PUBLIC DRAFT

ENVIRONMENTAL ASSESSMENT

ADDITIONAL FLOODWAY MOWING IN THE U.S. SECTION, INTERNATIONAL BOUNDARY AND WATER COMMISSION'S RECTIFICATION PROJECT EL PASO, YSLETA, FABENS AND FORT HANCOCK STATIONS' AREAS OF RESPONSIBILITY U.S. BORDER PATROL, EL PASO SECTOR, TEXAS

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

MARCH 2011

DRAFT

FINDING OF NO SIGNIFICANT IMPACT

ADDITIONAL FLOODWAY MOWING IN THE U.S. SECTION, INTERNATIONAL BOUNDARY AND WATER COMMISSION'S RECTIFICATION PROJECT, EL PASO, YSLETA, FABENS AND FORT HANCOCK STATIONS' AREAS OF RESPONSIBILITY U.S. BORDER PATROL, EL PASO SECTOR, TEXAS

Project History: United States (U.S.) Border Patrol (USBP) is a law enforcement entity of U.S. Customs and Border Protection (CBP) within the Department of Homeland Security. USBP's priority mission is to prevent the entry of terrorists and their weapons of terrorism and to enforce the laws that protect the U.S. homeland. This is accomplished by the detection, interdiction, and apprehension of those who attempt to illegally enter or smuggle any person or contraband across the sovereign borders of the U.S. between the land ports of entry. Increasing trends in illegal border activity require additional USBP agents, tactical infrastructure, improved technology, and other resources to enhance the operational capabilities of USBP.

CBP has proposed a vegetation management project within the floodway of the Rio Grande in the U.S. Section, International Boundary and Water Commission's (USIBWC) Rio Grande Rectification Project (RGRP), El Paso and Hudspeth Counties, Texas. The RGRP provides flood risk reduction along approximately 91 miles of the Rio Grande from El Paso to Fort Quitman and includes a levee system, floodway, dredged channel, and in-stream structures. The floodway in the RGRP is between 50 and 300 feet wide, and all but a narrow strip (approximately 5 to 20 feet wide) of mature woody riparian vegetation immediately adjacent to the north bank of the Rio Grande has been maintained by USIBWC through periodic mowing to control herbaceous and woody vegetation, to remove debris in floodway, and to smooth the floodway to reduce flow resistance.

More frequent mowing by USIBWC than what is required for basic maintenance is limited by conditions of their existing environmental documents for RGRP maintenance activities. CBP's proposed project includes increasing the mowing frequency of approximately 2,025 acres of the floodway in the RGRP to maintain vegetation below a height of 24 inches at all times. Suppression of vegetation to a height of 24 inches has been determined by USBP to be operationally necessary to ensure officer safety and enable the detection of illicit cross-border violators (CBVs) and contraband in the floodway. Currently, vegetation in portions of the floodway of the RGRP often exceeds 5 feet in height before USIBWC is able to mow.

Project Location: The project study area for this Environmental Assessment (EA) is in El Paso and Hudspeth Counties, within the RGRP. The project length extends 91 miles along the Rio Grande, from El Paso to Fort Quitman, Texas.

Purpose and Need: A continuous, clear line of sight into the RGRP floodway is needed by USBP agents for rapid detection and accurate characterization of potential threats. Continuous maintenance of vegetation in the floodway to a height of less than 24 inches is needed to remove

concealment opportunities and to assist in identifying, classifying, and bringing to a satisfactory law enforcement conclusion any CBVs. In addition, the regular maintenance of vegetation in the floodway is needed to provide a safer working environment for USBP agents and to strengthen the USBP control between the ports-of-entry in the El Paso Sector.

Alternatives: Several alternatives were identified and considered during the planning stages of the proposed project. However, only the No Action Alternative and the Proposed Action Alternative were carried forward for analysis in the EA. Other alternatives considered, but rejected and not further analyzed in this EA, were 1) alternative methods of vegetation control (e.g., prescribed burns and application of herbicides) and 2) alternative actions that would remove all the vegetation within the floodway (including mature woody vegetation). Although these alternatives were not carried further in this EA, this does not preclude CBP from considering additional vegetation removal and alternative methods of vegetation control within the RGRP in the future if operational requirements deem necessary.

Under the No Action Alternative, no additional floodway mowing in the RGRP would take place by CBP. USIBWC would continue to provide all maintenance mowing of the floodway twice annually to a height of 18 inches, as flood risk reduction maintenance necessitates. Vegetation in the RGRP would be allowed to reach heights as tall as 4 to 6 feet if it was determined by USIBWC that it would have no immediate effect on flood risk reduction in the region.

Proposed Action: USBP has identified the approximately 91-mile long RGRP, extending from El Paso to its downstream terminus at Fort Quitman, as a high priority area for vegetation mowing. When the height of vegetation in the floodway exceeds 24 inches, USBP proposes to mow the vegetation to a height of 18 inches (or lower if mowing equipment allows) using the same methods implemented by USIBWC since the original construction of the RGRP. USBP would mow all vegetation and remove debris within approximately 2,025 acres of the floodway up to the top of the levee as often as necessary, except for the narrow band of mature woody vegetation located along the north bank of the Rio Grande or along bisecting arroyos. No mature woody vegetation (i.e., exceeding 8 feet in height) would be removed as a result of the Proposed Action Alternative. Mowing would be avoided to the extent practicable during migratory bird (including burrowing owl [*Athene cunicularia*]) nesting season (March 1 through September 15) or during Ysleta del Sur Pueblo ceremonial use of the floodway. If mowing occurred during the migratory bird nesting season, surveys would be conducted prior to any maintenance activities, and buffers would be established around active nests to protect nesting birds.

Environmental Consequences: Although the total number of additional mowing events annually cannot be known since vegetation growth is based on numerous environmental factors that vary annually, for the purposes of the analysis of impacts, it is assumed that to maintain the height of vegetation below 24 inches, two additional mowing events would be needed annually, for a total of four mowing events in the floodway. Implementation of the Proposed Action Alternative would cause minor impacts to soils, vegetative habitat, wildlife resources, and aesthetics. Soils would be compacted causing low vegetation growth rates and increased soil erosion potential with reduced vegetative growth. The herbaceous vegetation in the floodway is mainly bunchgrasses and non-native and/or invasive species, and no mature woody riparian vegetation would be removed, so there would be no adverse effects on native vegetation

communities. However, increased mowing of approximately 2,025 acres annually would further selectively favor primarily invasive species that are tolerant of continued disturbance.

Direct, minor adverse impacts on wildlife resources may occur. Mobile animals would be able to escape to similar habitats, but slow or sedentary species may be lost as they are struck by heavy equipment tires or mower blades. However, the Proposed Action Alternative would not result in reduction of breeding opportunities or population numbers on a regional scale. If mowing occurs within the migratory bird nesting season, migratory bird surveys and avoidance of active nests would occur. Habitats within or adjacent to the project area are potentially suitable for two Federally listed species: the southwestern willow flycatcher (*Empidonax traillii extimus*) and the interior least tern (*Sterna antillarum athalassos*). For Federal and state listed bird species (e.g., southwestern willow flycatcher and interior least tern), a 1,000-foot buffer would be maintained around any active nests until chicks have fledged. By implementing a buffer around active nests during mowing activities and avoiding disturbance to mature woody riparian vegetation in the RGRP, no effect to listed species would occur.

Temporary and minor increases in air pollution would occur from the use of farm tractors (combustible emissions) and grass mowing (fugitive dust). In addition, grass maintenance workers would temporarily increase the combustible emissions in the airshed during their commute to and from the project area. Emissions from delivery trucks would also contribute to the overall air emission budget. However, these impacts would be less than significant.

No impacts would be expected to occur due to the Proposed Action Alternative on hydrology and groundwater, waters of the U.S., floodplains, threatened or endangered species, or sustainability and greening. Minor impacts on water quality of the Rio Grande could occur from increased soil erosion.

Contamination from small quantities of fuels, oils, lubricants, or solvents could occur with the Proposed Action Alternative, but increased mowing could reduce the amount of solid waste deposited by illegal aliens and other CBVs in the area. Mowing activities could create human health hazards, but the preparation and implementation of a CBP safety plan would reduce these risks.

Mitigation Measures: Although no significant impacts have been identified, CBP would implement mitigation measures, many of which are standard operating procedures, to further reduce potentially adverse effects. The mitigation measures are presented for each resource category that could be affected. The proposed measures would be coordinated through the appropriate agencies, land managers, and administrators prior to the initiation of construction.

Standard Project Implementation Measures: Best management practices would be implemented as standard operating procedures during all mowing activities and would include proper handling, storage, and/or disposal of hazardous and/or regulated 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 following

accepted industry guidelines, and all vehicles would have drip pans during storage to contain minor spills and drips. Although it would be unlikely for a major spill to occur, any spill of reportable quantities would be contained immediately within an earthen dike, and the application of an absorbent (e.g., granular, pillow, or sock) would be used to absorb and contain the spill. Pursuant to compliance with 40 Code of Federal Regulations (CFR), Part 112, Oil Pollution Prevention, a Spill Prevention, Control, and Countermeasures Plan (SPCCP) would be in place prior to the start of mowing operations, and all mowing personnel would be briefed on the implementation and responsibilities of this plan. All spills would be reported to the designated CBP point of contact for the project. Furthermore, a spill of any petroleum liquids (e.g., fuel) or material listed in 40 CFR 302 Table 302.4 of a reportable quantity must be cleaned up and reported to the appropriate Federal and state agencies. Reportable quantities of those substances listed on 40 CFR 302 Table 302.4 would be included as part of the SPCCP.

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 Federal, state, and local regulations, including proper waste manifesting procedures.

Soils: Mowing of vegetation will be limited during extremely wet periods, such as within 36 hours after a major rain event or 5 days following a flood event. In most cases, saturated soils would make it difficult to mow during wet conditions, and CBP would ensure that soils had adequately dried prior to the start of any mowing activities to reduce rutting and soil compaction.

Biological Resources: If mowing occurs within the migratory bird nesting season, migratory bird surveys would be conducted by a qualified professional biologist, a 50-foot buffer would be established around all active nests, and the buffer area would be avoided until chicks have fledged. Habitats within or adjacent to the project area are potentially suitable for two Federally listed species: the southwestern willow flycatcher (*Empidonax traillii extimus*) and interior least tern (*Sterna antillarum athalassos*). Bird surveys for these species would be conducted by a qualified professional biologist, a 1,000-foot buffer would be established around all southwestern willow flycatcher and interior least tern active nests, and the buffer area would be avoided until chicks have fledged.

Cultural Resources: Ceremonial activities by the Ysleta del Sur Pueblo will be respected, and mowing activities will be curtailed to provide access to the floodway and to preserve ceremonial plant species to the greatest extent practicable.

Finding: Based upon the results of the EA and the environmental design measures that shall be implemented by the USBP El Paso Sector and incorporated as part of the Proposed Action, it has been concluded that the Proposed Action will not have a significant effect on the human environment. Therefore, no further environmental impact analysis for the Proposed Action is warranted.

_____ _____

Rodney Washburn Date
Assistant Chief, El Paso Sector
U.S. Office of Border Patrol

_____ _____

Robert F. Janson Date
Acting Executive Director
Facilities Management and Engineering
U.S. Customs and Border Protection

PUBLIC DRAFT

ENVIRONMENTAL ASSESSMENT
ADDITIONAL FLOODWAY MOWING IN THE U.S. SECTION, INTERNATIONAL BOUNDARY AND WATER COMMISSION'S RECTIFICATION PROJECT
EL PASO, YSLETA, FABENS AND FORT HANCOCK STATIONS' AREAS OF RESPONSIBILITY
U.S. BORDER PATROL, EL PASO SECTOR, TEXAS

March 2011

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EXECUTIVE SUMMARY

INTRODUCTION:

The United States (U.S.) Border Patrol (USBP) is a law enforcement entity of U.S. Customs and Border Protection (CBP) within the Department of Homeland Security (DHS). USBP's priority mission is to prevent the entry of terrorists and their weapons of terrorism and to enforce the laws that protect the U.S. homeland. This is accomplished by the detection, interdiction, and apprehension of those who attempt to illegally enter or smuggle any person or contraband across the sovereign borders of the U.S. between the land ports-of-entry. Increasing trends in illegal border activity require additional USBP agents, tactical infrastructure, improved technology and other resources to enhance the operational capabilities of USBP.

CBP has proposed a vegetation management project within the floodway of the Rio Grande in the U.S. Section, International Boundary and Water Commission's (USIBWC) Rio Grande Rectification Project (RGRP), El Paso and Hudspeth Counties, Texas. The RGRP provides flood risk reduction along approximately 91 miles of the Rio Grande from El Paso to Fort Quitman, and includes a levee system, floodway, dredged channel and in-stream structures. The floodway in the RGRP is between 50 and 300 feet wide, and all but a narrow strip (approximately 5 to 20 feet wide) of mature woody riparian vegetation immediately adjacent to the north bank of the Rio Grande has been maintained by USIBWC through periodic mowing to control herbaceous and woody vegetation, removal of debris in floodway, and smoothing of the floodway to reduce flow resistance.

More frequent mowing by USIBWC than what is required for basic maintenance is limited by conditions of their existing environmental documents for all RGRP maintenance activities. CBP's proposed project includes increasing the mowing frequency of the floodway in the RGRP to maintain vegetation below a height of 24 inches at all times. Suppression of vegetation to a height of 24 inches has been determined by USBP to be operationally necessary to ensure officer safety and enable the detection of illicit cross-border violators (CBVs) and contraband in the floodway. Currently, vegetation in portions of the floodway of the RGRP can exceed 5 feet in height before USIBWC is able to mow.

PURPOSE AND NEED FOR THE PROPOSED ACTION:	A continuous, clear line of sight into the RGRP floodway is needed by USBP agents for rapid detection and accurate characterization of potential threats. Continuous maintenance of vegetation in the floodway to a height of less than 24 inches is needed to remove concealment opportunities, and to assist in identifying, classifying, and bringing to a satisfactory law enforcement conclusion any CBVs. In addition, the regular maintenance of vegetation in the floodway is needed to provide a safer working environment for USBP agents and to strengthen the USBP control between the ports-of-entry in the El Paso Sector.
DESCRIPTION OF PROPOSED ACTION:	USBP has identified the approximately 91-mile long RGRP, extending from El Paso to its downstream terminus at Fort Quitman, as a high priority area for vegetation mowing. When the height of vegetation in the floodway exceeds 24 inches, USBP proposes to mow the vegetation to a height of 18 inches (or lower if mowing equipment allows) using the same methods implemented by USIBWC since the original construction of the RGRP. USBP would mow all vegetation and remove debris within approximately 2,025 acres of the floodway. Mowing activities would occur up to the top of the levee as often as necessary, except for the narrow band of mature woody vegetation located along the north bank of the Rio Grande or along bisecting arroyos. No mature woody vegetation (i.e., exceeding 8 feet in height) would be removed as a result of the Proposed Action Alternative. Mowing would be avoided to the extent practicable during migratory bird (including burrowing owl [*Athene cunicularia*]) nesting season (March 1 through September 15) or during Ysleta del Sur Pueblo ceremonial use of the floodway. If mowing occurred during the migratory bird nesting season, surveys would be conducted by a qualified professional biologist prior to any maintenance activities, and buffers would be established around active nests.
PROPOSED ACTION AND ALTERNATIVES CONSIDERED:	The two alternatives selected for further analysis are the 1) No Action Alternative and 2) Proposed Action Alternative. Under the No Action Alternative, no additional floodway mowing in the RGRP would take place by CBP. USIBWC would continue to provide all maintenance mowing of the floodway and would mow the vegetation to a height of 18 inches as flood risk reduction maintenance necessitates. Vegetation in the RGRP would be allowed to reach heights as tall as 4 to 6 feet if it was determined by USIBWC that it would have no immediate effect on flood risk reduction in the region. The Proposed Action Alternative is listed above.

ENVIRONMENTAL CONSEQUENCES:

Although the total number of additional mowing events cannot be known since vegetation growth varies with environmental factors, it is assumed that on the average two additional mowing events would occur annually under the Proposed Action (for a total of four mowing events annually) in order to maintain vegetation at a height of less than 24 inches. Implementation of the Proposed Action Alternative would cause minor impacts to soils, vegetative habitat, and aesthetics. The increased use of heavy equipment would compact soils, thereby reducing vegetation growth rates and increasing the soil erosion potential. The vegetation in the floodway is mainly bunchgrasses and non-native and/or invasive species, so there would be no adverse effects on native vegetation communities. However, increased mowing of 2,025 acres annually would selectively favor invasive plant species that are more tolerant of disturbance.

Direct, minor adverse impacts on wildlife resources may occur. Under the Proposed Action Alternative, 2,025 acres of grassland habitat which could provide forage and cover for state-listed species, such as the western burrowing owl, would be disturbed and maintained at a lower height. Mobile animals would be able to escape to similar habitats, but slow or sedentary species may be lost as they are struck by heavy equipment tires or mower blades. However, the Proposed Action Alternative would not result in reduction of breeding opportunities or population numbers on a regional scale. If mowing occurs within the migratory bird nesting season, migratory bird surveys would be conducted by a qualified professional biologist and active nests would be avoided. Habitats within or adjacent to the project area are potentially suitable for two Federally listed species: the southwestern willow flycatcher (*Empidonax traillii extimus*) and interior least tern (*Sterna antillarum athalassos*). By implementing a buffer around active nests during mowing activities and avoiding disturbance to mature woody riparian vegetation in the RGRP, no effect on listed species would occur.

Temporary and minor increases in air pollution would occur from the use of farm tractors (combustible emissions) and grass mowing (fugitive dust). In addition, grass maintenance workers would temporarily increase the combustible emissions in the airshed during their commute to and from the project area. Emissions from delivery trucks would also contribute to the overall air emission budget. However, these impacts would be less than significant.

No impacts are expected to occur due to the Proposed Action on hydrology and groundwater, waters of the United States, floodplains, threatened or endangered species, or sustainability and greening. Minor adverse impacts on the water quality of the Rio Grande would occur from increased sedimentation.

Contamination from small quantities of fuels, oils, lubricants or solvents could occur with the Proposed Action, but increased mowing could reduce the amount of solid waste deposited by CBVs in the area. Mowing activities could create human health hazards, but the preparation and implementation of a CBP safety plan would reduce these risks.

SUMMARY OF MITIGATION ACTIONS:

Mowing activities will be limited to daylight hours to reduce noise effects on nearby sensitive receptors in the El Paso metropolitan area. No heavy equipment will be brought into the floodway for at least 36 hours after a major rain event or 5 days after a flood event to minimize soil rutting and compaction. Surveys will be conducted by a qualified professional biologist for nesting birds during the bird nesting and breeding season (March 1 through September 15), and all active nests will be avoided until chicks have fledged. A 50-foot buffer will be established around all active bird nests, and a 1,000-foot buffer will be established around southwestern willow flycatcher and interior least tern active nests. Ceremonial activities by the Ysleta del Sur Pueblo will be respected, and mowing activities will be curtailed to provide access to the floodway and to preserve ceremonial plant species to the greatest extent practicable.

FINDINGS AND CONCLUSIONS:

No significant adverse impacts are anticipated for any resource analyzed within this document. Therefore, no further analysis or documentation (i.e., Environmental Impact Statement) is warranted. CBP, in implementing this decision, would employ all practical means to minimize the potential adverse impacts on the human and biological environment.

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1.0 BACKGROUND

1.1 INTRODUCTION

This Environmental Assessment (EA) analyzes the potential positive and negative effects of a proposed vegetation management project that would be carried out by the United States (U.S.) Customs and Border Protection (CBP) within the floodway of the Rio Grande in the U.S. Section, International Boundary and Water Commission's (USIBWC) Rio Grande Rectification Project (RGRP), El Paso and Hudspeth Counties, Texas.

The RGRP provides flood risk reduction along approximately 91 miles of the Rio Grande from El Paso to Fort Quitman (Figure 1-1) and includes a levee system, floodway, dredged channel and in-stream structures. As part of maintaining flood capacity and adequate flows, USIBWC maintains the floodway within the RGRP. The floodway in the RGRP is between 50 and 300 feet wide, and all but a narrow strip (approximately 5 to 20 feet wide) of mature woody riparian vegetation (e.g., cottonwood [*Populus fremontii*], Gooding willow [*Salix goodingii*], mule fat [*Baccharis salicifolia*] and saltcedar [*Tamarix* sp.]) immediately adjacent to the north bank of the Rio Grande has been maintained by USIBWC through periodic mowing. The USIBWC conducts the following maintenance activities of the floodway of the RGRP on an as-needed basis (USIBWC 2008, 2009):

- Mow floodway to control herbaceous and woody vegetation;
- Remove debris in floodway on regular basis; and
- Perform floodway smoothing to reduce flow resistance.

Floodways are leveled annually by USIBWC in some areas, as required. Mowing takes place at least twice per year in the floodway prior to July 15th to remove vegetation and other obstructions from the floodway. Mowing is performed along the entire U.S. floodway with farm tractors using rotary slope mowers (Photograph 1-1). The USIBWC also clears vegetation at the request of the U.S. Border Patrol (USBP) when funding and manpower allows. An informal agreement is in place to facilitate access to the river for ceremonial purposes by the Ysleta del Sur Pueblo, and mowing activities are partially re-scheduled to avoid disruption of ceremonies. Mowing is usually scheduled to occur outside the bird nesting season, which is March 1 through September 15. If mowing is required during the migratory bird nesting season, a pedestrian survey for nesting birds is conducted.

Photograph 1-1. Mowing of the RGRP floodway in September 2010

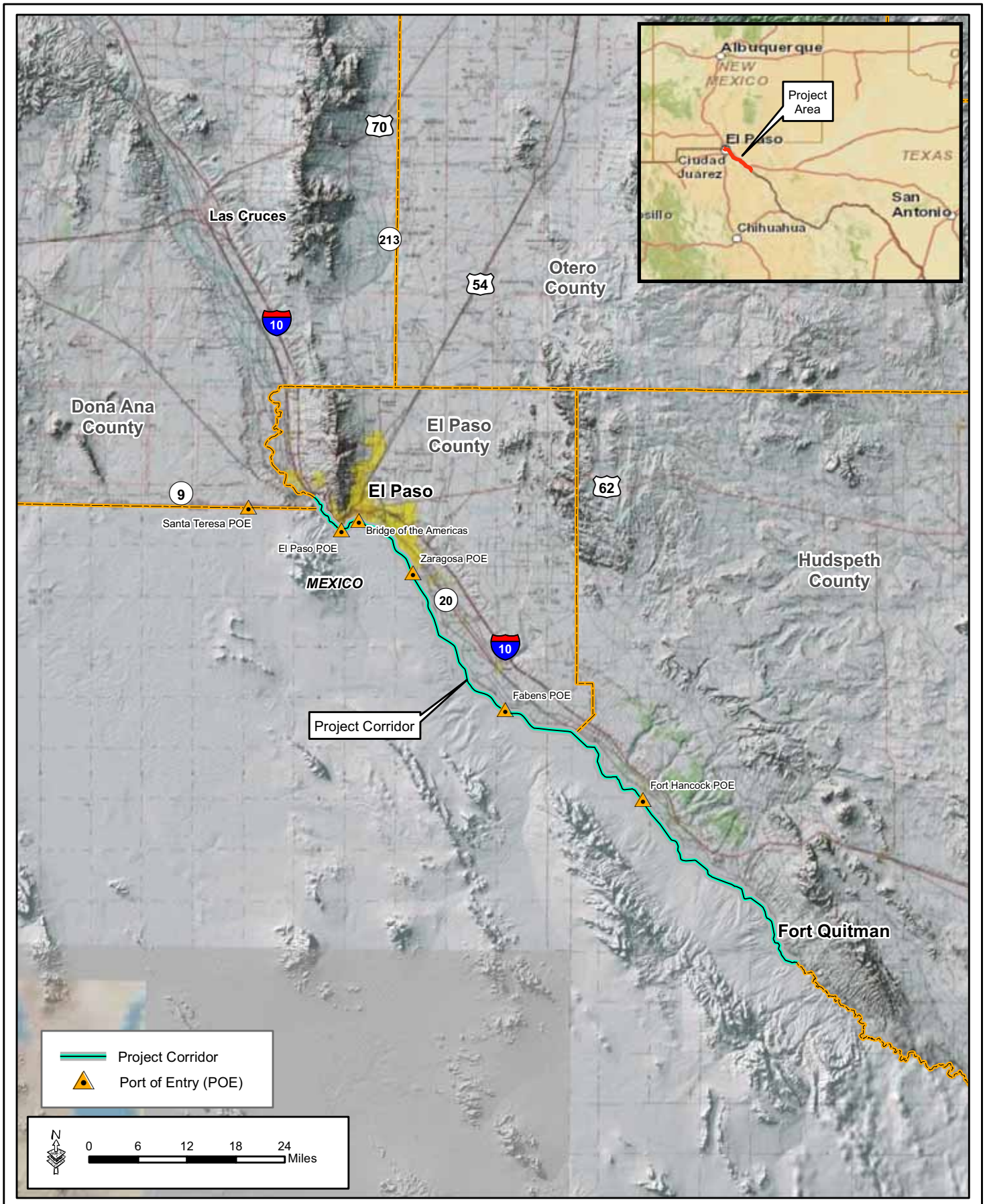

Figure 1-1: Vicinity Map

GSRC

October 2010

More frequent mowing by USIBWC than what is required for RGRP maintenance is limited by conditions of their existing environmental documents for all RGRP maintenance activities. High rainfall during the past several years has caused periodic flooding conditions in the Rio Grande, distributed sediment in the floodway, increased soil moisture, and increased the rate of plant growth, further exacerbating the need for additional vegetation mowing. Vegetation in portions of the floodway of the RGRP often exceeds 5 feet in height before USIBWC is able to mow. CBP's proposed project includes increasing the mowing frequency of the floodway in the RGRP to maintain vegetation below a height of 24 inches at all times. Suppression of vegetation to a height of 24 inches has been determined by USBP to be operationally necessary to ensure officer safety and enable the detection of illicit cross-border violators (CBVs) and contraband in the floodway. A large portion of the project area is classified as urban and rural land uses with little or no ambient lighting or technology, making the line of sight critical for deterrence and detection before CBVs can reach populated areas.

Consistent with the National Environmental Policy Act (NEPA; 40 Code of Federal Regulations [CFR] 1508.28), this EA analyzes direct and indirect site-specific and cumulative environmental impacts of the proposed project. The affected area for this EA covers approximately 91 miles of the Rio Grande floodway in the RGRP, from El Paso to Fort Quitman. In connection with other border infrastructure projects and USIBWC flood risk reduction projects, much of this area has been analyzed in previous NEPA documents prepared by CBP and USIBWC. Accordingly, this EA tiers from the *Final Environmental Assessment and Finding of No Significant Impact for Improvements to the Rio Grande Rectification Project in El Paso and Hudspeth Counties, Texas* (USIBWC 2009); the *Final Programmatic Environmental Impact Statement and Record of Decision for Improvements to the USIBWC Rio Grande Flood Control Projects along the Texas-Mexico Border* (USIBWC 2008) and the *Final Programmatic Environmental Assessment and Finding of No Significant Impact for Proposed Tactical Infrastructure, Office of Border Patrol, El Paso Sector, Texas Stations* (CBP 2006). Where the EA incorporates previously documented information, the appropriate NEPA compliance document is cited and the incorporated content is summarized in this EA. Where previous NEPA documents do not provide sufficient or current information for the analysis required in this EA, new surveys for sensitive resources were completed, and this information is included in this EA.

The USBP El Paso Sector provides law enforcement support along the U.S./Mexico border for the Texas counties of El Paso and Hudspeth, and the New Mexico counties of Doña Ana, Luna, and Hidalgo. The El Paso, Ysleta, Fabens and Fort Hancock stations would be affected by the proposed project. CBP proposes to implement a more frequent mowing schedule of the RGRP floodway to decrease illegal cross-border activities, deter and detect illegal entries, and improve officer safety through increased visibility in the El Paso Sector's Area of Responsibility (AOR). This project would support CBP's mission by strengthening national security between ports-of-entry (POE) and help to prevent illegal entry of smugglers and CBVs into the U.S.

The proposed RGRP floodway mowing project described and analyzed in this EA is anticipated to help achieve CBP operational requirements and CBP's mission of improving border security. This EA describes the project goals that CBP will support and analyzes the potential environmental impacts of the proposed implementation of more frequent vegetation mowing.

1.1.1 Program Background

The U.S. experiences substantial cross-border traffic of CBVs, illegal drugs, and other contraband every year. These illegal activities cost U.S. citizens billions of dollars annually - directly from criminal activities, including the costs of apprehension, detention, and incarceration of criminals, and indirectly by loss of property, illegal participation in government programs, and increased insurance costs. The program background was described in the 2006 Programmatic EA and is incorporated herein by reference (CBP 2006).

1.1.2 Legislative Background

Among its many functions, Department of Homeland Security (DHS) oversees enforcement of the Immigration and Naturalization Act, which includes the authority and duty to control and guard the boundaries and borders of the U.S. against the illegal entry of aliens (8 U.S. Code [U.S.C.] 1103). Pursuant to Section 1502 of the Homeland Security Act of 2002 (Public Law [PL] 107-296), the President's reorganization plan of January 30, 2003, established CBP, which has responsibility for the resources and missions of the legacy Customs Service and USBP relating to borders and POEs. CBP's core mission is to defend U.S. borders against all threats while facilitating legitimate trade and travel. The legislative background of DHS and CBP was described in the 2006 Programmatic EA and is incorporated herein by reference (CBP 2006).

1.2 PURPOSE AND NEED

A continuous, clear line of sight into the RGRP floodway is needed by USBP agents for rapid detection and accurate characterization of potential threats. Continuous maintenance of vegetation in the floodway to a height of less than 24 inches is needed to remove concealment opportunities, and to assist in identifying, classifying, and bringing to a satisfactory law enforcement conclusion any CBVs. In addition, the regular maintenance of vegetation in the floodway maintenance is needed to provide a safer working environment for USBP agents, and to strengthen the USBP control between the POEs in the El Paso Sector.

1.3 PUBLIC INVOLVEMENT

1.3.1 Public Review

CBP will initiate public involvement and scoping activities as directed by 40 CFR Section 1501.7, 1503, and 1506.6 to identify any significant environmental issues related to this proposed project.

A Notice of Availability (NOA) for the draft EA will be published in English and Spanish in the *El Paso Times* newspaper to solicit comments on the proposed project. Applicable and pertinent comments from the public and other Federal, state, and local agencies from the 30-day public review and comment period will be addressed in the final EA. Copies of public comments generated during the preparation of the EA will be maintained and will be provided in Appendix B in the final EA. Proof of publication of the NOA will also be included in the final EA. All public comments should be addressed to:

U.S. Customs and Border Protection
Mr. Joseph Zidron, Environmental Specialist
Laguna Facility Center
24000 Avila Road, Suite 5020
Laguna Niguel, CA 92677

1.3.2 Agency Coordination

Coordination and consultation with stakeholder agencies and other potentially affected parties occurred during the preparation of the EA. This began in September 2010 through the issuance of agency coordination letters to Federal, state, and local agencies and Indian tribes, inviting their participation and input regarding the proposed project. Copies of correspondence generated during the preparation of the EA will be maintained and are provided in Appendix A. Coordination will be conducted with the following entities:

- U.S. Department of the Interior (DOI)
  - U.S. Fish and Wildlife Service (USFWS)
- U.S. Environmental Protection Agency (USEPA)
- U.S. Department of Agriculture (USDA)
  - Natural Resources Conservation Service (NRCS)
- U.S. Section, International Boundary and Water Commission
- Texas Commission on Environmental Quality (TCEQ)
- Texas Parks and Wildlife Department (TPWD)
- Texas Historical Commission (THC)
- Texas Department of Transportation (TxDOT)
- Ysleta del Sur Pueblo

1.4 APPLICABLE ENVIRONMENTAL GUIDANCE, STATUTES, AND REGULATIONS

This EA was prepared by CBP in accordance with the NEPA of 1969 (42 U.S.C. 4321-4347) and the Council on Environmental Quality (CEQ) regulations for implementing NEPA (40 CFR 1500-1508), as well as the DHS "Environmental Planning Directive" (Directive 023.1) and other pertinent environmental statutes, regulations, and compliance requirements, as summarized in Table 1-1. This list is not intended to be all inclusive of the Federal regulations and laws that had to be considered during the preparation of this EA.

1.5 REPORT ORGANIZATION

This EA is organized into eight major sections, including this introduction. Section 2.0 describes all alternatives considered for the project. Section 3.0 discusses the environmental resources potentially affected by the project and the anticipated environmental consequences. Section 4.0 discusses cumulative impacts. Environmental design measures are discussed in section 5.0; sections 6.0, 7.0, and 8.0 present a list of the references cited in the document, a list of acronyms and abbreviations used in the document, and a list of the persons involved in the preparation of the EA, respectively.

Table 1-1. Relevant Policy Documents, Invoking Actions, Regulatory Requirements, and Status of Compliance *

Policy Document	Administrative Authority	Invoking Action	Requirements for Compliance	Status of Compliance
Archaeological Resources Protection Act of 1979 16 U.S.C. § 470 et seq.	DOI	Excavation, removal, damage, or other alteration or defacing; or attempt to excavate, remove, damage, or otherwise alter or deface any archaeological resource located on public lands. 43 CFR 7.4	Because activities are exclusively for purposes other than the excavation and/or removal of archaeological resources, even though those activities might incidentally result in the disturbance of archaeological resources, no permit shall be required.	No cultural resources surveys are necessary since no ground disturbance is proposed; Section 106 process has been initiated.
Native American Graves & Repatriation Act (NAGPRA) as amended	National Park Service (NPS)	Excavation, removal, damage, or other alteration of Native American human remains.	Coordination directly with tribes claiming cultural affinity to project areas.	Will be invoked if remains are discovered.
Archaeological and Historical Preservation Act of 1974	NPS	Any undertaking by CBP.	Coordination with the State Historic Preservation Officer (SHPO)	Section 106 process has been initiated.
American Indian Religious Freedom Act	NPS	Federal actions that affect current or historically used cultural properties.	Coordination directly with tribes claiming cultural affinity to project areas.	Full compliance.
Clean Air Act of 1963 16 U.S.C. § 470 et seq.	USEPA	Any CBP action where the total of direct and indirect emissions in a non-attainment area would equal or exceed the provided rates. 40 CFR 51	Project emission levels were determined to be less than *de minimis* thresholds; therefore, a determination of conformity with applicable implementation plan is not required.	Emissions are below *de minimis*; no conformity analysis required.
Endangered Species Act (ESA) of 1973 16 U.S.C. § 1531 et seq.	USFWS	All actions in which there is discretionary CBP involvement or control. 50 CFR 402.03	Determination of no jeopardy to listed species and no destruction or adverse modification of critical habitat through consultation with the USFWS.	CBP and USFWS are in informal Section 7 consultation.
Farmland Protection Policy Act of 1981 7 U.S.C. § 9601 et seq.	NRCS	Any CBP action. 7 CFR 658	Identify and take into account the adverse effects on the protection of farmland.	No Prime or Unique Farmlands are present in the project corridor.

Table 1-1, continued

Policy Document	Administrative Authority	Invoking Action	Requirements for Compliance	Status of Compliance
Federal Water Pollution Control Act of 1977 (also known as Clean Water Act or CWA) 33 U.S.C. § 1251 et seq.	USEPA	Storage, use, or consumption of oil and oil products, which could discharge oil in quantities that could affect water quality standards, into or upon the navigable Waters of the U.S. 40 CFR 112	Preparation of a Spill Prevention, Control, and Countermeasures Plan.	To be completed by USBP or contractor.
		Discharge of pollutants. 40 CFR 122	Obtain a general National Pollutant. Discharge Elimination System Permit.	To be completed by USBP or contractor.
Migratory Bird Treaty Act of 1918 16 U.S.C. § 703	USFWS	Any CBP action resulting in the take **of** any migratory bird, or the parts, nests, or eggs of such bird. 50 CFR 21.11	Avoidance of take or application for permit.	Surveys prior to any construction beginning during nesting season.
National Historic Preservation Act (NHPA) of 1966 16 U.S.C. § 470 et seq.	Advisory Council on Historic Preservation (ACHP)	Any undertaking by CBP. 36 CFR 800.3	Assessment of effects through consultation with the ACHP.	Section 106 consultation has been initiated.
Occupational Health and Safety Act of 1970 29 U.S.C. § 651 et seq.	Occupational Safety and Health Administration (OSHA), Department of Labor	Employees performing in a workplace. 29 CFR 1910.5 (a)	Adherence to occupational health and safety standards.	To be completed by USBP during design and operation.
Resource Conservation and Recovery Act of 1976 42 U.S.C. § 6901 et seq.	USEPA	Collection of residential, commercial, and institutional solid wastes and street wastes. 40 CFR 243	Adherence to guidelines for waste storage and safety and collection equipment, frequency, and management.	To be completed by USBP during design and operation.
		Procurement of more than $10,000 annually of products containing recovered materials. 40 CFR 247	Procure designated items composed of the highest percentage of recovered materials practicable.	To be completed by USBP during design and operation.

Table 1-1, continued

Policy Document	Administrative Authority	Invoking Action	Requirements for Compliance	Status of Compliance
Resource Conservation and Recovery Act of 1976 42 U.S.C. § 6901 et seq., continued	USEPA, continued	Recovery of resources from solid waste through source separation. 40 CFR 246	Recovery of high-grade paper, residential materials, and corrugated containers.	To be completed by USBP during design and operation.
		Treatment, storage, or disposal of hazardous waste on-site. 40 CFR 262.10(c)	Determination of hazardous or non-hazardous nature of solid waste, obtain an USEPA identification number if necessary, properly accumulate hazardous waste, and maintain a record.	To be completed by USBP during design and operation.
Executive Order (EO) 11988: Floodplain Management 42 Federal Register (FR) 26,951 (May 24, 1997)	Water Resources Council, Federal Emergency Management Agency, CEQ	Acquisition and management of Federal lands; Federally undertaken, financed, or assisted construction; conducting Federal activities affecting land use.	Determine whether the proposed action will occur in a floodplain, then evaluate potential effects of any action in a floodplain.	Project area is in the floodplain of the Rio Grande, but no construction activities are proposed.
EO 11990: Protection of Wetlands 42 FR 26,691 (May 24, 1977)	USACE, USEPA	Acquisition and management of Federal lands; Federally undertaken, financed, or assisted construction; conducting Federal activities affecting land use.	Take action to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands.	No wetlands would be affected.
EO 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations 59 FR 7629 (February 11, 1994)	USEPA	All programs or activities receiving Federal financial assistance that affect human health or the environment.	Analyze the environmental effects, including human health, economic, and social effects of CBP actions, including effects on minority communities and low-income communities.	No disproportionate adverse effects on minority or low income families.

Table 1-1, continued

Policy Document	Administrative Authority	Invoking Action	Requirements for Compliance	Status of Compliance
EO 13045: Protection of Children from Environmental Health Risks and Safety Risks 62 FR 19883 (April 23, 1997)	USEPA	Any CPB action.	Identify and assess environmental health risks and safety risks that may disproportionately affect children.	No adverse effects on children anticipated. Mowing areas will be clearly demarcated and controlled.
EO 13123: Greening the Government Through Efficient Energy Management 64 FR 30851	USEPA, Department of Energy	Operation and maintenance of a Federal facility.	Reduce emissions of greenhouse gases, reduce energy consumption, strive to expand use of renewable energy, reduce use of petroleum, and reduce water consumption.	To be completed by USBP during design and operation.
EO 13175: Consultation and Coordination with Indian Tribal Governments	Bureau of Indian Affairs	Federal actions that affect current or historically used cultural properties.	Coordinate directly with Tribes claiming cultural affinity to project areas.	Full compliance.

*Not All Inclusive

SECTION 2.0
PROPOSED ACTION AND ALTERNATIVES

2.0 PROPOSED ACTION AND ALTERNATIVES

This section provides detailed information on CBP's proposal to evaluate various methods for vegetation removal within the RGRP floodway in the El Paso Sector's AOR.

Line of sight into the floodway and to the Rio Grande within the RGRP is an operational problem for USBP agents patrolling along the RGRP levee and within the floodway. A clear line of sight into the floodway is primarily obstructed by vegetative growth. At times, herbaceous plants and immature woody plants grow to heights of 4 to 6 feet prior to USIBWC mowing operations, and mature woody plants grow along the banks of the Rio Grande and along arroyos and washes that bisect the floodway and drain into the Rio Grande (Photograph 2-1). The vegetation needs to be maintained shorter than 24 inches on a continual basis.

Photograph 2-1. Vegetation within the floodway of the RGRP project as seen from the top of the flood risk reduction levee, September 2010

The range of reasonable alternatives considered in this EA is constrained to those that would meet the purpose and need, provide a continual clear line of sight into the RGRP floodway, allow for rapid detection and accurate characterization of potential threats, and assist in identifying, classifying, and bringing a satisfactory law enforcement conclusion to any CBVs as described in Section 1.2.

Selection of methods of vegetation removal was based on the following criteria:

(1) method must provide for continual, clear line of sight for USBP agents in the RGRP floodway;
(2) method must support USBP operational needs to rapidly detect and accurately characterize potential threats;
(3) method must assist USBP in identifying, classifying, and bringing to a satisfactory law enforcement conclusion any CBVs;
(4) method must minimize adverse impact on threatened and endangered species and their critical habitat to the maximum extent practicable; and
(5) method must not cause substantial public controversy or have serious environmental concerns.

Besides the Proposed Action Alternative described in Section 2.2, no other action alternative was developed that fully addresses the project's purpose and need. The No Action Alternative, described in Section 2.1, has been included in the evaluation as required by NEPA regulations.

2.1 NO ACTION ALTERNATIVE

Under the No Action Alternative, no additional floodway maintenance in the RGRP would be performed by CBP. USIBWC would continue to provide all maintenance mowing of the floodway and would mow the vegetation to a height of 18 inches as flood risk reduction maintenance necessitates (estimated at two times per year). Vegetation in the RGRP would be allowed to reach heights as tall as 4 to 6 feet, if it was determined by USIBWC that it would have no immediate effect on flood risk reduction in the region.

USIBWC's mowing efforts in the RGRP floodway do not meet the purpose and need because the infrequent mowing does not provide a continual clear line of sight. With the taller vegetation, CBVs may escape law enforcement, and the work environment for USBP agents is not safe with the taller vegetation. The No Action Alternative is required by NEPA regulations (40 CFR 1502.14[d]) as a basis of comparison to the anticipated effects of action alternatives.

2.2 PROPOSED ACTION ALTERNATIVE

USBP has identified the approximately 91-mile long RGRP, extending from El Paso to the downstream terminus at Fort Quitman as a high priority area for vegetation mowing (Figures 2-1a through 2-1s). When the height of vegetation in the floodway exceeds 24 inches, USBP proposes to mow the vegetation to a height of 18 inches (or lower if mowing equipment allows) using the same methods implemented by USIBWC since the original construction of the RGRP.

In conjunction with USIBWC's on-going maintenance activities, USBP would mow as often as necessary, to maintain the height of the vegetation below 24 inches. USBP would mow all vegetation and remove debris within the floodway up to the top of the levee, except for the narrow band of mature woody vegetation located along the north bank of the Rio Grande (Figure 2-2) or along bisecting arroyos. The total maintenance area to be mowed in the RGRP floodway is approximately 2,025 acres. No mature woody vegetation (i.e., exceeding 8 feet in height) would be removed as a result of the Proposed Action Alternative. USBP would use farm tractors pulling heavy-duty rotary cutters to mow the vegetation in the floodway. Mowing would be avoided to the extent practicable during migratory bird (including burrowing owl [*Athene cunicularia*]) nesting season (March 1 through September 15) or during Ysleta del Sur Pueblo ceremonial use of the floodway. If USBP mows the floodway during migratory bird nesting season, surveys for nesting birds would be conducted prior to mowing activities. If active nests (or burrowing owl burrows) are discovered, a 50-foot buffer surrounding the active nests (or burrows) would be established and active nests avoided. A 1,000-foot buffer would be placed around any southwest willow flycatcher (*Empidonax traillii extimus*) and interior least tern (*Sterna antillarum athalassos*) nest(s). Alternatively, if nest avoidance is not possible, nest relocation permits would be acquired from the USFWS and TPWD, and nestlings and chicks would be relocated prior to mowing. Mowing would be done either by USBP agents using purchased or rented equipment, USIBWC operators, or by private contractors.

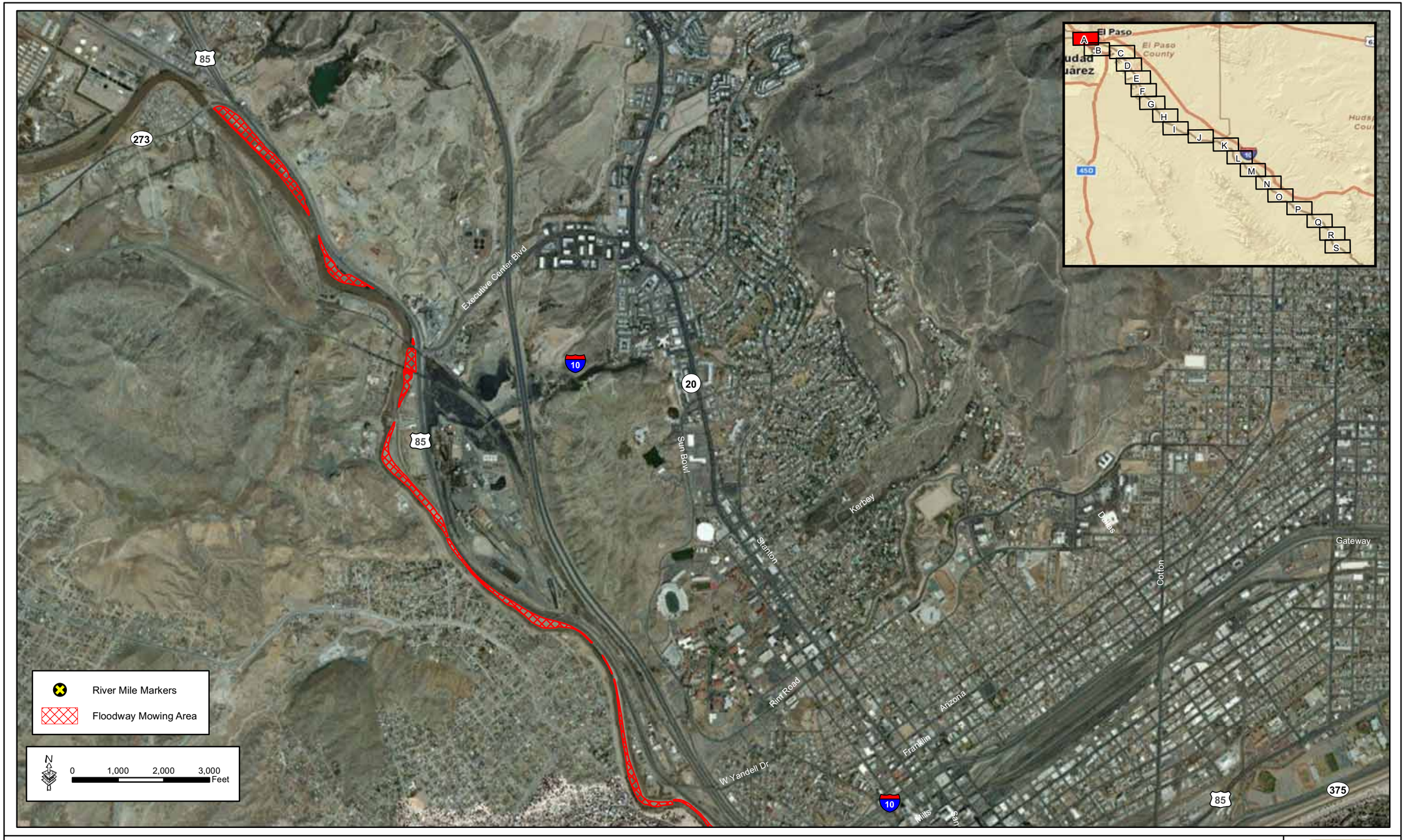

Figure 2-1a: Location of Proposed Floodway Mowing Area within the Rio Grande Rectification Project

GSRC

October 2010

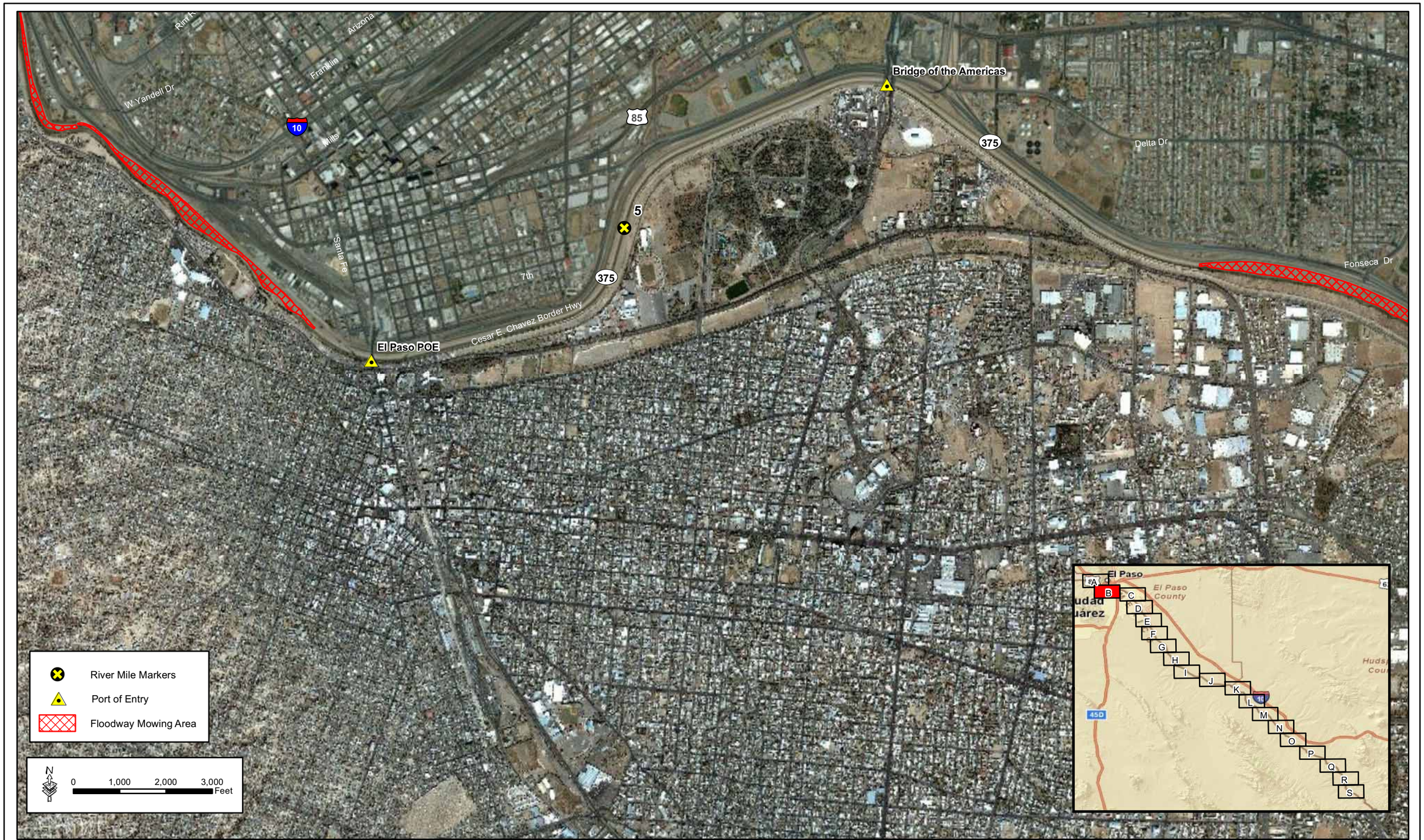

Figure 2-1b: Location of Proposed Floodway Mowing Area within the Rio Grande Rectification Project

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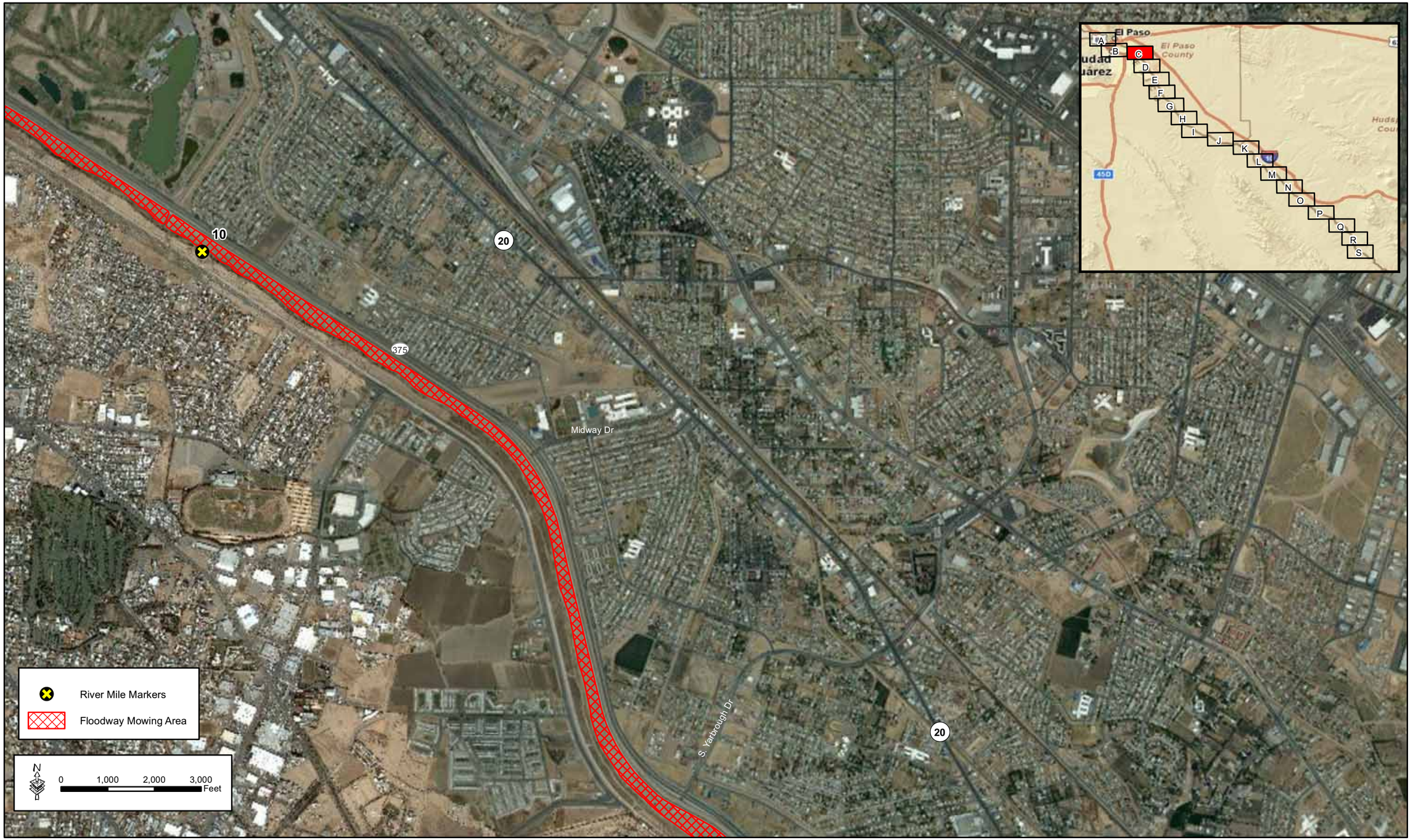

Figure 2-1c: Location of Proposed Floodway Mowing Area within the Rio Grande Rectification Project

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Figure 2-1d: Location of Proposed Floodway Mowing Area within the Rio Grande Rectification Project

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Figure 2-1e: Location of Proposed Floodway Mowing Area within the Rio Grande Rectification Project

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Figure 2-1f: Location of Proposed Floodway Mowing Area within the Rio Grande Rectification Project

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Figure 2-1g: Location of Proposed Floodway Mowing Area within the Rio Grande Rectification Project

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Figure 2-1h: Location of Proposed Floodway Mowing Area within the Rio Grande Rectification Project

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Figure 2-1i: Location of Proposed Floodway Mowing Area within the Rio Grande Rectification Project

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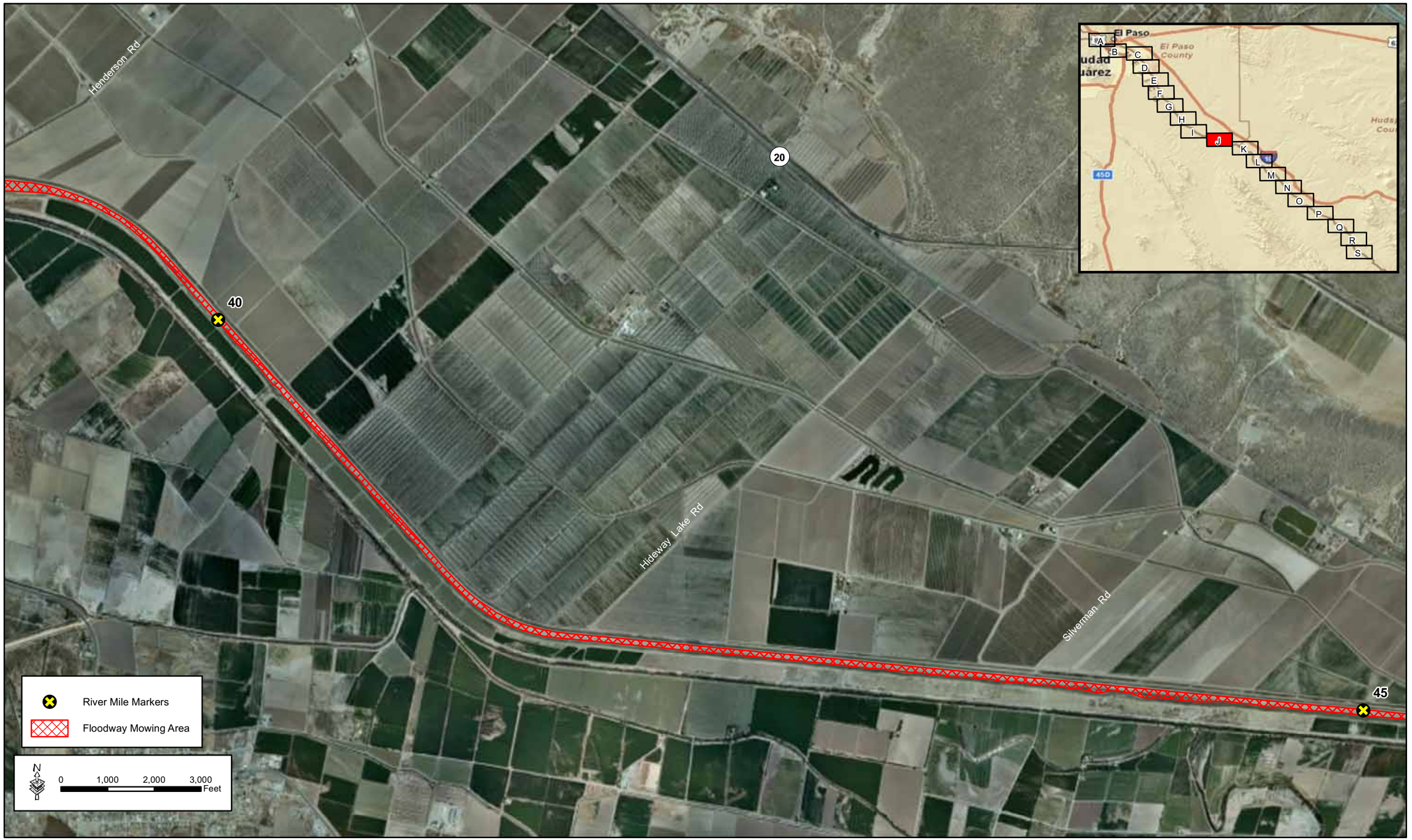

Figure 2-1j: Location of Proposed Floodway Mowing Area within the Rio Grande Rectification Project

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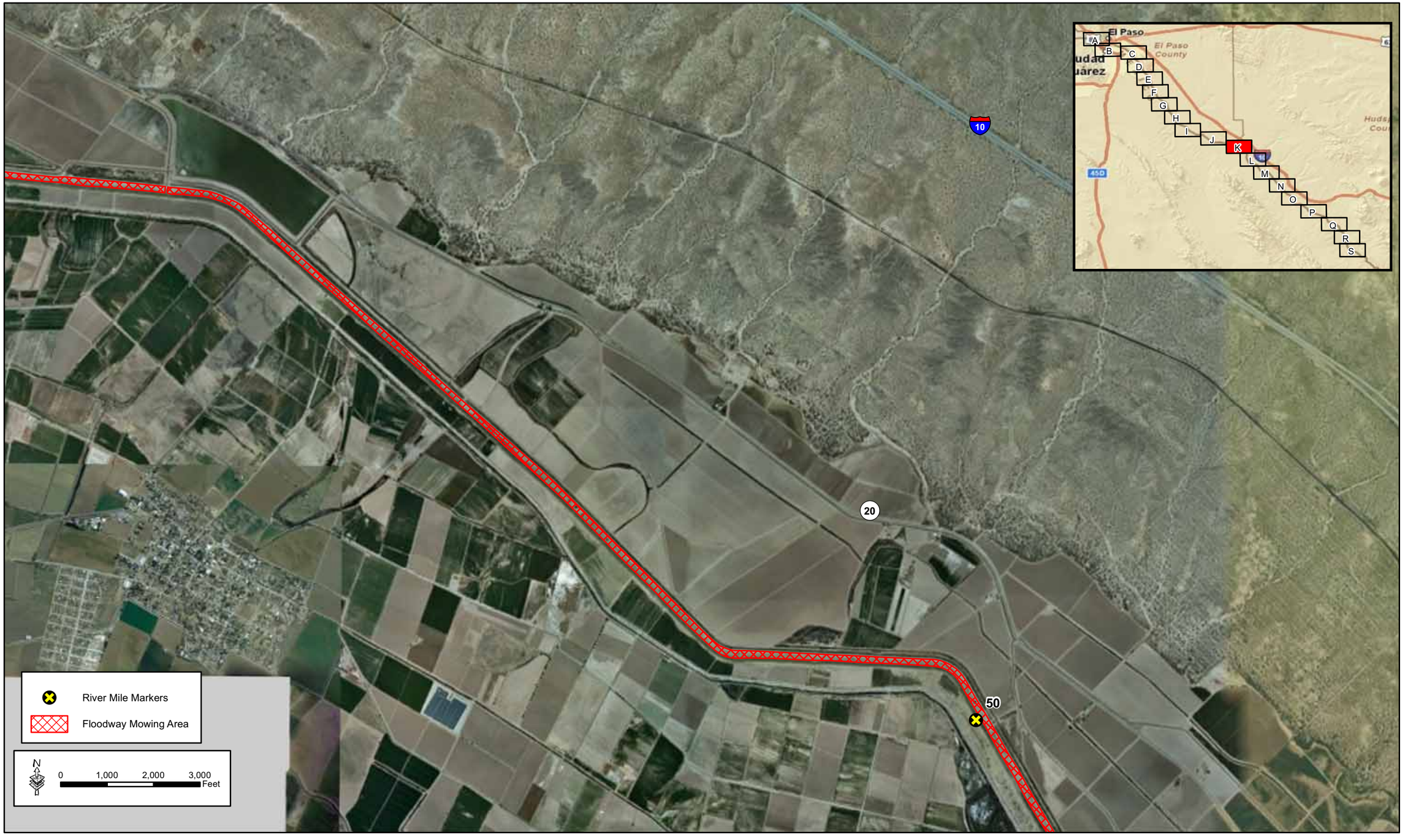

Figure 2-1k: Location of Proposed Floodway Mowing Area within the Rio Grande Rectification Project

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Figure 2-1l: Location of Proposed Floodway Mowing Area within the Rio Grande Rectification Project

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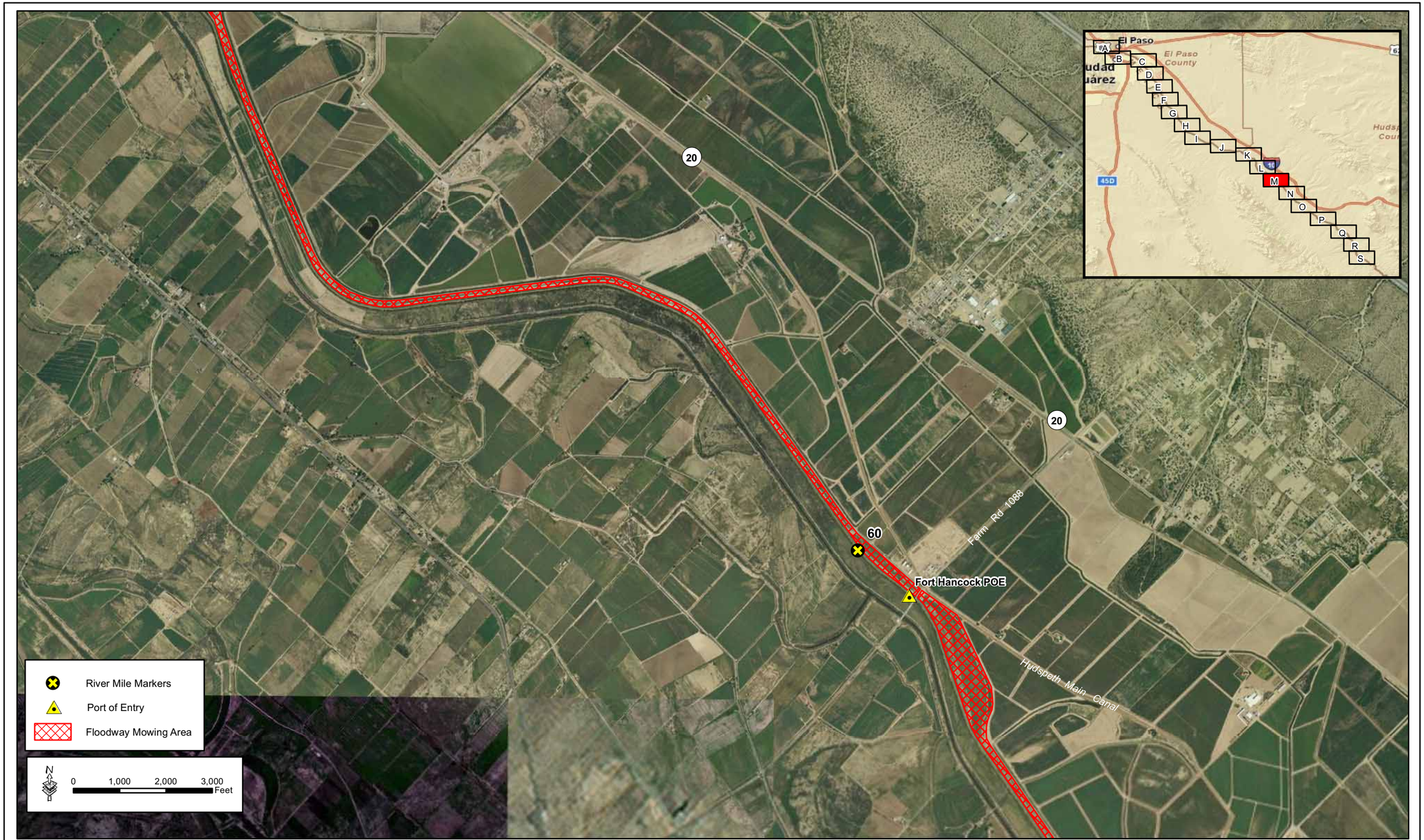

Figure 2-1m: Location of Proposed Floodway Mowing Area within the Rio Grande Rectification Project

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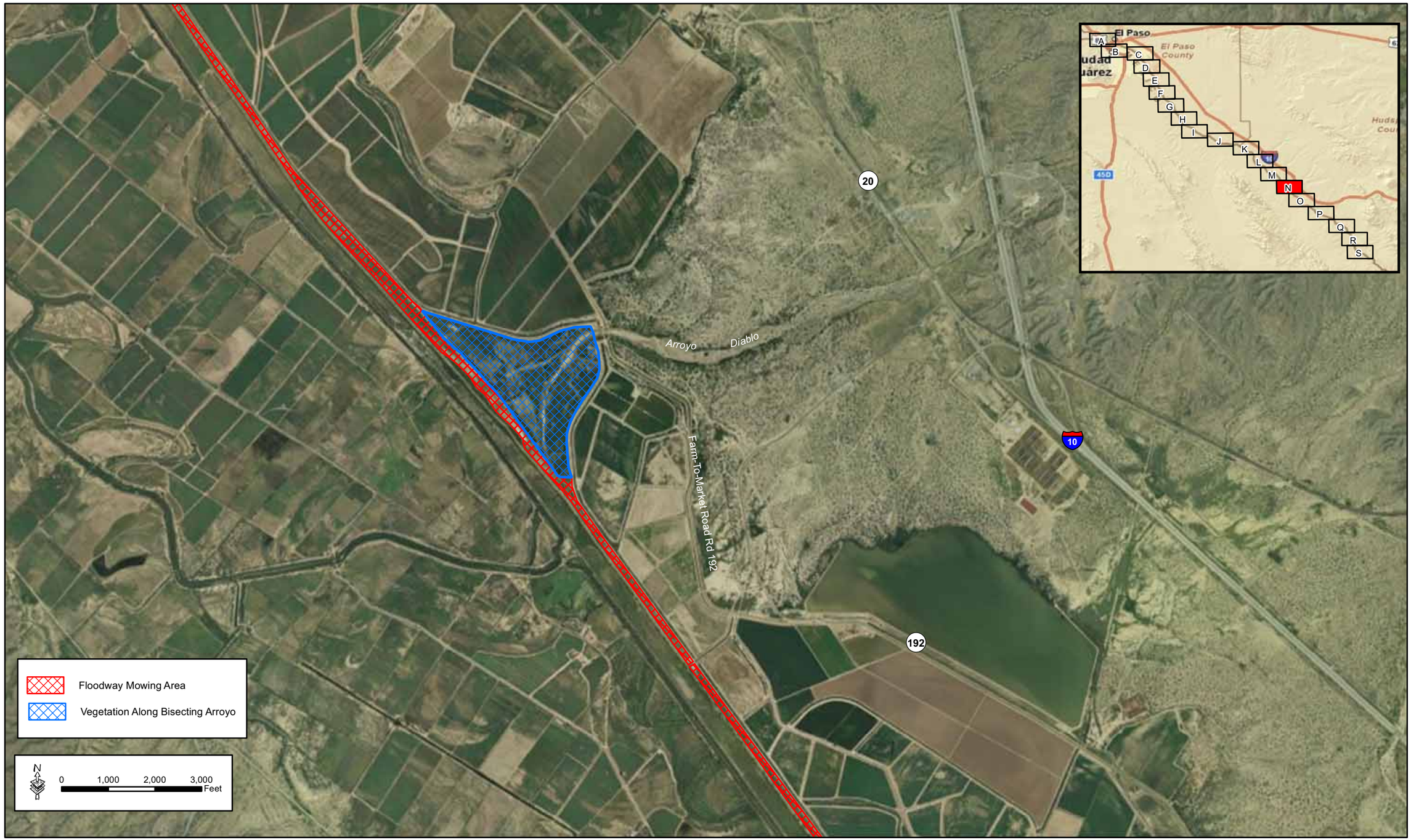

Figure 2-1n: Location of Proposed Floodway Mowing Area within the Rio Grande Rectification Project

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Figure 2-1o: Location of Proposed Floodway Mowing Area within the Rio Grande Rectification Project

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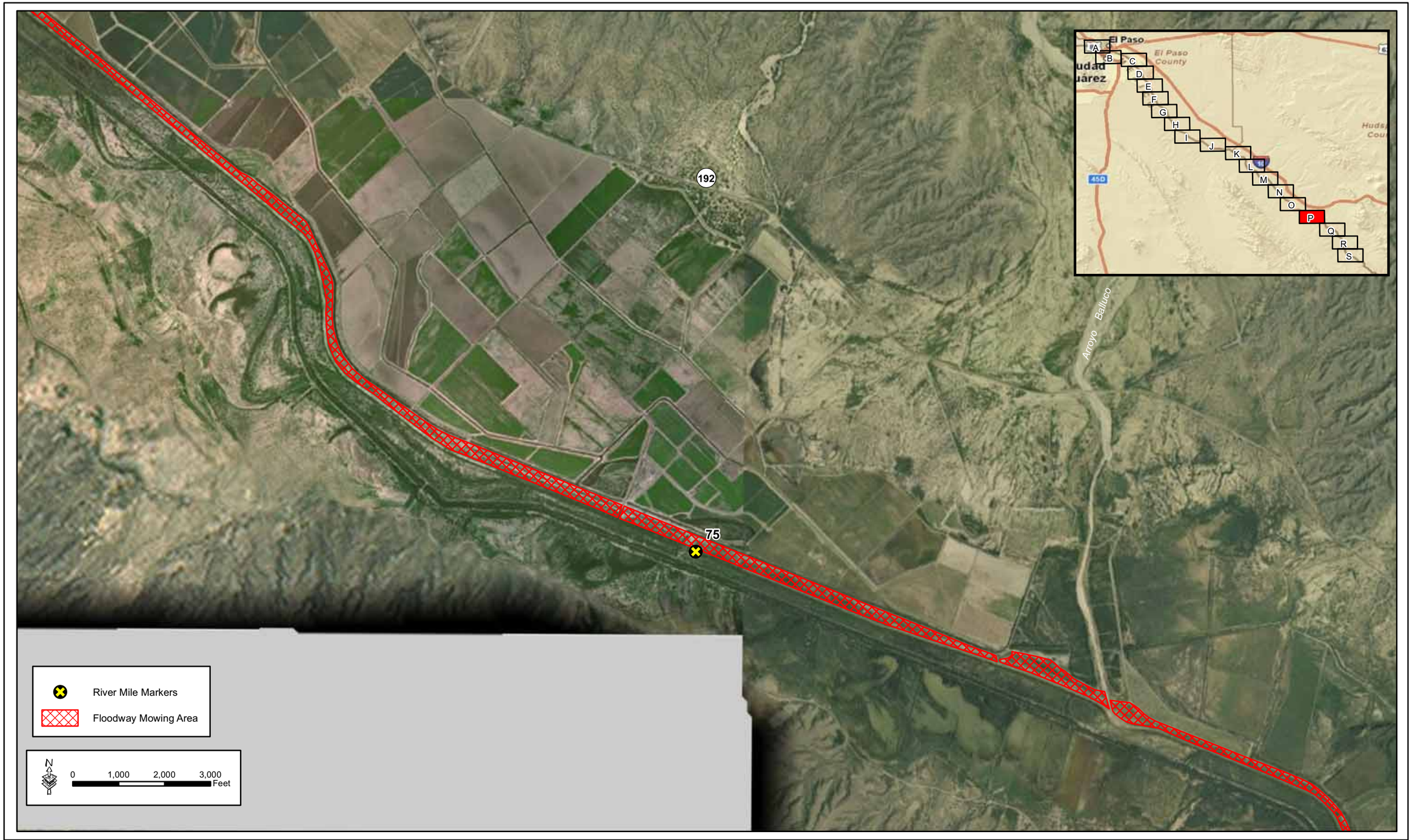

Figure 2-1p: Location of Proposed Floodway Mowing Area within the Rio Grande Rectification Project

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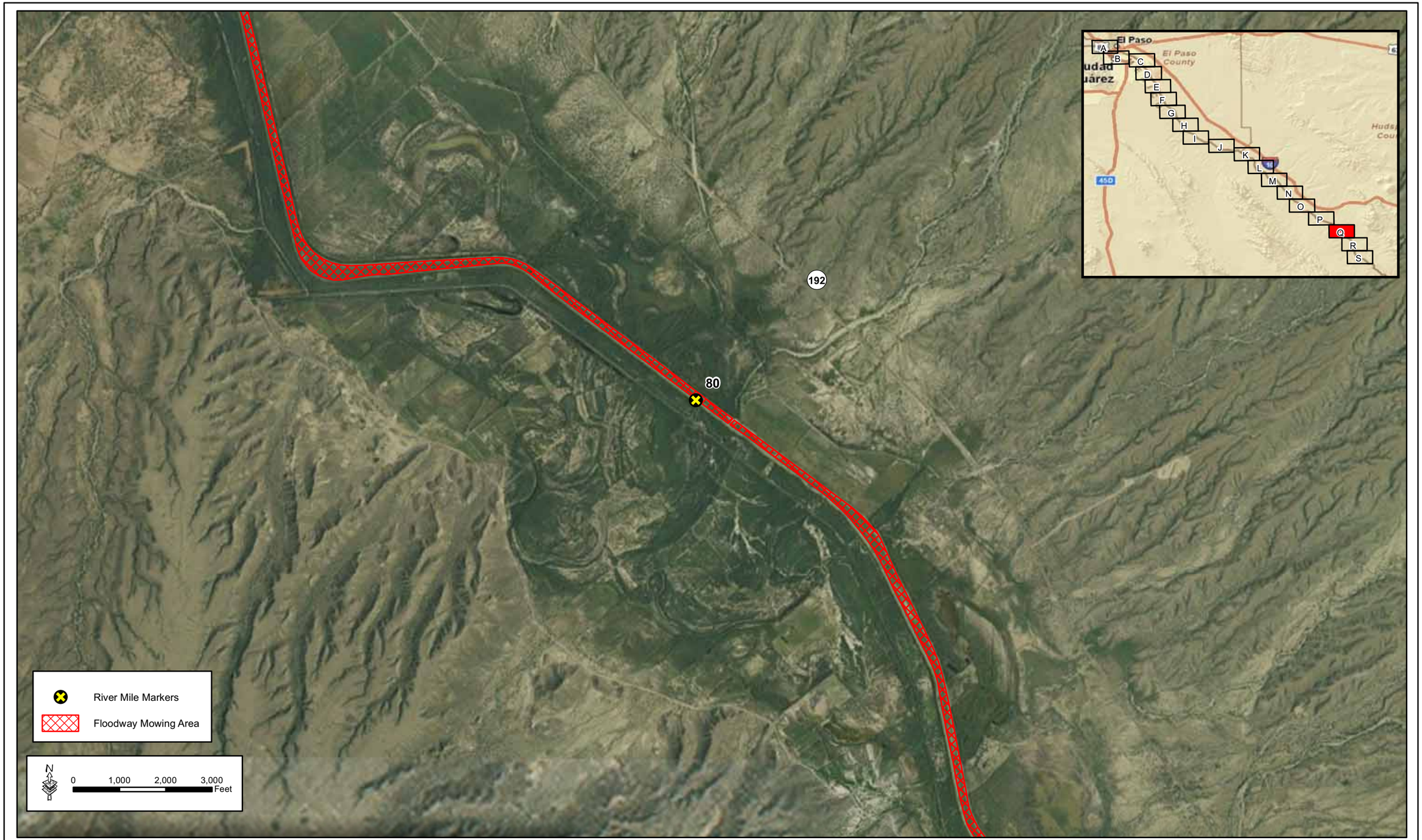

Figure 2-1q: Location of Proposed Floodway Mowing Area within the Rio Grande Rectification Project

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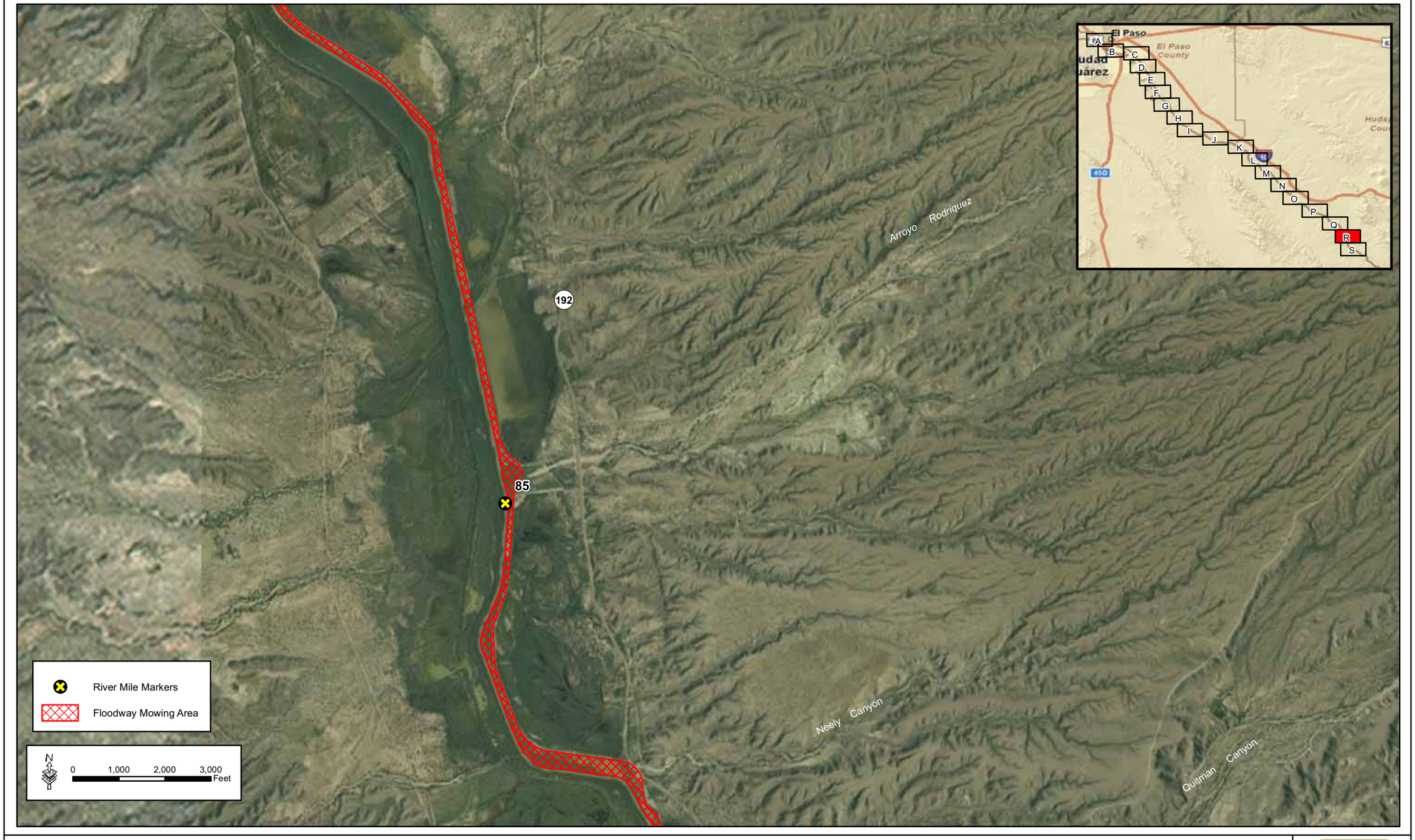

Figure 2-1r: Location of Proposed Floodway Mowing Area within the Rio Grande Rectification Project

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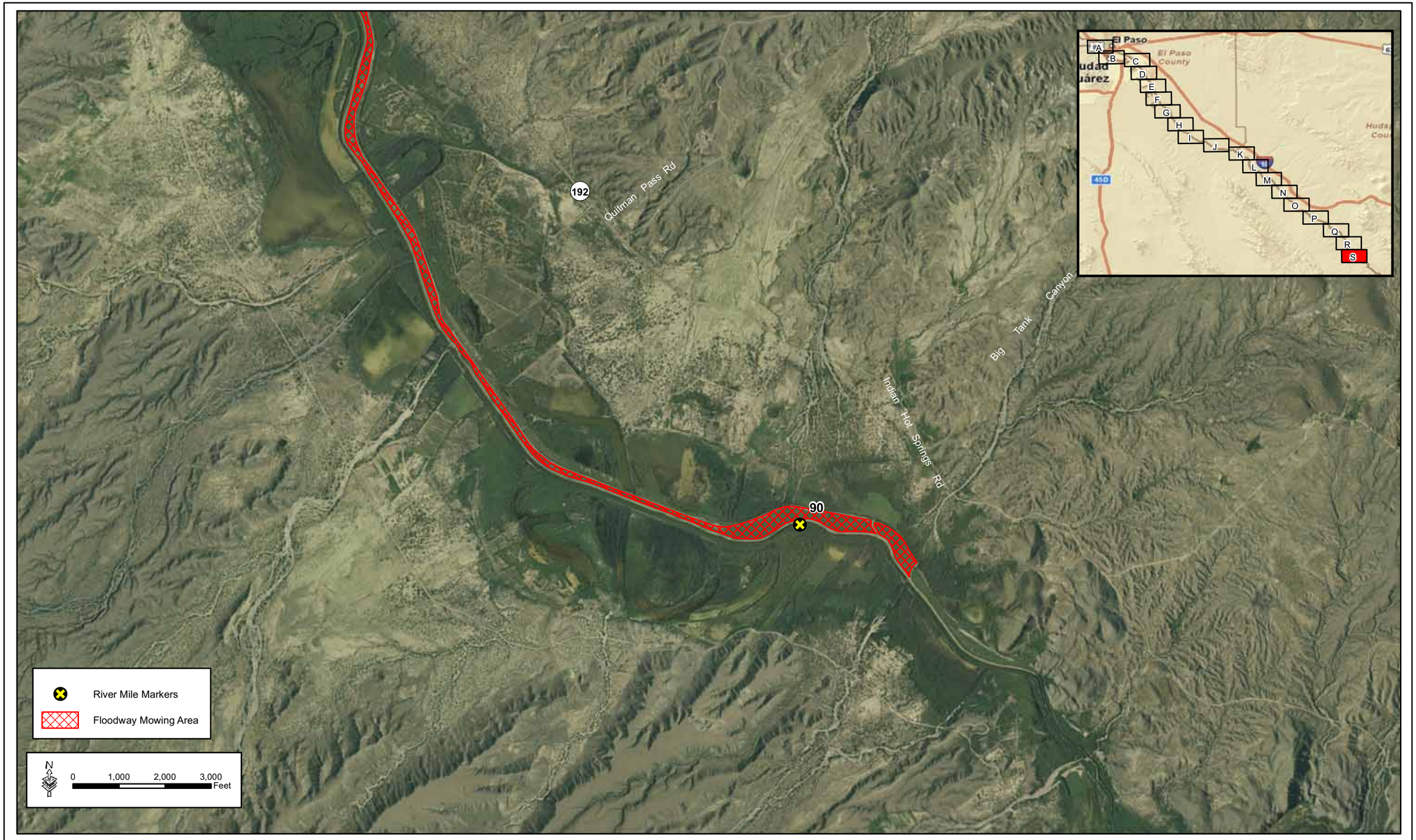

Figure 2-1s: Location of Proposed Floodway Mowing Area within the Rio Grande Rectification Project

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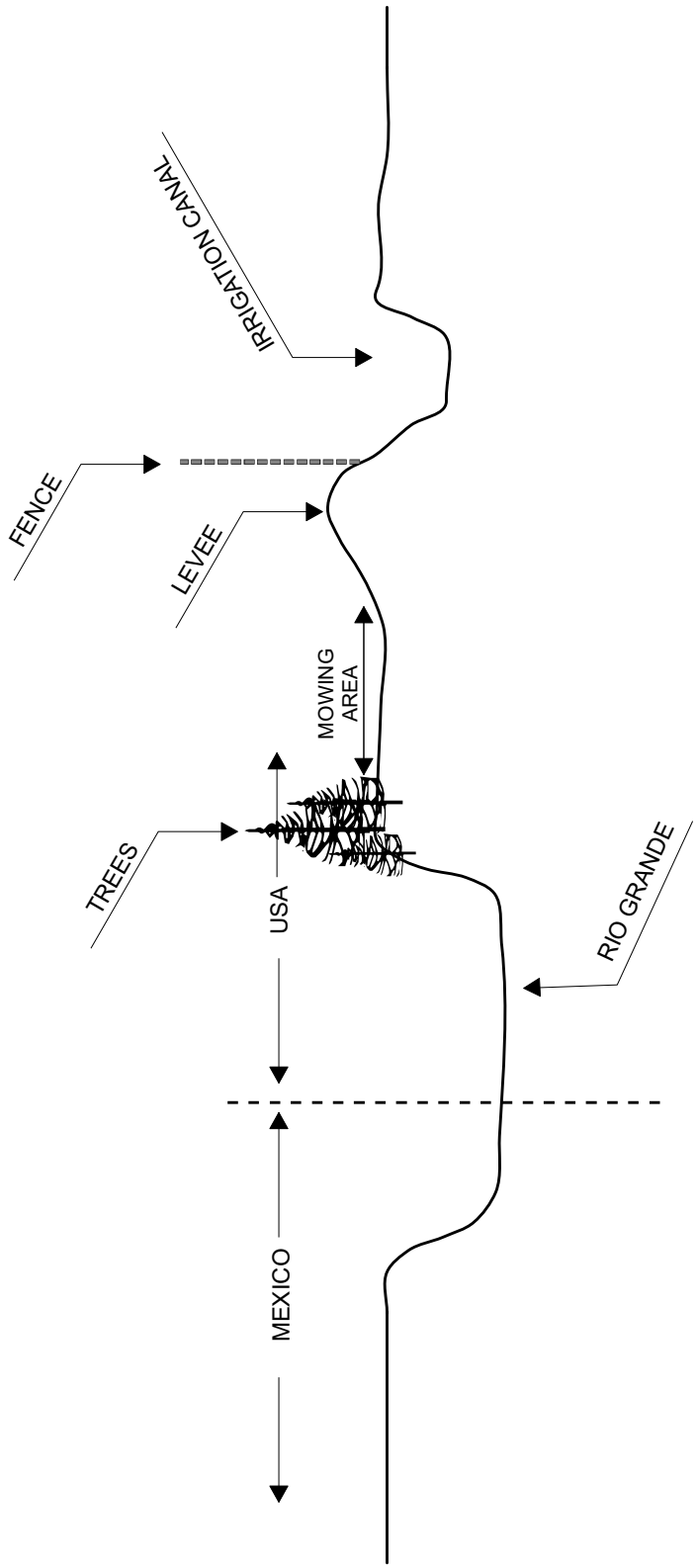

Figure 2-2: Conceptual Cross-Section of Rio Grande Rectification Project Floodway and Area of USBP Proposed Mowing Operations

2.3 OTHER ACTION ALTERNATIVES CONSIDERED BUT ELIMINATED

2.3.1 Alternative Methods of Vegetation Control

CBP evaluated alternative methods of vegetation control within the RGRP floodway. The use of prescribed burns and herbicides could be implemented in the floodway to suppress vegetation growth and alleviate line of sight issues for USBP agents. CBP has proposed the use of both prescribed burns and application of herbicides to control herbaceous vegetation in Laredo, Texas (CBP 2008), and has implemented a limited pilot project to evaluate alternative Carrizo cane (*Arundo donax*) removal methods. The attempt by CBP to use prescribed burns and herbicides on a small scale in Laredo caused a substantial amount of public controversy, including serious environmental concerns expressed by the Mexico Section, International Boundary and Water Commission, and USIBWC.

Although aerial application of herbicides approved by the USEPA for use in aquatic environments and the use of prescribed burns following requirements of a local burn permit would be reasonable, cost-effective methods for vegetation suppression in the floodway, agency concerns, public controversy and concerns expressed by the Mexican government have precluded CBP from carrying these alternative methods forward for additional analysis at this time. However, this does not preclude CBP from evaluating prescribed burns and herbicide use in the RGRP in the future if these concerns can be alleviated.

2.3.2 Alternative Actions that Would Remove All Vegetation in the Floodway

CBP evaluated alternative actions that would remove all of the vegetation within the floodway (including mature woody vegetation). Although it would further improve USBP line of sight compared to the Proposed Action and No Action Alternatives, the removal of mature woody vegetation within the RGRP floodway was determined to be an unsuitable alternative at this time.

This determination was made because the removal of mature woody vegetation within the floodway would cause the permanent loss of structural habitat for numerous nesting migratory bird species, and would cause short-term bank stabilization issues along the Rio Grande within the RGRP. CBP determined that the extent of habitat loss and risks to floodplain erosion and bank slumping would be too great and the benefits for improved line of sight too small to warrant the additional vegetation removal at this time. However, this does not preclude CBP from considering additional vegetation removal within the RGRP in the future if operational requirements deem it necessary.

2.4 SUMMARY

The two alternatives selected for further analysis are the No Action Alternative and Proposed Action Alternative. An alternative matrix (Table 2-1) shows how each of these alternatives satisfies the stated purpose and need. Table 2-2 presents a summary matrix of the potential impacts from the Proposed Action and No Action Alternatives analyzed and how each affects the environmental resources in the project area.

Table 2-1. Alternative Matrix of Purpose and Need to Alternatives

Purpose and Need	No Action Alternative	Proposed Action Alternative
Provides a continuous, clear line of sight for USBP agents into the RGRP floodway.	No	Yes
Allows for rapid detection and accurate characterization of potential threats.	No	Yes
Assists in identifying, classifying, and bringing to a satisfactory law enforcement conclusion any CBVs.	No	Yes
Provides a safer working environment for USBP agents and strengthens the USBP control between the POEs in the El Paso Sector.	Partial	Yes

Table 2-2. Summary Matrix of Potential Impacts

Affected Environment	No Action Alternative	Proposed Action Alternative
Soils	The No Action Alternative would not cause any substantial soil disturbance from mowing activities. Mower blades would cause loose surface soils in unvegetated areas to be blown and re-deposited within the floodway.	The Proposed Action would cause increased soil compaction and rutting from more frequent use of heavy equipment during mowing of up to 2,025 acres annually. Some minor impacts on soils would occur.
Hydrology and Groundwater	No impacts on hydrology and groundwater would occur.	No impacts on hydrology and groundwater would be expected with the implementation of the Proposed Action.
Water Resources	No impacts on surface water or Waters of the U.S. would occur.	No Waters of the U.S. occur in the RGRP floodway where mowing would take place. Increased soil compaction and rutting would cause decreased plant productivity and subsequent bare soil areas. The increased sedimentation from the soil disturbance would have indirect minor impacts on water quality of the Rio Grande.
Vegetative Habitat	The No Action Alternative would continue to have long-term impacts on vegetation in the area by selecting for non-native and invasive plants through mowing activities in the 2,025 acre maintenance area; however, no adverse impacts on native or sensitive vegetation communities would occur.	The Proposed Action would have long-term impacts on vegetation communities in the area, similar to the No Action Alternative; up to 2,025 acres of vegetation would be mowed annually but no adverse impacts on native or sensitive vegetation communities would be expected to occur.
Wildlife Resources	The No Action Alternative would continue to maintain the area as low-quality wildlife habitat and no additional impacts would occur.	The Proposed Action may moderately impact wading birds, as well as wetland, grassland, and songbirds in the area through periodic mowing disturbance. Direct minor adverse impacts may occur to slow or sedentary species, but impacts would not reduce breeding opportunities or population numbers on a regional scale. Pre-mowing surveys during the bird nesting season and establishment of buffers around nests would ensure no significant impacts would occur to nesting migratory birds.
Protected Species and Critical Habitat	No changes to the vegetation communities in the floodway would occur and the No Action Alternative would not impact threatened and endangered species.	No adverse impacts to threatened or endangered species would occur with the implementation of the Proposed Action. Bird surveys would be completed during the migratory bird breeding and buffers established around active nests, including southwestern willow flycatcher, western burrowing owl and interior least tern nests, if present, ensuring no adverse effect to any Federally or state listed species.

Table 2-2, continued

Affected Environment	No Action Alternative	Proposed Action Alternative
Cultural Resources	No impacts on cultural properties would occur from continued mowing activities. USIBWC coordinates with the Ysleta del Sur Pueblo to ensure that ceremonial activities are not impeded by mowing activities.	No impacts on cultural properties would occur from increased mowing activities. USBP would coordinate with the Ysleta del Sur Pueblo to ensure that ceremonial activities would not be impeded by mowing activities.
Air Quality	Impacts to air quality would be less than significant. Some fugitive dust emissions occur as a result of mowing activities but these remain below *de minimus* thresholds.	Increased emissions from the operation of mowing equipment, worker commute, supply trucks, and fugitive dusk could cause temporary and minor increases in air pollution. However, these impacts would be less than significant.
Noise	No adverse impacts from noise generated by mowing equipment would occur under the No Action Alternative.	Increased noise emissions would occur as a result of increased mowing activities. However, no sensitive receptors are present within the floodway, mowing activities would be restricted to daylight hours, and any single receptor would only experience noise emissions from mowing activities for 1 to 2 hours, when vegetation reaches a height of 24 inches. Therefore, there would be no significant impacts from increased noise emissions.
Aesthetics and Visual Resources	No impacts to aesthetics or visual resources would occur.	Minor adverse impacts on aesthetics could occur. Increased mowing could decrease the quantity and diversity of bird and plant species, which contribute to aesthetic appeal.
Hazardous Material and Solid Waste	Potential contamination from small quantities of fuels, oils, lubricants or solvents exist.	Potential contamination from small quantities of fuels, oils, lubricants or solvents exist. Best management practices (BMPs) would be implemented to ensure no adverse impacts would occur.
Sustainability and Greening	No additional impacts would occur with the implementation of the No Action Alternative.	No significant impacts would be expected to occur as a result of the Proposed Action.
Human Health and Safety	No beneficial or adverse impacts would occur.	Potential human health hazards could occur as a result of the Proposed Action but BMPs and safety planning would greatly reduce these risks.

SECTION 3.0
AFFECTED ENVIRONMENT AND CONSEQUENCES

3.0 AFFECTED ENVIRONMENT AND CONSEQUENCES

3.1 INTRODUCTION

This section of the EA describes the natural and human environment that exists within the alternative sites and region of influence (ROI), defined as El Paso and Hudspeth Counties for this assessment, and the potential impacts of the No Action and Proposed Action Alternatives outlined in Section 2.0. Only those parameters that have the potential to be affected by any of the alternatives are described, as per CEQ guidance (40 CFR 1501.7 [3]). Some topics are limited in scope due to the lack of direct effect from the proposed project on the resource or because that particular resource is not located within the project area. Resources dismissed from further discussion are:

Geologic Resources
Geological resources include physical surface and subsurface features of the earth such as geological formations and the seismic activity of the area. The proposed increase in mowing operations would not disturb the underlying geologic resources of the area. The RGRP area is not subject to seismic activity or landslides, so there would be no impacts on geological resources.

Climate
The proposed increase in mowing activities would neither affect, nor be affected by, the climate.

Wild and Scenic Rivers
The proposed increase in mowing activities would not affect any stretch of river designated as Wild and Scenic.

Unique and Sensitive Areas
The proposed increase in mowing activities in the RGRP would not affect any unique and sensitive areas because no areas designated as such are located within or near the project area.

Land Use
The land use would not change as a result of more frequent mowing activities in the floodway. The land use would remain as part of USIBWC's flood risk reduction project for the Rio Grande and under ownership of USIBWC.

Utilities
Floodway mowing activities would not impact nor be impacted by potable water or sanitary sewer or energy use.

Socioeconomics, Environmental Justice, and Protection of Children
The proposed increase in mowing activities in the RGRP would not affect socioeconomics, environmental justice, or children in the project region as there are no residences, businesses, minorities, or children residing in or utilizing the floodway.

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]). As discussed in this section, the alternatives may create temporary (lasting the duration of the project construction), short term (up to 3 years), long term (3 to 10 years following construction), or permanent impacts or effects. Whether an impact is significant depends on the context in which the impact occurs and the intensity of the impact.

Impacts can vary in degree or magnitude from a slightly noticeable change to a total change in the environment. Significant impacts are those effects that would result in substantial changes to the environment (40 CFR 1508.27) and should receive the greatest attention in the decision-making process. Insignificant impacts are those that would result in minimal changes to the environment. The following discussions describe and, where possible, quantify the potential effects of each alternative on the resources within or near the project sites. All impacts described below are considered to be adverse unless stated otherwise.

USIBWC's recent NEPA documents describing the RGRP and improvements to the flood control projects along the Rio Grande are used in this assessment to provide additional information on the affected environment and are incorporated by reference (see Section 1.1; USIBWC 2009 and USIBWC 2008). Information about the affected environment from CBP's 2006 Programmatic EA for proposed tactical infrastructure is incorporated by reference as well (CBP 2006). The analysis of impacts assumes that the entire RGRP floodway would be mowed any time that vegetation reaches a height of 24 inches and that the total area within the floodway that would be mowed is 2,025 acres. Although the total number of annual mowing events necessary to maintain this height will vary with environmental factors (i.e., precipitation, flooding, temperature), for the purposes of analysis of impacts it is assumed that, on average, mowing would occur two additional times annually, for a total of four mowing events each year.

3.2 SOILS

3.2.1 Affected Environment

The floodway is primarily located on Harkey-Glendale association soils (USDA Soil Conservation Service 1971) consisting of nearly level calcareous soils that have loamy very fine sand to silty clay loam underlying them. There are also areas of Gila soil material (made land) in the floodway. Harkey soils are moderately well drained, their internal drainage is medium, and their permeability is moderate or moderately slow. Glendale soils are well drained or moderately well-drained, have medium internal drainage, and are moderately to very slowly permeable. No wind or water erodibility information is provided by the Soil Survey report (USDA Soil Conservation Service 1971). A dirt road used by USIBWC to move heavy maintenance equipment laterally along the levee is located along the toe of the levee within the floodway (i.e., levee toe road). The levee toe road is also utilized by USBP for enforcement activities. There are no Prime Farmland soils in the project corridor.

3.2.2 Environmental Consequences

3.2.2.1 No Action Alternative

Under the No Action Alternative, periodic floodway mowing would continue to cause minimal soil disturbance in the RGRP floodway. USIBWC cuts the vegetation to 18 inches in height and does not completely remove the vegetation; therefore, no substantial soil disturbance occurs during mowing activities.

3.2.2.2 Proposed Action Alternative

Direct soil disturbance would be minimal during more frequent mowing of the RGRP floodway as the vegetation would be mowed and not removed. Mowed vegetation clippings would be left on-site and would contribute to maintaining higher organic content in the soils and reducing wind- and water-driven soil erosion. Increased mowing frequency would likely further compact soils and reduce the soil's biological productivity. A reduction in vegetation productivity and subsequent bare patches of soils would indirectly increase soil erosion in the floodway.

3.3 HYDROLOGY AND GROUNDWATER

3.3.1 Affected Environment

Hydrology and groundwater were discussed in the 2009 USIBWC EA (USIBWC 2009), and that discussion is herein incorporated by reference. In short, subsurface water resources within the project area are found in the Hueco Basin, which is recharged by storm water, and in the Rio Grande aquifer system. The latter is recharged by stream flow originating as precipitation in the mountains of Colorado and northern New Mexico, as well as by irrigation-return recharge. The primary loss of subsurface water resources in the project area occurs through wells, which extract groundwater for municipal and irrigation uses.

3.3.2 Environmental Consequences

3.3.2.1 No Action Alternative

Ongoing USIBWC mowing and maintenance operations would not directly affect hydrology or groundwater resources in the region. All mowing activities are limited to the herbaceous vegetation within the floodway, and regular maintenance activities maintain the hydraulic capacity of the floodway.

3.3.2.2 Proposed Action Alternative

The proposed increased mowing of the floodway would not have an adverse direct effect on hydrology and groundwater resources in the region and would not alter the hydraulic capacity of the RGRP floodway.

3.4 SURFACE WATERS AND WATERS OF THE U.S.

3.4.1 Affected Environment

Surface water resources in the area consist of the Rio Grande and various canals which divert the river water flow for irrigation and flood control purposes. The Rio Grande is located adjacent to, but not within, the project corridor. Based on surveys of the project area, no Waters of the U.S. or wetlands are located within the project corridor. However, the Rio Bosque Wetlands Park is located adjacent to the RGRP, and is managed by the University of Texas, El Paso on behalf of

the City of El Paso. The Rio Bosque Wetlands Park was constructed to mitigate for habitat loss from the Rio Grande American Canal Extension project.

3.4.2 Environmental Consequences

3.4.2.1 No Action Alternative

Surface waters and Waters of the U.S. would not be impacted by ongoing mowing operations. There are no jurisdictional wetlands present within the maintained floodway, and ongoing maintenance operations would not impact any Waters of the U.S., including the Rio Grande.

3.4.2.2 Proposed Action Alternative

Impacts on jurisdictional and non-jurisdictional wetlands would be similar to those described for the No Action Alternative. Surface waters and Waters of the U.S., including the Rio Grande, would not be directly impacted by increased mowing within the project area. No mowing activities would occur in the Rio Bosque Wetlands Park, and no alterations to the hydrologic function of the restored wetlands would occur as a result of the Proposed Action Alternative. The potential for increased soil erosion due to soil compaction and subsequent reduction in plant productivity would have indirect minor impacts on water quality through increased sedimentation.

3.5 FLOODPLAINS

3.5.1 Affected Environment

The current floodplain of the Rio Grande on the U.S. side of the river is defined by the Rio Grande and the USIBWC flood risk reduction levee and floodway. The entire project area is located within this floodplain. The floodplain is characterized by relatively flat ground, vegetated by various bunch-type grasses and invasive species which are routinely mowed by USIBWC for flood control and to improve visibility for USBP operations. The only relatively undisturbed vegetation remaining in the floodplain is a narrow strip of riparian vegetation immediately adjacent to the Rio Grande. The levee toe road located along the base of the unprotected side of the levee is located within the floodplain.

3.5.2 Environmental Consequences

3.5.2.1 No Action Alternative

Periodically mowed vegetation would be left in the floodplain, but it would not impede floodwater flow. No development would occur in the floodplain of the Rio Grande in the project area because it is a maintained floodway and an important component of the RGRP. Therefore, there would be no adverse impacts to floodplains under the No Action Alternative.

3.5.2.2 Proposed Action Alternative

Impacts on floodplains would be similar to those described for the No Action Alternative; however, vegetation would be mowed more frequently, which better maintains flood capacity, reduces flow resistance, and provides a beneficial effect on the Rio Grande floodplain.

3.6 VEGETATIVE HABITAT

3.6.1 Affected Environment

The project corridor is within the northern Trans-Pecos region of the Chihuahuan Desert. A full description of vegetation communities in the region was included in the 2008 USIBWC Programmatic Environmental Impact Statement and 2009 USIBWC EA and is incorporated herein by reference (USIBWC 2008, 2009).

A biological resources survey of the project corridor was completed on September 13 and 14, 2010. Common shrubs in the floodway included saltcedar, mesquite (*Prosopis* spp.), mulefat (*Baccharis* sp.), retama (*Parkinsonia aculeata*), spiny hackberry (*Celtis ehrenbergiana*), and willows (*Salix* spp.) (Photographs 3-1 and 3-2). Fremont cottonwoods less than 20 feet tall were observed within the narrow belts of vegetation along the banks of the Rio Grande, and several larger (i.e., up to 30 feet), but isolated cottonwoods were scattered within the floodplain. Common reed (*Phragmites australis*) and cattails (*Typha* spp.) were observed along the river banks in multiple locations, especially in the western half of the project corridor. Herbaceous species consisted primarily of ruderal species adapted to a high frequency of disturbance and included ragweed (*Ambrosia* spp.), pigweed (*Amaranthus palmeri*), cockle bur (*Xanthium strumarium*), silverleaf nightshade (*Solanum elaeagnifolium*), and sunflowers (*Helianthus* sp.). Russian thistle (*Salsola kali, S. collina*) and rabbit brush (*Chrysothamnus* sp.) were the most common species observed on the levee slopes and were abundant throughout the project corridor. Bermuda grass (*Cynodon dactylon*) was common and abundant in recently disturbed and frequently maintained areas, especially in the western portion of the project area. Other grasses included canary grass (*Phalaris canariensis*), ear muhly (*Muhlenbergia aranacea*), jungle rice (*Echniochloa colona*), and needlegrass (*Stipa* sp.).

Photograph 3-1. Saltcedar-mesquite community in the project area

Photograph 3-2. Shrubland in the project area

3.6.2 Environmental Consequences

3.6.2.1 No Action Alternative

The No Action Alternative would have long-term impacts on vegetation in the floodway through the annual mowing of 2,025 acres of herbaceous and immature woody vegetation. However, the

vegetation in the floodway is mainly bunchgrasses and non-native and/or invasive species. The periodic mowing of the vegetation would not cause an adverse impact on native or sensitive vegetation communities.

3.6.2.2 Proposed Action Alternative

The Proposed Action Alternative would have impacts on vegetation similar to those described for the No Action Alternative. However, the vegetation would be mowed more frequently, keeping vegetation heights in the floodway below 24 inches. The increased mowing frequency would likely further favor non-native and invasive species that are prevalent within the floodway and increase soil compaction which would reduce plant productivity. However, the Proposed Action Alternative would not cause the spread of invasive or non-native species to areas outside of the RGRP.

Mature woody vegetation, such as willow, cottonwood, and saltcedar dominated communities along the banks of the Rio Grande and arroyos, would not be disturbed and would continue to provide habitat structure and shading of adjacent aquatic areas. Therefore, no significant impacts on native or sensitive vegetation communities would occur under the Proposed Action Alternative.

3.7 WILDLIFE AND AQUATIC RESOURCES

3.7.1 Affected Environment

Wildlife observed during the September 2010 biological resources survey included turkey vulture (*Cathartes aura*), red-tailed hawk (*Buteo jamaicensis*), and a falcon (*Falco* sp.). Presence of these carrion-feeding and predatory birds is consistent with the low height of vegetative cover, adequate perching opportunities (e.g., security lighting, fencing, and scattered trees in the floodplain), and an adequate forage base (e.g., small animals such as mice, lizards, and snakes). Waterfowl and wading birds were observed feeding along the banks of the Rio Grande and in adjacent wetlands, including American coot (*Fulica americana*), great egret (*Ardea alba*), great blue heron (*Ardea herodias*), and ducks. Ground nesting species commonly found in grasslands and shrublands of low density such as Gambels's quail (*Callipepla gambelii*), road runner (*Geococcyx californianus*), and killdeer (*Charadrius vociferus*), and an abundant and diverse assemblage of songbirds were also observed. The presence of water, diversity of vegetation structure, and abundance of perching opportunities provide highly suitable habitat for birds, small mammals, and reptiles. Feral dog (*Canus lupus familiarus*) and coyote (*Canas latrans*) were also observed. Western painted turtles (*Chrysemys picta bellii*), sliders (*Trachemys* spp.), toads (*Bufo* spp.), and non-native bullfrogs (*Rana catesbeiana*) are common reptiles and amphibians located near the Rio Grande. The Rio Grande channel was typically less than 10 feet wide, shallow, and straight, and water clarity was very low. Water quality is also substantially impacted by runoff from adjacent agriculture and urban areas.

3.7.1.1 Migratory Birds

Bird migration and breeding activity in the region occurs from March 1 through September 15. Most of the proposed project area is not suitable for nesting, with the exception of a small number of ground nesting birds and burrowing owls. In general, the habitats lack sufficient cover and structure to support nesting , except for the cottonwood- and willow-dominated

community and saltcedar community located along the banks of the Rio Grande and bisecting arroyos.

3.7.2 Environmental Consequences

3.7.2.1 No Action Alternative

Periodic mowing would still occur in the floodway and removal of vegetation would maintain the floodway area as relatively low quality for wildlife use (e.g., managed saltcedar communities and managed old-field herbaceous communities). Adjacent mature woody vegetation stands would continue to provide nesting and foraging habitat for migratory and wading birds. Surveys for nesting birds would continue to be conducted prior to mowing activities during the migratory bird nesting season, and all active bird nests would be avoided until chicks have fledged. Therefore, there would be no impacts on migratory birds from floodway maintenance activities.

3.7.2.2 Proposed Action Alternative

The increased frequency of mowing within the floodway of the RGRP would have a localized moderate impact on grassland birds, songbirds, wetland birds, and waterfowl in the project area due to a loss of vegetative structure and forage. However, overall impacts to these birds would be minimal at the regional level since the grassland habitat in the floodway is highly disturbed from RGRP maintenance and USBP patrol activities.

Mobile animals (e.g., birds) would escape to areas of similar habitat, while other slow or sedentary species of reptiles, amphibians, and small mammals would potentially be lost if mowing equipment passed over them. As a result, direct minor adverse impacts on wildlife species in the vicinity of the project area would be expected. Although some animals may be lost, this alternative would not result in any substantial reduction of the breeding opportunities for birds and other animals on a regional scale due to the abundance of suitable, similar habitat adjacent to the project area. If mowing does occur within the migratory bird season, migratory bird surveys and avoidance of nests by placing buffer areas around all active nests until chicks have fledged would be conducted and reported accordingly. No significant impacts on wildlife would occur as a result of more frequent mowing activities.

3.8 THREATENED AND ENDANGERED SPECIES

3.8.1 Affected Environment

3.8.1.1 Federal

The USFWS is the Federal agency responsible for implementing the ESA for terrestrial and aquatic species. The responsibilities of the USFWS under the ESA include: 1) identification of threatened and endangered species; 2) identification of critical habitats for listed species; 3) implementation of research on, and recovery efforts for, these species; and 4) consultation with other Federal agencies concerning measures to avoid harm to listed species. There are eight Federally endangered (E) and threatened (T) species known to occur in the El Paso area, and all but one of these species, Sneed's pincushion cactus (*Coryphantha sneedii* var. *sneedii*), are known to occur in Hudspeth County. A list of these species is presented in Table 3-1. Of these eight species, habitats within or adjacent to the project area are potentially suitable for two: the interior least tern and the southwestern willow flycatcher.

Table 3-1. Federally Listed Species for El Paso County, Texas

Common Name	Scientific Name	Federal Status
Plants		
Sneed's pincushion cactus	*Coryphantha sneedii* var. *sneedii*	E
Birds		
Northern aplomado falcon**	*Falco femoralis septentrionalis*	E
Interior least tern**	*Sterna antillarum anthalassos*	E
Southwestern willow flycatcher**	*Empidonax traillii extimus*	E
Mexican spotted owl**	*Strix occidentalis lucida*	T
Fishes		
Rio Grande silvery minnow**	*Hybognoathus amarus*	E
Mammals		
Gray wolf**	*Canis lupus*	E
Black-footed ferret**	*Mustela nigripes*	E

** Also listed for Hudspeth County, Texas
Source: TPWD 2009 and 2010

The Sneed's pincushion cactus grows on limestone ledges at elevations between 3,900 to 7,000 feet above mean sea level. The northern aplomado falcon prefers open grasslands with relatively low ground cover and scattered shrubs and yucca (*Yucca* spp.) for nesting. Neither of these habitats occurs in the area of the project corridor, and the grasslands within the RGRP are not extensive enough to support foraging aplomado falcons. No preferred habitat exists within or adjacent to the project limits for the Mexican spotted owl, which prefers remote, shaded canyons of coniferous mountain woodlands (pine and fir). No suitable habitat for the Rio Grande silvery minnow exists within the project area; however, the Rio Grande silvery minnow has been reintroduced downstream of the project area and is known to occur in reaches of the river near Big Bend National Park. Suitable habitat for the black-footed ferret could exist within the floodway. However, the ferret has been extirpated from the region. The Federally- and state-listed gray wolf has also been extirpated from the region.

The interior least tern, although preferring nearly bare ground for nesting, has had its habitat severely disturbed by channelization projects and constant traffic associated with urban areas. Suitable habitat may occur for the interior least tern intermittently on unvegetated sand bars and gravel beds within the Rio Grande in the project area.

The Rio Grande floodplain throughout the project area is potential migratory habitat for the southwestern willow flycatcher, and potential breeding habitat for this species occurs within the project area. Suitable breeding habitat includes dense riparian habitats along rivers, streams, or other wetlands. The vegetation can be dominated by dense growths of willows, seepwillow (*Baccharis* sp.), or other shrubs and medium-sized trees (USFWS 2010). There may be an overstory of cottonwood (*Populus* sp.), saltcedar, or other large trees, but this is not always the case. In some areas, the flycatcher will nest in habitats dominated by saltcedar and Russian olive (*Eleagnus angustifolia*). One of the most important characteristics of the habitat appears to be the presence of dense vegetation, usually throughout all vegetation layers present. Flycatchers are generally not found nesting in confined floodplains where only a single narrow strip of riparian vegetation less than approximately 30 feet wide develops (USFWS 2002). However, the

species will use these narrow strips of vegetation if they extend out from larger patches and during migration. The entire project corridor provides potential migratory habitat for this species, and all dense, mature willow-cottonwood and saltcedar riparian habitat along the banks of the Rio Grande and bisecting arroyos is suitable breeding habitat within the project corridor. The project corridor is located in the Rio Grande Recovery Unit for the southwestern willow flycatcher (USFWS 2002). Although no flycatcher nests have been recorded in the Texas Management Unit of the Rio Grande Recovery Unit (USFWS 2002), the southwestern willow flycatcher has been observed in the Management Unit during migratory season (Appendix A). Threats to the species include the removal, thinning, or destruction of riparian vegetation, water diversion, and groundwater pumping.

3.8.1.2 Critical Habitat

The ESA also calls for the conservation of what is termed critical habitat, the areas of land, water, and air space that an endangered species needs for survival. Critical habitat also includes such things as food and water, breeding sites, cover or shelter, and sufficient habitat area to provide for normal population growth and behavior. One of the primary threats to many species in El Paso is the destruction or modification of essential habitat by uncontrolled land and water developments.

Only one of the Federally-listed species in El Paso and Hudspeth Counties has designated critical habitat. In 2005, critical habitat was designated for the southwestern willow flycatcher; however, no critical habitat units are located in Texas (USFWS 2005).

3.8.1.3 State

TPWD lists several state-listed species which may also occur near the project area in El Paso and Hudspeth Counties. There are two endangered state-listed species that possibly occur in the project area: the interior least tern and the southwestern willow flycatcher. Both are Federally listed species, and their habitat and occurrence have been described above. In addition, the Texas horned lizard (*Phrynosoma cornutum*), listed as threatened, may also occur in the project corridor. The Big Bend slider (*Trachemys gaigeae*) and the western burrowing owl may occur in the project corridor and are listed as rare, but with no regulatory listing status (TPWD 2009). Western burrowing owls inhabit grassland and shrubland habitat, occupying burrows established by prairie dogs and ground squirrels or utilizing man-made structures such as culverts. This species is protected under the Migratory Bird Treaty Act.

3.8.2 Environmental Consequences

3.8.2.1 No Action Alternative

Under the No Action Alternative, there would be no mowing or removal of the vegetation communities that provide suitable habitat for threatened and endangered species. Additional information on impacts on threatened and endangered species from ongoing mowing and maintenance and repair activities in the project area can be found in the 2009 USIBWC EA (USIBWC 2009), and that information is herein incorporated by reference.

3.8.2.2 Proposed Action Alternative

The Proposed Action Alternative would have impacts on threatened and endangered species similar to those of the No Action Alternative; however 2,025 acres of grassland habitat, which

could provide forage and cover for state-listed species such as the western burrowing owl, would be disturbed more often and maintained at a lower height.

As stated earlier, bird surveys would be completed as part of the Proposed Action Alternative prior to mowing during migratory bird breeding season (March 1 through September 15). A 50-foot no-disturbance buffer would be constructed around any active migratory bird nests during breeding season. A 1,000-foot no-disturbance buffer would be marked around any active southwest willow flycatcher or interior least tern nest within or immediately adjacent to the project area during breeding season. Pre-mowing surveys during the bird nesting season and the creation of buffers around any nesting birds, including those that are Federally and state listed, would insure that no adverse effect would occur to any listed bird species. Additionally, woody vegetation along the bank of the floodway or along the drainages/arroyos bisecting the project area would not be mowed, or otherwise affected, under the Proposed Action Alternative. Any threatened or endangered species that could potentially use the taller, more mature woody vegetation for habitat or foraging would not be affected under the Proposed Action Alternative. Because all mature woody riparian vegetation would be preserved, the mowing of herbaceous vegetation would not adversely affect the recovery of the southwestern willow flycatcher in the Texas Management Unit.

There is the potential for increased sedimentation in the Rio Grande from additional soil disturbance due to increased mowing activities. However, mowing would be restricted during times when soils are saturated, in order to avoid rutting and compaction. Further, the woody riparian vegetation along the banks of the Rio Grande would not be disturbed during mowing activities, thereby providing a buffer between areas where sediments would be disturbed from increased mowing and the Rio Grande. Because it is unlikely that more frequent mowing events would cause substantial increases in sedimentation in the Rio Grande and because the Rio Grande silvery minnow is not known within the immediate project area, it has been determined that increased mowing activities would not adversely affect the Rio Grande silvery minnow.

3.9 CULTURAL, HISTORICAL, AND ARCHAEOLOGICAL RESOURCES

The NHPA establishes the Federal government’s policy to provide leadership in the preservation of historic properties and to administer Federally owned or controlled historic properties in a spirit of stewardship. NHPA established the ACHP to advocate full consideration of historic values in Federal decision-making: review Federal programs and policies to promote effectiveness, coordination, and consistency with National preservation policies; and recommend administrative and legislative improvements for protecting our Nation's heritage with due recognition of other National needs and priorities. In addition, the NHPA also established the SHPO to administer National historic preservation programs on the state level and Tribal Historic Preservation Officers on tribal lands, where appropriate. The NHPA also establishes the National Register of Historic Places (NRHP). The NRHP is the Nation's official list of cultural resources worthy of preservation and protection. Properties listed in the NRHP include districts, sites, buildings, structures, and objects that are significant in U.S. history, architecture, archaeology, engineering, and culture. The National Park Service administers the NRHP.

3.9.1 Affected Environment

The project area is located in the floodway of the Rio Grande and has been disturbed through the RGRP construction and maintenance activities and periodic flooding events. No archaeological resources would be located on the surface of the floodway due to this periodic disturbance. However, there is the potential for deeply buried cultural material within the floodway. Architectural resources associated with the NRHP-listed El Paso County Water Improvement District No. 1, the Hudspeth County Conservation and Reclamation District No. 1, and the RGRP (both unevaluated for NRHP eligibility) exist in the project corridor (USIBWC 2009). Further, architectural resources have been identified in the project corridor, are described in the USIBWC 2009 EA (USIBWC 2009), and are incorporated herein by reference. The Ysleta del Sur Pueblo uses the RGRP and vegetation along the Rio Grande for ceremonial purposes. USIBWC has an agreement with the Ysleta del Sur Pueblo to allow access to the RGRP. As part of this agreement, USIBWC changes the schedule for RGRP maintenance activities to avoid conflicts with the Ysleta del Sur Pueblo's use of the floodway. The Ysleta del Sur Pueblo has also identified Traditional Cultural Properties (TCP) within the RGRP, but does not disclose the location of the TCPs to the public (USIBWC 2009).

3.9.2 Environmental Consequences

3.9.2.1 No Action Alternative

No soil disturbance would occur as a result of floodway maintenance activities, and no historic structures would be altered as a result of floodway mowing. Ysleta del Sur Pueblo ceremonial activities are respected by USIBWC, and floodway maintenance activities are coordinated with the tribe and re-scheduled as needed. There would be no significant impacts to NRHP-eligible properties as a result of the No Action Alternative.

3.9.2.2 Proposed Action Alternative

No soil disturbance or disturbance to architectural resources would occur as a result of the more frequent mowing activities, and mowing events would be coordinated with the Ysleta del Sur Pueblo to avoid ceremonial activities and respect their use of the floodway of the RGRP. Adverse impacts to TCPs from mowing activities would be avoided through consultation with the Ysleta del Sur Pueblo. No alteration to architectural properties would occur as a result of the Proposed Action Alternative; therefore, no significant impacts on cultural resources would be anticipated.

3.10 AIR QUALITY

3.10.1 Affected Environment

USEPA established National Ambient Air Quality Standards (NAAQS) for specific pollutants determined to be of concern with respect to the health and welfare of the general public. Ambient air quality standards are classified as either "primary" or "secondary." The major pollutants of concern, or criteria pollutants, are carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), ozone (O_3), particulate matter less than 10 microns (PM-10), particulate matter less than 2.5 microns (PM-2.5), and lead (Pb). Designed to protect the public health and welfare , NAAQS represent the maximum levels of background pollution that are considered safe, with an adequate margin of safety. The NAAQS are included in Table 3-2.

Table 3-2. National Ambient Air Quality Standards

Pollutant	Primary Standards		Secondary Standards	
	Level	Averaging Time	Level	Averaging Times
Carbon Monoxide	9 ppm (10 mg/m^3)	8-hour [1]	None	
	35 ppm (40 mg/m^3)	1-hour [1]		
Lead	0.15 µg/m^3 [2]	Rolling 3-Month Average	Same as Primary	
	1.5 µg/m^3	Quarterly Average	Same as Primary	
Nitrogen Dioxide	53 ppb [3]	Annual (Arithmetic Average)	Same as Primary	
	100 ppb	1-hour [4]	None	
Particulate Matter (PM-10)	150 µg/m^3	24-hour [5]	Same as Primary	
Particulate Matter (PM-2.5)	15.0 µg/m^3	Annual [6] (Arithmetic Average)	Same as Primary	
	35 µg/m^3	24-hour [7]	Same as Primary	
Ozone	0.075 ppm (2008 std)	8-hour [8]	Same as Primary	
	0.08 ppm (1997 std)	8-hour [9]	Same as Primary	
	0.12 ppm	1-hour [10]	Same as Primary	
Sulfur Dioxide	0.03 ppm	Annual (Arithmetic Average)	0.5 ppm	3-hour [1]
	0.14 ppm	24-hour [1]		
	75 ppb [11]	1-hour	None	

Source: USEPA 2010a at http://www.epa.gov/air/criteria.html

Units of measure for the standards are parts per million (ppm) by volume, parts per billion (ppb - 1 part in 1,000,000,000) by volume, milligrams per cubic meter of air (mg/m^3), and micrograms per cubic meter of air (µg/m^3).

[1] Not to be exceeded more than once per year.

[2] Final rule signed October 15, 2008.

[3] The official level of the annual NO_2 standard is 0.053 ppm, equal to 53 ppb, which is shown here for the purpose of clearer comparison to the 1-hour standard

[4] To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 100 ppb (effective January 22, 2010).

[5] Not to be exceeded more than once per year on average over 3 years.

[6] To attain this standard, the 3-year average of the weighted annual mean PM2.5 concentrations from single or multiple community-oriented monitors must not exceed 15.0 µg/m3.

[7] To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 µg/m3 (effective December 17, 2006).

[8] To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm. (effective May 27, 2008)

[9] (a) To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.08 ppm.

(b) The 1997 standard—and the implementation rules for that standard—will remain in place for implementation purposes as EPA undertakes rulemaking to address the transition from the 1997 ozone standard to the 2008 ozone standard.

(c) EPA is in the process of reconsidering these standards (set in March 2008).

[10] (a) EPA revoked the 1-hour ozone standard in all areas, although some areas have continuing obligations under that standard ("anti-backsliding").

(b) The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is ≤ 1.

[11] (a) Final rule signed June 2, 2010. To attain this standard, the 3-year average of the 99th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 75 ppb.

Areas that do not meet these NAAQS standards are called non-attainment areas; areas that meet both primary and secondary standards are known as attainment areas. The Federal Conformity Final Rule (40 CFR Parts 51 and 93) specifies criteria or requirements for conformity determinations for Federal projects. The Federal Conformity Rule was first promulgated in 1993 by the USEPA, following the passage of Amendments to the Clean Air Act in 1990. The rule mandates that a conformity analysis must be performed when a Federal action generates air pollutants in a region that has been designated a non-attainment or maintenance area for one or more NAAQS.

A conformity analysis is the process used to determine whether a Federal action meets the requirements of the General Conformity Rule. It requires the responsible Federal agency to evaluate the nature of a proposed action and associated air pollutant emissions and calculate emissions that would result from the proposed action. If the emissions exceed established limits, known as *de minimis* thresholds, the proponent is required to implement appropriate mitigation measures. TCEQ has adopted USEPA's NAAQS as Texas' criteria pollutants. Areas that fail to meet Federal standards for ambient air quality are considered non-attainment. The USEPA and TCEQ consider El Paso as a non-attainment area for PM-10 and Hudspeth County as an in-attainment area for all NAAQS (USEPA 2010b).

3.10.2 Greenhouse Gas Emissions

Global climate change refers to a change in the average weather on the earth. Greenhouse Gases (GHGs) are gases that trap heat in the atmosphere. They include water vapor, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), fluorinated gases including chlorofluorocarbons (CFC) and hydrochlorofluorocarbons (HFC), and halons, as well as ground-level O_3 (California Energy Commission 2007).

The major GHG-producing sectors in society include transportation, utilities (e.g., coal and gas power plants), industry/manufacturing, agriculture, and residential. End-use sector sources of GHG emissions include transportation (40.7 percent), electricity generation (22.2 percent), industry (20.5 percent), agriculture and forestry (8.3 percent), and other (8.3 percent) (California Energy Commission 2007). The main sources of increased concentrations of GHG due to human activity include the combustion of fossil fuels and deforestation (CO_2), livestock and rice farming, land use and wetland depletions, landfill emissions (CH_4), refrigeration system and fire suppression system use and manufacturing (i.e., CFC), and agricultural activities, including the use of fertilizers.

CEQ provided draft guidance for determining meaningful GHG decision-making analysis. CEQ GHG guidance is currently undergoing public comment at this time; however, the draft guidance states that if the proposed action would be reasonably anticipated to cause direct emissions of 25,000 metric tons or more of CO_2 equivalents GHG emissions on an annual basis, agencies should consider this an indicator that a quantitative and qualitative assessment may be meaningful to decision-makers and the public. For long-term actions that have annual direct emissions of less than 25,000 metric tons of CO_2 equivalents, CEQ encourages Federal agencies to consider whether the action's long-term emissions should receive similar analysis. CEQ does not propose this as an indicator of a threshold of significant effects, but rather as an indicator of a

minimum level of GHG emissions that may warrant some description in the appropriate NEPA analysis for agency actions involving direct emissions of GHGs (CEQ 2010).

3.10.3 Environmental Consequences

3.10.3.1 No Action Alternative

Implementation of the No Action Alternative would not create additional air emissions in the El Paso and Hudspeth County airshed.

3.10.3.2 Proposed Action Alternative

Temporary and minor increases in air pollution and GHG would occur from the use of farm tractors (combustible emissions) and grass mowing (fugitive dust). The following paragraphs describe the air calculation methodologies utilized to estimate air emissions produced by the Proposed Action Alternative. Fugitive dust emissions from grass mowing were calculated using the emission factor of 0.5 pounds per square mile, which is a PM-10 emission factor used for agricultural operations for grain harvesting (AP-42 1995).

USEPA's NONROAD Model (USEPA 2005a) was used, as recommended by USEPA's *Procedures Document for National Emission Inventory, Criteria Air Pollutants, 1985-1999* (USEPA 2001), to calculate emissions from a farm tractor with mowing equipment. Assumptions were made regarding the total number of days each piece of equipment would be used, and the number of hours per day each type of equipment would be used.

Workers utilizing mowing equipment in the RGRP floodway would temporarily increase the combustible emissions in the airshed during their commute to and from the project area. Emissions from delivery trucks would also contribute to the overall air emission budget. Emissions from delivery trucks and grass maintenance and commuters traveling to the job site were calculated using the USEPA MOBILE6.2 Model (USEPA 2005b, 2005c and 2005d).

The total air quality and GHG emissions of the mowing activities were calculated for the proposed mowing activities to be compared to the General Conformity Rule. Summaries of the total emissions for the Proposed Action Alternative are presented in Table 3-3. Details of the analyses are presented in Appendix C.

Table 3-3. Total Air Emissions (tons/year) from the Proposed Action Alternative Mowing Activities verses the *de minimus* Threshold Levels

Pollutant	Total (tons/year)	*de minimis* Thresholds[1] (tons/year)
CO	6.12	100
VOCs	1.27	100
NOx	4.70	100
PM-10	0.89	100
PM-2.5	0.85	100
SO_2	0.60	100
GHG (CO_2 –E)	1,961	25,000

Source: 40 CFR 51.853 and Gulf South Research Corporation model projections.
[1] Note that El Paso County is in non-attainment for PM-10 (USEPA 2010b)

Several sources of air pollutants would contribute to the overall air impacts from the increased frequency of mowing in the floodway. The air results in Table 3-3 included emissions from:

1. Combustible engines of grass mowing equipment;
2. Mowing workers' commute to and from work;
3. Supply trucks delivering equipment to the site; and
4. Fugitive dust from the ground disturbances of mowing activities.

As can be seen from the tables above, the proposed activities do not exceed Federal *de minimis* thresholds; thus, they do not require a Conformity Determination. As there would be no violations of air quality standards and no conflicts with the state implementation plans, the impacts to air quality from the implementation of the Proposed Action Alternative would be less than significant.

3.11 NOISE

3.11.1 Affected Environment

Noise is generally described as unwanted sound, which can be based either on objective effects (e.g., hearing loss and damage to structures) or subjective judgments (e.g., community annoyance). Sound is usually represented on a logarithmic scale with a unit called the decibel (dB). Sound on the decibel scale is referred to as sound level. The threshold of human hearing is approximately 0 dB, and the threshold of discomfort or pain is around 120 dB.

Noise levels occurring at night generally cause a greater community annoyance than do the same levels occurring during the day. A-weighted decibel (dBA) is a single measure of noise at a given, maximum level or constant state level, but weighted to approximate the response of the human ear with respect to frequencies. It is generally agreed that people perceive intrusive noise at night as being 10 dBA. This perception occurs largely because background environmental sound levels at night in most areas are also approximately 10 dBA lower than those during the day. Acceptable noise levels have been established by Housing and Urban Development (HUD) for construction activities in residential areas (HUD 1984):

- Acceptable (not exceeding 65 dBA) – The noise exposure may be of some concern, but common building construction will make the indoor environment acceptable and the outdoor environment will be reasonably pleasant for recreation and play.
- Normally Unacceptable (above 65 but not greater than 75 dBA) – The noise exposure is significantly more severe. Barriers may be necessary between the site and prominent noise sources to make the outdoor environment acceptable. Special building constructions may be necessary to ensure that people indoors are sufficiently protected from outdoor noise.
- Unacceptable (greater than 75 dBA) – The noise exposure at the site is so severe that the construction costs to make the indoor noise environment acceptable may be prohibitive; nevertheless, the outdoor environment would remain unacceptable.

As a general rule of thumb, noise generated by a stationary noise source, or "point source," will decrease by approximately 6 dBA for each doubling of the distance. For example, if a noise

source produces a noise level of 85 dBA at a reference distance of 50 feet over a hard surface, then the noise level would be 79 dBA at a distance of 100 feet from the noise source, 73 dBA at a distance of 200 feet, and so on. To estimate the attenuation of the noise over a given distance the following relationship is utilized:

Equation 1: dBA2 = dBA1 – 20 log (d2/d1)

Where:
dBA2 = dBA at distance 2 from source (predicted)
dBA1 = dBA at distance 1 from source (measured)
d2 = Distance to location 2 from the source
d1 = Distance to location 1 from the source
Source: California Department of Transportation 1998

3.11.2 Existing Conditions

The project corridor is located along 91 miles of the Rio Grande and is comprised of open space between the flood risk reduction levee and the Rio Grande. Much of the area south of urban El Paso adjacent to the project corridor is rural agricultural area with very few residential noise receptors. The northern 25 miles of the project corridor are located near San Elizario, Socorro, and El Paso and are adjacent to residential neighborhoods, schools, churches, and other sensitive noise receptors. However, while there are sensitive noise receptors approximate to those of the project corridor, the floodway is located behind the levee, and U.S. Highway 375, railroad tracks, and industrial areas are located between the project corridor and residential receptors. Very few residential homes are within 300 feet of the project corridor.

3.11.3 Environmental Consequences

3.11.3.1 No Action Alternative

Continued periodic mowing activities would not impact ambient noise quality in the region.

3.11.3.2 Proposed Action Alternative

Increased vegetation mowing activities would require the use of common farm tractors with a mowing attachment. Common mechanized equipment produces noise emissions which range from 76 dBA to 82 dBA at a distance of 50 feet (Federal Highway Administration 2007). Assuming the worst-case scenario of 82 dBA, the noise model projected that noise levels of 82 dBA from a point source (i.e., farm tractor) would have to travel 340 feet before the noise would be attenuated to an acceptable level of 65 dBA. To achieve an attenuation of 82 dBA to a normally unacceptable level of 75 dBA, the distance from the noise source to the receptor would need to be 110 feet.

Assuming the additional mowing activities would be contained within the delineated project corridor, only a few residential receptors are located within 300 feet of the edge of the project site boundary. These sensitive noise receptors would be exposed to normally unacceptable (75 dBA) noise emissions. To minimize the impact potential, mowing activities would be limited to daylight hours. Noise impacts would be less than significant if these timing restrictions are implemented during mowing activities. Noise generated by the additional mowing activities would be intermittent and not last for more than 2 hours at any single location, after which noise

levels would return to ambient levels. Therefore, the noise impacts from mowing activities would be considered less than significant.

3.12 AESTHETICS AND VISUAL RESOURCES

3.12.1 Affected Environment

The project area is a heavily disturbed (Photograph 3-3) and characterized by existing flood control structures (e.g., levee and floodgates), tactical infrastructure (i.e., a pedestrian fence and lighting), and a man-made canal system. Although the riparian areas along the Rio Grande and bisecting arroyos are comprised of saltcedar communities and some mature willow and cottonwood communities and has considerable aesthetic appeal, the floodway and adjacent levee are not easily accessible to the public. Further, the cities of El Paso and Juarez are located on either side of the Rio Grande, and buildings and other infrastructure are visible along the northern 25 miles of the project corridor.

Photograph 3-3. New drag road construction in floodway; area mostly void of vegetation

3.12.2 Environmental Consequences

3.12.2.1 No Action Alternative

Continued mowing of 2,025 acres of vegetation annually by USIBWC would not impact aesthetics or affect visual quality in the project area.

3.12.2.2 Proposed Action Alternative

Increased mowing of 2,025 acres in the RGRP floodway would potentially have minor adverse impacts on aesthetics in the project area but would not affect visual quality in the region. Increased mowing could potentially decrease the quantity and diversity of birds in the project area and possibly decrease plant species and diversity, which contribute to aesthetic appeal. However, the floodway is part of the RGRP and also used as a law enforcement corridor; thus, it is not easily accessible to the general public since it lacks pedestrian connectivity to urban parks, sidewalks, and bicycle paths. Therefore, any reduction in visual appeal due to a lower vegetation height would not be readily apparent to anyone except USIBWC maintenance personnel, USBP agents and the small portion of the public that uses the floodway for recreation purposes (e.g., hunting and bird watching).

3.13 HAZARDOUS MATERIALS AND SOLID WASTE

3.13.1 Affected Environment

Hazardous materials and substances are regulated in Texas by a combination of mandated laws promulgated by the USEPA and the TCEQ. Given the industrialized nature of the City of El Paso near the U.S./Mexico border, there is the potential for hazardous material and solid wastes to be encountered in the project area. There are no known hazardous or solid wastes sites along

or near the project area. Illegal dump sites for hazardous materials or household goods (including miscellaneous trash discarded by CBVs entering the country) are present within the floodway.

3.13.2 Environmental Consequences

3.13.2.1 No Action Alternative

Hazardous materials anticipated to be used during mowing activities are small volumes of petroleum hydrocarbons and their derivatives (e.g., fuels, oils, lubricants, and solvents), which are required to operate the mowing equipment. These materials are those routinely associated with the operation and maintenance of heavy equipment or other support vehicles, including gasoline, diesel fuels, and hydraulic fluids. Hazardous materials used for all USIBWC mowing would be contained within vessels engineered for safe storage. Areas for refueling of equipment are chosen so as to prevent any accidental fuel leakage from contaminating surface water, groundwater, or soils. Under the No Action Alternative, the potential for contamination from small quantities of fuels, oils, lubricants, or solvents exists, but would be minimized through proper equipment maintenance and fuel storage. Any hazardous materials found by USIBWC in the floodway during debris removal activities are disposed of according to state and Federal regulations.

3.13.2.2 Proposed Action Alternative

The Proposed Action Alternative would have impacts on on hazardous materials and solid wastes in the project area similar to those described for the No Action Alternative. The potential impacts of the handling and disposal of hazardous and regulated materials and substances during mowing would be insignificant when mitigation measures and BMPs as described in Section 5 are implemented.

3.14 SUSTAINABILITY AND GREENING

3.14.1 Affected Environment

In accordance with EO 13423 – Strengthening Federal Environmental, Energy, and Transportation Management (72 FR 3919), CBP would incorporate practices in an environmentally, economically, and fiscally sound, integrated, continuously improving, efficient, and sustainable manner in support of their mission. CBP implements practices throughout the agency to: 1) improve energy efficiency and reduce greenhouse emissions; 2) implement renewable energy projects; 3) reduce water consumption; 4) incorporate sustainable environmental practices such as recycling and the purchase of recycled-content products; and 5) reduce the quantity of toxic and hazardous materials used and disposed of by the agency. DHS will also reduce total consumption of petroleum products, as set forth in the EO and use environmentally sound practices with respect to the purchase and disposition of electronic equipment.

3.14.2 Environmental Consequences

3.14.2.1 No Action Alternative

The No Action Alternative would not result in any direct or indirect impacts, as no additional mowing activities would take place.

3.14.2.2 Proposed Action Alternative

Under the Proposed Action Alternative, CBP would continue to improve its environmental, transportation, and energy-related activities in support of its missions through sustainability and greening practices, to the greatest extent practicable. CBP also intends to obtain the goal of reducing petroleum-based product use with a Fleet Management Plan facilitated through CBP's Asset Management Division. This project would adhere to this management plan. Therefore, no significant impacts would be expected to occur as a result of the Proposed Action Alternative.

3.15 HUMAN HEALTH AND SAFETY

3.15.1 Affected Environment

Human health effects occur in a variety of forms, such as exposure to chemicals, extreme temperatures, weather, and threats to physical security and safety. Generally, human health factors are driven by effects that differ substantially by geographic area. In the El Paso area, factors that could impact human health include automobile accidents, extreme weather such as monsoon season rains and flooding, high temperatures, and physical security along the immediate border.

The general area surrounding the RGRP consists of urban development and agricultural lands. The area is a maintained floodway and public access is limited by a CBP-constructed pedestrian fence along the levee.

3.15.2 Environmental Consequences

3.15.2.1 No Action Alternative

Only trained operators using well-maintained equipment would be present during mowing activities. Mowing activities would be visible to anyone utilizing the floodway for recreation, and mowing activities would be avoided to the extent practicable during Ysleta del Sur Pueblo ceremonial activities; therefore, no public health or safety concerns would occur under the No Action Alternative.

3.15.2.2 Proposed Action Alternative

Mowing activities have the potential to create human health hazards. All mowing activities, regardless of the area, would be limited to daylight hours only. Materials Safety Data Sheet information would be readily accessible at this station. A Spill Prevention, Control and Countermeasures Plan (SPCCP) would also be implemented which would describe planning, prevention, and control measures to minimize impacts resulting from a spill of any hazardous materials or petroleum, oils, and lubricants (POLs). Furthermore, an on-site emergency plan would be prepared to protect the public health, safety, and environment on and off the proposed site in the case of a dangerous natural phenomenon or industrial accident relating to or affecting the project.

CBP would prepare the plan (or adopt USIBWC's plan, if appropriate) and be responsible for implementing the plan with its operations team in coordination with the local emergency response support functions. The plan would describe the emergency response procedures to be implemented during various situations that might affect the surrounding community or

environment. The emergency plan would cover a number of events that may occur at or near the project site by natural causes, equipment failure, or by human mistake, including the following:

- Personnel injury or emergencies;
- Project evacuation;
- Fire or explosion; and
- Extreme weather.

The project contractors and operations personnel would receive regular emergency response and safety training to assure that effective and safe action would be taken to reduce and limit the impact of an emergency at the project site. The following actions would be taken for personnel injuries:

- The Site supervisor(s), or designee, would be notified of the injury(s);
- A qualified first aid attendant would administer first aid until medical assistance arrives;
- The Site supervisor(s), or designee, would notify CBP and the county-wide emergency response (911) system; and
- All key supervisors would be paged or called and advised of the injury.

SECTION 4.0
CUMULATIVE IMPACTS

4.0 CUMULATIVE IMPACTS

This section of the EA addresses the potential cumulative impacts associated with the implementation of the alternatives and other projects/programs that are planned for the region. The CEQ defines cumulative impacts as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions" (40 CFR 1508.7). This section continues, "cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."

USBP has been conducting law enforcement actions along the border since its inception in 1924, and has continuously transformed its methods as new missions, CBP's 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 impacted thousands of acres with synergistic and cumulative impacts on soil, wildlife habitats, water quality, and noise. Beneficial effects have resulted from the construction and use of these roads and fences, including, but not limited to, increased employment and income for border regions and its surrounding communities, protection and enhancement of sensitive resources north of the border; reduction in crime within urban areas near the border; increased land value in areas where border security has increased; and increased knowledge of the biological communities and pre-history of the region through numerous biological and cultural resources surveys and studies.

With continued funding and implementation of CBP's environmental conservation measures, including use of biological and archaeological monitors, wildlife water systems, and restoration activities, adverse impacts due to on-going and future projects would be avoided or minimized. However, recent, on-going and reasonably foreseeable proposed projects will result in cumulative impacts. CBP is currently planning, conducting, or has completed, several projects in the region.

CBP projects include:

- Recently completed construction of a primary pedestrian fence along the top of the levee along the length of the RGRP. The entire 18-foot-high pedestrian fence has been completed with the exception of several small segments where other infrastructure has prevented the implementation of the fence segments (Photograph 4-1). Mowing of vegetation and road maintenance occurs routinely along the top of the levee and adjacent irrigation canal for pedestrian fence access and maintenance, and this

Photograph 4-1. Pedestrian fence located on the top of the levee along the RGRP

vegetation mowing occurs adjacent to the floodway and abuts the mowing activities proposed in this EA. The description of the maintenance activities and their impacts were provided in a 2010 Environmental Stewardship Summary Report prepared for the K-fence segments located adjacent to the RGRP (CBP 2010).

- Completion of 0.65 mile of pedestrian fence segment along the RGRP in downtown El Paso.
- Various canal crossovers (i.e., bridges) and vehicle ramps at existing pedestrian fence gate locations along the RGRP corridor.
- Construction of new USBP station in the Las Cruces Station AOR, Doña Ana County, New Mexico.
- Construction of new USBP station in the Fabens Station AOR, El Paso County, Texas.
- Modernization of CBP tactical communication towers through the addition of receivers and antennas on existing communication towers and the construction of new towers in the El Paso Sector.
- The Mexico Section, IBWC, and the USIBWC share the responsibility for sediment removal and disposal along the length of the RGRP. Sediment removal improves normal flow levels and maintains the international boundary. The Mexico Section and IBWC has begun removing sediment along the reaches for which it is responsible, and sediment removal by the USIBWC is contingent upon receipt of funding (USIBWC 2009).

In addition, numerous projects are planned in the El Paso metropolitan area. El Paso is a rapidly growing region, and many transportation, infrastructure, and residential/commercial development projects are ongoing and proposed. Further, El Paso is home to Fort Bliss, one of the largest U.S. Army installations in the U.S., comprising 1.1 million acres of land in Texas and New Mexico. Through various Base Realignment and Closure Actions, Fort Bliss has rapidly expanded, and increased mission requirements have caused tremendous development in a short period of time. Fort Bliss anticipates a 300 percent population growth by 2012, and the population increase corresponds to re-stationing one generation of several brigade combat teams, the 1st Armored Division headquarters, and numerous supporting units. This represents a $5 billion investment by the U.S. Army in facility construction (U.S. Army 2010).

A summary of the anticipated cumulative impacts relative to the Proposed Action Alternative is presented below. These discussions are presented for each of the resources described previously.

4.1 SOILS

A significant impact would occur if the action would exacerbate or promote long-term erosion or if there were to be a substantial reduction in agricultural production or loss of Prime Farmland soils. The Proposed Action and other CBP actions, combined with those proposed by others, would not reduce Prime Farmland soils or agricultural production regionally, as much of the land developed by CBP has not been used for agricultural production. All activities in the floodway would cumulatively increase soil compaction, rutting, reduction in productivity and erosion. However, the floodway is already highly disturbed and periodic flood events have a greater impact on floodway soil stability than floodway maintenance activities. The impact from increased floodway mowing, when combined with past and proposed projects in the region, would not be considered a significant cumulative adverse effect.

4.2 WATER RESOURCES

The significance threshold for water resources includes any action that substantially depletes groundwater supplies, interferes with groundwater recharge, or substantially alters drainage patterns. The significance threshold for surface water includes any action that substantially depletes surface water supplies, substantially alters drainage patterns, or results in the loss of Waters of the U.S. that cannot be compensated. The proposed increased mowing activity and any other proposed project in the vicinity of the RGRP floodway does not affect the surface water supply, alter drainage patterns, or result in loss of Waters of the U.S. This proposed project in conjunction with other regionally proposed projects does not create a substantial cumulative effect on water resources in the region.

4.3 FLOODPLAINS

The significance threshold for adverse impacts on floodplains includes any action or combination of actions that result in direct or indirect flood losses, affecting human safety, health, and welfare. No development would occur in the floodplain of the Rio Grande as a result of the Proposed Action, and compliance with EO 11988 and the local floodplain regulations would ensure that any potential adverse impacts on the floodplain are offset. Therefore, when combined with other existing and proposed projects in the region, any cumulative adverse impacts on floodplains would be insignificant.

4.4 VEGETATIVE HABITAT

The significance threshold for vegetation would include a substantial reduction in ecological process, 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 off-set or otherwise compensated. Many of the projects under consideration for the El Paso area are planned in developed, urban areas or areas where vegetation has already been removed or disturbed. This project would not affect any sensitive plant communities. Increased mowing could favor growth of invasive plants; however, the floodway is comprised of bunchgrasses and non-native and/or invasive species. Therefore, this proposed project, in conjunction with other regionally proposed projects, does not create a substantial cumulative effect on vegetative habitat in the region.

4.5 WILDLIFE AND AQUATIC RESOURCES

The significance threshold for wildlife and aquatic resources would include 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 off-set or otherwise compensated. As discussed for vegetative habitat, many of the projects under consideration in the El Paso area are planned in developed, urban areas or areas where wildlife habitat has already been removed or disturbed. This project would not threaten the long-term viability of any species and would not cause the substantial loss of a unique or sensitive wildlife habitat. Therefore, this proposed project in conjunction with other regionally proposed projects does not create a substantial cumulative effect on wildlife habitat in the region.

4.6 THREATENED AND ENDANGERED SPECIES

A significant impact on threatened and endangered species would occur if any action resulted in a jeopardy opinion for any endangered, threatened, or rare species. The Proposed Action Alternative would not have an adverse effect on protected species; therefore in combination with other planned projects in the region, would not contribute to cumulative impacts on threatened and endangered species.

4.7 CULTURAL, HISTORICAL, AND ARCHAEOLOGICAL RESOURCES

No ground disturbance, development, or construction is proposed; therefore, no cumulative impacts on NRHP eligible properties would occur. Projects within the RGRP cumulatively could adversely affect Ysleta del Sur Pueblo ceremonial activities if not properly coordinated. However, CBP and USIBWC respect the Ysleta del Sur Pueblo's use of the floodway and their TCPs within the RGRP and coordinate all activities with the Ysleta del Sur Pueblo, ensuring no cumulative impacts would occur.

4.8 AIR QUALITY

No cumulative impacts on air quality would occur because no soil disturbing activities are proposed and all heavy equipment use would be temporary.

4.9 NOISE

Noise in the RGRP floodway is limited to USBP vehicles and USIBWC maintenance equipment. The cumulative impact of long-term vehicle operation in combination with increased mowing activities would not raise cumulative noise emissions in the region to unacceptable levels, and all activities in the RGRP occur behind a flood risk reduction levee further attenuating cumulative noise emissions and reducing the distance that noise emissions could be heard.

4.10 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 significant impact. No major impacts on visual resources would occur from mowing the floodway in the already-disturbed project area, as various flood control structures, tactical infrastructure, and irrigation canals already exist in the area.

4.11 HAZARDOUS MATERIALS AND SOLID WASTE

Significant impacts would occur if an action were to create a public hazard, the site considered a hazardous waste site that poses health risks, or if the action were to impair the implementation of an adopted emergency response or evacuation plan. Only minor increases in the use of hazardous substances (e.g., petroleum, oils and lubricants) would occur as a result of the increased mowing in the floodway. BMPs would be implemented to minimize the risk from hazardous materials during mowing operations. No health or safety risks would be created by

the Proposed Action Alternative. The effects of this Proposed Action Alternative, when combined with other on-going and proposed projects in the region, would not be considered a significant cumulative effect.

SECTION 5.0
ENVIRONMENTAL DESIGN MEASURES

5.0 ENVIRONMENTAL DESIGN MEASURES

This chapter describes those measures that will be implemented to reduce or eliminate 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. Environmental design measures will be presented for each resource category that would be potentially affected. It should be emphasized that the environmental design measures also include general mitigation measures; development of specific mitigation measures will be required for certain activities implemented under the action alternatives. The proposed mitigation measures will be coordinated through the appropriate agencies and land managers/administrators, as required.

It is Federal policy to mitigate adverse impacts through the sequence of avoidance, minimization, and, finally, compensation. Compensation varies and includes activities such as restoration of habitat in other areas, acquisition of lands, etc., and is typically coordinated with the USFWS and other appropriate Federal and state resource agencies.

5.1 GENERAL CONSTRUCTION ACTIVITIES

BMPs will be implemented as standard operating procedures during all mowing operations, such as proper handling, storage, and/or disposal of hazardous and/or regulated materials. The refueling of machinery will be completed following accepted guidelines, and all vehicles will have drip pans during storage to contain minor spills and drips. Although it would be unlikely for a major spill to occur, any spill of a reportable quantity will be contained immediately within an earthen dike, and the application of an absorbent (e.g., granular, pillow, sock.) will be used to absorb and contain the spill. Any major reportable spill of a hazardous or regulated substance will be reported immediately to CBP environmental personnel, who would notify appropriate Federal and state agencies. A SPCCP will be in place prior to the start of mowing activities, and all personnel will be briefed on the implementation and responsibilities of this plan.

All waste, oil, and solvents will be recycled. All non-recyclable hazardous and regulated wastes will be collected, characterized, labeled, stored, transported, and disposed of in accordance with all Federal, state, and local regulations, including proper waste-manifesting procedures.

Non-hazardous solid waste (trash and waste construction materials) will be collected and deposited in the on-site receptacles. Solid waste receptacles will be maintained and solid waste would be collected and disposed of by a local waste disposal contractor.

5.2 SOILS

Mowing activities would avoid areas that are devoid of vegetation, to the greatest extent practicable, to reduce the disturbance of soils from equipment tires and mower blades. Mowing activities will not occur 36 hours after a major storm event or for at least 5 days following a flood event that inundates the floodway.

5.3 WATER RESOURCES

Standard construction procedures will be implemented to minimize the potential for erosion and sedimentation during mowing operations. All work will cease during heavy rains and will not resume until conditions are suitable for the movement of equipment.

5.4 BIOLOGICAL RESOURCES

The Migratory Bird Treaty Act requires that Federal agencies coordinate with the USFWS if a construction activity would result in the "take" of a migratory bird. If mowing activities are scheduled during the nesting season (typically March 1 through September 15), pre-mowing surveys for migratory bird species will be conducted by a qualified professional biologist immediately prior to the start of any activity to identify active nests. If mowing activities would result in the "take" of a migratory bird, then coordination with the USFWS and TPWD will occur, and a 50-foot buffer will be established around all active nests, and a 1,000-foot buffer established around any southwestern willow flycatcher or interior least tern active nests. No mowing in the buffer areas would occur until chicks have fledged. To lessen noise impacts on wildlife communities, mowing will only occur during daylight hours.

5.5 CULTURAL RESOURCES

Mowing activities will be coordinated with the Ysleta del Sur Pueblo and scheduled to avoid their ceremonial activities and to minimize disturbance to plant species utilized during the ceremonial activities.

SECTION 6.0
REFERENCES

6.0 REFERENCES

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SECTION 7.0
ACRONYMS AND ABBREVIATIONS

7.0 ACRONYMS AND ABBREVIATIONS

ACHP	Advisory Council on Historic Preservation
AOR	Area of Responsibility
CBP	Customs and Border Protection
CBVs	Cross-Border Violator
CEQ	Council on Environmental Quality
CFC	chlorofluorocarbon
CFR	Code of Federal Regulations
CH_4	methane
CO	carbon monoxide
CO_2	carbon dioxide
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibel
DHS	Department of Homeland Security
DOI	Department of the Interior
E	Endangered
EA	Environmental Assessment
EO	Executive Order
ESA	Endangered Species Act
FONSI	Finding of No Significant Impact
FR	Federal Register
GHG	Greenhouse Gases
GSRC	Gulf South Research Corporation
HFC	hydrofluorocarbon
HUD	U.S. Department of Housing and Urban Development
INA	Immigration and Nationality Act
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOA	Notice of Availability
NO_2	nitrogen dioxide
NRHP	National Register of Historic Places
NPS	National Park Service
NRCS	Natural Resources Conservation Service
O_3	ozone
OSHA	Occupational, Safety and Health Administration
Pb	lead
PL	Public Law
PM-2.5	Particulate Matter less than 2.5 Microns
PM-10	Particulate Matter less than 10 Microns
POE	port-of-entry
ppm	parts per million
RGRP	Rio Grande Rectification Project
ROI	Region of Influence

SHPO	State Historic Preservation Officer
SO_2	sulfur dioxide
SPCCP	Spill Prevention, Control, and Countermeasures Plan
TCEQ	Texas Commission on Environmental Quality
TCP	Traditional Cultural Property
THC	Texas Historical Commission
TPWD	Texas Parks and Wildlife Department
TxDOT	Texas Department of Transportation
U.S.	United States
USACE	U.S. Army Corps of Engineers
USBP	U.S. Border Patrol
U.S.C.	U.S. Code
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USIBWC	U.S. Section, International Boundary and Waters Commission

SECTION 8.0
LIST OF PREPARERS

8.0 LIST OF PREPARERS

The following people were primarily responsible for preparing this EA.

NAME	AGENCY/ORGANIZATION	DISCIPLINE/EXPERTISE	EXPERIENCE	ROLE IN PREPARING EA
Joe Zidron	Customs and Border Protection	NEPA/DHS PM and Regional Environmental Officer	5 years Environmental Management and Review	EA Review
Heather Santiago	Customs and Border Protection	PM, CBP, HQ		CBP Project Manager
Hope Pollmann	USACE, Fort Worth District	PM, USACE, Fort Worth District	14 years Natural Resources and NEPA studies	USACE Project Manager
Eric Webb, Ph.D.	Gulf South Research Corporation (GSRC)	Ecology; Wetlands Environmental Planning	17 years Natural Resources and NEPA studies	GSRC Project Manager; DOPAA; Technical Review
Chris Ingram	GSRC	Biology/Ecology	33 years EA/EIS studies	Technical Review
Steve Oivanki	GSRC	Geology	20 years EA and Remediation	QA/QC Review
Steve Kolian	GSRC	Environmental Science	12 years Natural Resources	Noise, Air Quality
Shanna McCarty	GSRC	Natural Resources	6 years Natural Resources and Environmental Studies	Soils, Biological Resources
Michael Hodson	GSRC	Ecology/Wetlands	5 years Natural Resources	QA/QC Review
Maria Reid	GSRC	Forestry; Environmental Planning	9 years Biological Resources	QA/QC Review
John Lindemuth	GSRC	Archaeology	18 years Professional Archaeologist/Cultural Resources	Cultural Resources and Socioeconomics
Sharon Newman	GSRC	GIS/Graphics	15 years GIS/Graphics	GIS/Graphics

APPENDIX A
CORRESPONDENCE

1300 Pennsylvania Avenue NW
Washington, DC 20229

U.S. Customs and Border Protection

OCT 0 4 2010

Ysleta del Sur Pueblo
Tigua Reservation
Attn: Mr. Javier Loera
Tribal Historic Preservation Officer
119 South Old Pueblo Road
El Paso, TX 79907

Dear Mr. Loera:

U.S. Customs and Border Protection (CBP) is in the process of preparing an Environmental Assessment (EA) to analyze the potential positive and negative effects of a proposed CBP vegetation management project within the floodway of the Rio Grande in the U.S. Section, International Boundary and Water Commission's (USIBWC) Rio Grande Rectification Project (RGRP), El Paso and Hudspeth Counties, Texas (Figures 1a and 1b). The RGRP provides flood risk reduction along approximately 91 miles of the Rio Grande from El Paso to Fort Quitman, and includes a levee system, floodway, dredged channel and in-stream structures.

As part of maintaining flood capacity and adequate flows, USIBWC maintains the floodway within the RGRP. The USIBWC conducts the following maintenance activities of the floodway of the RGRP on an as-needed basis:

- Mow floodway to control weeds and woody vegetation
- Remove debris in floodway on regular basis
- Perform floodway smoothing to reduce flow resistance

Floodways are leveled annually by USIBWC in areas as required. Mowing takes place at least twice per year in the floodway prior to July 15th to remove vegetation and other obstructions from the floodway. Mowing is performed along the entire U.S. floodway with farm tractors using rotary slope mowers. The USIBWC also clears vegetation at the request of the U.S. Border Patrol (USBP) when funding and manpower allows. An informal agreement is in place to facilitate access to the river for ceremonial purposes by the Tiguas Pueblo, and mowing activities are partially re-scheduled to avoid disruption of ceremonies. Mowing is usually scheduled to occur outside the bird nesting season, which is March 1 through August 31. If mowing is required during the migratory bird nesting season, a pedestrian survey is conducted.

Recently, USIBWC has not had adequate manpower and funding to mow the floodway within the RGRP more frequently than what is required for basic maintenance. High rainfall during the past several years caused periodic flooding conditions in the Rio Grande, distributing new sediment in the floodway, increasing soil moisture and increasing the rate of plant growth,

further exacerbating the need for additional vegetation mowing. Vegetation in portions of the floodway of the RGRP often exceeds five feet in height before USIBWC is able to mow. CBP's proposed project includes increasing the mowing frequency of the floodway in the RGRP to maintain vegetation below a height of 24 inches at all times. Suppression of vegetation to a height of 24 inches has been determined by USBP to be operationally necessary to ensure officer safety and enable the detection of illicit cross-border violators and contraband in the floodway.

When the height of vegetation in the floodway exceeds 24 inches, USBP proposes to mow the vegetation to a height of 18 inches (or lower if mowing equipment allows) using the same methods implemented by USIBWC since the original construction of the RGRP. USBP would mow as often as necessary, in conjunction with USIBWC on-going maintenance activities, to maintain the height of the vegetation below 24 inches. USBP would mow all vegetation within the floodway, except for the narrow band of mature woody vegetation located along the north bank of the Rio Grande. No mature woody vegetation (i.e., exceeding 8 feet in height) would be removed as a result of the Proposed Action.

USBP would use farm tractors pulling heavy-duty rotary cutters to mow the vegetation in the floodway. Mowing would be avoided to the extent practicable during migratory bird nesting season (March 1 through August 31) or during Tiguas Pueblo ceremonial use of the floodway. If USBP mows the floodway during migratory bird nesting season, surveys for nesting birds would be conducted prior to mowing activities. If active nests (or burrowing owl burrows) are discovered, a 50-foot buffer surrounding the active nests (or burrows) would be established and active nests avoided. Alternatively, if nest avoidance is not possible, nest relocation permits would be acquired from the USFWS and TPWD, and nestlings and chicks relocated prior to mowing. Mowing would be done either by USBP agents using purchased or rented equipment, USIBWC operators, or by contractors.

CBP is currently in the process of gathering the most current information available for all resources occurring within the area of El Paso and Hudspeth Counties. CBP respectfully requests that your agency provide any information regarding those resources and/or issues that you believe may be affected. We intend to provide your agency with a copy of the Draft EA once the document is completed.

Please inform Mr. Joe Zidron if additional copies are needed and/or if someone else within your agency other than you should receive the Draft EA. Mr. Zidron's contact information is:

U.S. Customs and Border Protection
Mr. Joseph Zidron, Environmental Specialist
Laguna Facility Center
24000 Avila Road, Suite 5020
Laguna Niguel, CA 92677

If you require additional information or have any questions, please contact Mr. Zidron at (949) 425-7092 or by email at joseph.zidron@dhs.gov.

Sincerely,

Loren Flossman
Director
Border Patrol Facilities and Tactical Infrastructure
Program Management Office

Enclosures

1300 Pennsylvania Avenue NW
Washington, DC 20229

U.S. Customs and Border Protection

OCT 0 4 2010

Apache Tribe of Oklahoma
Mr. Bobby Jay
Tribal Administrator
511 East Colorado Drive
Anadarko, OK 73005-5218

Dear Mr. Jay:

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U.S. Customs and Border Protection
Mr. Joseph Zidron, Environmental Specialist
Laguna Facility Center
24000 Avila Road, Suite 5020
Laguna Niguel, CA 92677

If you require additional information or have any questions, please contact Mr. Zidron at (949) 425-7092 or by email at joseph.zidron@dhs.gov.

Sincerely,

Loren Flossman
Director
Border Patrol Facilities and Tactical Infrastructure
Program Management Office

Enclosures

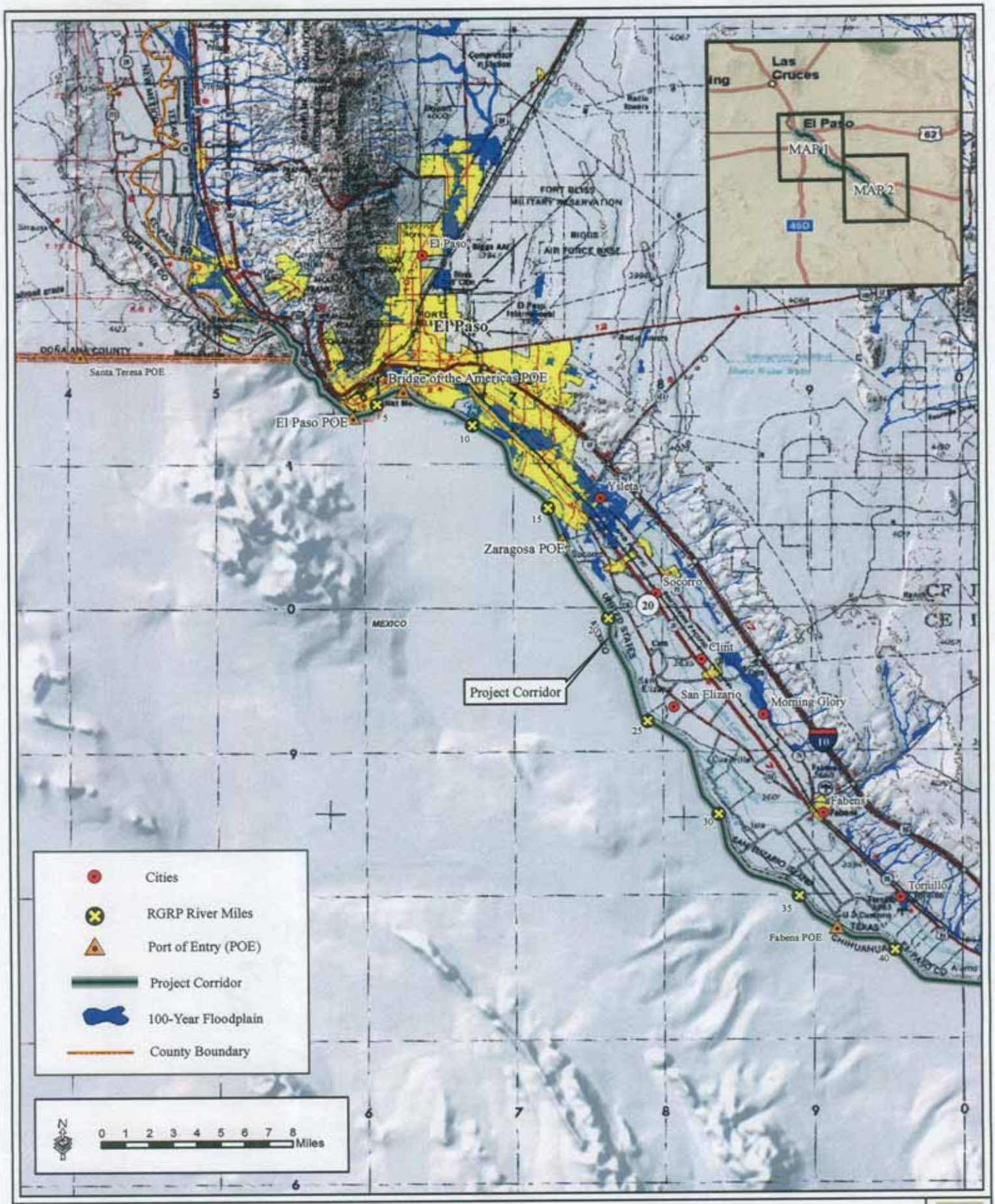

Figure 1a: Northern Extent of the USIBWC Rio Grande Rectification Project - Map 1

GSRC
August 2010

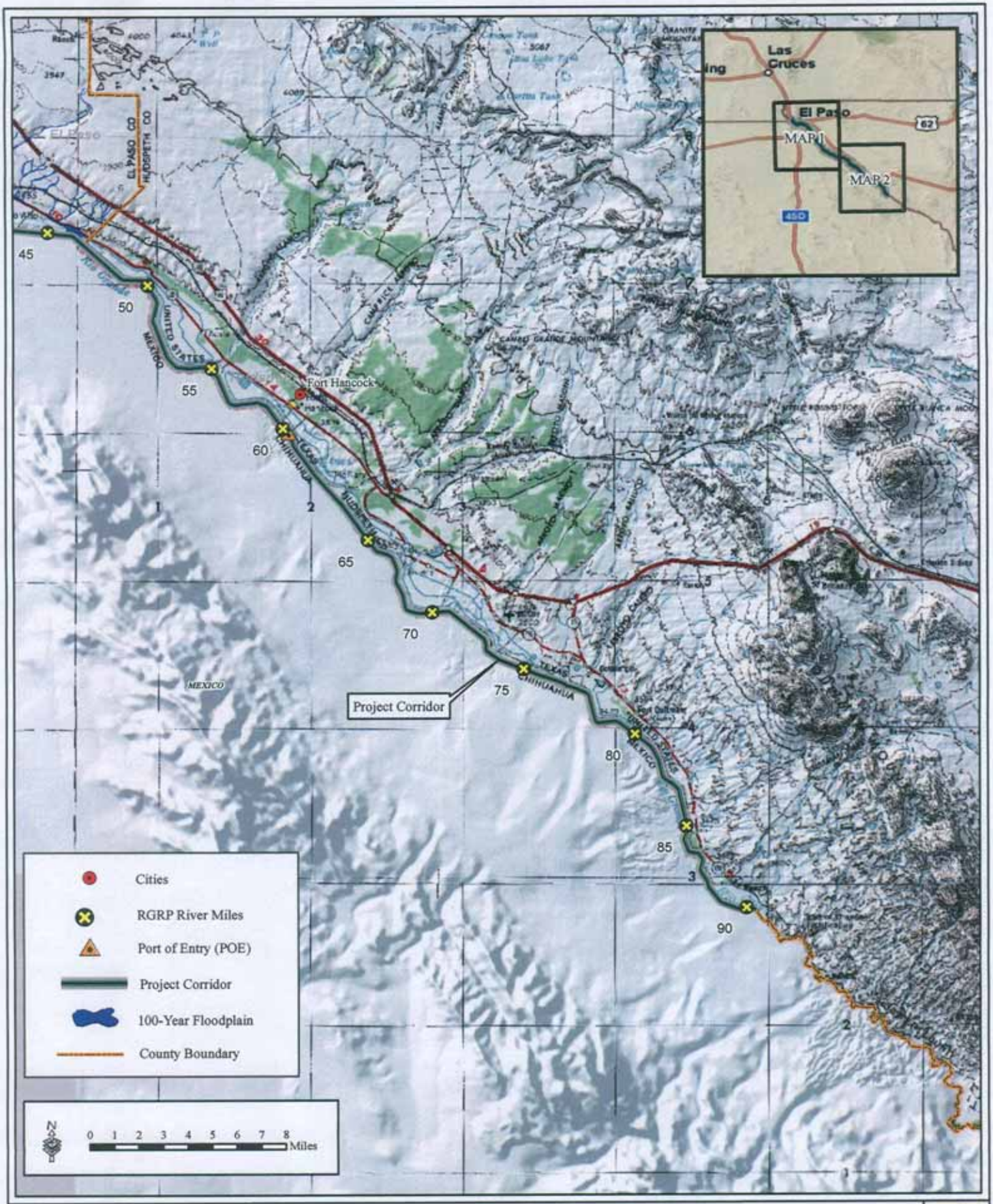

Figure 1b: Southern Extent of the USIBWC Rio Grande Rectification Project - Map 2

GSRC
Sept 2010

1300 Pennsylvania Avenue NW
Washington, DC 20229

U.S. Customs and Border Protection

OCT 0 4 2010

Dr. Jeffrey Blythe
Jicarilla Apache Nation
Tribal Historic Preservation Officer
25 Hawks Drive
Dulce, NM 87528

Dear Dr. Blythe:

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Sincerely,

Loren Flossman
Director
Border Patrol Facilities and Tactical Infrastructure
Program Management Office

Enclosures

1300 Pennsylvania Avenue NW
Washington, DC 20229

U.S. Customs and Border Protection

OCT 0 4 2010

Mescalero Apache Reservation
Mescalero Apache Tribal Council
Ms. Holly Houghen
101 Central Avenue
Mescalero, NM 88340

Dear Ms. Houghen:

U.S. Customs and Border Protection (CBP) is in the process of preparing an Environmental Assessment (EA) to analyze the potential positive and negative effects of a proposed CBP vegetation management project within the floodway of the Rio Grande in the U.S. Section, International Boundary and Water Commission's (USIBWC) Rio Grande Rectification Project (RGRP), El Paso and Hudspeth Counties, Texas (Figures 1a and 1b). The RGRP provides flood risk reduction along approximately 91 miles of the Rio Grande from El Paso to Fort Quitman, and includes a levee system, floodway, dredged channel and in-stream structures.

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Sincerely,

Loren Flossman
Director
Border Patrol Facilities and Tactical Infrastructure
Program Management Office

Enclosures

1300 Pennsylvania Avenue NW
Washington, DC 20229

U.S. Customs and Border Protection

OCT 0 4 2010

Mr. Robert Howard
San Carlos Apache Tribe
Administrative Advisor to the Chairman
1 San Carlos Ave, Building 3
San Carlos, AZ 85550

Dear Mr. Howard:

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Sincerely,

Loren Flossman
Director
Border Patrol Facilities and Tactical Infrastructure
Program Management Office

Enclosures

1300 Pennsylvania Avenue NW
Washington, DC 20229

U.S. Customs and Border Protection

OCT 0 4 2010

Ms. Sabrina Campbell
Tonto Apache Tribal Administrator
Tonto Apache Reservation #30
Payson, AZ 85541

Dear Ms. Campbell:

U.S. Customs and Border Protection (CBP) is in the process of preparing an Environmental Assessment (EA) to analyze the potential positive and negative effects of a proposed CBP vegetation management project within the floodway of the Rio Grande in the U.S. Section, International Boundary and Water Commission's (USIBWC) Rio Grande Rectification Project (RGRP), El Paso and Hudspeth Counties, Texas (Figures 1a and 1b). The RGRP provides flood risk reduction along approximately 91 miles of the Rio Grande from El Paso to Fort Quitman, and includes a levee system, floodway, dredged channel and in-stream structures.

As part of maintaining flood capacity and adequate flows, USIBWC maintains the floodway within the RGRP. The USIBWC conducts the following maintenance activities of the floodway of the RGRP on an as-needed basis:

- Mow floodway to control weeds and woody vegetation
- Remove debris in floodway on regular basis
- Perform floodway smoothing to reduce flow resistance

Floodways are leveled annually by USIBWC in areas as required. Mowing takes place at least twice per year in the floodway prior to July 15th to remove vegetation and other obstructions from the floodway. Mowing is performed along the entire U.S. floodway with farm tractors using rotary slope mowers. The USIBWC also clears vegetation at the request of the U.S. Border Patrol (USBP) when funding and manpower allows. An informal agreement is in place to facilitate access to the river for ceremonial purposes by the Tiguas Pueblo, and mowing activities are partially re-scheduled to avoid disruption of ceremonies. Mowing is usually scheduled to occur outside the bird nesting season, which is March 1 through August 31. If mowing is required during the migratory bird nesting season, a pedestrian survey is conducted.

Recently, USIBWC has not had adequate manpower and funding to mow the floodway within the RGRP more frequently than what is required for basic maintenance. High rainfall during the past several years caused periodic flooding conditions in the Rio Grande, distributing new sediment in the floodway, increasing soil moisture and increasing the rate of plant growth, further exacerbating the need for additional vegetation mowing. Vegetation in portions of the floodway of the RGRP often exceeds five feet in height before USIBWC is able to mow.

CBP's proposed project includes increasing the mowing frequency of the floodway in the RGRP to maintain vegetation below a height of 24 inches at all times. Suppression of vegetation to a height of 24 inches has been determined by USBP to be operationally necessary to ensure officer safety and enable the detection of illicit cross-border violators and contraband in the floodway.

When the height of vegetation in the floodway exceeds 24 inches, USBP proposes to mow the vegetation to a height of 18 inches (or lower if mowing equipment allows) using the same methods implemented by USIBWC since the original construction of the RGRP. USBP would mow as often as necessary, in conjunction with USIBWC on-going maintenance activities, to maintain the height of the vegetation below 24 inches. USBP would mow all vegetation within the floodway, except for the narrow band of mature woody vegetation located along the north bank of the Rio Grande. No mature woody vegetation (i.e., exceeding 8 feet in height) would be removed as a result of the Proposed Action.

USBP would use farm tractors pulling heavy-duty rotary cutters to mow the vegetation in the floodway. Mowing would be avoided to the extent practicable during migratory bird nesting season (March 1 through August 31) or during Tiguas Pueblo ceremonial use of the floodway. If USBP mows the floodway during migratory bird nesting season, surveys for nesting birds would be conducted prior to mowing activities. If active nests (or burrowing owl burrows) are discovered, a 50-foot buffer surrounding the active nests (or burrows) would be established and active nests avoided. Alternatively, if nest avoidance is not possible, nest relocation permits would be acquired from the USFWS and TPWD, and nestlings and chicks relocated prior to mowing. Mowing would be done either by USBP agents using purchased or rented equipment, USIBWC operators, or by contractors.

CBP is currently in the process of gathering the most current information available for all resources occurring within the area of El Paso and Hudspeth Counties. CBP respectfully requests that your agency provide any information regarding those resources and/or issues that you believe may be affected. We intend to provide your agency with a copy of the Draft EA once the document is completed.

Please inform Mr. Joe Zidron if additional copies are needed and/or if someone else within your agency other than you should receive the Draft EA. Mr. Zidron's contact information is:

U.S. Customs and Border Protection
Mr. Joseph Zidron, Environmental Specialist
Laguna Facility Center
24000 Avila Road, Suite 5020
Laguna Niguel, CA 92677

If you require additional information or have any questions, please contact Mr. Zidron at (949) 425-7092 or by email at joseph.zidron@dhs.gov.

Sincerely,

Loren Flossman
Director
Border Patrol Facilities and Tactical Infrastructure
Program Management Office

Enclosures

1300 Pennsylvania Avenue NW
Washington, DC 20229

U.S. Customs and Border Protection

OCT 0 4 2010

Texas Parks and Wildlife Department
Wildlife Diversity Program
ATTN: Ms. Kathy Boydson
4200 Smith School Road
Austin, TX 78744

Dear Ms. Boydson:

U.S. Customs and Border Protection (CBP) is in the process of preparing an Environmental Assessment (EA) to analyze the potential positive and negative effects of a proposed CBP vegetation management project within the floodway of the Rio Grande in the U.S. Section, International Boundary and Water Commission's (USIBWC) Rio Grande Rectification Project (RGRP), El Paso and Hudspeth Counties, Texas (Figures 1a and 1b). The RGRP provides flood risk reduction along approximately 91 miles of the Rio Grande from El Paso to Fort Quitman, and includes a levee system, floodway, dredged channel and in-stream structures.

As part of maintaining flood capacity and adequate flows, USIBWC maintains the floodway within the RGRP. The USIBWC conducts the following maintenance activities of the floodway of the RGRP on an as-needed basis:

- Mow floodway to control weeds and woody vegetation
- Remove debris in floodway on regular basis
- Perform floodway smoothing to reduce flow resistance

Floodways are leveled annually by USIBWC in areas as required. Mowing takes place at least twice per year in the floodway prior to July 15th to remove vegetation and other obstructions from the floodway. Mowing is performed along the entire U.S. floodway with farm tractors using rotary slope mowers. The USIBWC also clears vegetation at the request of the U.S. Border Patrol (USBP) when funding and manpower allows. An informal agreement is in place to facilitate access to the river for ceremonial purposes by the Tiguas Pueblo, and mowing activities are partially re-scheduled to avoid disruption of ceremonies. Mowing is usually scheduled to occur outside the bird nesting season, which is March 1 through August 31. If mowing is required during the migratory bird nesting season, a pedestrian survey is conducted.

Recently, USIBWC has not had adequate manpower and funding to mow the floodway within the RGRP more frequently than what is required for basic maintenance. High rainfall during the past several years caused periodic flooding conditions in the Rio Grande, distributing new sediment in the floodway, increasing soil moisture and increasing the rate of plant growth, further exacerbating the need for additional vegetation mowing. Vegetation in portions of the floodway of the RGRP often exceeds 5 feet in height before USIBWC is able to mow.

CBP's proposed project includes increasing the mowing frequency of the floodway in the RGRP to maintain vegetation below a height of 24 inches at all times. Suppression of vegetation to a height of 24 inches has been determined by USBP to be operationally necessary to ensure officer safety and enable the detection of illicit cross-border violators and contraband in the floodway.

When the height of vegetation in the floodway exceeds 24 inches, USBP proposes to mow the vegetation to a height of 18 inches (or lower if mowing equipment allows) using the same methods implemented by USIBWC since the original construction of the RGRP. USBP would mow as often as necessary, in conjunction with USIBWC on-going maintenance activities, to maintain the height of the vegetation below 24 inches. USBP would mow all vegetation within the floodway, except for the narrow band of mature woody vegetation located along the north bank of the Rio Grande. No mature woody vegetation (i.e., exceeding 8 feet in height) would be removed as a result of the Proposed Action.

USBP would use farm tractors pulling heavy-duty rotary cutters to mow the vegetation in the floodway. Mowing would be avoided to the extent practicable during migratory bird nesting season (March 1 through August 31) or during Tiguas Pueblo ceremonial use of the floodway. If USBP mows the floodway during migratory bird nesting season, surveys for nesting birds would be conducted prior to mowing activities. If active nests (or burrowing owl burrows) are discovered, a 50-foot buffer surrounding the active nests (or burrows) would be established and active nests avoided. Alternatively, if nest avoidance is not possible, nest relocation permits would be acquired from the USFWS and TPWD, and nestlings and chicks relocated prior to mowing. Mowing would be done either by USBP agents using purchased or rented equipment, USIBWC operators, or by contractors.

CBP is currently in the process of gathering the most current information available regarding Federal and State listed species potentially occurring within this area of El Paso and Hudspeth Counties. CBP respectfully requests that your agency provide a list of the protected species, along with a description of the sensitive resources (*e.g.*, rare and unique plant communities, threatened, endangered and candidate species, recreation, water resources, etc.) that you believe should be addressed in the EA. We intend to provide your agency with a copy of the Draft EA once the document is completed.

Please inform Mr. Joe Zidron if additional copies are needed and/or if someone else within your agency other than you should receive the Draft EA. Mr. Zidron's contact information is:

U.S. Customs and Border Protection
Mr. Joseph Zidron, Environmental Specialist
Laguna Facility Center
24000 Avila Road, Suite 5020
Laguna Niguel, CA 92677

If you require additional information or have any questions, please contact Mr. Zidron at (949) 425-7092 or by email at joseph.zidron@dhs.gov.

Sincerely,

Loren Flossman
Director
Border Patrol Facilities and Tactical Infrastructure
Program Management Office

Enclosure

1300 Pennsylvania Avenue NW
Washington, DC 20229

U.S. Customs and Border Protection

OCT 0 4 2010

United States Fish and Wildlife Service
Attn: Mr. Allen Strand
Ecological Services
6300 Ocean Drive, TAMUCC Box 338
Corpus Christi, TX 78412

Dear Mr. Strand:

United States (U.S.) Customs and Border Protection (CBP) is in the process of preparing an Environmental Assessment (EA) to analyze the potential positive and negative effects of a proposed CBP vegetation management project within the floodway of the Rio Grande in the U.S. Section, International Boundary and Water Commission's (USIBWC) Rio Grande Rectification Project (RGRP), El Paso and Hudspeth Counties, Texas (Figures 1a and 1b). The RGRP provides flood risk reduction along approximately 91 miles of the Rio Grande from El Paso to Fort Quitman, and includes a levee system, floodway, dredged channel and in-stream structures.

As part of maintaining flood capacity and adequate flows, USIBWC maintains the floodway within the RGRP. The USIBWC conducts the following maintenance activities of the floodway of the RGRP on an as-needed basis:

- Mow floodway to control weeds and woody vegetation
- Remove debris in floodway on regular basis
- Perform floodway smoothing to reduce flow resistance

Floodways are leveled annually by USIBWC in areas as required. Mowing takes place at least twice per year in the floodway prior to July 15th to remove vegetation and other obstructions from the floodway. Mowing is performed along the entire U.S. floodway with farm tractors using rotary slope mowers. The USIBWC also clears vegetation at the request of the U.S. Border Patrol (USBP) when funding and manpower allows.

Recently, USIBWC has not had adequate manpower and funding to mow the floodway within the RGRP more frequently than what is required for basic maintenance. High rainfall during the past several years caused periodic flooding conditions in the Rio Grande, distributing new sediment in the floodway, increasing soil moisture and increasing the rate of plant growth, further exacerbating the need for additional vegetation mowing. Vegetation in portions of the floodway of the RGRP often exceeds 5 feet in height before USIBWC is able to mow.

CBP's proposed project includes increasing the mowing frequency of the floodway in the RGRP to maintain vegetation below a height of 24 inches at all times. Suppression of vegetation to a

height of 24 inches has been determined by USBP to be operationally necessary to ensure officer safety and enable the detection of illicit cross-border violators and contraband in the floodway.

When the height of vegetation in the floodway exceeds 24 inches, USBP proposes to mow the vegetation to a height of 18 inches (or lower if mowing equipment allows) using the same methods implemented by USIBWC since the original construction of the RGRP. USBP would mow as often as necessary, in conjunction with USIBWC on-going maintenance activities, to maintain the height of the vegetation below 24 inches. USBP would mow all vegetation within the floodway, except for the narrow band of mature woody vegetation located along the north bank of the Rio Grande. No mature woody vegetation (i.e., exceeding 8 feet in height) would be removed as a result of the Proposed Action.

USBP would use farm tractors pulling heavy-duty rotary cutters to mow the vegetation in the floodway. An informal agreement is in place to facilitate access to the river for ceremonial purposes by the Ysleta del Sur Pueblo, and mowing activities are partially re-scheduled to avoid disruption of ceremonies. Mowing would be avoided to the extent practicable during migratory bird nesting season (March 1 through August 31). If USBP mows the floodway during migratory bird nesting season, surveys for nesting birds would be conducted prior to mowing activities. If active nests (or burrowing owl burrows) are discovered, a 50-foot buffer surrounding the active nests (or burrows) would be established and active nests avoided. Alternatively, if nest avoidance is not possible, nest relocation permits would be acquired from the U.S. Fish and Wildlife Service and Texas Parks and Wildlife Department, and nestlings and chicks relocated prior to mowing. Mowing would be done either by USBP agents using purchased or rented equipment, USIBWC operators, or by contractors.

Within El Paso and Hudspeth Counties, four species are listed as Federally endangered (least tern [*Sterna antillarum*], northern aplomado falcon [*Falco femoralis septentrionalis*], Sneed pincushion cactus [*Coryphantha sneedii* var. *sneedii*] and southwestern willow flycatcher [*Empidonax traillii extimus*]), one is listed as Federally threatened (Mexican spotted owl [*Strix occidentalis lucida*] and one is listed as a candidate species (yellow-billed cuckoo [*Coccyzus americanus*]). Of these six listed species, the least tern, southwestern willow flycatcher and yellow-billed cuckoo have the potential to occur in the project area. Least terns could nest on unvegetated sand bars in the Rio Grande, and southwestern willow flycatchers and yellow-billed cuckoos could forage, loaf and potentially nest in the mature riparian vegetation along the banks of the Rio Grande.

More frequent mowing activities in the RGRP have the potential to adversely affect listed bird species during their breeding season through the disturbance of active nests and chicks. However, surveys for nesting birds by qualified biologists would occur in the floodway prior to any mowing activities during bird breeding and nesting season (March 1 through August 31) as part of the CBP Proposed Action, and a 300 foot buffer would be established around any nesting least tern, southwestern willow flycatcher or yellow-billed cuckoo. No mowing activities would occur within that buffer area until nestlings have fledged.

Because no habitat that supports listed species would be disturbed as part of the Proposed Action, and bird surveys would be conducted and appropriate buffers established around any least tern, southwestern willow flycatcher, and yellow-billed cuckoo nests until nestlings have fledged, the Proposed Action may affect, but would not adversely affect the least tern, southwestern willow flycatcher, and yellow-billed cuckoo. CBP respectfully request your concurrence on this determination.

We also intend to provide your agency with a copy of the Draft EA once the document is completed. Please inform Mr. Joe Zidron if additional copies are needed and/or if someone else within your agency other than you should receive the Draft EA. Mr. Zidron's contact information is:

U.S. Customs and Border Protection
Mr. Joseph Zidron, Environmental Specialist
Laguna Facility Center
24000 Avila Road, Suite 5020
Laguna Niguel, CA 92677

If you require additional information or have any questions, please contact Mr. Zidron at (949) 425-7092 or by email at joseph.zidron@dhs.gov.

Sincerely,

Loren Flossman
Director
Border Patrol Facilities and Tactical Infrastructure
Program Management Office

Enclosure

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
c/o TAMU-CC, Campus Box 338
6300 Ocean Drive
Corpus Christi, Texas 78412

October 14, 2010

Loren Flossman
Director
Border Patrol Facilities and Tactical Infrastructure
Program Management Office
1300 Pennsylvania Avenue NW
Washington, D.C. 20229

Consultation Number: 21410-2011-I-0009

Dear Director:

This responds to your October 4, 2010, letter requesting the U.S. Fish and Wildlife Service's (Service) concurrence on your "*may affect, not likely to adversely affect*" determination for the endangered interior least tern (*Sterna antillarum*), southwestern willow flycatcher (*Empidonax traillii extimus*), and the candidate, yellow-billed cuckoo (*Coccyzus americanus*). The proposed project includes vegetation management within the floodway for the Rio Grande in the U.S. International Boundary and Water Commission's (IBWC) Rio Grande Rectification Project (RGRP), El Paso and Hudspeth Counties, Texas. The Service cannot concur with your determination at this time and requests additional information for our review and comment.

Due to the size, scope of the proposed project, and the determination that the project "may affect" federally-listed species, we request that a Biological Assessment be developed and provided to our office for review. The Biological Assessment may be included within the Draft Environmental Assessment (EA) that is being prepared for this project or it can be submitted separately. The Service understands that the 91 miles of the RGRP is not all mowable floodplain. Areas that are un-mowable due to installation of structures, channels, etc… should be explained and the total acreage to be mowed should be provided. Please explain how mowing equipment will access the 4.6 long area blocked by the vehicle barrier trenches at the ends of border fence segment L-1. The Service understands that the IBWC may consider adopting the City of El Paso's "no mow" zone at the west end of the city and this should be addressed in the EA/BA. The Service recommends that the draft EA/BA include assessments of various vegetation management practices (including prescribed fire and herbicide treatments) and the potential effects of each management practices on federally-listed species and other trust resources to determine if there is a less damaging alternative.

The Service requests the potential impacts to the threatened, Rio Grande Silvery minnow (*Hybognathus amarus*) be addressed. The Rio Grande silvery minnow was reintroduced downstream and in the vicinity of your projects in the Big Bend National Park area in 2009 and 2010. Impacts due to increased sedimentation of the river, erosion, potential use of herbicides, etc… should be considered when making your determination of effect. Also, the effects of your

projects on the habitat of the endangered southwestern willow flycatcher in particular, the impacts of the project to habitat included in the Rio Grande Recovery Unit (along the Rio Grande from Brewster County north and west to the New Mexico state line) were not addressed fully. Recently, the Service was advised that the southwestern willow flycatcher had been observed in the Recovery Unit in west Texas during the migration season. The Service would like to discuss further avoidance and minimization measures to lessen the impacts to southwestern willow flycatcher habitat which also facilitates additional protection of habitat for the yellow-billed cuckoo (a federally-listed, candidate species also know to inhabit the project area). For example, all woody species in the floodplain should be avoided, and a buffer, "no-mow zone", should be established adjacent to the riparian vegetation at the bank of the river. The proposed, potential increase in the number of mowings may have an adverse effect on nesting least terns. Please provide the known nesting areas and suitable areas for nesting for the interior least tern in your analysis and the effects of noise on nesting least terns. Typically 'no activity" buffers of 1000 feet are established around nesting least terns. Please note, the Service has recently requested that IBWC also reconsider their determinations for federally-listed species for their 2008 PEIS concerning improvements to the entire Rio Grande Flood Control Projects and to address some of these same concerns.

During a September 9, 2010, site visit with IBWC Environmental staff and U.S. Customs and Border Protection (CBP), the Border Patrol Agent, Lance Jackson, stated that the floodway in the vicinity of border fence segment L-1 (Sierra Blanca) had been mowed within the last few weeks. IBWC Environmental staff were not aware of the mowing and could not confirm if a migratory bird nesting survey had been completed prior to mowing. We have requested that IBWC provide the date that the mowing occurred and the results of the bird nesting survey if conducted. The Service has consistently recommended that in West Texas migratory bird nesting surveys be completed prior to any activity that might disturb an active nest between March 1st and September 1st. The Service has received additional information that indicates that birds are nesting in the west Texas area, along the Rio Grande for an extended period of time. Some species have been found nesting in October and November; therefore, the Service is revising its recommendation for bird nesting surveys to be conducted between March 1st and September 15th of each year, and that personnel be properly trained so they realize that active nests may be encountered outside this nesting period and should be avoided. The Service recommends that this measure be included in the EA/BA, and that standard operating procedures be implemented by each federal agency to address this issue.

During the September 9, 2010, site visit, we observed CBP construction material staged in the floodplain, silt fencing was improperly installed by IBWC, and various vehicles were using the floodplain for travel and not restricting travel to the maintenance road at the toe of the levee. CBP is required to revegetate the floodplain areas they impacted and in some cases denuded during the construction of the fence, but the additional impact of IBWC workers in the floodplain should also be considered. The Service requests that IBWC and CBP coordinate a plan to revegetate the floodplain and address erosion and dust control issues as soon as possible, and requests that the Service review the plan. The Service requests that a plan be coordinated within 60 days of the date of this letter. The Service has also recommended to IBWC that the road closest to the riverbank along the Rio Grande in the El Paso area be closed to facilitate revegetation and erosion control efforts. The Service cannot finalize this current consultation

until the above concerns have been addressed. Please contact Dr. Larisa Ford, at 361-994-9005 or by email larisa_ford@fws.gov for further coordination.

Sincerely,

Mary Orms
for Allan M. Strand
Field Supervisor

cc: Ernesto Reyes, Alamo-Sub Office, USFWS, Alamo, TX
Joesph Zidron, CBP, Laguna Niguel, CA

INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES AND MEXICO

OFFICE OF THE COMMISSIONER
UNITED STATES SECTION

February 11, 2011

Loren Flossman, Program Manager
SBI Tactical Infrastructure
1300 Pennsylvania Ave NW
Washington, D.C. 20229

Dear Mr. Flossman

I refer to the December 16, 2010 letter in which your office requested comments on the draft Environmental Assessment entitled "Additional Floodway Mowing in the U.S. Section, International Boundary and Water Commission's Rectification Project, El Paso, Ysleta, Fabens and Fort Hancock Stations' Areas of Responsibility, U.S. Border Patrol, El Paso Sector, Texas". After our agency review, the U.S. Section has determined that any proposed mowing in USIBWC Rectification Project be performed by the U.S. Section. This determination will allow the U.S. Section, as owner of the floodway system, to maintain quality control over any proposed action that occurs within our project foot print. The U.S. Section will coordinate with DHS on the necessary interagency agreements for the mowing and any related works or required mitigation.

The U.S. Section has no specific comments on document at this time, but we will take the opportunity to provide comments during the public comment period.

I look forward to our continued cooperation with you on all DHS border projects and operations.

Sincerely,

John L. Merino, P.E.
Principal Engineer

The Commons, Building C, Suite 310 • 4171 N. Mesa Street • El Paso, Texas 79902
(915) 832-4100 • (FAX) (915) 832-4190

APPENDIX B
PUBLIC COMMENTS

PUBLIC COMMENTS WILL BE INCLUDED IN THE FINAL EA.

APPENDIX C
AIR QUALITY ANALYSIS

CALCULATION SHEET-COMBUSTIBLE EMISSIONS-CONSTRUCTION

Assumptions for Combustible Emissions					
Type of Construction Equipment	Num. of Units	HP Rated	Hrs/day	Days/yr	Total hp-hrs
Diesel Tractors/Loaders/Backh	2	100	12	240	576000

Emission Factors							
Type of Construction Equipment	VOC g/hp-hr	CO g/hp-hr	NOx g/hp-hr	PM-10 g/hp-hr	PM-2.5 g/hp-hr	SO2 g/hp-hr	CO2 g/hp-hr
Diesel Tractors/Loaders/Backhoes	1.850	8.210	7.220	1.370	1.330	0.950	691.100

Emission factors (EF) were generated from the NONROAD2005 model for the 2006 calendar year. The VOC EFs includes exhaust and evaporative emissions. The VOC evaporative components included in the NONROAD2005 model are diurnal, hotsoak, running loss, tank permeation, hose permeation, displacement, and spillage. The construction equipment age distribution in the NONROAD2005 model is based on the population in U.S. for the 2006 calendar year.

Emission Calculations							
Type of Construction Equipment	VOC tons/yr	CO tons/yr	NOx tons/yr	PM-10 tons/yr	PM-2.5 tons/yr	SO2 tons/yr	CO2 tons/yr
Diesel Tractors/Loaders/Backhoes	1.174	5.211	4.583	0.870	0.844	0.603	438.677
Total Emissions	**1.174**	**5.211**	**4.583**	**0.870**	**0.844**	**0.603**	**438.677**

Conversion factors	
Grams to tons	1.102E-06

CALCULATION SHEET-TRANSPORTATION COMBUSTIBLE EMISSIONS-CONSTRUCTION

Construction Worker Personal Vehicle Commuting to Construction Site-Passenger and Light Duty Trucks									
	Emission Factors		Assumptions				Results by Pollutant		
Pollutants	Passenger Cars g/mile	Pick-up Trucks, SUVs g/mile	Mile/day	Day/yr	Number of cars	Number of trucks	Total Emissions Cars tns/yr	Total Emissions Trucks tns/yr	Total tns/yr
VOCs	1.36	1.61	60	240	2	2	0.04	0.05	0.09
CO	12.4	15.7	60	240	2	2	0.39	0.50	0.89
NOx	0.95	1.22	60	240	2	2	0.03	0.04	0.07
PM-10	0.0052	0.0065	60	240	2	2	0.00	0.00	0.00
PM 2.5	0.0049	0.006	60	240	2	2	0.00	0.00	0.00
CO2	369	511	60	240	2	2	11.71	16.22	27.93

Heavy Duty Trucks Delivery Supply Trucks to Construction Site									
	Emission Factors		Assumptions				Results by Pollutant		
Pollutants	10,000-19,500 lb Delivery Truck	33,000-60,000 lb semi trailer rig	Mile/day	Day/yr	Number of trucks	Number of trucks	Total Emissions Cars tns/yr	Total Emissions Trucks tns/yr	Total tns/yr
VOCs	0.29	0.55	60	160	1	0	0.00	0.00	0.00
CO	1.32	3.21	60	160	1	0	0.01	0.00	0.01
NOx	4.97	12.6	60	160	1	0	0.05	0.00	0.05
PM-10	0.12	0.33	60	160	1	0	0.00	0.00	0.00
PM 2.5	0.13	0.36	60	160	1	0	0.00	0.00	0.00
CO2	536	536	60	160	1	0	5.67	0.00	5.67
Daily Commute New Staff Associated with Proposed Action									
	Emission Factors		Assumptions				Results by Pollutant		
Pollutants	Passenger Cars g/mile	Pick-up Trucks, SUVs g/mile	Mile/day	Day/yr	Number of Cars	Number of trucks	Total Emissions cars tns/yr	Total Emissions Trucks tns/yr	Total tns/yr
VOCs	1.36	1.61	60	240	0	0	-	0.00	-
CO	12.4	15.7	60	240	0	0	-	0.00	-
NOx	0.95	1.22	60	240	0	0	-	0.00	-
PM-10	0.0052	0.0065	60	240	0	0	-	0.00	-
PM 2.5	0.0049	0.006	60	240	0	0	-	0.00	-
CO2	369	511	60	240	0	0	-	0.00	-

Truck Emission Factor Source: MOBILE6.2 USEPA 2005 Emission Facts: Average annual emissions and fuel consumption for gasoline-fueled passenger cars and light trucks. EPA 420-F-05-022 August 2005. Emission rates were generated using MOBILE.6 highway.

CALCULATION SHEET-TRANSPORTATION COMBUSTIBLE EMISSIONS-CONSTRUCTION

Conversion factor:	gms to tons
	0.000001102

Carbon Equivalents	Conversion Factor
N2O or NOx	311
Methane or VOCs	25

Source: EPA 2010 Reference, Tables and Conversions, Inventory of U.S. Greenhouse Gas Emissions and Sinks; http://www.epa.gov/climatechange/emissions/usinventoryreport.html

CARBON EQUIVALENTS

Construction Commuters	Conversion	Emissions CO2 tons/yr	Total CO2
VOCs	25	2.36	
NOx	311	0.07	
Total		2.43	30.35

Delivery Trucks	Conversion	Emissions CO2 tons/yr	Total CO2
VOCs	25	0.08	
NOx	311	16.35	
Total		16.43	22.10

Kirtland AFB staff and Students	Conversion	Emissions CO2 tons/yr	Total CO2
VOCs	25	-	
NOx	311	-	
Total		-	-

CALCULATION SHEET-FUGITIVE DUST-CONSTRUCTION

Construction Fugitive Dust Emissions

Construction Fugitive Dust Emission Factors

	Emission Factor	Units	Source
Lawn Maintenance Activities	0.96	lb/mi2	AP-42, 1995. Compilation of Air Pollutant Emission Factors. Volume I: Stationary Point
	0.0015	lb/acre	Sources and Area Sources. Fifth Edition, January 1995. Table 9.3.2 Emission

Project Assumptions

Construction Area			**Conversion Factors**	
Duration of Soil Disturbance in Project		months	0.000022957	acres per feet
Length	91	miles	5280	feet per mile
Length (converted)	480480	feet	0.0015625	sq miles per acre
Width	300	feet		
Area	3309.11	acres		
Number of Times Grass is Mowed per year	6			

	Project Emissions (tons/year)			
	PM10 uncontrolled	**PM10 controlled**	**PM2.5 uncontrolled**	**PM2.5 controlled**
Total Emissions per Year	29.78			
	0.00			
Total	**0.01**			

References:

AP-42, 1995. Compilation of Air Pollutant Emission Factors. Volume I: Stationary Point Sources and Area Sources. Fifth Edition, January 1995. Table 9.3.2 Emission Rates.Factors from Grain Harvesting.

CALCULATION SHEET-SUMMARY OF EMISSIONS

Construction Emissions for Criteria Pollutants (tons per year)									
Emission Source	VOC	CO	NOx	PM-10	PM-2.5	SO2	CO2	CO2 Equivalents	Total CO2
Combustible Emissions from Tractor	1.17	5.21	4.58	0.87	0.84	0.60	438.68	1454.64	1893.32
Lawn Maintenance-Fugitive PM-10	NA	NA	NA	0.01	NA	NA	NA	NA	NA
Lawn Maintenance Workers Commuter & Trucking	0.10	0.91	0.12	0.00	0.00	NA	27.93	40.20	68.13
Total emissions-CONSTRUCTION	**1.27**	**6.12**	**4.70**	**0.89**	**0.85**	**0.60**	**467**	**1495**	**1961**
De minimis Threshold (1)	100	100	100	70	100	100	NA	NA	25,000

1. Clark County is in non-attainment for CO (moderate), Ozone (Moderate), PM-10 (Serious)

Carbon Equivalents	Conversion Factor
N2O or NOx	311
Methane or VOCs	25

Source: EPA 2010 Reference, Tables and Conversions, Inventory of U.S. Greenhouse Gas Emissions and Sinks; http://www.epa.gov/climatechange/emissions/usinventoryreport.html