year to control vegetation regrowth. Alternative 3 would result in negligible to minor impacts to the aesthetic and visual value of the area during mechanical removal activities but no impacts to sensitive land uses in the vicinity of the Project Area.

3.3 AIR QUALITY

3.3.1 *Affected Environment*

The National Ambient Air Quality Standards (NAAQS) were established by the Federal Clean Air Act (CAA) of 1970 (as amended in 1977 and 1990). NAAQS represent the maximum levels of air pollution considered safe to protect public health and welfare from known or anticipated effects of air pollution. Initially, NAAQS were established for six criteria pollutants of concern: ozone (O₃); sulfur dioxide (SO₂); carbon monoxide (CO); nitrogen dioxide (NO₂); lead; and particulate matter (PM). A criteria pollutant is any air pollutant for which there is an established NAAQS. The PM NAAQS separate standards for PM less than 10 microns in diameter (PM₁₀) and PM less than 2.5 microns in diameter (PM_{2.5}).

When an area violates a health-based standard, the CAA requires that the area be designated as nonattainment for that pollutant. Specific geographic areas or air basins are classified as either “attainment” or “nonattainment” areas for each criteria pollutant based on the comparison of measured air quality data with Federal and state standards.

The Project Area is located in Imperial County. The attainment status of Imperial County is summarized Table 3.

Table 3 Air Quality Attainment Status	
Pollutant	Federal
Ozone (O ₃)	Nonattainment (Marginal)
Carbon Monoxide (CO)	Attainment (Unclassified)
Particulate Matter (PM ₁₀)	Nonattainment (Serious)
Particulate Matter (PM _{2.5})	Nonattainment (Moderate)
Lead (Pb)	Attainment (Unclassified)
Sulfur Dioxide (SO ₂)	Attainment (Unclassified)
Nitrogen Dioxide (NO ₂)	Attainment (Unclassified)
Sources: U.S. EPA 2018	

3.3.2 Environmental Consequences

General Conformity Rule. The 1990 Amendment to the CAA Section 176 requires the U.S. EPA to promulgate rules to ensure that Federal actions conform to the State Implementation Plan (SIP) for achieving compliance with NAAQS. These rules, known as the General Conformity Rule (40 CFR Parts 51.850–51.860 and 93.150–93.160), require any Federal agency responsible for an action in a Federal nonattainment/maintenance area to demonstrate conformity to the applicable SIP, by either determining that the Proposed Action is exempt from the General Conformity Rule requirements or subject to a formal conformity determination.

Actions would be exempt, and thus conform to the SIP, if an applicability analysis determines that the emissions caused by the Proposed Action would be less than specified emission rate thresholds, known as *de minimis* levels. The emissions estimate must include reasonably foreseeable emissions and be able to practicably control the emissions based upon the agency’s continuing program responsibility. The General Conformity *de minimis* levels applicable to Imperial County are summarized in Table 4.

Table 4 General Conformity De Minimis Limits	
Pollutant	Emission (tons/year)
Ozone Precursors* (VOC or NO _x)	100
Particulate Matter (PM ₁₀)	70
Particulate Matter (PM _{2.5})	100
Sources: 40 CFR 93.53(b)(1) and 40 CFR 93.53(b)(2) *Ozone is formed in the atmosphere as a product of the reaction of nitrogen oxides (NO _x) and volatile organic compounds (VOCs) in the presence of sunlight. These pollutants, which are referred to as “ozone precursors” are regulated.	

National Environmental Policy Act. A NEPA air quality analysis differs from the General Conformity analysis in that attainment pollutant emissions are considered as well as nonattainment pollutant emissions. For this analysis, air quality impacts are assessed based on air quality thresholds recommended by the local air district, which for the

Project Area is the Imperial County Air Pollution District (ICAPCD). ICAPCD air quality thresholds are shown in Table 5. In addition to the attainment pollutant emissions of PM₁₀, PM_{2.5}, VOC, and NO_x, emissions of oxides of sulfur (SO_x), and CO, are included in the NEPA analysis.

Table 5 Imperial County Air Pollution District Air Quality Thresholds		
Pollutant	Mass Daily Thresholds (pounds per day)	
	Construction	Operation
Nitrogen Oxides (NO _x)	100	137
Volatile Organic Compounds ¹ (VOC)	75	137
Particulate Matter (PM ₁₀)	150	150
Particulate Matter (PM _{2.5})	-- ²	550
Sulfur Oxides (SO _x)	-- ²	150
Carbon Monoxide (CO)	550	550
Lead (Pb)	-- ³	--

Sources: Imperial County Air Pollution District (ICAPCD) 2017

¹ The ICAPCD uses the term reactive organic gases (ROG). The definitions of VOC under the federal CAA and ROG under California Code of Regulations are nearly synonymous. The term VOC is used herein for simplicity.

² The ICAPCD Air Quality Handbook identifies ozone, PM₁₀, and CO as pollutants of concern for construction activities. No thresholds for PM_{2.5} or SO_x emissions are established.

³ Imperial County is in attainment of federal lead standards. Furthermore, fuel used in construction equipment and most other vehicles is no longer leaded. Consequently, lead emissions are not calculated.

3.3.2.1 No Action Alternative

General Conformity

Under the No Action Alternative, no vegetation clearing activities would occur. The No Action Alternative would not result in criteria pollutant emissions and would not result in emissions that exceed General Conformity *de minimis* levels. Therefore, the No Action Alternative would conform to the SIP, and a formal conformity determination would not be required.

National Environmental Policy Act

The No Action Alternative would not result in emissions that exceed ICAPCD air quality thresholds. Therefore, no adverse air quality impacts would occur.

3.3.2.2 Alternative 2: Mechanical Removal and Herbicide Application

Alternative 2 would involve use of heavy equipment for initial vegetation clearing followed by vegetation clearing up to twice per year in subsequent years (both occurring in the period between October 1 and February 28) supplemented by herbicide treatment up to four times per year. Sources of air emissions associated with Alternative 2 would include heavy equipment used for clearing of vegetation. Application of herbicides would likely be limited to hand tools such as backpack sprayers.

Based on standard equipment used for similar projects, vegetation clearing under Alternative 2 would require use of a wheeled tractor, a tracked tractor, tracked excavator with a flail mower attachment, and a dump truck. Equipment emission estimates were modeled using the SMAQMD's emission estimating tool, the Road Construction Emissions Model (RCEM) Version 8.1.0, which uses emission factors from the most recent EPA-approved California Air Resource Board (CARB) emissions models, OFFROAD, and EMFAC2014.

The rate at which vegetation clearing progresses would vary based on the condition of vegetation. For this analysis, it was conservatively assumed that under Alternative 2 both the initial vegetation clearing and vegetation clearing in subsequent years would require use of all heavy equipment for the entire 5-month period between October 1 and February 28. Refer to Appendix D for full modeling results.

General Conformity

Annual criteria pollutant emissions from initial vegetation clearing of Alternative 2 are summarized and compared to General Conformity *de minimis* levels in Table 6. Vegetation clearing in subsequent years would likely be less intensive than the initial vegetation clearing because vegetation communities would have lesser time to become established. For this analysis it was conservatively assumed that vegetation clearing would also require the same amount of heavy-equipment use as the initial vegetation clearing. Thus, the annual criteria pollutant emissions estimate for vegetation clearing in subsequent years would be the same.

Table 6 Alternative 2 – Comparison to De Minimis Levels (tons per year)			
Pollutant	Project Emissions	De Minimis Levels	Exceeds?
Volatile Organic Compounds (VOC)	0.08	100	<i>No</i>
Nitrogen Oxides (NO _x)	0.81	100	<i>No</i>
Particulate Matter (PM ₁₀)	1.14	70	<i>No</i>
Particulate Matter (PM _{2.5})	0.26	100	<i>No</i>
Sources: Appendix D			

As shown in Table 6, annual criteria pollutant emissions associated with Alternative 2 would be below the General Conformity *de minimis* levels. Therefore, the Proposed Action would conform to the SIP, and a formal conformity determination would not be required.

National Environmental Policy Act

Daily criteria pollutant emissions from vegetation removal activities under Alternative 2 are summarized and compared to ICAPCD air quality thresholds in Table 7. As discussed previously, vegetation clearing in subsequent years would likely be less intensive than the initial vegetation clearing because vegetation communities would have lesser time to become established. For this analysis it was conservatively assumed that vegetation clearing would also require the same amount of heavy-equipment use as the initial

vegetation clearing. Thus, the daily criteria pollutant emissions estimate for vegetation clearing in subsequent years would be the same.

Pollutant	Project Emissions	Threshold		Exceeds?
		Construction	Operation	
Nitrogen Oxides (NO _x)	15	100	137	<i>No / No</i>
Volatile Organic Compounds ¹ (VOC)	1	75	137	<i>No / No</i>
Particulate Matter (PM ₁₀)	21	150	150	<i>No / No</i>
Particulate Matter (PM _{2.5})	5	--	550	<i>No / No</i>
Sulfur Oxides (SO _x)	<1	--	150	<i>No / No</i>
Carbon Monoxide (CO)	12	550	550	<i>No / No</i>

Sources: Appendix D

As shown in Table 7, emissions associated with Alternative 2 would be below the ICAPCD air quality thresholds. Therefore, Alternative 2 would not result in an adverse air quality impacts under NEPA.

3.3.2.3 Alternative 3: Mechanical Removal Only

As discussed in Section 2.0, Alternative 3 would involve use of heavy-duty equipment for initial vegetation and would involve maintaining vegetation clearance through mechanical only treatment. Mechanical-only vegetation clearing is most effective if performed three to four times per year. Sources of air emissions associated with Alternative 3 would include heavy equipment used for clearing of vegetation as described under Alternative 2. Equipment emission estimates from were modeled using RCEM, which uses emission factors from the most recent EPA-approved CARB emissions models, OFFROAD and EMFAC2014.

The rate at which vegetation clearing progresses would vary based on the condition of vegetation. No herbicide application would occur under Alternative 3, thus, the rate at which vegetation regrows would likely be greater than the rate at which vegetation regrows under Alternative 2. For this analysis, it was conservatively assumed that under Alternative 3 both the vegetation clearing and maintaining vegetation clearance would require year-round use of all heavy equipment. Refer to Appendix D for full modeling results.

General Conformity

Annual criteria pollutant emissions from initial vegetation clearing under Alternative 3 are summarized and compared to General Conformity *de minimis* levels in Table 8. Vegetation clearing in subsequent years would likely be less intensive than the initial vegetation clearing because vegetation communities would have lesser time to become established. For this analysis it was conservatively assumed that vegetation clearing would also require the same amount of heavy-equipment use as the initial vegetation clearing. Thus, the annual criteria pollutant emissions estimate for vegetation clearing in subsequent years would be the same.

Table 8 Alternative 3 – Comparison to De Minimis Levels (tons per year)			
Pollutant	Project Emissions	De Minimis Levels	Exceeds?
Volatile Organic Compounds (VOC)	0.19	100	<i>No</i>
Nitrogen Oxides (NO _x)	1.93	100	<i>No</i>
Particulate Matter (PM ₁₀)	2.73	70	<i>No</i>
Particulate Matter (PM _{2.5})	0.64	100	<i>No</i>
Sources: Appendix D			

As shown in Table 8, annual criteria pollutant emissions associated with Alternative 3 would be below the General Conformity *de minimis* levels. Therefore, Alternative 3 would conform to the SIP, and a formal conformity determination would not be required. Emissions of criteria pollutants would be greater under Alternative 3 as compared to emissions under Alternative 2.

National Environmental Policy Act

Daily criteria pollutant emissions from construction of Alternative 3 are summarized and compared to ICAPCD air quality thresholds in Table 9. As discussed previously, vegetation clearing in subsequent years would likely be less intensive than the initial vegetation clearing because vegetation communities would have lesser time to become established. For this analysis it was conservatively assumed that vegetation clearing would also require the same amount of heavy-equipment use as the initial vegetation clearing. Thus, the daily criteria pollutant emissions estimate for vegetation clearing in subsequent years would be the same.

Table 9 Alternative 3 – Comparison to ICAPCD Air Quality Thresholds (pounds per day)				
Pollutant	Project Emissions	Threshold		Exceeds?
		Construction	Operation	
Nitrogen Oxides (NO _x)	15	100	137	<i>No / No</i>
Volatile Organic Compounds ¹ (VOC)	1	75	137	<i>No / No</i>
Particulate Matter (PM ₁₀)	21	150	150	<i>No / No</i>
Particulate Matter (PM _{2.5})	5	--	550	<i>No / No</i>
Sulfur Oxides (SO _x)	<1	--	150	<i>No / No</i>
Carbon Monoxide (CO)	12	550	550	<i>No / No</i>
Sources: Appendix D				

As shown in Table 9, emissions associated with Alternative 3 would be below the ICAPCD air quality thresholds. Therefore, Alternative 3 would not result in an adverse air quality impacts under NEPA.

3.4 BIOLOGICAL RESOURCES

This section identifies the vegetation and wildlife resources that are found within and adjacent to the Project Area. Vegetative resources include all plants that are found within

the region of analysis. Wildlife resources include native or naturalized terrestrial animals and the habitats in which they exist. Species addressed in this section include those that are Federal-listed as threatened or endangered, other sensitive wildlife species, and migratory birds. The biological resource investigation and analysis for this EA was conducted by qualified biologists working for RECON Environmental, Inc. (RECON).

3.4.1 Affected Environment

3.4.1.1 Vegetation Communities and Land Cover Types

RECON biologists conducted biological evaluations through multiple field site visits in 2018 for a wetland delineation, protocol surveys for the Federal-listed endangered Yuma Ridgeway’s rail (*Rallus obsoletus*[=*longirostris*] *yumanensis*), and vegetation community survey. Prior to the site visits, data from the Web Soil Survey (Natural Resources Conservation Service 2018) and aerial photographs of the Project Area were examined to determine whether any unique soil types that could support sensitive plant communities and/or features are present in the Project Area.

Biological communities observed in the Project Area were classified based on existing plant community descriptions discussed in *A Manual of California Vegetation* (Sawyer et al. 2009).

Ten vegetation communities and land cover types were documented within the Project Area (12.93 acres) and staging areas (2.86 acres). All vegetation communities and/or land cover types surveyed are depicted on Figure 4 and listed in Table 10 below.

Type or Community	Project Area (acres)	Staging Areas (acres)	Total (acres)
Agriculture	0.0	0.61	0.61
<i>Atriplex canescens</i> Shrubland Alliance	0.27	0.0	0.27
Developed/Disturbed	3.87	2.22	6.09
Open Water	0.49	0.0	0.49
Ornamental	0.0	0.03	0.03
<i>Phragmites australis</i> Herbaceous Alliance & Semi-natural stands	2.68	0.0	2.68
<i>Pluchea sericea</i> Shrubland Alliance	1.28	0.0	1.28
<i>Suaeda nigra</i> Shrubland Alliance	0.26	0.0	0.26
<i>Tamarix</i> spp. Semi-natural Shrubland stands	4.04	0.0	4.04
<i>Typha</i> (<i>angustifolia</i> , <i>domingensis</i> , <i>latifolia</i>) Alliance	0.04	0.0	0.04
Total	12.93	2.86	15.79

Atriplex canescens Shrubland Alliance (0.27 acre)

The *Atriplex canescens* shrubland alliance is limited to a small area within the north-central portion of the Project Area (0.27 acre). This alliance was observed growing in a vegetated fringe adjacent to large stands of phragmites (*Phragmites australis*, common reed) (see Figure 4).



- Project Area
- Staging Areas
- Vegetation Communities**
- Atriplex canescens* Shrubland
- Phragmites australis* Herbaceous Alliance and Semi-natural Stands
- Pluchea sericea* Shrubland Alliance
- Suaeda nigra* Shrubland Alliance
- Tamarix* spp. Semi-natural Shrubland Stands
- Typha* (*angustifolia*, *domingensis*, *latifolia*) Alliance
- Agriculture
- Developed/Disturbed
- Open Water
- Ornamental

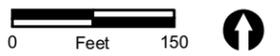


FIGURE 4
Project Area Vegetation Communities

Disturbed/Developed (6.09 acres)

Disturbed and developed lands account for the greatest land cover within the Project Area and Staging Areas (6.09 acres). The majority of the disturbed and developed areas consist of graded dirt roads, which provide access to the All-American Canal south of the Project Area (see Figure 4). These roads also provide access to adjacent agricultural lands and an aggregate production facility. An area characterized by mostly bare ground and minimal vegetation is also included in this disturbed category.

Open Water (0.49 acre)

Open water within the Project Area is found within portions of the Alamo River (0.49 acre) (see Figure 4). The area of open water in the southern portion of the Project Area is ponded where the All-American Canal diverts water to the Alamo River. It is associated with the traditional navigable water of the Alamo River, and is considered jurisdictional wetlands according to the wetland delineation performed (RECON 2018a).

Phragmites australis Herbaceous Alliance and Semi-natural Stands (2.68 acres)

This alliance is comprised of perennial emergent phragmites (common reed) typically forming a closed continuous canopy. This alliance, totaling 2.68 acres, occurs throughout the Project Area growing in dense monocultures as continuous stands surrounding the open waters of the Alamo River.

Pluchea sericea Shrubland Alliance (1.28 acres)

Arrowweed colonizes open, moist sites with a high water table, typically around springs, seeps, irrigation ditches, canyon bottoms, stream borders, and seasonally flooded washes (Sawyer et al. 2009). This alliance, totaling 1.28 acres, occurs within the Project Area and was observed in portions most often adjacent to invasive tamarisk (*Tamarix* spp.).

Suaeda nigra Shrubland Alliance (0.26 acre)

This alliance is widespread in the Colorado Desert adjacent to playas, bajadas, and on terraces above washes (Sawyer et al. 2009). *Suaeda nigra* Shrubland Alliance, totaling 0.26 acre, occurs within the Project Area as a small stand east of the Alamo River containing an open shrub canopy and a sparse herbaceous layer.

Typha (*angustifolia*, *domingensis*, *latifolia*) Alliance (0.04 acre)

Typha Alliance typically occurs in open bodies of fresh water with little current flow, such as ponds, and to a lesser extent around seeps and springs. This vegetation type is dominated by southern cattail (*Typha domingensis*), a tall reed common to fresh water marshes and ponds. This alliance was found on 0.04 acres within the Project Area. *Typha* was always submerged and found at two locations: 1) at the southern end of the Project Area west of open water, 2) and in the southeastern portion of the Project Area as a thin, continuous strip within a narrow drainage surrounded by arrowweed.

Agriculture (0.61 acre)

Agricultural activities represent a minimal amount of land use within the staging areas (approximately 0.61 acre), with seasonally planted and irrigated fields found in a portion of the western staging area (see Figure 4).

Ornamental (0.03 acres)

Ornamental vegetation occurred in the proposed western staging area adjacent to a fence delineating farmlands and an aggregate production facility. Yellow oleander (*Cascabela thevetia*), a native of tropical America, and a common ornamental of the Southwestern United States, accounted for 0.03 acres of ornamental vegetation.

Tamarix spp. Semi-natural Shrubland Stands (4.04 acres)

This category is dominated by the non-native and highly invasive tamarisk. The *Tamarix* spp. semi-natural stand represents a large amount vegetation cover within the Project Area (4.04 acres).

3.4.1.2 Non-Native Species

Non-native species are defined as: "...those present in a specified region only as a direct or indirect result of human activity. Other terms that are often used as synonyms for non-native include alien, exotic, introduced, adventive, non-indigenous, and non-aboriginal" (Morse et al. 2004).

From a conservation perspective, non-native plant species may be very harmful to the biodiversity of a landscape, as many non-native species negatively affect native species through their invasive nature. Non-native species can form dense monocultures that prevent native plant establishment or can hybridize with native plants and by modifying the local ecosystem processes they depend on (Morse et al. 2004). The California Invasive Plant Council (Cal-IPC) ranks non-native plant species for their ability to invade wildlands as High, Moderate, or Limited. This ranking is based on 13 criteria divided into three main categories: the ecological impacts of a species, the species' ability to invade natural vegetation, and the species' current ecological amplitude and extent of invasion.

Vegetation communities/land cover types found in the Project Area that are dominated by non-native species include the following: agriculture, ornamental, and *Tamarix* spp. Semi-natural Shrubland Stands. The ornamental land cover type is dominated by the non-native yellow oleander, although there is no Cal-IPC rank for this species. The tamarisk that dominates the *Tamarix* spp. Semi-natural Shrubland Stand is also non-native and highly invasive. The Cal-IPC rank for tamarisk is High.

No non-native animals were observed in the Project Area.

3.4.1.3 Wildlife

A variety of wildlife species were observed or would be expected to occur within the Project Area and vicinity. Many species are typical of disturbed and agricultural habitats, which provide cover, foraging, and breeding habitat. Riparian species are also likely to occur due to the Alamo River and associated vegetation.

Species observed or likely to occur include birds species such as: American coot (*Fulica americana*), American kestrel (*Falco sparverius*), barn swallow (*Hirundo rustica*), black phoebe (*Sayornis nigricans*), cattle egret (*Bubulcus ibis*), common ground dove (*Columbia passerine*), common raven (*Corvus corax*), Gambel's quail (*Callipepla gambelii*), great-tailed grackle (*Quiscalus mexicanus*), greater roadrunner (*Geococcyx californianus*), mourning dove (*Zenaida macroura*), northern mockingbird (*Mimus polyglottos*), red-tailed hawk (*Buteo jamaicensis*), turkey vulture (*Cathartes aura*), western meadowlark (*Sturnella neglecta*), white-crowned sparrow (*Zonotrichia leucophrys*), and white-winged dove (*Zenaida asiatica*).

Mammals likely to occur in the area include bobcat (*Lynx rufus*), coyote (*Canis latrans*), desert cottontail (*Sylvilagus audubonii*), kangaroo rat (*Dipodomys* sp.), and round-tailed ground squirrel (*Xerospermophilus tereticaudus*). A variety of invertebrates is also likely to occur within the Project Area and vicinity. Reptiles and amphibians likely to occur in the area include common side-blotched lizard (*Uta stansburiana*), desert iguana (*Dipsosaurus dorsalis*), spiny softshell turtle (*Trionyx spiniferus*), and western whiptail lizard (*Cnemidophorus tigris*).

3.4.1.4 Migratory Birds

Certain bird species are protected under the Migratory Bird Treaty Act (MBTA) of 1918, as amended. Under the MBTA, it is illegal for anyone to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter any migratory bird, or the parts, nests, or eggs of such a bird except under the terms of a valid permit. The MBTA was created to protect transitory birds across international borders. EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*, outlines the great ecological and economic value of migratory birds to the United States. It cites their ecological importance as well as the human activities that they enable such as studying, watching, feeding, and hunting.

Based on USFWS data, there are 21 migratory bird species that may occur in the Project Area or rely on the Project Area as a stopover location to feed and rest during migration (USFWS 2018). These are birds of particular concern either because they are on the USFWS Birds of Conservation Concern list or warrant special attention in the Project Area. These species and their potential to occur in the Project Area are listed in Table 11 below.

Table 11
Migratory Birds That May Occur within the Project Area or Vicinity

Common Name	Scientific Name	Potential to Occur
Allen’s Hummingbird	<i>Selasphorus sasin</i>	Low
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Moderate (December–February)
Bendire’s Thrasher	<i>Toxostoma bendirei</i>	Low
Black Rail	<i>Laterallus jamaicensis</i>	Moderate (February–July)
Black Skimmer	<i>Rynchops niger</i>	Moderate (April–September)
Black-chinned Sparrow	<i>Spizella astrogularis</i>	Low
Burrowing Owl	<i>Athene cunicularia</i>	High (year-round)
Clark’s Grebe	<i>Aechmophorus clarkia</i>	High (year-round)
Costa’s Hummingbird	<i>Calypte costae</i>	High (year-round)
Gila Woodpecker	<i>Melanerpes uropygialis</i>	High (year-round)
Golden Eagle	<i>Aquila chrysaetos</i>	Low
Gull-billed Tern	<i>Gelochelidon nilotica</i>	Moderate (March–September)
Lawrence’s Goldfinch	<i>Carduelis lawrencei</i>	Low
Le Conte’s Thrasher	<i>Toxostoma lecontei</i>	Low
Long-billed Curlew	<i>Numenius americanus</i>	High (year-round)
Marbled Godwit	<i>Limosa fedoa</i>	High (year-round)
Mountain Plover	<i>Charadrius montanus</i>	Moderate (November–March)
Rufous Hummingbird	<i>Selasphorus rufus</i>	Low
Rufous-winged Sparrow	<i>Almophila carpalis</i>	Low
Whimbrel	<i>Numenius phaeopus</i>	Moderate (March–August)
Willet	<i>Tringa semipalmata</i>	High (year-round)

3.4.1.5 Federal-Listed Species

One Federal-listed species has been documented to occur within or adjacent to the Project Area, the Yuma Ridgway’s rail bird species. A search of species observations, known locations, designated or proposed critical habitat, and primary constituent elements for additional Federal-listed species was conducted (USFWS 2018). No additional Federal-listed species or their habitats were identified and none are expected to occur within the vicinity of the Project Area (USFWS 2018; California Natural Diversity Database 2018).

Yuma Ridgway’s Rail

The Yuma Ridgway’s rail was Federal-listed as endangered on 11 March 1967 (USFWS 1967). Critical habitat has not been designated for this bird species. The Yuma Ridgway’s rail breeds in freshwater marshes and brackish waters and nests on firm elevated ground, often under small bushes. Yuma Ridgway’s rails are active most in the daylight hours, with little to no activity after dark. While the Yuma Ridgway’s rail was previously thought to be a migratory bird, experts have determined that they are year-round residents of the Lower Colorado River and Salton Sea, albeit discreet during winter months (USFWS 2009).

The Project Area supports approximately 2.7 acres of Yuma Ridgway’s rail habitat consisting of continuous emergent and submergent marsh composed of common reed and cattails along the low-flow channel. Focused surveys for the Yuma Ridgway’s rail occurred in appropriate habitat along the approximately 2,000 linear feet of the Project

Area. Six focused Yuma Ridgway's rail surveys were conducted between March and May 2018 using U.S. Fish and Wildlife Service protocols (USFWS 2017). Yuma Ridgway's rail was not detected during the 2018 focused surveys.

3.4.2 Environmental Consequences

3.4.2.1 No Action Alternative

Vegetation and Non-native Species

Under the No Action Alternative, CBP would not conduct mechanical removal or herbicide treatment of vegetation within the Project Area. Under this alternative, the current vegetation would remain and no adverse impacts to vegetation would occur. Non-native invasive species would likely continue to spread within the Project Area under the existing conditions, resulting in an adverse impact to native vegetation communities.

Migratory Birds

Under the No Action Alternative, existing activities within the Project Area would continue and no adverse impacts to migratory birds would occur.

Wildlife

Under the No Action Alternative, existing activities within the Project Area would continue and no adverse impacts to wildlife would occur.

Federal-listed Species

One Federal-listed species, the Yuma Ridgeway's rail, is known to occur in the Project Area vicinity. Under the No Action Alternative, USBP would continue to patrol the Project Area but no mechanical removal or herbicide treatment of vegetation would occur. Because these activities are ongoing within the Project Area, the No Action Alternative would not affect this Federally-listed species.

3.4.2.2 Proposed Action Alternative

Vegetation and Non-native Species

CBP proposes to conduct mechanical removal of vegetation within the 12.93-acre Project Area. Mechanical removal would consist of cutting of vegetation and use of heavy equipment, and would occur twice a year, or as required by CBP for surveillance purposes. Mechanical removal would be supplemented with herbicide application that would occur up to four times per year. Approximately 4.53 acres of native (common reed and native shrubs) and 4.07 acres of non-native vegetation (tamarisk and ornamental) would be removed.

Under the Proposed Action, the mechanical removal of approximately 4.53 acres of native vegetation and supplemental herbicide application would result in long-term,

direct, minor, and adverse impacts to these vegetation communities. Mechanical removal and supplemental herbicide treatment of non-native vegetation communities would result in short- and long-term, moderate, and beneficial impacts from the removal of these invasive plant species. The Proposed Action as a whole (removal of native and non-native vegetation) would have a minor, direct, and adverse impact on vegetation communities within the Project Area.

Migratory Birds

A variety of bird species protected by the MBTA is expected to forage and nest within the Project Area. Under the Proposed Action, the permanent removal of vegetation within the Project Area would result in the loss of foraging and nesting habitat for MBTA species. Potential effects to these species are expected to be short- and long-term, negligible to minor, direct and indirect, adverse effects. Measures outlined in **Section 5.3** have been incorporated into the Proposed Action to avoid and/or minimize potential impacts to Yuma Ridgway's, which would also minimize potential impacts to MBTA species. If mechanical removal and herbicide treatment must occur during MBTA bird species nesting season, a preconstruction nesting bird survey would be performed to minimize impacts on migratory birds.

Wildlife

A variety of wildlife species were observed or would be expected to occur within the Project Area and vicinity, including riparian species. The mechanical removal and herbicide treatment of vegetation within the Project Area would result in the loss of foraging, breeding, and nesting habitat for some wildlife species. However, these species have been subject to vegetation clearing activities in the recent past within the Project Area. The Proposed Action would likely result in negligible, short- and long-term, and adverse indirect effects to wildlife. Wildlife would likely avoid the Project Area during mechanical removal and herbicide treatment activities, minimizing potential impacts. In addition, wildlife species observed or potentially present within the Project Area are common, and suitable habitat of various types exists in relative abundance in the vicinity of the Project Area. Herbicides have been designed to target biochemical processes, such as photosynthesis, that are unique to plants, and typically are not acutely toxic to animals (Tatum 2004). Therefore, the Proposed Action is expected to have a negligible long-term indirect impact to common wildlife species with potential to occur in the Project Area.

Federal-Listed Species

Under the Proposed Action, approximately 2.72 acres of potentially suitable habitat (2.68 acre of common reed and 0.04 acre of cattail) for the Yuma Ridgeway's rail would be impacted by mechanical removal of vegetation and supplemental herbicide treatment. However, the habitat is not known to be occupied based on survey results and no direct impacts to Yuma Ridgeway's rail are anticipated. The Proposed Action would result in short- and long-term, minor, direct, and indirect adverse impacts to Yuma Ridgeway's rail potential habitat. The adverse impacts would not exceed the minor impact threshold because the Project Area contains a small amount of potential habitat compared to

estimated suitable habitat within Imperial County, potential habitat is isolated, habitat would not likely provide sufficient breeding habitat, and this species is not known to occupy the Project Area (based on survey results). CBP consulted with the USFWS (ESA Section 7 informal consultation) regarding the Yuma Ridgeway's rail. Based on the biological assessment, the USFWS concurred with the determination that the proposed vegetation removal activities are not likely to adversely affect the Yuma Ridgeway's rail (USFWS Concurrence Letter dated September 28, 2018). In addition, species-specific measures outlined in **Section 5.3** have been incorporated into the Proposed Action to avoid and/or minimize potential impacts to Yuma Ridgeway's rail.

There is no Yuma Ridgeway's rail Critical Habitat within or adjacent to the Project Area; therefore, no impacts to Critical Habitat would occur.

3.4.2.3 Alternative 3: Mechanical Removal Only

Under Alternative 3, only the mechanical removal of vegetation as described under Alternative 2 would be conducted. Impacts under this alternative would be similar to those from mechanical removal as described for Alternative 2, however, mechanical removal equipment would be present more frequently than under Alternative 2 due to the need to remove/mow vegetation at least three to four times per year to control vegetation regrowth. Under Alternative 3, mechanical removal of vegetation would result in short-term minor, direct impacts to vegetation communities; short- and long-term, negligible to minor, direct and indirect, adverse effects to migratory birds; negligible to minor long-term indirect impact to common wildlife species; short- and long-term, minor, direct, and indirect adverse impacts to Yuma Ridgeway's rail potential habitat. No impacts to Yuma Ridgeway's rail Critical Habitat would occur.

3.5 CULTURAL RESOURCES

3.5.1 *Affected Environment*

A cultural resources survey of the Project Area was conducted on December 27, 2017. Prior to the survey, a records search was requested from the South Coastal Information Center (SCIC) to identify any previously recorded sites recorded within a one-mile radius of the Project Area.

The primary goal of this survey was to determine (1) if there are previously unrecorded cultural resources present, and if so, document the resources' locations and what they consist of and (2) to update conditions of previously recorded cultural resources. The Project Area was inspected for evidence of archaeological materials such as flaked and ground stone tools or fragments, ceramics, milling features, and human remains.

A letter was sent to the NAHC requesting they search their files to identify spiritually significant and/or sacred sites or traditional use areas in the Project vicinity. The NAHC was also asked to provide a list of local Native American tribes, bands, or individuals that may have concerns or interests regarding cultural resources potentially occurring within the Area of Potential Effect (APE). Portions of the western periphery of the Project APE have been previously surveyed for sundry past projects. No previous survey encompassed

the entire current APE, nor resulted in the identification of significant archaeological or historical resources.

Three previously recorded sites were identified within a one-mile radius of the Project APE; none were located within the Project Area (RECON 2018b). The three resources include the adjacent All-American Canal; the South Alamo Lateral 16 Canal, located approximately 4,400 feet west of the Project Area; and a single Lower Colorado Buff Ware sherd, located approximately 3,900 feet north of the northern Project Area boundary.

Because the Project will constitute a Federal undertaking by CBP, it is subject to Federal regulations, including Section 106 of the National Historic Preservation Act (NHPA). The Project is an undertaking, as defined in Section 106 of the NHPA. Section 106, as implemented (36 CFR Part 800), requires Federal agencies to identify cultural resources within the APE, to assess effects to resources found eligible for the National Register of Historic Places (National Register), and to mitigate adverse effects to eligible resources.

Under Section 106, cultural resources are evaluated for National Register eligibility based on their integrity and significance under the four criteria outlined in 36 CFR 60.4 and the National Park Service Bulletin 15, *How to Apply the National Register Criteria for Evaluation*. Resources that are eligible for listing in the National Register must meet one or more of the following criteria:

- A. is associated with events that have made a significant contribution to the broad patterns of our history; or
- B. is associated with the lives of persons significant in our past; or,
- C. embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work of a master, or that possesses high artistic values, or that represents a significant and distinguishable entity whose components may lack individual distinction; or
- D. has yielded, or may be likely to yield, information important in prehistory or history [36 CFR 60.4].

Further, a cultural resource must be evaluated within an important historic context and retain integrity of those features necessary to convey its significance. Aspects of integrity that must be considered are location, design, setting, materials, workmanship, feeling, and association.

3.5.2 Environmental Consequences

3.5.2.1 No Action Alternative

Under the No Action Alternative, CBP would not conduct mechanical removal or herbicide treatment of vegetation within the Project Area. There would be no undertaking

as defined under Section 106; therefore, the No Action Alternative would have no potential to affect historic properties.

3.5.2.2 Proposed Action Alternative

The Proposed project under Alternative 2 constitutes a Federal undertaking by CBP, and is subject to Federal regulations, including Section 106 of the National Historic Preservation Act and NEPA. Section 106, as implemented (36 Code of Federal Regulations Part 800) requires Federal agencies to identify historic properties within the APE, to assess effects to those properties listed on or found eligible for the National Register of Historic Places (National Register), and to mitigate adverse effects to eligible resources.

Under the Proposed Action Alternative, CBP would conduct mechanical removal of vegetation twice per year, or as necessary, with supplemental herbicide application occurring four times per year within the Project Area. Based on the records search and survey of the Project Area, no cultural resources were identified. Therefore, the Proposed Action would not adversely impact any known significant cultural resources or historic properties. The likelihood of subsurface cultural resources to occur within the Project Area is low. Past scouring of the Alamo River, such as the 1905-1906 flood, which deepened the river as much as 20 to 30 feet in places (Dowd 1956), likely washed away any cultural resources that may have been present. Because the Proposed Action Project Area does not encompass any previously identified cultural resource, and because no resources were identified during the survey, nor are any buried cultural resources expected due to the scouring effects of the 1905-1906 flood, the Proposed Action would have no potential to affect historic properties.

Coordination letters were sent to all culturally affiliated Native American tribes (April 9, 2018), the NAHC and the California State Historic Preservation Officer (July 9, 2018). Based on the findings of the records review, site survey, and coordination, CBP has made a determination of no historic properties present or affected for the Proposed Action. Furthermore, CBP has determined that, in accordance with Stipulation IV of the Programmatic Agreement Regarding CBP Undertakings in States Located along the Southwest Border of the United States (CBP 2014), this undertaking is within the scope of Stipulation VI.D.3 and is therefore exempted from further review. No further consultation with Native American tribes or the California State Historic Preservation Officer is required at this time. Measures outlined in **Section 5.4** have been incorporated in case any unexpected archaeological artifacts are found during implementation of the Proposed Action.

3.5.2.3 Alternative 3: Mechanical Removal Only

Under Alternative 3, only the mechanical removal of vegetation, similar to Alternative 2 would be conducted. Impacts to cultural resources under this alternative would be similar to Alternative 2, and would have no potential to affect historic properties.

3.6 FLOODPLAINS

3.6.1 Affected Environment

The Alamo River originates approximately 2 miles south of the International Boundary with Mexico, and flows northward across the border for about 50 miles until it empties into the Salton Sea. The Alamo River is the main tributary to the Salton Sea and is sustained and dominated by agricultural return flows from the Imperial Valley. These return flows consist of surface run-off (tailwater) and subsurface drainage (tilewater), which mix with groundwater seepage and are discharged into the Alamo River via agricultural drains operated by the Imperial Irrigation District. The Alamo River also carries approximately 15 to 27 cubic feet per second of treated wastewater from point sources in Imperial Valley (California Environmental Protection Agency 1999). The portion of the Alamo River within the Project Area is adjacent to the international border with Mexico where the river is bisected by the All-American Canal. Flooding within this portion of the Alamo River is rare due to the proximity to the All-American Canal and flow of water north to the Salton Sea. The floodplain widens significantly downstream of the Project Area where the Alamo River nears the Salton Sea (Federal Emergency Management Agency [FEMA] 2018).

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map Panel 06025C2125C, the Project Area is located predominantly within the 100-year floodplain of the Alamo River (Federal Emergency Management Agency 2018). Adjacent lands are classified as FEMA Zone X, which are areas of minimal flood hazard.

3.6.2 Environmental Consequences

3.6.2.1 No Action Alternative

Under the No Action Alternative, CBP would not conduct mechanical removal or herbicide treatment of vegetation within the Project Area. The floodplain and water flow within the Project Area would remain the same. Long-term adverse impacts may occur due to dense vegetation clogging the Alamo River channel, increasing water flow friction and obstructions to water flow.

3.6.2.2 Proposed Action Alternative

Under EO 11988, all Federal agencies are required to take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health, and welfare.

Under the Proposed Action, no grading or earth moving activities are proposed, elevations within the Project Area would not be impacted and the floodplain would not be altered. In addition, the Proposed Action does not include construction of any structure that could be damaged or offices/housing that could result in injury or death during flooding.

Under the Proposed Action, impacts to flood control would not be expected as the Proposed Action would remove vegetation from a portion of upstream portions of the Alamo River adjacent to the All-American Canal, which bisects the river near the

international border with Mexico, and minimizes the amount of flood waters entering the river. In addition, mulched vegetation would be spread evenly and left on-site within the Project Area to minimize erosion potential.

Under the Proposed Action, removal of vegetation from the Project Area would result in beneficial changes to flood control by reducing water flow friction caused by obstructions and vegetation in the flood channel. Further, any changes in the extent of vegetation would be addressed from an engineering standpoint, such that flood control of the area would not be compromised. The Proposed Action would not likely result in adverse impacts to the floodplain, and minor long-term beneficial impacts would occur due to improved water flow from vegetation removal.

3.6.2.3 Alternative 3: Mechanical Removal Only

Under Alternative 3, only the mechanical removal of vegetation as described under Alternative 2 would be conducted. Impacts to the floodplain under this alternative would be similar to Alternative 2, however, vegetation would regrow more frequently without herbicide treatment, resulting in increased water flow friction and obstructions of the river channel over the long-term. In addition, mechanical removal would occur more frequently than under Alternative 2, resulting in an increase potential for erosion due to the presence of heavy equipment in and near the river channel. Under Alternative 3, negligible long-term adverse impacts to the project area floodplain may occur, and minor long-term beneficial impacts would occur due to improved water flow from vegetation removal.

3.7 GEOLOGY AND SOILS

3.7.1 *Affected Environment*

Soil types within the Project Area include Badland, Imperial-Glenbar silty clay loams, and Meloland very fine sandy loam. Badland consists of areas of essentially barren, eroded, soft shale. The terrain is broken by drainage channels that have cut into the soft shale. Imperial-Glenbar silty clay loams are characterized as well-drained soils of floodplains composed of mixed alluvium. Meloland very fine sandy loam is found in the western staging area and is characterized as soils found on flood plains and alluvial basin floors (Natural Resources Conservation Service 2018).

The Project Area is predominantly flat with an elevation of approximately 30 feet above mean sea level. The Alamo River banks and river bed are the primary geologic features within the Project Area.

3.7.2 *Environmental Consequences*

3.7.2.1 No Action Alternative

Under the No Action Alternative, CBP would not conduct mechanical removal or herbicide treatment of vegetation within the Project Area. The geology and soils within the Project Area would remain the same.

Invasive plants have been shown to have a multitude of direct and indirect impacts on soil chemistry and ecosystem function. The long-term impact of invasive plant root secretions may result in altered nutrient cycles and altered nutrient pools within soils. The alterations may also result in a competitive advantage for invasive plants for soil nutrients, reducing the potential for native species to grow in affected areas (Weidenhamer and Callaway 2010).

The No Action Alternative may result in long-term direct and indirect adverse impacts to soils due to the presence and continued spread of invasive species within the Project Area which could result in altered soil chemistry and reduction of native plant ecosystem function.

3.7.2.2 Proposed Action Alternative

Under the Proposed Action, vegetation control activities would largely occur aboveground, no disking and root extraction would take place. An articulating flail arm mowing attachment would be used to remove vegetation to the ground surface. No discing or up-rooting would occur under this alternative, resulting in minimal disturbance to soil. Vegetation would be mulched on-site and spread evenly, which would serve to protect soils from erosion. Mechanical clearing would occur twice per year after the initial removal.

Mechanical treatment would be followed by herbicide treatment up to four times per year. Herbicide treatment would occur using backpack sprayers (workers on foot), minimizing the use of heavy equipment that may disturb soils within the Project Area. Glyphosate, the most widely used herbicide, is generally considered to have minimal environmental impacts and most studies show little to no effect of this herbicide, as well as other herbicides, on soil microbial communities (Weidenhamer and Callaway 2010). However, herbicide application can drift and affect the growth of non-target species. BMPs have been added to reduce potential impacts to non-target species from herbicide drift.

Overall, Alternative 2 would result in negligible short-term adverse impacts on soils in the Project Area during vegetation removal and herbicide application. No changes to the geology of the Project Area would occur.

3.7.2.3 Alternative 3: Mechanical Removal Only

Under Alternative 3, only the mechanical removal of vegetation as described under Alternative 2 (Proposed Action) would be conducted; however, mechanical-only vegetation clearing is most effective if performed three to four times per year. Heavy equipment would be used for initial vegetation clearing and maintaining vegetation clearance. No discing or up-rooting would occur under this alternative, resulting in minimal disturbance to soil. Vegetation would be mulched on-site and spread evenly, which would serve to protect soils from erosion.

Under Alternative 3, mechanical clearing would be required more frequently than under Alternative 2. Heavy construction equipment would be used at a minimum of three to

four times per year to maintain surveillance clearance. The more frequent use of heavy equipment with the Project Area would likely increase the potential for erosion due to soil disturbance as compared to Alternative 2. Alternative 3 would likely result in minor short- and long-term impacts to soil due to increased potential for soil erosion. No changes to the geology of the Project Area would occur.

3.8 GROUNDWATER

3.8.1 Affected Environment

The Project Area is located along the Alamo River, north of the All-American Canal and international border with Mexico, near the city of Calexico in the southernmost edge of Imperial County, California (see Figure 1). The Project Area is located within the Imperial Valley Groundwater Basin, which lies within the southern part of the Colorado Desert Hydrologic Region, south of the Salton Sea (California Department of Water Resources 2004).

Major hydrologic features of the Imperial Valley Groundwater Basin include the New and Alamo rivers, which flow north towards the Salton Sea. These rivers were formed in the middle to late 1800s when the Colorado River occasionally escaped the normal channel and flowed northwards to the present day Salton Sea. The All-American Canal (three branches) and the Coachella Canal cross over this basin (California Department of Water Resources 2004).

Groundwater recharge within the Imperial Valley Groundwater Basin is primarily from irrigation return. Other recharge sources are deep percolation of rainfall and surface runoff, underflow into the basin, and seepage from unlined canals. Groundwater levels within the basin typically vary widely partially due to the localized confining clay beds in the area (California Department of Water Resources 2004). In the Project Area vicinity, water levels range from approximately 40 to 100 feet (U.S. Geological Survey 2018).

In general, groundwater beneath the basin is considered unusable for domestic and irrigation purposes without treatment. Groundwater in some areas of the basin has been reported to have higher than recommended levels of fluoride and boron (California Department of Water Resources 2004).

3.8.2 Environmental Consequences

3.8.2.1 No Action Alternative

Under the No Action Alternative, CBP would not conduct mechanical removal or herbicide treatment of vegetation within the Project Area. No impacts to groundwater resources would occur under this alternative.

3.8.2.2 Proposed Action Alternative

Under the Proposed Action Alternative, CBP would conduct mechanical removal of vegetation with supplemental herbicide application occurring four times per year within

the Project Area. The recharge potential of the Imperial Valley Groundwater Basin would not change as a result of the Proposed Action. The application of herbicides within the Project Area could result in leaching through soils into the groundwater. BMPs outlined in **Sections 5.5 and 5.6** would limit the potential adverse impacts on groundwater resources.

Leaching potential of herbicides can be determined considering three physical properties in combination with site conditions such as climate and geology. The three physical properties are the following:

- **Persistence:** The length of time a chemical stays active. It is measured by its half-life. The longer the half-life of a chemical, the more persistent it is. The half-life is affected by many variables, including sunlight, microorganisms, and chemical degradation.
- **Soil Adsorption:** The tendency of a chemical to bind soil particles. Soil absorption is expressed as $K(oc) = \text{concentration absorbed}/\text{concentration dissolved}/\text{percent organic carbon in soil}$.
- **Solubility:** The tendency of a chemical to dissolve in water. Solubility is expressed as the amount of a chemical dissolved in a known amount of water measured in milligram/l unit (parts per million).

Herbicides have to be relatively persistent in order to have potential for leaching (non-persistent herbicides do not stay active long enough to create a risk). If an herbicide has a high soil adsorption, it is more likely to run off with soil movement. If it has low soil adsorption, it is more likely to leach down through the soil. Even if an herbicide has leaching potential, the likelihood of it reaching a water body also depends on site characteristics such as climate and geology.

Application technique can also have a slight impact on leaching and runoff potential. Applications that are applied to an area (broadcast and aerial techniques) tend to also have herbicide applied to soils and are more likely to leach than techniques that apply herbicide to the plant only (spot or localized techniques).

Under the Proposed Action, mechanical removal practices would reduce the quantities of herbicide needed for subsequent control, due to the reduction in unwanted vegetation masses needing treatment. Re-sprouting species would require a series of follow-up applications of herbicide both within the initial removal period and in subsequent years to be fully eliminated.

Imperial County receives low levels of precipitation, approximately three inches per year (U.S. Climate Data 2018). Due to the low levels of precipitation as well as the reduced quantity of herbicide needed after mechanical removal, the potential for herbicide leaching into the groundwater is limited. Overall, the Proposed Action would result in short-term negligible, indirect adverse impacts to groundwater. Current aquifer conditions are likely to continue the same in the future in terms of aquifer recharge and water quality.

3.8.2.3 Alternative 3: Mechanical Removal Only

Under Alternative 3, only the mechanical removal of vegetation as described under Alternative 2 would be conducted. Impacts to groundwater resources under this alternative would be less than determined under Alternative 2 because Alternative 3 does not include herbicide application. Under Alternative 3, negligible, if any, adverse impacts to groundwater may occur. The recharge potential of the Imperial Valley Groundwater Basin would not change as a result of Alternative 3.

3.9 HAZARDOUS MATERIALS AND WASTE MANAGEMENT

3.9.1 *Affected Environment*

USBP and its contractors currently transport, handle, use, generate, and dispose of various types and quantities of hazardous substances, petroleum products, and hazardous and petroleum wastes as a result of conducting activities, such as tactical infrastructure maintenance and repair, in the Project Area vicinity. The primary hazardous substances, petroleum products, and hazardous and petroleum wastes are used for or generated by vehicles and equipment associated with these activities. Some of these materials include motor oil, antifreeze, hydraulic oils, lubricants, and liquid fuels (diesel and gasoline).

The Project Area is located adjacent to agricultural and industrial use lands, on which hazardous substances, petroleum products, and hazardous and petroleum wastes are stored, transported, handled, used, or generated from the miscellaneous activities that take place on these lands (California EPA 2018). Hazardous substances and petroleum products that could be present in the Project Area vicinity from adjacent land uses include pesticides, herbicides, petroleum products and hazardous substances associated with fuels, solvents, and cleaning products.

A review of the California Department of Toxic Substances database of environmental cleanup areas and hazardous waste permitted facilities indicates that there are no known sites within 5 miles of the Project Area (California Department of Toxic Substances Control 2018).

All hazardous substances, petroleum products, and hazardous and petroleum wastes associated with USBP and CBP activities are stored at various USBP or contractor maintenance shops, and are managed in accordance with each group's respective hazardous materials standard operating procedures. The hazardous and petroleum wastes are recycled or disposed of offsite in accordance with Federal, state, and local regulations.

3.9.2 *Environmental Consequences*

3.9.2.1 No Action Alternative

Under the No Action Alternative, CBP would not conduct mechanical removal or herbicide treatment of vegetation within the Project Area. No impacts related to hazardous materials and waste management would occur under this alternative as no changes to existing conditions in the Project Area would occur.

3.9.2.2 Proposed Action Alternative

Under the Proposed Action Alternative, CBP would conduct mechanical removal of vegetation with supplemental herbicide application occurring four times per year within the Project Area. Under this alternative, herbicide application could result in accidental exposure to hazardous compounds (herbicides, carriers, dyes, and adjuvants). A common herbicide is Glyphosate, which is a non-selective systemic herbicide that is applied directly to plant foliage. Exposure to common herbicides could occur from being accidentally sprayed, accidentally entering areas too soon after treatment, ingesting food exposed to herbicides within 72 hours of application, drinking contaminated water, or accidental exposure to downhill drift. However, Glyphosate is known to have poor absorption rates through human skin (National Pesticide Information Center 2018).

Short-term effects of excessive exposure to herbicides include nausea, dizziness, or reversible abnormalities of the nervous system (reversible neuropathy). In extreme cases of prolonged, repeated, and excessive exposure (resulting from careless and/or negligent work habits), long-term health problems can result, including: organ damage, immune system damage, permanent nervous system damage, production of inheritable mutations, damage to developing offspring, and reduction of reproductive success (National Pesticide Information Center 2018).

Occupational exposure to herbicides varies with the method of application. The greatest risk occurs when the worker must directly handle and/or mix chemicals. Spot and localized herbicide applications including use of backpack sprayers, aerial mixers/loaders, and stem injection require the most hands-on use of herbicides and, therefore, carry the greatest risk of exposure (and require the greatest amount of worker precaution and use of safety equipment, such as respirators). Under all application categories, workers can be exposed to herbicides from accidental spills, splashing, leaking equipment, contact with the spray, or by entering treated areas. Exposure can occur either through skin or through inhalation. Adherence to operational safety guidelines, use of protective clothing, equipment checks, and personal hygiene can prevent incidents from occurring. BMPs outlined in **Section 5.5** would ensure that no adverse effect would occur from using hazardous materials.

Misapplications and spills are caused by failure of the applicator to follow label instructions and restrictions and by applicator carelessness. Most experts agree that misapplications and spills are the leading cause of impacts on non-target resources. The impacts of herbicide spills would depend on the persistence and mobility of the spill, as well as on how quickly and thoroughly a spill is cleaned up. BMPs outlined in **Section 5.5** would ensure that no short- or long-term adverse effects would occur from misapplication or spills. The Proposed Action would result in potential negligible short-term indirect adverse impacts related to hazardous materials and waste management.

3.9.2.3 Alternative 3: Mechanical Removal Only

Under Alternative 3, only the mechanical removal of vegetation as described under Alternative 2 would be conducted. Impacts under this alternative would be less than under Alternative 2, because Alternative 3 does not include herbicide application.

Negligible adverse impacts from hazardous materials and waste have the potential to occur under Alternative 3.

3.10 SURFACE WATERS AND WATERS OF THE UNITED STATES

3.10.1 Affected Environment

3.10.1.1 Regulatory Framework

Surface Waters

Surface water includes natural, modified, and constructed water confinement and conveyance features that may or may not have a defined channel and discernable water flows. These features are generally classified as streams, springs, wetlands, natural and artificial impoundments (ponds and lakes), and constructed drainage canals and ditches.

The Clean Water Act (CWA; 33 USC § 1251 et. seq., as amended) establishes Federal limits on the amounts of specific pollutants that are discharged to surface waters to restore and maintain the chemical, physical, and biological integrity of the water.

The term “Waters of the United States” has a broad meaning under the CWA and incorporates deepwater aquatic habitats and special aquatic habitats, including wetlands (discussed in the following paragraph). Jurisdiction over the Waters of the United States is addressed by the U.S. EPA and USACE. These agencies assert jurisdiction over traditional navigable waters and their relatively permanent tributaries, and the wetlands that are adjacent to these waters (U.S. EPA 2017).

USACE and RWQCB jurisdictional waters are regulated by Federal, state, and local governments under a no-net-loss policy and all impacts are considered significant, and should be avoided to the greatest extent possible. Unavoidable and authorized impacts would require mitigation through habitat establishment (i.e., creation), enhancement, and/or preservation as determined by a qualified restoration biologist in consultation with the regulatory agencies during the permitting process.

There is a specific exception in the CWA regulations for mowing:

The term discharge of dredged material does not include the following: activities that involve only the cutting or removing of vegetation above the ground (i.e., mowing, rotary cutting, and chain-sawing) where the activity neither substantially disturbs the root system nor involves mechanized pushing, dragging, or other similar activities that redeposit excavated soil material. (33 CFR Part 323.2(e)(2)(ii)).

Wetlands

Wetlands generally include “swamps, marshes, bogs, and similar areas” (33 CFR Part 328). The USACE defines wetlands as “those areas that are inundated or saturated with ground or surface water at a frequency and duration sufficient to support, and that under

normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions.

Wetlands are protected as a subset of the Waters of the U.S. under Section 404 of the CWA. Section 404 of the CWA authorizes the USACE to issue permits for the discharge of dredged or fill materials into the Waters of the United States, including wetlands. In addition, Section 404 of the CWA also grants states with sufficient resources the right to assume these responsibilities. Section 401 of the CWA gives the state board and regional boards the authority to regulate through water quality certification any proposed federally permitted activity that could result in a discharge to water bodies, including wetlands. The state may issue certification, with or without conditions, or deny certification for activities that might result in a discharge to water bodies (U.S. EPA 2018). Point source discharges from pesticides to surface waters are covered through adopted Statewide General National Pollutant Discharge Elimination System Permit for Residual Aquatic Pesticide Discharges adopted by the State Water Resources Control Board. Application for coverage under this general permit will include an Aquatic Pesticide Application Plan.

EO 11990, *Protection of Wetlands*, requires that Federal agencies provide leadership and take actions to minimize or avoid the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands. Federal agencies are to avoid new construction in wetlands, unless the agency finds there is no practicable alternative to construction in the wetland, and the proposed construction incorporates all possible measures to limit harm to the wetland.

Non-wetland Jurisdictional Water

The USACE also requires the delineation of non-wetland jurisdictional waters. These waters must have strong hydrology indicators such as the presence of seasonal flows and an ordinary high watermark. Areas delineated as non-wetland jurisdictional waters may lack wetland vegetation or hydric soil characteristics. These types of jurisdictional waters are delineated by the lateral and upstream/downstream extent of the ordinary high watermark of the particular drainage or depression.

California Regional Water Quality Control Board

The RWQCB is the regional agency responsible for protecting water quality in California. The jurisdiction of this agency includes all waters of the state and all Waters of the United States as mandated by both the Federal CWA and the California Porter-Cologne Water Quality Control Act. Dredging or filling within “isolated” waters is considered waste discharge regulated by the RWQCB under Porter-Cologne authorities.

3.10.1.2 Surface Waters

Watershed

The Project Area is located within the Salton Sea Transboundary Watershed Hydrologic Unit of the Colorado River Basin Region. This hydrologic unit encompasses one-third of the region (about 8,360 square miles) and contains five (out of a total of six) of the

Colorado River Basin Region's impaired surface waterbodies. The watershed has been identified as a Category I (impaired) Watershed under the 1997 California Unified Watershed Assessment. Major waterbodies in the watershed include the Salton Sea, the New River, the Alamo River, and the Imperial Valley Agricultural Drains and the Coachella Valley Stormwater Channel (California Water Boards 2018).

The Alamo River originates approximately two miles south of the U.S./Mexico border, and flows northward across the border for about 50 miles until it empties into the Salton Sea. The Alamo River is dominated by agricultural return flows from Imperial Valley. It also carries treated wastewater from point sources in Imperial Valley (California Water Boards 2018).

Wetland

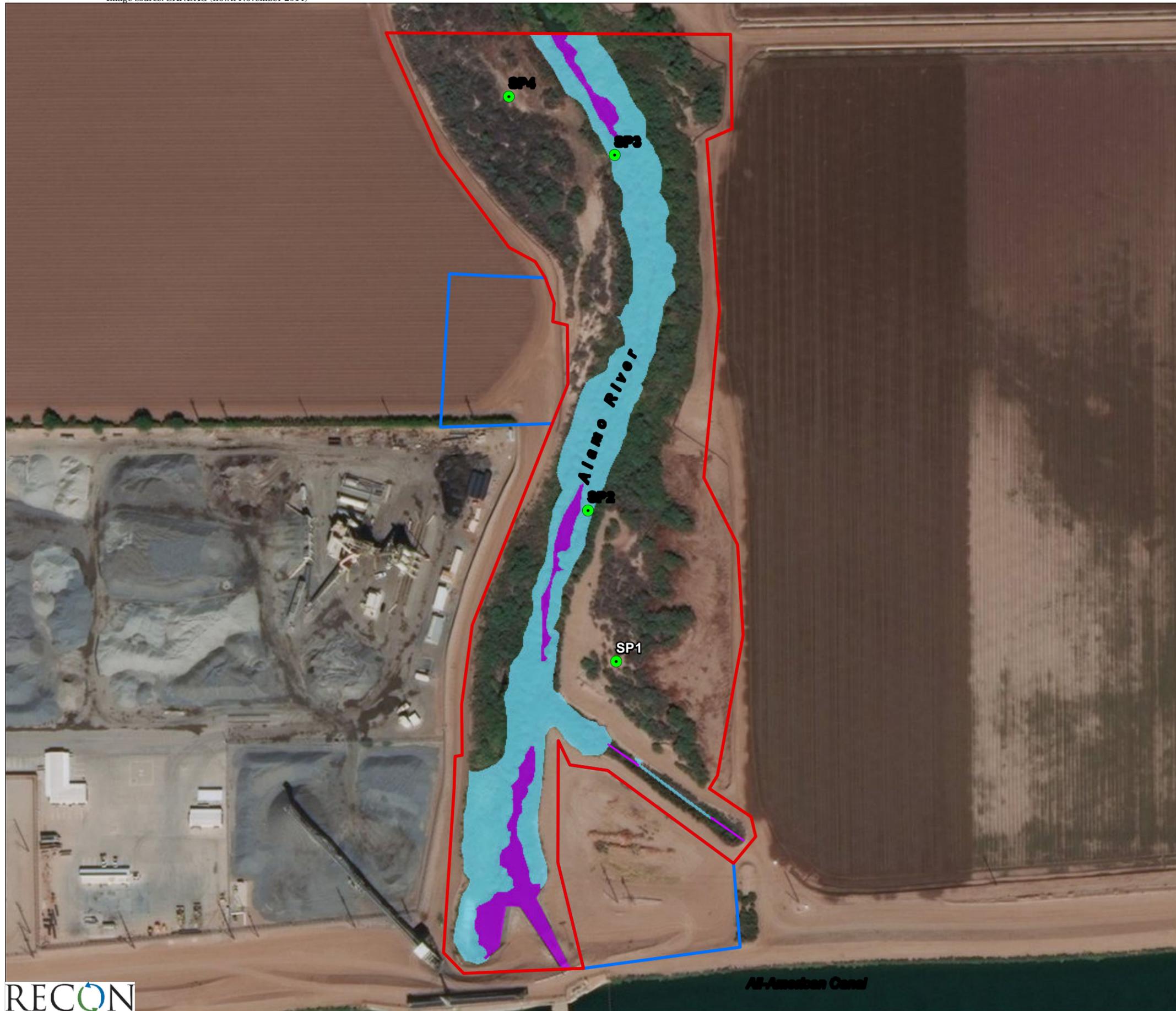
A wetland delineation was performed on the approximately 12.93-acre Project Area. Methods for delineating wetlands followed guidelines set forth by the USACE (RECON 2018c).

USACE and RWQCB jurisdictional waters within the Project Area total 3.21 acres and 1,976 linear feet. Federal and state CWA 404/401 jurisdictions are completely coincident at this location. Figure 5 shows the locations of the jurisdictional waters identified on-site for each agency jurisdiction. The acreage of jurisdictional waters of each jurisdiction is provided in Table 12.

Table 12		
Existing Jurisdictional Waters within the Project Area		
Jurisdictional Waters	Acres	Linear Feet
USACE/RWQCB Jurisdiction		
Wetland Waters	2.72	369
Non-wetland Waters	0.49	1,607
Total	3.21	1,976
USACE = U.S. Army Corps of Engineers; RWQCB = Regional Water Quality Control Board		

Non-wetland waters comprise the unvegetated perennial river channel flowing north through the Project Area and were classified as open water during vegetation mapping (see Figure 4) a direct hydrologic connectivity to a downstream traditional navigable water (Salton Sea). Federal wetland jurisdictional waters within the Project Area include those areas dominated by common reed and southern cattail vegetation.

RWQCB jurisdictional waters in the Project Area are coincident with Federal jurisdiction and include wetland and non-wetland Waters of the United States (see Figure 5). RWQCB jurisdictional waters consist of the Alamo River riverbed and associated common reed and southern cattail vegetation.



- Project Area
- Staging Areas
- Sampling Point
- Jurisdictional Resources**
- USACE/RWQCB Wetland Waters
- USACE/RWQCB Non-wetland Waters



FIGURE 5
Project Area Jurisdictional Resources

3.10.2 Environmental Consequences

3.10.2.1 No Action Alternative

Under the No Action Alternative, CBP would not conduct mechanical removal or herbicide treatment of vegetation within the Project Area. No impacts to surface water or wetland resources would occur under this alternative.

3.10.2.2 Proposed Action Alternative

Under the Proposed Action Alternative, CBP would conduct mechanical removal of vegetation with supplemental herbicide application occurring four times per year within the Project Area. These activities would result in removal of common reed and southern cattail vegetation.

USACE and RWQCB jurisdictional waters (wetland and non-wetland) that may be adversely affected by the Proposed Action are 3.21 acres (1,976 linear feet). Short-term, negligible to minor, direct, adverse impacts would occur to USACE and RWQCB jurisdictional waters from mechanical removal of vegetation and the application of herbicides within the Project Area.

Proper maintenance of equipment and the use of BMPs during construction activities would minimize the possibility of accidental spills of petroleum, oil, and lubricants that, if they occurred, could affect surface water. The application of herbicides as part of the Proposed Action would directly apply the herbicide to the plant, limiting the potential for runoff into jurisdictional waters. Standard BMPs listed in **Section 5.6** would be adopted to maintain water quality in jurisdictional waters and would minimize the potential for short- or long-term, direct, or indirect adverse effects.

As the Proposed Action Alternative does not propose dredge or fill and qualifies under a mowing exemption, USACE 404 CWA and RWQCB 401 WQC permitting would not be required. However, due to the potential use of aquatic herbicide near surface waters, a 402 National Pollutant Discharge Elimination System permit and associated Aquatic Pesticide Application Plan may be required.

3.10.2.3 Alternative 3: Mechanical Removal Only

Under Alternative 3, only the mechanical removal of vegetation as described under Alternative 2 would be conducted. Impacts to jurisdictional waters under this alternative would be less than determined under Alternative 2 because Alternative 3 does not include herbicide application. Under Alternative 3, short-term, negligible, direct adverse impacts to jurisdictional waters would occur.

4.0 CUMULATIVE IMPACTS AND OTHER ADVERSE EFFECTS

NEPA regulations define cumulative impacts as an “impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions” (40 CFR 1508.7). Cumulative impacts can result from individually minor, but collectively significant, 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 activities that are proposed, 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 activities that affected, affect, or will affect any part of the human or biological environment impacted by the Proposed Action. Activities were identified for this analysis by reviewing CBP documents, news/press releases and published media reports, as well as Imperial County Planning and Development, and City of Calexico Planning Department reviews.

For the purposes of the analysis in this section, consideration was given to cumulative impacts of vegetation control projects in southern Imperial County and CBP maintenance and repair of tactical infrastructure activities in the Project Area vicinity. The tactical infrastructure maintenance and repair activities include those addressed in previous NEPA documents and activities that were covered by a DHS Secretary’s waiver. The maintenance and repair of tactical infrastructure is unique to CBP; therefore, these activities are unlikely to be subjected to the compounding activity of other entities, particularly because such activities commonly occur in isolated areas and on an infrequent basis. The geographic scope of the analysis varies by resource area.

4.1 PAST, PRESENT, AND FORESEEABLE FUTURE ACTIONS

Past and present actions are those vegetation control activities and CBP maintenance and repair actions that occurred within the geographic scope of cumulative effects prior to the development of this EA or are concurrently being undertaken by way of a DHS Secretary’s waiver or separate NEPA.

Past actions have shaped the current environmental conditions in close proximity (i.e., within several miles) of the Alamo River. Therefore, the effects of identified past actions are now part of the existing environment, and are generally included in the affected environment described in **Section 3.0**. Present actions consist of ongoing activities in the immediate vicinity of existing tactical infrastructure performed by CBP as well as activities performed by other agencies, and the current ad hoc, as-needed approach to the maintenance and repair of the infrastructure. Future actions consist of reasonably foreseeable future vegetation control activities identified in this EA and the maintenance and repair of current tactical infrastructure and future additional tactical infrastructure that could be required along the U.S./Mexico border to address future border security needs.

4.1.1 U.S. CUSTOMS AND BORDER PROTECTION PROJECTS

USBP has been conducting law enforcement actions along the U.S./Mexico border since its inception in 1924, and has continually transformed its methods as new missions, CBVs modes of operations, 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 hundreds of acres of resources in southern California, including the climate and landscapes that support native plants and animals, as well as socioeconomic conditions in border communities.

All CBP actions have been in support of the agency's mission to gain and maintain control of U.S. borders. Infrastructure projects have supported the operational methods determined to be the most effective approach to achieving the agency's mission. Each of these projects has been compliant with NEPA, or subject to a waiver of NEPA and other environmental laws by the Secretary of DHS pursuant to Section 102(c) of the Illegal Immigration Reform and Immigrant Responsibility Act. Measures to avoid, minimize, or mitigate for the adverse effects on the human and natural environment have been developed and implemented on a project-specific basis. With continued funding and implementation of BMPs developed as part of past, ongoing, and future actions, including environmental education and training of its agents, use of biological, water quality and archaeological monitors, and restoration activities, the direct impacts of these projects have been and would be prevented or minimized.

4.1.2 PRIVATE/OTHER AGENCY/ORGANIZATION PROJECTS

Based on review of the Imperial County Planning and Development Department and City of Calexico Planning Department websites, no reasonably foreseeable projects are planned in the Project Area or vicinity.

Past private, agency, or other organization projects within 2 miles of the Project Area include industrial development to the west and northwest, land port of entry along the United States/Mexico border to the west, and agricultural use to the north and east.

4.2 CUMULATIVE IMPACTS ANALYSIS

Impacts on each resource can vary in degree or magnitude from a slightly noticeable change to a total change in the environment. For the purpose of this analysis, the intensity of impacts will be classified as negligible, minor, moderate, or major. These intensity thresholds were previously defined in **Section 3.0**.

4.2.1 Aesthetics and Visual Resources

Actions that cause the permanent loss of the characteristics that make an area visually unique or sensitive would be considered to cause a major impact. No major impacts on visual resources would occur from implementing the Proposed Action, due in part to the nature of Proposed Action (i.e., vegetation removal and herbicide treatment). Vegetation within the Project Area consists primarily of non-native invasive plant species that provide minimal aesthetic value. In addition, vegetation removal (mechanical) has been conducted in the Project Area in the past, with no adverse impacts to aesthetics or visual

resources because there are no sensitive land uses in the vicinity of the Project Area. The Proposed Action, in combination with past, present, and reasonably foreseeable future actions, would not result in cumulative impacts to aesthetics or visual resources.

4.2.2 Air Quality

Imperial County has been designated as in nonattainment for PM₁₀ and PM_{2.5}. Annual criteria pollutant emissions associated with the Proposed Action would be below the General Conformity *de minimis* levels and would not result in an adverse air quality impact. Vegetation removal (mechanical) has been conducted in the Project Area in the past, with no adverse impacts to local area air quality. The minimal ongoing and future actions in the Project Area vicinity would not likely contribute to air quality issues in the area.

The Proposed Action includes BMPs to reduce the potential effects of PM₁₀ and PM_{2.5} emissions during mechanical removal of vegetation. The Proposed Action, in combination with past, present, and reasonably foreseeable future actions, would not result in cumulative impacts to air quality.

4.2.3 Biological Resources

Cumulative development contributes to an incremental reduction in the amount and connectivity of existing natural communities and wildlife habitat. BMPs in **Sections 5.2 to 5.6** recommended to mitigate the Proposed Action's potential impacts on sensitive natural resources would address the Project's contribution to cumulative impacts. Some species may disperse through the habitat within the Project Area, but most wildlife presently using the site do so as part of their normal movements for foraging, mating, and caring for young. However, given the limited nature of potential impacts discussed below, cumulative impacts would be considered negligible to minor.

4.2.3.1 Vegetation Communities and Non-Native Species

Overall, mechanical removal of vegetation would result in a minor adverse effect to native vegetation, whereas the permanent removal of vegetation dominated by non-native, invasive species would have a moderate beneficial effect. Therefore, cumulative impacts on vegetation would be considered negligible to minor.

4.2.3.2 Wildlife

Wildlife would likely avoid the Project Area during mechanical removal and herbicide treatment activities, minimizing potential impacts. The Proposed Action would likely result in negligible long-term adverse effects to wildlife. General wildlife species observed or potentially present within the Project Area are common, and suitable habitat of various types exists in relative abundance in the vicinity of the Project Area. Therefore, the Proposed Action, in combination with past, present, and reasonably foreseeable future projects in the vicinity would result in negligible cumulative impacts on general wildlife.

4.2.3.3 Migratory Birds

A major impact on species protected by the MBTA would occur if a substantial reduction in ecological processes, communities, or populations that would threaten the long-term

viability of a species or result in the substantial loss of a sensitive community that could not be offset or otherwise compensated. A variety of bird species protected by the MBTA is expected to nest within the Project Area. Potential effects to these species are expected to be short- and long-term, negligible to moderate, direct and indirect, adverse effects. The mechanical removal and herbicide treatment of vegetation within the Project Area would remove nesting habitat for many MBTA bird species. Measures outlined in **Section 5.3** have been incorporated to minimize impacts to nesting MBTA bird species. The Proposed Action Alternative, in combination with the past, present, and reasonably foreseeable future projects in the vicinity, would result in negligible cumulative impacts on migratory birds.

4.2.3.4 Federal-listed Species

A major impact on Federal-listed species would occur if a substantial reduction in ecological processes, communities, or populations would occur under the Proposed Action that would threaten the long-term viability of a species or result in the substantial loss of a sensitive community that could not be offset or otherwise compensated.

The permanent removal and herbicide treatment of approximately 2.72 acres of potentially suitable habitat (2.68 acre of common reed and 0.04 acre of cattail) for the Yuma Ridgeway's rail within the Project Area may have potential for short- and long-term, minor, direct, and indirect adverse impacts to suitable nesting and foraging habitat. These effects are not expected to exceed the moderate effect threshold because the Project Area is small compared to the available habitat within Imperial County, potential habitat is isolated, habitat would not likely provide sufficient breeding habitat, and this species is not known to occupy the Project Area (based on survey results). Therefore, the Proposed Action Alternative, in combination with the past, present, and reasonably foreseeable future projects in the vicinity, would result in minor cumulative impacts to the Yuma Ridgeway's rail. No cumulative impacts to Yuma Ridgeway's rail Critical Habitat would occur as there is none within or adjacent to the Project Area.

4.2.4 Cultural Resources

The Proposed Action would not adversely impact any known significant cultural resources or historic properties. In addition, the likelihood of subsurface cultural resources to occur within the Project Area is low. Therefore, the Proposed Action, in combination with past, present, and reasonably foreseeable future projects in the vicinity would not result in cumulative impacts to cultural resources or historic properties.

4.2.5 Floodplains

The natural floodplain of the Alamo River has been altered by agricultural activities, development activities, and the construction of nearby canals. The Proposed Action does not involve new development activities and would have no direct effects on the Project Area floodplains. The Proposed Action would not result in adverse impacts to the floodplain, and minor long-term beneficial impacts would occur due to improved water flow from vegetation removal. The Proposed Action would include BMPs to reduce the potential for herbicide leaching into the floodplain. The Proposed Action, in combination with past,

present, and reasonably foreseeable future projects in the vicinity would not result in cumulative impacts to floodplains.

4.2.6 Geology and Soils

The Proposed Action would result in negligible short-term adverse impacts on soils in the Project Area during vegetation removal and herbicide application. No changes to the geology of the Project Area would occur. Vegetation would be mulched on-site and spread evenly, which would serve to protect soils from erosion. Implementation of appropriate BMPs would further minimize impacts on soils. The Proposed Action, in combination with past, present, and reasonably foreseeable future projects in the vicinity would result in negligible cumulative impacts soils in the Project Area.

4.2.7 Groundwater

The Proposed Action would result in short-term negligible, indirect adverse impacts to groundwater, primarily due to the low levels of precipitation as well as the reduced quantity of herbicide needed after mechanical removal of vegetation. The potential for herbicide leaching into the groundwater is limited. The implementation of BMPs would reduce the potential for herbicide leaching into groundwater to occur.

In general, groundwater beneath the basin is considered unusable for domestic and irrigation purposes without treatment. Groundwater in some areas of the basin has been reported to have higher than recommended levels of fluoride and boron (California Department of Water Resources 2004). Therefore, the Proposed Action, in combination with past, present, and reasonably foreseeable future projects in the vicinity would result in negligible cumulative impacts on groundwater.

4.2.8 Hazardous Materials and Waste Management

The Proposed Action includes measures to reduce the potential effects of pollutants associated with the handling of hazardous materials. The Proposed Action, in combination with past, present, and reasonably foreseeable future projects in the vicinity would result in negligible cumulative impacts related to hazardous materials and waste management in the Project Area.

4.2.9 Surface Waters and Waters of the United States

Short-term, negligible to minor, direct, adverse impacts to 3.21 acres (1,976 linear feet) of USACE and RWQCB jurisdictional waters from mechanical removal of vegetation and the application of herbicides within the Project Area would occur. The application of herbicides as part of the Proposed Action would directly apply the herbicide to the plant, limiting the potential for runoff into jurisdictional waters. Standard BMPs listed in **Section 5.5** would be adopted to maintain water quality in jurisdictional waters and would minimize the potential for adverse effects. Therefore, The Proposed Action, in combination with past, present, and reasonably foreseeable future projects in the vicinity would result in negligible to minor cumulative impacts on surface waters and Waters of the United States.

5.0 SUMMARY OF MITIGATION MEASURES AND BEST MANAGEMENT PRACTICES

It is CBP's policy to reduce impacts through a sequence of avoidance, minimization, mitigation, and compensation. This chapter describes those measures that would be implemented to avoid, reduce, eliminate, or mitigate potential adverse impacts on the human and natural environment. Many of these measures have been incorporated as standard operating procedures by CBP on past projects. BMPs are presented for each resource category potentially affected.

5.1 PROJECT PLANNING/DESIGN-GENERAL CONSTRUCTION

CBP would ensure that all construction would follow DHS Instruction Manual 025-01-001-01 Sustainable Practices Guidance Manual (August 12, 2014). CBP would incorporate BMPs relating to Project Area delineation, water sources, waste management, and site restoration into Project planning and implementation for construction and maintenance.

5.2 GENERAL CONSTRUCTION ACTIVITIES

Within the designated disturbance area, CBP would minimize the area to be disturbed by limiting deliveries of materials and equipment to only those needed for effective Project implementation.

CBP would avoid contamination of ground and surface waters by storing any water that has been contaminated with construction materials, oils, equipment residue, etc., in closed containers onsite until removed for disposal. This wash water is toxic to wildlife. Storage tanks must have proper air space (to avoid rainfall-induced overtopping), be on-ground containers, and be located in upland areas.

In the event that CBP contaminates soil or water resources as a result of the Proposed Action, the contaminated soil or water would be remediated as per DHS requirements.

CBP would place drip pans under parked equipment and establish containment zones when refueling vehicles or equipment.

5.3 BIOLOGICAL RESOURCES

The Proposed Action includes the following measures designed to avoid and minimize direct and indirect harm or injury to Federal-listed species and designated critical habitat.

5.3.1 General Measures

The following measures will be employed to avoid and/or minimize effects on biological resources:

- Prior to vegetation removal activities occurring during the bird breeding season (March 1–September 30), a qualified biologist must survey the area for nesting and migratory birds, including threatened and endangered species. This shall include burrowing and ground-nesting species in addition to those nesting in vegetation. If any

active nests (containing eggs or young) are found, an appropriately sized buffer area must be avoided until the young birds fledge.

- Prior to the initiation of Project activities, all Project Areas shall be demarcated in coordination with the biological monitor to ensure that adverse effects to biological resources are minimized and that no work is performed outside the designated boundaries.
- Mechanical vegetation treatment and re-treatment should occur between October 1 and February 28, to avoid any impacts to migratory birds during the breeding season. A biological monitor will conduct an environmental training program for all crew members working on the Project and will perform site visits to ensure compliance with BMPs and monitor vegetation removal activities.
- Vehicles and equipment shall be operated in existing and designated access areas, and staging of all equipment shall occur in designated areas of developed/disturbed or agricultural land.
- The contractor shall pick up and remove trash and debris from the job site daily.
- Appropriate BMPs will be implemented and would include but not be restricted to: installation of measures to minimize erosion and siltation associated with vegetation removal activities; refueling of machinery following accepted guidelines and all vehicles equipped with drip pans during storage to contain minor spills and drips; and preparation of a Spill Prevention, Containment, and Countermeasures Plan prior to the start of work.
- CBP would not, for any length of time, permit any pets inside the Project Area or adjacent native habitats. This BMP does not pertain to law enforcement animals.

5.3.2 Species-specific Measures

The following measures will be employed to avoid and/or minimize effects on Yuma Ridgway's rail.

- Mechanical vegetation treatment and herbicide treatment will generally occur between October 1 and February 28, to avoid any impacts to migratory birds during the breeding season.
- If vegetation removal activities occur during the bird breeding season (March 1–September 30), a qualified biologist must survey the area for nesting and migratory birds, including federally threatened and endangered species. This shall include burrowing and ground-nesting species in addition to those nesting in vegetation. If any active nests are found, an appropriately sized buffer area must be avoided until the young birds fledge.
- A biological monitor will conduct an environmental training program for all crew working on the project and will perform site visits to ensure compliance with BMPs and monitor vegetation removal activities.

- Prior to the initiation of Project activities, all project areas shall be demarcated in coordination with a biological monitor to ensure that adverse effects to biological resources are minimized and that no work is performed outside the designated boundaries.
- Vehicles and equipment shall be operated in existing and designated access areas, and staging of all equipment shall occur in designated areas of developed/disturbed or agricultural land.
- The contractor shall pick up and remove trash and debris from the job site daily.
- Appropriate BMPs will be implemented and would include but not be restricted to: installation of measures to minimize erosion and siltation associated with vegetation removal activities; refueling of machinery will follow accepted guidelines and all vehicles will be equipped with drip pans during storage to contain minor spills and drips; and Spill Prevention, Containment, and Countermeasures Plan will be prepared prior to the start of work.
- CBP would not, for any length of time, permit any pets inside the Project Area or adjacent native habitats. This BMP does not pertain to law enforcement animals.
- Prior to any maintenance activities associated with vegetation control, a focused survey shall be conducted to confirm the presence or absence of Yuma Ridgway's rail. If Yuma Ridgway's rail is found within the Project Area, no removal of habitat shall take place within 500 feet of occupied habitat.
- A qualified biological monitor shall be present during all vegetation removal activities to ensure avoidance and effects to sensitive species and critical habitats on-site.

5.4 CULTURAL RESOURCES

Should any archaeological artifacts be found during implementation of the Proposed Action, the Standard Operating Procedure for Post-Review Discovery of Cultural Materials or Human Remains shall be implemented. Below are the procedures for inadvertent discovery of cultural materials and of human remains.

Scenario I: Inadvertent discovery of cultural materials

A. Program Management Office (PMO)

1. Goals: Understand the procedures when cultural materials are inadvertently discovered so that the materials can be adequately protected.
2. Tasks:
 - a. Immediately cease all ground-disturbing activities when possible historical artifacts and features, human remains, or burials are observed or encountered and secure the site.
 - b. CBP Personnel will report any observation or discoveries immediately to the PMO and they will in turn notify Energy and Environmental Management Division (EEMD) within

24 hours of the discovery. CBP Personnel will await instructions from EEMD on proceeding with any activities.

- c. Secure the discovery location(s). Examine the location of the discovery to ensure that it has been properly secured. Take appropriate measures to further secure location if needed.
- d. Coordinate with EEMD on where activities can resume and give direction to CBP Personnel and the construction crew regarding locations where activities may continue and any restrictions or special requirements.

B. EEMD

1. Goals: Ensure that when a discovery occurs, procedures are followed that will protect and properly treat the discovery.
2. Tasks:
 - a. Ensure the site location and materials are properly protected.
 - b. Provide the PMO with necessary information so that they can be protected/avoided, etc.
 - c. Notify the appropriate State and Tribal Preservation Officers, Indian Tribe(s), and any impacted Federal agency in writing of the discovery within two business days.
 - d. Coordinate with consulting parties to ensure all work is carried in accordance with National Historic Preservation Act and Native American Graves Protection and Repatriation Act (NAGPRA), that all discoveries are accounted for, and all artifacts are properly curated in accordance with CBP's curation standard operating procedure.

Scenario II: Inadvertent Discovery of Human Remains

A. PMO

1. Goals: Understand the procedures when human remains are inadvertently discovered so that the remains can be adequately protected.
2. Tasks:
 - a. Immediately cease all ground-disturbing activities when possible human remains or burials are observed or encountered and secure the site.
 - b. CBP Personnel will report any observation or discoveries immediately to the PMO and they will in turn notify EEMD within 24 hours of the discovery. They will await instructions from EEMD on proceeding with any activities.
 - c. Notify state police within 24 hours of the discovery and follow their direction for securing the site pending examination of the site by state or local law enforcement and the medical examiner. Police and a medical examiner will determine if the remains and any associated objects constitute a crime scene or a historical burial. Their findings will be communicated to EEMD by the PMO within 24 hours of being communicated to the PMO.

- d. Secure the discovery location(s). Examine the location of the discovery to ensure that it has been properly secured. Take appropriate measures to further secure location if needed.
- e. Coordinate with EEMD, state police, and the coroner on where activities can resume and give direction to the CBP Personnel and construction crew regarding locations where activities may continue and any restrictions or special requirements.

B. EEMD

1. Goals: Ensure that when human remains are discovered, procedures are followed that will protect and properly treat the discovery.
2. Tasks:
 - a. Ensure the site location and materials are properly protected.
 - b. Provide PMO with necessary information so that they can be protected/avoided, etc.
 - c. Notify the appropriate State and Tribal Preservation Officer, Indian Tribe(s), and any impacted Federal agency in writing of the discovery within two business days. EEMD shall follow up this initial notification with written notification regarding the police and medical examiner's findings within two business days of EEMD receipt.
 - d. If human remains and associated objects are determined to be historic and there are possible NAGPRA concerns, EEMD will notify the Archaeological Assistance Division of National Park Service.
 - e. Coordinate with consulting parties to ensure all work is carried in accordance with National Historic Preservation Act and Native American Graves Protection and Repatriation Act, that all discoveries are accounted for, and all artifacts are properly curated in accordance with CBP's curation standard operating procedure.

5.5 HAZARDOUS MATERIALS AND WASTE MANAGEMENT

The following measures will be employed to avoid and/or minimize effects from hazardous materials:

- To minimize potential impacts from hazardous and regulated materials, all fuels, waste oils, and solvents would 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. The refueling of machinery would be completed in accordance with accepted industry and regulatory guidelines, and all vehicles would have drip pans during storage to contain minor spills and drips. Although it is unlikely that a major spill would occur, any spill of reportable quantities would be contained immediately within an earthen dike, and the application of an absorbent (e.g., granular, pillow, sock) would be used to absorb and contain the spill.
- CBP would ensure that all herbicide applicators have received training and are licensed in appropriate application categories.

- CBP would follow all herbicide and material safety data sheet instruction regarding worker safety standards. These include the following:
 - wear appropriate protective equipment;
 - do not eat, drink, or smoke when handling herbicides;
 - avoid spilling herbicides on skin or clothing (promptly change any clothing substantially contaminated by a herbicide);
 - clean and wash protective equipment daily;
 - have ready access to clean water and first aid supplies;
 - have access to emergency medical facilities;
 - observe specified restricted entry intervals; and
 - use self-contained herbicide handling equipment when appropriate and available to reduce worker exposure during herbicide mixing and handling.
- CBP would contain non-hazardous waste materials and other discarded materials, such as construction waste, until removed from the construction and maintenance sites. This would assist in keeping the Project Area and surroundings free of litter and reduce the amount of disturbed area needed for waste storage.
- CBP would minimize site disturbance and avoid attracting predators by promptly removing waste materials, wrappers, and debris from the site. Any waste that must remain more than 12 hours should be properly stored until disposal.
- All waste oil and solvents would be recycled. All non-recyclable hazardous and regulated wastes would be collected, characterized, labeled, stored, transported, and disposed of in accordance with all applicable Federal, state, and local regulations, including proper waste manifesting procedures.
- Solid waste receptacles would be maintained at the construction staging area. Nonhazardous solid waste (trash and waste construction materials) would be collected and deposited in on-site receptacles. Solid waste would be collected and disposed of by a local waste disposal contractor.
- CBP will notify adjacent agricultural land owners of herbicide application dates. Herbicides will not be applied when winds exceed more than 10 miles per hour to avoid herbicide drift into adjacent agricultural fields.
- Herbicides will not be sprayed within 50 feet of adjacent agricultural fields.

5.6 SURFACE WATERS AND WATERS OF THE UNITED STATES

The following measures will be employed to avoid and/or minimize effects to surface waters and Waters of the United States:

- To protect surface waters and Waters of the United States, CBP would comply with all conditions pursuant to Section 401 of the CWA, would prepare required plans and acquire all necessary permits and certifications. All beneficial uses of surface water would be protected with standard BMPs, such as erosion control and water quality protection measures during construction to minimize the potential for impacts to surface

waters and Waters of the United States. CBP would work under the USACE Regional General Permit to remove vegetation from Waters of the United States.

- Take precautions to minimize drift by not applying herbicides when winds exceed more than 10 miles per hour, or a serious rainfall event is imminent.
- Use drift control agents and low volatile formulations, as appropriate, to reduce the drift to non-target species and surface water.
- Ensure the application is done to avoid overspray to maximize uptake within the vegetative material and minimize any input into the river and banks.
- Monitoring ambient temperature during herbicide application to minimize the volatilization of certain chemicals during spray.

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APPENDIX A
Consultation: U.S. Fish and Wildlife Service and Tribal



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

AUG 23 2018

G. Mendel Stewart
Field Supervisor
Carlsbad Fish and Wildlife Office
2177 Salk Avenue, Suite 250
Carlsbad, CA 92008

Subject: Request for Concurrence with the Not Likely to Adversely Affect Determination for the U.S. Customs and Border Protection Alamo River Vegetation Control Project in the Vicinity of Calexico, California

Dear Mr. Stewart:

The Department of Homeland Security, U.S. Customs and Border Protection (CBP) proposes to conduct vegetation control in the Alamo River in Calexico, California. The Proposed Action would implement a combination of minimally intrusive mechanical removal and herbicide treatments in areas where non-native invasive species are prevalent. Vegetation control efforts would occur within a 12.93-acre Action Area. Two staging areas, totaling 2.86 acres, are proposed to be used during project implementation.

To comply with Section 7(a)(2) of the Endangered Species Act (ESA) (50 CFR § 402.13), CBP has assessed the potential effects of the Proposed Action on the one species listed as threatened or endangered under the ESA potentially found in the Action Area: Yuma Ridgway's rail (*Rallus bsoletus [=longirostris] yumanensis*). CBP has determined, through that assessment, that the proposed vegetation control may affect, but is not likely to adversely affect, Yuma Ridgway's rail. No critical habitat for any federally listed species occurs within or adjacent to the Action Area. A copy of the assessment is enclosed.

This letter requests your concurrence that the project is not likely to adversely affect Yuma Ridgway's rail and will have no effect on any other species listed as threatened or endangered and designated critical habitat under the U.S. Fish and Wildlife Service jurisdiction in accordance with Section 7(a) of the ESA.

We appreciate your assistance with this project. If you have any questions or concerns, please contact Mr. John Petrilla by telephone at (949) 643-6385 or by email at john.petrilla@dhs.gov.

Sincerely,

A handwritten signature in black ink that reads "Joseph Zidron".

Joseph Zidron
(A) Real Estate and Environmental Branch Chief
Border Patrol and Air and Marine Program Management Office
U.S. Customs and Border Protection

Enclosure

cc (via email): Mr. Patrick Gower



**Biological Assessment for the Alamo
River Vegetation Control Project**

Prepared for

U.S. Customs & Border Protection
Real Estate and Environmental Services Division
Border Patrol and Air and Marine Program
Management Office
24000 Avila Road, Room 5020
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Attn: John Petrilla

Prepared by

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RECON Number 8815
July 19, 2018

A handwritten signature in black ink, appearing to read "Wendy Loeffler".

Wendy Loeffler, Associate Vice President, Biology

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Acronyms

BA	Biological Assessment
BMP	Best management practice
CBP	U.S. Customs and Border Protection
CBV	cross-border violators
ESA	Endangered Species Act of 1973
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey

1.0 Executive Summary

U.S. Customs and Border Protection (CBP) is proposing to conduct vegetation control in the Alamo River in Calexico, California. This Biological Assessment (BA) describes potential effects to federally listed species and federally designated critical habitat from implementation of the Proposed Action. This includes federally threatened, endangered, or candidate species that are either currently present or have the potential to occur within the project footprint.

The Proposed Action has the potential to affect Yuma Ridgway's rail (*Rallus obsoletus* [=longirostris] *yumanensis*), a federally endangered listed species. Measures to avoid and minimize potential direct and indirect effects to this species are presented in this document.

2.0 Introduction

This BA has been prepared in consideration of the activities associated with the Alamo River Vegetation Control Project (project) located in the vicinity of Calexico, California (Figure 1). The Proposed Action is located approximately 1 mile south of State Route 98 and 30 feet north of the All-American Canal. The Proposed Action area is bordered to the east by irrigated agricultural fields and to the west by an aggregate production facility and irrigated agricultural fields (Figures 2 and 3). The project area is specifically located in the U.S. Geological Survey Bonds Corner 7.5-minute quadrangle, Township 17 South, Range 16 East Sections 18 (U.S. Geological Survey [USGS] 1976). The Proposed Action would implement a combination of minimally intrusive mechanical removal (mowing) and herbicide treatment in areas where non-native invasive species are prevalent. Vegetation removal would not include root grubbing or digging and no significant soil disturbance would occur to the extent practicable. The Proposed Action area consists of a 12.93-acre Project Area and two potential staging areas totaling 2.86 acres. The Project Area and its associated staging areas span Assessor's Parcel Numbers 059-401-003, 059-401-001, 059-280-018, 059-280-015, 059-513-012, and 059-280-019.

2.1 Purpose and Need for the Proposed Action

The purpose of the Proposed Action is to enable CBP to fulfill its mission of protecting the U.S. southern border and to enhance the safety of U.S. Border Patrol (USBP) agents in carrying out their duties. For CBP to maintain effective control of the border and enhance the safety of USBP agents, it must maintain surveillance sight lines across the Project Area in perpetuity.

The Project Area contains a high proportion of non-native plants, which obstruct the view of USBP agents and hinders their ability to detect people illegally crossing the border in the vicinity of the Alamo River. The Project Area is an area of consistent cross-border violators (CBV) traffic. CBVs use the tall and dense vegetation in the Project Area to hide from USBP agents before submerging into the water of the Alamo River north of the project

area to elude detection. CBVs hiding in the brush create an agent safety issue, being able to use the concealment of the vegetation to ambush USBP agents. Historical vegetation control (vegetation removal) occurred within the Project Area until 2014; however, no vegetation control activities have occurred in the Project Area since 2014.

The need for the Proposed Action is to increase visibility and enhance patrol capabilities to increase security at the U.S./Mexico border in the Project Area. The Proposed Action will remove all vegetation within the Project Area and may temporarily affect vegetation within the staging areas (see Figure 3).

The Proposed Action requires an Environmental Assessment and supporting documentation, including a BA, to address requirements of the National Environmental Policy Act; the Endangered Species Act (ESA); other Federal environmental laws, regulations, and executive orders; as well as the Department of Homeland Security Instruction 023-01-001-01, and CBP environmental planning requirements.

2.2 Sensitive Species Evaluation

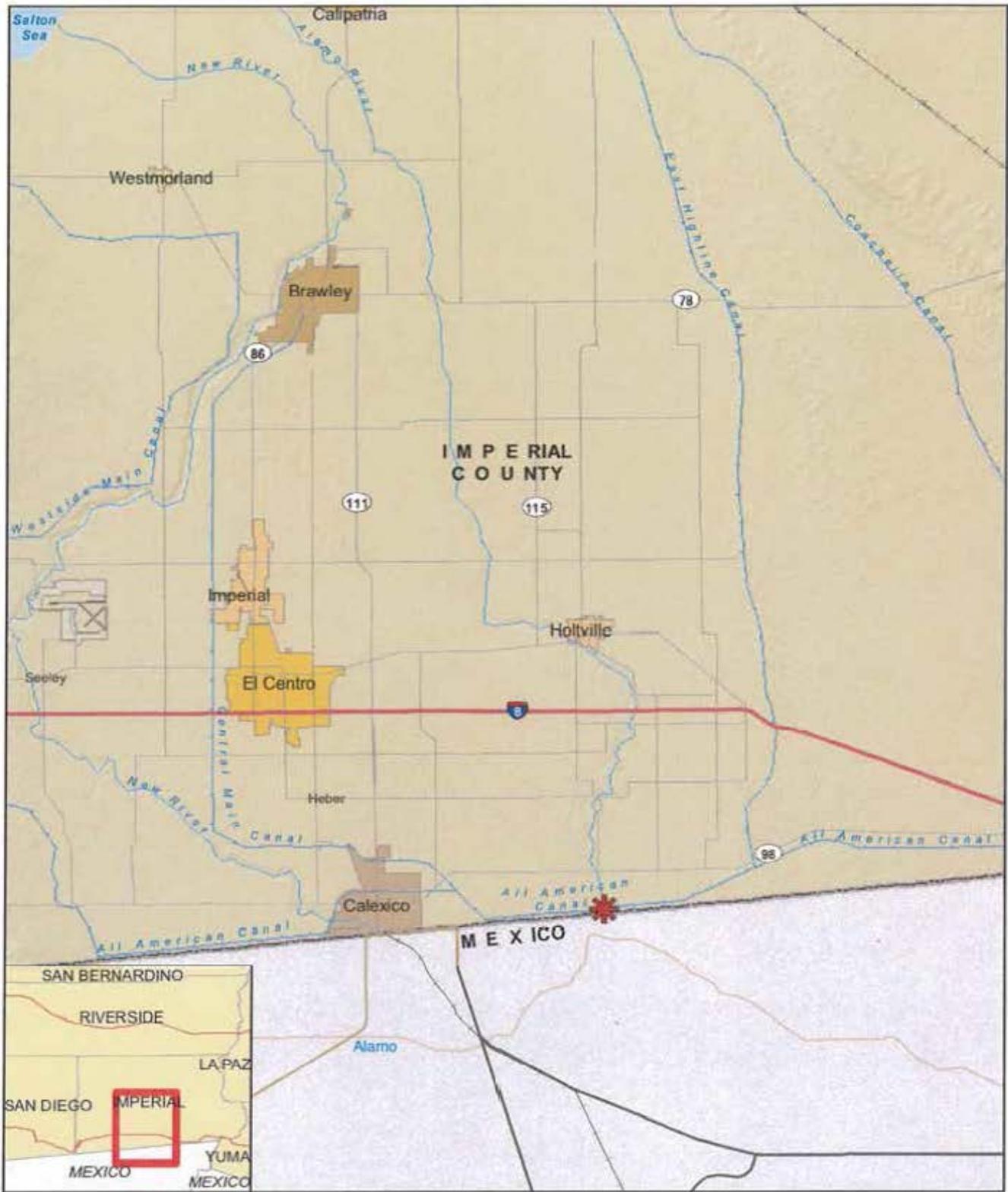
Prior to visiting the project area, RECON Environmental, Inc., obtained a U.S. Fish and Wildlife Service (USFWS) list of federally protected species potentially found in the area (USFWS 2017; Attachment A), which identified only the federally endangered Yuma Ridgway's rail (*Rallus obsoletus [=longirostris] yumanensis*). A search of species observations, known locations and designated or proposed critical habitat was conducted for additional federally listed species (USFWS 2018b and State of California 2018).

Based on an evaluation of the above listed resources, this BA evaluates potential effects of the Proposed Action on the Yuma Ridgway's rail

No additional federally listed species or their habitats were identified and none are expected to occur within the vicinity of the project site. Therefore, the Proposed Action is not expected to have any effect on other federally listed species or critical habitat and they are not addressed further in this document.

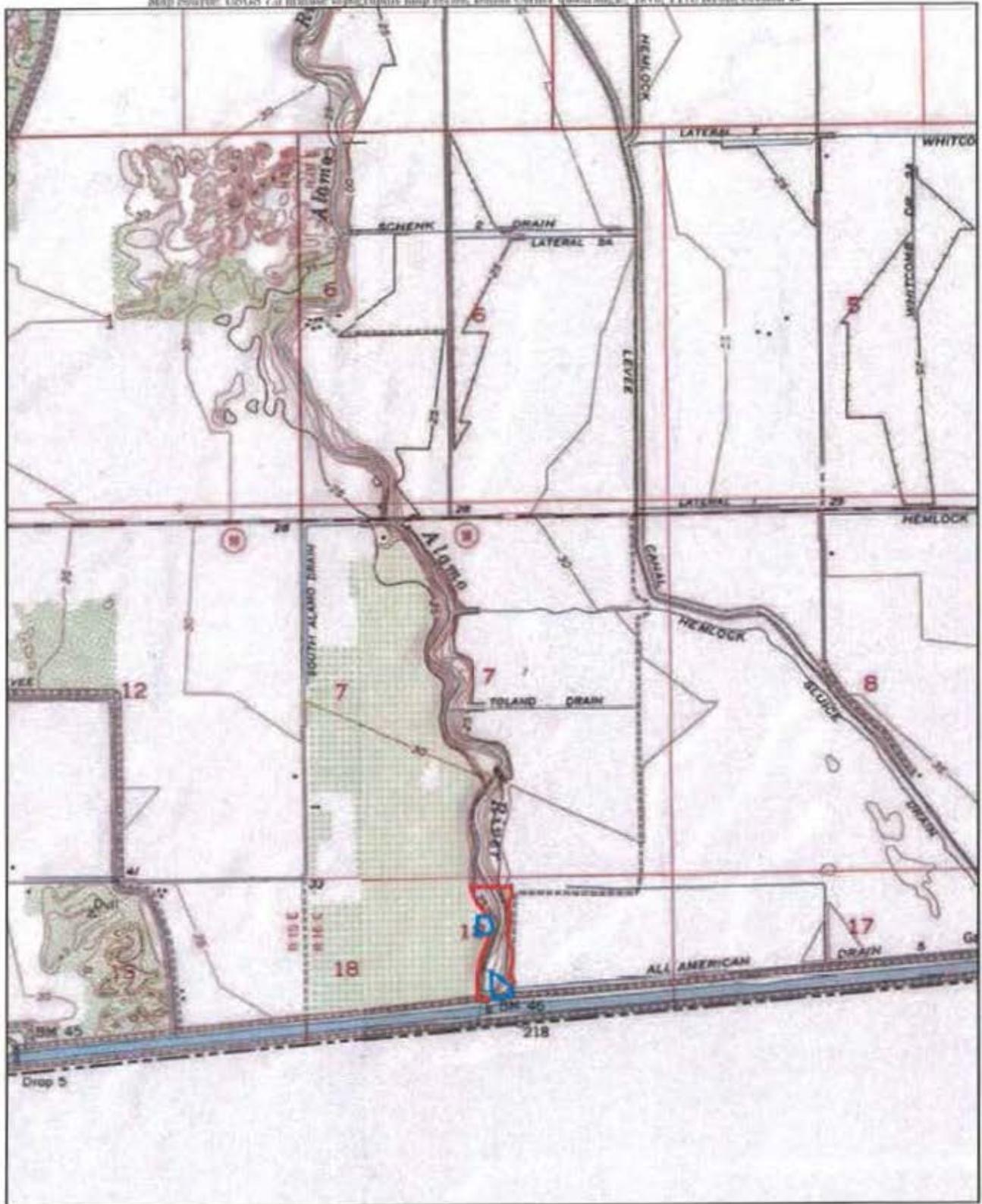
2.3 USFWS Consultation History

The USFWS has not issued a Biological Opinion for the project. It is intended that this BA provide the information necessary to support formal consultation with USFWS, as required by Title 50 Code of Federal Regulations (CFR) Part 402.14(c). This BA provides the best available scientific and commercial data for Yuma Ridgway's rail with regard to the Proposed Action.



 Project Location

FIGURE 1
Regional Location



- Project Area
- Staging Areas



FIGURE 2

Project Location on USGS Map



- Project Area
- Staging Areas
- Vegetation Control Area



FIGURE 3

Proposed Action on Aerial Photograph

2.4 Effects Determination

CBP proposes the effects determinations shown below for the potentially affected species. This determination represents the net effect of all positive and negative influences associated with the Proposed Action as discussed in this document. They, thus, represent the overall finding concerning the need to consult, pursuant to Section 7 of the ESA.

May Affect but Not Likely to Adversely Affect

- Yuma Ridgway's rail based on the lack of occurrence for this species during the 2018 survey.

3.0 Project Description

3.1 Proposed Action

The Proposed Action would implement a combination of minimally intrusive mechanical removal and herbicide treatments in areas where non-native invasive species are prevalent. Mechanical removal and herbicide treatment methods are described below. Vegetation control efforts would occur within a 12.93-acre Project Area (see Figure 3). Staging areas of all equipment and construction materials throughout implementation of the Proposed Action will be located within either an existing roadway or agricultural area. Two staging areas, totaling 2.86 acres, are proposed to be used during project implementation. The staging area located at the southern boundary of the project area comprises an existing roadway approximately 40 feet from the nearest waterway. The proposed staging area along the western border of the project area is approximately 80 feet from the nearest waterway. This staging area includes agricultural land use and would require securing right of entry from land owners.

3.1.1 Mechanical Removal

Under the Proposed Action, CBP proposes to conduct mechanical removal of vegetation (vegetation clearance) within the 12.93-acre Project Area. Mechanical removal is an effective first step in controlling tall growing plant species that reduce sightlines within the Project Area.

Mechanical removal would consist of mowing, cutting of vegetation (clipping at grade), and occasional use of heavy equipment to remove non-native vegetation. No discing or up-rooting would occur. CBP proposes to use an articulating flail arm mowing attachment to remove vegetation to the ground surface. The attachment also mulches vegetation as it goes. The mulched vegetation is spread evenly and would be left on-site. Some mulched vegetation would fall on the banks and some could fall into the water of the Alamo River. The attachment extends approximately 30 feet off to the side of a heavy-duty vehicle, which would traverse the perimeter of the Project Area on previously disturbed access roads

where possible. If the vehicle must enter the Project Area to reach vegetation, the number of trips and routes traveled would be planned to minimize potential impacts.

Mechanical removal of vegetation would be followed by herbicide treatment to maintain vegetation clearance, as described in Section 3.1.2.

All vehicle refueling and herbicide mixing would occur off-site or at the designated upland staging area (see Figure 3).

Removal of native vegetation would be conducted between October 1 and February 28, outside the nesting season for most bird species.

3.1.2 Herbicide Application

Under the Proposed Action, CBP proposes to supplement mechanical removal with herbicide application. Herbicides are chemicals that damage or kill plants. Herbicide application must comply with the U.S. Environmental Protection Agency label directions as well as California Environmental Protection Agency, Department of Pesticide Regulation label standards.

Within the Project Area, specific herbicides that are compatible with wetlands and water bodies would be used, including RoundUp Custom® and Rodeo®, Garlon 3A®, Polaris Herbicide®, or equivalent herbicides. Use of other herbicides that are readily dispersed into aquatic habitats and that can cause damage to aquatic species would not be used.

Herbicide application could occur up to four times a year, depending on the extent and composition of species requiring management. Staging areas would be sited in previously disturbed areas such as unimproved roads, shoulders, graded areas, or sites with compacted soil that do not support vegetation adjacent to the Project Area.

Herbicide would be thoroughly applied in the manner appropriate for the particular herbicide and plant species being treated, and crew members would ensure that all appropriate portions of the treated plants in each stand are well sprayed. The manufacturer's recommended rate of application for each targeted species would be followed. All crew members would have the proper personal protective equipment (PPE) when handling herbicides (e.g., safety glasses, rubber gloves, and long-sleeve shirts and pants), and as previously mentioned, all applicators would be appropriately trained in accordance with California Department of Pesticide Regulation (CDPR) mandates. Work would be supervised by an individual with a Qualified Applicator's License (QAL). Work crews would only mix herbicide and refill sprayers within the staging areas to minimize impacts to non-target vegetation.

Application of chemical controls is most effective on new sprouts that typically emerge after removal of aboveground biomass by mechanical methods. CBP mechanical removal practices would reduce the quantities of herbicide needed for subsequent control, due to the reduction in unwanted vegetation masses needing treatment. Re-sprouting species would

require a series of follow-up applications of herbicide both within the initial removal period and in subsequent years to be fully eliminated.

Currently no chemicals, specifically herbicides, are used by the CBP to control vegetation within the Project Area. Once an inventory of the species requiring management has been completed, a more specific project plan and approach will be developed and may include the preparation of an Aquatic Pesticide Application Plan (APAP) as part of this alternative. The APAP may be required for coverage under the State Water Resources Control Board, Statewide General National Pollutant Discharge Elimination System (NPDES) Permit for Residual Aquatic Pesticide Discharges to Waters of the United States from Algae and Aquatic Weed Control Applications, Water Quality Order 2013-0002-DWQ.

3.1.3 Action Area

Under the implementing regulations for Section 7(a)(2) of the Federal ESA, the Action Area is defined as the reach of all direct and indirect effects, in addition to the analysis area, i.e., Proposed Action, for this assessment. Thus, the Action Area evaluated in this BA includes the Proposed Action footprint including the Project Area and staging areas (Figure 4).

3.2 Measures Proposed to Avoid and Minimize Effects to Listed Species to be Incorporated into the Proposed Action

The Proposed Action includes the following measures designed to avoid and minimize direct and indirect harm or injury to federally listed species and designated critical habitat.

3.2.1 General Measures

- Mechanical vegetation treatment and herbicide treatment should occur between October 1 and February 28, to avoid any impacts to migratory birds during the breeding season.
- Prior to vegetation removal activities occurring during the bird breeding season (March 1–September 30), a qualified biologist must survey the area for nesting and migratory birds, including federal threatened and endangered species. This shall include burrowing and ground-nesting species in addition to those nesting in vegetation. If any active nests are found, an appropriately sized buffer area must be avoided until the young birds fledge.
- Prior to the initiation of project activities, all project areas shall be demarcated in coordination with a biological monitor to ensure that adverse effects to biological resources are minimized and that no work is performed outside the designated boundaries.



-  Action Area
-  Project Area
-  Staging Areas

FIGURE 4
Proposed Action Area

- A biological monitor will conduct an environmental training program for all crew working on the project and will perform site visits to ensure compliance with best management practices (BMPs) and monitor vegetation removal activities.
- Vehicles and equipment shall be operated in existing and designated access areas, and staging of all equipment shall occur in designated areas of developed/disturbed or agricultural land.
- The contractor shall pick up and remove trash and debris from the job site daily.
- Appropriate BMPs will be implemented and would include but not be restricted to: installation of measures to minimize erosion and siltation associated with vegetation removal activities; refueling of machinery following accepted guidelines and all vehicles equipped with drip pans during storage to contain minor spills and drips; and preparation of a Spill Prevention, Containment, and Countermeasures Plan prior to the start of work.
- CBP would not, for any length of time, permit any pets inside the Project Area or adjacent native habitats. This BMP does not pertain to law enforcement animals.

3.2.2 Species-specific Measures

The following measures will be employed to avoid and/or minimize effects on Yuma Ridgway's rail.

- Prior to any maintenance activities associated with vegetation control, a focused survey shall be conducted to confirm the presence or absence of Yuma Ridgway's rail. If Yuma Ridgway's rail is found to be present, no removal of habitat shall take place within 500 feet of occupied habitat.
- A qualified biological monitor shall be present during all vegetation removal activities to ensure avoidance and effects to sensitive species and critical habitats on-site.

4.0 Existing Conditions and Description of the Specific Area Affected by the Action

4.1 Land Uses

As described in Section 3.0, the Proposed Action footprint encompasses a 1,650-foot portion of the Alamo River, located immediately north of the All-American Canal. The 80-mile channelized All-American Canal conveys water from the Colorado River to the Salton Sea, providing water to Imperial County along the way. An aqueduct diverts water into the Alamo River just south of the project boundary. The Alamo River conveys seasonal flows and floodwaters approximately 52 miles north and drains into the Salton Sea.

Surrounding land uses include irrigated agricultural fields to both the east and west of the project area and an aggregate production facility that borders the western project boundary.

Soil types within the Alamo River project area include Badland, Imperial–Glenbar silty clay loams, and Meloland very fine sandy loam. Badland consists of areas of essentially barren, eroded, soft shale. The terrain is broken by drainage channels that have cut into the soft shale. Imperial–Glenbar silty clay loams are characterized as well-drained soils of floodplains, composed of mixed alluvium. Meloland very fine sandy loam is found in the western staging area and is characterized as soils found on floodplains and alluvial basin floors (Natural Resources Conservation Service 2018).

4.2 Vegetation Communities and Land Cover Types

Ten vegetation communities and land cover types were documented within the project area: agriculture, *Atriplex canescens* shrubland alliance, developed/disturbed, open water, ornamental, *Phragmites australis* herbaceous alliance & semi-natural stands, *Pluchea sericea* shrubland alliance, *Suaeda nigra* shrubland alliance, *Tamarix* spp. semi-natural shrubland stands, and *Typha* (*angustifolia*, *domingensis*, *latifolia*) Alliance. Vegetation communities were classified and mapped according to the California Native Plant Society Manual of California Vegetation, second edition (Sawyer et al. 2009). All vegetation communities and/or land cover types surveyed within the Alamo River survey area are depicted on Figure 5 and listed in Table 1.

Type or Community	Project Area (acres)	Staging Areas (acre)	Total (acres)
Agriculture		0.61	0.61
<i>Atriplex canescens</i> Shrubland Alliance	0.27		0.27
Developed/Disturbed	3.87	2.22	6.09
Open Water	0.49		0.49
Ornamental		0.03	0.03
<i>Phragmites australis</i> Herbaceous Alliance & Semi-natural stands	2.68		2.68
<i>Pluchea sericea</i> Shrubland Alliance	1.28		1.28
<i>Suaeda nigra</i> Shrubland Alliance	0.26		0.26
<i>Tamarix</i> spp. Semi-natural Shrubland stands	4.04		4.04
<i>Typha</i> (<i>angustifolia</i> , <i>domingensis</i> , <i>latifolia</i>) Alliance	0.04		0.04
Total	12.93	2.86	15.79

4.2.1 Agriculture (0.61 acre)

Agricultural activities represent a minimal amount of land use within the project site (approximately 0.61 acre); these seasonally planted and irrigated fields are located in a portion of the proposed western staging area.

4.2.2 *Atriplex canescens* Shrubland Alliance (0.27 acre)

This alliance is associated with playas, old beaches and shores, lake deposits, dissected alluvial fans, and rolling hills. Four-wing saltbush (*Atriplex canescens*) is a rapidly evolving evergreen shrub that grows widely in California. This alliance, however, is limited to deserts and is dominated by fourwing saltbush and often found with herbaceous seasonal herbs and non-native grasses (Sawyer et al. 2009).

Atriplex canescens Shrubland Alliance totaling 0.27 acre occurs within the project area and was observed growing in a vegetated fringe adjacent to large stands of common reed.

4.2.3 Disturbed/Developed (6.10 acres)

Developed and disturbed lands account for the greatest land cover within the project area (6.10 acres). The majority of the developed and disturbed areas within the project site consist of graded dirt roads that provide access to the All-American Canal. These roads run parallel along the eastern and western project borders, and provide access to adjacent farmed lands and the aggregate production facility.

An area east of the proposed western staging area was also included in this disturbed category. This area was characterized by bare ground and minimal vegetation. A heavy deposition of chemical crust from agriculture runoff was present as well as signs of a previous fire.

4.2.4 Open Water (0.49 acre)

Open water within the project area can be found in three areas, two in the northern portion of the site and one in the southern portion, totaling 0.49 acre. The two northern areas of open water exist in a heavily vegetated low flow channel. The area of open water in the southern portion of the project area is ponded at the site where All-American Canal diverts water to the Alamo River. These open waters are associated with the traditional navigable water of the Alamo River and are considered jurisdictional wetlands according to the wetland delineation performed by RECON (2018a).

4.2.5 Ornamental (0.03 acre)

Ornamental vegetation occurs in the proposed western staging area adjacent to a fence delineating farmlands and an aggregate production facility. Yellow oleander (*Cascabela thevetia*), a native of tropical America and a common ornamental of the southwestern United States, accounts for 0.03 acre of ornamental vegetation.



- Project Area
- Staging Areas
- Vegetation Communities**
- Atriplex canescens* Shrubland
- Phragmites australis* Herbaceous Alliance and Semi-natural Stands
- Pluchea sericea* Shrubland Alliance
- Suaeda nigra* Shrubland Alliance
- Tamarix* spp. Semi-natural Shrubland Stands
- Typha* (*angustifolia*, *domingensis*, *latifolia*) Alliance
- Agriculture
- Developed/Disturbed
- Open Water
- Ornamental



FIGURE 5
Existing Biological Resources

4.2.6 *Phragmites australis* Herbaceous Alliance and Semi-natural Stands (2.68 acres)

This alliance consists of perennial common reed (*Phragmites australis*) typically forming a closed continuous canopy. This vegetation type is widespread in both estuarine intertidal and palustrine persistent emergent wetlands (Cowardin et al. 1979). Common reed is often found in dense, monotypic stands (Hansen et al. 1988). Along the southern reaches of the Colorado River common reed scrub is known to grow alongside native clonal wet marsh species such as cattail (*Typha* sp.) (Stevens et al. 1995). This habitat occurs in open bodies of fresh water with minimal flow, such as ponds, marshes, ditches, and is often paired with soils that are often poorly aerated and high in organic material (Sawyer et al. 2009).

This alliance, totaling 2.68 acres, occurs throughout the project area growing in dense monocultures as continuous stands surrounding open water associated with the channel of the Alamo River.

4.2.7 *Pluchea sericea* Shrubland Alliance (1.28 acres)

Arrowweed (*Pluchea sericea*) colonizes open moist sites with a high water table, typically around springs, seeps, irrigation ditches, canyon bottoms, stream borders, and seasonally flooded washes (Sawyer et al. 2009). This alliance is characterized by a sparse herbaceous layer and a dominant layer of shrub arrow-weed thickets with an intermittent to continuous canopy (Sawyer et al. 2009). In the Colorado Desert, this alliance is found adjacent to alkaline springs, and the borders of streams and marshes (Sawyer et al. 2009).

This alliance, totaling 1.28 acres, occurs within the project area and was observed in portions most often adjacent to invasive tamarisk (*Tamarix* spp.).

4.2.8 *Suaeda nigra* Shrubland Alliance (0.26 acre)

This alliance is widespread in the Colorado Desert adjacent to playas, bajadas, and on terraces above washes (Sawyer et al. 2009). This alliance is dominated by bush seepweed (*Suaeda nigra*) with a sparse to intermittent layer of herbaceous plants. Although bush seepweed acts opportunistically, often colonizing recently disturbed areas, this alliance is limited to alkaline substrates in desert or semi-desert habitats (Sawyer et al. 2009).

Suaeda nigra Shrubland Alliance, totaling 0.26 acre, occurs within the project area as a small stand east of the Alamo River containing an open shrub canopy and a sparse herbaceous layer.

4.2.9 *Tamarix* spp. Semi-natural Shrubland Stands (4.04 acres)

This alliance is dominated by the non-native and highly invasive tamarisk. This weedy plant community is usually a monoculture of tamarisk that has supplanted native wetland

plant species. Tamarisk usually invades following disturbance. This plant community typically occurs in sandy or gravelly braided washes or intermittent streams, often in areas where high evaporation creates high salinity in the stream (Holland 1986).

The *Tamarix* spp. semi-natural shrubland stand represents the largest amount of the vegetation cover within the project area (4.04 acres) and typically occurs adjacent to stands of common reed.

4.2.10 *Typha (angustifolia, domingensis, latifolia)* Alliance (0.04 acre)

Typha (angustifolia, domingensis, latifolia) Alliance typically occurs in open bodies of fresh water with little current flow, such as ponds, and to a lesser extent around seeps and springs. This vegetation type is dominated by cattails, a tall reed common to fresh water marshes and ponds, and nearly always observed in areas of permanent inundation by freshwater. Within the project site, the species of cattail identified was southern cattail (*Typha domingensis*).

Typha (angustifolia, domingensis, latifolia) Alliance totaled 0.04 acre onsite and was observed at two locations within the project area: 1) at the southern end of the project area west of open water and 2) in the southeastern portion of the project area as a thin, continuous strip within a narrow drainage surrounded by arrowweed.

5.0 Description of Listed Species and Critical Habitat that may be Affected by the Action

Based on known occurrences or presence of suitable habitat on or in the immediate vicinity of the Proposed Action, this BA evaluates the following federally listed species: Yuma Ridgway's rail. The Yuma Ridgway's rail was federally listed as endangered on 11 March 1967 (USFWS 1967). Critical habitat has not been established for this species.

5.1 Life History

The Yuma Ridgway's rail breeds in freshwater marshes and brackish waters and nests on firm elevated ground, often under small bushes. It typically occupies emergent marsh vegetation, such as pickleweed (*Salicornia pacifica* or *Anthrocnemum subterminale*) and cord grass (*Spartina foliosa*), as well as mature stands of bulrush (*Schoenoplectus* sp.) and cattail (*Typha* sp.) around the Salton Sea. High water levels may force them into willow (*Salix* spp.) and tamarisk stands. Tamarisk is also used after breeding and in winter at some sites. Nests are built between March and late July in clumps of living emergent vegetation over shallow water. Typical home ranges exceed 17 acres, increasing after the breeding season (USFWS 2009).

The diet of Yuma Ridgway's rails is dominated by crayfish, with small fish, tadpoles, clams, and other aquatic invertebrates also utilized (Ohmart and Tomlinson 1977; Anderson and Ohmart 1985; Todd 1986; Eddleman 1989; and Conway 1990 as cited in USFWS 2009). The seasonal availability of crayfish in different habitat locations corresponds to shifts in habitat use by Yuma Ridgway's rails (Bennett and Ohmart 1978; Eddleman 1989; and Conway et al. 1993 as cited in USFWS 2009). This species relies more on a diet of seeds and vegetation in the winter.

Yuma Ridgway's rails are active most of the daylight hours, with little to no activity after dark. Daily movement is lowest during the late breeding period (May to July) and highest during the late winter (January to February; USFWS 2009). Juvenile dispersal, movements by unpaired males during the breeding season and by both sexes post-breeding, and relocations in response to changing water levels are also documented (USFWS 2009). Studies to determine migratory patterns showed a difficulty in locating the Yuma Ridgway's rail during winter months without telemetry. While the Yuma Ridgway's rail was previously thought to be migratory, experts have determined that they are year-round residents of the Lower Colorado River and Salton Sea, albeit discreet during winter months (USFWS 2009).

Habitat destruction and depredation by mammals and raptors have caused population declines. It is also possible that increased selenium concentrations from agricultural runoff are affecting reproduction (USFWS 2009).

5.2 Distribution

This bird breeds in freshwater marshes along the Colorado River from Needles, California, to the Colorado River delta (Tomlinson and Todd 1973). Additional populations occur at the south end of the Salton Sea, and the Salt and Gila Rivers (Eddleman 1989). Most breeding populations are resident and this species is known to overwinter in the lower Colorado River (USFWS 2009).

5.3 Critical Habitat

Critical habitat had not been designated for this species.

5.4 Occurrence within the Project Area

The project area supports approximately 2.7 acres of continuous emergent and submergent marsh composed of cattails and common reed along the low-flow channel. Historical records indicate an adult pair was detected just north of the Project Area in 1998 (State of California 2018). Records also indicate that the pair was found within habitat containing cattails as the primary fresh water marsh vegetation. Since then, it is likely that the common reed found throughout the site has taken over the fresh water marsh habitat within the area as very few cattails were observed within the project area. No other occurrences were documented for this species within the vicinity of the Project Area.

Focused surveys for the Yuma Ridgway's rail occurred in appropriate habitat along the approximately 2,000 linear feet of the project area. RECON biologist John Konecny (TE837308-6) conducted six focused Yuma Ridgway's rail surveys between March and May 2018 using protocols developed by USFWS (2017). Yuma Ridgway's rail was not detected during the 2018 focused surveys. Further details of the surveys can be found in the Yuma Ridgway rail survey post-survey report (RECON 2018b).

6.0 Analysis of Effects and Description of the Manner in which the Action may Affect Any Listed Species

Yuma Ridgway's rails were not detected during current-year surveys and are not historically known to occur within the project area. This species prefers dense stands of cattails and bulrush intermixed with some open water; whereas, the emergent vegetation in project area, while dense, is relatively narrow and highly disturbed. Prey availability, such as small fish and crustaceans, may also be reduced in this area due to poor water quality. No crayfish shells, a preferred prey item of this rail species, were found in the area during the focused rail surveys.

The low quality and small area of habitat to be impacted, lack of prey resources, and negative survey results indicate that the proposed project would have a negligible effect on species distribution overall for this species. In addition, avoidance and minimization measures have been identified that would limit work within the breeding season for any nesting birds and would provide a biological monitor during implementation. No direct or indirect effects are expected for this species based on current data.

7.0 Cumulative Effects Analysis

Cumulative effects are those effects of future state or private activities, not involving Federal activities, that are reasonably certain to occur within the Action Area of the Federal action subject to consultation [50 Code of Federal Regulations Part 402.02]. Future Federal actions that are unrelated to the Proposed Action are not considered in this section, because they would require separate consultation pursuant to Section 7 of the ESA.

There are some existing rural and agricultural developments to the east and west of the project that provide some input into Alamo River (e.g., sediment, runoff); however, these developments are pre-existing. Agricultural runoff has impacted a small section of the Action Area as described in Section 4.2.3.

However, given the lack of Yuma Ridgway's rail in the project area, the minimal footprint and the minimally intrusive nature of the Proposed Action, and associated avoidance and minimization measures to be implemented, cumulative impacts from any other projects in the region are not likely to adversely affect Yuma Ridgway's rail.

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RECON Environmental, Inc.

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- 2018b Post-Survey Notification of Yuma Ridgway's Rail Survey for the U.S. Customs and Border Protection Alamo River Vegetation Control Project. *In preparation.*

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- 1976 7.5-minute topographic map series, Bonds Corner quadrangle, T17S R16E, Section 18.



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Palm Springs Fish and Wildlife Office
777 East Tahquitz Canyon Way, Suite 208
Palm Springs, California 92262



In Reply Refer To:
FWS-IMP-11B0229-18I1668

September 28, 2018
Sent by email

Mr. Joseph Zidron
Real Estate and Environmental Branch Chief
Border Patrol and Air and Marine Program Management Office
U.S. Customs and Border Protection
1300 Pennsylvania Avenue NW
Washington, DC 20229

Attention: Mr. John Petrilla

Subject: Proposed Alamo River Vegetation Control Project, Imperial County, California

Dear Mr. Zidron:

This is in response to your correspondence we received on August 29, 2018, requesting our concurrence with your determination that the Alamo River Vegetation Control Project (Project) is not likely to adversely affect the federally endangered Yuma Ridgway's rail (*Rallus obsoletus yumanensis*)¹ in accordance with section 7 of the Endangered Species Act of 1973 (Act), as amended (16 U.S.C. 1531 *et seq.*). Designated critical habitat for Yuma Ridgway's rail does not occur in the action area.

This consultation is based on information provided in your letter dated August 23, 2018; the Biological Assessment for the Alamo River Vegetation Control Project (BA) dated July 19, 2018; and information in our files.

The proposed Project is located along the Alamo River approximately one mile south of State Route 98 and 30 feet north of the All-American Canal in Imperial County, California. The Project area is bordered to the east by irrigated agricultural fields and to the west by an aggregate production facility and irrigated agricultural fields (see Figures 2 and 3 in the BA).

Vegetation growth along the Alamo River near the border with Mexico has led to an obstructed view for U.S. Customs and Border Protection (CBP) agents that hinders their ability to detect people illegally crossing the border near the Alamo River. Therefore, CBP is proposing to remove all vegetation within a 12.93-acre vegetation removal area (see Table 1 below for a breakdown of vegetation communities affected and Figure 1). The Project also proposes to construct two temporary staging areas totaling 2.86 acres as depicted in Table 1. Vegetation removal will include a combination of minimally intrusive mechanical removal and herbicide treatments in areas where non-native invasive species are prevalent. Mechanical removal and herbicide treatment methods are described in more detail in Section 3 of the BA.

¹ Formerly known as Yuma clapper rail (*Rallus longirostris yumanensis*)

Table 1: Vegetation Communities/Land Cover Types within the Project Area			
Type or Community	Project Area (acres)	Staging Areas (acres)	Total (acres)
Agriculture		0.61	0.61
<i>Atriplex canescens</i> Shrubland Alliance	0.27		0.27
Developed/Disturbed	3.87	2.22	6.09
Open Water	0.49		0.49
Ornamental		0.03	0.03
<i>Phragmites australis</i> Herbaceous Alliance and Semi-natural stands	2.68		2.68
<i>Pluchea sericea</i> Shrubland Alliance	1.28		1.28
<i>Suaeda nigra</i> Shrubland Alliance	0.26		0.26
<i>Tamarix</i> spp. Semi-natural Shrubland stands	4.04		4.04
<i>Typha (angustifolia, domingensis, latifolia)</i> Alliance	0.04		0.04
Total	12.93	2.86	15.79

CBP has agreed to implement the following conservation measures during Project activities to ensure adverse effects are avoided.

1. Mechanical vegetation treatment and herbicide treatment will generally occur between October 1 and February 28, to avoid any impacts to migratory birds during the breeding season.
2. If vegetation removal activities occur during the bird breeding season (March 1–September 30), a qualified biologist must survey the area for nesting and migratory birds, including federally threatened and endangered species. This shall include burrowing and ground-nesting species in addition to those nesting in vegetation. If any active nests are found, an appropriately sized buffer area must be avoided until the young birds fledge.
3. Prior to the initiation of Project activities, all project areas shall be demarcated in coordination with a biological monitor to ensure that adverse effects to biological resources are minimized and that no work is performed outside the designated boundaries.
4. A biological monitor will conduct an environmental training program for all crew working on the project and will perform site visits to ensure compliance with best management practices (BMPs) and monitor vegetation removal activities.
5. Vehicles and equipment shall be operated in existing and designated access areas, and staging of all equipment shall occur in designated areas of developed/disturbed or agricultural land.
6. The contractor shall pick up and remove trash and debris from the job site daily.

7. Appropriate BMPs will be implemented and would include but not be restricted to: installation of measures to minimize erosion and siltation associated with vegetation removal activities; refueling of machinery will follow accepted guidelines and all vehicles will be equipped with drip pans during storage to contain minor spills and drips; and Spill Prevention, Containment, and Countermeasures Plan will be prepared prior to the start of work.
8. CBP would not, for any length of time, permit any pets inside the Project area or adjacent native habitats. This BMP does not pertain to law enforcement animals.
9. Prior to any maintenance activities associated with vegetation removal, a focused survey shall be conducted to confirm the presence or absence of Yuma Ridgway's rail. If Yuma Ridgway's rail is found with the Project area, no removal of habitat shall take place within 500 feet of occupied habitat.
10. A qualified biological monitor shall be present during all vegetation removal activities to ensure adverse effects to sensitive species and critical habitats on-site are avoided.

In general, the measures proposed, including but not limited to having a qualified biologist conduct pre-construction surveys, implementing a worker awareness program, and ensuring Yuma Ridgway's rail do not occur within the Project area, are effective means of avoiding adverse effects to the species.

Based on the information you have provided and the proposed avoidance and minimization measures, we concur with your determination that the proposed vegetation removal activities are not likely to adversely affect the Yuma Ridgway's rail. We have reached this conclusion because the measures that CBP will implement during removal activities will substantially reduce the likelihood that these activities would kill or injure Yuma Ridgway's rail and the loss of habitat associated with the proposed action would not have a measurable effect on their breeding, feeding, or sheltering activities.

The interagency consultation requirements of section 7 of the Act have been satisfied. Although our concurrence ends informal consultation, obligations under section 7 of the Act will be reconsidered if new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not previously considered, or this action is subsequently modified in a manner that was not considered in this assessment. If you have any questions, please contact Felicia Sirchia of my staff at (760) 322-2070, extension 405.

Sincerely,

For Kennon A. Corey
Assistant Field Supervisor

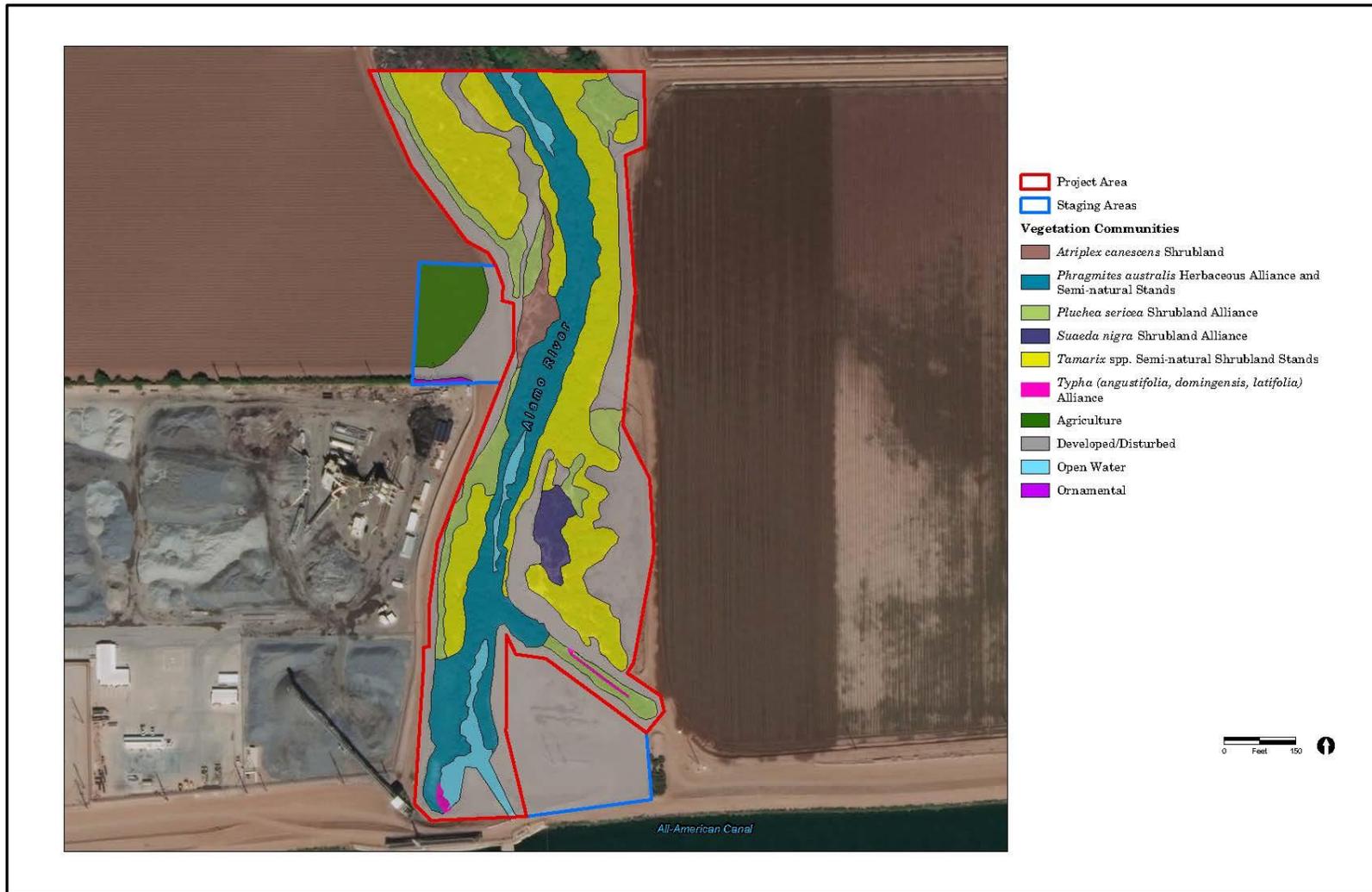


Figure 1. Map illustrating vegetation communities in the project area of the All-American Canal, Alamo River, Imperial County, California

APPENDIX B
**Native American Heritage Commission,
State Historical Preservation Officer, and
Tribal Consultation/Correspondence**



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

JUL 9 2018

Gayle Totton
Native American Heritage Commission, Cultural and Environmental Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691

Subject: Preparation of an Environmental Assessment Addressing the Proposed Alamo River Vegetation Control Project in Imperial County, California

Dear Ms. Totton

U.S. Customs and Border Protection (CBP), under the Department of Homeland Security (DHS), is preparing a Draft Environmental Assessment (EA) for the proposed Alamo River Vegetation Control Project (Proposed Action). The Proposed Action would implement a combination of minimally intrusive mechanical removal (mowing) and herbicide treatment in areas where non-native invasive species are prevalent. The Proposed Action would preserve line of sight for U.S. Border Patrol (USBP) agents in the El Centro Sector and reduce hiding opportunities of cross-border violators (CBV) within the Alamo River (Project Area). The Project Area is under private and public ownership, including by the U.S. Bureau of Reclamation and four private ownership groups. An EA is being prepared in accordance with the National Environmental Policy Act for this project.

The Proposed Action comprises the mechanical removal of vegetation (vegetation clearance) within the 12.93-acre Project Area. Mechanical removal is an effective first step in controlling tall-growing plant species that reduce sightlines within the Project Area. Mechanical removal would consist of mowing, cutting of vegetation (clipping at grade), and use of heavy equipment to remove non-native vegetation twice a year, or as required by CBP for surveillance purposes. No discing or up-rooting would occur under this alternative. CBP proposes to supplement mechanical removal with herbicide application. Herbicide application could occur up to four times a year, depending on the extent and composition of species requiring management. Staging areas would be sited in previously disturbed areas such as unimproved roads, shoulders, graded areas, or sites with compacted soil that do not support vegetation adjacent to the Project Area. The Proposed Action would remove all vegetation, primarily non-native species, within the 12.93-acre Project Area.

The EA will consider two alternatives in detail: the Proposed Action and the No Action Alternative. In addition to preparation of the EA, resource surveys of the Alamo River Project Area have been completed, including a cultural resources survey, jurisdictional waters survey, and endangered species survey.

Ms. Totton

Page 2

Should you have comments or information about the Proposed Action that you would like considered during preparation of the Draft EA, please send them within 30 days of receipt of this letter using one of the following methods:

- By U.S. mail: Alamo River Vegetation Control EA c/o Mr. John Petrilla, U.S. Customs and Border Protection, Border Patrol and Air and Marine Program Management Office, 24000 Avila Road - Suite 5020, Laguna Niguel, CA 92677
- By email: John.P.Petrilla@cbp.dhs.gov

We intend to provide you with an electronic copy of the Draft EA on a CD once the document is completed. Please inform us if hard copies are needed and if someone else other than you should receive the Draft EA.

Your prompt attention to this request is greatly appreciated. If you have any questions, please contact Mr. John Petrilla by email at John.P.Petrilla@cbp.dhs.gov or by telephone at (949) 643-6385.

Sincerely,



Joseph Zidron
Environmental Branch Chief (A)
Border Patrol and Air and Marine Program Management Office

Enclosure: Figure 1 – Map of Proposed Action Location



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

JUL 9 2018

Julianne Polanco
Office of Historic Preservation, State Historic Preservation Officer
1725 23rd Street, Suite 100
Sacramento, CA 95816

Subject: Preparation of an Environmental Assessment Addressing the Proposed Alamo River Vegetation Control Project in Imperial County, California

Dear Ms. Polanco

U.S. Customs and Border Protection (CBP), under the Department of Homeland Security (DHS), is preparing a Draft Environmental Assessment (EA) for the proposed Alamo River Vegetation Control Project (Proposed Action). The Proposed Action would implement a combination of minimally intrusive mechanical removal (mowing) and herbicide treatment in areas where non-native invasive species are prevalent. The Proposed Action would preserve line of sight for U.S. Border Patrol (USBP) agents in the El Centro Sector and reduce hiding opportunities of cross-border violators (CBV) within the Alamo River (Project Area). The Project Area is under private and public ownership, including by the U.S. Bureau of Reclamation and four private ownership groups. An EA is being prepared in accordance with the National Environmental Policy Act for this project.

The Proposed Action comprises the mechanical removal of vegetation (vegetation clearance) within the 12.93-acre Project Area. Mechanical removal is an effective first step in controlling tall-growing plant species that reduce sightlines within the Project Area. Mechanical removal would consist of mowing, cutting of vegetation (clipping at grade), and use of heavy equipment to remove non-native vegetation twice a year, or as required by CBP for surveillance purposes. No discing or up-rooting would occur under this alternative. CBP proposes to supplement mechanical removal with herbicide application. Herbicide application could occur up to four times a year, depending on the extent and composition of species requiring management. Staging areas would be sited in previously disturbed areas such as unimproved roads, shoulders, graded areas, or sites with compacted soil that do not support vegetation adjacent to the Project Area. The Proposed Action would remove all vegetation, primarily non-native species, within the 12.93-acre Project Area.

The EA will consider two alternatives in detail: the Proposed Action and the No Action Alternative. In addition to preparation of the EA, resource surveys of the Alamo River Project Area have been completed, including a cultural resources survey, jurisdictional waters survey, and endangered species survey.

Should you have comments or information about the Proposed Action that you would like considered during preparation of the Draft EA, please send them within 30 days of receipt of this letter using one of the following methods:

- By U.S. mail: Alamo River Vegetation Control EA c/o Mr. John Petrilla, U.S. Customs and Border Protection, Border Patrol and Air and Marine Program Management Office, 24000 Avila Road - Suite 5020, Laguna Niguel, CA 92677
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We intend to provide you with an electronic copy of the Draft EA on a CD once the document is completed. Please inform us if hard copies are needed and if someone else other than you should receive the Draft EA.

Your prompt attention to this request is greatly appreciated. If you have any questions, please contact Mr. John Petrilla by email at John.P.Petrilla@cbp.dhs.gov or by telephone at (949) 643-6385.

Sincerely,

A handwritten signature in cursive script, appearing to read "Joseph Zidron".

Joseph Zidron
Environmental Branch Chief (A)
Border Patrol and Air and Marine Program Management Office

Enclosure: Figure 1 – Map of Proposed Action Location



U.S. Customs and Border Protection

Ms. Angela Elliott Santos
Chairperson
Manzanita Band of Kumeyaay Nation
P.O. Box 1302
Boulevard, CA 91905

Reference: National Historic Preservation Act Section 106 Consultation – Alamo River Vegetation Control Project, Imperial County, California

Dear Ms. Elliott Santos:

The purpose of this letter is to initiate National Historic Preservation Act (NHPA) Section 106 consultation for the Alamo River Vegetation Control project. Customs and Border Protection (CBP), a component within the Department of Homeland Security (DHS), proposes to conduct vegetation control along the Alamo River channel in Imperial County, California. The project is an undertaking, as defined in Section 106 of the NHPA. Section 106, as implemented (36 Code of Federal Regulations Part 800), requires federal agencies to enter into consultation with interested Native American Tribes.

Description of Proposed Undertaking

CBP proposes to conduct vegetation control along the Alamo River channel in Imperial County, California. The El Centro Sector of U.S. Border Patrol (USBP) requires vegetation control along 12.95 acres of the Alamo River located in the Calexico area of responsibility, with the All-American Canal to the south and Highway 98 to the north, to increase visibility and enhance patrol capabilities at the U.S./Mexico border. CBP is responsible for vegetation control because the USBP law enforcement organization and responsibilities were transferred to the CBP component of DHS on March 1, 2003.

Vegetation control would consist of a combination of minimally intrusive mechanical removal (mowing) and herbicide treatment in areas where non-native invasive species are prevalent. The proposed action would remove approximately 8.92 acres of vegetation within the 12.95-acre project area. Staging of all equipment and construction materials throughout implementation of the proposed action would be located on either an existing roadway or designated agriculture area. The 1.73 acres of staging area situated at the southern boundary of the project area is comprised of existing roadway approximately 40 feet from the nearest waterway. The staging area along the western border of the project area is approximately 1.12 acres and approximately 80 feet from the nearest waterway. The western staging area includes agricultural land use and would require securing right of entry from land owners. The Area of Potential Effect (APE) consists of 15.8 acres (Figure 1).

Identification of Historic Properties

In an effort to identify cultural resources within the APE and to assess effects to resources found eligible for the National Register of Historic Places, CBP hired a consultant to conduct an archaeological survey of the APE. Prior to the survey, a records search with a one-mile search radius was requested from the South Coastal Information Center. Three previously recorded resources were identified in the records search; none were located within the project area. The three resources include the adjacent All-American Canal; the South Alamo Lateral 16 Canal, located approximately 4,400 feet west of the project area; and a single Lower Colorado Buff Ware sherd, located approximately 3,900 feet north of the northern project area boundary. A sacred lands request was also sent to the Native American Heritage Commission. The results were negative for sacred lands.

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Evaluation of Eligibility and Assessment of Effects

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a) by email to john.p.petrilla@cbp.dhs.gov

b) by mail to

John Petrilla
U.S. Customs and Border Protection
24000 Avila Road, Suite 5020
Laguna Niguel, CA 92677

c) or by phone at (949) 643-6385

CBP appreciates your interest and concern regarding the proposed undertaking. We look forward to continuing the Section 106 consultation process with you

Sincerely,

Paul Enriquez
Environmental Branch Chief
Border Patrol and Air and Marine
Program Management Office
U.S. Customs and Border Protection



U.S. Customs and Border Protection

Mr. John Flores
Environmental Coordinator
San Pasqual Band of Mission Indians
P.O. Box 365
Valley Center, CA 92082

Reference: National Historic Preservation Act Section 106 Consultation – Alamo River Vegetation Control Project, Imperial County, California

Dear Mr. Flores:

The purpose of this letter is to initiate National Historic Preservation Act (NHPA) Section 106 consultation for the Alamo River Vegetation Control project. Customs and Border Protection (CBP), a component within the Department of Homeland Security (DHS), proposes to conduct vegetation control along the Alamo River channel in Imperial County, California. The project is an undertaking, as defined in Section 106 of the NHPA. Section 106, as implemented (36 Code of Federal Regulations Part 800), requires federal agencies to enter into consultation with interested Native American Tribes.

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CBP proposes to conduct vegetation control along the Alamo River channel in Imperial County, California. The El Centro Sector of U.S. Border Patrol (USBP) requires vegetation control along 12.95 acres of the Alamo River located in the Calexico area of responsibility, with the All-American Canal to the south and Highway 98 to the north, to increase visibility and enhance patrol capabilities at the U.S./Mexico border. CBP is responsible for vegetation control because the USBP law enforcement organization and responsibilities were transferred to the CBP component of DHS on March 1, 2003.

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Identification of Historic Properties

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Laguna Niguel, CA 92677

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Sincerely,

Paul Enriquez
Environmental Branch Chief
Border Patrol and Air and Marine
Program Management Office
U.S. Customs and Border Protection



U.S. Customs and Border Protection

Mr. Michael Garcia
Vice Chairperson
Ewiiapaayp Tribal Office
4054 Willows Road
Alpine, CA 91901

Reference: National Historic Preservation Act Section 106 Consultation – Alamo River Vegetation Control Project, Imperial County, California

Dear Mr. Garcia:

The purpose of this letter is to initiate National Historic Preservation Act (NHPA) Section 106 consultation for the Alamo River Vegetation Control project. Customs and Border Protection (CBP), a component within the Department of Homeland Security (DHS), proposes to conduct vegetation control along the Alamo River channel in Imperial County, California. The project is an undertaking, as defined in Section 106 of the NHPA. Section 106, as implemented (36 Code of Federal Regulations Part 800), requires federal agencies to enter into consultation with interested Native American Tribes.

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Identification of Historic Properties

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Laguna Niguel, CA 92677

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Sincerely,

Paul Enriquez
Environmental Branch Chief
Border Patrol and Air and Marine
Program Management Office
U.S. Customs and Border Protection



U.S. Customs and Border Protection

Mr. Ralph Goff
Chairperson
Campo Band of Mission Indians
36190 Church Road, Suite 1
Campo, CA 91906

Reference: National Historic Preservation Act Section 106 Consultation – Alamo River Vegetation Control Project, Imperial County, California

Dear Mr. Goff:

The purpose of this letter is to initiate National Historic Preservation Act (NHPA) Section 106 consultation for the Alamo River Vegetation Control project. Customs and Border Protection (CBP), a component within the Department of Homeland Security (DHS), proposes to conduct vegetation control along the Alamo River channel in Imperial County, California. The project is an undertaking, as defined in Section 106 of the NHPA. Section 106, as implemented (36 Code of Federal Regulations Part 800), requires federal agencies to enter into consultation with interested Native American Tribes.

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John Petrilla
U.S. Customs and Border Protection
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Laguna Niguel, CA 92677

c) or by phone at (949) 643-6385

CBP appreciates your interest and concern regarding the proposed undertaking. We look forward to continuing the Section 106 consultation process with you

Sincerely,

Paul Enriquez
Environmental Branch Chief
Border Patrol and Air and Marine
Program Management Office
U.S. Customs and Border Protection



U.S. Customs and Border Protection

Ms. Julie Hagen
Cultural Resources
Viejas Band of Kumeyaay Indians
1 Viejas Grade Road
Alpine, CA 91901

Reference: National Historic Preservation Act Section 106 Consultation – Alamo River Vegetation Control Project, Imperial County, California

Dear Ms. Hagen:

The purpose of this letter is to initiate National Historic Preservation Act (NHPA) Section 106 consultation for the Alamo River Vegetation Control project. Customs and Border Protection (CBP), a component within the Department of Homeland Security (DHS), proposes to conduct vegetation control along the Alamo River channel in Imperial County, California. The project is an undertaking, as defined in Section 106 of the NHPA. Section 106, as implemented (36 Code of Federal Regulations Part 800), requires federal agencies to enter into consultation with interested Native American Tribes.

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John Petrilla
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Laguna Niguel, CA 92677

c) or by phone at (949) 643-6385

CBP appreciates your interest and concern regarding the proposed undertaking. We look forward to continuing the Section 106 consultation process with you

Sincerely,

Paul Enriquez
Environmental Branch Chief
Border Patrol and Air and Marine
Program Management Office
U.S. Customs and Border Protection



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

Ms. Lisa Haws
Cultural Resource Manager
Sycuan Band of the Kumeyaay Nation
1 Kwaaypaay Court
El Cajon, CA 92019

Reference: National Historic Preservation Act Section 106 Consultation – Alamo River Vegetation Control Project, Imperial County, California

Dear Ms. Haws:

The purpose of this letter is to initiate National Historic Preservation Act (NHPA) Section 106 consultation for the Alamo River Vegetation Control project. Customs and Border Protection (CBP), a component within the Department of Homeland Security (DHS), proposes to conduct vegetation control along the Alamo River channel in Imperial County, California. The project is an undertaking, as defined in Section 106 of the NHPA. Section 106, as implemented (36 Code of Federal Regulations Part 800), requires federal agencies to enter into consultation with interested Native American Tribes.

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Sincerely,

Paul Enriquez
Environmental Branch Chief
Border Patrol and Air and Marine
Program Management Office
U.S. Customs and Border Protection



U.S. Customs and Border Protection

Mr. Michael Jackson Sr.
President
Quechuan Tribe of the Fort Yuma Reservation
P.O. Box 1899
Yuma, AZ 85366

Reference: National Historic Preservation Act Section 106 Consultation – Alamo River Vegetation Control Project, Imperial County, California

Dear Mr. Jackson Sr.:

The purpose of this letter is to initiate National Historic Preservation Act (NHPA) Section 106 consultation for the Alamo River Vegetation Control project. Customs and Border Protection (CBP), a component within the Department of Homeland Security (DHS), proposes to conduct vegetation control along the Alamo River channel in Imperial County, California. The project is an undertaking, as defined in Section 106 of the NHPA. Section 106, as implemented (36 Code of Federal Regulations Part 800), requires federal agencies to enter into consultation with interested Native American Tribes.

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Sincerely,

Paul Enriquez
Environmental Branch Chief
Border Patrol and Air and Marine
Program Management Office
U.S. Customs and Border Protection



U.S. Customs and Border Protection

Mr. Allen E. Lawson
Chairperson
San Pasqual Band of Mission Indians
P.O. Box 365
Valley Center, CA 92082

Reference: National Historic Preservation Act Section 106 Consultation – Alamo River Vegetation Control Project, Imperial County, California

Dear Mr. Lawson:

The purpose of this letter is to initiate National Historic Preservation Act (NHPA) Section 106 consultation for the Alamo River Vegetation Control project. Customs and Border Protection (CBP), a component within the Department of Homeland Security (DHS), proposes to conduct vegetation control along the Alamo River channel in Imperial County, California. The project is an undertaking, as defined in Section 106 of the NHPA. Section 106, as implemented (36 Code of Federal Regulations Part 800), requires federal agencies to enter into consultation with interested Native American Tribes.

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Sincerely,

Paul Enriquez
Environmental Branch Chief
Border Patrol and Air and Marine
Program Management Office
U.S. Customs and Border Protection



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

Mr. Clint Linton
Director of Cultural Resources
Ipai Nation of Santa Ysabel
P.O. Box 507
Santa Ysabel, CA 92070

Reference: National Historic Preservation Act Section 106 Consultation – Alamo River Vegetation Control Project, Imperial County, California

Dear Mr. Linton:

The purpose of this letter is to initiate National Historic Preservation Act (NHPA) Section 106 consultation for the Alamo River Vegetation Control project. Customs and Border Protection (CBP), a component within the Department of Homeland Security (DHS), proposes to conduct vegetation control along the Alamo River channel in Imperial County, California. The project is an undertaking, as defined in Section 106 of the NHPA. Section 106, as implemented (36 Code of Federal Regulations Part 800), requires federal agencies to enter into consultation with interested Native American Tribes.

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Vegetation control would consist of a combination of minimally intrusive mechanical removal (mowing) and herbicide treatment in areas where non-native invasive species are prevalent. The proposed action would remove approximately 8.92 acres of vegetation within the 12.95-acre project area. Staging of all equipment and construction materials throughout implementation of the proposed action would be located on either an existing roadway or designated agriculture area. The 1.73 acres of staging area situated at the southern boundary of the project area is comprised of existing roadway approximately 40 feet from the nearest waterway. The staging area along the western border of the project area is approximately 1.12 acres and approximately 80 feet from the nearest waterway. The western staging area includes agricultural land use and would require securing right of entry from land owners. The Area of Potential Effect (APE) consists of 15.8 acres (Figure 1).

Identification of Historic Properties

In an effort to identify cultural resources within the APE and to assess effects to resources found eligible for the National Register of Historic Places, CBP hired a consultant to conduct an archaeological survey of the APE. Prior to the survey, a records search with a one-mile search radius was requested from the South Coastal Information Center. Three previously recorded resources were identified in the records search; none were located within the project area. The three resources include the adjacent All-American Canal; the South Alamo Lateral 16 Canal, located approximately 4,400 feet west of the project area; and a single Lower Colorado Buff Ware sherd, located approximately 3,900 feet north of the northern project area boundary. A sacred lands request was also sent to the Native American Heritage Commission. The results were negative for sacred lands.

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Evaluation of Eligibility and Assessment of Effects

CBP respectfully invites you to enter into government-to-government consultation regarding the proposed undertaking. Please provide any comments or concerns you have regarding the proposed undertaking by May 11, 2018. You may provide comments to John Petrilla, Environmental Protection Specialist, via the following:

a) by email to john.p.petrilla@cbp.dhs.gov

b) by mail to

John Petrilla
U.S. Customs and Border Protection
24000 Avila Road, Suite 5020
Laguna Niguel, CA 92677

c) or by phone at (949) 643-6385

CBP appreciates your interest and concern regarding the proposed undertaking. We look forward to continuing the Section 106 consultation process with you

Sincerely,

Paul Enriquez
Environmental Branch Chief
Border Patrol and Air and Marine
Program Management Office
U.S. Customs and Border Protection



U.S. Customs and Border Protection

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

Reference: National Historic Preservation Act Section 106 Consultation – Alamo River Vegetation Control Project, Imperial County, California

Dear Ms. Lucas:

The purpose of this letter is to initiate National Historic Preservation Act (NHPA) Section 106 consultation for the Alamo River Vegetation Control project. Customs and Border Protection (CBP), a component within the Department of Homeland Security (DHS), proposes to conduct vegetation control along the Alamo River channel in Imperial County, California. The project is an undertaking, as defined in Section 106 of the NHPA. Section 106, as implemented (36 Code of Federal Regulations Part 800), requires federal agencies to enter into consultation with interested Native American Tribes.

Description of Proposed Undertaking

CBP proposes to conduct vegetation control along the Alamo River channel in Imperial County, California. The El Centro Sector of U.S. Border Patrol (USBP) requires vegetation control along 12.95 acres of the Alamo River located in the Calexico area of responsibility, with the All-American Canal to the south and Highway 98 to the north, to increase visibility and enhance patrol capabilities at the U.S./Mexico border. CBP is responsible for vegetation control because the USBP law enforcement organization and responsibilities were transferred to the CBP component of DHS on March 1, 2003.

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Identification of Historic Properties

In an effort to identify cultural resources within the APE and to assess effects to resources found eligible for the National Register of Historic Places, CBP hired a consultant to conduct an archaeological survey of the APE. Prior to the survey, a records search with a one-mile search radius was requested from the South Coastal Information Center. Three previously recorded resources were identified in the records search; none were located within the project area. The three resources include the adjacent All-American Canal; the South Alamo Lateral 16 Canal, located approximately 4,400 feet west of the project area; and a single Lower Colorado Buff Ware sherd, located approximately 3,900 feet north of the northern project area boundary. A sacred lands request was also sent to the Native American Heritage Commission. The results were negative for sacred lands.

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John Petrilla
U.S. Customs and Border Protection
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Laguna Niguel, CA 92677

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Sincerely,

Paul Enriquez
Environmental Branch Chief
Border Patrol and Air and Marine
Program Management Office
U.S. Customs and Border Protection



U.S. Customs and Border Protection

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

Reference: National Historic Preservation Act Section 106 Consultation – Alamo River Vegetation Control Project, Imperial County, California

Dear Mr. Martinez:

The purpose of this letter is to initiate National Historic Preservation Act (NHPA) Section 106 consultation for the Alamo River Vegetation Control project. Customs and Border Protection (CBP), a component within the Department of Homeland Security (DHS), proposes to conduct vegetation control along the Alamo River channel in Imperial County, California. The project is an undertaking, as defined in Section 106 of the NHPA. Section 106, as implemented (36 Code of Federal Regulations Part 800), requires federal agencies to enter into consultation with interested Native American Tribes.

Description of Proposed Undertaking

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Identification of Historic Properties

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Laguna Niguel, CA 92677

c) or by phone at (949) 643-6385

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Sincerely,

Paul Enriquez
Environmental Branch Chief
Border Patrol and Air and Marine
Program Management Office
U.S. Customs and Border Protection



U.S. Customs and Border Protection

Ms. Jill McCormick
Cultural Resources Manager
Cocopah Indian Reservation
14515 S. Veterans Drive
Somerton, AZ 85350

Reference: National Historic Preservation Act Section 106 Consultation – Alamo River Vegetation Control Project, Imperial County, California

Dear Ms. McCormick:

The purpose of this letter is to initiate National Historic Preservation Act (NHPA) Section 106 consultation for the Alamo River Vegetation Control project. Customs and Border Protection (CBP), a component within the Department of Homeland Security (DHS), proposes to conduct vegetation control along the Alamo River channel in Imperial County, California. The project is an undertaking, as defined in Section 106 of the NHPA. Section 106, as implemented (36 Code of Federal Regulations Part 800), requires federal agencies to enter into consultation with interested Native American Tribes.

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Identification of Historic Properties

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U.S. Customs and Border Protection
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Laguna Niguel, CA 92677

c) or by phone at (949) 643-6385

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Sincerely,

Paul Enriquez
Environmental Branch Chief
Border Patrol and Air and Marine
Program Management Office
U.S. Customs and Border Protection



U.S. Customs and Border Protection

Mr. Javaughn Miller
Tribal Administrator
La Posta Band of Mission Indians
8 Crestwood Road
Boulevard, CA 91905

Reference: National Historic Preservation Act Section 106 Consultation – Alamo River Vegetation Control Project, Imperial County, California

Dear Mr. Miller:

The purpose of this letter is to initiate National Historic Preservation Act (NHPA) Section 106 consultation for the Alamo River Vegetation Control project. Customs and Border Protection (CBP), a component within the Department of Homeland Security (DHS), proposes to conduct vegetation control along the Alamo River channel in Imperial County, California. The project is an undertaking, as defined in Section 106 of the NHPA. Section 106, as implemented (36 Code of Federal Regulations Part 800), requires federal agencies to enter into consultation with interested Native American Tribes.

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Laguna Niguel, CA 92677

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Sincerely,

Paul Enriquez
Environmental Branch Chief
Border Patrol and Air and Marine
Program Management Office
U.S. Customs and Border Protection



U.S. Customs and Border Protection

Mr. Mario Morales
Cultural Resources Representative
Mesa Grande Band of Mission Indians
35008 Pala Temecula Road, PMB 366
Pala, CA 92059

Reference: National Historic Preservation Act Section 106 Consultation – Alamo River Vegetation Control Project, Imperial County, California

Dear Mr. Morales:

The purpose of this letter is to initiate National Historic Preservation Act (NHPA) Section 106 consultation for the Alamo River Vegetation Control project. Customs and Border Protection (CBP), a component within the Department of Homeland Security (DHS), proposes to conduct vegetation control along the Alamo River channel in Imperial County, California. The project is an undertaking, as defined in Section 106 of the NHPA. Section 106, as implemented (36 Code of Federal Regulations Part 800), requires federal agencies to enter into consultation with interested Native American Tribes.

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Sincerely,

Paul Enriquez
Environmental Branch Chief
Border Patrol and Air and Marine
Program Management Office
U.S. Customs and Border Protection



U.S. Customs and Border Protection

Ms. Rebecca Osuna
Spokesperson
Inaja Band of Mission Indians
2005 S. Escondido Blvd.
Escondido, CA 92025

Reference: National Historic Preservation Act Section 106 Consultation – Alamo River Vegetation Control Project, Imperial County, California

Dear Ms. Osuna:

The purpose of this letter is to initiate National Historic Preservation Act (NHPA) Section 106 consultation for the Alamo River Vegetation Control project. Customs and Border Protection (CBP), a component within the Department of Homeland Security (DHS), proposes to conduct vegetation control along the Alamo River channel in Imperial County, California. The project is an undertaking, as defined in Section 106 of the NHPA. Section 106, as implemented (36 Code of Federal Regulations Part 800), requires federal agencies to enter into consultation with interested Native American Tribes.

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Sincerely,

Paul Enriquez
Environmental Branch Chief
Border Patrol and Air and Marine
Program Management Office
U.S. Customs and Border Protection



U.S. Customs and Border Protection

Mr. Virgil Oyos
Chairperson
Mesa Grande Band of Mission Indians
P.O. Box 270
Santa Ysabel, CA 92070

Reference: National Historic Preservation Act Section 106 Consultation – Alamo River Vegetation Control Project, Imperial County, California

Dear Mr. Oyos:

The purpose of this letter is to initiate National Historic Preservation Act (NHPA) Section 106 consultation for the Alamo River Vegetation Control project. Customs and Border Protection (CBP), a component within the Department of Homeland Security (DHS), proposes to conduct vegetation control along the Alamo River channel in Imperial County, California. The project is an undertaking, as defined in Section 106 of the NHPA. Section 106, as implemented (36 Code of Federal Regulations Part 800), requires federal agencies to enter into consultation with interested Native American Tribes.

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Sincerely,

Paul Enriquez
Environmental Branch Chief
Border Patrol and Air and Marine
Program Management Office
U.S. Customs and Border Protection



U.S. Customs and Border Protection

Ms. Gwendolyn Parada
Chairperson
La Posta Band of Mission Indians
P.O. Box 1120
Boulevard, CA 91905

Reference: National Historic Preservation Act Section 106 Consultation – Alamo River Vegetation Control Project, Imperial County, California

Dear Ms. Parada:

The purpose of this letter is to initiate National Historic Preservation Act (NHPA) Section 106 consultation for the Alamo River Vegetation Control project. Customs and Border Protection (CBP), a component within the Department of Homeland Security (DHS), proposes to conduct vegetation control along the Alamo River channel in Imperial County, California. The project is an undertaking, as defined in Section 106 of the NHPA. Section 106, as implemented (36 Code of Federal Regulations Part 800), requires federal agencies to enter into consultation with interested Native American Tribes.

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Identification of Historic Properties

In an effort to identify cultural resources within the APE and to assess effects to resources found eligible for the National Register of Historic Places, CBP hired a consultant to conduct an archaeological survey of the APE. Prior to the survey, a records search with a one-mile search radius was requested from the South Coastal Information Center. Three previously recorded resources were identified in the records search; none were located within the project area. The three resources include the adjacent All-American Canal; the South Alamo Lateral 16 Canal, located approximately 4,400 feet west of the project area; and a single Lower Colorado Buff Ware sherd, located approximately 3,900 feet north of the northern project area boundary. A sacred lands request was also sent to the Native American Heritage Commission. The results were negative for sacred lands.

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Evaluation of Eligibility and Assessment of Effects

CBP respectfully invites you to enter into government-to-government consultation regarding the proposed undertaking. Please provide any comments or concerns you have regarding the proposed undertaking by May 11, 2018. You may provide comments to John Petrilla, Environmental Protection Specialist, via the following:

a) by email to john.p.petrilla@cbp.dhs.gov

b) by mail to

John Petrilla
U.S. Customs and Border Protection
24000 Avila Road, Suite 5020
Laguna Niguel, CA 92677

c) or by phone at (949) 643-6385

CBP appreciates your interest and concern regarding the proposed undertaking. We look forward to continuing the Section 106 consultation process with you

Sincerely,

Paul Enriquez
Environmental Branch Chief
Border Patrol and Air and Marine
Program Management Office
U.S. Customs and Border Protection



U.S. Customs and Border Protection

Mr. Virgil Perez
Spokesman
Iipay Nation of Santa Ysabel
P.O. Box 130
Santa Ysabel, CA 92070

Reference: National Historic Preservation Act Section 106 Consultation – Alamo River Vegetation Control Project, Imperial County, California

Dear Mr. Perez:

The purpose of this letter is to initiate National Historic Preservation Act (NHPA) Section 106 consultation for the Alamo River Vegetation Control project. Customs and Border Protection (CBP), a component within the Department of Homeland Security (DHS), proposes to conduct vegetation control along the Alamo River channel in Imperial County, California. The project is an undertaking, as defined in Section 106 of the NHPA. Section 106, as implemented (36 Code of Federal Regulations Part 800), requires federal agencies to enter into consultation with interested Native American Tribes.

Description of Proposed Undertaking

CBP proposes to conduct vegetation control along the Alamo River channel in Imperial County, California. The El Centro Sector of U.S. Border Patrol (USBP) requires vegetation control along 12.95 acres of the Alamo River located in the Calexico area of responsibility, with the All-American Canal to the south and Highway 98 to the north, to increase visibility and enhance patrol capabilities at the U.S./Mexico border. CBP is responsible for vegetation control because the USBP law enforcement organization and responsibilities were transferred to the CBP component of DHS on March 1, 2003.

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24000 Avila Road, Suite 5020
Laguna Niguel, CA 92677

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CBP appreciates your interest and concern regarding the proposed undertaking. We look forward to continuing the Section 106 consultation process with you

Sincerely,

Paul Enriquez
Environmental Branch Chief
Border Patrol and Air and Marine
Program Management Office
U.S. Customs and Border Protection



U.S. Customs and Border Protection

Mr. Robert Pinto
Chairperson
Ewiiapaayp Tribal Office
4054 Willows Road
Alpine, CA 91901

Reference: National Historic Preservation Act Section 106 Consultation – Alamo River Vegetation Control Project, Imperial County, California

Dear Mr. Pinto:

The purpose of this letter is to initiate National Historic Preservation Act (NHPA) Section 106 consultation for the Alamo River Vegetation Control project. Customs and Border Protection (CBP), a component within the Department of Homeland Security (DHS), proposes to conduct vegetation control along the Alamo River channel in Imperial County, California. The project is an undertaking, as defined in Section 106 of the NHPA. Section 106, as implemented (36 Code of Federal Regulations Part 800), requires federal agencies to enter into consultation with interested Native American Tribes.

Description of Proposed Undertaking

CBP proposes to conduct vegetation control along the Alamo River channel in Imperial County, California. The El Centro Sector of U.S. Border Patrol (USBP) requires vegetation control along 12.95 acres of the Alamo River located in the Calexico area of responsibility, with the All-American Canal to the south and Highway 98 to the north, to increase visibility and enhance patrol capabilities at the U.S./Mexico border. CBP is responsible for vegetation control because the USBP law enforcement organization and responsibilities were transferred to the CBP component of DHS on March 1, 2003.

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Identification of Historic Properties

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Laguna Niguel, CA 92677

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Sincerely,

Paul Enriquez
Environmental Branch Chief
Border Patrol and Air and Marine
Program Management Office
U.S. Customs and Border Protection



U.S. Customs and Border Protection

Ms. Erica Pinto
Chairperson
Jamul Indian Reservation
P.O. Box 612
Jamul, CA 91935

Reference: National Historic Preservation Act Section 106 Consultation – Alamo River Vegetation Control Project, Imperial County, California

Dear Ms. Pinto:

The purpose of this letter is to initiate National Historic Preservation Act (NHPA) Section 106 consultation for the Alamo River Vegetation Control project. Customs and Border Protection (CBP), a component within the Department of Homeland Security (DHS), proposes to conduct vegetation control along the Alamo River channel in Imperial County, California. The project is an undertaking, as defined in Section 106 of the NHPA. Section 106, as implemented (36 Code of Federal Regulations Part 800), requires federal agencies to enter into consultation with interested Native American Tribes.

Description of Proposed Undertaking

CBP proposes to conduct vegetation control along the Alamo River channel in Imperial County, California. The El Centro Sector of U.S. Border Patrol (USBP) requires vegetation control along 12.95 acres of the Alamo River located in the Calexico area of responsibility, with the All-American Canal to the south and Highway 98 to the north, to increase visibility and enhance patrol capabilities at the U.S./Mexico border. CBP is responsible for vegetation control because the USBP law enforcement organization and responsibilities were transferred to the CBP component of DHS on March 1, 2003.

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John Petrilla
U.S. Customs and Border Protection
24000 Avila Road, Suite 5020
Laguna Niguel, CA 92677

c) or by phone at (949) 643-6385

CBP appreciates your interest and concern regarding the proposed undertaking. We look forward to continuing the Section 106 consultation process with you

Sincerely,

Paul Enriquez
Environmental Branch Chief
Border Patrol and Air and Marine
Program Management Office
U.S. Customs and Border Protection



U.S. Customs and Border Protection

Mr. Edwin Romero
Chairperson
Barona Group of the Capitan Grande
1095 Barona Road
Lakeside, CA 92040

Reference: National Historic Preservation Act Section 106 Consultation – Alamo River Vegetation Control Project, Imperial County, California

Dear Mr. Romero:

The purpose of this letter is to initiate National Historic Preservation Act (NHPA) Section 106 consultation for the Alamo River Vegetation Control project. Customs and Border Protection (CBP), a component within the Department of Homeland Security (DHS), proposes to conduct vegetation control along the Alamo River channel in Imperial County, California. The project is an undertaking, as defined in Section 106 of the NHPA. Section 106, as implemented (36 Code of Federal Regulations Part 800), requires federal agencies to enter into consultation with interested Native American Tribes.

Description of Proposed Undertaking

CBP proposes to conduct vegetation control along the Alamo River channel in Imperial County, California. The El Centro Sector of U.S. Border Patrol (USBP) requires vegetation control along 12.95 acres of the Alamo River located in the Calexico area of responsibility, with the All-American Canal to the south and Highway 98 to the north, to increase visibility and enhance patrol capabilities at the U.S./Mexico border. CBP is responsible for vegetation control because the USBP law enforcement organization and responsibilities were transferred to the CBP component of DHS on March 1, 2003.

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b) by mail to

John Petrilla
U.S. Customs and Border Protection
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Laguna Niguel, CA 92677

c) or by phone at (949) 643-6385

CBP appreciates your interest and concern regarding the proposed undertaking. We look forward to continuing the Section 106 consultation process with you

Sincerely,

Paul Enriquez
Environmental Branch Chief
Border Patrol and Air and Marine
Program Management Office
U.S. Customs and Border Protection



U.S. Customs and Border Protection

Mr. Robert Welch
Chairperson
Viejas Band of Kumeyaay Indians
1 Viejas Grade Road
Alpine, CA 91901

Reference: National Historic Preservation Act Section 106 Consultation – Alamo River Vegetation Control Project, Imperial County, California

Dear Mr. Welch:

The purpose of this letter is to initiate National Historic Preservation Act (NHPA) Section 106 consultation for the Alamo River Vegetation Control project. Customs and Border Protection (CBP), a component within the Department of Homeland Security (DHS), proposes to conduct vegetation control along the Alamo River channel in Imperial County, California. The project is an undertaking, as defined in Section 106 of the NHPA. Section 106, as implemented (36 Code of Federal Regulations Part 800), requires federal agencies to enter into consultation with interested Native American Tribes.

Description of Proposed Undertaking

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Identification of Historic Properties

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John Petrilla
U.S. Customs and Border Protection
24000 Avila Road, Suite 5020
Laguna Niguel, CA 92677

c) or by phone at (949) 643-6385

CBP appreciates your interest and concern regarding the proposed undertaking. We look forward to continuing the Section 106 consultation process with you

Sincerely,

Paul Enriquez
Environmental Branch Chief
Border Patrol and Air and Marine
Program Management Office
U.S. Customs and Border Protection

APPENDIX C
Scoping Letters



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

JUL 9 2018

Scott C. Kerns
Senior Realty Specialist
U.S. Bureau of Reclamation
Yuma Area Office
7301 S. Calle Agua Salada,
Yuma, AZ 85364

Subject: Preparation of an Environmental Assessment Addressing the Proposed Alamo River Vegetation Control Project in Imperial County, California

Dear Mr. Kerns

U.S. Customs and Border Protection (CBP), under the Department of Homeland Security (DHS), is preparing a Draft Environmental Assessment (EA) for the proposed Alamo River Vegetation Control Project (Proposed Action). The Proposed Action would implement a combination of minimally intrusive mechanical removal (mowing) and herbicide treatment in areas where non-native invasive species are prevalent. The Proposed Action would preserve line of sight for U.S. Border Patrol (USBP) agents in the El Centro Sector and reduce hiding opportunities of cross-border violators (CBV) within the Alamo River (Project Area). The Project Area is under private and public ownership, including by the U.S. Bureau of Reclamation and four private ownership groups. An EA is being prepared in accordance with the National Environmental Policy Act for this project.

The Proposed Action comprises the mechanical removal of vegetation (vegetation clearance) within the 12.93-acre Project Area. Mechanical removal is an effective first step in controlling tall-growing plant species that reduce sightlines within the Project Area. Mechanical removal would consist of mowing, cutting of vegetation (clipping at grade), and use of heavy equipment to remove non-native vegetation twice a year, or as required by CBP for surveillance purposes. No discing or up-rooting would occur under this alternative. CBP proposes to supplement mechanical removal with herbicide application. Herbicide application could occur up to four times a year, depending on the extent and composition of species requiring management. Staging areas would be sited in previously disturbed areas such as unimproved roads, shoulders, graded areas, or sites with compacted soil that do not support vegetation adjacent to the Project Area. The Proposed Action would remove all vegetation, primarily non-native species, within the 12.93-acre Project Area.

The EA will consider two alternatives in detail: the Proposed Action and the No Action Alternative. In addition to preparation of the EA, resource surveys of the Alamo River Project Area have been completed, including a cultural resources survey, jurisdictional waters survey, and endangered species survey.

Mr. Kems

Page 2

Should you have comments or information about the Proposed Action that you would like considered during preparation of the Draft EA, please send them within 30 days of receipt of this letter using one of the following methods:

- By U.S. mail: Alamo River Vegetation Control EA c/o Mr. John Petrilla, U.S. Customs and Border Protection, Border Patrol and Air and Marine Program Management Office, 24000 Avila Road - Suite 5020, Laguna Niguel, CA 92677
- By email: John.P.Petrilla@cbp.dhs.gov

We intend to provide you with an electronic copy of the Draft EA on a CD once the document is completed. Please inform us if hard copies are needed and if someone else other than you should receive the Draft EA.

Your prompt attention to this request is greatly appreciated. If you have any questions, please contact Mr. John Petrilla by email at John.P.Petrilla@cbp.dhs.gov or by telephone at (949) 643-6385.

Sincerely,



Joseph Zidron
Environmental Branch Chief (A)
Border Patrol and Air and Marine Program Management Office

Enclosure: Figure 1 – Map of Proposed Action Location



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

JUL 9 2018

Aung Win
Controller
Zone 15 Investments LLC (Aggregate Products Inc.)
9500 Beverly Road,
Pico Rivera, CA 90660-2135

Subject: Preparation of an Environmental Assessment Addressing the Proposed Alamo River Vegetation Control Project in Imperial County, California

Dear Ms. Win

U.S. Customs and Border Protection (CBP), under the Department of Homeland Security (DHS), is preparing a Draft Environmental Assessment (EA) for the proposed Alamo River Vegetation Control Project (Proposed Action). The Proposed Action would implement a combination of minimally intrusive mechanical removal (mowing) and herbicide treatment in areas where non-native invasive species are prevalent. The Proposed Action would preserve line of sight for U.S. Border Patrol (USBP) agents in the El Centro Sector and reduce hiding opportunities of cross-border violators (CBV) within the Alamo River (Project Area). The Project Area is under private and public ownership, including by the U.S. Bureau of Reclamation and four private ownership groups. An EA is being prepared in accordance with the National Environmental Policy Act for this project.

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Sincerely,



Joseph Zidron
Environmental Branch Chief (A)
Border Patrol and Air and Marine Program Management Office

Enclosure: Figure 1 – Map of Proposed Action Location



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

JUL 9 2018

Mr. Raul Perez
U.S. Army Corps of Engineers
1325 J Street, Room 802
Sacramento, CA 95814

Subject: Preparation of an Environmental Assessment Addressing the Proposed Alamo River Vegetation Control Project in Imperial County, California

Dear Mr. Perez

U.S. Customs and Border Protection (CBP), under the Department of Homeland Security (DHS), is preparing a Draft Environmental Assessment (EA) for the proposed Alamo River Vegetation Control Project (Proposed Action). The Proposed Action would implement a combination of minimally intrusive mechanical removal (mowing) and herbicide treatment in areas where non-native invasive species are prevalent. The Proposed Action would preserve line of sight for U.S. Border Patrol (USBP) agents in the El Centro Sector and reduce hiding opportunities of cross-border violators (CBV) within the Alamo River (Project Area). The Project Area is under private and public ownership, including by the U.S. Bureau of Reclamation and four private ownership groups. An EA is being prepared in accordance with the National Environmental Policy Act for this project.

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Sincerely,



Joseph Zidron
Environmental Branch Chief (A)
Border Patrol and Air and Marine Program Management Office

Enclosure: Figure 1 – Map of Proposed Action Location



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

JUL 9 2018

Joshua J. Meyer
Manager
Tierra Management LLC (Meyer Imperial Investments LLC)
3220 Lakeside Village Drive
Prescott, AZ 86301

Subject: Preparation of an Environmental Assessment Addressing the Proposed Alamo River Vegetation Control Project in Imperial County, California

Dear Mr. Meyer

U.S. Customs and Border Protection (CBP), under the Department of Homeland Security (DHS), is preparing a Draft Environmental Assessment (EA) for the proposed Alamo River Vegetation Control Project (Proposed Action). The Proposed Action would implement a combination of minimally intrusive mechanical removal (mowing) and herbicide treatment in areas where non-native invasive species are prevalent. The Proposed Action would preserve line of sight for U.S. Border Patrol (USBP) agents in the El Centro Sector and reduce hiding opportunities of cross-border violators (CBV) within the Alamo River (Project Area). The Project Area is under private and public ownership, including by the U.S. Bureau of Reclamation and four private ownership groups. An EA is being prepared in accordance with the National Environmental Policy Act for this project.

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The EA will consider two alternatives in detail: the Proposed Action and the No Action Alternative. In addition to preparation of the EA, resource surveys of the Alamo River Project Area have been completed, including a cultural resources survey, jurisdictional waters survey, and endangered species survey.

Should you have comments or information about the Proposed Action that you would like considered during preparation of the Draft EA, please send them within 30 days of receipt of this letter using one of the following methods:

- By U.S. mail: Alamo River Vegetation Control EA c/o Mr. John Petrilla, U.S. Customs and Border Protection, Border Patrol and Air and Marine Program Management Office, 24000 Avila Road - Suite 5020, Laguna Niguel, CA 92677
- By email: John.P.Petrilla@cbp.dhs.gov

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Your prompt attention to this request is greatly appreciated. If you have any questions, please contact Mr. John Petrilla by email at John.P.Petrilla@cbp.dhs.gov or by telephone at (949) 643-6385.

Sincerely,



Joseph Zidron
Environmental Branch Chief (A)
Border Patrol and Air and Marine Program Management Office

Enclosure: Figure 1 – Map of Proposed Action Location



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

JUL 9 2018

Brent Grizzle
CEO
MFC Imperial LLC
5100 California Ave, Suite 233
Bakersfield, CA 93309

Subject: Preparation of an Environmental Assessment Addressing the Proposed Alamo River Vegetation Control Project in Imperial County, California

Dear Mr. Grizzle

U.S. Customs and Border Protection (CBP), under the Department of Homeland Security (DHS), is preparing a Draft Environmental Assessment (EA) for the proposed Alamo River Vegetation Control Project (Proposed Action). The Proposed Action would implement a combination of minimally intrusive mechanical removal (mowing) and herbicide treatment in areas where non-native invasive species are prevalent. The Proposed Action would preserve line of sight for U.S. Border Patrol (USBP) agents in the El Centro Sector and reduce hiding opportunities of cross-border violators (CBV) within the Alamo River (Project Area). The Project Area is under private and public ownership, including by the U.S. Bureau of Reclamation and four private ownership groups. An EA is being prepared in accordance with the National Environmental Policy Act for this project.

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Mr. Grizzle
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Sincerely,



Joseph Zidron
Environmental Branch Chief (A)
Border Patrol and Air and Marine Program Management Office

Enclosure: Figure 1 – Map of Proposed Action Location



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

JUL 9 2018

G. Mendel Stewart
U.S. Fish and Wildlife Service, Carlsbad Fish and Wildlife Office
2177 Salk Avenue, Suite 250
Carlsbad, CA 92008-7385

Subject: Preparation of an Environmental Assessment Addressing the Proposed Alamo River Vegetation Control Project in Imperial County, California

Dear Mr. Stewart

U.S. Customs and Border Protection (CBP), under the Department of Homeland Security (DHS), is preparing a Draft Environmental Assessment (EA) for the proposed Alamo River Vegetation Control Project (Proposed Action). The Proposed Action would implement a combination of minimally intrusive mechanical removal (mowing) and herbicide treatment in areas where non-native invasive species are prevalent. The Proposed Action would preserve line of sight for U.S. Border Patrol (USBP) agents in the El Centro Sector and reduce hiding opportunities of cross-border violators (CBV) within the Alamo River (Project Area). The Project Area is under private and public ownership, including by the U.S. Bureau of Reclamation and four private ownership groups. An EA is being prepared in accordance with the National Environmental Policy Act for this project.

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Sincerely,



Joseph Zidron
Environmental Branch Chief (A)
Border Patrol and Air and Marine Program Management Office

Enclosure: Figure 1 – Map of Proposed Action Location



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

JUL 9 2018

Michele Lynch
U.S. Army Corps of Engineers, Regulatory Division
5900 La Place Ct., Suite 100
Carlsbad, CA 92008-7385

Subject: Preparation of an Environmental Assessment Addressing the Proposed Alamo River Vegetation Control Project in Imperial County, California

Dear Ms. Lynch

U.S. Customs and Border Protection (CBP), under the Department of Homeland Security (DHS), is preparing a Draft Environmental Assessment (EA) for the proposed Alamo River Vegetation Control Project (Proposed Action). The Proposed Action would implement a combination of minimally intrusive mechanical removal (mowing) and herbicide treatment in areas where non-native invasive species are prevalent. The Proposed Action would preserve line of sight for U.S. Border Patrol (USBP) agents in the El Centro Sector and reduce hiding opportunities of cross-border violators (CBV) within the Alamo River (Project Area). The Project Area is under private and public ownership, including by the U.S. Bureau of Reclamation and four private ownership groups. An EA is being prepared in accordance with the National Environmental Policy Act for this project.

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Sincerely,



Joseph Zidron
Environmental Branch Chief (A)
Border Patrol and Air and Marine Program Management Office

Enclosure: Figure 1 – Map of Proposed Action Location



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

JUL 9 2018

Leslie MacNair
California Department of Fish and Wildlife, Inland Deserts Region
3602 Inland Empire Blvd., Suite C-220
Ontario, CA 91764

Subject: Preparation of an Environmental Assessment Addressing the Proposed Alamo River Vegetation Control Project in Imperial County, California

Dear Ms. MacNair

U.S. Customs and Border Protection (CBP), under the Department of Homeland Security (DHS), is preparing a Draft Environmental Assessment (EA) for the proposed Alamo River Vegetation Control Project (Proposed Action). The Proposed Action would implement a combination of minimally intrusive mechanical removal (mowing) and herbicide treatment in areas where non-native invasive species are prevalent. The Proposed Action would preserve line of sight for U.S. Border Patrol (USBP) agents in the El Centro Sector and reduce hiding opportunities of cross-border violators (CBV) within the Alamo River (Project Area). The Project Area is under private and public ownership, including by the U.S. Bureau of Reclamation and four private ownership groups. An EA is being prepared in accordance with the National Environmental Policy Act for this project.

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Sincerely,



Joseph Zidron
Environmental Branch Chief (A)
Border Patrol and Air and Marine Program Management Office

Enclosure: Figure 1 – Map of Proposed Action Location



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

JUL 9 2018

Gayle Totton
Native American Heritage Commission, Cultural and Environmental Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691

Subject: Preparation of an Environmental Assessment Addressing the Proposed Alamo River Vegetation Control Project in Imperial County, California

Dear Ms. Totton

U.S. Customs and Border Protection (CBP), under the Department of Homeland Security (DHS), is preparing a Draft Environmental Assessment (EA) for the proposed Alamo River Vegetation Control Project (Proposed Action). The Proposed Action would implement a combination of minimally intrusive mechanical removal (mowing) and herbicide treatment in areas where non-native invasive species are prevalent. The Proposed Action would preserve line of sight for U.S. Border Patrol (USBP) agents in the El Centro Sector and reduce hiding opportunities of cross-border violators (CBV) within the Alamo River (Project Area). The Project Area is under private and public ownership, including by the U.S. Bureau of Reclamation and four private ownership groups. An EA is being prepared in accordance with the National Environmental Policy Act for this project.

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Ms. Totton

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Sincerely,



Joseph Zidron
Environmental Branch Chief (A)
Border Patrol and Air and Marine Program Management Office

Enclosure: Figure 1 – Map of Proposed Action Location



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

JUL 9 2018

Julianne Polanco
Office of Historic Preservation, State Historic Preservation Officer
1725 23rd Street, Suite 100
Sacramento, CA 95816

Subject: Preparation of an Environmental Assessment Addressing the Proposed Alamo River Vegetation Control Project in Imperial County, California

Dear Ms. Polanco

U.S. Customs and Border Protection (CBP), under the Department of Homeland Security (DHS), is preparing a Draft Environmental Assessment (EA) for the proposed Alamo River Vegetation Control Project (Proposed Action). The Proposed Action would implement a combination of minimally intrusive mechanical removal (mowing) and herbicide treatment in areas where non-native invasive species are prevalent. The Proposed Action would preserve line of sight for U.S. Border Patrol (USBP) agents in the El Centro Sector and reduce hiding opportunities of cross-border violators (CBV) within the Alamo River (Project Area). The Project Area is under private and public ownership, including by the U.S. Bureau of Reclamation and four private ownership groups. An EA is being prepared in accordance with the National Environmental Policy Act for this project.

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Joseph Zidron
Environmental Branch Chief (A)
Border Patrol and Air and Marine Program Management Office

Enclosure: Figure 1 – Map of Proposed Action Location



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

JUL 9 2018

Jose Angel
California Regional Water Quality Control Board, Regional Board 7, Colorado River
73-720 Fred Waring Drive
Palm Desert, CA 92260

Subject: Preparation of an Environmental Assessment Addressing the Proposed Alamo River
Vegetation Control Project in Imperial County, California

Dear Mr. Angel

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Joseph Zidron
Environmental Branch Chief (A)
Border Patrol and Air and Marine Program Management Office

Enclosure: Figure 1 – Map of Proposed Action Location



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

JUL 9 2018

Scott Morgan
California State Clearinghouse
P.O. Box 3044
Sacramento, CA 95812-3044

Subject: Preparation of an Environmental Assessment Addressing the Proposed Alamo River Vegetation Control Project in Imperial County, California

Dear Mr. Morgan

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Border Patrol and Air and Marine Program Management Office

Enclosure: Figure 1 – Map of Proposed Action Location



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

JUL 9 2018
Ralph B. Morales
City of Calexico
608 Heber Avenue
Calexico, CA 92231

Subject: Preparation of an Environmental Assessment Addressing the Proposed Alamo River Vegetation Control Project in Imperial County, California

Dear Mr. Morales

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Joseph Zidron
Environmental Branch Chief (A)
Border Patrol and Air and Marine Program Management Office

Enclosure: Figure 1 – Map of Proposed Action Location



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

JUL 9 2018

Monica Soucier
Imperial County Air Pollution Control District
150 S. 9th Street
El Centro, CA 92243

Subject: Preparation of an Environmental Assessment Addressing the Proposed Alamo River Vegetation Control Project in Imperial County, California

Dear Ms. Soucier

U.S. Customs and Border Protection (CBP), under the Department of Homeland Security (DHS), is preparing a Draft Environmental Assessment (EA) for the proposed Alamo River Vegetation Control Project (Proposed Action). The Proposed Action would implement a combination of minimally intrusive mechanical removal (mowing) and herbicide treatment in areas where non-native invasive species are prevalent. The Proposed Action would preserve line of sight for U.S. Border Patrol (USBP) agents in the El Centro Sector and reduce hiding opportunities of cross-border violators (CBV) within the Alamo River (Project Area). The Project Area is under private and public ownership, including by the U.S. Bureau of Reclamation and four private ownership groups. An EA is being prepared in accordance with the National Environmental Policy Act for this project.

The Proposed Action comprises the mechanical removal of vegetation (vegetation clearance) within the 12.93-acre Project Area. Mechanical removal is an effective first step in controlling tall-growing plant species that reduce sightlines within the Project Area. Mechanical removal would consist of mowing, cutting of vegetation (clipping at grade), and use of heavy equipment to remove non-native vegetation twice a year, or as required by CBP for surveillance purposes. No discing or up-rooting would occur under this alternative. CBP proposes to supplement mechanical removal with herbicide application. Herbicide application could occur up to four times a year, depending on the extent and composition of species requiring management. Staging areas would be sited in previously disturbed areas such as unimproved roads, shoulders, graded areas, or sites with compacted soil that do not support vegetation adjacent to the Project Area. The Proposed Action would remove all vegetation, primarily non-native species, within the 12.93-acre Project Area.

The EA will consider two alternatives in detail: the Proposed Action and the No Action Alternative. In addition to preparation of the EA, resource surveys of the Alamo River Project Area have been completed, including a cultural resources survey, jurisdictional waters survey, and endangered species survey.

Should you have comments or information about the Proposed Action that you would like considered during preparation of the Draft EA, please send them within 30 days of receipt of this letter using one of the following methods:

- By U.S. mail: Alamo River Vegetation Control EA c/o Mr. John Petrilla, U.S. Customs and Border Protection, Border Patrol and Air and Marine Program Management Office, 24000 Avila Road - Suite 5020, Laguna Niguel, CA 92677
- By email: John.P.Petrilla@cbp.dhs.gov

We intend to provide you with an electronic copy of the Draft EA on a CD once the document is completed. Please inform us if hard copies are needed and if someone else other than you should receive the Draft EA.

Your prompt attention to this request is greatly appreciated. If you have any questions, please contact Mr. John Petrilla by email at John.P.Petrilla@cbp.dhs.gov or by telephone at (949) 643-6385.

Sincerely,



Joseph Zidron
Environmental Branch Chief (A)
Border Patrol and Air and Marine Program Management Office

Enclosure: Figure 1 – Map of Proposed Action Location



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

JUL 9 2018

Donald Vargas
Imperial Irrigation District
1699 West Main Street, Suite A
El Centro, CA 92243

Subject: Preparation of an Environmental Assessment Addressing the Proposed Alamo River Vegetation Control Project in Imperial County, California

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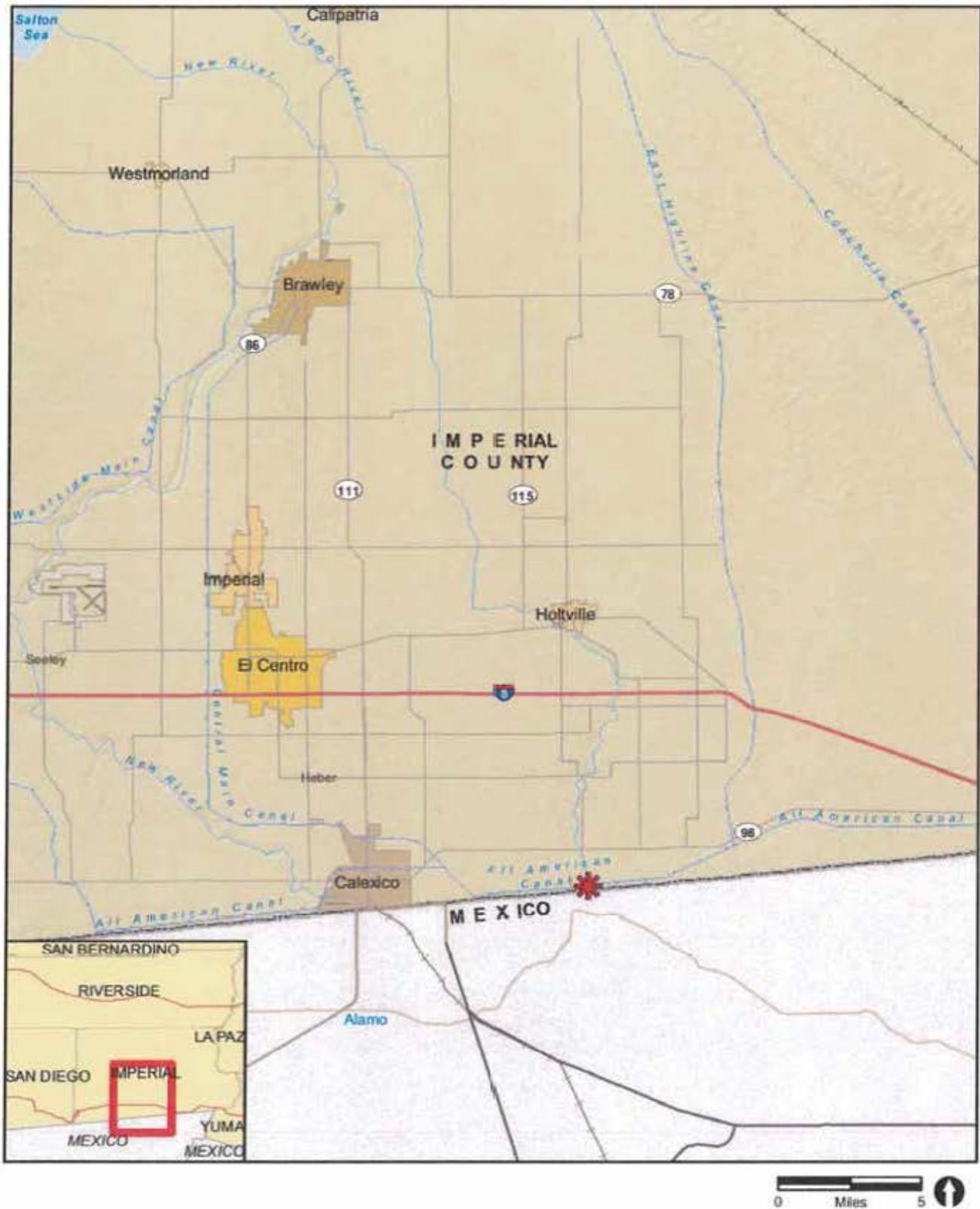
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Sincerely,



Joseph Zidron
Environmental Branch Chief (A)
Border Patrol and Air and Marine Program Management Office

Enclosure: Figure 1 – Map of Proposed Action Location



 Project Location



FIGURE 1
Regional Location

APPENDIX D
Air Quality Monitoring Results

Road Construction Emissions Model Data Entry Worksheet		Version 8.1.0		
<p>Note: Required data input sections have a yellow background. Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background. The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types. Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.</p>		<p>To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.</p>		
				
Input Type				
Project Name	<input type="text" value="Alternative 2"/>			
Construction Start Year	<input type="text" value="2019"/>	Enter a Year between 2014 and 2025 (inclusive)		
Project Type	<input type="text" value="4"/>	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction		
Project Construction Time	<input type="text" value="5.00"/>	months		
Working Days per Month	<input type="text" value="22.00"/>	days (assume 22 if unknown)		
Predominant Soil/Site Type: Enter 1, 2, or 3 <small>(for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)</small>	<input type="text" value="1"/>	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the lone formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)		
Project Length	<input type="text" value="0.38"/>	miles		
Total Project Area	<input type="text" value="12.93"/>	acres		
Maximum Area Disturbed/Day	<input type="text" value="1.00"/>	acre		
Water Trucks Used?	<input type="text" value="2"/>	1. Yes 2. No		
Material Hauling Quantity Input				
Material Type	Phase	Haul Truck Capacity (yd ³) (assume 20 if unknown)	Import Volume (yd ³ /day)	Export Volume (yd ³ /day)
Soil	Grubbing/Land Clearing			
	Grading/Excavation			
	Drainage/Utilities/Sub-Grade			
	Paving			
Asphalt	Grubbing/Land Clearing			
	Grading/Excavation			
	Drainage/Utilities/Sub-Grade			
	Paving			
Mitigation Options				
On-road Fleet Emissions Mitigation	<input type="text"/>	Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer		
Off-road Equipment Emissions Mitigation	<input type="text"/>	Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/ceqa/mitigation.shtml). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard		
<p>The remaining sections of this sheet contain areas that require modification when 'Other Project Type' is selected.</p>				

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

<http://www.conservation.ca.gov/cgs/information/geologic/mapping/Pages/googlemaps.aspx#regionalseries>

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing	5.00	0.50		1/1/2019
Grading/Excavation	0.00	2.00		6/3/2019
Drainage/Utilities/Sub-Grade	0.00	1.75		6/3/2019
Paving	0.00	0.75		6/3/2019
Totals (Months)		5		

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions		User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
User Input											
Miles/round trip: Grubbing/Land Clearing					0	0.00					
Miles/round trip: Grading/Excavation					0	0.00					
Miles/round trip: Drainage/Utilities/Sub-Grade					0	0.00					
Miles/round trip: Paving					0	0.00					
Emission Rates		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)		0.07	0.36	1.48	0.10	0.04	0.02	1,576.79	0.00	0.05	1,592.32
Grading/Excavation (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling Emissions		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Pounds per day - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Asphalt Hauling emission default values can be overridden in cells D87 through D90, and F87 through F90.

Asphalt Hauling Emissions		User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
User Input											
Miles/round trip: Grubbing/Land Clearing					0	0.00					
Miles/round trip: Grading/Excavation					0	0.00					
Miles/round trip: Drainage/Utilities/Sub-Grade					0	0.00					
Miles/round trip: Paving					0	0.00					
Emission Rates		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)		0.07	0.36	1.48	0.10	0.04	0.02	1,576.79	0.00	0.05	1,592.32
Grading/Excavation (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Pounds per day - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Worker commute default values can be overridden in cells D113 through D118.

Worker Commute Emissions		User Override of Worker Commute Default Values		Default Values							
User Input				Calculated Daily Trips	Calculated Daily VMT						
Miles/ one-way trip											
One-way trips/day				0	0.00						
No. of employees: Grubbing/Land Clearing				0	0.00						
No. of employees: Grading/Excavation				0	0.00						
No. of employees: Drainage/Utilities/Sub-Grade				0	0.00						
No. of employees: Paving				0	0.00						
Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
Grubbing/Land Clearing (grams/mile)	0.02	1.19	0.13	0.05	0.02	0.00	381.71	0.01	0.01	383.53	
Grading/Excavation (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Grubbing/Land Clearing (grams/trip)	1.08	2.86	0.23	0.00	0.00	0.00	85.97	0.01	0.01	89.17	
Grading/Excavation (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Paving (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Emissions	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Note: Water Truck default values can be overridden in cells D145 through D148, and F145 through F148.

Water Truck Emissions		User Override of		Program Estimate of		User Override of Truck		Default Values		Calculated	
User Input		Default # Water Trucks	Number of Water Trucks	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Daily VMT			
Grubbing/Land Clearing - Exhaust								0.00			
Grading/Excavation - Exhaust								0.00			
Drainage/Utilities/Subgrade								0.00			
Paving								0.00			
Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
Grubbing/Land Clearing (grams/mile)	0.07	0.36	1.48	0.10	0.04	0.02	1,576.79	0.00	0.05	1,592.32	
Grading/Excavation (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Emissions	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Note: Fugitive dust default values can be overridden in cells D171 through D173.

Fugitive Dust	User Override of Max		Default	PM10	PM10	PM2.5	PM2.5
	Acreage Disturbed/Day	Maximum Acreage/Day					
Fugitive Dust - Grubbing/Land Clearing				20.00	1.10	4.16	0.23
Fugitive Dust - Grading/Excavation				0.00	0.00	0.00	0.00
Fugitive Dust - Drainage/Utilities/Subgrade				0.00	0.00	0.00	0.00

Grading/Excavation	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default	Equipment Tier										
Override of Default Number of Vehicles	Program-estimate		Equipment Tier	Type	pounds/day									
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in "Non-default Off-road Equipment" tab				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation		pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation		tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Default		Mitigation Option											
Drainage/Utilities/Subgrade	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles	Program-estimate		Equipment Tier	pounds/day									
			Model Default Tier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
User-Defined Off-road Equipment	<i>If non-default vehicles are used, please provide information in "Non-default Off-road Equipment" tab</i>			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles		Equipment Tier	Type	pounds/day									
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage/Utilities/Sub-Grade		pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage/Utilities/Sub-Grade		tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Paving	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Override of	Default										
	Override of Default Number of Vehicles	Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier										
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
User-Defined Off-road Equipment														
If non-default vehicles are used, please provide information in "Non-default Off-road Equipment" tab					ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day									
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Paving		pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Paving		tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Emissions all Phases (tons per construction period) =>					0.08	0.66	0.81	0.04	0.04	0.00	134.75	0.04	0.00	136.17

Equipment default values for horsepower and hours/day can be overridden in cells D391 through D424 and F391 through F424.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		78		8
Bore/Drill Rigs		206		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws		81		8
Cranes		226		8
Crawler Tractors		208		8
Crushing/Proc. Equipment		85		8
Excavators		163		8
Forklifts		89		8
Generator Sets		84		8
Graders		175		8
Off-Highway Tractors		123		8
Off-Highway Trucks		400		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		167		8
Pavers		126		8
Paving Equipment		131		8
Plate Compactors		8		8
Pressure Washers		13		8
Pumps		84		8
Rollers		81		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		255		8
Rubber Tired Loaders		200		8
Scrapers		362		8
Signal Boards		6		8
Skid Steer Loaders		65		8
Surfacing Equipment		254		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		98		8
Trenchers		81		8
Welders		46		8

END OF DATA ENTRY SHEET

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> <i>Alternative 2</i>														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	1.45	12.00	14.64	20.71	0.71	20.00	4.81	0.65	4.16	0.02	2,449.95	0.78	0.02	2,475.77
Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	1.45	12.00	14.64	20.71	0.71	20.00	4.81	0.65	4.16	0.02	2,449.95	0.78	0.02	2,475.77
Total (tons/construction project)	0.08	0.66	0.81	1.14	0.04	1.10	0.26	0.04	0.23	0.00	134.75	0.04	0.00	136.17

Notes: Project Start Year -> 2019
 Project Length (months) -> 5
 Total Project Area (acres) -> 13
 Maximum Area Disturbed/Day (acres) -> 1
 Water Truck Used? -> No

Phase	Total Material Imported/Exported Volume (yd ³ /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	0	0	0	0	0	0
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> <i>Alternative 2</i>														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.08	0.66	0.81	1.14	0.04	1.10	0.26	0.04	0.23	0.00	134.75	0.04	0.00	123.53
Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.08	0.66	0.81	1.14	0.04	1.10	0.26	0.04	0.23	0.00	134.75	0.04	0.00	123.53
Total (tons/construction project)	0.08	0.66	0.81	1.14	0.04	1.10	0.26	0.04	0.23	0.00	134.75	0.04	0.00	123.53

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.
 The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model Data Entry Worksheet		Version 8.1.0		
<p>Note: Required data input sections have a yellow background. Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background. The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types. Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.</p>		<p>To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.</p>		
				
Input Type				
Project Name	Alternative 3			
Construction Start Year	2019	Enter a Year between 2014 and 2025 (inclusive)		
Project Type	4	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction		
Project Construction Time	12.00	months		
Working Days per Month	22.00	days (assume 22 if unknown)		
Predominant Soil/Site Type: Enter 1, 2, or 3 <small>(for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)</small>	1	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the lone formation (Scott Road, Rancho Murietta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murietta)		
Project Length	0.38	miles		
Total Project Area	12.93	acres		
Maximum Area Disturbed/Day	1.00	acre		
Water Trucks Used?	2	1. Yes 2. No		
Material Hauling Quantity Input				
Material Type	Phase	Haul Truck Capacity (yd ³) (assume 20 if unknown)	Import Volume (yd ³ /day)	Export Volume (yd ³ /day)
Soil	Grubbing/Land Clearing			
	Grading/Excavation			
	Drainage/Utilities/Sub-Grade			
	Paving			
Asphalt	Grubbing/Land Clearing			
	Grading/Excavation			
	Drainage/Utilities/Sub-Grade			
	Paving			
Mitigation Options				
On-road Fleet Emissions Mitigation		Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer		
Off-road Equipment Emissions Mitigation		Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/ceqa/mitigation.shtml). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard		

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries

The remaining sections of this sheet contain areas that require modification when 'Other Project Type' is selected.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing	12.00	1.20		1/1/2019
Grading/Excavation	0.00	4.80		1/1/2020
Drainage/Utilities/Sub-Grade	0.00	4.20		1/1/2020
Paving	0.00	1.80		1/1/2020
Totals (Months)		12		

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions		User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
User Input											
Miles/round trip: Grubbing/Land Clearing					0	0.00					
Miles/round trip: Grading/Excavation					0	0.00					
Miles/round trip: Drainage/Utilities/Sub-Grade					0	0.00					
Miles/round trip: Paving					0	0.00					
Emission Rates		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)		0.07	0.36	1.48	0.10	0.04	0.02	1,576.79	0.00	0.05	1,592.32
Grading/Excavation (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling Emissions		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Pounds per day - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Asphalt Hauling emission default values can be overridden in cells D87 through D90, and F87 through F90.

Asphalt Hauling Emissions		User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
User Input											
Miles/round trip: Grubbing/Land Clearing					0	0.00					
Miles/round trip: Grading/Excavation					0	0.00					
Miles/round trip: Drainage/Utilities/Sub-Grade					0	0.00					
Miles/round trip: Paving					0	0.00					
Emission Rates		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)		0.07	0.36	1.48	0.10	0.04	0.02	1,576.79	0.00	0.05	1,592.32
Grading/Excavation (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Pounds per day - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Worker commute default values can be overridden in cells D113 through D118.

Worker Commute Emissions		User Override of Worker Commute Default Values		Default Values							
User Input				Calculated Daily Trips	Calculated Daily VMT						
Miles/ one-way trip											
One-way trips/day				0	0.00						
No. of employees: Grubbing/Land Clearing				0	0.00						
No. of employees: Grading/Excavation				0	0.00						
No. of employees: Drainage/Utilities/Sub-Grade				0	0.00						
No. of employees: Paving				0	0.00						
Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
Grubbing/Land Clearing (grams/mile)	0.02	1.19	0.13	0.05	0.02	0.00	381.71	0.01	0.01	383.53	
Grading/Excavation (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Grubbing/Land Clearing (grams/trip)	1.08	2.86	0.23	0.00	0.00	0.00	85.97	0.01	0.01	89.17	
Grading/Excavation (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Paving (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Emissions	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Note: Water Truck default values can be overridden in cells D145 through D148, and F145 through F148.

Water Truck Emissions		User Override of		Program Estimate of		User Override of Truck		Default Values		Calculated	
User Input		Default # Water Trucks	Number of Water Trucks	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Daily VMT			
Grubbing/Land Clearing - Exhaust								0.00			
Grading/Excavation - Exhaust								0.00			
Drainage/Utilities/Subgrade								0.00			
Paving								0.00			
Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
Grubbing/Land Clearing (grams/mile)	0.07	0.36	1.48	0.10	0.04	0.02	1,576.79	0.00	0.05	1,592.32	
Grading/Excavation (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Emissions	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Note: Fugitive dust default values can be overridden in cells D171 through D173.

Fugitive Dust	User Override of Max		Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
	Acreage Disturbed/Day						
Fugitive Dust - Grubbing/Land Clearing				20.00	2.64	4.16	0.55
Fugitive Dust - Grading/Excavation				0.00	0.00	0.00	0.00
Fugitive Dust - Drainage/Utilities/Subgrade				0.00	0.00	0.00	0.00

Values in cells D183 through D216, D234 through D267, D285 through D318, and D336 through D369 are required when 'Other Project Type' is selected.

Off-Road Equipment Emissions													
Grubbing/Land Clearing	Default	Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default										
Override of Default Number of Vehicles	Program-estimate		Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Excavators	0.27	3.37	2.77	0.13	0.12	0.01	527.30	0.17	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.71	3.98	7.15	0.26	0.24	0.01	1,301.23	0.41	0.01
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.47	4.65	4.72	0.32	0.29	0.01	621.43	0.20	0.01
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing		pounds per day	1.45	12.00	14.64	0.71	0.65	0.02	2,449.95	0.78	0.02	2,475.77
	Grubbing/Land Clearing		tons per phase	0.19	1.58	1.93	0.09	0.09	0.00	323.39	0.10	0.00	326.80

Grading/Excavation	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default	Equipment Tier										
Override of Default Number of Vehicles	Program-estimate		Equipment Tier	Type	pounds/day									
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in "Non-default Off-road Equipment" tab				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day									
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation			pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation			tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Default		Mitigation Option											
Drainage/Utilities/Subgrade	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles	Program-estimate		Equipment Tier	pounds/day									
			Model Default Tier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in "Non-default Off-road Equipment" tab			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles		Equipment Tier	Type	pounds/day									
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage/Utilities/Sub-Grade		pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage/Utilities/Sub-Grade		tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Paving	Default	Mitigation Option	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type	pounds/day									
	Override of Default Number of Vehicles	Program-estimate												
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in "Non-default Off-road Equipment" tab				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day									
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving			pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving			tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Emissions all Phases (tons per construction period) =>					0.19	1.58	1.93	0.09	0.09	0.00	323.39	0.10	0.00	326.80

Equipment default values for horsepower and hours/day can be overridden in cells D391 through D424 and F391 through F424.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		78		8
Bore/Drill Rigs		206		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws		81		8
Cranes		226		8
Crawler Tractors		208		8
Crushing/Proc. Equipment		85		8
Excavators		163		8
Forklifts		89		8
Generator Sets		84		8
Graders		175		8
Off-Highway Tractors		123		8
Off-Highway Trucks		400		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		167		8
Pavers		126		8
Paving Equipment		131		8
Plate Compactors		8		8
Pressure Washers		13		8
Pumps		84		8
Rollers		81		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		255		8
Rubber Tired Loaders		200		8
Scrapers		362		8
Signal Boards		6		8
Skid Steer Loaders		65		8
Surfacing Equipment		254		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		98		8
Trenchers		81		8
Welders		46		8

END OF DATA ENTRY SHEET

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> Alternative 3														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	1.45	12.00	14.64	20.71	0.71	20.00	4.81	0.65	4.16	0.02	2,449.95	0.78	0.02	2,475.77
Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	1.45	12.00	14.64	20.71	0.71	20.00	4.81	0.65	4.16	0.02	2,449.95	0.78	0.02	2,475.77
Total (tons/construction project)	0.19	1.58	1.93	2.73	0.09	2.64	0.64	0.09	0.55	0.00	323.39	0.10	0.00	326.80

Notes:
 Project Start Year -> 2019
 Project Length (months) -> 12
 Total Project Area (acres) -> 13
 Maximum Area Disturbed/Day (acres) -> 1
 Water Truck Used? -> No

Phase	Total Material Imported/Exported Volume (yd ³ /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	0	0	0	0	0	0
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Alternative 3														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.19	1.58	1.93	2.73	0.09	2.64	0.64	0.09	0.55	0.00	323.39	0.10	0.00	296.47
Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.19	1.58	1.93	2.73	0.09	2.64	0.64	0.09	0.55	0.00	323.39	0.10	0.00	296.47
Total (tons/construction project)	0.19	1.58	1.93	2.73	0.09	2.64	0.64	0.09	0.55	0.00	323.39	0.10	0.00	296.47

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.