

**FINAL SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT**

**IMPROVEMENTS TO THE MISSION PROTECTIVE LEVEE SYSTEM,  
HIDALGO COUNTY, TEXAS**

**UNITED STATES INTERNATIONAL BOUNDARY AND  
WATER COMMISSION**



Prepared for:  
United States Section  
International Boundary and Water Commission

Prepared by:  
TRC Environmental Corporation

October 2011

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**COVER SHEET**

**FINAL SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT**

**AND**

**FINDING OF NO SIGNIFICANT IMPACT**

**IMPROVEMENTS TO THE MISSION PROTECTIVE LEVEE SYSTEM**

**LEAD AGENCY:** United States Section, International Boundary and Water Commission (USIBWC)

**PROPOSED ACTION:** Improvements to the Mission Protective Levee System (Mission Levee) to re-establish a canal access and maintenance road in order to address contractual obligations between the USIBWC and the United Irrigation District (UID)

**REPORT DESIGNATION:** Supplemental Environmental Assessment

**ABSTRACT:** The Mission Levee Protective System is a component of the Lower Rio Grande Flood Control Project (LRGFCP) that conveys floodwater diverted from the Rio Grande to the Laguna Madre in the Gulf of Mexico and protects urban, suburban, and highly developed irrigated farmland along the Rio Grande delta in the United States and Mexico. In 2009, the Mission and Common Levee Systems were raised in order to meet Federal Emergency Management Agency (FEMA) flood protection criteria. However, during the levee raising efforts, a canal access and maintenance road between the toe of the Mission Levee and the Mission Main Canal was eliminated by the expanded levee.

The purpose of the Proposed Action is to re-establish the canal access and maintenance road in order to address the maintenance requirements of the Mission Main Canal and to meet contractual obligations between the USIBWC and UID.

This Supplemental Environmental Assessment (SEA) evaluates the potential impacts of the No Action Alternative, the Preferred Alternative, Alternative 2 and Alternative 3. Potential impacts on natural, cultural, and other resources were evaluated.

## **FINDING OF NO SIGNIFICANT IMPACT**

### **IMPROVEMENTS TO THE MISSION PROTECTIVE LEVEE SYSTEM IN HIDALGO COUNTY, TEXAS**

**LEAD AGENCY:** United States Section, International Boundary and Water Commission

#### **BACKGROUND**

The Lower Rio Grande Flood Control Project (LRGFCP) extends approximately 186 miles from Peñitas, Texas to the mouth of the Rio Grande in the Gulf of Mexico, along Hidalgo, Cameron and Willacy Counties. The project was the result of a 1932 agreement between the United States and Mexico to provide flood protection to urban, suburban, and agricultural lands in both countries. The LRGFCP conveys floodwater diverted from the Rio Grande to the Laguna Madre in the Gulf of Mexico and protects urban, suburban, and highly developed irrigated farmland along the Rio Grande delta in the United States and Mexico.

In 2009, the Mission and Common Levee Systems were raised in order to meet Federal Emergency Management Agency (FEMA) flood protection criteria. However, during the levee raising efforts, a canal access and maintenance road between the toe of the Mission Levee and the Mission Main Canal was eliminated by the expanded levee. Due to the size of the Mission Main Canal, the United Irrigation District (UID) is currently unable to properly maintain the canal without the eliminated canal access and maintenance road. In addition, Contract IBM-6513 between the USIBWC and UID requires the USIBWC to maintain a minimum 10-foot wide access road between the toe of the Mission Levee and the Mission Main Canal.

The purpose of the Proposed Action is to re-establish the canal access and maintenance road in order to address the maintenance requirements of the Mission Main Canal. Improvements are needed to meet contractual obligations between the USIBWC and UID.

#### **PROPOSED ACTION**

The Preferred Alternative consists of modifying the Mission Main Canal from 1.1 miles west of Bentsen Palm Road east to the Military Road bridge crossing, a distance of 2.9 miles. In order to re-establish the canal access and maintenance road, the canal would be narrowed by approximately 15 feet (the width necessary to re-establish the road) with fill material obtained from commercial sources outside the levee system. The Mission Main Canal would be lined with concrete in order to regain carrying capacity lost by narrowing the canal. Construction would occur between October 1 and March 15 to coincide with the lowest demand period for the UID.

Other modifications would include minor excavation and reshaping of the canal to ensure proper elevation and slope of the modified canal, re-grading the northern access and maintenance road to prevent erosion damage to the canal and to improve access for construction equipment, and grading and adding road base (caliche) to the re-established canal access and maintenance road. Drainage and irrigation structures are located along the canal. These structures may require

modification as a result of canal modification. The USIBWC, in coordination with the appropriate irrigation or drainage district, may use the following modification options: remove and replace the structures in-kind, extend the structures to the new canal edge, remove and plug the structures with concrete or quality material, or abandon the structures and cover them in-place with concrete or quality material.

The USIBWC would be responsible for grading and maintenance activities associated with the re-established canal access and maintenance road. Routine maintenance activities such as vegetation management along the Mission Main Canal would be the responsibility of the UID.

## **SUMMARY OF FINDINGS**

Pursuant to National Environmental Policy Act (NEPA) guidance (40 Code of Federal Regulations 1500 – 1508), the President’s Council on Environmental Quality issued regulations for NEPA implementation including provisions for both the content and procedural aspects of the required Supplemental Environmental Assessment (SEA). The USIBWC completed an SEA of the potential environmental consequences of re-establishing a canal access and maintenance road between the toe of the Mission Levee and the Mission Main Canal. The SEA, which supports this Finding of No Significant Impact (FONSI), evaluated the No Action Alternative, the Preferred Alternative, Alternative 2 and Alternative 3. Based on the evidence presented in the Final SEA, impacts resulting from the Preferred Alternative have been identified below.

### *Preferred Alternative*

#### **Biological Resources**

Canal modification activities would affect approximately 8.9 acres of terrestrial vegetation and 22.5 acres of aquatic vegetation along the Mission Levee project area through vegetation removal and fill activities. Impacts would occur on the landside levee toe, the Mission Main Canal and the riverside slope of the northern canal access and maintenance road. Approximately 5.3 acres of the vegetation impacted would include low quality, non-native, grass-covered toe of the existing levee and slopes of the northern canal access road. Approximately 3.6 acres of herbaceous riparian vegetation associated with the Mission Main Canal banks would be impacted. No wetlands would be impacted.

It is anticipated that most wildlife species present in the project area would move to adjacent, undisturbed areas during construction and rapidly re-colonize the area after the work is completed and after the vegetation has been re-established. However, no similarly suitable habitat is adjacent to the Mission Main Canal for amphibians and reptiles inhabiting the canal banks. Canal modification activities would eliminate all aquatic flora and fauna within the Mission Main Canal through dewatering, fill placement, and concrete lining activities.

The project area is composed primarily of regularly maintained areas that provide relatively low quality habitat for most wildlife species. Routine maintenance activities would remain unchanged. The area of proposed disturbance is located along previously disturbed areas and regular maintenance activities are conducted along the levee and canal. Based on USIBWC commitments identified under the Best Management Practices section, the U.S. Fish and Wildlife Service concurred, in a letter dated June 7, 2011, that the Preferred Alternative would not

adversely affect federally listed species, their habitats, or designated critical habitat. The Preferred Alternative may affect twelve state-listed species. The USIBWC would provide a qualified environmental monitor to survey for T&E species to prevent direct take of any state-listed species.

## **Cultural Resources**

Construction activities would take place along the current levee and canal right-of-way. The use of heavy equipment to add and move soil material for canal modification may cause soil disturbance several inches deep in the project area. Upon the investigation of two High Probability Areas within the Area of Potential Affect (APE) through pedestrian survey and shovel testing, no archeological resources were observed within the APE. Given these data, no adverse effects to archeological resources would be anticipated from construction activities associated with the Preferred Alternative.

Architectural resources may be affected by canal modification activities. Potential effects include vibration and ground disturbance from the use of heavy equipment during construction as well as may include the alteration of architectural traits by modification of existing structures. A survey of the architectural resources for National Register of Historic Places (NRHP) eligibility documented two historic resources: the 2.9-mile portion of the Mission Protective Levee System and the adjacent Mission Main Canal of the UID. Each of these resources has associated features, 24 of which are within the APE. In a letter dated August 2, 2011, the Texas Historical Commission (THC) determined that the Mission Main Canal was not potentially eligible for listing on the NRHP but the Mission Protective Levee System was potentially eligible for listing. The THC concurred, in a letter dated August 2, 2011, that there would be no adverse effect on the Mission Protective Levee by the Preferred Alternative. No resources or concerns to Native American Tribes have been identified by the Preferred Alternative.

## **Water Resources**

The project would disturb approximately 8.9 acres of terrestrial habitat. The project would comply with the Texas Pollutant Discharge Elimination System (TPDES) Construction General Permit as administered by the Texas Commission on Environmental Policy. A Storm Water Pollution Prevention Plan (SWPP) would be prepared and implemented and a construction notice would be posted at the project site.

The Mission Main Canal would be completely dewatered prior to any construction activities. Temporary dams would be placed within the Mission Main Canal upstream and downstream of the project area to ensure fill material, sediment and construction debris would not enter either the Rio Grande or the rest of the UID system. Therefore, no impacts are expected to surface water and groundwater under the Preferred Alternative.

## **Land Use**

Construction activities associated with the Preferred Alternative would occur from the landside toe of the levee to the northern canal access and maintenance road. Two U.S. Fish and Wildlife Service (USFWS) National Wildlife Refuges, a Texas Parks and Wildlife Department (TPWD) State Park and residential properties are located adjacent to the project area. It is anticipated that

periodic, temporary obstructions would occur from construction traffic. No prime or unique farmlands are located within the project area in Hidalgo County.

## **Community Resources**

During construction activities, a temporary influx of employment, business sales volume, and income would occur in Hidalgo County. A small but positive, temporary economic contribution to the local community would occur as a result of the Preferred Alternative. The benefit would be small for Hidalgo County given its large economic base, less than 1.0% of the annual county employment, income and sales values. No adverse impacts to high minority and low-income populations were identified for construction activities. Moderate utilization of public roads would be required during construction, with a temporary increase in access road use for equipment mobilization to staging areas.

## **Environmental Health**

Estimated air emissions of any of the six criteria pollutants during construction would be discontinuous and represent less than 0.1% of the annual emissions inventory for Hidalgo County. There would be a moderate increase in ambient noise levels due to construction activities. Neither long-term nor regular exposure is expected above noise threshold values. A database search indicated that no waste storage and disposal sites were within proposed work areas, and none would affect, or be affected, by the proposed Mission Levee improvements.

## **Cumulative Impacts**

A review of current and proposed local, state, and federal activities in and near the project area identified the Mission and Common Levee Improvements Project as having identified impacts that occur in the project area. However, the cumulative effects of these activities would not be significant.

## **Best Management Practices**

Best management practices would be implemented as part of the Preferred Alternative to minimize the potential for impacts to natural and cultural resources.

A SWPPP would be developed during project design to minimize impacts to receiving water, as specified by TCEQ regulations for construction projects. During project construction, methods such as soil wetting would be employed to prevent erosion from unvegetated slopes and/or corridors and to minimize additional air quality impacts from construction activities. Limiting unnecessary idling of construction vehicles and shutting down construction machines that are not in use would minimize additional air quality impacts from construction activities. Existing access points to the levee would remain in service with no change to lateral access to the levee road.

Revegetation with native herbaceous species along the construction corridor would be implemented after construction is complete. Native vegetation species would be determined through coordination with the USFWS and the TPWD. USIBWC would compensate the loss of riparian habitat on a 2:1 acre basis (2 acres protected for every 1 acre disturbed) for a total of 7.2

acres. Land of equal value would be compensated under conservation easement, land acquisition, or monetary payment.

Construction activities would be scheduled to occur outside the March through August migratory bird nesting season, when possible. An environmental monitor would survey for birds protected under the Migratory Bird Treaty Act to prevent destruction of nests or eggs during construction activities. Prior to and during construction activities, the USIBWC environmental monitor would survey for T&E species to prevent direct take of a listed species. USIBWC would compensate noise impacts to jaguarundi and ocelot on a 0.025:1 acre basis for a total of 5 acres. Land of equal value would be compensated under conservation easement, land acquisition, or monetary payment.

Dewatering of the Mission Main Canal would require a survey to determine the presence or absence of state-listed mollusks. If any were found, they would be relocated to suitable habitat outside the project area. USIBWC would also submit an Aquatic Relocation Plan for TPWD approval a minimum of four weeks prior to any dewatering activities.

In the event that any human remains or burial furniture are encountered during construction, all work would immediately cease and USIBWC, law enforcement and the THC would be notified. If necessary, tribal representatives would also be contacted.

#### **DECISION**

Based on my review of the facts and analyses contained in the Supplemental Environmental Assessment, I conclude that implementation of the Preferred Alternative to improve the Mission Protective Levee system would not have a significant impact. Accordingly, requirements of the National Environmental Policy Act and regulations promulgated by the Council on Environmental Quality are fulfilled and an environmental impact statement is not required.



Edward Drusina, P.E.  
Commissioner  
International Boundary and Water Commission,  
United States Section

10/31/2011

Date

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TRC Environmental Corporation

October 2011

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## List of Acronyms

AQCR	Air Quality Control Regions	NRHP	National Register of Historic Places
APE	Area of Potential Effect	NRCS	Natural Resources Conservation Service
AIRFA	American Indian Religious Freedom Act	NTS	Not to Scale
AHPA	Archeological and Historic Preservation Act	PEIS	Programmatic Environmental Impact Statement
BRGVSP	Bentsen-Rio Grande Valley State Park	PL	Public Law
CAA	Clean Air Act	RCRA	Resource Conservation and Recovery Act
CEQ	Council on Environmental Quality	ROW	Right-of-way
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	SARA	Superfund Amendments and Reauthorization Act
CFR	Code of Federal Regulations	SEA	Supplemental Environmental Assessment
CWA	Clean Water Act	SHPO	State Historic Preservation Office
dB	Decibels	SWPPP	Storm Water Pollution Prevention Plan
DNL	Day-night average sound level	T&E	Threatened and Endangered Species
EA	Environmental Assessment	TAC	Texas Administrative Code
FEMA	Federal Emergency Management Agency	TCEQ	Texas Commission on Environmental Quality
FM	Farm-to-Market	THC	Texas Historical Commission
GPM	Gallons per Minute	TPDES	Texas Pollutant Discharge Elimination System
H:V	horizontal feet per foot of height	TxNDD	Texas Natural Diversity Database
HCID #1	Hidalgo County Irrigation District #1	TPWD	Texas Parks and Wildlife Department
HPA	High Probability Area	TWDB	Texas Water Development Board
IBWC	International Boundary and Water Commission	TRC	TRC Environmental Corporation
LRGFCP	Lower Rio Grande Flood Control Project	TSCA	Toxic Substances Control Act
LRGNWR	Lower Rio Grande National Wildlife Refuge	UID	United Irrigation District
LRGV	Lower Rio Grande Valley	US	United States
MBTA	Migratory Bird Treaty Act	USACE	United States Army Corps of Engineers
NAAQS	National Ambient Air Quality Standards	USBP	United States Border Patrol
NABA	North American Butterfly Association	USC	United States Code
NAGPRA	Native American Graves Protection and Repatriation Act	USDA	United States Department of Agriculture
NEPA	National Environmental Policy Act	USDOT	United States Department of Transportation
NHPA	National Historic Preservation Act	USEPA	United States Environmental Protection Agency
NPDES	National Pollutant Discharge Elimination System	USFWS	United States Fish and Wildlife Service
		USIBWC	United States Section, International Boundary and Water Commission
		WIID	Water Information Integration and Dissemination

## **SECTION 1: PURPOSE AND NEED FOR THE PROPOSED ACTION**

### **1.1 INTRODUCTION**

The United States Section of the International Boundary and Water Commission (USIBWC) prepared this Supplemental Environmental Assessment (SEA) for proposed improvements along a 2.9-mile section of the Mission Protective Levee System (Mission Levee) located in Hidalgo County, Texas. The Mission Levee is a component of the Lower Rio Grande Flood Control Project (LRGFCP) that conveys floodwater diverted from the Rio Grande to the Laguna Madre in the Gulf of Mexico and protects urban, suburban, and highly developed irrigated farmland along the Rio Grande delta in the United States and Mexico.

The Proposed Action would involve improvements to re-establish a 10-foot wide canal access and maintenance road along the levee side of the Mission Main Canal from 1.1 miles west of Bentsen Palm Road to the Military Road bridge crossing. Figure 1-1 shows the layout of the project area, main geographical features, and levee mile markers. Appendix A provides detailed maps of the project area.

This SEA supplements the *Final Environmental Assessment Improvements to the Mission and Common Levee Systems* (USIBWC 2007) and the *Final Programmatic Environmental Impact Statement – Improvements to the USIBWC Rio Grande Flood Control Projects along the Texas-Mexico Border* (USIBWC 2008) completed by the USIBWC for long-term improvements to Rio Grande flood control projects operated along the Texas-Mexico border. Descriptions of environmental conditions along the Mission Levee presented in this SEA are summaries of more detailed information provided in the 2008 Programmatic Environmental Impact Statement (PEIS) and the 2007 Final Environmental Assessment, as well as the Waters of the U.S. Delineation Report (Appendix B) of this SEA. These descriptions are supplemented with data from biological and cultural resources field evaluations conducted in support of the SEA preparation.

### **1.2 PURPOSE AND NEED FOR ACTION**

In 2009, the Mission and Common Levee Systems were raised in order to meet Federal Emergency Management Agency (FEMA) flood protection criteria. During the levee raising efforts, the widening of the levee eliminated a canal access and maintenance road between the toe of the Mission Levee and the Mission Main Canal. Due to the size of the Mission Main Canal, the United Irrigation District (UID) is currently unable to properly maintain the canal without the eliminated canal access and maintenance road. In addition, Contract IBM-6513 between the USIBWC and UID requires the USIBWC to maintain a minimum 10-foot wide access road between the toe of the Mission Levee and the Mission Main Canal.

The purpose of the Proposed Action is to re-establish the canal access and maintenance road in order to address the maintenance requirements of the Mission Main Canal. Improvements are needed to meet contractual obligations between the USIBWC and UID.

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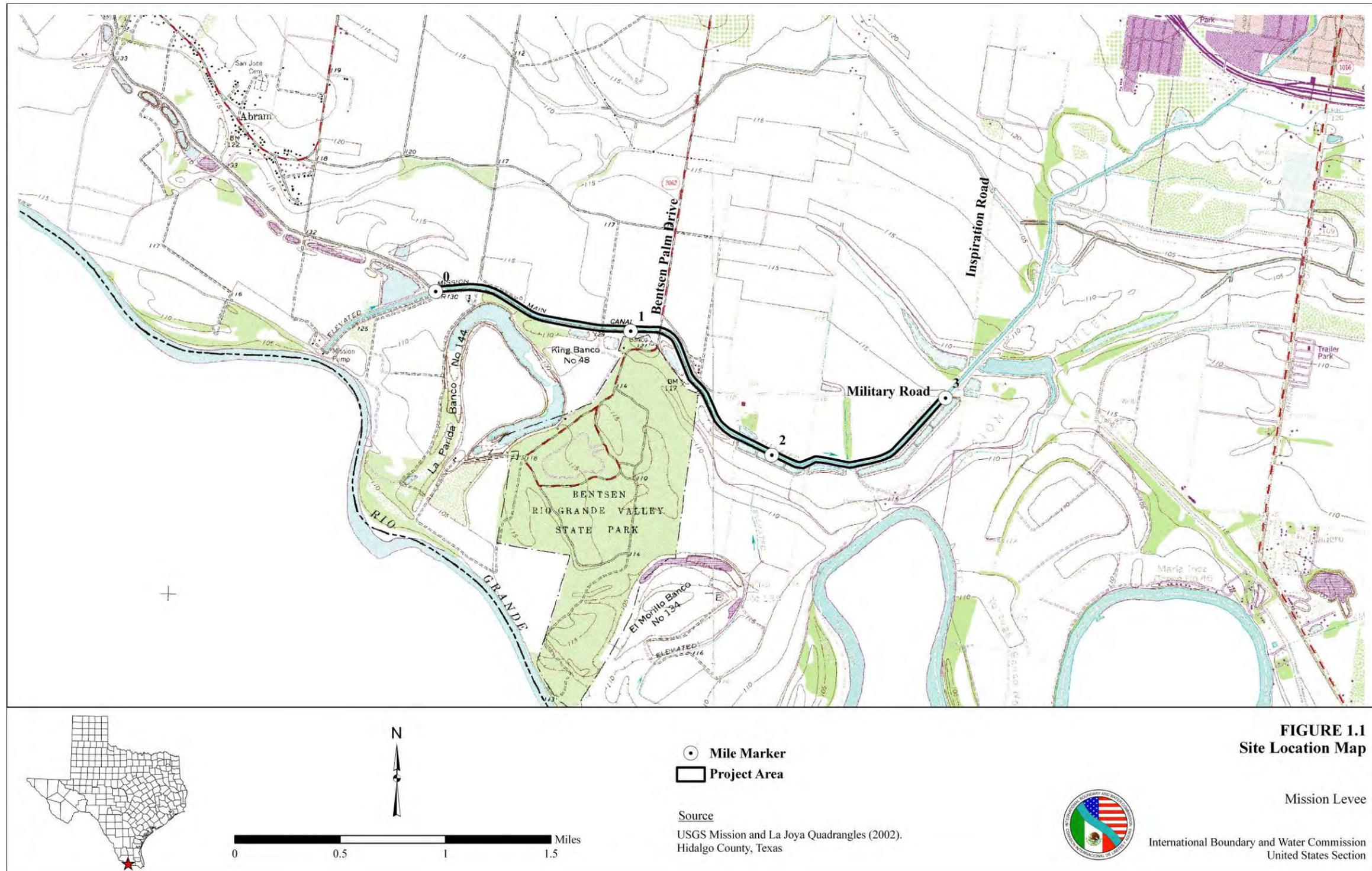


Figure 1-1: Mission Levee Vicinity Map

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## 1.3 BACKGROUND

### 1.3.1 USIBWC Authority

The International Boundary and Water Commission (IBWC) – which before 1944 was known as the International Boundary Commission – was created by the Convention of 1889 and consists of a United States Section (USIBWC) and a Mexican Section. The IBWC was established to apply the rights and obligations the Governments of the United States and Mexico assumed under the numerous boundary and water treaties and related agreements. Application of the rights and obligations are accomplished in a way that benefits the social and economic welfare of the people on both sides of the boundary and improves relations between the two countries. The mission of the USIBWC has five components, as follows:

- regulation and conservation of waters of the Rio Grande for use by the United States and Mexico through joint construction, operation, and maintenance of international storage dams, reservoirs, and plants for generating hydroelectric energy at the dams, and regulation of the Colorado River waters allocated to Mexico;
- distribution of waters of the Rio Grande and the Colorado River between the two countries;
- protection of lands along the Rio Grande from floods through levee and floodway projects and resolution of border sanitation and other border water quality problems;
- preservation of the Rio Grande and the Colorado River as the international boundary; and
- demarcation of the land boundary.

### 1.3.2 Levee System Description

The LRGFCP extends approximately 186 river-miles from Peñitas, Texas to the mouth of the Rio Grande in the Gulf of Mexico, along Hidalgo, Cameron, and Willacy counties. The project was the result of a 1932 agreement between the United States and Mexico to provide flood protection to urban, suburban, and agricultural lands in both countries. The LRGFCP includes the Mission Protective Levee System that extends approximately 12 miles from the Town of Peñitas east to its junction with the Main Floodway.

The following terminology is used throughout the report:

- Floodway: In this SEA, the floodway is restricted to the area between the Rio Grande and the Mission Levee.
- Riverside of levee: The area from the center of the Mission Levee toward the Rio Grande.
- Landside of levee: The area from the center of the Mission Levee extending away from the Rio Grande.

- Levee side of canal: The area from the toe of the Mission Levee to the southern edge of the Mission Main Canal. For the purposes of this report, this area is assumed to be 5 feet wide.
- Northern access and maintenance road: The existing raised maintenance road located along the northern edge of the Mission Main Canal.
- Project area: The project area is assumed to be the area from the landside of the Mission Levee to the northern edge of the existing Mission Main Canal access road.
- Right-of-way (ROW): The areas on the riverside and landside of the Mission Levee managed by the USIBWC. The USIBWC has access to the ROW through land easements.
- Irrigation canals: Excavated drainages that provide water from the Rio Grande to irrigate agricultural lands.
- Area of Potential Effect: The area where cultural resources may occur and may be affected by construction activities.

#### **1.4 ENVIRONMENTAL COORDINATION AND COMPLIANCE**

Federal agencies are required to take into consideration the environmental consequences of proposed and alternative actions in the decision-making process under the National Environmental Policy Act (NEPA) of 1969, as amended. The President's Council on Environmental Quality (CEQ) issued regulations to implement NEPA that include provisions for both the content and procedural aspects of the required environmental analysis. In 1978, the CEQ issued regulations implementing the process (40 Code of Federal Regulations [CFR] 1500-1508).

The USIBWC regulations for implementing NEPA are specified in *Operational Procedures for Implementing Section 102 of the National Environmental Policy Act of 1969, Other Laws Pertaining to Specific Aspects of the Environment and Applicable Executive Orders* (46 FR 44083, September 2, 1981). These federal regulations establish both the administrative process and substantive scope of the environmental impact evaluation designed to ensure that the USIBWC has a proper understanding of the potential environmental consequences of a contemplated course of action.

Table 1-1 is a summary of regulatory and/or permitting requirements potentially applicable to improvements under consideration, potential compliance issues, and anticipated level of environmental coordination.

**Table 1-1: Summary of Environmental Coordination and Compliance**

Agency or Organization	Regulation or Issue	Level of USIBWC Coordination
<b>Biological Resources</b>		
U.S. Fish and Wildlife Service (USFWS)	Endangered Species Act of 1973 (Public Law [PL] 93-205) and amendments of 1988 (PL100-478)	Section 7 of the Act requires formal consultation if significant adverse impacts to federally listed, threatened and/or endangered (T&E) species could occur due to the Proposed Action.
	Fish and Wildlife Coordination Act (916 United States Code [USC] 661, <i>et seq.</i> )	Requires federal agencies to consult with USFWS regarding the impact of the Proposed Action on any waters controlled or modified
	Migratory Bird Treaty Act of 1918, as amended (16 USC 703-712; Ch. 128; July 13, 1918; 40 Stat. 755)	Requires consultation to determine whether migratory birds and T&E species could be affected
	National Wildlife Refuge System Administration Act of 1966 (16 USC 668dd-668ee)	Requires coordination with USFWS wildlife refuge managers if wildlife refuges are affected
Texas Parks and Wildlife Department (TPWD)	Chapters 67 and 68 of the TPWD Code, and Section 65.171-65.184 of the Texas Administrative Code (TAC)	Requires coordination concerning impacts on wildlife and state T&E species  Coordination with State Parks Division concerning potential impacts on park tracts
	Fish and Wildlife Coordination Act (916 USC 661, <i>et seq.</i> )	Requires federal agencies to consult with TPWD regarding impact of Proposed Action on any waters controlled or modified
<b>Cultural Resources</b>		
State Historic Preservation Officer (SHPO)	National Historic Preservation Act (NHPA) of 1966, as amended (16 USC 470 <i>et seq.</i> )	Requires federal agencies to consult with the Texas Historical Commission (THC) regarding cultural and historic resources
	American Indian Religious Freedom Act (AIRFA), 1978	
	Native American Graves Protection and Repatriation Act (NAGPRA), 1990	

Agency or Organization	Regulation or Issue	Level of USIBWC Coordination
<b>Water Resources</b>		
U.S. Army Corps of Engineers (USACE)	Section 10 of the Rivers and Harbors Act of 1899 Section 404 of the Clean Water Act (33 USC 1344)	Requires pre-permit application. If waters of the United States are affected, a mitigation plan and a permit application would be required.
Texas Commission on Environmental Quality (TCEQ)	Section 401 of the Clean Water Act (33 USC 1344); Section 26.040 of Texas Water Code	Section 401 Certification: conditions and mitigation measures may be stipulated for the 401 permit; coordination is typically a function of the USACE permitting process.
United States Environmental Protection Agency (USEPA)	Section 402 of the Clean Water Act Section 404 of the Clean Water Act	Requirements for National Pollutant Discharge Elimination System (NPDES) construction permit and Storm Water Pollution Prevention Plan (SWPPP) preparation.  Section 404 Certification; coordination typically is a function of the USACE permitting process.  Section 402 Certification would be coordinated with the TCEQ
<b>Other Issues</b>		
Natural Resources Conservation Service (NRCS)	Farmland Protection Policy Act	Determination whether unique or prime farmland would be affected by the federal project
U.S. Border Patrol (USBP)	Levee Road Usage	Coordination during construction activities
United Irrigation District (UID)	Modifications and construction Mission Main Canal	Coordination during construction activities
Hidalgo County Drainage District No. 1	Modifications to drainage structures	Coordination during construction activities

<b>Agency or Organization</b>	<b>Regulation or Issue</b>	<b>Level of USIBWC Coordination</b>
Local and County Governments	Noise and air ordinances	Coordination with the City of Mission Coordination with Hidalgo County
North American Butterfly Association (NABA)	Construction along Mission Main Canal	Coordination during construction activities

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## SECTION 2: DESCRIPTION OF ALTERNATIVES

This section identifies alternatives evaluated in this document associated with the Mission Levee Improvements Project. Under the No Action Alternative, re-establishment of the canal access and maintenance road would not be made. Under the Preferred Alternative, the re-establishment of the canal access and maintenance road would be accomplished by modifying the Mission Main Canal, while Alternatives 2 and 3 would re-establish the canal access and maintenance road by sheet pile and retention walls, respectively. Table 2-1 summarizes the potential environmental impacts of all alternatives analyzed.

The existing levee is a raised trapezoidal compacted-earth structure with an average crown width of 16 feet, an average height of 18 to 20 feet, and an approximate 3:1 side slope ratio (horizontal feet per foot of height; [H:V]). The existing levee footprint width typically ranges from 90 to 120 feet, depending on location. The existing Mission Main Canal is an earthen canal with an average bottom width of 30 feet, an average 75-foot top width, an average depth of 8 feet, and an approximate 2:1 side slope ratio.

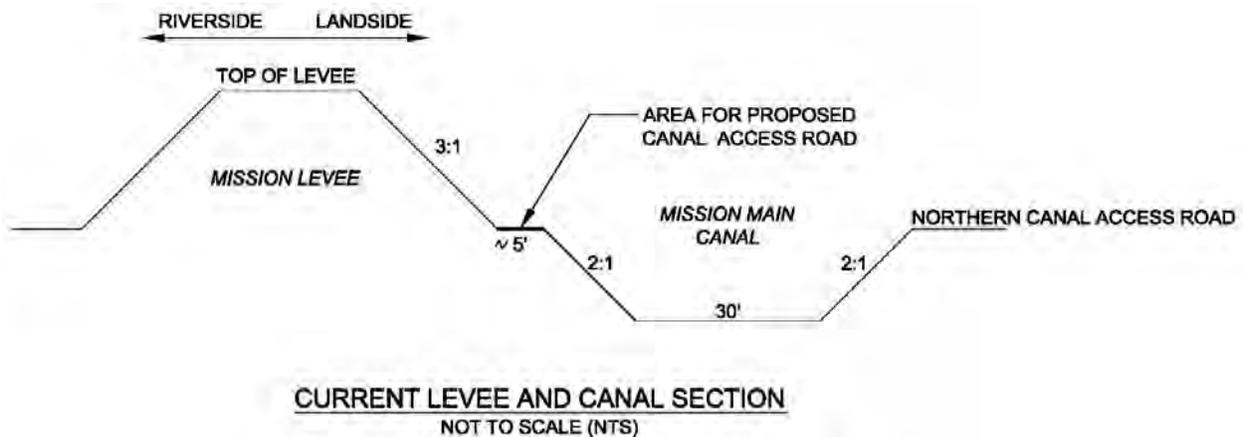


Figure 2-1: Current Cross-section of the Mission Levee and Mission Main Canal

### 2.1 NO ACTION ALTERNATIVE

The No Action Alternative would retain the current configuration of the Mission Levee and the canal access and maintenance road would not be re-established. No changes in routine maintenance activities such as vegetation management and grading to repair erosion damage and maintain structural and functional integrity of the levees would be implemented. The USIBWC would continue to fail to meet its obligations to the UID under Contract IBM-6513.

## 2.2 PREFERRED ALTERNATIVE: CANAL MODIFICATION

The Preferred Alternative consists of modifying the Mission Main Canal from 1.1 miles west of Bentsen Palm Road east to the Military Road bridge crossing, a distance of 2.9 miles. In order to re-establish the canal access and maintenance road, the canal would be narrowed by approximately 15 feet (the width necessary to re-establish the road) with fill material obtained from commercial sources outside the levee system. Approximately 58,100 cubic yards of fill material would be placed along the bank adjacent to the levee (levee side) of the canal and compacted. The modified canal would have a 15-foot bottom width, a 55-foot top width and 2:1 H:V side slopes. Canal elevations would be kept close to the original design as much as possible. A typical cross-section of the proposed modification is shown in Figure 2-2.

The Mission Main Canal would be lined with concrete in order to regain carrying capacity lost by narrowing the canal. Lining the canal would reduce friction loss, reduce evapotranspiration caused by vegetation in the canal, and reduce seepage out of the canal.

Other modifications would include minor excavation and reshaping of the canal to ensure proper elevation and slope of the modified canal, re-grading the northern access and maintenance road to prevent erosion damage to the canal and to improve access for construction equipment, and grading and adding road base (caliche) to the re-established canal access and maintenance road. Drainage and irrigation structures are located along the canal. These structures would require modification as a result of canal modification. The USIBWC, in coordination with the appropriate irrigation or drainage district, would use the following modification options depending on the structures condition: remove and replace the structures in-kind, extend the structures to the new canal edge, remove and plug the structures with concrete or quality material, or abandon the structures and cover them in-place with concrete or quality material.

The Mission Main Canal would be completely dewatered during construction. The irrigation outlets that are adjacent to the section of canal to be taken out of service would be served by other connecting irrigation facilities, if available. The UID also would contract with the Hidalgo County Irrigation District No.1 (HCID #1) to provide water for the UID and their customers. The UID would pump water out of the HCID #1 Edinburg Main Canal into the UID Mission Main Canal where the two canals intersect at approximately 0.25 mile north of Farm-to-Market (FM) Road 495 along Los Ebanos Road in Mission, Texas (Figure 2-3). Transfer of water from HCID #1 to the UID would be accomplished with the use of six, 10,000 gallons per minute (gpm) pumps and the modification of existing pipelines installed during a previous water transfer agreement in 2006. This equipment would be placed in previously impacted areas along the existing canals. Construction would occur between October 1 and March 15 to coincide with the lowest demand period for the UID.

The USIBWC would be responsible for grading and maintenance activities associated with the re-established canal access and maintenance road. Routine maintenance activities such as vegetation management along the Mission Main Canal would be the responsibility of the UID.

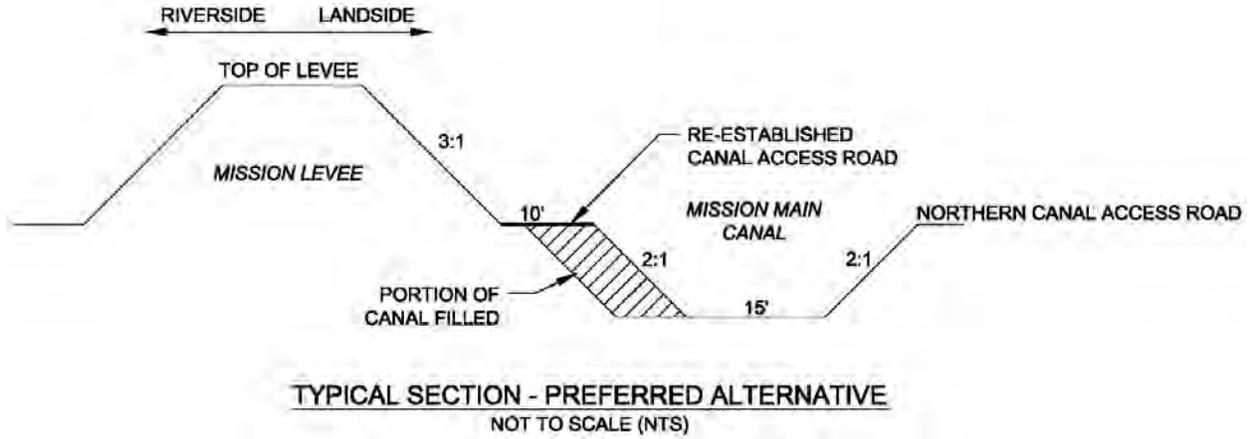


Figure 2-2: Typical Cross-section of the Preferred Alternative: Canal Modification

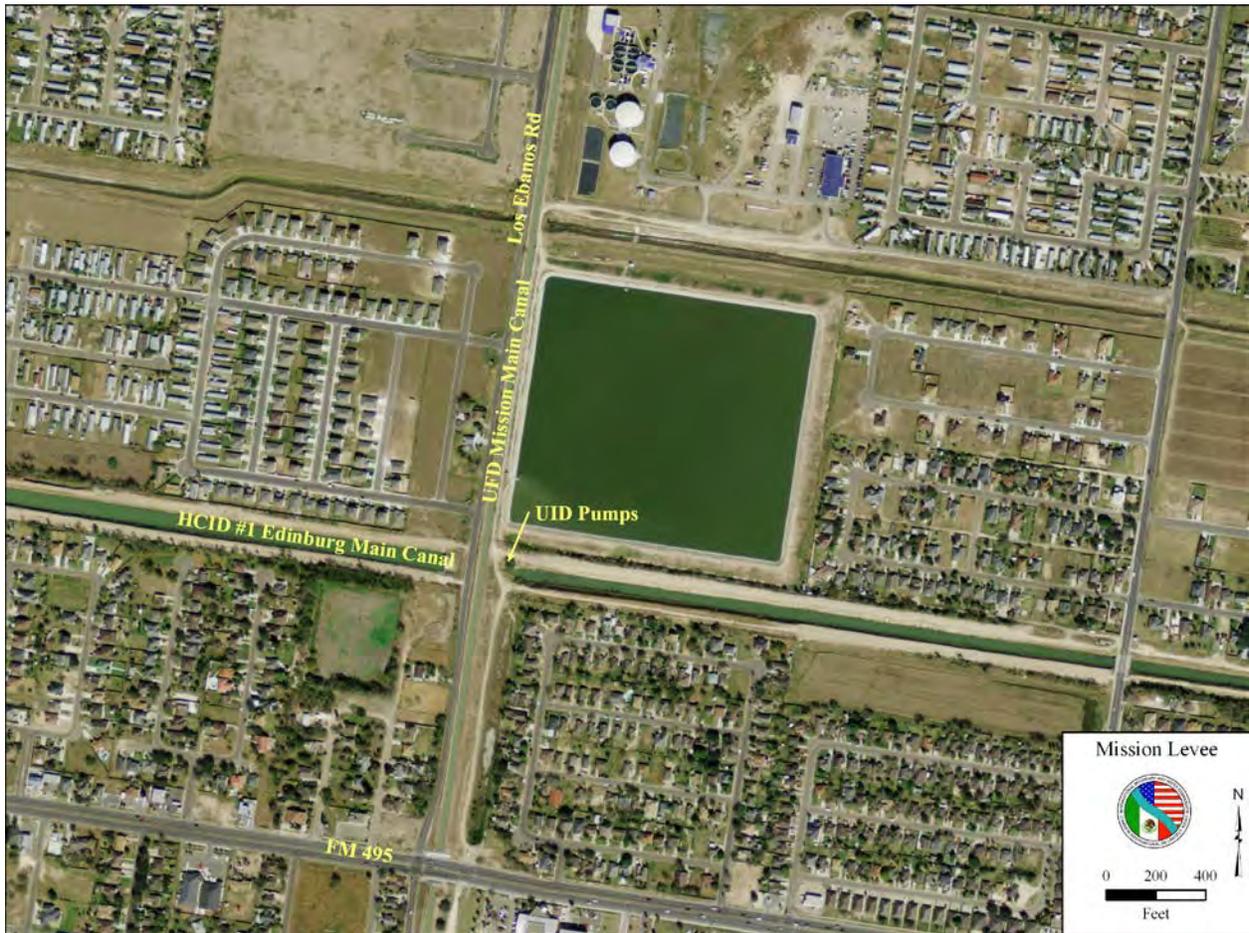


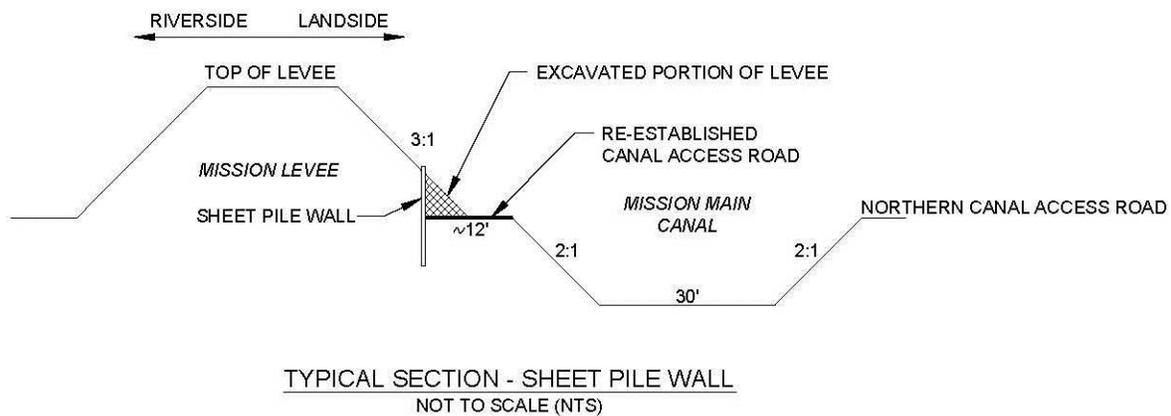
Figure 2-3: Location of Water Transfer between HCID #1 and UID

### 2.3 ALTERNATIVE 2: SHEET PILE WALL

Alternative 2 consists of installing a sheet pile wall along the Mission Levee from 1.1 miles west of Bentsen Palm Road east to the Military Road bridge crossing, a distance of 2.9 miles. Sheet piling would be located approximately 10 to 12 feet up the landside levee slope from the toe towards the levee centerline. The re-established road would be approximately 12 feet wide in order to allow for proper vehicle maneuvering. The sheet piling would be driven approximately 20 feet into the levee. Levee material would be excavated from the toe of the levee to the sheet pile wall to meet existing natural ground conditions between the toe and the canal, thus re-establishing the canal access and maintenance road. A typical cross-section of the proposed modification is shown in Figure 2-4.

Other modifications would include minor excavation and reshaping of the canal to ensure proper elevation and slope of the canal and grading and adding road base (caliche) to the re-established canal access and maintenance road. Drainage and irrigation structures are located along the canal. These structures may require modification as a result of canal modification. The USIBWC, in coordination with the appropriate irrigation or drainage district, may use the following modification options: remove and replace the structures in-kind, remove and plug the structures with concrete or quality material, or abandon the structures and cover them in-place with concrete or quality material. Construction could occur at any time of year, as the Mission Main Canal would not be modified.

The USIBWC would be responsible for grading and maintenance activities associated with the re-established canal access and maintenance road. Routine vegetation maintenance along the levee by USIBWC would remain unchanged. Routine vegetation maintenance along the south bank of the Mission Main Canal would be re-established and would be the responsibility of the UID. Routine vegetation maintenance along the north bank of the Mission Main Canal would not change and would continue to be the responsibility of the UID.



**Figure 2-4: Typical Cross-section of Alternative 2: Sheet Pile Wall**

## 2.4 ALTERNATIVE 3: RETENTION WALL

Alternative 3 consists of installing a retention wall along the Mission Levee from 1.1 miles west of Bentsen Palm Road east to the Military Road bridge crossing, a distance of 2.9 miles. A reinforced concrete retention wall would be located approximately 10 to 14 feet up the landside levee slope from the toe towards the levee centerline. The re-established road would be approximately 12 feet wide in order to allow for proper vehicle maneuvering. The retention wall would be approximately 15 feet deep with an 8-foot wide concrete base. Levee material would be excavated from the toe of the levee to the retention wall to meet existing natural ground conditions between the toe and the canal, thus re-establishing the canal access and maintenance road. Levee material would also be excavated from the top of the levee to the retention wall in order to construct the base of the retention wall. Excavated levee material would be backfilled upon completion of construction. A typical cross-section of the proposed modification is shown in Figure 2-5.

Other modifications would include minor excavation and reshaping of the canal to ensure proper elevation and slope of the canal and grading and adding road base (caliche) to the re-established canal access and maintenance road. Drainage and irrigation structures are located along the canal. These structures may require modification as a result of canal modification. The USIBWC, in coordination with the appropriate irrigation or drainage district, may use the following modification options: remove and replace the structures in-kind, remove and plug the structures with concrete or quality material, or abandon the structures and cover them in-place with concrete or quality material. Construction could occur at any time of year as the Mission Main Canal would not be modified.

The USIBWC would be responsible for grading and maintenance activities associated with the re-established canal access and maintenance road. Routine vegetation maintenance along the levee by USIBWC would remain unchanged. Routine vegetation maintenance along the south bank of the Mission Main Canal would be re-established and would be the responsibility of the UID. Routine vegetation maintenance along the north bank of the Mission Main Canal would not change and would continue to be the responsibility of the UID.

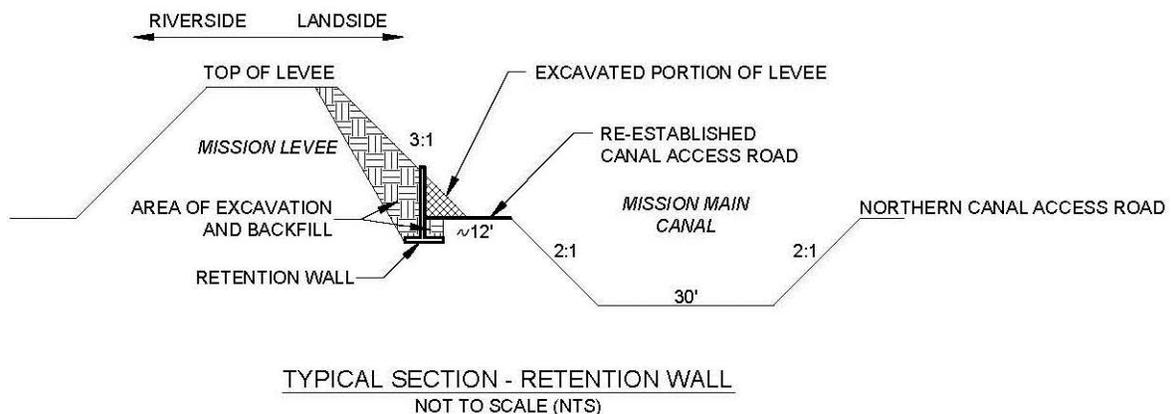


Figure 2-5: Typical Cross-section of Alternative 3: Retention Wall

**Table 2-1: Summary of Environmental Impacts of Proposed Mission Levee Improvements**

Resource Area	Environmental Impacts			
	No Action Alternative	Preferred Alternative: Canal Modification	Alternative 2: Sheet Pile Wall	Alternative 3: Retention Wall
<b>Biological Resources (Section 3.1)</b>				
<b>Vegetation (Section 3.1.1)</b>	Disturbances from routine maintenance	8.9 total acres of previously disturbed land impacted	8.1 total acres of previously disturbed land impacted	11.3 total acres of previously disturbed land impacted
<b>Wetlands and Waterbodies (Section 3.1.2)</b>	Disturbances from routine maintenance	3.6 acres of herbaceous riparian vegetation impacted; 22.5 acres of Mission Main Canal impacted	1.8 acres of herbaceous riparian vegetation impacted	1.8 acres of herbaceous riparian vegetation impacted;
<b>Wildlife (Section 3.1.3)</b>	Disturbances from routine maintenance	Temporary impacts from construction; impacts to amphibians, reptiles and burrowing species; vegetation removal outside of migratory bird breeding season or surveys for nesting birds required	Temporary impacts from construction; impacts to reptiles and burrowing species; vegetation removal outside of migratory bird breeding season or surveys for nesting birds required	Temporary impacts from construction; impacts to reptiles and burrowing species; vegetation removal outside of migratory bird breeding season or surveys for nesting birds required
<b>Aquatic Ecosystems (Section 3.1.4)</b>	Disturbances from routine maintenance	22.5 acres of aquatic habitat impacted	None	None
<b>Threatened and Endangered Species (Sections 3.1.5 and 3.1.6)</b>	Disturbances from routine maintenance	Not likely to adversely affect federally listed species; 12 state-listed species potentially impacted	Not likely to adversely affect federally listed species; 9 state-listed species potentially impacted	Not likely to adversely affect federally listed species; 9 state-listed species potentially impacted
<b>Cultural Resources (Section 3.2)</b>				
<b>Archeological Resources (Section 3.2.2)</b>	None	None	None	None

Resource Area	Environmental Impacts			
	No Action Alternative	Preferred Alternative: Canal Modification	Alternative 2: Sheet Pile Wall	Alternative 3: Retention Wall
<b>Architectural Resources (Section 3.2.3)</b>	None	Impacts to 1 identified architectural resource that is potentially eligible for listing on the National Register of Historic Places (NRHP)	Impacts to 1 identified architectural resource that is potentially eligible for listing on the NRHP	Impacts to 1 identified architectural resource that is potentially eligible for listing on the NRHP
<b>Native American Resources (Section 3.2.4)</b>	None	None	None	None
<b>Water Resources (Section 3.3)</b>				
<b>Water Quality (Section 3.3)</b>	None	None	Short-term negligible impacts from potential erosion and runoff during construction	Short-term negligible impacts from potential erosion and runoff during construction
<b>Land Use (Section 3.4)</b>				
<b>Natural Resources Management and Recreational Areas (Section 3.4.1)</b>	None	Temporary impacts from construction traffic	Temporary impacts from construction traffic	Temporary impacts from construction traffic
<b>Agricultural Land (Section 3.4.2)</b>	None	Temporary impacts from construction traffic	Temporary impacts from construction traffic	Temporary impacts from construction traffic
<b>Residential Areas (Section 3.4.3)</b>	None	Temporary impacts from construction traffic	Temporary impacts from construction traffic	Temporary impacts from construction traffic
<b>Community Resources (Section 3.5)</b>				
<b>Socioeconomics (Section 3.5.1)</b>	Benefits provided from routine levee maintenance	Temporary influx of employment, business sales volume, and income; benefits from routine levee maintenance; temporary impacts from construction traffic	Temporary influx of employment, business sales volume, and income; benefits from routine levee maintenance; temporary impacts from construction traffic	Temporary influx of employment, business sales volume, and income; benefits from routine levee maintenance; temporary impacts from construction traffic

Resource Area	Environmental Impacts			
	No Action Alternative	Preferred Alternative: Canal Modification	Alternative 2: Sheet Pile Wall	Alternative 3: Retention Wall
<b>Environmental Justice (3.5.2)</b>	None	None	None	None
<b>Transportation (3.5.3)</b>	None	Temporary impacts from construction traffic	Temporary impacts from construction traffic	Temporary impacts from construction traffic
Environmental Health (Section 3.6)				
<b>Air Quality (Section 3.6.1)</b>	Temporary negligible impacts from routine maintenance	Temporary negligible impacts	Temporary negligible impacts	Temporary negligible impacts
<b>Noise (Section 3.6.2)</b>	Disturbances from routine maintenance	Temporary negligible impacts	Temporary negligible impacts	Temporary negligible impacts
<b>Hazardous Materials (Section 3.6.3)</b>	None	None	None	None

## **SECTION 3:**

### **AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES**

The following section describes the current existing environmental conditions within the Mission Levee project area, evaluates the potential direct and indirect environmental consequences that may result from implementation of identified alternatives, and describes best management practices to prevent or minimize impacts to the environment. Direct impacts are defined as those that occur at the same time and place of the action, whereas indirect impacts occur later in time or are farther removed in distance, but are still reasonably foreseeable. Analyses of impacts focus on natural and cultural resources within the Mission Levee project area. Reference values for air quality, socioeconomics, and environmental justice are evaluated at the county level.

Some environmental resources were excluded from review because they were not found to be present within the project area or are not anticipated to be affected by the proposed project. These include wilderness areas, wild and scenic rivers, national natural landmarks, national monuments, forests, coastal zones, offshore fisheries, geology, and displacement of persons. The following resource areas and issues are included in the evaluation:

- biological resources (vegetation, wetlands, wildlife, aquatic ecosystems, and threatened and endangered [T&E] species);
- cultural resources (archeological and architectural) and Native American consultation;
- water resources (wetlands, and water quality);
- land use (natural resources management and recreation areas, agricultural land, prime and unique farmlands, and residential developments);
- community resources (socioeconomics, environmental justice, and transportation); and
- environmental health (air quality, noise, and public health and environmental hazards).

#### **3.1 BIOLOGICAL RESOURCES**

Information presented in this section was obtained from available USIBWC reports and studies conducted in and near the project area and information obtained during field surveys. General biological resources information was obtained from various state and federal agencies including, but not limited to, TPWD, USFWS, United States Department of Agriculture (USDA) National Resources Conservation Service (NRCS), and the United States Army Corps of Engineers (USACE).

##### **3.1.1 Vegetation**

The Mission Levee is within the Matamorán Biotic District subdivision of the Tamaulipan Biotic Province and is in a transition zone between temperate and tropical climates (Blair 1950). The

native vegetation type covering much of southern Texas and northeastern Mexico is mesquite-grassland. The Tamaulipan thornscrub, a subtropical semi-arid vegetation type, occurs on both sides of the Rio Grande. Spiny shrubs and trees dominate this thornscrub, but grasses, forbs, and succulents also are prominent (Crosswhite 1980). Exceptions to the arid shrub-covered landscapes are areas of dense riparian vegetation within the few river valleys. Species composition and distribution throughout the region usually are a function of soil and geological formations. Most of the natural vegetation in southern Hidalgo County has been replaced by cropland and urban development. Much of the off-river floodway system on the United States side of the international border is used for agriculture, including grain sorghum, cotton, and a variety of vegetables. A detailed description of regional vegetation is provided in the 2008 PEIS (USIBWC 2008). Aquatic vegetation is discussed in Section 3.1.4.

The majority of land surrounding the project area is associated with two Lower Rio Grande National Wildlife Refuge (LRGNWR) units (La Parida Banco and El Morillo Banco), Bentsen Rio Grande Valley State Park (BRGVSP), and the North American Butterfly Association (NABA) National Butterfly Center (Appendix A). Agricultural land also is located in many areas adjacent to the Mission Main Canal. Herbaceous grassland and riparian vegetation communities were identified within the project area during field surveys. A photographic log of the project area is provided in Appendix C.

#### ***Herbaceous Grassland Associations***

Most herbaceous vegetation communities are associated with the Mission Main Canal northern access and maintenance road and Mission Levee slopes. Observed species along the slopes include native and non-native herbaceous vegetation such as buffelgrass (*Pennisetum ciliaris*), sand dropseed (*Sporobolus cryptandrus*), Bermudagrass (*Cynodon dactylon*), cane bluestem (*Bothriochloa barbinodis*), common sunflower (*Helianthus annuus*), silverleaf nightshade (*Solanum elaeagnifolium*), sandmat (*Chamaesyce* sp.), and balloon vine (*Cardiospermum halicacabum*). Some areas along the Mission Levee slopes support young, woody vegetation including huajillo (*Havardia pallens*), retama (*Parkinsonia aculeata*), and huisache (*Acacia farnesiana*).

#### ***Herbaceous Riparian Associations***

Riparian vegetation within the project area is associated primarily with the Mission Main Canal and includes herbaceous and young, woody vegetation. Slopes adjacent to the Mission Main Canal are maintained and relatively steep, limiting the lateral extent of riparian vegetation along the edges of the canal. Observed species along the edges of the canal include common reed (*Phragmites australis*), giant reed (*Arundo donax*), balloon vine, and buffelgrass. Some riparian areas support young, woody vegetation including huajillo, retama, and huisache.

#### ***No Action Alternative***

Under the No Action Alternative, no changes to the levee system or the Mission Main Canal would occur. Routine maintenance activities would continue. The plant communities along the Mission Levee would remain as under present management. Vegetation diversity and

composition are expected to remain the same, with no additional habitat created within the project area.

### ***Alternative 1 (Preferred Alternative): Canal Modification***

Under the Preferred Alternative, canal modification activities would affect vegetation communities along the landside toe of the levee and along both banks of the Mission Main Canal for the entire 2.9 miles of the project area through vegetation removal and fill activities. The vegetation communities impacted would include the non-native, grass-covered, landside toe of the existing levee (1.8 acres) and the riverside slope of the northern access and maintenance road (3.5 acres), as well as the herbaceous, riparian vegetation along the banks of the Mission Main Canal (3.6 acres). Since the canal banks would be lined with concrete, re-growth of riparian vegetation along the banks would not be expected to occur. Any riparian vegetation that may occur adjacent to the canal would be subject to routine vegetation maintenance activities by the UID. Estimated vegetation community acreages impacted under the Preferred Alternative are presented in Table 3-1.

Following canal modification activities, the disturbed areas outside the canal and the re-established canal access road would be revegetated with a native plant species seed mixture appropriate for the land type as soon as possible after project completion. Prompt reseeding with native vegetation species would allow for efficient establishment and, once established, provide additional erosion control. USIBWC would compensate the loss of riparian habitat on a 2:1 acre basis (2 acres protected for every 1 acre disturbed). Approximately 3.6 acres of riparian habitat would be impacted; therefore USIBWC would compensate for approximately 7.2 acres of riparian habitat. Land of equal value would be compensated under conservation easement, land acquisition, or monetary payment.

Vegetation management of the project area would be in accordance with the Presidential Memorandum on Environmentally Beneficial Landscaping (1994) and Executive Order 13112 on Invasive Species (1999), which would include the use of regionally native vegetation for landscaping and USIBWC Environmental Management approved seed mixes. All construction activities adjacent to LRGNWR areas would be coordinated with the USFWS. All construction activities adjacent to the BRGVSP would be coordinated with TPWD.

### ***Alternative 2: Sheet Pile Wall***

Activities associated with sheet pile wall construction would affect vegetation communities along the landside slope and toe of the Mission Levee for the entire 2.9 miles of the project area through vegetation removal and excavation activities. Construction activities would impact the non-native, grass-covered, landside slope and toe of the existing levee (6.3 acres). Re-establishment of the canal access road would allow the UID to continue vegetation maintenance of the Mission Main Canal south bank. Approximately 1.8 acres of herbaceous riparian vegetation would be subject to regular maintenance activities by the UID. Estimated vegetation community acreages impacted under the Preferred Alternative are presented in Table 3-1.

Following construction activities, the disturbed areas outside the re-established canal access road would be revegetated with a native plant species seed mixture appropriate for the land type as

soon as possible after project completion. Prompt reseeded with native vegetation species would allow for efficient establishment and, once established, would provide additional erosion control. USIBWC would compensate the loss of riparian habitat on a 2:1 acre basis. Approximately 1.8 acres of riparian habitat would be impacted; therefore USIBWC would compensate for approximately 3.6 acres of riparian habitat. Land of equal value would be compensated under conservation easement, land acquisition, or monetary payment.

Vegetation management of the project area would be in accordance with the Presidential Memorandum on Environmentally Beneficial Landscaping (1994) and Executive Order 13112 on Invasive Species (1999) which would include the use of regionally native vegetation for landscaping and in seed mixes. All construction activities adjacent to LRGNWR areas would be coordinated with the USFWS. All construction activities adjacent to the BRGVSP would be coordinated with TPWD.

### ***Alternative 3: Retention Wall***

Activities associated with retention wall construction would affect vegetation communities along the landside slope and toe of the Mission Levee for the entire 2.9 miles of the project area through vegetation removal and excavation activities. Construction activities would impact the non-native, grass-covered, landside slope and toe of the existing levee (9.5 acres). Re-establishment of the canal access road would allow the UID to continue vegetation maintenance of the Mission Main Canal south bank. Approximately 1.8 acres of herbaceous riparian vegetation would be subject to regular maintenance activities by the UID. Estimated vegetation community acreages impacted under the Preferred Alternative are presented in Table 3-1.

Following construction activities, the disturbed areas outside the re-established canal access road would be revegetated with a native plant species seed mixture appropriate for the land type as soon as possible after project completion. Prompt reseeded with native vegetation species would allow for efficient establishment and, once established, provide additional erosion control. USIBWC would compensate the loss of riparian habitat on a 2:1 acre basis. Approximately 1.8 acres of riparian habitat would be impacted; therefore USIBWC would compensate for approximately 3.6 acres of riparian habitat. Land of equal value would be compensated under conservation easement, land acquisition, or monetary payment.

Vegetation management of the project area would be in accordance with the Presidential Memorandum on Environmentally Beneficial Landscaping (1994) and Executive Order 13112 on Invasive Species (1999) which would include the use of regionally native vegetation for landscaping and in seed mixes. All construction activities adjacent to LRGNWR areas would be coordinated with the USFWS. All construction activities adjacent to the BRGVSP would be coordinated with TPWD.

**Table 3-1: Acreages of Vegetation Impacts for All Alternatives**

Vegetation Community	No Action (acres)	Preferred Alternative – Canal Modification (acres)	Alternative 2 – Sheet Pile Wall (acres)	Alternative 3 – Retention Wall (acres)
Non-native Grasses	0.0	5.3 <sup>1</sup>	6.3 <sup>2</sup>	9.5 <sup>3</sup>
Herbaceous Riparian	0.0	3.6 <sup>4</sup>	1.8 <sup>4</sup>	1.8 <sup>4</sup>
<b>Total</b>	<b>0.0</b>	<b>8.9</b>	<b>8.1</b>	<b>11.3</b>

1. Estimated width of landside toe is 5 feet; estimated width of northern access and maintenance road slope is 10 feet; project area length is 2.9 miles.
2. Estimated width of landslide slope impacted is 13 feet; estimated width of landside toe is 5 feet; project area length is 2.9 miles.
3. Estimated width of landslide slope impacted is 22 feet; estimated width of landside toe is 5 feet; project area length is 2.9 miles.
4. Estimated width of each canal bank is 5 feet; project area length is 2.9 miles.

### 3.1.2 Wetlands and Waterbodies

Wetlands perform valuable functions in restoring and maintaining the quality of the nation’s waters. These functions include floodwater storage, sediment trapping, nutrient removal, chemical detoxification, aquatic food chain support, fish and wildlife habitat, and groundwater recharge. Over the past several centuries, the Rio Grande has meandered across its lower floodplain near the Gulf of Mexico. Geological remnants of this process include isolated oxbow lakes (i.e. resacas), linear channel segments, and small pools associated with the historic river channel. Over time, these wetland areas developed into habitats of unique value that often support water-tolerant woody species along the wetland fringes. Resacas contribute to high biodiversity in the Lower Rio Grande Valley (LRGV) and provide important habitat for migratory birds and resident wildlife. In addition to wetlands, there are other manmade waters including settling basins, ditches, canals, reservoirs, and lakes throughout the project area region. Although these manmade waters primarily were designed for flood control and irrigation purposes, they often are lined with vegetation communities that support wildlife, and they serve as travel corridors for some species.

An on-site determination and delineation of jurisdictional waters of the U.S. within the project area was conducted by TRC Environmental Corporation (TRC) in February 2011. No jurisdictional wetlands were identified within the project area. One waterbody, the Mission Main Canal, is located within the Mission Levee project area and contains open, deepwater habitat. Slopes adjacent to the Mission Main Canal are maintained and relatively steep, limiting the lateral extent of riparian vegetation along the edge of the irrigation canal.

A detailed description of the identification and characterization of potential wetlands and waterbodies within the project area is provided in the Waters of the U.S. Delineation Report (Appendix B). Figures presenting wetlands and waterbodies located within the vicinity of the project area also are included in the Waters of the U.S. Delineation Report. In a letter dated May

31, 2011 (Appendix D), the USACE – Galveston District determined that the Mission Main Canal was not subject to USACE jurisdiction nor were there any jurisdictional waters within the project area.

### ***No Action Alternative***

Under the No Action Alternative, no changes to the levee system or the Mission Main Canal would occur. No wetlands were identified within the project area; therefore, there would be no impact to wetlands. No additional wetlands would be created within the project area.

### ***Alternative 1 (Preferred Alternative): Canal Modification***

Canal modification activities would not impact any wetlands because no wetlands occur within the project area. Impacts to riparian vegetation communities associated with the Mission Main Canal (3.6 acres) would occur through vegetation removal and fill activities. Since the canal banks would be lined with concrete, re-growth of riparian vegetation along the banks would not be expected to occur. Any riparian vegetation that may occur adjacent to the canal would be subject to routine vegetation maintenance activities by the UID. Mitigation for loss of riparian vegetation is discussed in Section 3.1.1. No additional wetlands would be created within the project area.

The Mission Main Canal would be narrowed by approximately 15 feet with approximately 58,100 cubic yards of fill material obtained from commercial sources outside the levee system. The fill would be placed along the levee side of the canal and compacted. The modified canal would be concrete-lined and have a 15-foot bottom width, a 30-foot top width and 2:1 H:V side slopes.

### ***Alternative 2: Sheet Pile Wall***

No wetlands were identified within the project area; therefore, there would be no impact to wetlands. Impacts to riparian vegetation communities associated with the Mission Main Canal (1.8 acres) would occur through regular vegetation maintenance activities by the UID. Mitigation for loss of riparian vegetation is discussed in Section 3.1.1. No additional wetlands would be created within the project area. No modification of the Mission Main Canal would be required.

### ***Alternative 3: Retention Wall***

No wetlands were identified within the project area; therefore, there would be no impact to wetlands. Impacts to riparian vegetation communities associated with the Mission Main Canal (1.8 acres) would occur through regular vegetation maintenance activities by the UID. Mitigation for loss of riparian vegetation is discussed in Section 3.1.1. No additional wetlands would be created within the project area. No modification of the Mission Main Canal would be required.

### **3.1.3 Wildlife**

Common wildlife species in the region include whitetail deer, turkey, javelina, bobwhite quail, scaled quail, white-winged dove, mourning dove, cottontail rabbit, jackrabbit, various waterfowl species, and many species of reptiles, amphibians, and nongame birds and mammals. The region also provides important wintering habitat for thousands of migratory birds, including many species of passerines, raptors, shorebirds (e.g., sandhill cranes), ducks, and geese. In addition, a number of unique and rare animals occur in the region (Sections 3.1.5 and 3.1.6). Many of the terrestrial wildlife species in the project area are limited in their distribution either partially or entirely to the Tamaulipan Biotic Province, with some only found in the LRGV. A detailed description of regional wildlife is provided in the 2008 PEIS (USIBWC 2008) and 2007 EA (USIBWC 2007). Aquatic wildlife is discussed in Section 3.1.4.

#### ***No Action Alternative***

Under the No Action Alternative, no changes to the levee system or the Mission Main Canal would occur. No construction related disturbances to wildlife would occur. Habitat would not be disturbed or created. Routine maintenance activities would still occur.

#### ***Alternative 1 (Preferred Alternative): Canal Modification***

The project area is composed primarily of regularly maintained areas that provide relatively low quality habitat for most wildlife species. Canal modification activities under the Preferred Alternative would impact approximately 5.3 acres of non-native grasses associated with the landside levee toe and riverside slope of the north access and maintenance road, as well as 3.6 acres herbaceous riparian vegetation along the banks of the Mission Main Canal.

It is anticipated that most species present would move to adjacent, undisturbed areas during construction. However, no similarly suitable habitat is adjacent to the Mission Main Canal for amphibians and reptiles inhabiting the canal banks. It is also expected that most species that use the Mission Main Canal as a source of drinking water would be able to use the numerous water sources (i.e. wetlands, resacas, and Rio Grande) in the area during construction.

Construction and vegetation clearing activities would be conducted between October 1 and March 15, which is primarily outside of the breeding season of the bird species in this area (March through August). In accordance with the Migratory Bird Treaty Act (MBTA), construction and vegetation clearing activities would be conducted outside of the breeding season or the area would be surveyed for active nests to ensure the preservation of the nests. If nests are found during the survey, construction would not occur in the vicinity until the offspring fledge or the nest fails or is abandoned. The USIBWC would provide a qualified environmental monitor to survey for birds protected under the MBTA to prevent destruction of nests or eggs during construction activities.

### ***Alternative 2: Sheet Pile Wall***

The project area is composed primarily of regularly maintained or cultivated areas that provide relatively low quality habitat for most wildlife species. It is anticipated that the wildlife species present would move to adjacent, undisturbed areas during construction and rapidly recolonize the area after the work is completed and after vegetation along the levee slope and toe has been re-established. Some species, particularly burrowing species, would be impacted during construction activities.

Construction activities under this alternative would impact approximately 6.3 acres of non-native grasses associated with the landside levee slope and toe. After construction, approximately 1.8 acres of herbaceous, riparian vegetation would be subject to regular vegetation maintenance activities by the UID.

In accordance with the MBTA, construction and vegetation clearing activities would be conducted outside of the breeding season or the area would be surveyed for active nests to ensure the preservation of the nests. If nests are found during the survey, construction would not occur in the vicinity until the offspring fledge or the nest fails or is abandoned. The USIBWC would provide a qualified environmental monitor to survey for birds protected under the MBTA to prevent destruction of nests or eggs during construction activities.

### ***Alternative 3: Retention Wall***

The project area is composed primarily of regularly maintained or cultivated areas that provide relatively low quality habitat for most wildlife species. It is anticipated that the wildlife species present would move to adjacent, undisturbed areas during construction and rapidly recolonize the area after the work is completed and after vegetation along the levee slope and toe has been re-established. Some species, particularly burrowing species, would be impacted during construction activities.

Construction activities under this alternative would impact approximately 9.5 acres of non-native grasses associated with the landside levee slope and toe. Approximately 1.8 acres of herbaceous riparian vegetation would be subject to regular vegetation maintenance activities by the UID.

In accordance with the MBTA, construction and vegetation clearing activities would be conducted outside of the breeding season or the area would be surveyed for active nests to ensure the preservation of the nests. If nests are found during the survey, construction would not occur in the vicinity until the offspring fledge or the nest fails or is abandoned. The USIBWC would provide a qualified environmental monitor to survey for birds protected under the MBTA to prevent destruction of nests or eggs during construction activities.

#### **3.1.4 Aquatic Ecosystems**

There are several distinct aquatic communities within the region including the Rio Grande, resacas, arroyos, reservoirs, ponds, irrigation canals, and other manmade impoundments. Native aquatic vegetation in the lower Rio Grande includes emergent plants such as spikerush, bulrush, and coast cockspur grass, as well as submerged plants including water stargrass, smartweed, sago

pondweed, and sheathed pondweed (Owens, Grodowitz, & Nibling 2005). Several non-native, invasive, aquatic species also inhabit the lower Rio Grande including hydrilla, water hyacinth, giant cane, and Eurasian watermilfoil (Owens et al. 2005). These invasive species crowd out native species and can grow to such densities that water flow in rivers are severely impeded (Grodowitz et al. 2000).

The freshwater fauna of the Rio Grande consists of numerous species of fish, benthic macroinvertebrates (e.g., worms, mussels, and crustaceans), amphibians, and reptiles. Common freshwater fish of the Rio Grande include carp, bass, smallmouth buffalo, catfish, and sunfish (Thomas, Bonner, & Whiteside 2007). There are several important recreational species, including the warmouth, bluegill, largemouth bass, white crappie, and catfish (USIBWC 2008). Common amphibians and reptiles include green tree frog, bullfrog, barred tiger salamander, red-eared slider, Texas spiny softshell, and green anole.

Water from the Rio Grande enters the Mission Main Canal at the UID pump station located approximately 0.6 mile from the western end of the project area. The Mission Main Canal has never been dredged (T. Nieto, UID Manager, personal communication, March 15, 2011) and is expected to contain similar flora and fauna as the Rio Grande. Although no aquatic vegetation was observed during the survey, species known to occur within the Mission Main Canal include water hyacinth and hydrilla. Sterilized grass carp were introduced into the Mission Main Canal in 2007 in order to control hydrilla (T. Nieto, personal communication, February 22, 2011). In order to protect the grass carp, the UID has banned fishing in the Mission Main Canal.

### ***No Action Alternative***

Under the No Action Alternative, no changes to the levee system or the Mission Main Canal would occur. No construction related disturbances to aquatic vegetation or wildlife would occur. Habitat would not be disturbed or created. Routine maintenance activities would still occur.

### ***Alternative 1 (Preferred Alternative): Canal Modification***

Canal modification activities would eliminate all aquatic flora and fauna within the Mission Main Canal through dewatering, fill placement, and concrete lining activities. Based on the current canal configuration, up to 22.5 acres of aquatic vegetation would be eliminated. In order to minimize impacts to fish, the canal would be dewatered over a period of days in order to allow fish to move downstream out of the project area. USIBWC would also submit an Aquatic Relocation Plan for TPWD approval a minimum of four weeks prior to any dewatering activities.

Lining the Mission Main Canal with concrete would prevent submerged and emergent aquatic vegetation from taking root in the canal. Free-floating, aquatic vegetation would not be impacted by the concrete lining.

### ***Alternative 2: Sheet Pile Wall***

Under Alternative 2, no changes to the Mission Main Canal would occur. No construction related disturbances to aquatic vegetation or wildlife would occur. Habitat would not be disturbed or created. Routine maintenance activities would still occur.

**Alternative 3: Retention Wall**

Under Alternative 3, no changes to the Mission Main Canal would occur. No construction related disturbances to aquatic vegetation or wildlife would occur. Habitat would not be disturbed or created. Routine maintenance activities would still occur.

**3.1.5 Federally Listed Threatened and Endangered Species**

The *Endangered Species Act of 1973* gives the USFWS federal legislative authority for the protection of T&E species. This protection includes a prohibition of direct take (i.e., killing, harassing) and indirect take (i.e., destruction of critical habitat). The Texas Parks and Wildlife Code also has established a state regulatory mandate for protection of state-listed T&E species by prohibiting the take of such species.

The Texas Natural Diversity Database (TxNDD), which is maintained by TPWD, was reviewed in order to assess the potential for federal T&E species to occur within the vicinity of the project area. Data from the TxNDD do not provide a definitive statement as to the presence, absence, or condition of special status species, natural communities, or other significant features within a project area. The TxNDD database was accessed on February 25, 2011, to obtain a report detailing the Elements of Occurrence for listed species within a 1.5-mile and a 10.0-mile radius of the project area. There were occurrence records for the federally listed jaguarundi, ocelot and Walker’s manioc within a 1.5-mile and 10-mile radius of the project area (Appendix E).

Six federally listed T&E species potentially occur within Hidalgo County (Table 3-2). Detailed species and habitat descriptions are provided below.

**Table 3-2: Federally Listed T&E Species with the Potential to Occur in the Vicinity of the Mission Levee Project Area**

Species Common Name	Scientific Name	USFWS <sup>1</sup>	Preferred Habitat in South Texas	Suitable Habitat in Project Area?
<b>Wildlife</b>				
Northern aplomado falcon	<i>Falco femoralis septentrionalis</i>	LE	Inhabits open grasslands and savannas containing tall cacti, tree yuccas, and open stands of tall pines and oaks	No
Jaguarundi	<i>Herpailurus yaguarondi</i>	LE	Inhabits thick, dense thorny brush and shrubland; uses brushlands, grasslands and riparian areas for travel and forage	Yes
Ocelot	<i>Leopardus pardalis</i>	LE	Inhabits thick, dense thorny brush and shrubland; uses brushlands, grasslands and riparian areas for travel and forage	Yes
<b>Plants</b>				
Star cactus	<i>Astrophytum asterias</i>	LE	Occurs in sparsely vegetated areas with gravelly, saline clays or loams at low elevations in the Rio Grande Plains; known populations occur in Starr County, Texas	No
Texas ayenia	<i>Ayenia limitaris</i>	LE	Occurs at low elevations in dense subtropical woodland communities; prefers well-drained, heavy soils on riparian terraces with close to 95% canopy cover	No

Walker's manioc	<i>Manihot walkerae</i>	LE	Species typically occurs on periphery of native brush in sandy loam underlain by caliche; flowers April to September	No
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1. U.S. Fish and Wildlife Service (USFWS): LE = endangered  
 Source: USFWS (2011)

### ***Northern Aplomado Falcon***

The northern aplomado falcon (*Falco femoralis septentrionalis*) is a federally listed endangered species in Hidalgo County (USFWS 2011). The species was nearly extirpated, but a reintroduction program has produced some nesting pairs since the 1990s, primarily in New Mexico and south Texas. The species inhabits open country, especially savanna and open woodland, and sometimes occurs in very barren areas, grassy plains, and valleys with scattered mesquite, yucca, and cactus in the South Texas and Trans-Pecos regions of Texas (TPWD 2011a). The falcons capture small birds, insects, rodents, and reptiles, and initiate capture from tree perches using a horizontal flight pattern. The species uses stick nests created by other species (e.g., crows, ravens, and hawks). They prefer open terrain with scattered trees and/or shrubs (USFWS 1990). No northern aplomado falcons were observed during the February 2011 field survey.

### ***Jaguarundi***

The jaguarundi (*Herpailurus yaguarondi*) is a federally listed endangered species in Hidalgo County (USFWS 2011). The habitat of the jaguarundi includes dense thornscrub with greater than 95% canopy cover. Jaguarundi also uses brushlands, grasslands and riparian areas for travel and forage. Potential habitat includes four areas of the LRGV: Mesquite-Granjeno Parks, Mesquite-Blackbrush Brush, Live Oak Woodlands/Parks, and Rio Grande Riparian (TPWD 2011a). Habitat loss and fragmentation from agriculture and development, especially along the Rio Grande, are the primary causes of population decline. No jaguarundi was observed during the February 2011 field survey.

### ***Ocelot***

The ocelot (*Leopardus pardalis*) is a federally listed endangered species in Hidalgo County (USFWS 2011). This species is found from the southern tip of Texas and Arizona and northern Mexico into northern Argentina, Paraguay, and Uruguay. The habitat of the ocelot is similar to that of the jaguarundi and includes dense thornscrub with greater than 95% canopy cover. Ocelots also use brushlands, grasslands and riparian areas for travel and forage. Potential habitat includes four areas of the LRGV: Mesquite-Granjeno Parks, Mesquite-Blackbrush Brush, Live Oak Woodlands/Parks, and Rio Grande Riparian (TPWD 2011a). Habitat loss and fragmentation from agriculture and development, especially along the Rio Grande, are the primary causes of population decline. No ocelots were observed during the February 2011 field survey.

### ***Star Cactus***

The star cactus (*Astrophytum asterias*) is a federally listed endangered plant species in Hidalgo County (USFWS 2011). This species grows in sparsely vegetated areas with gravelly, saline clays or loams, on gentle slopes and flats in grasslands or shrublands. The site of the known

United States population is located in Starr County, Texas, with confirmed historical populations once located in Zapata and Cameron counties (USFWS 2003). Habitat within the project area is highly disturbed from canal, levee, and northern access and maintenance road construction and maintenance activities. In addition, suitable soil types for this species are not present in the project area. Therefore, this species is unlikely to occur within the project area. The star cactus was not observed during the February 2011 field survey.

### ***Texas Ayenia***

The Texas ayenia (*Ayenia limitaris*) is a federally listed endangered plant species in Hidalgo County (USFWS 2011). This species occupies dense subtropical thorn woodland or tall shrubland on well-drained calcareous sandy clay loam (Hidalgo Series soil type) and neutral to moderately alkaline, fine sandy loam (Willacy Series soil type). The current known population in Texas is within the Texas Ebony-Anacua plant community (NatureServe 2009). This plant community occurs on well-drained, riparian terraces with canopy cover of close to 95 %. Plants growing in association with this species include coma (*Sideroxylon celastrinum*), brasil (*Condalia hookeri*), mesquite (*Prosopis glandulosa*), lotebush (*Ziziphus obtusifolia*), lime pricklyash (*Zanthoxylum fagara*), snake-eyes (*Phaulothamnus spinescens*), and granjeno (*Celtis ehrenbergiana*; TPWD 2011b). Habitat within the project area is highly disturbed from canal, levee, and northern access and maintenance road construction and maintenance activities. Therefore, this species is unlikely to occur within the project area. No Texas ayenia were observed during the February 2011 survey.

### ***Walker's Manioc***

The Walker's manioc (*Manihot walkerae*) is a federally listed endangered plant species in Hidalgo County (USFWS 2011). This species is typically found on the periphery of native brush in sandy loam soils underlain by caliche. Known populations of Walker's manioc in Texas are located in Hidalgo, Starr, and Duval counties (USFWS 2007). Habitat within the project area is highly disturbed from canal, levee, and northern access and maintenance road construction and maintenance activities. In addition, suitable soil types for this species are not present in the project area. Therefore, this species is unlikely to occur within the project area. The Walker's manioc was not observed during the February 2011 field survey.

### ***No Action Alternative***

Under the No Action Alternative, no changes to the levee system or the Mission Main Canal would occur. Existing vegetation communities and habitat would not be cleared for canal access road re-establishment, nor would additional habitat be created within the project area. Routine maintenance activities would remain unchanged. There would be no effect on federally listed species, their habitats, or designated critical habitat.

### ***Alternative 1 (Preferred Alternative): Canal Modification***

Under the Preferred Alternative, canal modification activities would remove primarily herbaceous non-native grassland communities along the levee toe and north canal access road slope and herbaceous riparian vegetation associated with the Mission Main Canal, as well as

aquatic vegetation within the Mission Main Canal. Construction impacts would be temporary and localized along the landside toe of the existing levee and the Mission Main Canal. Routine maintenance activities would remain unchanged.

The area of proposed disturbance is located along previously disturbed areas, regular maintenance activities are conducted along the levee and canal, and the project area lacks suitable habitat for northern aplomado falcon, star cactus, Texas ayenia and Walker's manioc. Construction noise may negatively impact jaguarundi or ocelots that are within 300 feet of the construction area. In coordination with the USFWS (Appendix D), USIBWC determined that approximately 202.2 acres of potential ocelot and jaguarundi habitat would be impacted by noise. USFWS currently requires mitigation for noise impacts at a 0.025:1 ratio; therefore USIBWC would compensate for approximately 5 acres of habitat. Land of equal value would be compensated under conservation easement, land acquisition, or monetary payment.

Due to the lack of suitable habitat for northern aplomado falcon, star cactus, Texas ayenia and Walker's manioc and the mitigation of noise impacts to ocelot and jaguarundi, the Preferred Alternative would not likely adversely affect federally listed species, their habitats, or designated critical habitat. In a letter dated June 7, 2011, the USFWS concurred with this finding.

### ***Alternative 2: Sheet Pile Wall***

Under Alternative 2, construction activities would remove primarily herbaceous, non-native, grassland communities along the landside levee slope and toe. After construction, approximately 1.8 acres of herbaceous riparian vegetation would be subject to regular vegetation maintenance activities by the UID. Construction impacts would be temporary and localized along the landside slope and toe of the existing levee. Routine maintenance activities would remain unchanged.

The area of proposed disturbance is located along previously disturbed areas, regular maintenance activities are conducted along the levee and canal, and the project area lacks suitable habitat for northern aplomado falcon, star cactus, Texas ayenia and Walker's manioc. Construction noise may negatively impact jaguarundi or ocelots that are within 300 feet of the construction area. In coordination with the USFWS (Appendix D), USIBWC determined that approximately 202.2 acres of potential ocelot and jaguarundi habitat would be impacted by noise. USFWS currently requires mitigation for noise impacts at a 0.025:1 ratio; therefore USIBWC would compensate for approximately 5 acres of habitat. Land of equal value would be compensated under conservation easement, land acquisition, or monetary payment.

Due to the lack of suitable habitat for northern aplomado falcon, star cactus, Texas ayenia and Walker's manioc and the mitigation of noise impacts to ocelot and jaguarundi, the Preferred Alternative would not likely adversely affect federally listed species, their habitats, or designated critical habitat. In a letter dated June 7, 2011, the USFWS concurred with this finding.

### ***Alternative 3: Retention Wall***

Under Alternative 3, construction activities would remove primarily herbaceous non-native grassland communities along the landside levee slope and toe. After construction, approximately

1.8 acres of herbaceous riparian vegetation would be subject to regular vegetation maintenance activities by the UID. Construction impacts would be temporary and localized along the landside slope and toe of the existing levee. Routine maintenance activities would remain unchanged.

The area of proposed disturbance is located along previously disturbed areas, regular maintenance activities are conducted along the levee and canal, and the project area lacks suitable habitat for northern aplomado falcon, star cactus, Texas ayenia and Walker's manioc. Construction noise may negatively impact jaguarundi or ocelots that are within 300 feet of the construction area. In coordination with the USFWS (Appendix D), USIBWC determined that approximately 202.2 acres of potential ocelot and jaguarundi habitat would be impacted by noise. USFWS currently requires mitigation for noise impacts at a 0.025:1 ratio; therefore USIBWC would compensate for approximately 5 acres of habitat. Land of equal value would be compensated under conservation easement, land acquisition, or monetary payment.

Due to the lack of suitable habitat for northern aplomado falcon, star cactus, Texas ayenia and Walker's manioc and the mitigation of noise impacts to ocelot and jaguarundi, the Preferred Alternative would not likely adversely affect federally listed species, their habitats, or designated critical habitat. In a letter dated June 7, 2011, the USFWS concurred with this finding.

### **3.1.6 State-Listed Threatened and Endangered Species**

The Texas Parks and Wildlife Code has established a state regulatory mandate for protection of state-listed T&E species by prohibiting the take of such species. TPWD maintains the authority to protect state-listed T&E species.

Thirty-nine state-listed T&E species potentially occur within Hidalgo County. The TxNDD was reviewed in order to assess the potential for T&E species to occur within the project area. Data from the TxNDD do not provide a definitive statement as to the presence, absence, or condition of special status species, natural communities, or other significant features within a project area. The TxNDD database was accessed on February 25, 2011, to obtain a report detailing the Elements of Occurrence for listed species within a 1.5-mile and a 10.0-mile radius of the project area. There were occurrence records for the state-listed sheep frog, black-spotted newt and South Texas siren within a 1.5-mile radius of the project area. There were occurrence records for the state-listed river goby, black-striped snake, reticulate collared lizard, Texas indigo snake, sheep frog, white-lipped frog, black-spotted newt, rose-throated becard, gray hawk, Texas tortoise, Texas horned lizard, and South Texas siren within a 10-mile radius of the project area (Appendix E).

Twelve of the 39 state-listed species have suitable habitat within the project area. Additional state-listed species may occur within the project area as transients since higher quality habitats (e.g., wildlife management areas) are located adjacent to the project area. Detailed species and habitat descriptions are provided in Table 3-3. No state-listed T&E species were observed in the project area during the field survey.

**Table 3-3: State-Listed T&E Species with the Potential to Occur in the Vicinity of the Mission Levee Project Area**

Species Common Name	Scientific Name	TPWD <sup>1</sup>	Preferred Habitat in South Texas	Suitable Habitat in Project Area?
<b>Amphibians</b>				
Black-spotted newt	<i>Notophtalmus meridionalis</i>	T	Inhabits wet and mesic areas such as arroyos, canals, ditches, or shallow depressions; aestivates underground during droughts	Yes
Mexican treefrog	<i>Smilisca baudinii</i>	T	Occupies savannas and areas with xerophytic vegetation in semiarid regions; often found in the vicinity of ponds, pools, canals, and flooded fields; breeds in ponds	Yes
Sheep frog	<i>Hypopachus variolosus</i>	T	Inhabits low and moderate elevations in tropical humid forests, as well as disturbed and open habitats; often found at the margins of ponds and marshes and in underground burrows	Yes
South Texas siren (large form)	<i>Siren</i> sp. 1	T	Inhabits wet and mesic areas such as arroyos, canals, ditches, or shallow depressions; aestivates underground during droughts	Yes
White-lipped frog	<i>Leptodactylus fragilis</i>	T	Inhabits a wide variety of habitats including grasslands, cultivated fields, and roadside ditches; species requirements incompatible with widespread habitat alteration and pesticide use in south Texas	Yes
<b>Birds</b>				
American peregrine falcon	<i>Falco peregrinus anatum</i>	T	In Texas, low-altitude migrant across state from more northern breeding areas in U.S. and Canada; winters along coast and barrier islands and occupies a wide range of habitats during migration, including urban; concentrations occur along coast and barrier islands; utilizes stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands	No
Cactus ferruginous pygmy-owl	<i>Glaucidium brasilianum cactorum</i>	T	Inhabits riparian trees, brush, palm, and mesquite thickets; roosts in small caves and recesses on slopes of low hills during the day; breeds April to June	No
Common black-hawk	<i>Buteogallus anthracinus</i>	T	Inhabits cottonwood-lined rivers and streams and willow tree groves on the Lower Rio Grande floodplain; formerly bred in south Texas	No
Gray hawk	<i>Asturina nitida</i>	T	Found locally and irregularly along the U.S.-Mexico border in mature riparian woodlands and semiarid mesquite and scrub grasslands; breeding range formerly extended north to southernmost Rio Grande floodplain	No
Interior least tern	<i>Sternula antillarum athalassos</i>	E	Nests on ground, typically on sites that are sandy and relatively free of vegetation, such as sand and gravel bars in rivers, beaches, spits, and coastal areas	No

Northern aplomado falcon	<i>Falco femoralis septentrionalis</i>	E	Inhabits open grasslands and savannas containing tall cacti, tree yuccas, and open stands of tall pines and oaks	No
Northern beardless-tyrannulet	<i>Camptostoma imberbe</i>	T	Inhabits mesquite woodlands and frequents cottonwoods, willows, elms, and great leadtrees near the Rio Grande; breeds April to July	No
Rose-throated becard	<i>Pachyramphus aglaiae</i>	T	Inhabits riparian trees, woodlands, open forest, scrub, and mangroves; breeds April to July	No
Texas Botteri's sparrow	<i>Aimophila botterii texana</i>	T	Inhabits grassland and shortgrass plains with scattered bushes or shrubs, sagebrush, mesquite, or yucca; nests on ground in low clumps of grasses	No
Tropical parula	<i>Parula pitaiayumi</i>	T	Inhabits dense or open woods, undergrowth, brush, and trees along edges of rivers and resacas; breeds April to July	No
White-faced ibis	<i>Plegadis chihi</i>	T	Prefers freshwater marshes, sloughs, and irrigated rice fields, but also will inhabit brackish and saltwater habitats; nests in marshes, in low trees, on the ground in bulrushes or reeds or on floating mats	No
White-tailed hawk	<i>Buteo albicaudatus</i>	T	Often found near coast on prairies, cordgrass flats, and scrub-live oak; further inland, often found on prairies, mesquite and oak savannas, and mixed savanna-chaparral; breeds from March to May	No
Wood stork	<i>Mycteria americana</i>	T	Forages in prairie ponds, flooded pastures or fields, ditches, and other shallow standing water, including saltwater; usually roosts communally in tall snags, sometimes in association with other wading birds; breeds in Mexico and moves into Gulf states in search of mudflats, other wetlands, and even forested areas; formerly nested in Texas	No
Zone-tailed hawk	<i>Buteo albonotatus</i>	T	Found in arid open country, including deciduous or pine-oak woodland, mesa, or mountain country, often near watercourses, wooded canyons, and tree-lined rivers along middle-slopes of desert mountains; nests in various habitats and sites, ranging from small trees in lower desert, giant cottonwoods in riparian areas, to mature conifers in montane regions	No
<b>Fishes</b>				
River goby	<i>Awaous banana</i>	T	Found in southern coastal waters with clear water, slow to moderate current, sandy or hard bottom, and little to no vegetation; also enters brackish and ocean waters	No
<b>Mammals</b>				
Coues' rice rat	<i>Oryzomys couesi</i>	T	Inhabits cattail-bulrush marshes with shade trees and a shallower zone of aquatic grasses near the shoreline; prefers salt and freshwater, as well as grassy areas near water; breeds April to August.	Yes
Southern yellow bat	<i>Lasiurus ega</i>	T	Associated with trees which provide daytime roosts, including palm trees ( <i>Sabal mexicana</i> ) in Brownsville; breeds in late winter	No

Jaguarundi	<i>Herpailurus yaguarondi</i>	E	Inhabits thick, dense, thorny brush and shrubland	No
Ocelot	<i>Leopardus pardalis</i>	E	Inhabits thick, dense, thorny brush and shrubland	No
White-nosed coati	<i>Nasua narica</i>	T	Inhabits woodlands, riparian corridors, and canyons; most individuals in Texas are probably transients from Mexico; diurnal, crepuscular, and very sociable; omnivore forages on ground and in trees	No
<b>Mollusks</b>				
False spike mussel	<i>Quadrula mitchelli</i>	T	Found in substrates of cobble and mud; Rio Grande, Brazos, Colorado, and Guadalupe (historic) river basins	Yes
Salina mucket	<i>Potamilus metnecktayi</i>	T	Lotic waters in submerged soft sediment (clay or silt) along river banks; other habitat requirements are poorly understood; Rio Grande basin	Yes
Texas hornshell	<i>Popenaias popeii</i>	T	Both ends of narrow shallow runs over bedrock in areas where small-grained materials collect in crevices, along river banks, and at the base of boulders; not known from impoundments; Rio Grande basin in the U.S.	Yes
<b>Reptiles</b>				
Black-striped snake	<i>Coniophanes imperialis</i>	T	Inhabits semi-arid coastal plains in warm, moist micro-habitats and sandy soils; proficient burrower; lays eggs April to June	No
Indigo snake	<i>Drymarchon corais</i>	T	Inhabits thornbrush-chaparral woodlands of south Texas, particularly dense riparian corridors; can inhabit suburban and irrigated croplands; requires moist micro-habitats such as rodent burrows for shelter	Yes
Northern cat-eyed snake	<i>Leptodeira septentrionalis septentrionalis</i>	T	Found in the Gulf coastal plains in thornbrush woodlands and dense thickets bordering ponds and streams; semi-arboreal and nocturnal	No
Reticulate collared lizard	<i>Crotaphytus reticulatus</i>	T	Occurs in open brush and grasslands with thorn scrub vegetation	Yes
Speckled racer	<i>Drymobius margaritiferus</i>	T	Occupies dense thickets near water, Texas palm groves, riparian woodlands, and often areas with much vegetation litter on ground; breeds April to August	No
Texas horned lizard	<i>Phrynosoma cornutum</i>	T	Inhabits open, arid and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush or shrubby trees; soil may vary from sandy to rocky; burrows into soil, enters rodent burrows, or hides under rock when inactive; breeds March to September	Yes

Texas tortoise	<i>Gopherus berlandieri</i>	T	Inhabits open brush with a preferred grass understory; areas with open grass and bare ground are avoided; occupies shallow depressions and sometimes underground burrows or under objects when inactive; active March to November; breeds April to November	No
<b>Plants</b>				
South Texas ambrosia	<i>Ambrosia cheiranthifolia</i>	E	Occurs at low elevations in open clay-loam to sandy-loam prairies and savannas; only known from Kleberg and Nueces counties, Texas	No
Star cactus	<i>Astrophytum asterias</i>	E	Occurs in sparsely vegetated areas with gravelly, saline clays or loams at low elevations in the Rio Grande Plains; known populations in Starr County, Texas	No
Texas ayenia	<i>Ayenia limitaris</i>	E	Occurs at low elevations in dense subtropical woodland communities; prefers well-drained, heavy soils on riparian terraces with close to 95% canopy cover	No
Walker's manioc	<i>Manihot walkerae</i>	E	Species typically occurs on periphery of native brush in sandy loam underlain by caliche; flowers April to September	No

1. Texas Parks and Wildlife Department (TPWD): E = endangered, T = threatened  
 Source: TPWD (2011a)

### ***No Action Alternative***

Under the No Action Alternative, no changes to the levee system or the Mission Main Canal would occur. Existing vegetation communities and habitat would not be cleared for canal access road re-establishment, nor would additional habitat be created within the project area. Routine maintenance activities would remain unchanged.

### ***Alternative 1 (Preferred Alternative): Canal Modification***

The project area is composed primarily of regularly maintained areas that provide relatively low quality habitat for most T&E species. Canal modification activities under the Preferred Alternative would impact approximately 5.3 acres of non-native grasses associated with the landside levee toe and the slope of the northern access and maintenance road. State-listed species associated with this habitat include Coues' rice rat, reticulate collared lizard and Texas horned lizard. State-listed species associated with the 3.6 acres of herbaceous riparian vegetation and the banks of the Mission Main Canal include black-spotted newt, white-lipped frog, Mexican treefrog, sheep frog, South Texas siren (large form) and indigo snake. State-listed species associated with the Mission Main Canal are primarily mollusks and include the false spike, Salina mucket, and Texas hornshell.

It is anticipated that Coues' rice rat, indigo snake, reticulate collared lizard and Texas horned lizard would move to the adjacent, undisturbed areas of the levee slope or the north slope of the existing canal access road during construction. However, no similarly suitable habitat is adjacent to the Mission Main Canal for the state-listed amphibians. A survey of state-listed species that may occur within the Mission Main Canal and its banks is currently being conducted by TPWD. Based on the results of the survey, USIBWC would coordinate with TPWD regarding an appropriate course of action. The USIBWC would also provide a qualified environmental monitor to survey for T&E species to prevent direct take of any state-listed species. The environmental monitor also would survey for birds protected under MBTA to prevent destruction of nests or eggs during construction activities.

The state-listed mollusks are unable to survive without water for more than a few hours; therefore, a survey by a qualified biologist would be conducted during the dewatering process of the Mission Main Canal to determine the presence or absence of state-listed mollusks. USIBWC would also submit an Aquatic Relocation Plan for TPWD approval a minimum of four weeks prior to any dewatering activities.

### ***Alternative 2: Sheet Pile Wall***

The project area is composed primarily of regularly maintained areas that provide relatively low quality habitat for most T&E species. Construction activities under Alternative 2 would impact approximately 6.3 acres of non-native grasses associated with the landside levee slope and toe. State-listed species associated with this habitat include Coues' rice rat, reticulate collared lizard and Texas horned lizard. After construction, approximately 1.8 acres of herbaceous riparian vegetation would be subject to regular vegetation maintenance activities by the UID. State-listed species associated with this habitat and the banks of the Mission Main Canal include black-

spotted newt, white-lipped frog, Mexican treefrog, sheep frog, South Texas siren (large form) and indigo snake.

Construction impacts would be temporary and localized along the landside slope and toe of the existing levee. It is anticipated that Coues' rice rat, indigo snake, reticulate collared lizard and Texas horned lizard would move to the adjacent, undisturbed areas of the levee slope or the north slope of the existing canal access road during construction. State-listed species associated with the herbaceous riparian vegetation along the Mission Main Canal would be subject to impacts from vegetation maintenance. Compliance with Texas Parks and Wildlife Code would be the responsibility of the UID.

The USIBWC would provide a qualified environmental monitor to survey for T&E species and prevent direct take of any state-listed species during construction. The environmental monitor also would survey for birds protected under MBTA to prevent destruction of nests or eggs during construction activities.

### ***Alternative 3: Retention Wall***

The project area is composed primarily of regularly maintained areas that provide relatively low quality habitat for most T&E species. Construction activities under Alternative 3 would impact approximately 9.5 acres of non-native grasses associated with the landside levee slope and toe. State-listed species associated with this habitat include Coues' rice rat, reticulate collared lizard and Texas horned lizard. After construction, approximately 1.8 acres of herbaceous riparian vegetation would be subject to regular vegetation maintenance activities by the UID. State-listed species associated with this habitat and the banks of the Mission Main Canal include black-spotted newt, white-lipped frog, Mexican treefrog, sheep frog, South Texas siren (large form) and indigo snake.

Construction impacts would be temporary and localized along the landside slope and toe of the existing levee. It is anticipated that Coues' rice rat, indigo snake, reticulate collared lizard and Texas horned lizard would move to the adjacent, undisturbed areas of the levee slope or the north slope of the existing canal access road during construction. State-listed species associated with the herbaceous riparian vegetation along the Mission Main Canal would be subject to impacts from vegetation maintenance. Compliance with Texas Parks and Wildlife Code would be the responsibility of the UID.

The USIBWC would provide a qualified environmental monitor to survey for T&E species and to prevent direct take of any state-listed species during construction. The environmental monitor also would survey for birds protected under the MBTA to prevent destruction of nests or eggs during construction activities.

## **3.2 CULTURAL RESOURCES**

Cultural resources are prehistoric and historic archeological sites, structures, districts, artifacts, and/or any materials which have been made or modified through past human activity that embodies cultural significance. In this document, the term cultural resources refers specifically

to prehistoric and historic archeological sites, the materials associated with these sites, and historic architectural resources.

The proposed undertaking represents a federally sponsored project on private lands and has the potential for impacting cultural resources that may lie within the Area of Potential Effect (APE). A cultural resources evaluation of the proposed APE is required to meet legal responsibilities under existing federal and state guidelines, including Sections 106 and 110 of the National Historic Preservation Act (NHPA) of 1966 (PL89-665; 80 Stat. 915; 16 USC §4221 et seq.); Executive Order Number 11593 of 1971; the Archeological and Historic Preservation Act (AHPA) of 1974 (PL 93-291; 88 Stat. 174; 16 USC §469 et seq.); the American Indian Religious Freedom Act (AIRFA) of 1978 (PL 95-341; 92 Stat. 469; 42 USC §12996); and the Native American Graves Repatriation Act (NAGPRA) of 1990 (PL 101-601; 104 Stat. 3048; 25 USC §3001 et seq.).

### **3.2.1 Previous Cultural Resources Studies**

Four investigations were previously conducted to identify cultural resources in the immediate vicinity of the Mission Levee project area. In 1995, archeologists from Texas A&M University performed a survey at Bentsen-Rio Grande Valley State Park (BRGVSP). The intensive survey consisted of two backhoe trenches, four 1-by-0.5-meter excavation units, and 424 shovel tests within the 588-acre park located adjacent to the southern edge of the Mission Levee ROW (Hartmann et al. 1995). They identified a concentration of historic metal, glass artifacts, and concrete debris within the boundaries of the park dating no earlier than 1950. Because this cultural deposit was not more than 50 years old, an archeological site designation was not provided.

In 2002, Geo-Marine, Inc., for Wendy Lopez and Associates, conducted an assessment of effects that USIBWC maintenance activities would have on cultural resources in support of a USACE Environmental Impact Statement for the LRGFCP (Cooper et al. 2002). This study area included the Mission Levee project APE, but survey methods for this portion of the project area included only field reconnaissance and archival research. The study identified one high probability area ([HPA]; 16LJ1) within the Mission Levee project APE. Cooper et al. (2002) also recorded the archeological site observed by Texas A&M University (Hartmann et al. 1995) as 41HG206. The study also identified one archeological site (41HG125) and one HPA (16MI2) in the vicinity of, but outside of the Mission Levee project APE (Cooper et al. 2002). Site 16MI2, a historic structure complex, occurs south of the Mission Levee and outside the Mission Levee project APE near the intersection of Inspiration Road and Military Road. Site 41HG125, a late prehistoric artifact scatter occurs 1.2 miles to the north and outside of the Mission Levee project APE, near Palmview, Texas.

In 2006, LGGROUP, for Parsons, conducted a resources evaluation (Neel 2006) in support of an EA for the USIBWC for proposed modifications to the Mission Levee and Common Levee Systems (USIBWC 2007). The project area included the 2.9 miles of Mission Levee within the current project APE. Data collection methods for this project included a site file search, archival research and field reconnaissance. The study identified one area of high probability (HPA 3) adjacent to the Mission Levee project APE that includes the Hedley Ranch and the ruins of the King Ranch. The King Ranch ruins occur near Bentsen Palm Road adjacent to the Mission

Levee project APE. The architectural survey identified 30 historic-age or unknown-age architectural resources. Nine of these resources are located within the Mission Levee project APE.

In 2007, the TPWD conducted investigations at BRGVSP (Strutt 2008). Site 41HG206 was updated. The historic artifact scatter was associated with Las Nuevas Ranch (State Site Form by Christopher Ringstaff: November 26, 2007). The historic artifact scatter was located in the northern portion of BRGVSP, in a cleared area adjacent to the park road at the old headquarters (State Site Form by Christopher Ringstaff: November 26, 2007). The site was recommended eligible for listing on the NRHP. Site 41HG206 is outside the Mission Levee APE.

In 2008, Moore Archeological Consulting, Inc. conducted a cultural resources intensive pedestrian survey and intensive shovel testing within the entirety of the Phase II segment of the Mission and Common Levee Systems rehabilitation project for the USIBWC (Mangum and Moore 2008). The Phase II segment consisted of an approximately 3.6 mile segment of the overall levee system and included the 2.9 miles of Mission Levee within the current project APE. The work was performed by a crew subcontracted from Coastal Environments, Inc. A total of 67 shovel tests were excavated within the footprint of the proposed levee. All shovel tests were negative for cultural resources. Based on the findings, Moore Archeological Consulting, Inc. recommended that Phase II of the Mission and Common Levee Systems rehabilitation project be allowed to proceed without additional archeological investigation.

In 2008, Coastal Environments, Inc. conducted an architectural survey of the Phase 2, 3, and 4 segments of the Mission and Common Levee systems improvement project (Hahn and Ryan 2008). The Phase 2a segment includes the current APE. The survey recorded all structures 45 years of age or greater within a 1-mile view corridor of the Mission Levee. The El Jardin de Flores Ranch, consisting of three historic-age buildings, is located approximately 1,000 feet south of the levee and is considered potentially eligible for the NRHP. No resources were considered potentially eligible for the NRHP with the current Mission Levee APE.

### **3.2.2 Archeological Resources**

TRC archeologists consulted the Texas Historical Commission's (THC) Archeological Sites Atlas to determine if there were prehistoric or historic archeological sites located within the study area. Four archeological sites were previously recorded within a 1-mile radius of the project area, however, none of these sites occurs within the current APE. TRC cultural resources staff performed a Phase I cultural resources survey on February 22, 2011. Work involved both shovel testing and a pedestrian survey of two selected HPAs along the project area.

The pedestrian survey was conducted to provide an overview and to determine any areas of obvious localized disturbance prior to shovel testing, as well as to look for surface features and cultural materials. Shovel tests were excavated at regular intervals on a linear transect across the HPAs. Shovel test intervals were no more than 98 feet in accordance with THC guidelines. Shovel test diameters were 11.81 inches to 19.69 inches. Soil was screened through ¼-inch hardware mesh to identify and recover cultural materials. Shovel test locations were backfilled and the surface returned (as much as possible) to its original condition.

Twelve shovel tests were positioned along the Mission Levee project APE within the two pre-determined HPAs approved by the THC. No cultural deposits were observed in any of the excavated areas.

### ***No Action Alternative***

Under the No Action Alternative, the current levee and canal configuration would be retained. Routine maintenance activities would continue. No adverse effects to archeological resources would be anticipated.

### ***All Build Alternatives***

Potential impacts to archeological resources include the disturbance of surface and shallow subsurface materials through the movement and use of heavy machinery adjacent to the existing levee within the APE. Examination of existing site records indicates that there are multiple recent archeological investigations within and near the project area. However, upon the investigation of two HPAs within the APE through pedestrian survey and shovel testing, no archeological resources were observed within the APE. Given these data and the extensive disturbance of the project area by levee and canal construction and modification, no adverse effects to archeological resources would be anticipated from construction activities associated with the Preferred Alternative, Alternative 2, or Alternative 3.

In the event that any human remains or burial furniture are encountered during construction, all work would cease immediately and law enforcement and the THC would be notified.

### **3.2.3 Architectural Resources**

An architectural survey of historic structures was performed along the 2.9 miles of the Mission Levee ROW. The architectural survey identified two historic resources: the 2.9-mile portion of the Mission Protective Levee System and the adjacent Mission Main Canal of the UID. Each of these resources has associated features, 24 of which are within the APE. These include 12 irrigation and drainage structures with pipes running under the canal (levee structures), six irrigation turnouts that deliver water from the canal, and six bridges. All of the irrigation and drainage structures and bridges were originally constructed as part of the Mission Protective Levee project by the USIBWC in 1961 (USIBWC ca. 1962). The two identified resources were determined potentially eligible for individual listing on the NRHP. In a letter dated August 2, 2011, the THC determined that the Mission Main Canal was not potentially eligible for listing on the NRHP but the Mission Protective Levee System was potentially eligible for listing.

### ***No Action Alternative***

Under the No Action Alternative, the current levee and canal configuration would be retained. Routine maintenance activities would continue. No adverse effects to architectural resources would be anticipated.

### ***Alternative 1 (Preferred Alternative): Canal Modification***

Impacts that may occur to architectural resources within the APE may include the alteration of architectural traits by modification of existing structures, structural instability to existing structures from earth movement and/or vibration of heavy machinery. These aspects can affect the physical integrity of an NRHP-eligible or potentially eligible architectural resource, which would result in the loss of those characteristics that make it potentially eligible for nomination to the NRHP.

The effect of the Preferred Alternative on the Mission Protective Levee would be to re-establish the road that existed adjacent to the levee prior to raising the levee in 2009. The irrigation and drainage structures that run under the levee would remain in place and the profile would be unchanged. A degree of the levee's integrity would be restored with the re-establishment of the road, and the overall structure would still maintain its integrity of design, workmanship, association, materials, feeling, and setting. Therefore, the Preferred Alternative would have no adverse effect to the NRHP-eligible Mission Protective Levee. The THC concurred, in a letter dated August 2, 2011, that there would be no adverse effect on the Mission Protective Levee by the Preferred Alternative.

### ***Alternative 2: Sheet Pile Wall***

The effect of Alternative 2 on the Mission Protective Levee would be to re-establish the road that existed adjacent to the levee prior to raising the levee in 2009. The irrigation and drainage structures that run under the levee would remain in place and the profile would be unchanged. A degree of the levee's integrity would be restored with the re-establishment of the road, and the overall structure would still maintain its integrity of design, workmanship, association, materials, feeling, and setting. There would be no modification to the Mission Main Canal. Therefore, Alternative 2 would have no adverse effect to the NRHP-eligible Mission Protective Levee. The USIBWC would work in close coordination with the THC to develop measures to minimize impacts to NRHP-eligible resources.

### ***Alternative 3: Retention Wall***

The effect of Alternative 3 on the Mission Protective Levee would be to re-establish the road that existed adjacent to the levee prior to raising the levee in 2009. The irrigation and drainage structures that run under the levee would remain in place and the profile would be unchanged. A degree of the levee's integrity would be restored with the re-establishment of the road, and the overall structure would still maintain its integrity of design, workmanship, association, materials, feeling, and setting. There would be no modification to the Mission Main Canal. Therefore, Alternative 3 would have no adverse effect to the NRHP-eligible Mission Protective Levee. The USIBWC would work in close coordination with the THC to develop measures to minimize impacts to NRHP-eligible resources.

#### **3.2.4 Native American Resources**

Native American resources are sites, areas, and materials important to Native Americans for heritage or religious reasons. Native American resources may include prehistoric sites and

artifacts, contemporary sacred areas, traditional use areas (e.g., native plant or animal habitat), sources used in the production of sacred objects and traditional implements, or traditional cultural properties. Sacred places important to religion also may be present and may include mountain peaks, springs, and burial sites. Traditional rituals may prescribe the use of a particular native plants, animals, or minerals from specific places. Therefore, activities that may affect sacred areas, their accessibility, or the availability of materials used in traditional practices may be of concern.

Impacts to Native American resources as a result of the proposed project include destruction of traditional resources, burials, and sacred sites, and plant or animal habitat through ground-disturbing activities. Audio and visual intrusion may adversely affect the visual and audio landscape or the viewshed of these resources and may disturb any associated ceremonial activities. These types of physical disturbance may disturb or destroy unidentified Native American resources.

Based on previous USIBWC reports, no resources or concerns to Native American Tribes have been identified in nearby project areas (USIBWC 2009, 2010). Native American consultation was initiated by the USIBWC, pursuant to 36 CFR 800.2, with the Comanche Nation, Tonkawa Tribe, Apache Tribe of Oklahoma, Mescalero-Apache Tribe, Wichita and Affiliated Tribes and Kiowa Tribe of Oklahoma to identify any Native American resources or concerns. In a letter dated April 26, 2011 the Tonkawa Tribe indicated that no specifically designated historical or cultural sites were located within the project area.

### ***All Alternatives***

No resources or concerns to Native American Tribes previously have been identified. Tribes previously have indicated no concerns regarding resources in nearby project areas (USIBWC 2009, 2010). Access to any identified sites or resources within the floodway would be maintained. In the event that any human remains or burial furniture are encountered during construction, all work would cease immediately and tribal representatives would be contacted, if necessary. Routine maintenance activities similar to current activities would continue. No Native American resources would be affected.

## **3.3 WATER QUALITY**

### ***Surface Water***

Sections 303(d) and 305(b) of the Clean Water Act (CWA) require all states to identify and characterize waters that do not meet, or are not expected to meet, applicable water quality standards. The Texas Commission on Environmental Quality (TCEQ) is the agency of the State of Texas responsible for ensuring that all waters of the state are in compliance with applicable surface water quality standards (30 TAC 307). The TCEQ's Texas Integrated Report for CWA Sections 303(d) and 305(b) describes the status of Texas' natural waters based on historical data and identifies waterbodies that do not meet standards set for their use on the 303(d) list, an inventory of impaired waters. The segment of the Rio Grande where water is pumped into the Mission Main Canal is included on the 303(d) list for bacteria. No other impaired waters are located within the project area.

## ***Groundwater***

The major aquifer underlying the Mission Levee area is the Gulf Coast Aquifer. The aquifer consists of discontinuous beds of clay, silt, sand, and gravel that are hydrologically connected to form a large, leaky, artesian system. Water quality issues associated with the Gulf Coast Aquifer include land-surface subsidence, increased chloride content in the groundwater from the southwestern portion of the aquifer, and saltwater intrusion along the coast (Texas Water Development Board [TWDB] 2006). An additional aquifer is located in the project area and is associated with the alluvial material of the Rio Grande river system.

A data search on the TWDB Water Information Integration and Dissemination (WIID) System was conducted on March 10, 2011 (TWDB 2011). The WIID System provides TWDB groundwater data and submitted water well driller reports. The area of interest included and approximately 100 feet on either side of the entire length of the project area corridor. No water wells were identified within the area of interest.

### ***No Action Alternative***

Under the No Action Alternative, no construction activities would occur and the surface water quality in the Mission Main Canal and groundwater quality in the aquifers would remain unchanged from current conditions.

### ***Alternative 1 (Preferred Alternative): Canal Modification***

The project would disturb approximately 8.9 acres of terrestrial habitat and would be subject to the Texas Pollutant Discharge Elimination System (TPDES) Construction General Permit as administered by the TCEQ. A Storm Water Pollution Prevention Plan (SWPP) would be prepared and implemented and a construction notice would be posted at the project site.

The Mission Main Canal would be completely dewatered prior to any construction activities. Temporary dams would be placed within the Mission Main Canal upstream and downstream of the project area to ensure fill material, sediment and construction debris would not enter either the Rio Grande or the rest of the UID system. Therefore, no impacts are expected to surface water and groundwater under the Preferred Alternative.

### ***Alternative 2: Sheet Pile Wall***

Short-term impacts on surface water within the Mission Main Canal may occur as a result of the activities associated with Alternative 2. Sheet pile wall construction activities are expected to remove vegetation along the landside slope and toe of the Mission Levee, which could result in a short-term increase of erosion potential and runoff during heavy precipitation events. Construction activities, however, would be conducted using best management practices to minimize sediment or construction debris from being transported into the Mission Main Canal.

Silt curtains or other erosion control devices such as temporary erosion blankets would be used to prevent sediment from reaching waterbodies. Best management practices would be developed

as part of the required SWPPP and in compliance with all federal, state, and local regulations, including Section 402 of the CWA and rules established under the 30 TAC.

Water quality impacts from Alternative 2 construction activities would be localized and temporary, occurring only over a period of weeks at any one location. In accordance with the required construction storm water permit, specific measures would be implemented to minimize the impacts from construction activities. Impacts to surface water and groundwater are expected to be negligible under Alternative 2.

### ***Alternative 3: Retention Wall***

Short-term impacts on surface water within the Mission Main Canal may occur as a result of the activities associated with Alternative 3. Retention wall construction activities are expected to remove vegetation along the landside slope and toe of the Mission Levee, which could result in increased erosion potential and runoff during heavy precipitation events. Construction activities, however, would be conducted using best management practices to minimize sediment or construction debris from being transported into the Mission Main Canal.

Silt curtains or other erosion control devices such as temporary erosion blankets would be used to prevent sediment from reaching waterbodies. Best management practices would be developed as part of the required SWPPP and in compliance with all federal, state, and local regulations, including Section 402 of the CWA and rules established under the 30 TAC.

Water quality impacts from Alternative 3 construction activities would be localized and temporary, occurring only over a period of weeks at any one location. In accordance with the required construction storm water permit, specific measures would be implemented to minimize the impacts from construction activities. Impacts to surface water and groundwater are expected to be negligible under Alternative 3.

## **3.4 LAND USE**

This section summarizes the existing land uses within the project area in Hidalgo County. Land use descriptions are limited to areas immediately adjacent to the project area along the Mission Levee. Current land use potentially affected by the Proposed Action includes natural resources management areas, recreation areas, agricultural land, and residential areas. No urban or industrial areas are located within the project area. Any potential borrow material for compacted fill would be obtained from commercial sources outside the project area by the construction contractor.

### **3.4.1 Natural Resources Management and Recreational Areas**

Natural resources management areas are established to represent habitats and wildlife populations typical of each ecological region of Texas and to encourage research on wildlife populations and habitat, including issues such as T&E species recovery and resource management education. Two tracts of the LRGNWR, the La Parida Banco and El Morillo Banco units, occur adjacent the project area (Appendix A). These tracts are not open to the public.

Recreational areas are established to provide hiking, camping, bird watching, and other outdoor recreational opportunities. The BRGVSP and the NABA National Butterfly Center are located adjacent to the project area. (Appendix A). The BRGVSP occupies a total of 760 acres, with tracts on both sides of the Mission Main Canal. Together with over 1,700 acres of adjoining federal refuge land, this park is considered one of the premiere bird watching destinations in the United States. The park features nature trails, a hawk tower, birding blinds and viewing stations, primitive camping sites, and tram tours. Over the last three years, average annual visitation is approximately 27,700 with approximately 81% of annual park visitation occurring between October and March (Y. Lacio, TPWD staff, personal communication, March 10, 2011).

The National Butterfly Center occupies 100 acres and is committed to education, conservation and scientific research on wild butterflies (NABA 2011). The Center consists of a visitors' center, trails, and gardens.

### ***No Action Alternative***

No impacts to natural resource management or recreation areas are anticipated under the No Action Alternative, as the current levee and Mission Main Canal configuration would be retained. Construction activities would not occur and no vegetation would be cleared. Routine maintenance activities would continue.

### ***All Build Alternatives***

No construction activities would occur within areas managed by the LRGNWR. Access to the refuge tracts would be maintained throughout construction. All construction activities adjacent to the LRGNWR would be coordinated with the USFWS.

No construction activities would occur within areas managed by the TPWD or NABA. It is anticipated that periodic, temporary impacts would occur from construction traffic at the bridge that provides entry into the BRGVSP. A traffic control plan would be implemented to reduce the impact of construction-related traffic by using traffic control measures such as flaggers and traffic signs. It is not anticipated that the bridge would be closed to vehicular or pedestrian traffic.

Since construction activities would be similar to those of the levee raising project in 2009, it is anticipated that similar impacts to visitation would be expected. Visitation numbers between October 2008 and June 2009 decreased by 0.02% compared to visitation numbers of the same months in the previous year. All construction activities adjacent to the BRGVSP would be coordinated with the TPWD.

Temporary impacts also would occur from construction traffic near the National Butterfly Center; however, access would not be prevented to these properties during construction activities.

### **3.4.2 Agricultural Land**

The Farmland Protection Policy Act (PL 97 – 98; Sec. 1539 – 1549; 7 USC 4201, et seq.) was enacted to minimize the unnecessary conversion of farmland to non-agricultural uses as a result of federal actions. The Farmland Protection Policy Act requires federal agencies to evaluate the adverse effects of their activities on prime and unique farmland, as well as farmland of statewide and local importance. The NRCS is responsible for protecting significant agricultural lands from irreversible conversions that would result in the loss of an essential food or environmental resource. Prime farmland is characterized as land with the best physical and chemical characteristics for the production of food, feed, forage, fiber, and oilseed crops. Prime farmland is used either for food or fiber crops or is available for those crops, but is not urban, built-up land, or water areas. Unique farmland is land other than prime farmland that is used for production of specific high-value food and fiber crops. It has the special combination of soil quality, location, growing season, and moisture supply needed to economically produce sustained high-quality, high yields, or specific crops when treated and managed according to acceptable farming methods.

Agricultural land borders portions of both sides of the project area (Appendix A). However, because of the disturbance from previous construction activities associated with the Mission Main Canal and levee, no prime or unique farmland is under cultivation within the limits of the project area.

#### ***No Action Alternative***

No impacts to agricultural areas are anticipated under the No Action Alternative, as the current levee and Mission Main Canal configuration would be retained. Construction activities would not occur and no vegetation would be cleared. Routine maintenance activities would continue.

#### ***All Build Alternatives***

No construction activities would occur within agricultural areas. Access to agricultural land would be maintained throughout construction. It is anticipated that periodic, temporary impacts would occur from construction traffic. A traffic control plan would be implemented to reduce the impact of construction-related traffic by using traffic control measures such as flaggers and traffic signs. Agricultural land use in the area would continue as at the present time.

### **3.4.3 Residential Areas**

Residences are located near the intersection of Bentsen Palm Drive and Military Road. Residential development within this area is limited and consists of a nearby subdivision and Bentsen Palm Village RV Park. No residential developments are located within the limits of the project area (Appendix A).

### ***No Action Alternative***

No impacts to residential areas are anticipated under the No Action Alternative, as the current levee and Mission Main Canal configuration would be retained. Construction activities would not occur and no vegetation would be cleared. Routine maintenance activities would continue.

### ***All Build Alternatives***

No construction activities would occur within residential areas. Access to the residences would be maintained throughout construction. It is anticipated that periodic, temporary impacts would occur from construction traffic. A traffic control plan would be implemented to reduce the impact of construction-related traffic by using traffic control measures such as flaggers and traffic signs.

## **3.5 COMMUNITY RESOURCES**

### **3.5.1 Socioeconomics**

#### ***Population***

The Mission Levee rehabilitation project area is located within Hidalgo County. Municipalities that are near the Mission Levee project area include Mission, Madero, and Palmview. The region of influence of this analysis is based on the location of the construction work being conducted in Hidalgo County.

The total population for Hidalgo County in 2010 was 774,769 persons (U.S. Census Bureau 2010a). Based on projected population data for 2040 (TWDB 2010), Hidalgo County is projected to increase by 91% over the next 30 years.

Median household income for Hidalgo County in 2010 was \$33,200 (U.S. Department of Housing and Urban Development 2010). Per capita income was estimated at \$13,130 (reported in 2009 dollars) for Hidalgo County (U.S. Census Bureau 2010b). Approximately 31.7% of all families in Hidalgo County were estimated to be below the poverty level in the 2009 (U.S. Census Bureau 2010b). Additional information on poverty data is provided in Section 3.5.2, Environmental Justice.

#### ***Housing***

For the purposes of this EA, housing was evaluated based on the categories as defined by the U.S. Census Bureau. Multi-family housing units include structures that contain two or more units. Single-family housing units include attached and detached 1-unit structures, mobile homes, and other housing units that do not fit in the previous categories such as boats and houseboats, recreational vehicles and campers, vans, and railroad cars.

The estimated total housing units, single-family units, and multi-family units for Hidalgo County in 2009 was 246,498 (U.S. Census Bureau 2010b). In Hidalgo County, approximately 16% of the housing stock in 2009 was composed of multi-family units, whereas single-family units

accounted for the majority of the housing stock in the county at approximately 84% (U.S. Census Bureau 2010b). Between 2000 and 2009, the total number of housing units in Hidalgo County increased by an estimated 28% (U.S. Census Bureau 2010b).

### ***No Action Alternative***

Under the No Action Alternative, current maintenance operations along the Mission Levee and Mission Main Canal would continue to provide long-term benefits by maintaining revenue in wages and expenditures into the region's economy. USIBWC employees from several field offices and UID employees contribute to the recurring maintenance activities. No additional business sales, income, or employment from construction would be created, no changes to housing units would occur, and no additional housing units would be created as a result of current maintenance activities.

### ***Alternative 1 (Preferred Alternative): Canal Modification***

Direct and indirect employment, business sales volume, and income are indicator criteria of socioeconomic impacts of the Preferred Alternative. Estimates of economic impacts of the Preferred Alternative at a county level in terms of employment, income, and sales volume, and reference annual values for Hidalgo County are presented in Table 3-4. Unit costs for levee improvements are calculated estimates based on consultation with the USIBWC and data and methods available in previous USIBWC reports (USIBWC 2008). The annual economic influx would be approximately \$30.5 million in terms of increased sales volume and income. A temporary influx of employment, business sales volume, and income would occur in Hidalgo County during construction activities. Construction activities associated with the Preferred Alternative would be performed by current USIBWC employees, current UID employees, and local construction contractors. The proposed improvements to the Mission Levee are not expected to create major changes to the economic base or the tax base of Hidalgo County. Under the Preferred Alternative, maintenance operations along the Mission Levee and Mission Main Canal would be similar to conditions prior to construction.

Residential and recreational properties are located adjacent to the project area, and it is anticipated that periodic, temporary obstructions would occur from construction traffic. However, a traffic control plan would be implemented to reduce the impact of construction-related traffic by using traffic control measures such as flaggers and traffic signs; therefore, no adverse financial impacts to residents or recreational properties from construction traffic would occur under the Preferred Alternative.

**Table 3-4: Economic Impacts of the Mission Levee System in Hidalgo County, Texas**

Evaluation Criteria	Unit Value Per \$1M Expended <sup>1</sup>	Annual Value for Hidalgo County	Preferred Alternative	Change Relative to Hidalgo County	Alternative 2	Change Relative to Hidalgo County	Alternative 3	Change Relative to Hidalgo County
Local Expenditures	\$1,000,000	--	\$9,000,000	--	\$8,800,000	--	\$11,000,000	--
Direct Employment	19	--	171	--	167	--	209	--
Indirect Employment	12	--	108	--	106	--	132	--
<i>Total Employment</i>	<i>31</i>	<i>276,150<sup>2</sup></i>	<i>279</i>	<i>0.10%</i>	<i>273</i>	<i>0.10%</i>	<i>341</i>	<i>0.12%</i>
Direct Sales Volume	\$1,274,065	--	\$11,466,585	--	\$11,211,772	--	\$14,014,715	--
Indirect Sales Volume	\$2,114,948	--	\$19,034,532	--	\$18,611,542	--	\$23,264,428	--
<i>Total Sales Volume</i>	<i>\$3,389,013</i>	<i>\$5,106,141,475<sup>3</sup></i>	<i>\$30,501,117</i>	<i>0.60%</i>	<i>\$29,823,314</i>	<i>0.58%</i>	<i>\$37,279,143</i>	<i>0.73%</i>
Direct Income	\$554,814	--	\$4,993,326	--	\$4,882,363	--	\$6,102,954	--
Indirect Income	\$452,466	--	\$4,072,194	--	\$3,981,701	--	\$4,977,126	--
<i>Total Income</i>	<i>\$1,007,280</i>	<i>\$10,172,716,970<sup>4</sup></i>	<i>\$9,065,520</i>	<i>0.09%</i>	<i>\$8,864,064</i>	<i>0.09%</i>	<i>\$11,080,080</i>	<i>0.11%</i>

1. Unit data for levee construction from USIBWC Rio Grande Flood Control Projects PEIS (USIBWC 2008; Table II-9)
2. Total of labor force (16 years and older) employed in 2009 (U.S. Census Bureau 2010b)
3. Estimated Gross Sales for Hidalgo County in 2009 (Texas Comptroller of Public Accounts 2010)
4. Based on 2009 per capita income of \$13,130 and a Hidalgo County population of 774,769.

### ***Alternative 2: Sheet Pile Wall***

Direct and indirect employment, business sales volume, and income are indicator criteria of socioeconomic impacts of Alternative 2. Estimates of economic impacts of Alternative 2 at a county level in terms of employment, income, and sales volume, and reference annual values for Hidalgo County are presented in Table 3-4. Unit costs for levee improvements are calculated estimates based on consultation with the USIBWC and data and methods available in previous USIBWC reports (USIBWC 2008). The annual economic influx would be approximately \$29.8 million in terms of increased sales volume and income. A temporary influx of employment, business sales volume, and income would occur in Hidalgo County during construction activities. Construction activities associated with Alternative 2 would be performed by current USIBWC employees and local construction contractors. The proposed improvements to the Mission Levee are not expected to create major changes to the economic base or the tax base of Hidalgo County. Under Alternative 2, maintenance operations along the Mission Levee would be similar to conditions prior to construction.

Residential and recreational properties are located adjacent to the project area, and it is anticipated that periodic, temporary obstructions would occur from construction traffic.

However, a traffic control plan would be implemented to reduce the impact of construction-related traffic by using traffic control measures such as flaggers and traffic signs; therefore, no adverse financial impacts to residents or recreational properties from construction traffic would occur under Alternative 2.

### ***Alternative 3: Retention Wall***

Direct and indirect employment, business sales volume, and income are indicator criteria of socioeconomic impacts of Alternative 3. Estimates of economic impacts of Alternative 3 at a county level in terms of employment, income, and sales volume, and reference annual values for Hidalgo County are presented in Table 3-4. Unit costs for levee improvements are calculated estimates based on consultation with the USIBWC and data and methods available in previous USIBWC reports (USIBWC 2008). The average annual economic influx would be approximately \$37.2 million in terms of increased sales volume and income. A temporary influx of employment, business sales volume, and income would occur in Hidalgo County during construction activities. Construction activities associated with Alternative 3 would be performed by current USIBWC employees and local construction contractors. The proposed improvements to the Mission Levee are not expected to create major changes to the economic base or the tax base of Hidalgo County. Under Alternative 3, maintenance operations along the Mission Levee would be similar to conditions prior to construction.

Residential and recreational properties are located adjacent to the project area, and it is anticipated that periodic, temporary obstructions would occur from construction traffic. However, a traffic control plan would be implemented to reduce the impact of construction-related traffic by using traffic control measures such as flaggers and traffic signs; therefore, no adverse financial impacts to residents or recreational properties from construction traffic would occur under Alternative 3.

### **3.5.2 Environmental Justice**

On February 11, 1994, the President issued Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations”, providing that “*each Federal agency make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health and environmental effects of its programs, policies, and activities on minority populations and low-income populations.*” In an accompanying memorandum to heads of departments, the President specifically recognized the importance of procedures under NEPA for identifying and addressing environmental justice concerns, stating that “*each Federal agency shall analyze the environmental effects, including human health, economic and social effects, of Federal actions, including effects on minority communities and low-income communities, when such analysis is required by [NEPA].*”

According to the CEQ, minority groups include individuals who are members of American Indian or Alaskan Native, Asian or Pacific Islander, Black (not of Hispanic origin), and Hispanic population groups. A minority population is a group of individuals living in close proximity to one another where either: (a) a minority group of the population within the affected area exceeds 50% of that population, (b) the minority population percentage of the affected area is

meaningfully greater than the minority population percentage in the general population, or (c) there is more than one minority group present and the minority percentage, as calculated by aggregating all minority persons, meets one of the first two thresholds.

As defined by the CEQ, low-income groups include individuals who earn an annual family income below the statistical poverty thresholds provided by the U.S. Census Bureau's Current Population Reports, Series P-60. A low-income population includes a group of individuals whose median family income for the year is below the poverty threshold identified by the U.S. Census Bureau.

In order to identify minority and low-income populations in the project area potentially affected by the three alternatives, Hidalgo County was chosen as an arbitrary geographic boundary of a group of individuals that experience common conditions of environmental exposure as to not artificially dilute or inflate the affected minority or low-income populations. All of the data presented below are derived from the U.S. Census Bureau. Table 3-5 presents a detailed breakdown of minority populations and poverty rates in Hidalgo County.

**Table 3-5: Percentage of Minority Populations and Poverty Rates in Hidalgo County, Texas**

<b>Ethnic Composition<sup>1</sup></b>	<b>Hidalgo County</b>	<b>Percent</b>
White	60,553	7.8%
Hispanic or Latino (of any race)	702,206	90.6%
Black	2777	0.4%
Asian	7122	0.9%
American Indian	524	0.1%
Native Hawaiian and Other Pacific Islander	49	<0.1%
Other	348	<0.1%
<i>Total Population</i>	<i>774,769</i>	<i>100%</i>
<i>Total Minority</i>	<i>713,026</i>	<i>92.0%</i>
<b>Poverty Levels<sup>2</sup></b>	<b>Hidalgo County</b>	<b>Percent</b>
Individuals Below Poverty Levels	--	36.0%

1. Based on 2010 values presented in the U.S. Census Bureau (2010a)

2. Based on estimated values presented by U.S. Census Bureau (2010b) as 2010 data are not available at this time

### ***No Action Alternative***

No adverse impacts to biological, environmental, community, and cultural resources would occur under the No Action Alternative, as the current levee and Mission Main Canal configuration would be retained. No adverse impacts to disproportionately high minority and low-income populations would occur under the No Action Alternative.

### ***All Build Alternatives***

Data indicate that Hidalgo County has a high minority population (approximately 92%) and 36% of individual incomes are below the poverty level; however, construction activities would not occur in residential or workplace areas. A small, positive, temporary economic contribution to the local community would occur under each Alternative. No disproportionate adverse impacts to high minority and low-income populations are expected from improvements to the Mission levee.

### **3.5.3 Transportation**

The Mission Levee and Mission Main Canal extend from 1.1 miles west of Bentsen Palm Road east to Military Road bridge crossing, a distance of 2.9 miles. Numerous paved and unpaved local, state, and intrastate roadways are located within and near the project area. Many of these roadways cross the Mission Main Canal. The transportation system for the Hidalgo County area is served by a network of highways that include United States Highways 83 and 281.

### ***No Action Alternative***

Under the No Action Alternative, no changes to the levee system or the Mission Main Canal would occur. Therefore, no impacts would be anticipated.

### ***Alternative 1 (Preferred Alternative): Canal Modification***

Proposed improvements to the Mission Levee and Main Canal under the Preferred Alternative would have moderate impacts on local transportation. Heavy construction equipment (e.g., dump trucks, front-end loaders, graders) likely would be driven to the construction site from local areas using local highways and surface streets. During construction, a temporary increase in use of the access roads would occur during placement of equipment in the staging areas. Potential construction access road locations for the Preferred Alternative include Green Road, Bentsen Palm Drive, Airfield Road, Inspiration Road, and Military Road.

Subsequent construction activities also would temporarily increase local transportation, as fill material would be imported from sources outside the project area. Construction activities, including staging activities, would occur within the existing ROW. Transportation of construction equipment and the use of personal vehicles would occur within the ROW and along the levee road system. Following completion of construction, the levee roads would continue providing access for maintenance activities and U.S. Border Patrol (USBP) surveillance activities.

### ***Alternative 2: Sheet Pile Wall***

Proposed improvements to the Mission Levee and Main Canal under Alternative 2 would have moderate impacts on local transportation. Heavy construction equipment (e.g., dump trucks, front-end loaders, graders) likely would be driven to the construction site from local areas using local highways and surface streets. During construction, a temporary increase in use of the access roads would occur during placement of equipment in the staging areas. Potential construction access road locations for the Preferred Alternative include Green Road, Bentsen Palm Drive, Airfield Road, Inspiration Road, and Military Road.

Subsequent construction activities also would temporarily increase local transportation, as excavated material would be exported from the project area. Construction activities, including staging activities, would occur within the existing ROW. Transportation of construction equipment and the use of personal vehicles would occur within the ROW and along the levee road system. Following completion of construction, the levee roads would continue providing access for maintenance activities and USBP surveillance activities.

### ***Alternative 3: Retention Wall***

Proposed improvements to the Mission Levee and Main Canal under Alternative 3 would have moderate impacts on local transportation. Heavy construction equipment (e.g., dump trucks, front-end loaders, graders) likely would be driven to the construction site from local areas using local highways and surface streets. During construction, a temporary increase in use of the access roads would occur during placement of equipment in the staging areas. Potential construction access road locations for the Preferred Alternative include Green Road, Bentsen Palm Drive, Airfield Road, Inspiration Road, and Military Road.

Subsequent construction activities also would temporarily increase local transportation, as excavated material would be exported from the project area. Construction activities, including staging activities, would occur within the existing ROW. Transportation of construction equipment and the use of personal vehicles would occur within the ROW and along the levee road system. Following completion of construction, the levee roads would continue providing access for maintenance activities and USBP surveillance activities.

## **3.6 ENVIRONMENTAL HEALTH**

### **3.6.1 Air Quality**

The Clean Air Act (CAA), as amended in 1977 and 1990, provides the basis for regulating air pollution to the atmosphere. The CAA states that Air Quality Control Regions (AQCR) shall be designated in interstate and major intrastate areas as deemed necessary or appropriate by the federal administrator for attainment and maintenance of the National Ambient Air Quality Standards (NAAQS). The USEPA classifies air quality within AQCR according to whether the concentrations of criteria air pollutants in the atmosphere exceed primary or secondary NAAQS. Primary standards define levels of air quality necessary, with an adequate margin of safety, to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards define levels of air quality necessary to protect public

welfare (e.g., decreased visibility; damage to animals, crops, vegetation, wildlife, and buildings) from any known or anticipated adverse effects of a pollutant.

Based on the NAAQS, each state is divided into three types of areas for each of the criteria pollutants: (a) those that are in compliance with the NAAQS (attainment), (b) those that do not meet the ambient air quality standards (nonattainment), and (c) those areas where a determination of attainment/nonattainment cannot be made due to a lack of monitoring data (unclassifiable – treated as attainment until proven otherwise).

NAAQS currently are established for six criteria air pollutants, including carbon monoxide, lead, nitrogen dioxide, particulate matter with an aerodynamic diameter less than or equal to ten microns, particulate matter with an aerodynamic diameter less than or equal to 2.5 microns, ozone, and sulfur dioxide.

An attainment designation indicates that air quality within an area is as good as or better than the NAAQS. The Mission Levee project area is located within Hidalgo County, which is located within the Brownsville – Laredo AQCR. This region is designated as AQCR 213 by the USEPA and includes Cameron, Hidalgo, Jim Hogg, Starr, Webb, Willacy, and Zapata counties. As of March 2011, AQCR 213 was designated in attainment status for all criteria pollutants (USEPA 2011a).

Table 3-6 presents the combined area emission inventory for Hidalgo County for the year 2002 and impacts associated with the Preferred Alternative, Alternative 2, and Alternative 3 (discussed below). The combined area emission inventory is based on the latest available data from the USEPA National Emissions Inventory as of March 2011 (USEPA 2011b).

### ***No Action Alternative***

No impacts are anticipated under the No Action Alternative, as the current Mission Levee and Main Canal configuration would be retained. No changes would occur to the routine maintenance of the Mission Levee, Main Canal, and northern access and maintenance road.

### ***Alternative 1 (Preferred Alternative): Canal Modification***

Air quality impacts from construction activities would be localized and temporary, occurring only over a period of months at any one location. Negligible impacts are expected from construction activities. Post-construction routine maintenance activities are expected to be similar to current maintenance activities; therefore, no impacts are anticipated from operation and maintenance activities. Emissions from canal water transfer pumping operations at the intersection of the HCID #1 Edinburg Main Canal and UID Mission Main Canal are anticipated to be lower than those of the current pumping operations of the Mission Main Canal, as fewer pumps would be in use under the Preferred Alternative (T. Nieto, personal communication, February 22, 2011). During project construction activities, measures such as wetting the soil, limiting unnecessary idling of construction vehicles, maintaining vehicles in proper working condition, and shutting down construction machines that are not in use would be employed to minimize additional air quality impacts from construction activities. Table 3-6 presents the additional estimated criteria pollutants associated with the Preferred Alternative, as well as the

percentage of increase above the existing Hidalgo County emission inventory. Estimates were calculated for 2.9 miles of construction activities based on methodology and data available in previous USIBWC reports (USIBWC 2007). Estimated emissions represent less than 0.088 % of the Hidalgo County annual emissions inventory for the six criteria pollutants.

**Table 3-6: Air Emissions for Improvements to the Mission Protective Levee System**

Parameter	Emissions					
	Carbon Monoxide	Nitrogen Oxides	Particulate Matter (PM <sub>10</sub> )	Particulate Matter (PM <sub>2.5</sub> )	Sulfur Dioxide	Volatile Organic Compounds
Unit emissions per mile of construction activities (tons per year) <sup>1</sup>	2.11	5.05	5.61	0.95	0.55	0.4
Hidalgo County Emissions Inventory (tons per year) <sup>2</sup>	124,097	26,778	57,977	8,691	1,813	22,963
All Build Alternatives						
Estimated Emissions Produced from Mission Protective Levee System Project (tons per year)	6.12	14.65	16.27	2.76	1.60	1.16
Emissions as a Percentage of Hidalgo County's Emissions (%)	0.005	0.055	0.028	0.032	0.088	0.005

1. Unit data for levee construction from the USIBWC Main and North Floodway EA (USIBWC 2007: Table 4.8).

2. USEPA (2011b), the most recent available data as of March 2011.

**Alternative 2: Sheet Pile Wall**

Air quality impacts from construction activities would be localized and temporary, occurring only over a period of months at any one location. Negligible impacts are expected from construction activities. Post-construction routine maintenance activities are expected to be similar to current maintenance activities; therefore, no impacts are anticipated from operation and maintenance activities. During project construction activities, measures such as wetting the soil, limiting unnecessary idling of construction vehicles, maintaining vehicles in proper working condition, and shutting down construction machines that are not in use would be employed to minimize additional air quality impacts from construction activities. Table 3-6 presents the additional estimated criteria pollutants associated with Alternative 2, as well as the percentage increase above the existing Hidalgo County emission inventory. Estimates were calculated for 2.9 miles of construction activities based on methodology and data available in previous USIBWC reports (USIBWC 2007). Estimated emissions represent less than 0.088 % of the Hidalgo County annual emissions inventory for the six criteria pollutants.

### ***Alternative 3: Retention Wall***

Air quality impacts from construction activities would be localized and temporary, occurring only over a period of months at any one location. Negligible impacts are expected from construction activities. Post-construction routine maintenance activities are expected to be similar to current maintenance activities; therefore, no impacts are anticipated from operation and maintenance activities. During project construction activities, measures such as wetting the soil, limiting unnecessary idling of construction vehicles, maintaining vehicles in proper working condition, and shutting down construction machines that are not in use would be employed to minimize additional air quality impacts from construction activities. Table 3-6 presents the additional estimated criteria pollutants associated with Alternative 3, as well as the percentage increase above the existing Hidalgo County emission inventory. Estimates were calculated for 2.9 miles of construction activities based on methodology and data available in previous USIBWC reports (USIBWC 2007). Estimated emissions represent less than 0.088 % of the Hidalgo County annual emissions inventory for the six criteria pollutants.

#### **3.6.2 Noise**

Noise is defined as sound that is undesirable. Although sound levels are subjective, federal and local governments have established noise guidelines and regulations for the purpose of protecting citizens from potential hearing damage and from various other adverse physiological, psychological, and social effects associated with noise. The Federal Interagency Committee on Urban Noise developed land use compatibility guidelines for noise in terms of day-night average sound level (DNL) metered in decibels (dB) (USDOT 1980). In general, residential units and other noise-sensitive land uses are “clearly unacceptable” in areas where the noise exposure exceeds DNL 75 dB; “normally unacceptable” in regions exposed to noise between DNL 65 and 75 dB; and “normally acceptable” in areas exposed to noise where the DNL is 65 dB or less.

The primary sources of noise within the project area are traffic from local roads and highways, farm equipment, and periodic vegetation management and maintenance activities. The BRGVSP headquarters and several residences are located near the project area. No other sensitive noise receptors such as schools, churches, or medical facilities are located in the project area.

#### ***No Action Alternative***

Under the No Action Alternative, the current Mission Levee and Main Canal would be retained; thus, no noise impacts are anticipated. No additional sources of noise, outside of routine maintenance activities, are expected.

#### ***Alternative 1 (Preferred Alternative): Canal Modification***

Under the Preferred Alternative, construction activities temporarily would increase ambient noise levels due to additional construction vehicle traffic. Trucks would bring additional fill material to the site for fill activities associated with the levee improvement. For the purposes of this EA, it is estimated that the shortest distance between an equipment noise source and a receptor (i.e., person[s]) in a rural area would be 100 feet. The BRGVSP headquarters building would be located within 100 feet of anticipated locations of equipment noise sources. If a person

were within this distance, the person could be exposed to noise as high as 74 to 83 dB. It is anticipated that noise associated with canal water transfer pumping operations at the intersection of the HCID #1 Edinburg Main Canal and UID Mission Main Canal could be as high as 74 to 83 dB. However, it is unlikely a person other than a worker would be within 100 feet of the transfer pumps during operation.

It is anticipated that construction activities would occur between 7:30 a.m. and 5:00 p.m. for 5 days per week during construction activities. However, individuals would not be exposed during the entire noise-producing period because construction activities would be temporary and localized. Under these conditions, persons would not be exposed to long-term and regular noise above 75 dB. As stated above, 75 dB during the noise event indicates a good probability for frequent speech disruption, producing ratings of “barely acceptable” for intelligibility of spoken material. Therefore, although nearby persons are not expected to experience loss of hearing, they may experience frequent speech disruption. During project construction activities, measures such as limiting unnecessary idling of construction vehicles, maintaining vehicles in proper working condition, and shutting down construction machines that are not in use would be employed to minimize additional noise impacts from construction activities.

### ***Alternative 2: Sheet Pile Wall***

Under Alternative 2, construction activities temporarily would increase ambient noise levels due to additional construction vehicle traffic. Trucks would bring additional fill material to the site for fill activities associated with the levee improvement. For the purposes of this EA, it is estimated that the shortest distance between an equipment noise source and a receptor (i.e., person[s]) in a rural area would be 100 feet. The BRGVSP headquarters building would be located within 100 feet of anticipated locations of equipment noise sources. If a person were within this distance, the person could be exposed to noise as high as 74 to 83 dB.

It is anticipated that construction activities would occur between 7:30 a.m. and 5:00 p.m. for 5 days per week during construction activities. However, individuals would not be exposed during the entire noise-producing period because construction activities would be temporary and localized. Under these conditions, persons would not be exposed to long-term and regular noise above 75 dB. As stated above, 75 dB during the noise event indicates a good probability for frequent speech disruption, producing ratings of “barely acceptable” for intelligibility of spoken material. Therefore, although nearby persons are not expected to experience loss of hearing, they may experience frequent speech disruption. During project construction activities, measures such as limiting unnecessary idling of construction vehicles, maintaining vehicles in proper working condition, and shutting down construction machines that are not in use would be employed to minimize additional noise impacts from construction activities.

### ***Alternative 3: Retention Wall***

Under Alternative 3, construction activities temporarily would increase ambient noise levels due to additional construction vehicle traffic. Trucks would bring additional fill material to the site for fill activities associated with the levee improvement. For the purposes of this EA, it is estimated that the shortest distance between an equipment noise source and a receptor (i.e., person[s]) in a rural area would be 100 feet. The BRGVSP headquarters building would be

located within 100 feet of anticipated locations of equipment noise sources. If a person were within this distance, the person could be exposed to noise as high as 74 to 83 dB.

It is anticipated that construction activities would occur between 7:30 a.m. and 5:00 p.m. for 5 days per week during construction activities. However, individuals would not be exposed during the entire noise-producing period because construction activities would be temporary and localized. Under these conditions, persons would not be exposed to long-term and regular noise above 75 dB. As stated above, 75 dB during the noise event indicates a good probability for frequent speech disruption, producing ratings of “barely acceptable” for intelligibility of spoken material. Therefore, although nearby persons are not expected to experience loss of hearing, they may experience frequent speech disruption. During project construction activities, measures such as limiting unnecessary idling of construction vehicles, maintaining vehicles in proper working condition, and shutting down construction machines that are not in use would be employed to minimize additional noise impacts from construction activities.

### **3.6.3 Hazardous Materials**

Hazardous materials are those substances defined by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), and the Toxic Substances Control Act (TSCA). The Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act (RCRA), which was further amended by the Hazardous and Solid Waste Amendments, defines hazardous wastes. In general, both hazardous materials and hazardous wastes include substances that, because of their quantity, concentration, or physical, chemical, or infectious characteristics, may present substantial danger to public health or welfare or to the environment when released or otherwise improperly managed.

Waste disposal activities within or near the project area were reviewed to identify areas where industrial processes occur, solid and hazardous wastes are stored, disposed, or released, and where hazardous materials or petroleum or its derivatives are stored or used. A data search on the USEPA Enviromapper for Envirofacts website was conducted on March 4, 2011 (USEPA 2011c). The Enviromapper website combines interactive maps and aerial photography to display facility-based environmental information as filed with state agencies and reported to the USEPA. The facility types queried for the project area included Superfund sites, toxic release sites, water dischargers, hazardous waste sites, and multi-activity sites. The Enviromapper area of interest included the entire length of the project area and up to 1 mile on either side from the centerline of the project area. The results of the environmental database report indicated that one facility, the Bentsen Palm Reverse Osmosis Wastewater Treatment Plant, is located near the project area.

#### ***All Alternatives***

No impacts from waste storage and disposal sites are anticipated because no Superfund sites, toxic release sites, water dischargers, hazardous waste facilities or sites, or multi-activity sites are located within the levee expansion area. The Bentsen Palm Reverse Osmosis Wastewater Treatment Plant is located outside of the construction area, on Bentsen Palm Drive approximately 1 mile north of the centerline of the project area.

### **3.7 CUMULATIVE IMPACTS**

The CEQ defines cumulative impacts as impacts on the environment that result from the incremental impacts of the proposed action when added to other past, present, and reasonably foreseeable future actions, both federal and nonfederal (40 CFR 1508.7). Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time. Two criteria were used to determine whether an action should be considered under cumulative effects analysis:

- It must be reasonably foreseeable. It must have a legislative mandate, agreement, or formal proposal that specifies the scope of the action such that its content and intensity can be measurably calculated without speculation.
- Impacts must occur within the same time and geographic space such that a measurable, combined impact actually exists.

A review of current and proposed local, state, and federal activities in and near the project area identified the *Final Environmental Assessment, Improvements to the Mission and Common Levee Systems* (USIBWC 2007) and the construction and expansion of the National Butterfly Center (NABA 2011). For the purposes of this EA, the cumulative impact assessment focuses on actions located within a one-mile radius of the project area due to the narrow construction corridor.

Based on the master plan layout by the National Butterfly Center (2011), construction and/or restoration projects are currently planned within an area immediately north of the Mission Main Canal. However, specific details regarding future projects have not been developed; therefore, a cumulative impacts analysis cannot be completed without speculation.

The Improvements to the Mission and Common Levee Systems Project consist of raising the levees along 17 miles of the Mission and Common Levee Systems in Hidalgo County. Approximately 5 miles of levee improvements are located within one mile of the project area. Construction to raise the levees has been completed; however, construction associated with various levee structures is currently occurring.

Expected cumulative impacts from the Improvements to the Mission and Common Levee Systems Project and the Preferred Alternative are detailed in Table 3.7 below. Data used in this analysis were derived from the *Final Environmental Assessment, Improvements to the Mission and Common Levee Systems* (USIBWC 2007).

**Table 3-7: Cumulative Impacts of the Preferred Alternative**

Resource		Preferred Alternative – Canal Modification	2007 Mission EA	Total
Biological	Herbaceous Vegetation	8.9 acres	77.5 acres	86.4 acres
	Thorn Woodland	0.0 acres	34.2 acres	34.2 acres
	Wetlands	0.0 acres	1.1 acres	1.1 acres
	Aquatic	22.5 acres	0.0 acres	22.5 acres
	T&E	Not likely to affect federal species; may affect 12 state-listed species	Not likely to affect federal and state species	Not likely to affect federal species; may affect 12 state-listed species
Cultural	Archeological	0 locations	7 locations	7 locations
	Architectural	2 resources	4 resources	6 resources
Water		No affect	New levee crossing at Edinburg intake channel	New levee crossing at Edinburg intake channel
Land Use	Agricultural	0.0 acres	0.5 acres	0.5 acres
	Natural Resource Areas	0.0 miles	4.0 miles	4.0 miles
Community		Increase in annual employment, sales, and income by 0.1, 0.6, and 0.09%, respectively; no adverse disproportionate effects to high minority or low-income populations	Increase in annual employment, sales, and income by 0.3, 0.5, and 0.3 %, respectively; no disproportionate adverse effects to high minority or low-income populations	Increase in annual employment, sales, and income by 0.4, 1.1, and 0.4%, respectively; no adverse disproportionate effects to high minority or low-income populations
Environmental Health		Increase in annual emissions of less than 1% for all criteria; no adverse noise impacts; no waste storage or disposal sites	Increase in annual emissions of less than 1% for all criteria; no adverse noise impacts; no waste storage or disposal sites	Increase in annual emissions of less than 1% for all criteria; no adverse noise impacts; no waste storage or disposal sites

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## **SECTION 4: BEST MANAGEMENT PRACTICES**

This section describes the environmental commitments to be implemented as part of the evaluated alternatives for re-establishment of the canal access and maintenance road along the Mission Levee. Best management practices represent specific actions to minimize potential for impacts to natural and cultural resources. Best management practices are organized within the engineering, natural resources, and cultural resources categories.

### **4.1 ENGINEERING MEASURES**

Construction activities are not anticipated in areas with a potential to contain cultural resources. The following best management practices would minimize or avoid construction impacts on resources near the project area.

- A SWPPP would be developed during project design to minimize impacts to receiving water, as specified by USEPA regulations for construction projects. The SWPPP would include construction areas along the levee and Mission Main Canal, as well as equipment staging areas. The contractor would be required to develop the SWPPP and obtain all permits and clearances necessary prior to construction.
- The contractor would be required to obtain all USACE permits and clearances necessary for construction in areas designated as waters of the U.S prior to construction. All permit conditions would be followed in order to minimize impacts to waters of the U.S.
- During project construction, methods such as wetting the soil would be employed to prevent erosion from unvegetated slopes and/or corridors and to minimize additional air quality impacts from construction activities. Limiting unnecessary idling of construction vehicles, maintaining vehicles in proper working condition, and shutting down construction machines that are not in use would be employed to minimize additional air quality impacts from construction activities.
- During construction, in areas where construction would occur near waterbodies (i.e. Mission Main Canal), silt curtains or other erosion control devices such as temporary erosion blankets would be used to prevent sediment from reaching waterbodies.
- During project construction, existing access points to the levee road would remain in service.

### **4.2 NATURAL RESOURCES**

Some vegetation, primarily grassland communities, would be removed during construction. These communities are expected to rapidly re-establish upon project completion. For additional protection of sensitive vegetation and wildlife, the following best management practices would be utilized.

- Revegetation with native herbaceous species along the construction corridor would be implemented after construction is complete. Rapid re-establishment of vegetation would allow native species to become established, and would provide additional erosion control. Native vegetation species to be used in reclamation would be determined through coordination with the USFWS and the TWP. USIBWC would compensate the loss of riparian habitat on a 2:1 acre basis (2 acres protected for every 1 acre disturbed) for a total of 7.2 acres. Land of equal value would be compensated under conservation easement, land acquisition, or monetary payment.
- Bird species in the area that are protected under the MBTA may nest in areas containing trees or other suitable habitat. Construction activities would be scheduled to occur outside the March through August migratory bird nesting season, when possible. If construction activities must occur during the nesting season of birds protected under the MBTA, then the areas proposed for disturbances would be surveyed for nesting birds prior to construction to avoid inadvertent destruction of nests and eggs.
- USIBWC would compensate noise impacts to jaguarundi and ocelot on a 0.025:1 acre basis for a total of 5 acres. Land of equal value would be compensated under conservation easement, land acquisition, or monetary payment.
- Prior to and during construction activities, the USIBWC would provide a qualified environmental monitor to survey T&E species to prevent direct take of a listed species. The environmental monitor also would survey for birds protected under the MBTA to prevent destruction of nests or eggs during construction activities.
- A survey by a qualified biologist would be conducted during the dewatering process of the Mission Main Canal to determine the presence or absence of state-listed mollusks. USIBWC would also submit an Aquatic Relocation Plan for TPWD approval a minimum of four weeks prior to any dewatering activities.

#### **4.3 CULTURAL RESOURCES**

If any human remains or burial furniture are encountered during construction, all work would cease and law enforcement and the THC would be notified immediately. If necessary, tribal representatives would also be contacted.

## SECTION 5: ENVIRONMENTAL COMPLIANCE AND COORDINATION

### 5.1 CONSULTATION

The Draft SEA was sent for a 30-day public review period to representatives of the agencies or organizations listed in Table 5-1.

**Table 5-1: Supplemental Environmental Assessment Mailing List of Agencies and Organizations**

Agencies and Organizations	
U.S. Fish and Wildlife Service, Ecological Services	Hidalgo County Drainage District #1
U.S. Army Corps of Engineers, Galveston District	Comanche Nation, Chairman
United States Border Patrol, Rio Grande Valley Sector	Kiowa Tribe of Oklahoma, Chairman
Texas Parks and Wildlife Department, Wildlife Habitat Assessment Program	Tonkawa Tribe of Oklahoma, President
Texas Parks and Wildlife Department, State Parks Division	Apache Tribe of Oklahoma, Chairman
Texas Historical Commission, Archeological Division	Mescalero-Apache Tribe, President
Texas Historical Commission, Historic Division	Wichita and Affiliated Tribes, President
Texas Commission on Environmental Quality Section 401 Coordination	North American Butterfly Association
United Irrigation District	

### 5.2 DRAFT SEA COMMENTS AND RESPONSES

Comments on the Draft SEA were received from the following agencies:

- USEPA had no objection with the Draft SEA and had no additional comments.
- TCEQ verified that the project area is located in an unclassified or attainment area for criteria air pollutants. TCEQ does not anticipate significant impacts on air quality by the project. TCEQ does not anticipate significant long-term environmental impacts from this project as long as construction and waste disposal activities associated with it are

completed in accordance with applicable local, state, and federal environmental permits and regulations.

- USACE determined that the Mission Main Canal is non-jurisdictional and would not require a USACE permit. No other areas were identified as jurisdictional.
- THC determined that the proposed project would have no adverse effect on historic resources.
- The Tonkawa Tribe of Oklahoma has no specifically designated historical or cultural sites identified in the project area. However if any human remains, funerary objects, or other evidence of historical or cultural significance is inadvertently discovered then the Tonkawa Tribe requests notification to provide proper disposition thereof.
  - *Based on these comments, if any human remains, funerary objects, or other evidence of historical or cultural significance is discovered the Tonkawa Tribe of Oklahoma would be contacted.*
- TPWD supports the selection of Alternatives 2 or 3 in order to minimize impacts on park visitors, wildlife, and state-listed species. Should the Preferred Alternative be selected, TPWD recommended the relocation of all wildlife in the canal, not just state-listed species. TPWD requested that construction near the Bentsen-Rio Grande Valley State Park entrance be completed no later than October 31 in order to minimize impacts to visitors during the park's annual peak visitation period.
  - *USIBWC is currently coordinating with TPWD to survey the Mission Main Canal for state-listed species. Based on the results of the survey, USIBWC would continue to coordinate with TPWD regarding an appropriate course of action. USIBWC would also submit an Aquatic Relocation Plan for TPWD approval a minimum of four weeks prior to any dewatering activities.*
- USFWS requested verification of the wetland determination by the USACE and the distribution of any required mitigation plan to all resource agencies. USFWS requested a status report on outstanding compliance issues associated with other USIBWC flood control projects. USFWS requested coordination with the LRGVNWR manager should any construction activities take place on LRGVNWR property. It was requested that grasslands be replaced on a 1:1 ratio and riparian vegetation be replaced at a 2:1 ratio. A correction to Table 3-2 to include the use of brushlands, grasslands and riparian areas for travel and forage by ocelot and jaguarundi was requested. USFWS expressed concern regarding noise and lighting impacts on ocelot and jaguarundi.
  - *In a letter dated May 31, 2011, the USACE determined that the project area does not contain any jurisdictional areas; therefore, no permit or mitigation plan would be required. The USIBWC provided a status report on outstanding compliance issues associated with other flood control projects and entered into an Interagency Agreement with USFWS on August 25, 2011 and subsequent work*

*orders to ensure implementation of environmental mitigation commitments. As identified in Section 3.4.1, no construction activities would occur within LRGVNR property. USIBWC has incorporated compensation for grassland and riparian vegetation into Sections 3.1.1 and 4.2. The correction to Table 3-2 has been made. As identified in Section 3.6.2, construction activities would occur between 7:30 a.m. and 5:00 p.m.; therefore, no lighting would be required and no lighting impacts would occur. USIBWC has incorporated compensation for noise impacts to ocelot and jaguarundi into Section 3.1.5 and 4.2.*

Comment letters received are provided in Appendix D.

### 5.3 LIST OF CONTRIBUTORS

Table 5-2 lists contributors to the preparation of this SEA and development of technical support studies regarding the proposed re-establishment of the canal access and maintenance road.

**Table 5-2: List of Contributors to the Supplemental Environmental Assessment**

Name	Organization	Degree	Years Experience
Daniel Borunda	USIBWC	M.S., Fisheries and Wildlife Science	14
Valentin Arzola, Jr., P.E.	USIBWC	B.S., Civil Engineering	12
Deborah Blackburn	TRC	B.S., Biology	11
Barrett Clark	TRC	M.S., Biology	6
Rick Frithiof, P.E.	TRC	B.S., Civil Engineering	33
Geoffrey Henry	TRC	M.A., Architectural History	30
Jeff Holland	TRC	M.A., History	27
Cory Laskoskie	TRC	B.S., Geography	15
Paul Matchen	TRC	M.A., Anthropology	17
Elia Perez	TRC	M.A., History	19
Diane Thomas	TRC	M.S., Zoology and Physiology	21
Larissa Thomas	TRC	Ph.D., Anthropology	14

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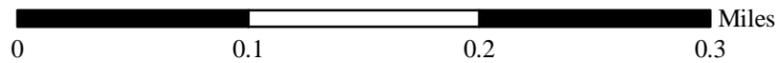
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**APPENDIX A:  
DETAILED MAPS OF THE MISSION LEVEE PROJECT AREA**

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- Mile Marker
- ▭ Project Area
- ▭ Bentsen-Rio Grande Valley State Park
- ▭ USFWS Wildlife Refuge

Source  
 1. Aerial: National Agricultural Imagery Program (NAIP) 2009.  
 2. Parks: Texas Parks and Wildlife, State Parks.  
 3. Refuge: National Wildlife Refuges in Texas owned by USFWS.



International Boundary and Water Commission  
 United States Section

**FIGURE A-1**

Mission Levee Project

Hidalgo County

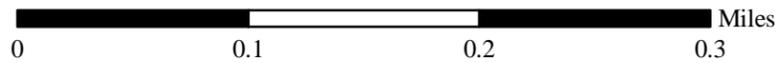
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**FIGURE A-2**

**Mission Levee Project**

Hidalgo County



- ⊙ Mile Marker
- ▭ Project Area
- ▭ Bentsen-Rio Grande Valley State Park
- ▭ USFWS Wildlife Refuge

Source

1. Aerial: National Agricultural Imagery Program (NAIP) 2009.
2. Parks: Texas Parks and Wildlife, State Parks.
3. Refuge: National Wildlife Refuges in Texas owned by USFWS.



International Boundary and Water Commission  
United States Section

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**APPENDIX B:  
WATERS OF THE UNITED STATES DELINEATION REPORT**

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# **WATERS OF THE UNITED STATES DELINEATION REPORT**

**IMPROVEMENTS TO THE MISSION PROTECTIVE LEVEE SYSTEM**

**UNITED STATES INTERNATIONAL BOUNDARY  
AND WATER COMMISSION**



Prepared for:  
United States Section  
International Boundary and Water Commission

Prepared by:  
TRC Environmental Corporation

March 18, 2011

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# **WATERS OF THE UNITED STATES DELINEATION REPORT**

**IMPROVEMENTS TO THE MISSION PROTECTIVE LEVEE SYSTEM**

**UNITED STATES INTERNATIONAL BOUNDARY  
AND WATER COMMISSION**



Prepared for:  
United States Section  
International Boundary and Water Commission

Prepared By:  
TRC Environmental Corporation  
505 East Huntland Drive, Suite 250  
Austin, Texas 78752

March 18, 2011

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### APPENDIX PHOTOGRAPHIC LOG

## Abbreviations and Acronyms

5	Carmago Silt Loam
33	Laredo Silty Clay Loam
34	Matamoros Silty Clay
55	Reynosa Silty Clay Loam, 0 – 1 Percent Slopes
56	Reynosa Silty Clay Loam, Saline, 0 – 1 Percent Slopes
62	Rio Grande Silt Loam
65	Runn Silty Clay, Saline
CBD	Cannot Be Determined
EPA	Environmental Protection Agency
FAC	Facultative
FACU	Facultative Upland
FACW	Facultative Wetland
FEMA	Federal Emergency Management Agency
GPS	Global Positioning System
JD	Jurisdictional Determination
Mission Levee	Mission Protection Levee System
NI	No Indicator
OBL	Obligate Wetland
Project	Improvements to the Mission Levee Protection System Project
TRC	TRC Environmental Corporation
UPL	Obligate Upland
U.S.	United States
USIBWC	United States Section of the International Boundary and Water Commission
USACE	United States Army Corps of Engineers
USDA – NRCS	United States Department of Agriculture – Natural Resource Conservation Service
USGS	United States Geological Survey
UTM	Universal Transverse Mercator

## 1.0 INTRODUCTION

TRC Environmental Corporation (TRC) has been contracted by the United States Section of the International Boundary and Water Commission (USIBWC) to conduct natural resource surveys and prepare a Supplemental Environmental Assessment for the proposed improvements to the Mission Protection Levee System (Mission Levee) located in Hidalgo County, Texas. The USIBWC is proposing to re-establish a 10-foot wide canal access and maintenance road along the Mission Main Canal (Project).

Pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act, TRC conducted a survey of wetlands, waterbodies, and other special aquatic sites for the properties proposed for the Project. This jurisdictional delineation report describes the results of delineation of jurisdictional Waters of the United States (U.S.) conducted in February 2011 for approximately 2.9 miles of existing levee right-of-way for the Project.

## 2.0 PROPOSED PROJECT

The Mission Levee is a component of the Lower Rio Grande Flood Control Project that conveys floodwater diverted from the Rio Grande to the Laguna Madre in the Gulf of Mexico and protects urban, suburban, and highly developed irrigated farmland along the Rio Grande delta in the United States and Mexico. In 2009, the Mission Levee System was raised in order to meet Federal Emergency Management Agency (FEMA) flood protection criteria. However, during the levee raising efforts, a canal access and maintenance road between the toe of the Mission Levee and the Mission Main Canal was eliminated by the expanded levee. Due to the size of the Mission Main Canal, the United Irrigation District (UID) is currently unable to properly maintain the canal without the eliminated canal access and maintenance road. In addition, Contract IBM-6513, between USIBWC and UID, requires USIBWC to maintain a minimum 10-foot access road between the toe of the Mission Levee and the Mission Main Canal. The Project involves improvements to the Mission Levee in order to re-establish the canal access and maintenance roads to address the maintenance requirements of the Mission Main Canal.

### 2.1 Location

The Project is located along the Mission Levee from 1.1 miles west of Bentsen Palm Road to Inspiration Road in Hidalgo County, Texas (survey area). The survey area laterally extended approximately from the southern boundary of the levee road (located south of the Main Canal) to the northern boundary of the access road (located north of the Main Canal) for the entire 2.9 miles of Mission Levee right-of-way. A site location map is included as Figure 1.

### 2.2 Purpose

The purpose of the Proposed Action is to re-establish the canal access and maintenance road in order to address the maintenance requirements of the Mission Main Canal.

## 3.0 METHODS

The wetland determination and delineation was performed using the routine on-site determination methods described in the Corps of Engineers Wetlands Delineation Manual (U.S. Army Corps of Engineers [USACE], Environmental Laboratory 1987), hereafter referred to as the

“1987 Manual,” and is consistent with the methods, guidelines, and indicators present in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0 [Regional Supplement] USACE 2010). Wetlands were classified by type and other jurisdictional systems (*i.e.*, rivers, streams, aquatic systems) were characterized in accordance with the Cowardin classification system detailed in the Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et.al. 1979). The determination and delineation consisted of: (1) background data collection and assessment; (2) field investigation; and (3) reporting.

### 3.1 Background Data Review

Prior to initiation of the routine on-site investigation, existing background data and information were reviewed to provide information regarding the presence of previously identified wetlands, the location of hydric soils, and/or locations where jurisdictional wetlands could exist that have not been previously mapped. The background data reviewed consisted of the following materials:

- U.S. Geological Survey (USGS), 7.5-minute series quadrangle topographical maps, La Joya and Mission Quadrangles in Hidalgo County, Texas (USGS 2002);
- USGS, 7.5-minute series quadrangle topographical maps, Mission Quadrangle in Hidalgo County, Texas (USGS 2002);
- U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) Web Wetlands Mapper (USFWS 2011);
- USDA – NRCS, National Soil Information System (NASIS) Database, National Hydric Soils List by State, Texas (USDA – NRCS 2010a); and
- U.S. Department of Agriculture – Natural Resource Conservation Service (USDA – NRCS) Web Soil Survey Application (USDA – NRCS 2011b).

### 3.2 Field Investigation

An on-site determination and delineation of jurisdictional Waters of the U.S. was conducted by a qualified wetland scientist within the Project survey area in February 2011.

The Project spatial boundaries were confirmed by aerial photograph interpretation and initial site reconnaissance. The survey area was then examined for the presence of atypical situations via site reconnaissance to identify any recent and sufficient natural or human-induced alteration that may have significantly changed the area vegetation, soils, and/or hydrology.

A site reconnaissance was conducted of all portions of the survey area to identify and develop an approximate location map of each different plant community type present to ensure all plant community types were included in the investigation. Each identified plant community type was further examined to determine the type(s) and number of vegetative layers in each community, including trees (woody overstory), saplings/shrubs (woody understory), herbs (herbaceous understory), and/or woody vines.

Observation points were established and documented within each vegetative community. The investigators determined whether normal environmental conditions were present at each observation point by considering whether: (a) hydrophytic vegetation and/or hydrologic indicators were lacking due to annual or seasonal fluctuations in precipitation or groundwater levels; and (b) hydrophytic vegetation indicators were lacking due to seasonal fluctuations in temperature.

Data points were recorded using a sub-meter Trimble Global Positioning System (GPS) unit. GPS data were recorded as NAD 1983 UTM coordinates. Soil pit sampling was conducted to determine the presence of hydric soil indicators, with plant communities identified and characterized for hydrophytic properties, indicator status, and percent cover. Particular wetland hydrology indicators were also identified.

Vegetation, soil, and hydrologic information for each sample plot was recorded on data forms and used to determine wetland boundaries. A description of the methods employed to assess each parameter is provided in Sections 3.2.1 to 3.2.3.

### **3.2.1 Hydrophytic Vegetation**

According to the 1987 Manual, hydrophytic vegetation is defined as, “the sum total of macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present.” Plant species are further categorized according to their probability of occurrence in wetlands. Each plant species is assigned an “Indicator Status,” which ranges from Obligate Wetland (100% occurrence in wetlands) to Obligate Upland (does not occur in wetlands). Indicator status categories are further defined as follows:

- Obligate Wetland (OBL): A species that almost always (under natural conditions) occurs in wetlands (estimated probability greater than 99%).
- Facultative Wetland (FACW): A species that usually occurs in wetlands (estimated probability 67% - 99%), but occasionally is found in non-wetlands.
- Facultative (FAC): A species that is equally likely to occur in non-wetlands (estimated probability 34% - 66%).
- Facultative Upland (FACU): A species that usually occurs in non-wetlands (estimated probability 67% - 99%), but is occasionally found in wetlands.
- Obligate Upland (UPL): A species that almost always (under natural conditions) occurs in non-wetlands (estimated probability greater than 99%).
- No Indicator (NI): A species for which there is insufficient information to determine an indicator status ranking.
- Cannot Be Determined (CBD): A species that was only identified to the genus level. Therefore, no indicator could be assigned.

All plant communities investigated were characterized by identifying dominant plant species using the dominance test. For each stratum in the plant community (tree, sapling, shrub, herb, and woody vine), a list of plant species (Reed 1988) and their respective percent cover was recorded. Percent cover for each plant species was recorded within a 30-foot radius around a central observation point for all strata. The total cover for each stratum may range from zero to over 100 percent, depending on the density and amount of overlapping of vegetation.

“Dominant” plants were classified using the 50/20 rule, under which any plant species that equaled or exceeded 50 percent of the total percent aerial coverage for each stratum, and any additional species comprising 20 percent or more of the same stratum, was classified as a dominant plant.

Vegetation was reevaluated using the prevalence index in cases where indicators of hydric soil and wetland hydrology were present, but the percentage of dominant species did not exceed 50 percent utilizing the dominance test. The prevalence index is a weighted-average wetland indicator status of all plant species in the sampling plot, where each indicator status category is given a numeric code and the abundance as evaluated by percent cover is weighted. A site scoring less than 3 on the prevalence index meets the wetland hydrophytic vegetation criterion. The prevalence index is used in the Great Plains Region Supplement to determine whether hydrophytic vegetation is present on sites where indicators of hydric soil and wetland hydrology are present but the vegetation initially fails the dominance test.

### **3.2.2 Hydric Soils**

According to the 1987 Manual, a hydric soil is defined as “a soil that is saturated, flooded or ponded long enough during the growing season to develop anaerobic conditions that favor the growth and regeneration of hydrophytic vegetation.” The presence or absence of hydric soils was determined by pit sampling to a depth of twelve inches or more, and characterization of soil profile layers using Munsell soil color charts (X-Rite Incorporated 2009). The presence of hydric indicators was recorded, including, but not limited to, saturation, gleying, mottling, depleted matrix, and development of other redoximorphic features. The wetland boundary was placed between areas meeting the three wetland criteria and areas which do not meet the criteria. As a result, soil in both the assumed wetland and the surrounding upland were sampled to verify the wetland boundary.

### **3.2.3 Wetland Hydrology**

Guidance in the 1987 Manual indicates that wetland hydrology is found in areas in which “the presence of water has an overriding influence on characteristics of vegetation and soils due to anaerobic and reducing conditions, respectively.” The frequency of soil inundation or saturation is dependent on a variety of factors, including topography, soil stratigraphy and soil permeability, in conjunction with the water source(s) of precipitation, runoff, stormwater, and groundwater discharge. Wetland hydrology is classified according to the extent of soil saturation or inundation and ranges from permanently inundated to irregularly inundated or saturated. Those areas which are either intermittently or never inundated or saturated are not considered to have wetland hydrology.

Indicators of wetland hydrology include, but are not limited to, drainage patterns, drift lines, water marks, sediment and debris deposition, and visual observations and historical records. Wetland hydrology indicators were noted during the investigation.

### **3.3 Reporting**

Data collected in the field was subsequently entered onto the data forms presented in the Appendix. Wetland delineation/GPS data were collected and recorded as NAD 1983 UTM coordinates. Photographs were also taken of the Project site and at data collection points. All survey results are presented in the Appendix.

## **4.0 RESULTS**

### **4.1 Background Data Review**

Desktop analysis of potential Waters of the U.S. was conducted by reviewing topographic (Figure 1), USFWS NWI (2011) online wetland mapper and hydric soils data from the USDA – NRCS (2011b) online web soil survey data (Figures 3 and 4). This analysis provided an indication of the presence of wetlands and waterbodies, areas and soils likely to support hydrophytic vegetation, and photographic signatures of potential wetlands and waterbodies. It should be noted that the status of the wetlands presented on the NWI online mapper that were outside of the survey corridor were not verified.

### **4.2 Field Investigation**

Maps, data forms, photographs, and the documentation of the presence or absence of wetland vegetation, hydric soils, wetland hydrology, and waterbodies are provided in Appendix.

#### **4.2.1 Vegetation**

##### **Wetland/Riparian Plant Communities**

No jurisdictional wetlands were identified within the Project survey area, and consequently, no wetland plant communities are discussed.

Riparian vegetation within the survey area is primarily associated with the Main Canal, which contains open, deepwater habitat. Common riparian species include common reed (*Phragmites australis*), giant reed (*Arundo donax*), balloon vine (*Cardiospermum halicacabum*), buffelgrass (*Pennisetum ciliaris*), and young huajillo (*Havardia pallens*), retama (*Parkinsonia aculeata*), and huisache (*Acacia farnesiana*). Slopes adjacent to the Main Canal are maintained and relatively steep, limiting the lateral extent of riparian vegetation along the edge of the canal.

##### **Upland Plant Communities**

Upland plant communities within the survey area generally consist of maintained herbaceous communities, along the levee slopes and northern access road. Much of the survey area and surrounding region consists of agricultural land (including pasture and cropland) and woodlands.

Common species identified for the maintained herbaceous community included buffelgrass, sand dropseed (*Sporobolus cryptandrus*), Bermudagrass (*Cynodon dactylon*), cane

bluestem (*Bothriochloa barbinodis*), common sunflower (*Helianthus annuus*), silverleaf nightshade (*Solanum elaeagnifolium*), sandmat (*Chamaesyce* sp.), and balloon vine. Some areas of levee slopes support young, woody vegetation including huajillo, retama, and huisache.

#### **4.2.2 Soils**

Descriptions of these soils are provided by the USDA – NRCS National Cooperative Soil Survey (USDA – NRCS 2010b) and are provided below.

##### **Hydric Soils**

No hydric soils were identified within the Project survey area, and consequently, no hydric soils are discussed.

##### **Non-Hydric Soils**

A review of the USDA – NRCS Soil Survey (USDA – NRCS 2010b) and Hydric Soils List by State (USDA – NRCS 2010a) indicates that the non-hydric soils within the survey area include silty clays, silty clay loams, and silt loams that lie on slopes that range from 0 to 1 percent. These soils are moderately well drained to well drained. Permeability ranges from slow to rapid. Surface runoff is typically slow with some areas exhibiting a high erosion potential caused by rapid surface runoff of steeper slopes. Some areas include former, shallow borrow sites located adjacent to the USIBWC levees. Descriptions of non-hydric soils, as provided by the NRCS, are provided below.

##### Camargo silt loam (5)

The Carmago series consists of deep, well drained, moderately permeable, silty soils that formed in thick beds of calcareous, silty alluvium. Slopes range from 0 to 1 percent. The potential for surface runoff is slow. This soil occupies bottomlands on active floodplains of the Rio Grande.

Areas with this soil are used almost entirely as irrigated cropland. Irrigated crops include cotton, grain sorghum, sugarcane, and vegetables. Non-irrigated crops include cotton and grain sorghum.

##### Laredo silty clay loam (33)

The Laredo series consists of deep, well drained, slowly permeable soils that formed in thick beds of silty alluvium. Slopes range from 0 to 1 percent. The potential for surface runoff is slow. This soil occupies areas of deltas ancient stream terraces.

Areas with this soil are used almost entirely as irrigated cropland. Irrigated crops include cotton and grain sorghum. Non-irrigated crops include cotton, grain sorghum, and vegetables.

##### Matamoros silty clay (34)

The Matamoros series consists of deep, moderately well drained, slowly permeable soils that formed in thick beds of calcareous, clayey alluvium. Slopes range from 0 to 1 percent. The

potential for surface runoff is slow. This soil occupies bottomlands on active floodplains of the Rio Grande.

Areas with this soil are used almost entirely as irrigated cropland. Irrigated crops include cotton, grain sorghum, and vegetables. Non-irrigated crops include cotton and sorghum grain.

Reynosa silty clay loam, 0 – 1 percent slopes (55)

The Reynosa series consists of deep, well drained, moderately permeable soils that formed in calcareous clayey sediments. Slopes range from 0 to 1 percent. The potential for surface runoff is slow. These soils occupy areas of ancient stream terraces.

Areas with Reynosa silty clay loam (0 – 1 percent slopes) are used almost entirely as irrigated cropland. Sub-surface drainage systems remove excess irrigation water. Irrigated crops include cotton, grain sorghum, sugarcane, and vegetables. Non-irrigated crops include cotton and grain sorghum.

Reynosa silty clay loam, saline, 0 – 1 percent slopes (56)

The Reynosa series consists of deep, well drained, moderately permeable soils that formed in calcareous clayey sediments. Slopes range from 0 to 1 percent. The potential for surface runoff is slow. These soils occupy areas of ancient stream terraces.

Areas with Reynosa saline silty clay loam (0 – 1 percent slopes) are used almost entirely as irrigated cropland. Crops include cotton and grain sorghum.

Rio Grande silt loam (62)

The Rio Grande series consists of deep, well drained, moderately rapidly permeable soils that formed in thick beds of calcareous, silty alluvium. Slopes range from 0 to 1 percent. The potential for surface runoff is slow. These soils occupy bottomlands on the active flood plain of the Rio Grande.

Areas with Rio Grande silt loam are used almost entirely as irrigated cropland. Irrigated crops include cotton, grain sorghum, sugarcane, and vegetables. Non-irrigated crops include cotton and grain sorghum.

Runn silty clay, saline (65)

The Runn series consists of deep, moderately well drained, slowly permeable soils that formed in thick beds of clayey alluvium. Slopes range from 0 to 1 percent. The potential for surface runoff is slow. This soil occupies areas of deltas ancient stream terraces.

Areas with Runn saline silty clay are used almost entirely as irrigated cropland or pasture. Sub-surface drainage systems remove excess irrigation water. Crops include cotton and grain sorghum.

### **4.2.3 Hydrology**

The survey area is located approximately 0.2 to 2 miles north of the Rio Grande (Figure 1). The entire Project area is located within the South Laguna Madre and Lower Rio Grande watersheds (U.S. Environmental Protection Agency [USEPA] 2011).

Hydrology of the survey area is primarily driven by agricultural irrigation runoff/drainage and precipitation events. The general water regime across the entire Project area is to the east. Within the survey area, surface water follows topography along the levee and access road slopes, draining into the Main Canal.

## **5.0 SUMMARY**

TRC was contracted by the USIBWC to conduct a delineation of Waters of the U.S. for the proposed Mission Protection Levee System Project. The delineation was performed by a qualified wetland scientist in order to identify the presence and delineate the boundaries of wetlands and other waters potentially subject to regulation by the USACE pursuant to Section 404 of the Clean Water Act. Based on review of background data and field investigations further described in this report, qualified wetland scientists from TRC identified no jurisdictional wetlands are located within the survey area.

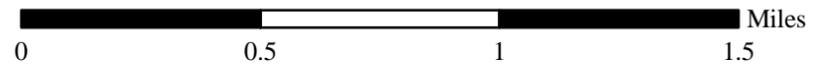
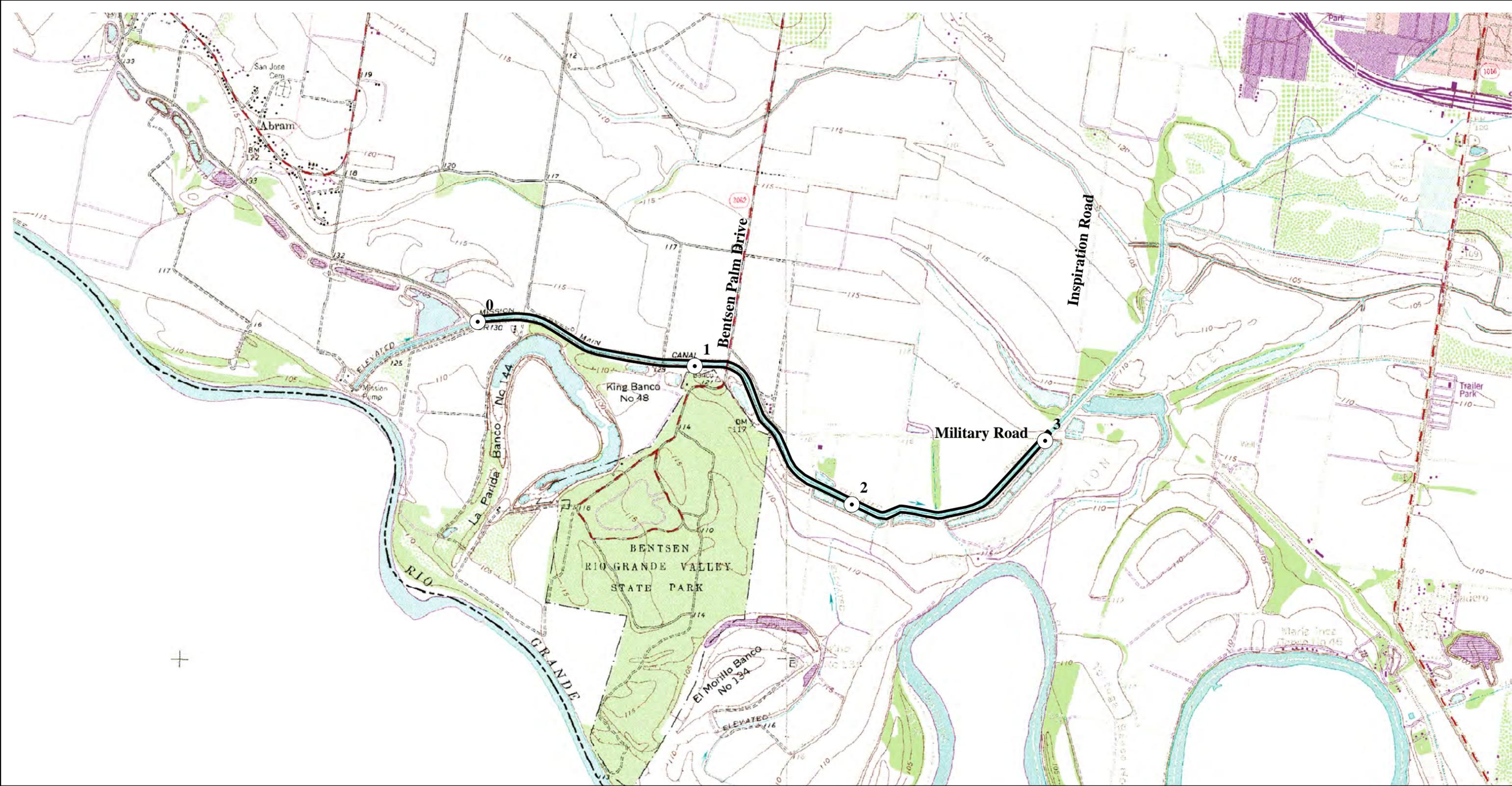
## 6.0 REFERENCES

- Reed, P. 1988. National List of Plant Species that Occur in Wetlands: Southeast (Region 6). Accessed February 8, 2011 at: <http://www.fws.gov/pacific/ecoservices/habcon/pdf/National%20List%20of%20Plant%20Species%201988.pdf>.
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- USGS. 2002. 7.5-minute series quadrangle topographical maps, La Joya and Mission Quadrangles, Hidalgo County, Texas.
- X-Rite, Incorporated. 2009. Munsell Soil Color Charts. Munsell Color Division, Grand Rapids, MI. Revised Edition.

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**FIGURE 1**  
**TOPOGRAPHIC SITE LOCATION MAP**

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-  Mile Marker
-  Survey Area

Source  
 USGS Mission and La Joya Quadrangles (2002).  
 Hidalgo County, Texas



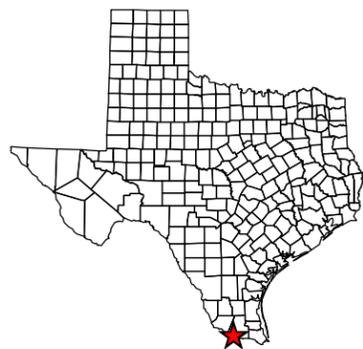
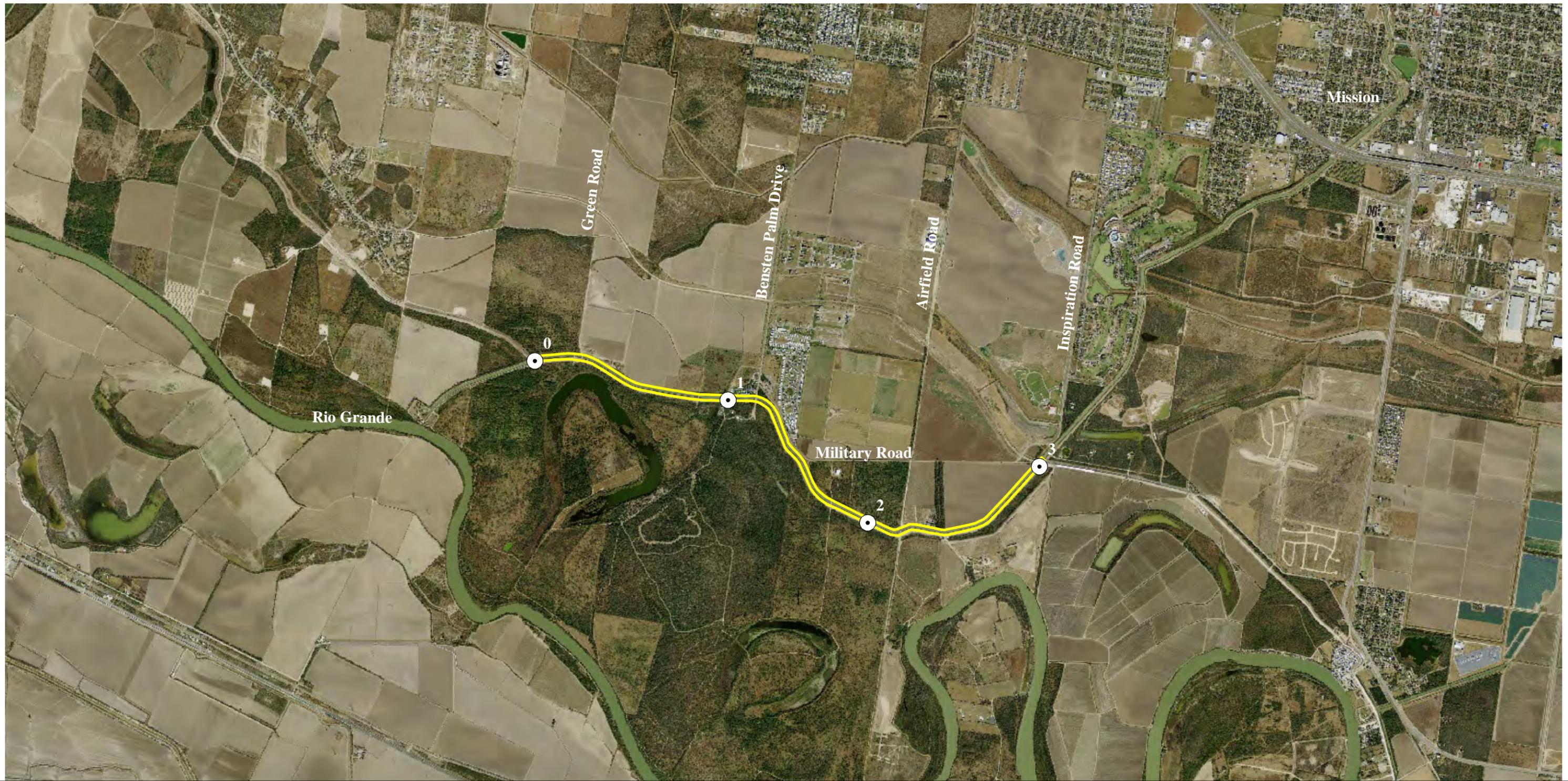
Mission Levee  
 International Boundary and Water Commission  
 United States Section

**FIGURE 1**  
**Site Location Map**

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**FIGURE 2**  
**AERIAL SITE LOCATION MAP**

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- Mile Marker
- ▭ Survey Area

Source  
National Agricultural Imagery Program (NAIP) 2009.



**FIGURE 2**  
**Site Location Map**

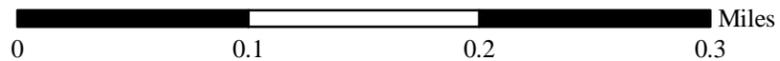
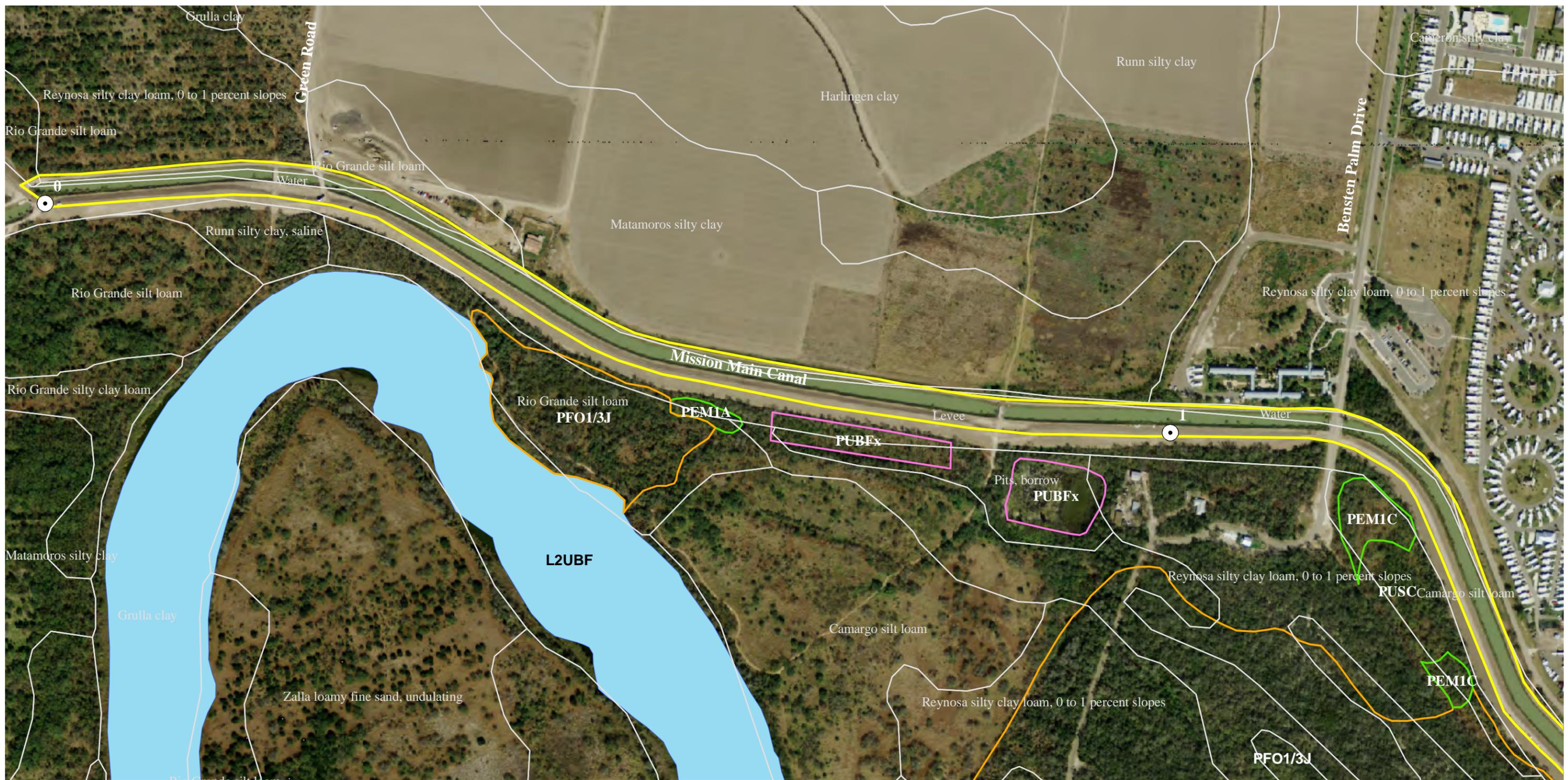
Mission Levee

International Boundary and Water Commission  
United States Section

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**FIGURE 3**  
**SOILS AND NATIONAL WETLAND INVENTORY MAPS**

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- Mile Marker
- Survey Area
- Soil Boundary
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake

Source  
 1. Aerial: National Agricultural Imagery Program (NAIP) 2009.  
 2. Soils: USDA-NRCS SSURGO Database, Hidalgo County, TX.

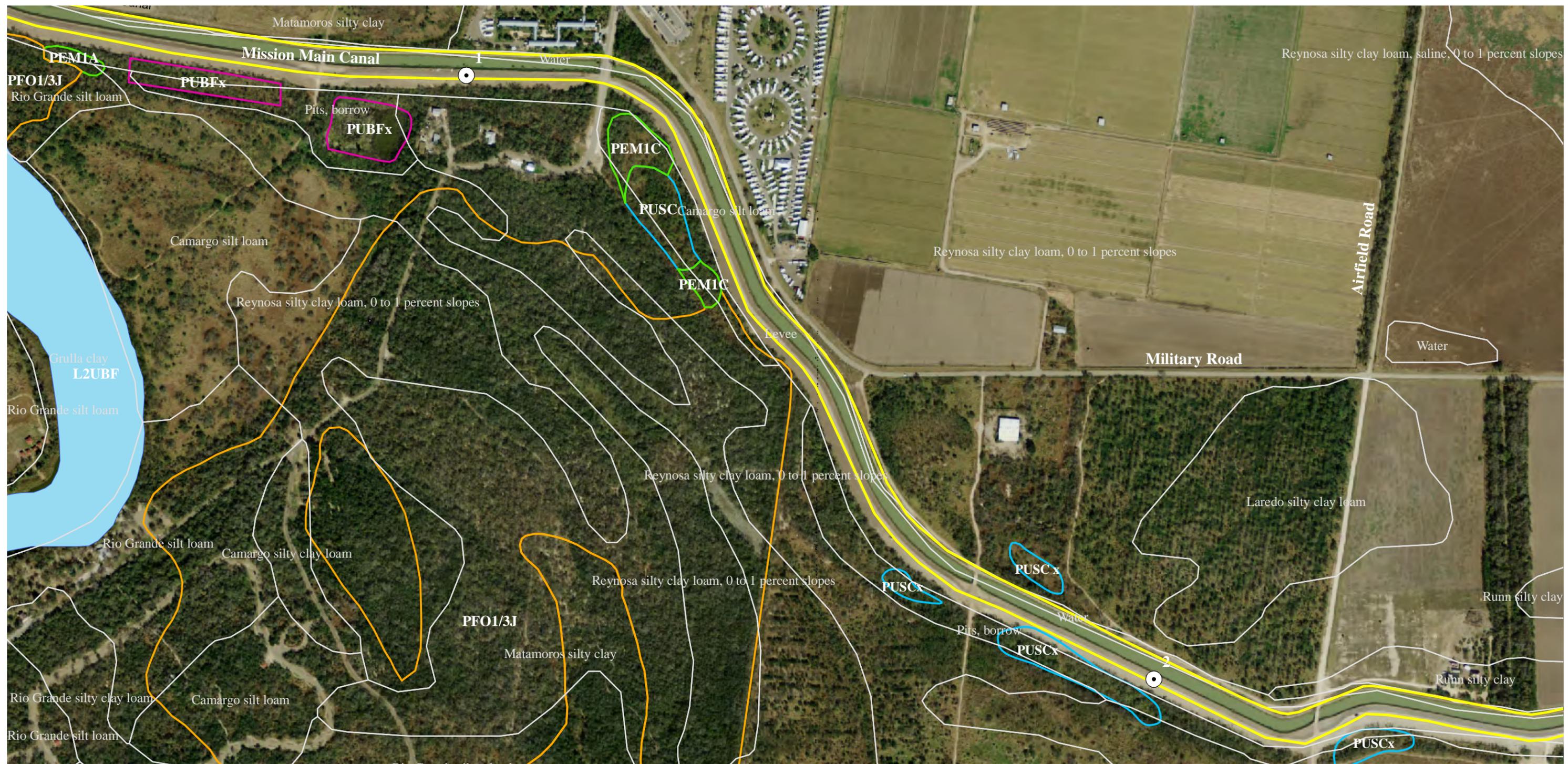


International Boundary and Water Commission  
 United States Section

**FIGURE 3**  
**Soils and NWI Map**  
**Sheet 1 of 3**

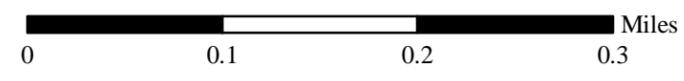
Mission Levee

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**FIGURE 4**  
**Soils and NWI Map**  
**Sheet 2 of 3**

Mission Levee



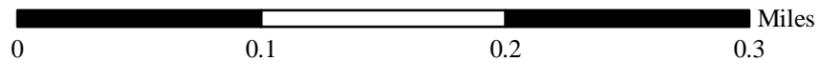
- ⊙ Mile Marker
- Survey Area
- Soil Boundary
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other

**Source**  
 1. Aerial: National Agricultural Imagery Program (NAIP) 2009.  
 2. Soils: USDA-NRCS SSURGO Database, Hidalgo County, TX.



International Boundary and Water Commission  
 United States Section

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- ⊙ Mile Marker
- Survey Area
- Soil Boundary
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Lake
- Other

Source  
 1. Aerial: National Agricultural Imagery Program (NAIP) 2009.  
 2. Soils: USDA-NRCS SSURGO Database, Hidalgo County, TX.



International Boundary and Water Commission  
 United States Section

**FIGURE 5**  
**Soils and NWI Map**  
**Sheet 3 of 3**

Mission Levee

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**APPENDIX**  
**PHOTOGRAPHIC LOG**

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## PHOTOGRAPHIC LOG

<b>Client: United States Section, International Boundary and Water Commission</b>		<b>Project Number: 180942</b>
<b>Project Name: Mission Levee Improvements</b>		<b>County, State: Hidalgo County, Texas</b>
<b>Photograph ID:</b> 1		
<b>Feature:</b> Levee Road and Main Canal		
<b>Date:</b> 2/22/2011		
<b>Comments:</b> Levee road facing Mile Marker 0 (west). Ongoing construction observed. Main Canal Intake Channel (left), Main Canal (right), and northern access road (right).		
<b>Photograph ID:</b> 2		
<b>Feature:</b> Main Canal and Northern Access Road		
<b>Date:</b> 2/22/2011		
<b>Comments:</b> Main Canal and northern access road. LRGNWR La Parida Banco Unit in background. Facing north.		

## PHOTOGRAPHIC LOG

<b>Client: United States Section, International Boundary and Water Commission</b>		<b>Project Number: 180942</b>	
<b>Project Name: Mission Levee Improvements</b>		<b>County, State: Hidalgo County, Texas</b>	
<b>Photograph ID: 3</b>			
<b>Feature: Levee Road, Main Canal, and Northern Access Road</b>			
<b>Date: 2/22/2011</b>			
<b>Comments: On levee road, Main Canal (left), and northern access road (left). Agricultural field in background. Facing east.</b>			
<b>Photograph ID: 4</b>			
<b>Feature: Main Canal Survey Corridor</b>			
<b>Date: 2/22/2011</b>			
<b>Comments: Representative photo of survey corridor at Mile Marker 1. Northern access road (left), Main Canal (middle), levee road (right). Facing east.</b>			

# PHOTOGRAPHIC LOG

<b>Client: United States Section, International Boundary and Water Commission</b>	<b>Project Number: 180942</b>
<b>Project Name: Mission Levee Improvements</b>	<b>County, State: Hidalgo County, Texas</b>
<b>Photograph ID: 5</b>	
<b>Feature: Construction at Bentsen Palm Drive Bridge</b>	
<b>Date: 2/22/2011</b>	
<b>Comments: Ongoing construction on levee road at Bentsen Palm Drive Bridge (Mile Marker 1). Facing east.</b>	
<b>Photograph ID: 6</b>	
<b>Feature: Construction at Bentsen Palm Drive Bridge</b>	
<b>Date: 2/22/2011</b>	
<b>Comments: Ongoing construction on levee road at Bentsen Palm Drive Bridge (Mile Marker 1). Facing north.</b>	

## PHOTOGRAPHIC LOG

<b>Client: United States Section, International Boundary and Water Commission</b>	<b>Project Number: 180942</b>
<b>Project Name: Mission Levee Improvements</b>	<b>County, State: Hidalgo County, Texas</b>
<b>Photograph ID: 7</b>	
<b>Feature: Northern Access Road, Main Canal, Levee Road</b>	
<b>Date: 2/22/2011</b>	
<b>Comments: One northern access road, Main Canal (right), levee road (right). RV park in background. Facing southeast.</b>	
<b>Photograph ID: 8</b>	
<b>Feature: Main Canal at Inspiration Road</b>	
<b>Date: 2/22/2011</b>	
<b>Comments: Inspiration Road Bridge at eastern end of project area. Main Canal (right), levee (right). Facing west.</b>	

**APPENDIX C:  
PHOTOGRAPHIC LOG**

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## PHOTOGRAPHIC LOG

<b>Client: United States Section, International Boundary and Water Commission</b>		<b>Project Number: 180942</b>
<b>Project Name: Mission Levee Improvements</b>		<b>County, State: Hidalgo County, Texas</b>
<b>Photograph ID:</b> 1		
<b>Feature:</b> Levee Road and Main Canal		
<b>Date:</b> 2/22/2011		
<b>Comments:</b> Levee road facing Mile Marker 0 (west). Ongoing construction observed. Main Canal Intake Channel (left), Main Canal (right), and northern access road (right).		
<b>Photograph ID:</b> 2		
<b>Feature:</b> Main Canal and Northern Access Road		
<b>Date:</b> 2/22/2011		
<b>Comments:</b> Main Canal and northern access road. LRGNWR La Parida Banco Unit in background. Facing north.		

## PHOTOGRAPHIC LOG

<b>Client: United States Section, International Boundary and Water Commission</b>		<b>Project Number: 180942</b>	
<b>Project Name: Mission Levee Improvements</b>		<b>County, State: Hidalgo County, Texas</b>	
<b>Photograph ID: 3</b>			
<b>Feature: Levee Road, Main Canal, and Northern Access Road</b>			
<b>Date: 2/22/2011</b>			
<b>Comments: On levee road, Main Canal (left), and northern access road (left). Agricultural field in background. Facing east.</b>			
<b>Photograph ID: 4</b>			
<b>Feature: Main Canal Survey Corridor</b>			
<b>Date: 2/22/2011</b>			
<b>Comments: Representative photo of survey corridor at Mile Marker 1. Northern access road (left), Main Canal (middle), levee road (right). Facing east.</b>			

## PHOTOGRAPHIC LOG

<b>Client: United States Section, International Boundary and Water Commission</b>		<b>Project Number: 180942</b>
<b>Project Name: Mission Levee Improvements</b>		<b>County, State: Hidalgo County, Texas</b>
<b>Photograph ID:</b> 5		
<b>Feature:</b> Construction at Bentsen Palm Drive Bridge		
<b>Date:</b> 2/22/2011		
<b>Comments:</b> Ongoing construction on levee road at Bentsen Palm Drive Bridge (Mile Marker 1). Facing east.		
<b>Photograph ID:</b> 6		
<b>Feature:</b> Construction at Bentsen Palm Drive Bridge		
<b>Date:</b> 2/22/2011		
<b>Comments:</b> Ongoing construction on levee road at Bentsen Palm Drive Bridge (Mile Marker 1). Facing north.		

## PHOTOGRAPHIC LOG

<b>Client: United States Section, International Boundary and Water Commission</b>	<b>Project Number: 180942</b>
<b>Project Name: Mission Levee Improvements</b>	<b>County, State: Hidalgo County, Texas</b>
<b>Photograph ID: 7</b>	
<b>Feature: Northern Access Road, Main Canal, Levee Road</b>	
<b>Date: 2/22/2011</b>	
<b>Comments: One northern access road, Main Canal (right), levee road (right). RV park in background. Facing southeast.</b>	
<b>Photograph ID: 8</b>	
<b>Feature: Main Canal at Inspiration Road</b>	
<b>Date: 2/22/2011</b>	
<b>Comments: Inspiration Road Bridge at eastern end of project area. Main Canal (right), levee (right). Facing west.</b>	

**APPENDIX D:  
CORRESPONDENCE**

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INTERNATIONAL BOUNDARY AND WATER COMMISSION  
UNITED STATES AND MEXICO

April 6, 2011

OFFICE OF THE COMMISSIONER  
UNITED STATES SECTION

Dear Reviewer:

The United States Section of the International Boundary and Water Commission (USIBWC) has prepared a Draft Supplemental Environmental Assessment (SEA) and Draft Finding of No Significant Impact (FONSI) on the Improvements to the Mission Protective Levee System in Hidalgo County, Texas for review and comment. The SEA evaluates environmental effects that may result from the proposed improvements to re-establish a 10-foot wide canal access and maintenance road along the levee side of the Mission Main Canal from 1.1 miles west of Bentsen Palm Road to the Military Road bridge crossing. The results of the analysis of the Draft SEA, and all comments received, will be used by USIBWC prior to making a final decision. The Draft SEA is being made available for a 30-day review and comment period. An electronic copy of the Draft SEA and FONSI can be found at:

[http://www.ibwc.gov/Organization/Environmental/EIS\\_EA\\_Public\\_Comment.html](http://www.ibwc.gov/Organization/Environmental/EIS_EA_Public_Comment.html)

The Final SEA will be prepared considering the comments received and will be sent to those who commented on the Draft SEA. Please submit your comments so they are postmarked by **May 6, 2011**.

Written comments should be addressed to:

Mr. Daniel Borunda  
Natural Resource Specialist  
Environmental Management Division, USIBWC  
4171 North Mesa, C-100  
El Paso, Texas 79902

Thank you for your interest in the evaluation of the Draft SEA for improvements to the Mission Protective Levee System project.

Sincerely,

John L. Merino, P.E.  
Principal Engineer

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Bryan W. Shaw, Ph.D., *Chairman*  
Buddy Garcia, *Commissioner*  
Carlos Rubinstein, *Commissioner*  
Mark R. Vickery, P.G., *Executive Director*



## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

April 13, 2011

Mr. Daniel Borunda  
Environmental Mgmt Division  
4171 North Mesa, C-100  
El Paso, TX 79902

Re: TCEQ Grant and Texas Review and Comment System (TRACS) #2011-157, Hidalgo County - Improvements to the Mission Protective levee System

Dear Mr. Borunda:

The Texas Commission on Environmental Quality (TCEQ) has reviewed the above-referenced project and offers following comments:

A review of the project for General Conformity impact in accordance with 40 CFR Part 93 and Title 30, Texas Administrative Code § 101.30 indicates that the proposed action is located in Hidalgo County, which is currently unclassified or in attainment of the National Ambient Air Quality Standards for all six criteria air pollutants. Therefore, General Conformity does not apply.

Although any demolition, construction, rehabilitation or repair project will produce dust and particulate emissions, these actions should pose no significant impact upon air quality standards. Any minimal dust and particulate emissions should be easily controlled by the construction contractors using standard dust mitigation techniques.

We do not anticipate significant long term environmental impacts from this project as long as construction and waste disposal activities associated with it are completed in accordance with applicable local, state, and federal environmental permits and regulations. We recommend that the applicant take necessary steps to insure that best management practices are utilized to control runoff from construction sites to prevent detrimental impact to surface and ground water.

Thank you for the opportunity to review this project. If you have any questions, please contact Ms. Tangela Niemann at (512) 239-3786 or [tangela.niemann@tceq.texas.gov](mailto:tangela.niemann@tceq.texas.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Jim Harrison".

Jim Harrison, Director  
Intergovernmental Relations Division



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6  
1445 ROSS AVENUE, SUITE 1200  
DALLAS, TX 75202-2733

April 22, 2011

Daniel Borunda  
Environmental Management Div.  
U.S. International Boundary and  
Water Commission  
4171 North Mesa, C-100  
El Paso, TX 79902

SUBJECT: Draft Supplemental Environmental Assessment for Improvements to the Mission Protective Levee System in Hidalgo, County, Texas

Dear Mr. Borunda:

In accordance with your letter dated April 6, 2011, the U.S. Environmental Protection Agency (EPA) Region 6 has no objection to the Draft Supplemental Environmental Assessment (SEA).

We appreciate the opportunity to examine the SEA. Thank you for your coordination and don't hesitate to contact John MacFarlane, of my staff, at 214-665-7491, should you have any questions or concerns regarding this letter.

Sincerely,

A handwritten signature in blue ink, appearing to read "Rhonda Smith".

Rhonda Smith  
Chief, Office of Planning and  
Coordination



Life's better outside.®

May 5, 2011

Daniel Borunda  
Natural Resource Specialist  
Environmental Management Division, USIBWC  
4171 North Mesa, C-100  
El Paso, TX 79902

RE: Draft Supplemental Environmental Assessment for improvements to the Mission Protective Levee System, Hidalgo County, Texas

Dear Mr. Borunda:

Texas Parks and Wildlife Department (TPWD) received your request for review of the Draft Supplemental Environmental Assessment (SEA) and Draft Finding of No Significant Impact (FONSI) prepared by the United States Section of the International Boundary and Water Commission (USIBWC) for the project referenced above.

### **Project Description**

In 2009, the Mission and Common Levee Systems were raised to meet Federal Emergency Management Agency (FEMA) flood protection criteria. During the levee raising project, a canal access and maintenance road located between the toe of the levee and the main canal was inadvertently eliminated. The proposed project would re-establish a 10-foot wide canal access and maintenance road along a 2.9 mile section of the levee system in order to address maintenance requirements of the Mission Main Canal and to meet contractual obligations between the USIBWC and the United Irrigation District (UID).

Four alternatives, including the "No Action" alternative, were considered. The preferred alternative (canal modification) would add enough fill material to the landside of the levee to construct a canal access and maintenance road. The additional fill would narrow the existing 30-foot wide canal to approximately 15 feet; the resulting narrower canal would be concrete lined for the length of the project. Alternative 2 would install sheet piles 20-feet deep into the landside of the levee. Levee material would be excavated from the toe of the levee to the sheet pile wall to provide space for the canal access and maintenance road to be constructed. The Mission Main Canal would not be modified. Alternative 3 would install a retention wall approximately 15-feet deep with an eight-foot wide base along the landside of the levee. Levee material would be excavated from the toe of the levee to the retention wall to provide space for the canal access and maintenance road to be constructed. The Mission Main Canal would not be

#### Commissioners

Peter M. Holt  
Chairman  
San Antonio

T. Dan Friedkin  
Vice-Chairman  
Houston

Mark E. Bivins  
Amarillo

Ralph H. Duggins  
Fort Worth

Antonio Falcon, M.D.  
Rio Grande City

Karen J. Hixon  
San Antonio

Dan Allen Hughes, Jr.  
Beeville

Margaret Martin  
Boerne

S. Reed Morian  
Houston

Lee M. Bass  
Chairman-Emeritus  
Fort Worth

Carter P. Smith  
Executive Director

modified. Construction of the proposed project would occur between October and March.

TPWD has reviewed the information provided and offers comments and recommendations concerning the following:

### **Preferred Alternative**

The preferred alternative (canal modification) would result in greater direct and/or potential impacts to vegetation, wetland and waterbodies, wildlife, aquatic ecosystems, and threatened and endangered species than the other build alternatives.

**Recommendation:** TPWD does not support the preferred alternative (canal modification) and recommends either Alternative 2 or 3 be considered the preferred alternative in order to avoid and/or minimize potential impacts to wildlife, including state-listed species, and to avoid negatively affecting the experience of state park visitors.

### **State Regulations**

#### *Parks and Wildlife Code*

State law prohibits any take (incidental or otherwise) of state-listed species. Laws and regulations pertaining to state-listed endangered or threatened animals are contained in Chapters 67 and 68 of the Texas Parks and Wildlife (TPW) Code; laws pertaining to endangered or threatened plants are contained in Chapters 88 of the TPW Code.

TPWD agrees that suitable habitat for a number of state-listed species occurs in the proposed project area and appreciates that an environmental monitor would be on site to survey for listed species and birds to prevent direct take.

The Draft SEA states that most wildlife species would move to adjacent areas during construction; however, no habitat suitable for amphibians and reptiles occurs adjacent to the Mission Main Canal, which is described in the draft SEA as having never been dredged and as having “similar flora and fauna as the Rio Grande.”

As proposed, the Mission Main Canal would be dewatered over a period of days to allow fish to move downstream. Any state-listed mollusks detected during

dewatering would be relocated to suitable habitat outside the project area. In addition to mollusks, TPWD is concerned about potential impacts to black-spotted newts and South Texas sirens, state-listed amphibians, both of which are known to occur on the managed properties bordering the proposed project area. Due to their size, cryptic coloration, and ability to aestivate or conceal themselves in the canal sediment, the ability to observe these species during construction to prevent direct take would be difficult if not impossible.

**Recommendation:** Because the Mission Main Canal could likely contain state-listed amphibians, if “canal modification” is selected as the preferred alternative in the Final SEA, TPWD recommends *all* wildlife in the canal be collected and relocated in order to ensure potential impacts to wildlife, including state-listed species, are avoided. TPWD would gladly assist in the capture and relocation of wildlife inhabiting the canal.

As previously stated, many state-listed amphibians will burrow into the sediment during the cooler months which coincides with this project’s construction schedule. While the construction schedule assists in avoiding potential impacts to nesting birds, it increases the likelihood of impacting species that are unable to flee the area. Selecting alternative 2 or 3 as the preferred alternative would avoid and/or minimize potential impacts to these state-listed species.

### **State Park Impacts**

As stated in the Draft SEA, Bentsen-Rio Grande Valley State Park (BRGVSP) occupies tracts on both sides of the Mission Main Canal and offers a variety of outdoor recreational activities for visitors. Previous USIBWC construction projects near the entrance of BRGVSP resulted in decreased visitation to the park. Additional construction projects that could affect access to the park will likely impact current and future park visitation due to repeat customer dissatisfaction.

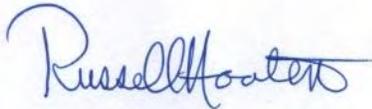
**Recommendation:** Since the proposed improvements to the Mission Levee would take place during the park’s annual peak visitation period (October – March), TPWD requests that all construction near the park be conducted in October 2011 to reduce operational impacts to the park. Construction near the bridge that allows access to the park should be completed no later than October 31, 2011 to reduce the chance of park closure during high visitation periods.

Mr. Borunda  
May 5, 2011  
Page 4 of 4

Currently the Mission Main Canal provides habitat (*i.e.*, cover, food, water) for many species of wildlife and offers excellent wildlife viewing opportunities for park visitors. The project's preferred alternative would concrete line this portion of the Mission Main Canal thus eliminating the habitat and resulting recreational opportunities for park visitors. TPWD recommends Alternative 2 or 3 be considered as the preferred alternative in order to minimize impacts to local flora and fauna and maintain the wildlife watching opportunities along the canal that enhance the park visitor's experience.

TPWD appreciates the opportunity to review and comment on the Draft SEA for this project. If you would have any questions regarding our comments, please contact Kendal Keyes, Natural Resources Coordinator, in the Region 2 office at 361-790-0325 in Rockport or Russell Hooten, Wildlife Habitat Assessment Biologist, in Corpus Christi at 361-825-3240.

Sincerely,

A handwritten signature in blue ink that reads "Russell Hooten". The signature is written in a cursive style with a large initial "R".

Russell Hooten  
Wildlife Habitat Assessment Program  
Wildlife Division

RH:KK:rh 16045

cc: Kendal Keyes, TPWD-State Parks Region 2



INTERNATIONAL BOUNDARY AND WATER COMMISSION  
UNITED STATES AND MEXICO

April 6, 2011

OFFICE OF THE COMMISSIONER  
UNITED STATES SECTION

Ernesto Reyes  
U.S. Fish and Wildlife Service  
Ecological Services  
Route 2, Box 202-A  
Alamo, Texas 78516

Subject: Initiation of Consultation under Section 7 of the Endangered Species Act to Conduct Improvements Along the Mission Protective Levee System Located within Hidalgo County, Texas

Dear Mr. Reyes:

The United States Section of the International Boundary and Water Commission (USIBWC) has prepared a Draft Supplemental Environmental Assessment (SEA) and Draft Finding of No Significant Impact (FONSI) for proposed improvements along the Mission Protective Levee System (Mission Levee) in order to re-establish a 10-foot wide canal access and maintenance road along the levee side of the Mission Main Canal from 1.1 miles west of Bentsen Palm Road to the Military Road bridge crossing.

Please find enclosed the Draft SEA and FONSI including a detailed description of the proposed project along with maps of the area. The Preferred Alternative consists of narrowing the Mission Main Canal by approximately 15 feet (the width necessary to re-establish the road) with fill material obtained from commercial sources outside the levee system.

Six federally listed threatened or endangered species were determined to be potentially impacted by the Preferred Alternative. These include the northern aplomado falcon (*Falco femoralis septentrionalis*), jaguarundi (*Herpailurus yaguarondi*), ocelot (*Leopardus pardalis*), star cactus (*Astrophytum asterias*), Texas ayenia (*Ayenia limitaris*) and Walker's manioc (*Manihot walkerae*).

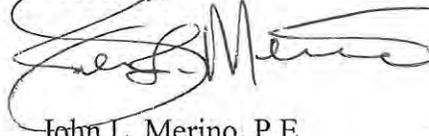
A field reconnaissance survey was conducted by TRC Environmental Corporation on February 22, 2011, to assess habitat suitability for threatened and endangered species in the project area. No threatened or endangered species were observed during the field survey. A detailed description of the vegetation communities and threatened and endangered species potentially impacted by the Preferred Alternative are included in the Draft SEA.

Under the Preferred Alternative, canal modification activities would remove primarily herbaceous non-native grassland communities along the levee toe and north canal access road slope and herbaceous riparian vegetation associated with the Mission Main Canal, as well as aquatic vegetation within the Mission Main Canal. Construction impacts would be temporary

and localized along the landside toe of the existing levee and the Mission Main Canal and be subject to the best management practices outlined in the Draft SEA. Routine maintenance activities would remain unchanged. The area of proposed disturbance is located along previously disturbed areas, regular maintenance activities are conducted along the levee and canal, and the project area lacks suitable habitat for the federally listed species. Therefore, the USIBWC has determined that construction and operation of the Preferred Alternative would not likely adversely affect federally listed species, their habitats, or designated critical habitat.

USIBWC therefore requests your concurrence with this determination. Thank you for your timely assistance in this matter. We welcome your comments on this undertaking and look forward to addressing any concerns your office may have. Please submit your comments so they are postmarked by **May 6, 2011**. If you have any questions or concerns, please contact Daniel Borunda at (915) 832-4767 or by emailing [Daniel.Borunda@ibwc.gov](mailto:Daniel.Borunda@ibwc.gov)

Sincerely,

A handwritten signature in black ink, appearing to read 'John L. Merino', written over a horizontal line.

John L. Merino, P.E.  
Principal Engineer

Enclosures: As stated



# 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

May 6, 2011

Daniel Borunda  
Natural Resources Specialist  
Environmental Management Division  
International Boundary and Water Commission (IBWC)  
The Commons, Building C-100  
4171 N. Mesa Street  
El Paso, Texas 79902

Consultation Number: 21410-2006-I-0243

Dear Mr. Borunda:

The U.S. Fish and Wildlife Service (Service) has reviewed the U.S. International Boundary and Water Commission's (IBWC) Draft Supplemental Environmental Assessment (SEA) for the proposed improvements along the Mission Protective Levee System. The proposed project would be operated in Hidalgo County, Texas.

### **General Comments**

The Service's general comments and recommendations on the draft SEA are as follows:

In order to accurately assess the impacts of the proposed project, the Service recommends that the wetland delineation for the project be verified by the U. S. Army Corps of Engineers and that the natural resource agencies be provided with a mitigation plan for review and comment prior to issuance of the Final SEA. The mitigation plan should include a complete restoration plan for temporary impacts as well as mitigation for all permanent or operational impacts to jurisdictional areas.

IBWC is currently out-of compliance with several projects included in the programmatic EIS mentioned as the overarching document for this project, and has self-reported instances when the best management practices have not been followed. The Service has not received sufficient documentation to resolve all issues. The Service recommends before proceeding with this or any other projects under the "Final Programmatic Impact Statement – Improvements to the USIBWC Rio Grande Flood Control Projects along the Texas-Mexico Border" that an interim report be prepared that covers actions completed, actions still pending, maintenance needs, operational needs, updated BA's in the West Texas region to consider threatened Rio Grande Silvery Minnow 10 (j) experimental population which has been established since the final programmatic document was

completed, as well as the endangered southwestern willow flycatcher which has been observed in the El Paso area in its Texas the recovery unit. Revegetation plans for the Rectification Area are still pending and a solution to resolve the wildlife trapping issues at Sierra Blanca, by Mr. Merino, IBWC, Principal Engineer, on your land by U.S. Customs and Border Protection vehicle trenches has yet to be determined, although a resolution was promised by the end of January 2011. Also compensation for impacts in the Lower Rio Grande Valley has not been fulfilled and a status report is requested. Additionally, the report should give the status of realigning levees in the Presidio area, and any information about the proposed weir near Laredo if that is available to IBWC.

### **Specific Comments**

#### **3.1.1 Vegetation, page 3-2**

Please coordinate with the Lower Rio Grande Valley Natural Wildlife Refuge (LRGV NWR) Manager, Bryan Winton, to determine if a Special Use permit will be required for working in or near La Parida Banco, El Morillo Banco, and any other conservation lands in the project area that may be managed by LRGV NWR.

#### **3.1.1 Vegetation, page 3-3**

Levee slopes may provide travel corridors for the endangered ocelot and jaguarundi, especially if the grass is high. Also riparian vegetation provides for travel and cover along water sources for these cats. Although the Service often recommends grasslands be replaced at a 1:1 ratio because of their quick growth, riparian areas should be compensated for at a 2:1 ratio.

#### **Table 3-2, page 3-10**

Ocelots and jaguarundi are known to use other habitat areas besides thick brush. They use brushlands, grasslands, and riparian areas among other vegetation types for travel and to forage. Please correct the table.

Also please note, loss of connectivity along the corridor during and after construction should be considered and any impacts addressed. Construction noise and lighting also should be considered an impact to endangered cats and IBWC should consider the types of lighting used, whether down-shielding can be used to avoid habitat areas, and what decibel level of noise will be typical of the construction activities in the area and how they can be muffled. Noise impacts may dissipate at 300 to 1,800 feet around the source depending on decibel level.

The Service cannot concur with your determination that the project is “not likely to adversely affect” federally-listed species at this time. The Service requests further information, and suggests incorporation of best management practices and conservation measures that will assist in avoiding and minimizing impacts to the endangered cats.

Thank you for allowing the Service to comment. The Service will provide further comments as the draft SEA is updated and revised. The Service further recommends that Section 7 consultation for this project be completed and included in the appendices of revised versions of the draft SEA. If there are any questions or you need further information, please contact Dr.

Larisa Ford, Corpus Christi Ecological Services Field Office, Fish and Wildlife Biologist, at  
(361) 994-9005.

Sincerely,

A handwritten signature in black ink that reads "E. Dawn Whitehead". The signature is written in a cursive style with a large initial "E".

Allan M. Strand  
Field Supervisor

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INTERNATIONAL BOUNDARY AND WATER COMMISSION  
UNITED STATES AND MEXICO

May 20, 2011

OFFICE OF THE COMMISSIONER  
UNITED STATES SECTION

Larisa Ford, PhD, MPA  
Corpus Christi Ecological Services Field Office  
United States Fish & Wildlife Service  
Texas A&M University at Corpus Christi  
6300 Ocean Drive, USFWS -Unit 5837  
Corpus Christi, TX 78412-5837

RE: Consultation Number: 21410-2006-I-0243

Dear Dr. Ford:

The United States Section, International Boundary and Water Commission (USIBWC) has received your comment letter dated May 6, 2011, regarding the Draft Supplemental Environmental Assessment (DSEA) for the proposed improvements along the Mission Protective Levee system. The following information is provided in response to your comments:

1) General Comments –The USIBWC recognizes the outstanding mitigation commitments and in essence agrees that the agency is out of compliance. As an update, the agency is in the process of purchasing lands that will enable us to offset past and present impacts as committed by the Programmatic EIS. A conference should be scheduled with you, Mr. Ernesto Reyes, Dr. Lisa Santana and Mr. Daniel Borunda to discuss these commitments and develop a formal plan to address each issue directly. Regarding impacts to wetlands or waters of the United States, we have received a verbal determination from Mr. John Wong of the Corpus Christi Corps of Engineers Regulatory Office that the proposed work will not impact jurisdictional waters. We are awaiting the formal written response.

2) Specific Comment #1 - Special Use permit requirements for any work impacting Fish and Wildlife Service (FWS) properties. We have confirmed that the project, as described in the draft SEA, will not impact FWS properties. All work will remain within the USIBWC right-of-way and the United Irrigation District (UID) property adjacent to the UID canal. A FWS special use permit would not be required for this project.

3) Specific Comment #2 – Compensatory mitigation for removal of grassland and riparian areas resulting from the project. The USIBWC concurs with this requirement. Non-native grasses removed along the project corridor (levee slopes) will be re-seeded with native grasses on a 1:1 ratio. The riparian vegetation fringe will be completely removed and replaced along the concrete channel lining. This fringe will be mitigated at a 2:1 ratio. The preferred alternative on Table

The Commons, Building C, Suite 100 • 4171 N. Mesa Street • El Paso, Texas 79902-1441  
(915) 832-4100 • Fax: (915) 832-4190 • <http://www.ibwc.gov>

3.1 on page 3-4 of the Draft SEA states the impacts are 3.6 acres of riparian vegetation therefore USIBWC commits to mitigate 7.2 acres. This mitigation requirement will be included as part of the current effort in the land acquisition acreage that Dr. Lisa Santana is spearheading.

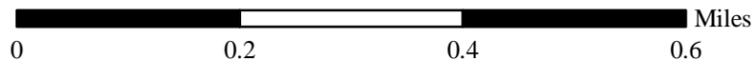
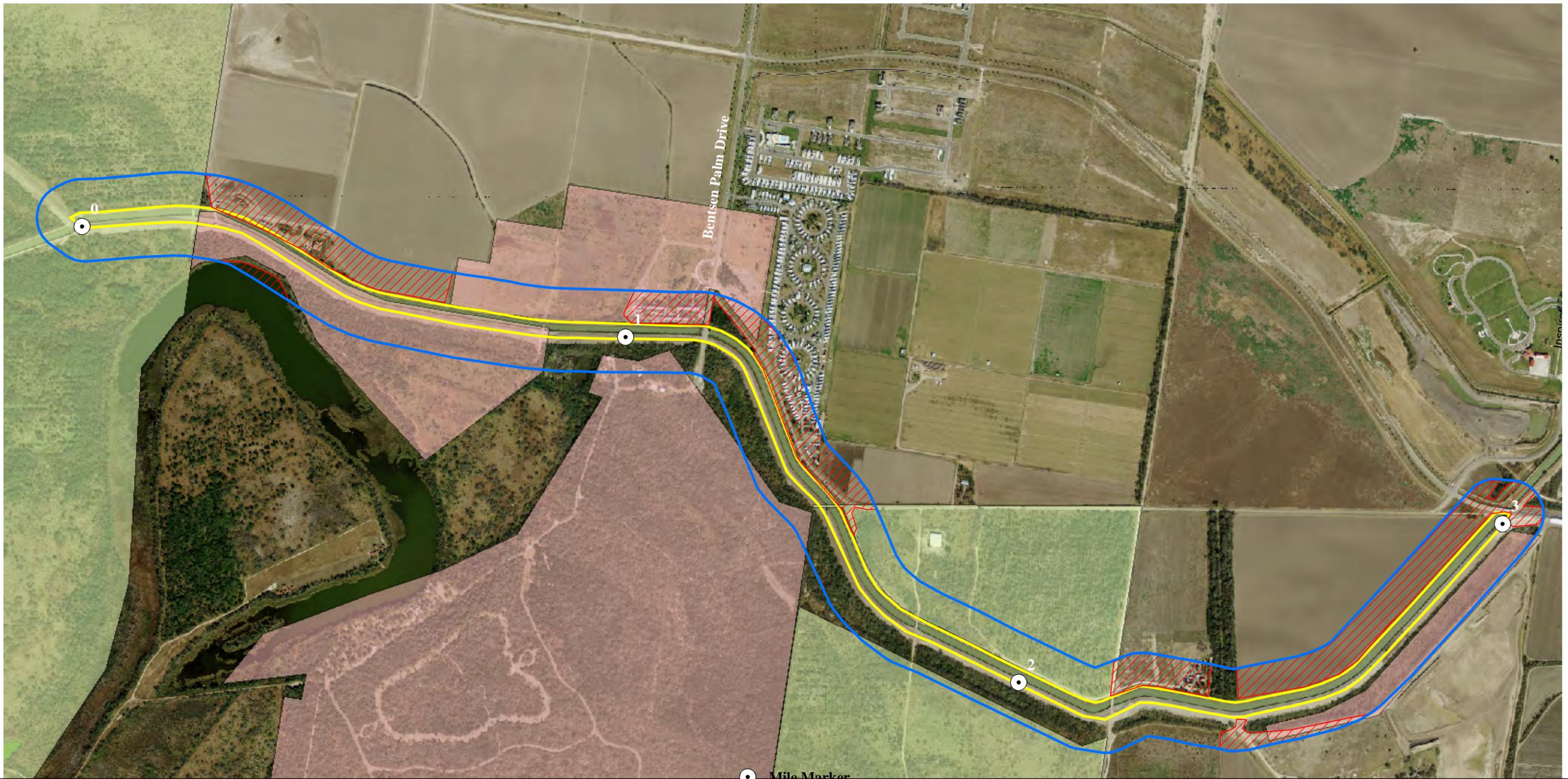
3) Specific Comment #3 - Impacts to the endangered ocelot and jaguarundi from lighting and construction noise. Based on the project requirements, the USIBWC anticipates that lighting will not be necessary for this project during construction or future operations. Following your recommended guidelines for construction noise, the USIBWC has included a map showing a 300 foot noise buffer along the entire project reach and calculated potential noise impacts. As indicated in discussions with you, the mitigation ratio for noise impacts would be 0.025:1. The attached map shows the buffer area and excludes areas identified as non-cultivated agricultural fields, roads, residential, and park headquarters. The calculated acreage impacted by noise is approximately 202.2 acres. Therefore, the USIBWC recommends mitigating of 5.0 acres for construction noise impacts. This mitigation requirement will be included as part of the current effort in the land acquisition acreage that Dr. Lisa Santana is spearheading.

The USIBWC is committed to coordinating closely with you and other FWS colleagues to ensure that we protect and offset any impacts associated with the proposed project. The total mitigation commitments for this project will be 12 acres. Based on these mitigation commitments and clarifications, the USIBWC requests your concurrence that the proposed action may affect but not likely to adversely affect federally listed species. If you would like to discuss this project further please feel free to contact me at (915) 932-4702, or you may contact Natural Resources Specialist, Mr. Daniel Borunda of my office at (915) 832-4767.

Sincerely,



Gilbert Anaya  
Division Chief  
Environmental Management Division



- Mile Marker
- ▭ 300 foot Buffer
- ▨ Excluded Areas
- ▭ Project Area
- ▭ Bentsen-Rio Grande Valley State Park
- ▭ USFWS Wildlife Refuge

Source  
 1. Aerial: National Agricultural Imagery Program (NAIP) 2009.  
 2. Parks: Texas Parks and Wildlife, State Parks.  
 3. Refuge: National Wildlife Refuges in Texas owned by USFWS.



International Boundary and Water Commission  
 United States Section

**FIGURE A-1**

Mission Levee Project

Hidalgo County

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## 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

June 7, 2011

Gilbert Anaya  
Division Chief  
Environmental Management Division  
International Boundary and Water Commission  
The Commons, Building C, Suite 100  
4171 N. Mesa Street  
El Paso, Texas 79902-1441

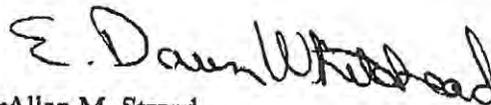
Dear Mr. Anaya:

We have reviewed your additional information in your letter, received on May 20, 2011, concerning impacts on endangered and threatened species and their habitats, and proposed compensation for these impacts for the Mission Protective Levee System, under consultation number 21410-2006-I-0243. Dr. Lisa Santana and Daniel Borunda from your office and Ernesto Reyes and Dr. Larisa Ford of our office discussed options and needs for the International Boundary and Water Commission to comply with the Endangered Species Act of 1973, as amended.

Based on the current project description and location, the Service concurs with your determination that the project may affect, but is not likely to adversely affect the endangered ocelot and jaguarundi. The Corpus Christi Ecological Services Field Office recommends that compensation components be completed prior to the start of construction of the Mission Protective Levee Project. This will require that the MOU/IAA and transfer of funds for mitigation services to the Service be completed prior to October 1, 2011. Should project plans change, or if additional information on the distribution of listed or proposed species becomes available, this determination can be reconsidered.

If you have any further questions please contact Dr. Larisa Ford at (361) 994-9005 or by email

Sincerely

  
for Allan M. Strand  
Field Supervisor



INTERNATIONAL BOUNDARY AND WATER COMMISSION  
UNITED STATES AND MEXICO

April 6, 2011

OFFICE OF THE COMMISSIONER  
UNITED STATES SECTION

Mr. Lloyd Mullins  
U.S. Army Corps of Engineers  
Galveston District  
Corpus Christi Regulatory Field Office  
5151 Flynn Parkway, Suite 306  
Corpus Christi, Texas 78411-4318

Subject: Improvements to the Mission Protective Levee System in Hidalgo County  
United States International Boundary and Water Commission Request for Preliminary  
Jurisdictional Determination and Comments to the Draft Supplemental Environmental  
Assessment

Dear Mr. Mullins:

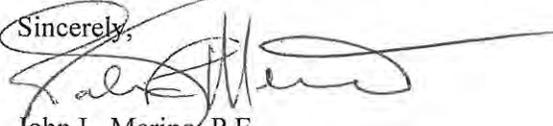
The United States Section of the International Boundary and Water Commission (USIBWC) requests a Preliminary Jurisdictional Determination of the subject project area under the Clean Water Act. The Mission Protective Levee System (Mission Levee) is a component of the Lower Rio Grande Flood Control Project and protects urban, suburban, and highly developed irrigated farmland. The purpose of the project is to re-establish a 10-foot wide canal access and maintenance road along the levee side of the Mission Main Canal.

The project consists of improvements to the Mission Levee from 1.1 miles west of Bentsen Palm Road near Abram, Texas to the Military Road Bridge Crossing near Madero, Texas, a distance of approximately 2.9 miles. The approximate coordinates for the west end of the project area are UTM Zone 14, 560289E, 2896627N and UTM Zone 14, 564207E, 2895851N for the east end of the project area.

Please find enclosed the Draft Supplemental Environmental Assessment (SEA) and Draft Finding of No Significant Impact (FONSI) that includes location maps; aerial photographs of the project area; recent site photographs of the project area; and a wetland delineation report as Appendix B. The Preferred Alternative consists of narrowing the Mission Main Canal by approximately 15 feet (the width necessary to re-establish the road) with fill material obtained from commercial sources outside the levee system.

The Draft SEA is being made available for a 30-day review and comment period. Please submit your comments so they are postmarked by **May 6, 2011**.

Thank you for your timely assistance in this matter. If you have any questions or concerns, please contact Natural Resource Specialist Daniel Borunda at (915) 832-4767 or by email at [Daniel.Borunda@ibwc.gov](mailto:Daniel.Borunda@ibwc.gov)

Sincerely,  
  
John L. Merino, P.E.  
Principal Engineer

Enclosures: As stated



DEPARTMENT OF THE ARMY  
GALVESTON DISTRICT, CORPS OF ENGINEERS  
CORPUS CHRISTI REGULATORY FIELD OFFICE  
5151 FLYNN PARKWAY, SUITE 306  
CORPUS CHRISTI TX 78411-4318

May 31, 2011

REPLY TO  
ATTENTION OF:

Corpus Christi Regulatory Field Office

SUBJECT: SWG-2011-00312: Jurisdictional Determination

International Boundary & Water Commission  
ATTN: Mr. John L. Merino, Principal Engineer  
4171 N. Mesa Street  
El Paso, TX 79902

Dear Mr. Merino:

This is in reference to your letter, dated April 6, 2011, in which you requested a jurisdictional determination for proposed improvements to 2.9 miles of the Mission Protective Levee System. The proposed work listed as your preferred alternative consists of narrowing the Mission Main Canal by 15 feet to reestablish an access road for maintenance. The beginning of the proposed work is located 1.1 miles west of Bentsen Palm Road near Abram, Hidalgo County, Texas, as shown on Sheet 1.

A review of aerial photography, the USGS quadrangle map, the National Wetland Inventory map, Hidalgo County soil surveys, and aerial photographs, all indicate that this segment of the Mission Main Canal is an elevated irrigation canal excavated through uplands, and as such not considered to be jurisdictional pursuant to Section 404 of the Clean Water Act (CWA). Accordingly, a Department of the Army permit is not required for the proposed work so long as work is conducted within the footprint of the canal as depicted on Sheet 2 (Figure 2-2). Please note that maps and aeriels depict borrow areas on the outside of the levee, particularly the south levee, which have naturalized and may be jurisdictional under the Section 404 of the CWA. These areas are not described as being in the work area; however, should future work affect these areas, please contact our office so that we can determine their jurisdictional status.

This letter contains an approved jurisdictional determination for your subject site. If you object to this determination, you may request an administrative appeal under Corps regulations at 33 CFR Part 331. Enclosed you will find a combined Notification of Administrative Appeal Options and Process (NAP) and Request for Appeal (RFA) form. If you request to appeal this determination you must submit a completed RFA form to the Southwestern Division Office at the following address:

Mr. Elliott Carman  
Administrative Appeals Review Officer (CESWD-PD-O)  
U.S. Army Corps of Engineers  
1100 Commerce Street, Suite 831  
Dallas, Texas 75242-1731  
Telephone: 469-487-7061; FAX: 469-487-7199

JM 180/11  
Re 6/10/2011

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, meets the criteria for appeal under 33 C.F.R. Part 331.5, and that it has been received by the Division Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address within 60 days of the date of this letter.

It is not necessary to submit an RFA form to the Division office if you do not object to the determination in this letter.

Corps determinations are conducted to identify the limits of the Corps Clean Water Act jurisdiction for the particular sites. This determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985, as amended. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service prior to starting work.

Please reference determination number **SWG-2011-00312** in future correspondence pertaining to this subject. If you have any questions concerning this determination or possible appeal of this determination, please contact me at the letterhead address or John Wong by telephone at 361-814-5847. To assist us in improving our service to you, please complete the survey found at <http://per2.nwp.usace.army.mil/survey.html>.

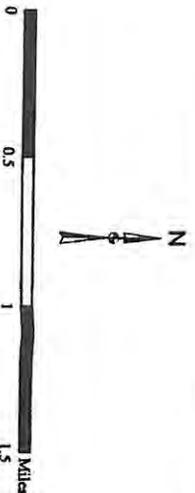
Sincerely,



Lloyd Mullins  
Supervisor  
Corpus Christi Regulatory Field Office

Enclosures

Notification of Administrative Appeal Options and Process and Request for Appeal



- Mile Marker
- Survey Area

Source:  
USGS Mission and La Joya Quadrangles (2002),  
Hidalgo County, Texas



International Boundary and Water Commission  
United States Section

**FIGURE 1**  
Site Location Map

Mission Levee

SWG-2011-00312  
IBWE  
HIDALGO Co., TX  
SHEET 1 OF 2 5/31/11

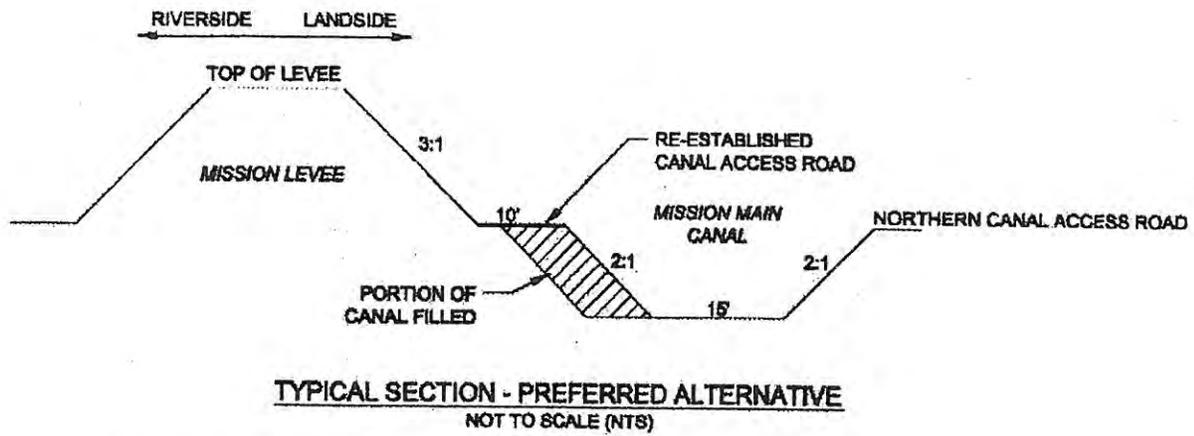


Figure 2-2: Typical Cross-section of the Preferred Alternative: Canal Modification



Figure 2-3: Location of Water Transfer between HCID #1 and UID

SH6-2011-00312  
IBWC  
Hidalgo Co., TX  
SHEET 2 of 2 5/31/11

Applicant: International Boundary & Water Comm. | File Number: SWG-2011-00312 | Date: 31 May 2011

Attached is: | See Section below

	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
X	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at <http://www.usace.army.mil/CEC/W/Pages/faq-materials.aspx> or Corps regulations at 33 CFR Part 331.

**A: INITIAL PROFFERED PERMIT:** You may accept or object to the permit.

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **OBJECT:** If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

**B: PROFFERED PERMIT:** You may accept or appeal the permit

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **APPEAL:** If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

**C: PERMIT DENIAL:** You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

**D: APPROVED JURISDICTIONAL DETERMINATION:** You may accept or appeal the approved JD or provide new information.

- **ACCEPT:** You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- **APPEAL:** If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

**E: PRELIMINARY JURISDICTIONAL DETERMINATION:** You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

**SECTION II - REQUEST FOR APPEAL OR OBJECTIONS TO AN INITIAL PROFFERED PERMIT**

**REASONS FOR APPEAL OR OBJECTIONS:** (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

**ADDITIONAL INFORMATION:** The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

**POINT OF CONTACT FOR QUESTIONS OR INFORMATION**

If you have questions regarding this decision and/or the appeal process you may contact:  
Lloyd Mullins, Supervisor  
U.S. Army Corps of Engineers  
Corpus Christi Regulatory Field Office  
5151 Flynn Parkway, Suite 306  
Corpus Christi, Texas 78411-4318  
361-814-5847

If you only have questions regarding the appeal process you may also contact:  
Mr. Elliott Carman  
Administrative Appeals Review Officer (CESWD-PD-O)  
U.S. Army Corps of Engineers  
1100 Commerce Street, Suite 831  
Dallas, Texas 75242-1731  
469-487-7061

**RIGHT OF ENTRY:** Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

\_\_\_\_\_  
Signature of appellant or agent.

Date:

Telephone number:



INTERNATIONAL BOUNDARY AND WATER COMMISSION  
UNITED STATES AND MEXICO

April 6, 2011

OFFICE OF THE COMMISSIONER  
UNITED STATES SECTION

Mr. Mark Wolfe, State Historic Preservation Officer  
Texas Historical Commission  
Attn: Debra Beene  
Project Review Coordinator  
P.O. Box 12276  
Austin, TX 78711-2276

**Subject: STIMULUS-Request for Consultation under Section 106 of the National Historic Preservation Act and submission of Draft Supplemental Environmental Assessment and Cultural Resources Survey Report for improvements along the Mission Protective Levee System located in Hidalgo County, Texas.**

Dear Mr. Wolfe:

The United States Section of the International Boundary and Water Commission (USIBWC) proposes to conduct improvements along the Mission Protective Levee System (Mission Levee) located in Hidalgo County, Texas. The Mission Levee is a component of the Lower Rio Grande Flood Control Project that conveys floodwater diverted from the Rio Grande to the Laguna Madre in the Gulf of Mexico and protects urban, suburban, and highly developed irrigated farmland along the Rio Grande delta in the United States and Mexico.

The Proposed Action would involve improvements to re-establish a 10-foot wide canal access and maintenance road along the levee side of the Mission Main Canal from 1.1 miles west of Bentsen Palm Road to the Military Road bridge crossing, a distance of approximately 2.9 miles. The Preferred Alternative would consist of narrowing the Mission Main Canal by approximately 15 feet (the width necessary to re-establish the road) with fill material obtained from commercial sources outside the levee system. Construction activities would take place between the landside toe of the Mission Levee up to the northern edge of the existing Mission Main Canal access and maintenance road entirely within the USIBWC and United Irrigation District right-of-way. Please find enclosed the Draft Supplemental Environmental Assessment (SEA) that includes a detailed description of the proposed project and alternatives, along with maps of the area.

The cultural resources data were obtained from field surveys, site file searches using the Texas Historical Commission's Restricted Cultural Resources Information, the Texas Archeological Sites Atlas, and various archival resources. The archeological field investigation included two (2) High Probability Areas previously identified in the cultural resources work plan and subsequently approved by the THC on February 14, 2011. There were no archeological resources identified within the APE during the course of this investigation.

An architectural survey of historic structures was performed along the 2.9 miles of the Mission Levee right-of-way. The architectural survey identified two historic resources: the 2.9-mile portion of the Mission Protective Levee System and the adjacent Mission Main Canal. Each of these resources has associated features, 24 of which are within the APE. These include 12 irrigation and drainage structures with pipes running under the canal (levee structures), six irrigation turnouts that deliver water from the canal, and six bridges. The two identified resources are potentially eligible for individual listing on the National Register of Historic Places.

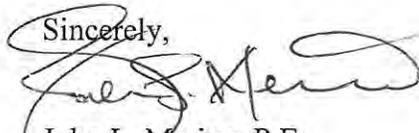
USIBWC is aware that Native American and other cultural groups may have concerns related to cultural resources, so consultation will also be conducted with the following groups:

- Comanche Nation
- Kiowa Tribe of Oklahoma
- Tonkawa Tribe of Oklahoma
- Apache Tribe of Oklahoma
- Mescalero-Apache Tribe
- Wichita and Affiliated Tribes

With this letter, the USIBWC is submitting a Draft SEA document that addresses potential impacts to environmental and socioeconomic conditions and a cultural resources investigations report that addresses impacts to archeological and architectural resources by the proposed undertaking. The Draft SEA serves as the Determination of Effect for this undertaking in accordance with 36 CFR 800.8 and is being submitted to your office for review and concurrence under Section 106 of the National Historic Preservation Act.

We welcome your comments on this undertaking and look forward to addressing any concerns your office may have. Please submit your comments so they are postmarked by **May 6, 2011**. If you have any questions or concerns, please contact, Daniel Borunda at (915) 832-4767 or by emailing [Daniel.Borunda@ibwc.gov](mailto:Daniel.Borunda@ibwc.gov).

Sincerely,



John L. Merino, P.E.  
Principal Engineer

Attachment(s)

One (1) copy of Draft Supplemental Environmental Assessment; Improvements to the Mission Protective Levee System, Hidalgo County, Texas

Two (2) copies of Cultural Resources Intensive Survey for the Proposed Improvements to the Mission Protective Levee System along the Lower Rio Grande Flood Control Project located in Hidalgo County, Texas by Matchen et al.

**TEXAS HISTORICAL COMMISSION**

*real places telling real stories*

May 6, 2011

John L. Merino, P.E.  
Principal Engineer  
International Boundary and Water Commission  
The Commons, Building C, Suite 310  
4171 N. Mesa Street  
El Paso, TX 79902

Re: *Project review under Section 106 of the National Historic Preservation Act of 1966  
Proposed Access Road, Mission Levee & Mission Main Canal, Hidalgo County  
(106/USIBWC; THC Track #201111320)*

Dear Mr. Merino,

This letter serves as comment on the proposed undertaking from the State Historic Preservation Officer (SHPO), the Executive Director of the Texas Historical Commission (THC).

The review staff, led by Linda Henderson and Kim Barker, has completed its review of the project documentation provided. It is our understanding that the proposed project consists of widening the access road along the canal side of the Mission Protective Levee from approximately 5 feet to 10 feet. This widening is proposed to be accomplished by filling the canal by approximately 15 feet, decreasing the width at the bottom of the Mission Main Canal by half. Additionally, the canal is proposed to be concrete-lined. Associated irrigation structures such as gates and standpipes are expected to be damaged during construction and will be replaced, although specific figures on the number of structures was not provided. The project area encompasses 2.9 miles of the 12 mile-long Mission Protective Levee System, which is a component of the 186 mile-long Lower Rio Grande Flood Control Project (LRGFPC).

The drawings of the existing levee and canal, which we realize are not to scale, indicate a more substantial distinction between the two features than is indicated through the photographic documentation, which seems to show the levee as an extension of the canal wall. The photographs provided show what appears to be an access road on the top of the levee, not at the toe. We believe that the photographs may pre-date the 2009 levee raising project that eliminated the access road. Since we are unable to determine the current appearance and dimensions of the levee and canal, we are unable to evaluate the Mission Protective Levee and Mission Main Canal for eligibility for listing in the National Register of Historic Places, and are unable determine the effect of the proposed project on these potential historic resources.

In addition, we want to clarify past determinations of eligibility and existing historical designations before we can concur with confidence that the structures are NR eligible. In



JM 154/11  
Rec. 5/11/11

April 2009, we received a copy of an internal TxDOT memo in which their staff determined the United Irrigation District (UID) as a system to be **not** eligible for National Register as a district due to loss of integrity, although the two resources at Chimney Park—the Second Lift Station site—are already listed as a small individual district. An argument could be made that the Mission Main Canal is individually eligible as an individual component of the UID system, although recent coordination with TxDOT has tended toward only look at systems as a whole. Your survey report mentions (on page 25) past correspondence between our office and TxDOT related to the Donna-to-Brownsville portion; we could not find record of this letter, but if you could provide a copy, it would assist us in ensuring we are evaluating these resources consistently.

Please provide the following information so that we may complete our review:

- Photographs showing configuration of the levee and canal, and particularly their relationship to one another
- Dimensioned drawings showing the levee and canal as they currently exist
- Dimensioned drawings showing the levee and canal with the proposed widened access road
- Information on the associated irrigation structures that may be affected and replaced as part of the project, including the approximate percentage of affected structures, and types and photographs of typical structures

We understand that the nature of the structure(s) changes along the length of the project area, but please send the best representative information of these various configurations.

We look forward to further consultation with your office and hope to maintain a partnership that will foster effective historic preservation. Thank you for your cooperation in this federal review process, and for your efforts to preserve the irreplaceable heritage of Texas. If you have any questions concerning our review or if we can be of further assistance, please contact Kim Barker at 512/463-8952.

Sincerely,



Kim Barker, Project Reviewer  
for: Mark Wolfe, State Historic Preservation Officer

cc: Adela Ortega, Chair, Hidalgo County Historical Commission



INTERNATIONAL BOUNDARY AND WATER COMMISSION  
UNITED STATES AND MEXICO

OFFICE OF THE COMMISSIONER  
UNITED STATES SECTION

July 6, 2011

Mr. Mark Wolfe, State Historic Preservation Officer  
Texas Historical Commission  
Attn: Kim Barker  
Project Reviewer  
P.O. Box 12276  
Austin, TX 78711-2276

**Subject: STIMULUS – THC Track # 201111320**

Dear Mr. Wolfe:

The United States Section of the International Boundary and Water Commission (USIBWC) has received your comment letter dated May 6, 2011, regarding review under Section 106 of the National Historic Preservation Act for improvements along the Mission Protective Levee System in Hidalgo County, Texas. The following information is provided in response to your comments:

1) General Comments – Your letter indicated there was some confusion regarding the existing and proposed access roads along the Mission Levee and the Mission Main Canal. Currently, there is an access road along the top of the Mission Levee but no access road along the toe. The proposed action would create an access road along the toe of the Mission Levee adjacent to the Mission Main Canal while leaving the access road along the top of the levee undisturbed.

It was requested that the letter between your office and TxDOT, dated November 13, 2009, regarding the Donna to Brownsville portion of the Mission Main Canal be provided. The requested letter is attached. The relevant discussion regarding the Donna to Brownsville portion is on Page 4 of the letter.

2) Specific Comment #1 – Request for photographs showing configuration of the Mission Levee and the Mission Main Canal. Photographs of the levee and the canal were taken during the field survey in February 2011. These photographs are presented in Appendix C: Photographic Log of the Draft Supplemental Environmental Assessment (SEA) as well as Page 19 and Appendix A of the Draft Cultural Resources Survey Report.

3) Specific Comment #2 – Request for dimensioned drawings of the levee and canal, as they currently exist. The requested drawings are provided as an attachment to this letter.

4) Specific Comment #3 – Request for dimensioned drawings of the levee and canal under the Proposed Alternative. The requested drawings are provided as an attachment to this letter.

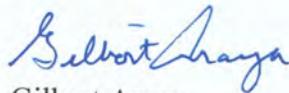
5) Specific Comment #4 – Request for information regarding the irrigation structures that may be impacted including types and photographs of typical structures. Information regarding the specific number of structures and types was presented in Section 3.2.3 of the Draft SEA (page 3).

6) Additional information regarding number of structures, types, and photographs was presented in Sections 6.8.2 – 6.8.4 (pages 32 – 46) of the Draft Cultural Resources Report.

In order to preserve the confidentiality of cultural resource locations, USIBWC separated the Draft SEA (a publically viewable document) from the Draft Cultural Resources Survey Report and submitted both documents under a single cover letter to THC on April 6, 2011. These documents should be reviewed together and provide a complete picture of the cultural resources within the project area as well as the potential alternatives and impacts of the proposed action.

We appreciate your comments on this undertaking and look forward to receiving concurrence under Section 106 of the National Historic Preservation Act. If you have any questions or, please contact, Daniel Borunda at (915) 832-4767 or by emailing [Daniel.Borunda@ibwc.gov](mailto:Daniel.Borunda@ibwc.gov).

Sincerely,



Gilbert Anaya  
Division Chief  
Environmental Management Division

Attachment(s)

Letter between THC and TxDOT, dated November 13, 2009

Dimensioned drawings of the levee and canal, as they currently exist

Dimensioned drawings of the levee and canal under the Proposed Alternative

**TEXAS HISTORICAL COMMISSION**  
*real places telling real stories*

November 13, 2009

Mario L. Sanchez  
Historical Architect, Environmental Affairs  
Texas Department of Transportation  
125 E. 11<sup>th</sup> Street  
Austin, Texas 78701

Re: Trinity River Parkway Corridor, Dallas, Dallas County (FHWA)  
CSJ # 0918-45-121; 0918-45-122

Dear Dr. Sanchez:

Thank you for providing the information regarding the above-mentioned project. This letter serves as a comment on the plans from the State Historic Preservation Officer (SHPO), the Executive Director of the Texas Historical Commission (THC).

First, we wish to acknowledge a potential conflict between federal agencies which may both have jurisdiction over this project, the Federal Highways Administration (FHWA) and the US Army Corps of Engineers (Corps). At a Trinity Parkway Section 106 meeting on September 16, 2009, it was apparent that the Corps and FHWA/ TxDOT had the potential for conflicting determinations of eligibility for historic-age resources in the overlapping Areas of Potential Effects (APE) for the Trinity River Parkway and the Trinity River Reclamation Project.

When two federal agencies cannot resolve a disagreement regarding the eligibility of a historic-age resource, they must seek final resolution from the Keeper of the National Register of Historic Places (NRHP) at the National Park Service. However, at the request of FHWA and with the assent of the Corps, THC has agreed to consider a draft paper provided by the Corps in our review of the Trinity River Parkway Corridor, in an effort to avoid prolonged coordination with the Keeper of the NRHP and to prevent the environmental coordination for this project from further delay. Both agencies have indicated a concern over the potential for derailment of the environmental process, and therefore we have agreed to provide input regarding this potential dispute. However, as you know, our agency does not have the final word on eligibility, especially when there is a disagreement between federal agencies. If you do not agree with our findings or that of the Corps after they present their survey findings and cannot reach compromise, you should address the Keeper of the NRHP for a determination of eligibility and/or the Advisory Council on Historic Preservation for conflict resolution.

In addition, our office does not consider determinations of eligibility to be static, as they can change due to several factors including the provision of more information, change in



**RICK PERRY, GOVERNOR • JON T. HANSEN, CHAIRMAN • MARK WOLFE, EXECUTIVE DIRECTOR**

P.O. BOX 12276 • AUSTIN, TEXAS • 78711-2276 • P 512.463.6100 • F 512.475.4872 • TDD 1.800.735.2989 • [www.thc.state.tx.us](http://www.thc.state.tx.us)

historic integrity, and the passage of time allowing non-historic properties to reach historic age. Without having the survey data and completed report from the Corps for the Dallas Trinity River Reclamation Project, we cannot predict their determinations of eligibility or whether our agency will concur with or object to those determinations. We acknowledge that the Corps' position paper is a draft of a working document and that they are not seeking formal comment from THC at this time. Rather, the Corps has provided the document to TxDOT and FHWA to keep your agencies informed of potential findings of eligibility and effects that might differ from what previous surveys and coordination has identified. Nor can THC make inalterable decisions based on what is the equivalent of a research design, when all parties acknowledge the Corps has yet to undertake survey.

Within the constraints of the situation outlined above, THC staff has reviewed the material submitted with your coordination letter dated October 26, 2009. Based on the information you have provided, we cannot concur with all of your determinations of eligibility for listing in the NRHP at this time. Please find our comments, as follows:

**Previously Identified Historic Resources in the APE**

Resources in the APE of this project have been determined eligible for listing in the NRHP during coordination for other projects with overlapping APEs, as well as in previous coordination for this project. Therefore, our first comment is a reiteration that the following properties are NRHP eligible:

1. Corinth Street Viaduct over the Trinity River
2. Corinth Street Overpass
3. Commerce Street Viaduct
4. Continental Street Viaduct
5. Atchison, Topeka & Santa Fe Railroad Bridge over the Trinity River
6. Missouri, Kansas & Texas Railroad Bridge over the Trinity River
7. Union Pacific Railroad Bridge over the Trinity River (previously referred to as the Southern Pacific Railroad Bridge)
8. City and County Levee Operations Pump Station B (Baker)
9. 1715 Market Center Blvd.
10. 1202 Riverfront Blvd. (previously referred to as Industrial Blvd.)
11. 1212 Riverfront Blvd. (previously referred to as Industrial Blvd.)
12. 3701 South Lamar St.

We also acknowledge that the Sportatorium, previously identified as NRHP eligible in 2002, has been demolished.

1. Colonial Hill Historic District
2. Dealey Plaza Historic District
3. West End Historic District
4. Lake Cliff Historic District
5. Houston Street Viaduct

**Newly Identified Historic Properties**

Based on the findings of additional survey of the project area between 2006 and 2009, we concur with your determination that the following properties are individually eligible for NRHP listing:

1. 7138 Envoy Court (Salinas International Freight Office Building)
2. 818 Singleton Avenue (Atlas Metal Works)
3. 959 Dragon Street (Clifton Carpets)

**Objections to Determinations of Eligibility for Individual Properties:**

We object to your determination that the following resources are not eligible:

1. WT-3A- The US Army Corps of Engineers (Corps) has determined that Pavaho Pump Station is eligible for listing in the NRHP in anticipation of an upcoming federal undertaking for which they will be the lead agency. THC staff concurred with this determination of eligibility on November 12, 2009. Although the proposed project will have an adverse effect to the historic resource, at this time the station is considered eligible.
2. OC-5A (911 N. Lancaster Ave.)- This property is a good example of its type and we consider it eligible for listing in the NRHP under Criterion C, in the area of Architecture, at the local level of significance.
3. OC-8 (Oak Farms Dairy at 1114 N. Lancaster Ave.)- Despite expansion of the Oak Farms Dairy in the 1970s and 1990s, there is not sufficient information for us to concur that the 1954 core of this dairy operation is not eligible for listing in the NRHP under Criterion A, in the area of Agriculture, at the local level of significance. In order for THC staff to concur with a determination of eligibility for this complex, an intensive survey would be required.
4. MK-2 (1000 Forest Ave.)- There is not sufficient information provided to concur with a determination that this property is not eligible for listing in the NRHP. The loss of integrity appears to consist solely of windows covered with plywood and is not sufficient to remove the property from consideration. Individual resources appear to meet the criteria for eligibility under C, in the area of Architecture, at the local level of significance. Also, the dates appear to be incorrect for most of the property. The survey identifies MK-2C as a 1926 former "Godberson" residence, converted into offices; however, the 1922 Sanborn maps show it as the Guiberson Corporation. In order for THC staff to concur with a determination of eligibility for this complex, an intensive survey would be required.
5. 115 (2255 Irving Blvd.)- Some additional historical context for the Trinity Industrial District and the Industrial Properties Corporation was provided in the Corps' position paper that indicates this building requires reconsideration for eligibility under Criterion A. In addition, the 2001 survey estimated a construction date of this building as 1960, when it is probably a contemporary of the Baker Pump Station. We cannot concur that this building is not eligible for listing in the NRHP without an intensive survey.
6. ES-2 (2920 Sylvan Ave.), ES-4 (730 Singleton Blvd.), WS-95 (900 Singleton Blvd.)- There is not sufficient information to concur with a determination that these properties are not eligible for the NRHP individually, or as a district, at this time. These properties and at least one other outside the APE are grouped around

Atlas Metal Works and may share a similar historic context. We request more information, including better photographs, for these properties for our evaluation.

**Objections to Determinations of Eligibility for Districts:**

As you know, the draft paper by the Corps proposes that the Pegasus report did not properly consider the levees for eligibility for listing in the NRHP and that a more comprehensive context and survey would take into consideration the entire Floodway, and include the diversion channel, the open area between the levees, pumping plants, pressure sewers, sluices, and interceptors. The Corps has also suggested that the viaducts that cross the floodway and the reclamation area (old river channel, Industrial Boulevard alignment, industrial properties in the hydraulic fill area, and the triple underpass) should also be considered in any evaluation of eligibility. The contextual information in their draft paper and the supporting documentation, such as the American Society of Civil Engineer's (ASCE) civil engineering landmark designation, provide support for their position. After careful consideration of the draft paper provided by the Corps and TxDOT's rebuttal, THC staff acknowledges that we have previously concurred with your determination in 2004 that the levees are not eligible for listing. However, as Mr. Murphey points out, the changes made by the USACE have reached historic age since this time. Since this determination, THC and other agencies have given more consideration to historic-age infrastructure. An indication of this consideration is the THC's recent coordination in which staff concurred with determinations of eligibility for levees or independent determination that levee systems are eligible for listing. In 2006, the Forth Worth flood control system, built between 1910 and 1957, was determined eligible by the Corps under Criterion A for Community Planning and Development, at the local level of significance. This determination was made during Section 106 coordination for the Trinity River Vision project. In February 2009, THC objected to the determination that the Donna-to-Brownsville Levee and levee gate boxes are not eligible for listing and countered that the levee was eligible under Criterion A, in the areas of Agriculture and Politics/Government and Criterion C, in the area of Engineering, at the local level of significance. The 1950s changes made to the levees, originally constructed in the 1930s, were identified as having taken place during the period of significance and contributed to the significance of the levee. THC's letter to the consultant included the following statement:

Our reviewers understand that structures such as this earthen levee and its associated mechanical gate boxes are subject to periodic maintenance and replacement, but the integrity of this massive earthwork is quite high, as it is still in place and serving its original function as in its historic period of significance. Its local importance to the further growth and development of neighboring agricultural communities, struggling to control or reduce flood damage during those years, cannot be denied, and the levee continues to play this important role today. It is likely that the addition of earth to the levee profile or footprint, or the in-kind replacement of the levee gate box components, would not pose an adverse effect to the NRHP-eligible resources.

In March 2009, THC objected to a determination that the Lateral A levee in the Lateral A and Retama Dike Systems within the Lower Rio Grande Flood Control Project in Hidalgo County was not eligible for listing in the NRHP. THC staff suggested that the levee and its associated levee gate boxes were eligible under Criterion A for Agriculture at the local level of significance and that periodic minor changes due to maintenance and

replacement were necessary for the function of the levee and therefore did not significantly detract from the integrity of the resource.

Therefore, it is quite possible that with the presentation of additional information, such as the establishment of a period of significance and a survey evaluating the integrity of the components of the system, THC could change our previous concurrence that the levees are not eligible to concurrence with the determination that the levees are either individually eligible structures or are eligible as part of a larger Dallas Floodway Historic District that would include the elements listed above, including the viaducts. Although there is no context developed at this time to support a determination of eligibility at the state or national level, there is sufficient information to indicate that it is eligible at the local level of significance. We do not agree with your comments in the rebuttal document that the Dallas Floodway should be evaluated within a greater local context. Rather, we agree with the Corps' assertion that Dallas is the appropriate local context, and while other levee systems along the Trinity River in Kaufman and Tarrant County may be interesting to compare with Dallas, it is not necessary to do so to establish significance. Dallas is a major city and the context is community planning and development for the city, not a broader region. As a result, we find that the development of the floodway system is historically significant. However, the question your rebuttal document posed regarding change in levee alignment is worth investigation. Without survey data and analysis, the integrity system of the levee is unknown and staff cannot reach a conclusion regarding eligibility.

Regarding the consideration of a larger district including the reclaimed area with Industrial Boulevard and the surrounding industrial district, THC has previously considered TxDOT's survey of Industrial Boulevard, which included consideration of a larger historic industrial warehouse district. At the time we reviewed the survey in 2002, staff concurred with the determination that no district was present, although a few individual properties were eligible for listing. Due to the different types of resources and areas of significance, we find it more appropriate to consider the industrial area as a separate district and not as part of a greater Dallas Floodway Historic District.

Since 2002, coordination with THC by TxDOT, FHWA, NTTA, and consultants for NTTA for this undertaking has focused on previously-determined eligible properties that would be directly impacted. It has been seven years since the last coordination regarding eligibility of historic-age resources. We therefore revisited the methodology in the coordination from 2002 to ensure that buildings constructed before 1965 were considered, as they have been in the most recent survey. We observed that the methodology of the report included a 40-year date for consideration of historic properties (buildings built in 1961 or earlier). While the methodology included a consideration of buildings built after 1961 and several resources built after 1961 were surveyed, the methodology does not clearly illustrate to what extent buildings constructed after 1961 were evaluated for individual eligibility or for consideration as contributing resources within a historic district. As many of the buildings in Irving/ Riverfront Corridor date from the mid 1950s to the late 1960s, many of them have become "historic-age" in the years since our 2002 coordination.

There is not a strong context developed for mid-century industrial resources in Dallas to assist in evaluating eligibility of the resources in these surveys. Also, no consideration is given to the potential for larger mid-century industrial historic districts that may intersect with the APE. cursory examination of the strips of light industrial properties in the Irving/ Riverfront areas indicates that more than 50% of the buildings retain sufficient integrity to contribute to a district. Without more information on the history of the buildings and individuals associated with these areas, and without knowing of other large concentrations of mid-century commercial buildings in Dallas, it is difficult to assess their importance within the context of the city's commercial history. The industrial area seems to be significant locally and merits consideration as a district, and THC would like the buildings evaluated within a district context that extends beyond the APE. As the survey data has previously been collected within the APE and only up-to-date analysis of the survey is lacking, we therefore request TxDOT re-evaluate the properties in the Irving/ Riverfront Blvd. corridor, defining all buildings constructed before 1965 as historic-age and include comparative analysis with other mid-century industrial areas, such as the area south of the intersection of Stemmons and 183. Reconsideration of the properties from this survey should include analysis of potential for properties to be individually eligible, as well.

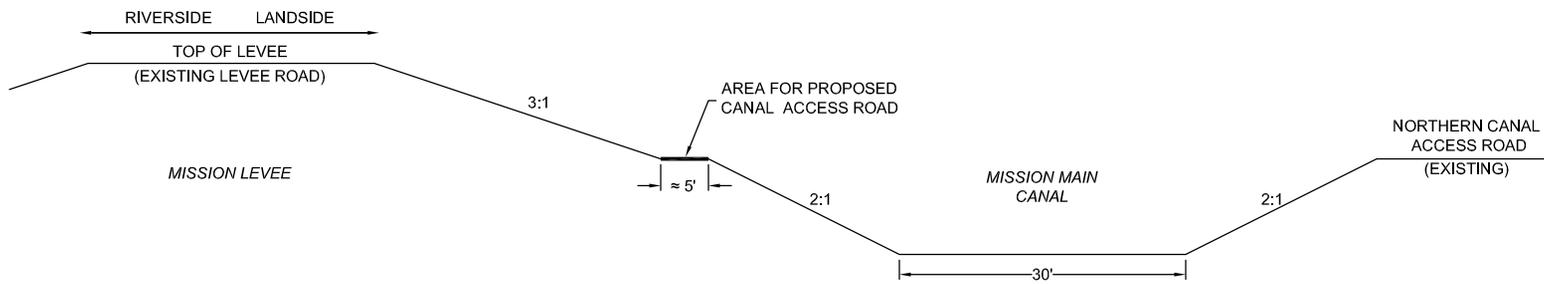
We concur with your determination that the remaining properties are not eligible for listing in the NRHP.

Thank you for your participation in this federal review process; we look forward to additional Section 106 coordination with your office for this undertaking in the near future. Our staff will be happy to meet with you at your convenience to discuss this letter and the additional information we have requested. If you have any questions concerning this review or if we can be of further assistance, please contact Adrienne Campbell at 512/936-7403.

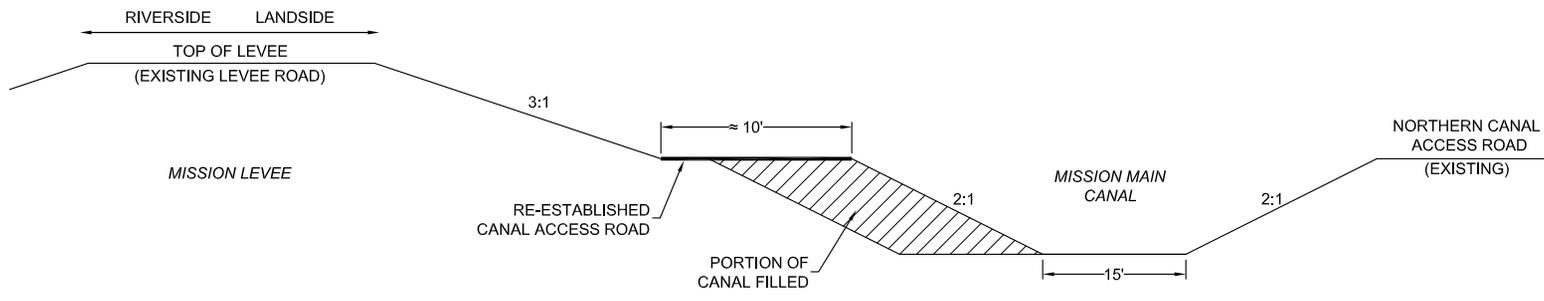
Sincerely,

A handwritten signature in black ink that reads "Mark Wolfe". The signature is written in a cursive, flowing style.

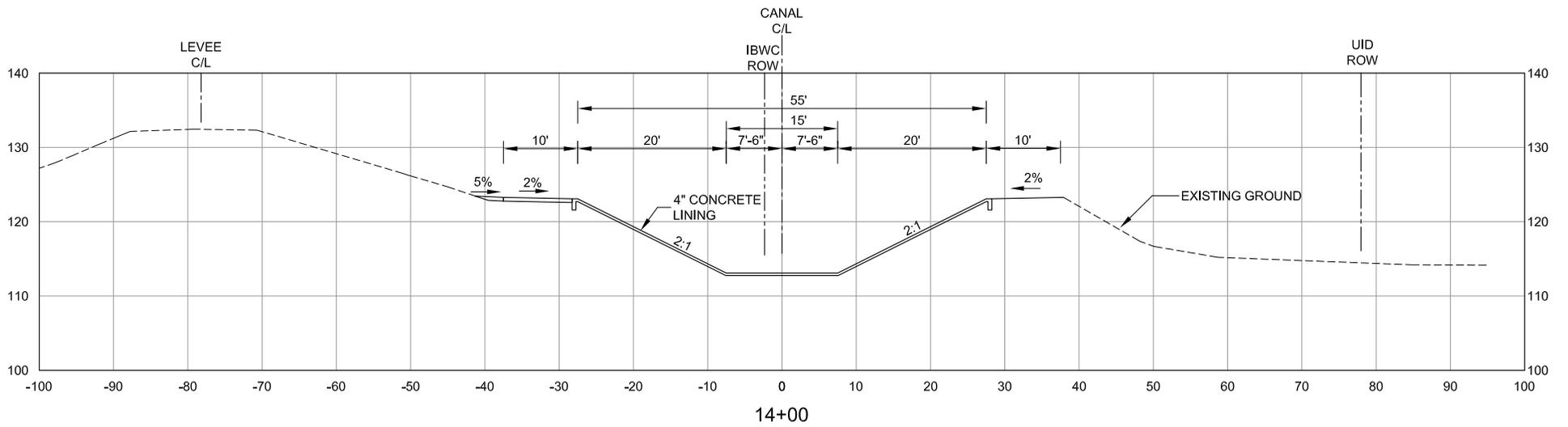
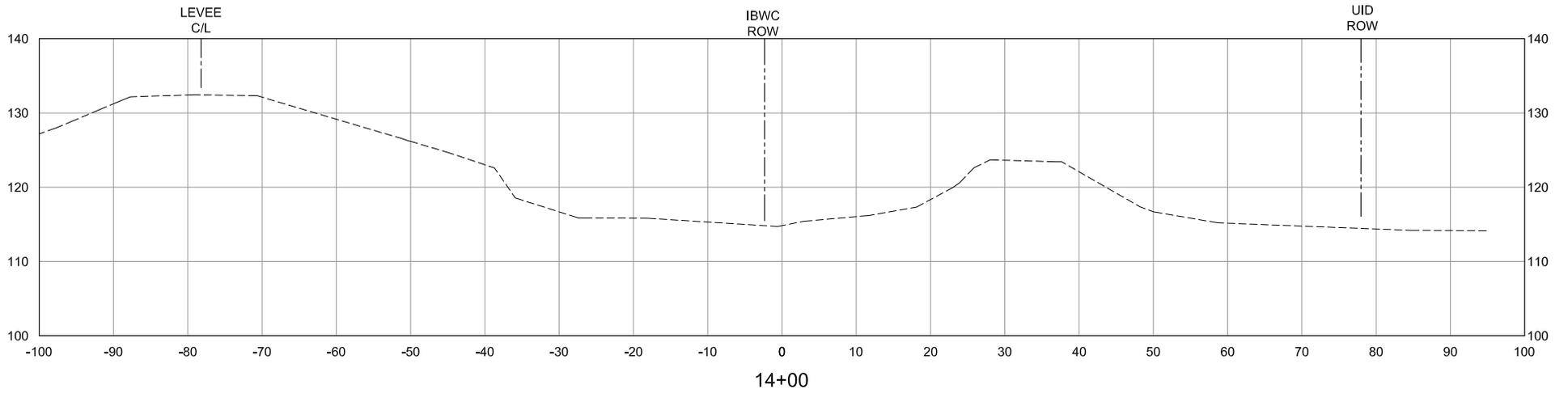
Mark Wolfe  
State Historic Preservation Officer



CURRENT LEVEE AND CANAL SECTION  
 SCALE : 1" = 20'



TYPICAL SECTION - PREFERRED ALTERNATIVE  
 SCALE: 1" = 20'



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TEXAS HISTORICAL COMMISSION  
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August 2, 2011

Gilbert Anaya  
Division Chief  
Environmental Management Division  
International Boundary and Water Commission  
The Commons, Building C, Suite 310  
4171 N. Mesa Street  
El Paso, TX 79902

Re: *Project review under Section 106 of the National Historic Preservation Act of 1966  
Proposed Access Road, Mission Levee & Mission Main Canal, Hidalgo County  
(106/USIBWC; THC Track #201116759; see also #201111320)*

Dear Mr. Anaya,

Thank you for your correspondence providing additional information regarding the above referenced project which we received on July 8, 2011. This letter serves as comment on the proposed undertaking from the State Historic Preservation Officer (SHPO), the Executive Director of the Texas Historical Commission (THC).

The review staff, led by Linda Henderson and Kim Barker, has completed its review of the project documentation provided. It is our understanding that the proposed project consists of creating an access road along the canal side of the Mission Protective Levee. Establishment of the road is proposed to be accomplished by filling the canal by approximately 15 feet, decreasing the width at the bottom of the Mission Main Canal by half. Additionally, the canal, a component of the United Irrigation District, is proposed to be concrete-lined. The levee will retain its basic form. Associated irrigation structures such as gates and standpipes are expected to be damaged during construction and will be replaced. The project area encompasses 2.9 miles of the 12 mile-long Mission Protective Levee System, which is a component of the 186 mile-long Lower Rio Grande Flood Control Project (LRGFCP).

In 2008, TxDOT historians evaluated the United Irrigation District (UID) and determined that it is not eligible for listing in the National Register of Historic Places since less than 50% of the system as a whole continues to survive. TxDOT found that due to a loss of integrity of location, design, workmanship, materials, feeling and association to the system as a whole, the UID does not convey significance under Criterion A (Agriculture) or C (Engineering). The Texas Historical Commission has followed TxDOT's recommendation for ineligibility of the UID in the past and continues to do so today. Thus, we **do not concur** with IBWC that the Mission Main Canal is eligible for listing in the National Register. If the Mission Main Canal were to be treated as individually eligible as recommended by IBWC (which is counter to the TxDOT methodology of treating irrigation districts as systems), we believe that the substantial proposed changes (reducing the canal width by half and concrete-lining) may constitute an adverse effect.



We **concur** that the Mission Protective Levee System is National Register-eligible and that the proposed project will have **no adverse effect** on the levee.

We look forward to further consultation with your office and hope to maintain a partnership that will foster effective historic preservation. Thank you for your cooperation in this federal review process, and for your efforts to preserve the irreplaceable heritage of Texas. If you have any questions concerning our review or if we can be of further assistance, please contact Kim Barker at 512/463-8952.

Sincerely,

A handwritten signature in black ink, appearing to read 'Kim Barker', with a stylized, cursive script.

Kim Barker, Project Reviewer

for: Mark Wolfe, State Historic Preservation Officer

cc: Adela Ortega, Chair, Hidalgo County Historical Commission (via email)



INTERNATIONAL BOUNDARY AND WATER COMMISSION  
UNITED STATES AND MEXICO

April 6, 2011

OFFICE OF THE COMMISSIONER  
UNITED STATES SECTION

Chairman Louis Maynahonah, Sr.  
Apache Tribe of Oklahoma  
P.O. Box 1330  
Anadarko, OK 73005

Subject: Request for Consultation under Section 106 of the National Historic Preservation Act for Improvements Along the Mission Protective Levee System Located in Hidalgo County, Texas

Dear Chairman Maynahonah:

The United States Section, International Boundary and Water Commission, United States and Mexico (USIBWC) invite the Apache Tribe of Oklahoma to review and comment on the Draft Supplemental Environmental Assessment (SEA) and Draft Finding of No Significant Impact (FONSI) on the Improvements to the Mission Protective Levee System in Hidalgo County, Texas. The Draft SEA evaluates environmental effects that may result from the proposed improvements to re-establish a 10-foot wide canal access and maintenance road along the levee side of the Mission Main Canal from 1.1 miles west of Bentsen Palm Road to the Military Road bridge crossing.

In addition, please find enclosed the *Cultural Resources Intensive Survey for Proposed Improvements to the Mission Levee System along the Lower Rio Grande Flood Control Project located in Hidalgo County, Texas* report for your review and comment. There were no archeological resources identified within the project area during the course of this investigation.

The Draft SEA serves as the Determination of Effect for this undertaking in accordance with 36 CFR 800.8 and is being submitted to the Apache Tribe of Oklahoma for review and concurrence under Section 106 of the National Historic Preservation Act. The USIBWC welcomes your comments on this undertaking and look forward to addressing any concerns the Apache Tribe of Oklahoma may have. Please submit your comments so they are postmarked by **May 6, 2011**. If you have any questions or concerns, please contact Daniel Borunda at (915) 832-4767 or by emailing [Daniel.Borunda@ibwc.gov](mailto:Daniel.Borunda@ibwc.gov).

Sincerely,

John L. Merino, P.E.  
Principal Engineer

Enclosures: As stated



INTERNATIONAL BOUNDARY AND WATER COMMISSION  
UNITED STATES AND MEXICO

April 6, 2011

OFFICE OF THE COMMISSIONER  
UNITED STATES SECTION

Chairman Michael Burgess  
Comanche Nation  
584 NW Bingo Road  
Lawton, Oklahoma 73507

Subject: Request for Consultation under Section 106 of the National Historic Preservation Act for Improvements Along the Mission Protective Levee System Located in Hidalgo County, Texas

Dear Chairman Burgess:

The United States Section, International Boundary and Water Commission, United States and Mexico (USIBWC) invite the Comanche Nation to review and comment on the Draft Supplemental Environmental Assessment (SEA) and Draft Finding of No Significant Impact (FONSI) on the Improvements to the Mission Protective Levee System in Hidalgo County, Texas. The Draft SEA evaluates environmental effects that may result from the proposed improvements to re-establish a 10-foot wide canal access and maintenance road along the levee side of the Mission Main Canal from 1.1 miles west of Bentsen Palm Road to the Military Road bridge crossing.

In addition, please find enclosed the *Cultural Resources Intensive Survey for Proposed Improvements to the Mission Levee System along the Lower Rio Grande Flood Control Project located in Hidalgo County, Texas* report for your review and comment. There were no archeological resources identified within the project area during the course of this investigation.

The Draft SEA serves as the Determination of Effect for this undertaking in accordance with 36 CFR 800.8 and is being submitted to the Comanche Nation for review and concurrence under Section 106 of the National Historic Preservation Act. The USIBWC welcomes your comments on this undertaking and look forward to addressing any concerns the Comanche Nation may have. Please submit your comments so they are postmarked by **May 6, 2011**. If you have any questions or concerns, please contact Mr. Daniel Borunda at (915) 832-4767 or by email at [Daniel.Borunda@ibwc.gov](mailto:Daniel.Borunda@ibwc.gov).

Sincerely,

John L. Merino, P.E.  
Principal Engineer

Enclosures: As stated



INTERNATIONAL BOUNDARY AND WATER COMMISSION  
UNITED STATES AND MEXICO

April 6, 2011

OFFICE OF THE COMMISSIONER  
UNITED STATES SECTION

Chairman Ron Twohatchet  
Kiowa Tribe of Oklahoma  
P.O. Box 369  
Carnegie, OK 73015

Subject: Request for Consultation under Section 106 of the National Historic Preservation Act for Improvements Along the Mission Protective Levee System Located in Hidalgo County, Texas

Dear Chairman Twohatchet:

The United States Section, International Boundary and Water Commission, United States and Mexico (USIBWC) invite the Kiowa Tribe of Oklahoma to review and comment on the Draft Supplemental Environmental Assessment (SEA) and Draft Finding of No Significant Impact (FONSI) on the Improvements to the Mission Protective Levee System in Hidalgo County, Texas. The Draft SEA evaluates environmental effects that may result from the proposed improvements to re-establish a 10-foot wide canal access and maintenance road along the levee side of the Mission Main Canal from 1.1 miles west of Bentsen Palm Road to the Military Road bridge crossing.

In addition, please find enclosed the *Cultural Resources Intensive Survey for Proposed Improvements to the Mission Levee System along the Lower Rio Grande Flood Control Project located in Hidalgo County, Texas* report for your review and comment. There were no archeological resources identified within the project area during the course of this investigation.

The Draft SEA serves as the Determination of Effect for this undertaking in accordance with 36 CFR 800.8 and is being submitted to the Kiowa Tribe of Oklahoma for review and concurrence under Section 106 of the National Historic Preservation Act. The USIBWC welcomes your comments on this undertaking and look forward to addressing any concerns the Kiowa Tribe of Oklahoma may have. Please submit your comments so they are postmarked by **May 6, 2011**. If you have any questions or concerns, please contact Daniel Borunda at (915) 832-4767 or by emailing [Daniel.Borunda@ibwc.gov](mailto:Daniel.Borunda@ibwc.gov).

Sincerely,

John L. Merino, P.E.  
Principal Engineer

Enclosures: As stated



INTERNATIONAL BOUNDARY AND WATER COMMISSION  
UNITED STATES AND MEXICO

April 6, 2011

OFFICE OF THE COMMISSIONER  
UNITED STATES SECTION

President Mark Chino  
Mescalero Apache Tribe  
P.O. Box 227  
Mescalero, NM 88340

Subject: Request for Consultation under Section 106 of the National Historic Preservation Act for Improvements along the Mission Protective Levee System Located in Hidalgo County, Texas

Dear President Chino:

The United States Section, International Boundary and Water Commission, United States and Mexico (USIBWC) invite the Mescalero Apache Tribe to review and comment on the Draft Supplemental Environmental Assessment (SEA) and Draft Finding of No Significant Impact (FONSI) on the Improvements to the Mission Protective Levee System in Hidalgo County, Texas. The Draft SEA evaluates environmental effects that may result from the proposed improvements to re-establish a 10-foot wide canal access and maintenance road along the levee side of the Mission Main Canal from 1.1 miles west of Bentsen Palm Road to the Military Road bridge crossing.

In addition, please find enclosed the *Cultural Resources Intensive Survey for Proposed Improvements to the Mission Levee System along the Lower Rio Grande Flood Control Project located in Hidalgo County, Texas* report for your review and comment. There were no archeological resources identified within the project area during the course of this investigation.

The Draft SEA serves as the Determination of Effect for this undertaking in accordance with 36 CFR 800.8 and is being submitted to the Mescalero Apache Tribe for review and concurrence under Section 106 of the National Historic Preservation Act. The USIBWC welcomes your comments on this undertaking and look forward to addressing any concerns the Mescalero Apache Tribe may have. Please submit your comments so they are postmarked by **May 6, 2011**. If you have any questions or concerns, please contact Daniel Borunda at (915) 832-4767 or by emailing [Daniel.Borunda@ibwc.gov](mailto:Daniel.Borunda@ibwc.gov).

Sincerely,

John L. Merino, P.E  
Principal Engineer

Enclosure: As stated



INTERNATIONAL BOUNDARY AND WATER COMMISSION  
UNITED STATES AND MEXICO

April 6, 2011

OFFICE OF THE COMMISSIONER  
UNITED STATES SECTION

President Donald Patterson  
Tonkawa Tribe of Oklahoma  
1 Rush Buffalo Road  
Tonkawa, OK 74653

Subject: Request for Consultation under Section 106 of the National Historic Preservation Act for improvements along the Mission Protective Levee System located in Hidalgo County, Texas

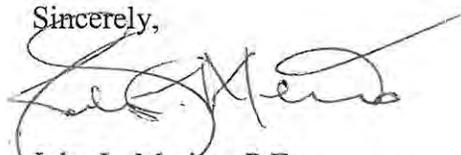
Dear President Patterson:

The United States Section, International Boundary and Water Commission, United States and Mexico (USIBWC) invite the Tonkawa Tribe of Oklahoma to review and comment on the Draft Supplemental Environmental Assessment (SEA) and Draft Finding of No Significant Impact (FONSI) on the Improvements to the Mission Protective Levee System in Hidalgo County, Texas. The Draft SEA evaluates environmental effects that may result from the proposed improvements to re-establish a 10-foot wide canal access and maintenance road along the levee side of the Mission Main Canal from 1.1 miles west of Bentsen Palm Road to the Military Road bridge crossing.

In addition, please find enclosed the *Cultural Resources Intensive Survey for Proposed Improvements to the Mission Levee System along the Lower Rio Grande Flood Control Project located in Hidalgo County, Texas* report for your review and comment. There were no archeological resources identified within the project area during the course of this investigation.

The Draft SEA serves as the Determination of Effect for this undertaking in accordance with 36 CFR 800.8 and is being submitted to the Tonkawa Tribe of Oklahoma for review and concurrence under Section 106 of the National Historic Preservation Act. The USIBWC welcomes your comments on this undertaking and look forward to addressing any concerns the Tonkawa Tribe of Oklahoma may have. Please submit your comments so they are postmarked by **May 6, 2011**. If you have any questions or concerns, please contact Daniel Borunda at (915) 832-4767 or by emailing [Daniel.Borunda@ibwc.gov](mailto:Daniel.Borunda@ibwc.gov).

Sincerely,



John L. Merino, P.E.  
Principal Engineer

Enclosures: As stated

**From:** "Miranda Allen" <mallen@tonkawatribe.com>

**To:** <Daniel.Borunda@ibwc.gov>

**Date:** 04/26/2011 12:33 PM

**Subject:** Tonkawa Tribe of Oklahoma NAGPRA

TONKAWA TRIBE OF OKLAHOMA  
**NATIVE AMERICAN GRAVES PROTECTION  
AND REPATRIATION ACT**

- 1 RUSH BUFFALO ROAD, TONKAWA, OKLAHOMA 74653 •
- PHONE (580) 628-2561 • FAX: (580) 628-9903 •
- WEB SITE: [www.tonkawatribe.com](http://www.tonkawatribe.com)

Office of the Commissioner  
United States Section  
International Boundary and Water Commission  
United States and Mexico

ATTN: Daniel Borunda

Date: April 26, 2011

Regarding the proposed Section 106 Consultation listed below we submit the following:

- Request for Consultation under Section 109 if the National Historic Preservation Act for improvements along the Mission Protective Levee System located in Hidalgo County, Texas.

The Tonkawa Tribe has no specifically designated historical or cultural sites identified in the above listed project area. However if any human remains, funerary objects, or other evidence of historical or cultural significance is inadvertently discovered then the Tonkawa Tribe would certainly be interested in proper disposition thereof.

We appreciate notification by your office of the many projects on-going, and as always the Tonkawa Tribe is willing to work with your representatives in any manner to uphold the provisions of NAGPRA to the extent of our capability.

Respectfully,

**Miranda Nax'ce Allen**

PO/CHK REQ Clerk, Executive/Museum Assistant, NAGPRA Representative

Tonkawa Tribe of Oklahoma

1 Rush Buffalo Road

Tonkawa, OK 74653

Phone: (580) 628-2561 x103

Fax: (580) 628-9903

E-mail: [mallen@tonkawatribe.com](mailto:mallen@tonkawatribe.com) & [info@tonkawatribe.com](mailto:info@tonkawatribe.com)

Website: [www.tonkawatribe.com](http://www.tonkawatribe.com)



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INTERNATIONAL BOUNDARY AND WATER COMMISSION  
UNITED STATES AND MEXICO

April 6, 2011

OFFICE OF THE COMMISSIONER  
UNITED STATES SECTION

President Stratford Williams  
Wichita and Affiliated Tribes  
P.O. Box 729  
Anadarko, OK 73005

Subject: Request for Consultation under Section 106 of the National Historic Preservation Act for Improvements Along the Mission Protective Levee System Located in Hidalgo County, Texas

Dear President Williams:

The United States Section, International Boundary and Water Commission, United States and Mexico (USIBWC) invite the Wichita and Affiliated Tribes to review and comment on the Draft Supplemental Environmental Assessment (SEA) and Draft Finding of No Significant Impact (FONSI) on the Improvements to the Mission Protective Levee System in Hidalgo County, Texas. The Draft SEA evaluates environmental effects that may result from the proposed improvements to re-establish a 10-foot wide canal access and maintenance road along the levee side of the Mission Main Canal from 1.1 miles west of Bentsen Palm Road to the Military Road bridge crossing.

In addition, please find enclosed the *Cultural Resources Intensive Survey for Proposed Improvements to the Mission Levee System along the Lower Rio Grande Flood Control Project located in Hidalgo County, Texas* report for your review and comment. There were no archeological resources identified within the project area during the course of this investigation.

The Draft SEA serves as the Determination of Effect for this undertaking in accordance with 36 CFR 800.8 and is being submitted to the Wichita and Affiliated Tribes for review and concurrence under Section 106 of the National Historic Preservation Act. The USIBWC welcomes your comments on this undertaking and look forward to addressing any concerns the Wichita and Affiliated Tribes may have. Please submit your comments so they are postmarked by **May 6, 2011**. If you have any questions or concerns, please contact Daniel Borunda at (915) 832-4767 or by emailing [Daniel.Borunda@ibwc.gov](mailto:Daniel.Borunda@ibwc.gov).

Sincerely,

John L. Merino, P.E.  
Principal Engineer

Enclosures: As stated

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**APPENDIX E:  
TEXAS NATURAL DIVERSITY DATABASE**

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# TEXAS NATURAL DIVERSITY DATABASE

## Data System, Source Types, Utility, Limitations

The Texas Natural Diversity Database (TXNDD), established in 1983, is the Texas Parks and Wildlife Department's (TPWD) most comprehensive source of information on rare, threatened, and endangered plants, animals, invertebrates, exemplary natural communities, and other significant features. The TXNDD is continually updated, providing current or additional information on statewide status and locations of these unique elements of natural diversity. However, the data is not all-inclusive, as there are gaps in coverage and species data, due to the lack of access to land or data, and a lack of staff and resources to collect and process data on all rare and significant resources.

The TXNDD gathers biological information from public information sources, such as: museum and herbarium collection records, peer-reviewed publications, experts in the scientific community, organizations, qualified individuals, and on-site field surveys conducted by TPWD staff on public lands or private lands with written permission. TPWD staff botanists, zoologists, and ecologists perform field surveys to locate and verify specific occurrences of high-priority biological elements and collect accurate information on their condition, quality, and management needs.

The TXNDD can be used to help evaluate environmental impacts of routing and siting options for development projects, environmental review, and permit review, as well as for natural resource management, scientific research, and educational applications. Appropriate use of the TXNDD requires both interpretation and extrapolation because of the many data gaps across the state from current and historic lack of access to private lands, the restriction of data extraction from only public information sources, species and geographic coverage skewed towards listed and the most rare species and ecosystems, and the lack of precise locality data in many secondary sources.

**Given the small proportion of public versus private land in Texas, the TXNDD does not include a representative inventory of rare resources in the state.** Although it is based on the best data available to TPWD regarding rare species, these data cannot provide a definitive statement as to the presence, absence, or condition of special species, natural communities, or other significant features in any area. Nor can these data substitute for on-site evaluation by qualified biologists. The TXNDD information is intended to assist users in avoiding harm to rare species or significant ecological features. Refer all requests back to the TXNDD to obtain the most current information.

- GRANK – Global Conservation Status Rank; for element’s entire global range, factors together abundance, total range size, distribution, trends, threats, fragility, and number of adequately protected occurrences within global range
- SRANK – State Conservation Status Rank; for element’s state range, factors together abundance, state range size, distribution, trends, threats, fragility, and number of adequately protected occurrences within state range
- LASTOBS – Last Observed; date a particular occurrence was last observed as noted in the source(s); **refers only to species occurrence as noted in source and does not imply the last date the species was present**
- DATA SENSITIVE flag – a “Y” indicates the species or location is sensitive due to threat from collection, disturbance, or illegal trespass onto private lands
- LAT – Latitude of occurrence record point, or polygon link point located in upper right corner of polygon
- LONG – Longitude of occurrence record point, or polygon link point located in upper right corner of polygon
- PRECISION – Mapping Precision of occurrence record; lat/long coordinates of point or polygon link point; mapping precision of record determined by preciseness of locality information provided in source(s)
- S - Second: For point records, accuracy within 3-second radius, or approximately 1000 foot radius margin-of-error from lat/long of point on map; for boundary/polygon records, accuracy within 3-second radius of drawn polygon as represented in the source(s), not the lat/long of the polygon link point
- M - Minute: For point records, accuracy within 1-minute radius, or approximately 2 kilometers or 1.5 miles radius margin-of-error from lat/long of point on map; for records with a boundary/polygon, the polygon should be considered marginally uncertain based on inferred extent of record as stated in the source(s), not the lat/long of the polygon link point
- G - General: For point records, accuracy general to locale, quad(s), or place name precision, or default of approximately 8 kilometers or 5 miles radius margin-of-error from lat/long of point on map; for records with a boundary/polygon, the polygon should be considered somewhat imprecise or generalized based on implied extent of record as stated in the source(s), not the lat/long of the polygon link point
- U - Unmappable: Records with little to no locality information provided in the source(s), such as noting only county name or generalized region of state

## Occurrence List for Surrounding Quads

<u>Scientific Name:</u>	<u>Common Name:</u>	<u>Occurrence Number:</u>	<u>State Status:</u>	<u>Federal Status:</u>	<u>Eo Id:</u>
<i>Adelia vaseyi</i>	Vasey's adelia	6			6460
<i>Adelia vaseyi</i>	Vasey's adelia	8			4109
<i>Adelia vaseyi</i>	Vasey's adelia	11			1483
<i>Adelia vaseyi</i>	Vasey's adelia	22			879
<i>Cardiospermum dissectum</i>	Chihuahua balloon-vine	1			6631
<i>Cardiospermum dissectum</i>	Chihuahua balloon-vine	12			5626
<i>Cardiospermum dissectum</i>	Chihuahua balloon-vine	16			3011
<i>Cardiospermum dissectum</i>	Chihuahua balloon-vine	19			7554
<i>Cardiospermum dissectum</i>	Chihuahua balloon-vine	22			8308
<i>Coniophanes imperialis</i>	Black-striped Snake	2	T		8189
<i>Crotaphytus reticulatus</i>	Reticulate Collared Lizard	12	T		5240
<i>Crotaphytus reticulatus</i>	Reticulate Collared Lizard	16	T		7942
<i>Drymarchon melanurus erebennus</i>	Texas Indigo Snake	9	T		3445
<i>Eriogonum greggii</i>	Gregg's wild-buckwheat	1			5710
<i>Herpailurus yaguarondi</i>	Jaguarundi	11	E	LE	2582
<i>Herpailurus yaguarondi</i>	Jaguarundi	28	E	LE	6401
<i>Heteranthera mexicana</i>	Mexican mud-plantain	4			2647
<i>Heteranthera mexicana</i>	Mexican mud-plantain	9			1383
<i>Hypopachus variolosus</i>	Sheep Frog	1	T		7429
<i>Hypopachus variolosus</i>	Sheep Frog	2	T		4303
<i>Hypopachus variolosus</i>	Sheep Frog	31	T		8816
<i>Justicia runyonii</i>	Runyon's water-willow	6			2801

<u>Scientific Name:</u>	<u>Common Name:</u>	<u>Occurrence Number:</u>	<u>State Status:</u>	<u>Federal Status:</u>	<u>Eo Id:</u>
<i>Leopardus pardalis</i>	Ocelot	9	E	LE	2142
<i>Leptodactylus fragilis</i>	White-lipped Frog	1	T		3108
<i>Leptodactylus fragilis</i>	White-lipped Frog	3	T		379
<i>Manfreda longiflora</i>	St. Joseph's Staff	4			1137
<i>Manfreda longiflora</i>	St. Joseph's Staff	9			4097
<i>Manihot walkerae</i>	Walker's manioc	3	E	LE	369
<i>Manihot walkerae</i>	Walker's manioc	6	E	LE	2674
<i>Manihot walkerae</i>	Walker's manioc	7	E	LE	5302
<i>Manihot walkerae</i>	Walker's manioc	8	E	LE	163
<i>Matelea radiata</i>	Falfurrias milkvine	2			1793
<i>Notophthalmus meridionalis</i>	Black-spotted Newt	2	T		5794
<i>Notophthalmus meridionalis</i>	Black-spotted Newt	6	T		1757
<i>Pachyramphus aglaiae</i>	Rose-throated Becard	2	T		235
<i>Phrynosoma cornutum</i>	Texas Horned Lizard	42	T		8307
<i>Pithecellobium ebano-ehretia anacua series</i>	Texas Ebony-anacua Series	7			3506
<i>Pithecellobium ebano-ehretia anacua series</i>	Texas Ebony-anacua Series	12			4272
<i>Siren sp. 1</i>	South Texas Siren (Large Form)	9	T		1997
<i>Siren sp. 1</i>	South Texas Siren (Large Form)	14	T		2584
<i>Siren sp. 1</i>	South Texas Siren (Large Form)	20	T		1753
<i>Siren sp. 1</i>	South Texas Siren (Large Form)	23	T		3530
<i>Siren sp. 1</i>	South Texas Siren (Large Form)	24	T		4856
<i>Siren sp. 1</i>	South Texas Siren (Large Form)	25	T		1591
<i>Siren sp. 1</i>	South Texas Siren (Large Form)	28	T		7085

<u>Scientific Name:</u>	<u>Common Name:</u>	<u>Occurrence Number:</u>	<u>State Status:</u>	<u>Federal Status:</u>	<u>Eo Id:</u>
<i>Tillandsia baileyi</i>	Bailey's ballmoss	1			8129
<i>Tillandsia baileyi</i>	Bailey's ballmoss	7			124

# Element Occurrence Record

**Scientific Name:** Adelia vaseyi

**Occurrence #:** 6      **Eo Id:** 6460

**Common Name:** Vasey's adelia

**Track Status:** Track all extant and selected historical EOs

**TX Protection Status:**

**Global Rank:** G2G3      **State Rank:** S2S3

**Federal Status:**

---

## Location Information:

### Watershed:

12110208 - South Laguna Madre

### County Name:

Hidalgo

### State:

TX

### Mapsheet:

26098-B3, Mission

26098-B4, La Joya

26098-C4, Citrus City

26098-B2, Pharr

26098-C2, Edinburg

26098-C3, Alton

### Directions:

Population 1 - Novitiate south of Mission, near the Rio Grande Population 2 - Mission (Lomita Alta)

---

## Survey Information:

**First Observation:** 1933-05-08

**Survey Date:**

**Last Observation:** 1937-06-22

**Eo Type:**

**Eo Rank:**

**Eo Rank Date:**

**Observed Area:** 1.00

---

## Comments:

**General Description:** Population 1 - sandy hill

**Comments:**

**Protection Comments:**

**Management Comments:**

---

## Data:

**EO Data:** Population 1 - 8 May 1933, in flower; Population 2 - 22 June 1937, in fruit

---

## Managed Area:

**Managed Area Name**

## Element Occurrence Record

---

### Reference:

#### Citation:

---

### Specimen:

University of Texas at Austin Herbarium. 1937. C.E.R. Cameron #45, Specimen # 85733 TEX. 22 June 1937.

University of Texas at Austin Herbarium. 1933. E.U. Clover #1077, Specimen # 85732 TEX. 8 May 1933.

---

## Element Occurrence Record

**Scientific Name:** Asturina nitida

**Occurrence #:** 1      **Eo Id:** 5022

**Common Name:** Gray Hawk

**Track Status:** Track all extant and selected historical EOs

**TX Protection Status:** T

**Global Rank:** G4G5      **State Rank:** S2B

**Federal Status:**

---

### Location Information:

**Watershed:**

13090002 - Lower Rio Grande

**County Name:**

**State:**

**Mapsheet:**

Hidalgo

TX

26098-B3, Mission

**Directions:**

AT ANZALDUAS COUNTY PARK, CA. 1 MILE SOUTH OF VILLA QUEEN OF PEACE (SOUTH OF FM 1016), SOUTH OF MISSION

---

### Survey Information:

**First Observation:** 1999-04-17

**Survey Date:**

**Last Observation:** 1999-07-23

**Eo Type:**

**Eo Rank:**

**Eo Rank Date:**

**Observed Area:**

---

### Comments:

**General**      NEST HIGH IN CEDAR ELM NEAR CENTRAL BATHROOMS

**Description:**

**Comments:**      MAPPED AT SAME LOCATION AS ROSE-THROATED BECARD 001

**Protection**

**Comments:**

**Management**

**Comments:**

---

### Data:

**EO Data:**      NEST IN LARGE CEDAR ELM; ADULT PAIR FLEDGED ONE YOUNG

---

### Managed Area:

**Managed Area Name**

---

### Reference:

**Citation:**

BRUSH, TIM. 1999. E-MAIL CORRESPONDENCE TO JOHN MARESH OF 3 NOVEMBER 1999 CONTAINING 1999 NESTING DATA FOR GRAY HAWK AND ROSE-THROATED BECARD AT ANZALDUAS COUNTY PARK.

2011-03-04

Element Occurrence Record

---

Specimen:

---

# Element Occurrence Record

**Scientific Name:** Awaous banana

**Occurrence #:** 1

**Eo Id:** 7286

**Common Name:** River Goby

**Track Status:** Track all extant and selected historical EOs

**TX Protection Status:** T

**Global Rank:** G5

**State Rank:** S1

**Federal Status:**

---

## Location Information:

### Watershed:

13090002 - Lower Rio Grande

### County Name:

Hidalgo

### State:

TX

### Mapsheet:

26098-B3, Mission

### Directions:

MAINSTREAM OF THE RIO GRANDE, BELOW THE ANZALDUAS FLOODWATER CONTROL DAM 6 KILOMETERS  
SOUTHWEST OF MISSION

---

## Survey Information:

**First Observation:** 1985

**Survey Date:** 1985-02-13

**Last Observation:** 1985-02-13

**Eo Type:**

**Eo Rank:** BC

**Eo Rank Date:**

**Observed Area:**

---

## Comments:

**General Description:** POOL IN MAINSTREAM LINED WITH SQUARE SLAB-SIDED BOULDERS, UNDER MODERATE TO SWIFT  
CURRENT, WITH VERY LITTLE DETRITUS, SAND OR OTHER FINE SEDIMENTS

**Comments:** TWO SPECIMENS, TNHC 12096

### Protection

**Comments:**

### Management

**Comments:**

---

## Data:

**EO Data:**

---

## Managed Area:

**Managed Area Name**

---

## Reference:

### Citation:

EDWARDS, R.J., T.S. STURDIVANT, & C.S. LINSKEY. 1986. THE RIVER GOBY, AWAOUS TAJASICA  
(OSTEICHTHYES:GOBIIDAE), CONFIRMED FROM THE LOWER RIO GRANDE, TEXAS AND MEXICO. TEXAS J. SCI.  
38(2):191-192.

2011-03-04

## Element Occurrence Record

---

**Specimen:**

---

## Element Occurrence Record

**Scientific Name:** Coniophanes imperialis

**Occurrence #:** 2      **Eo Id:** 8189

**Common Name:** Black-striped Snake

**Track Status:** Track all extant and selected historical EOs

**TX Protection Status:** T

**Global Rank:** G4G5      **State Rank:** S2

**Federal Status:**

---

### Location Information:

**Watershed:**

12110208 - South Laguna Madre

**County Name:**

Hidalgo

**State:**

TX

**Mapsheet:**

26098-B3, Mission

26098-B2, Pharr

**Directions:**

1.5 MILES WEST OF MCALLEN

---

### Survey Information:

**First Observation:**

**Survey Date:**

**Last Observation:** 1949-04-28

**Eo Type:**

**Eo Rank:** C

**Eo Rank Date:**

**Observed Area:**

---

### Comments:

**General**

**Description:**

**Comments:** ONE SPECIMEN COLLECTED APRIL 28

**Protection**

**Comments:**

**Management**

**Comments:**

---

**Data:**

**EO Data:**

---

### Managed Area:

**Managed Area Name**

---

### Reference:

**Citation:**

2011-03-04

## Element Occurrence Record

---

### **Specimen:**

University of Illinois, Museum of Natural History. 1949. Unknown Collector, Specimen # ? UIMNH. 28 April 1949.

---

# Element Occurrence Record

**Scientific Name:** Crotaphytus reticulatus

**Occurrence #:** 18

**Eo Id:** 2336

**Common Name:** Reticulate Collared Lizard

**Track Status:** Track all extant and selected historical EOs

**TX Protection Status:** T

**Global Rank:** G3

**State Rank:** S2

**Federal Status:**

---

## Location Information:

### Watershed:

13090001 - Los Olmos

### County Name:

Hidalgo

### State:

TX

### Mapsheet:

26098-B4, La Joya

### Directions:

0.4 MILE WEST OF LA JOYA ON HIGHWAY 83

---

## Survey Information:

### First Observation:

### Survey Date:

Last Observation: 1976-05-22

### Eo Type:

### Eo Rank:

### Eo Rank Date:

### Observed Area:

---

## Comments:

### General

#### Description:

Comments: COLLECTED 22 MAY

### Protection

#### Comments:

### Management

#### Comments:

---

## Data:

### EO Data:

---

## Managed Area:

### Managed Area Name

---

## Reference:

### Citation:

2011-03-04

## Element Occurrence Record

---

### **Specimen:**

Texas A & M University, Texas Cooperative Wildlife Collection. 1976. O.W. Thornton, Specimen # 52455 TCWC. 22 May 1976.

---

# Element Occurrence Record

**Scientific Name:** Drymarchon melanurus erebennus

**Occurrence #:** 9

**Eo Id:** 3445

**Common Name:** Texas Indigo Snake

**Track Status:** Track all extant and selected historical EOs

**TX Protection Status:** T

**Global Rank:** G4

**State Rank:** S3

**Federal Status:**

---

## Location Information:

### Watershed:

12110208 - South Laguna Madre

### County Name:

Hidalgo

### State:

TX

### Mapsheet:

26098-A3, Hidalgo

26098-B3, Mission

26098-A2, Las Milpas

### Directions:

0.25 MILE EAST OF THE JUNCTION OF FM 107 AND 495 ON FM 107, HIDALGO CITY

---

## Survey Information:

### First Observation:

### Survey Date:

Last Observation: 1968-11-23

### Eo Type:

### Eo Rank:

### Eo Rank Date:

### Observed Area:

---

## Comments:

### General

### Description:

### Comments:

### Protection

### Comments:

### Management

### Comments:

---

## Data:

### EO Data:

---

## Managed Area:

### Managed Area Name

---

## Reference:

2011-03-04

## Element Occurrence Record

**Citation:**

ELLIOTT, LEE. 1994. MEMORANDUM TO DORINDA SULLIVAN DATED DECEMBER 2, 1994 CONCERNING TEXAS A& M-KINGSVILLE VERTEBRATE SPECIMENS CATALOGUE.

---

**Specimen:**

TEXAS A & M UNIVERSITY-KINGSVILLE--VERTEBRATE COLLECTION. 1968. UNKNOWN COLLECTOR, SPECIMEN # 1719 AI. 23 NOVEMBER 1968.

---

# Element Occurrence Record

**Scientific Name:** Eriogonum greggii

**Occurrence #:** 1      **Eo Id:** 5710

**Common Name:** Gregg's wild-buckwheat

**Track Status:** Track all extant and selected historical EOs

**TX Protection Status:**

**Global Rank:** G2

**State Rank:** S1

**Federal Status:**

---

## Location Information:

### Watershed:

13090001 - Los Olmos

12110208 - South Laguna Madre

### County Name:

Hidalgo

### State:

TX

### Mapsheet:

26098-B4, La Joya

26098-B5, Los Ebanos

26098-C4, Citrus City

26098-C5, Sullivan City

### Directions:

LA JOYA

---

## Survey Information:

**First Observation:** 1942

**Survey Date:**

**Last Observation:** 1942-02-09

**Eo Type:**

**Eo Rank:**

**Eo Rank Date:**

**Observed Area:**

---

## Comments:

### General

**Description:**

**Comments:**

### Protection

**Comments:**

### Management

**Comments:**

---

## Data:

**EO Data:**

---

## Managed Area:

**Managed Area Name**

## Element Occurrence Record

---

**Reference:**

**Citation:**

---

**Specimen:**

University of Texas at Austin Herbarium. 1942. Mrs. E.J. Walker (s.n.), Specimen # 50566 TEX. 9 February 1942.

---

## Element Occurrence Record

**Scientific Name:** Gopherus berlandieri

**Occurrence #:** 5      **Eo Id:** 2644

**Common Name:** Texas Tortoise

**Track Status:** Track all extant and selected historical EOs

**TX Protection Status:** T

**Global Rank:** G4

**State Rank:** S3

**Federal Status:**

---

### Location Information:

**Watershed:**

12110208 - South Laguna Madre

**County Name:**

Hidalgo

**State:**

TX

**Mapsheet:**

26098-B4, La Joya

**Directions:**

DUE EAST OF PINITAS CA. 1.5 AIR MILES; SOUTH OF EDINBURG MAIN CANAL; CA. 0.5 AIR MILE NORTHWEST OF CHIHUAHUA

---

### Survey Information:

**First Observation:**

**Survey Date:**

**Last Observation:** 199?

**Eo Type:**

**Eo Rank:**

**Eo Rank Date:**

**Observed Area:**

---

### Comments:

**General Description:** AREA WAS CLEARED FOR PASTURE, BUT WAS BEING ALLOWED TO REVERT; MOSTLY OPEN WITH A LIGHT COVERING OF MESQUITE; AREA WAS GRAZED HERBACEOUS VEGETATION IS EITHER ABSENT OR GRAZED TO GROUND LEVEL

**Comments:**

**Protection**

**Comments:**

**Management**

**Comments:**

---

### Data:

**EO Data:** ONE LIVE ADULT

---

### Managed Area:

**Managed Area Name**

---

### Reference:

**Citation:**

POWELL, TIM. 1993. PERSONAL COMMUNICATION TO DORINDA SULLIVAN, FEBRUARY 1993.

Element Occurrence Record

---

Specimen:

---

## Element Occurrence Record

**Scientific Name:** Herpailurus yaguarondi

**Occurrence #:** 2

**Eo Id:** 7202

**Common Name:** Jaguarundi

**Track Status:** Track all extant and selected historical EOs

**TX Protection Status:** E

**Global Rank:** G4

**State Rank:** S1

**Federal Status:** LE

---

### Location Information:

#### Watershed:

12110208 - South Laguna Madre

#### County Name:

Hidalgo

#### State:

TX

#### Mapsheet:

26098-B3, Mission

26098-B4, La Joya

#### Directions:

Observation 1 - Gabrielson Unit of Lower Rio Grande Valley National Wildlife Refuge; ca 0.5 air miles southeast of Anzalduas Dam; ca. 2.25 air miles south of Madero; Observation 2 - Bentsen Rio Grande Valley State Park, ca. 3 miles south of Highway 83

---

### Survey Information:

**First Observation:** 1987

**Survey Date:**

**Last Observation:** 1993-03-11

**Eo Type:**

**Eo Rank:**

**Eo Rank Date:**

**Observed Area:**

---

### Comments:

**General** Observation 1 - along River Road, dense brush (hackberry, anacua, etc.)

**Description:**

**Comments:** Class II = reliable observation/observer

**Protection**

**Comments:**

**Management**

**Comments:**

---

### Data:

**EO Data:** Observation 1 - 11 March 1993 a small cat but larger than a medium house cat; uniform reddish brown, long tail, very skiddish; Observation 2 - nine Class II observations made in FY88, FY89, FY91, FY93 (FY93 observations on 18 November 1992, 30 December 1992, and 3 January 1993)

---

### Managed Area:

#### Managed Area Name

BENTSEN-RIO GRANDE VALLEY STATE PARK

---

### Reference:

2011-03-04

## Element Occurrence Record

### Citation:

WAGGERMAN, GARY AND J. ROBERSON. 1993. SIGHTING OF SPECIAL INTEREST FORM, LOWER RIO GRANDE VALLEY NATIONAL WILDLIFE REFUGE.

HOMERSTAD, GARY E. 1987. PERFORMANCE REPORT, NONGAME WILDLIFE INVESTIGATIONS, FEDERAL AID PROJECT NO. W-103-R-17, JOB NO. 12: ENDANGERED FELINE STATUS SURVEY. TPWD. OCTOBER 9, 1987.

HOMERSTAD, GARY E. 1988. PERFORMANCE REPORT, NONGAME WILDLIFE INVESTIGATIONS, FEDERAL AID PROJECT NO. W-103-R-18, JOB NO. 12: ENDANGERED FELINE STATUS SURVEY. TPWD. NOVEMBER 9, 1988.

HOMERSTAD, GARY E. 1989. PERFORMANCE REPORT, NONGAME WILDLIFE INVESTIGATIONS, FEDERAL AID PROJECT NO. W-103-R-19, JOB NO. 12: ENDANGERED FELINE STATUS SURVEY. TPWD. OCTOBER 6, 1989.

PRIETO, FELIPE G. 1990. PERFORMANCE REPORT, WILDLIFE RESEARCH AND SURVEYS, FEDERAL AID PROJECT NO. W-125-R-1 AND ESEC6-1, JOB NO. 12: ENDANGERED FELINE POPULATION AND HABITAT ENHANCEMENT. TPWD. OCTOBER 29, 1990.

PRIETO, FELIPE G. 1991. PERFORMANCE REPORT, WILDLIFE RESEARCH AND SURVEYS, FEDERAL AID PROJECT NO. W-125-R-2 AND ESEC6-2, JOB NO. 12: ENDANGERED FELINE POPULATION AND HABITAT ENHANCEMENT. TPWD. NOVEMBER 8, 1991.

BENN, STEPHEN J. 1993. PERFORMANCE REPORT, WILDLIFE RESEARCH AND SURVEYS, FEDERAL AID PROJECT NO. W-125-R-3, JOB NO. 12: ENDANGERED FELINE POPULATION AND HABITAT ENHANCEMENT. TPWD. SEPTEMBER 22, 1993.

---

### Specimen:

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# Element Occurrence Record

**Scientific Name:** Heteranthera mexicana

**Occurrence #:** 9

**Eo Id:** 1383

**Common Name:** Mexican mud-plantain

**Track Status:** Track all extant and selected historical EOs

**TX Protection Status:**

**Global Rank:** G2G3

**State Rank:** S1

**Federal Status:**

---

## Location Information:

### Watershed:

12110208 - South Laguna Madre

### County Name:

Hidalgo

### State:

TX

### Mapsheet:

26098-B3, Mission

26098-C3, Alton

26098-B2, Pharr

26098-A3, Hidalgo

26098-B4, La Joya

### Directions:

MISSION

---

## Survey Information:

**First Observation:** 1936-07

**Survey Date:**

**Last Observation:** 1936-07

**Eo Type:**

**Eo Rank:**

**Eo Rank Date:**

**Observed Area:**

---

## Comments:

### General

#### Description:

**Comments:** COMPLETE SPECIMEN CITATION: MISSION, JULY 1936, MRS. E.J. WALKER 19069 (TAES); SPECIMEN EXTREMELY DEPAUPERATE, NO WAY TO VERIFY ID

### Protection

#### Comments:

### Management

#### Comments:

---

## Data:

**EO Data:**

---

## Managed Area:

**Managed Area Name**

## Element Occurrence Record

---

**Reference:**

**Citation:**

---

**Specimen:**

TEXAS A & M UNIVERSITY, TRACY HERBARIUM. 1936. MRS. E.J. WALKER #19069, SPECIMEN # NONE TAES. JULY 1936.

---

# Element Occurrence Record

**Scientific Name:** Hypopachus variolosus

**Occurrence #:** 1

**Eo Id:** 7429

**Common Name:** Sheep Frog

**Track Status:** Track all extant and selected historical EOs

**TX Protection Status:** T

**Global Rank:** G5

**State Rank:** S2

**Federal Status:**

---

## Location Information:

### Watershed:

12110208 - South Laguna Madre

### County Name:

Hidalgo

### State:

TX

### Mapsheet:

26098-B3, Mission

### Directions:

1.5 MILES WEST OF MCALLEN

---

## Survey Information:

### First Observation:

### Survey Date:

Last Observation: 1949-04-28

### Eo Type:

Eo Rank: C

### Eo Rank Date:

### Observed Area:

---

## Comments:

### General

#### Description:

Comments: ONE SPECIMEN COLLECTED APRIL 28

### Protection

#### Comments:

### Management

#### Comments:

---

## Data:

### EO Data:

---

## Managed Area:

### Managed Area Name

---

## Reference:

### Citation:

## Element Occurrence Record

---

### **Specimen:**

University of Illinois, Museum of Natural History. 1949. Unknown Collector, Catalog # 3626 UIMNH. 28 April 1949.

---

## Element Occurrence Record

**Scientific Name:** Hypopachus variolosus

**Occurrence #:** 32

**Eo Id:** 8817

**Common Name:** Sheep Frog

**Track Status:** Track all extant and selected historical EOs

**TX Protection Status:** T

**Global Rank:** G5

**State Rank:** S2

**Federal Status:**

---

### Location Information:

**Watershed:**

12110208 - South Laguna Madre

**County Name:**

Hidalgo

**State:**

TX

**Mapsheet:**

26098-B3, Mission

**Directions:**

Approx. 3 air miles southwest of Mission and approx. 0.5 miles north of the Rio Grande River.

---

### Survey Information:

**First Observation:** 2004-04-05

**Survey Date:** 2004-04-05

**Last Observation:** 2004-04-05

**Eo Type:**

**Eo Rank:** E

**Eo Rank Date:** 2004-04-05

**Observed Area:**

---

### Comments:

**General**

**Description:**

**Comments:** Other species heard on 5 Apr 2004 include: <i>Bufo valliceps</i> and <i>Gastrophryne</i> sp.

**Protection**

**Comments:**

**Management**

**Comments:**

---

### Data:

**EO Data:** 5 Apr 2004: A few <i>H</i>. <i>variolosus</i> were heard.

---

### Managed Area:

**Managed Area Name**

---

### Reference:

## Element Occurrence Record

### Citation:

Martin, Dave. 2007. E-mail to Sandy Birnbaum, Natural Diversity Database manager, on 9 February concerning observations of *Hypopachus variolosus*, *Smilisca baudini*, *Leptodactylus fragilis*, and *Rhinophrynus dorsalis* in South Texas (Starr, Hidalgo, and Cameron counties).

Gottfried, Bob. 2007. E-mail to Sandy Birnbaum, Natural Diversity Database Manager on 2 February concerning observations of *Notophthalmus meridionalis* in Kenedy County, *Hypopachus variolosus* and *Smilisca baudinii* in Cameron County, and *H. variolosus* in Hidalgo County, TX.

---

### Specimen:

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## Element Occurrence Record

**Scientific Name:** Leopardus pardalis

**Occurrence #:** 11

**Eo Id:** 6239

**Common Name:** Ocelot

**Track Status:** Track all extant and selected historical EOs

**TX Protection Status:** E

**Global Rank:** G4

**State Rank:** S1

**Federal Status:** LE

---

### Location Information:

#### Watershed:

12110208 - South Laguna Madre

#### County Name:

Hidalgo

#### State:

TX

#### Mapsheet:

26098-B4, La Joya

26098-B3, Mission

#### Directions:

BENTSEN STATE PARK, CA. 3 MILES SOUTH OF HIGHWAY 83

---

### Survey Information:

**First Observation:** 1991-01-16

**Survey Date:**

**Last Observation:** 1992-12-26

**Eo Type:**

**Eo Rank:**

**Eo Rank Date:**

#### Observed Area:

---

### Comments:

#### General

#### Description:

**Comments:** CLASS II = RELIABLE OBSERVATION/OBSERVER

#### Protection

#### Comments:

#### Management

#### Comments:

---

### Data:

**EO Data:** SEVEN CLASS II OBSERVATIONS MADE IN FY90, FY91, AND FY93

---

### Managed Area:

#### Managed Area Name

BENTSEN-RIO GRANDE VALLEY STATE PARK

---

### Reference:

## Element Occurrence Record

### Citation:

HOMERSTAD, GARY E. 1989. PERFORMANCE REPORT, NONGAME WILDLIFE INVESTIGATIONS, FEDERAL AID PROJECT NO. W-103-R-19, JOB NO. 12: ENDANGERED FELINE STATUS SURVEY. TPWD. OCTOBER 6, 1989.

PRIETO, FELIPE G. 1990. PERFORMANCE REPORT, WILDLIFE RESEARCH AND SURVEYS, FEDERAL AID PROJECT NO. W-125-R-1 AND ESEC6-1, JOB NO. 12: ENDANGERED FELINE POPULATION AND HABITAT ENHANCEMENT. TPWD. OCTOBER 29, 1990.

PRIETO, FELIPE G. 1991. PERFORMANCE REPORT, WILDLIFE RESEARCH AND SURVEYS, FEDERAL AID PROJECT NO. W-125-R-2 AND ESEC6-2, JOB NO. 12: ENDANGERED FELINE POPULATION AND HABITAT ENHANCEMENT. TPWD. NOVEMBER 8, 1991.

BENN, STEPHEN J. 1993. PERFORMANCE REPORT, WILDLIFE RESEARCH AND SURVEYS, FEDERAL AID PROJECT NO. W-125-R-3, JOB NO. 12: ENDANGERED FELINE POPULATION AND HABITAT ENHANCEMENT. TPWD. SEPTEMBER 22, 1993.

---

### Specimen:

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# Element Occurrence Record

**Scientific Name:** Manfreda longiflora

**Occurrence #:** 1      **Eo Id:** 2499

**Common Name:** St. Joseph's Staff

**Track Status:** Track all extant and selected historical EOs

**TX Protection Status:**

**Global Rank:** G2

**State Rank:** S2

**Federal Status:**

---

## Location Information:

### Watershed:

12110208 - South Laguna Madre

13090002 - Lower Rio Grande

### County Name:

Hidalgo

### State:

TX

### Mapsheet:

26098-B4, La Joya

### Directions:

0.4 MI. WEST OF JUNCTION OF HWY 83 & FM 1427, THEN 0.2 MI. WEST ON DIRT ROAD SOUTH OF HWY 83, TURN SOUTH, CROSS RAILROAD TRACKS & GO 0.2 MI. SOUTH, TURN WEST ALONG POWERLINE RIGHT-OF-WAY, ON NORTH SIDE OF RIGHT-OF-WAY; DATA SENSITIVE BECAUSE OF CACTI

---

## Survey Information:

**First Observation:** 1987-10-02

**Survey Date:** 1987-10-02

**Last Observation:** 1987-10-02

### Eo Type:

**Eo Rank:** B

**Eo Rank Date:**

**Observed Area:** 2.00

---

## Comments:

**General Description:** OPEN MESQUITE WOODLAND, WITH SHRUB THICKETS; NUMEROUS CACTI LITERALLY COVER THE LEVEL GROUND SURFACE; WITH PROSOPIS GLANDULOSA, CELTIS PALLIDA, PORLIERIA ANGUSTIFOLIA

### Comments:

### Protection

### Comments:

### Management

### Comments:

---

## Data:

**EO Data:** IN FLOWER AND FRUIT; APPROXIMATELY 50 INDIVIDUALS, DENSELY CLUSTERED

---

## Managed Area:

### Managed Area Name

CHIHUAHUA WOODS

---

## Reference:

## Element Occurrence Record

**Citation:**

POOLE, J.M. 1987. FIELD SURVEY TO CHIHUAHUA WOODS OF OCTOBER 2, 1987.

---

**Specimen:**

University of Texas at Austin Herbarium. 1987. J.M. Poole #?, Specimen # ? TEX. 2 October 1987.

---

## Element Occurrence Record

**Scientific Name:** Manihot walkerae

**Occurrence #:** 1

**Eo Id:** 3041

**Common Name:** Walker's manioc

**Track Status:** Track all extant and selected historical EOs

**TX Protection Status:** E

**Global Rank:** G1

**State Rank:** S1

**Federal Status:** LE

---

### Location Information:

#### Watershed:

12110208 - South Laguna Madre

#### County Name:

Hidalgo

#### State:

TX

#### Mapsheet:

26098-B4, La Joya

#### Directions:

3.5 MILES SOUTHEAST (EAST-SOUTHEAST) OF LA JOYA, 1.25 MILES NORTHEAST (EAST-NORTHEAST) OF PENITAS, 1.5 MILES WEST OF PEREZVILLE, 1.25 MILES NORTHEAST OF RIO GRANDE RIVER

---

### Survey Information:

**First Observation:** 1990-05-09

**Survey Date:** 1992-04-30

**Last Observation:** 1992-04-30

**Eo Type:**

**Eo Rank:** D

**Eo Rank Date:** 1992-04-30

**Observed Area:** 1.00

---

### Comments:

**General Description:** FINE SANDY LOAM, PARTIAL SHADE, MARGIN OF DENSE NATIVE BRUSH (GRANJENO, CENIZO, TASAJILLO, PROSOPIS GLANDULOSA, CONDALIA HOOKERI, ALOYSIA GRATISSIMA)

#### Comments:

#### Protection

#### Comments:

#### Management

#### Comments:

---

### Data:

**EO Data:** One plant, in fruit; shrubby, upright habit.

---

### Managed Area:

#### Managed Area Name

---

### Reference:

## Element Occurrence Record

### Citation:

CLAYTON, PHILIP. 1990. UNTITLED [REPORT ON DISCOVERY OF MANIHOT WALKERAE IN HIDALGO COUNTY], USFWS, CORPUS CHRISTI ECOLOGICAL SERVICES. 2 PP. + MAP.

POOLE, JACKIE M. NO DATE. TEXAS PARKS AND WILDLIFE DEPARTMENT, WILDLIFE DIVERSITY BRANCH, 4200 SMITH SCHOOL ROAD, AUSTIN, TEXAS 78744; 512/389-8019; jackie.poole@tpwd.state.tx.us

IDEKER, JOE. 1990. MANIHOT WALKERAE REDISCOVERED. SABAL 7(8):1-2.

---

### Specimen:

University of Texas at Austin Herbarium. 1990. Philip Clayton #1014, Specimen # none TEX. 9 May 1990.

---

# Element Occurrence Record

**Scientific Name:** Manihot walkerae

**Occurrence #:** 2

**Eo Id:** 5411

**Common Name:** Walker's manioc

**Track Status:** Track all extant and selected historical EOs

**TX Protection Status:** E

**Global Rank:** G1

**State Rank:** S1

**Federal Status:** LE

---

## Location Information:

### Watershed:

12110208 - South Laguna Madre

### County Name:

Hidalgo

### State:

TX

### Mapsheet:

26098-B3, Mission

### Directions:

ALONG THE LOWER RIO GRANDE SOUTH OF MISSION

---

## Survey Information:

### First Observation:

### Survey Date:

Last Observation: 1940

### Eo Type:

### Eo Rank:

### Eo Rank Date:

### Observed Area:

---

## Comments:

### General

#### Description:

Comments: HOLOTYPE

### Protection

#### Comments:

### Management

#### Comments:

---

## Data:

### EO Data:

---

## Managed Area:

### Managed Area Name

---

## Reference:

### Citation:

## Element Occurrence Record

---

### **Specimen:**

Harvard University, Herbarium of Arnold Arboretum. 1940. E.J. Walker (s.n.), Specimen # ? A. Holotype.

---

## Element Occurrence Record

**Scientific Name:** Manihot walkerae

**Occurrence #:** 3

**Eo Id:** 369

**Common Name:** Walker's manioc

**Track Status:** Track all extant and selected historical EOs

**TX Protection Status:** E

**Global Rank:** G1

**State Rank:** S1

**Federal Status:** LE

---

### Location Information:

**Watershed:**

13090001 - Los Olmos

**County Name:**

Hidalgo

**State:**

TX

**Mapsheet:**

26098-B4, La Joya

**Directions:**

LA JOYA, TEXAS

---

### Survey Information:

**First Observation:** 1940-11-12

**Survey Date:**

**Last Observation:** 1941-10-22

**Eo Type:**

**Eo Rank:**

**Eo Rank Date:**

**Observed Area:**

---

### Comments:

**General**

**Description:**

**Comments:**

**Protection**

**Comments:**

**Management**

**Comments:**

---

### Data:

**EO Data:**

---

### Managed Area:

**Managed Area Name**

---

### Reference:

**Citation:**

## Element Occurrence Record

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### Specimen:

Texas A & M University, Tracy Herbarium. 1940. V.L. Cory #36162, 36163, Specimen # 50212, 50213 TAES. 12 November 1940.

University of Texas at Austin Herbarium. 1941. Mrs. E.J. Walker (s.n.), Specimen # 88488 TEX. 22 October 1941.

---

## Element Occurrence Record

**Scientific Name:** Manihot walkerae      **Occurrence #:** 12      **Eo Id:** 6569  
**Common Name:** Walker's manioc      **Track Status:** Track all extant and selected historical EOs  
**Global Rank:** G1      **State Rank:** S1      **TX Protection Status:** E  
**Federal Status:** LE

---

### Location Information:

#### Watershed:

13090002 - Lower Rio Grande

#### County Name:

Hidalgo

#### State:

TX

#### Mapsheet:

26098-B4, La Joya

#### Directions:

PENITAS CEMETERY ("SAN ANTONIO CEMETERY" ON QUAD), ALONG SOUTH FENCELINE; EAST OF PENITAS

---

### Survey Information:

**First Observation:** 1997      **Survey Date:** 2002-06-02      **Last Observation:** 2002-06-02

**Eo Type:**      **Eo Rank:**      **Eo Rank Date:**

#### Observed Area:

---

### Comments:

**General Description:** NATIVE BRUSH ALONG FENCELINE OF OLD CEMETERY

#### Comments:

FIRST OBSERVED BY CHRISTY DAVIS, A NATIVE PLANT PROJECT MEMBER [INFO PER CHRIS BEST] TO BE CONTACTED FOR DETAILS OF FIRST OBSERVED DATE; MICHELLE PULICH HAS PHOTOS FROM SITE [INFO PER CHRIS BEST]

#### Protection

#### Comments:

#### Management

#### Comments:

---

### Data:

**EO Data:** On 2 June 2002, 13 plants (5 of which were in flower/fruit) observed

---

### Managed Area:

#### Managed Area Name

---

### Reference:

## Element Occurrence Record

### Citation:

PATTERSON, TOM. NO DATE. 142 FM 3167, RIO GRANDE CITY, TX 78582; 956/488-5812, TFPATT@STCC.CC.TX.US.

PRICE, DANA M. NO DATE. BOTANIST, WILDLIFE DIVERSITY BRANCH, TEXAS PARKS AND WILDLIFE DEPARTMENT, 3000 SOUTH IH-35, SUITE 100, AUSTIN, TEXAS 78704; PHONE: 512/912-7043.

BEST, CHRIS. 2002. EMAIL TO DANA PRICE NOTING CHRISTY DAVIS OF MISSION, TEXAS AS DISCOVERER OF MANIHOT WALKERAE AT PENITAS CEMETERY, JUNE 29, 2002.

PRICE, DANA. 2002. NOTES ON TRIP TO THE LOWER RIO GRANDE VALLEY AND NORTHERN MEXICO, JUNE 2-7, 2002.

BEST, CHRIS. 2000. EMAIL TO DANA PRICE REGARDING ADDITIONAL INFORMATION FOR VARIOUS MANIHOT WALKERAE LOCATIONS, INCLUDING AN ASCLEPIAS PROSTRATA. APRIL, 6, 2000.

---

### Specimen:

---

## Element Occurrence Record

**Scientific Name:** Matelea radiata      **Occurrence #:** 2      **Eo Id:** 1793  
**Common Name:** Falfurrias milkvine      **Track Status:** Track all extant and selected historical EOs  
**Global Rank:** GH      **State Rank:** SH      **TX Protection Status:**  
**Federal Status:**

---

### Location Information:

#### Watershed:

13090001 - Los Olmos  
12110208 - South Laguna Madre

#### County Name:

Hidalgo

#### State:

TX

#### Mapsheet:

26098-B4, La Joya  
26098-C4, Citrus City  
26098-B5, Los Ebanos  
26098-C5, Sullivan City

#### Directions:

"LA JOYA, BORDERING SIDE ROAD TO NORTH"

---

### Survey Information:

**First Observation:**      **Survey Date:**      **Last Observation:** 1941-07-13

**Eo Type:**      **Eo Rank:** H      **Eo Rank Date:**

#### Observed Area:

---

### Comments:

**General** "DRY GRAVEL HILLS; CLAY; ALTITUDE 45 METERS"

#### Description:

**Comments:** ORIGINALLY UNDET., ANN. TO M. RADIATA BY D.J. DRAPALIK; SEE TNC'S ELEMENT STEWARDSHIP ABSTRACT IN EMF

#### Protection

#### Comments:

#### Management

#### Comments:

---

### Data:

**EO Data:** "TWINING VINE; BARK GREEN; ROOTS WOODY; FLOWERS DARK GOLD; LEAVES BRIGHT; POD WARTY"

---

### Managed Area:

#### Managed Area Name

## Element Occurrence Record

---

**Reference:**

**Citation:**

---

**Specimen:**

University of Texas at Austin Herbarium. 1941. Robert Runyon #2832, Specimen # 269169 TEX. 13 July 1941.

---

## Element Occurrence Record

**Scientific Name:** Notophthalmus meridionalis

**Occurrence #:** 2      **Eo Id:** 5794

**Common Name:** Black-spotted Newt

**Track Status:** Track all extant and selected historical EOs

**TX Protection Status:** T

**Global Rank:** G1

**State Rank:** S1

**Federal Status:**

---

### Location Information:

**Watershed:**

13090001 - Los Olmos

**County Name:**

Hidalgo

**State:**

TX

**Mapsheet:**

26098-C5, Sullivan City

26098-C4, Citrus City

26098-B5, Los Ebanos

26098-B4, La Joya

**Directions:**

LAKE LA JOYA [LA JOYA LAKE], 10 MILES WEST OF MISSION

---

### Survey Information:

**First Observation:** 1939-11-11

**Survey Date:**

**Last Observation:** 1945-11-11

**Eo Type:**

**Eo Rank:**

**Eo Rank Date:**

**Observed Area:**

---

### Comments:

**General**

**Description:**

**Comments:** MARCH 24, 1940; APRIL 13, 1941; NOVEMBER 11, 1939 AND 1945.

**Protection**

**Comments:**

**Management**

**Comments:**

---

### Data:

**EO Data:** SPECIMENS TAKEN FROM UNDER JUNK AT 1245-1310 ON A SUNNY AND WARM DAY; 1045 HRS UNDER LOG ON A SUNNY, HOT DAY; 1030 HRS UNDER A CEMENT SACK IN SHADE OF TREE ABOUT 3 FT. FROM WATER, SUNNY DAY, 75 DEG. F.

---

### Managed Area:

**Managed Area Name**

## Element Occurrence Record

---

### Reference:

#### Citation:

---

### Specimen:

CARNEGIE MUSEUM, PITTSBURGH. 1941. B.C. BROWN, CATALOG # 25838-25840 CM. 13 APRIL 1941.

BAYLOR UNIVERSITY, BRYCE C. BROWN COLLECTION AT STRECKER MUSEUM. 1941. B.C. BROWN, CATALOG # 87-90, 597-600 BCB. 13 APRIL 1941.

BAYLOR UNIVERSITY, BRYCE C. BROWN COLLECTION AT STRECKER MUSEUM. 1945. B.C. BROWN, CATALOG # 1700 BCB. 11 NOVEMBER 1945.

BAYLOR UNIVERSITY, BRYCE C. BROWN COLLECTION AT STRECKER MUSEUM. 1939. B.C. BROWN, CATALOG # 445, 721-727 BCB. 11 NOVEMBER 1939.

University of Texas at Austin, Texas Natural History Collection. 1940. A.G. Flury, Catalog # 06116-06124 TNHC. 24 March 1940.

University of Texas at Austin, Texas Natural History Collection. 1941. B.C. Brown, Catalog # 06125-06130 TNHC. 13 April 1941.

University of Texas at Austin, Texas Natural History Collection. 1939. B.C. Brown, Catalog # 06131-06141 TNHC. 11 November 1939.

---

# Element Occurrence Record

**Scientific Name:** Notophthalmus meridionalis

**Occurrence #:** 3

**Eo Id:** 3661

**Common Name:** Black-spotted Newt

**Track Status:** Track all extant and selected historical EOs

**TX Protection Status:** T

**Global Rank:** G1

**State Rank:** S1

**Federal Status:**

---

## Location Information:

### Watershed:

12110208 - South Laguna Madre

### County Name:

Hidalgo

### State:

TX

### Mapsheet:

26098-B3, Mission

26098-B4, La Joya

### Directions:

1 MI. E. BENTSEN STATE PARK

---

## Survey Information:

### First Observation:

### Survey Date:

Last Observation: 1967-05-25

### Eo Type:

Eo Rank: B

### Eo Rank Date:

### Observed Area:

---

## Comments:

### General

### Description:

Comments: TWO SPECIMENS, COLLECTED 25 MAY 1967

### Protection

### Comments:

### Management

### Comments:

---

## Data:

### EO Data:

---

## Managed Area:

### Managed Area Name

---

## Reference:

### Citation:

2011-03-04

## Element Occurrence Record

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### Specimen:

CARNEGIE MUSEUM, PITTSBURGH. 1967. COLLECTOR: HAH..., CATALOG # ? CM. 25 MAY 1967.

---

# Element Occurrence Record

**Scientific Name:** Notophthalmus meridionalis

**Occurrence #:** 6

**Eo Id:** 1757

**Common Name:** Black-spotted Newt

**Track Status:** Track all extant and selected historical EOs

**TX Protection Status:** T

**Global Rank:** G1

**State Rank:** S1

**Federal Status:**

---

## Location Information:

### Watershed:

12110208 - South Laguna Madre

### County Name:

Hidalgo

### State:

TX

### Mapsheet:

26098-B2, Pharr

26098-B3, Mission

26098-A3, Hidalgo

26098-B1, Donna

26098-A1, San Juan SE

26098-A2, Las Milpas

### Directions:

Observation 1 - 5 miles southeast of McAllen; Observation 2 - 4 miles south of McAllen

---

## Survey Information:

**First Observation:** 1962-02-16

**Survey Date:**

**Last Observation:** 1962-02-17

**Eo Type:**

**Eo Rank:**

**Eo Rank Date:**

**Observed Area:**

---

## Comments:

### General

**Description:**

**Comments:**

### Protection

**Comments:**

### Management

**Comments:**

---

## Data:

**EO Data:** Observation 1 - 16 February 1962, one specimen collected; Observation 2 - 17 February 1962, one specimen collected

---

## Managed Area:

**Managed Area Name**

## Element Occurrence Record

---

### Reference:

#### Citation:

---

### Specimen:

Texas A & M University, Texas Cooperative Wildlife Collection. 1962. D.R. Blankinship, Catalog # 17546 TCWC. 17 February 1962.

Texas A & M University, Texas Cooperative Wildlife Collection. 1962. W.D. Brummel, Catalog # 17547 TCWC. 16 February 1962.

---

## Element Occurrence Record

**Scientific Name:** Pachyramphus aglaiae

**Occurrence #:** 1      **Eo Id:** 4390

**Common Name:** Rose-throated Becard

**Track Status:** Track all extant and selected historical EOs

**TX Protection Status:** T

**Global Rank:** G4G5      **State Rank:** SNA

**Federal Status:**

---

### Location Information:

**Watershed:**

13090002 - Lower Rio Grande

**County Name:**

Hidalgo

**State:**

TX

**Mapsheet:**

26098-B3, Mission

**Directions:**

AT ANZALDUAS COUNTY PARK, CA. 1 MILE SOUTH OF VILLA QUEEN OF PEACE (SOUTH OF FM 1016), SOUTH OF MISSION

---

### Survey Information:

**First Observation:** 1999-05-12

**Survey Date:**

**Last Observation:** 1999-08-30

**Eo Type:**

**Eo Rank:**

**Eo Rank Date:**

**Observed Area:**

---

### Comments:

**General** CEDAR ELM AND MEXICAN ASH IN PARK

**Description:**

**Comments:** NEAR CENTRAL BATHROOMS AT ANZALDUAS COUNTY PARK; MAPPED AT SAME LOCATION AS GRAY HAWK 001

**Protection**

**Comments:**

**Management**

**Comments:**

---

### Data:

**EO Data:** FIRST NEST 25-30 FEET UP IN CEDAR ELM ABANDONED; SECOND NEST IN MEXICAN ASH ABANDONED; BOTH NESTS FROM SAME PAIR, FEMALE AND SUBADULT MALE

---

### Managed Area:

**Managed Area Name**

---

### Reference:

**Citation:**

BRUSH, TIM. 1999. E-MAIL CORRESPONDENCE TO JOHN MARESH OF 3 NOVEMBER 1999 CONTAINING 1999 NESTING DATA FOR GRAY HAWK AND ROSE-THROATED BECARD AT ANZALDUAS COUNTY PARK.

2011-03-04

## Element Occurrence Record

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**Specimen:**

---

# Element Occurrence Record

**Scientific Name:** Pithecellobium ebano-ehretia anacua series

**Occurrence #:** 5      **Eo Id:** 7263

**Common Name:** Texas Ebony-anacua Series

**Track Status:** Track all extant and selected historical EOs

**TX Protection Status:**

**Global Rank:** G2

**State Rank:** S1

**Federal Status:**

---

## Location Information:

**Watershed:**

**County Name:**

**State:**

**Mapsheet:**

Hidalgo

TX

26098-B4, La Joya

**Directions:**

SOUTH OF ABRAM 1 MILE; ON BANK OF RIO GRANDE JUST TWO MILES UPSTREAM FROM BENTSEN-RIO GRANDE VALLEY STATE PARK

---

## Survey Information:

**First Observation:** 1985

**Survey Date:** 1985-04-03

**Last Observation:** 1985-04-03

**Eo Type:**

**Eo Rank:** C

**Eo Rank Date:**

**Observed Area:** 30.00

---

## Comments:

**General** SUGARBERRY-ANACUA-HUISACHE; PROBABLY GO-BACK; NOT GREAT CONDITION; MAY BE

**Description:** SUGARBERRY-ELM POTENTIAL, BUT SURELY EARLY SUCCESSIONAL

**Comments:**

**Protection**

**Comments:**

**Management**

**Comments:**

---

**Data:**

**EO Data:**

---

## Managed Area:

**Managed Area Name**

---

## Reference:

**Citation:**

SCHUMACHER, ROBERT. SANTA ANA NWR, RT 1, BOX 202A, ALAMO, TX 78516.

## Element Occurrence Record

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Specimen:

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## Element Occurrence Record

**Scientific Name:** Pithecellobium ebano-ehretia anacua series

**Occurrence #:** 6 **Eo Id:** 5935

**Common Name:** Texas Ebony-anacua Series

**Track Status:** Track all extant and selected historical EOs

**TX Protection Status:**

**Global Rank:** G2

**State Rank:** S1

**Federal Status:**

---

### Location Information:

**Watershed:**

12110208 - South Laguna Madre

**County Name:**

Hidalgo

**State:**

TX

**Mapsheet:**

26098-B4, La Joya

**Directions:**

UPLANDS IN NORTHERN HALF OF BENTSEN-RIO GRANDE VALLEY SP

---

### Survey Information:

**First Observation:** 1985

**Survey Date:** 1990-03-21

**Last Observation:** 1990-03-21

**Eo Type:**

**Eo Rank:** BC

**Eo Rank Date:** 1990-03-21

**Observed Area:**

---

### Comments:

**General Description:** SUGARBERRY-EBONY-ANACUA-BLUEWOOD-MESQUITE-ELM; SOME IS SUGARBERRY-ELM POTENTIAL, BUT MUCH EBONY-ANACUA AS WELL; LARGE, HETEROGENEOUS, SOME GO-BACK BUT VERY GOOD SITE; HETEROGENEOUS SHRUBLAND, WOODLAND, AND FOREST; TEXAS EBONY-ANACUA (TEXAS EBONY-SNAKE-EYES) EVERGREEN SUBTROPICAL PATCHES MOSTLY DEVELOPED, REMNANTS SMALL; MOSTLY DOMINATED BY SUGARBERRY AND MESQUITE AND WEEDY FORBS

**Comments:**

**Protection**

**Comments:**

**Management**

**Comments:**

---

### Data:

**EO Data:** PORTION OF COMMUNITY DESCRIBED, WITH PLANT LIST, IN DLI REPORT, SITE 1

---

### Managed Area:

**Managed Area Name**

BENTSEN-RIO GRANDE VALLEY STATE PARK

---

### Reference:

## Element Occurrence Record

**Citation:**

TEXAS PARKS & WILDLIFE DEPARTMENT. 1990. BENTSEN-RIO GRANDE VALLEY STATE PARK. SUMMARY OF REPRESENTATIVE PLANT COMMUNITIES.

RISKIND, DAVID, PH.D. TEXAS PARKS AND WILDLIFE DEPARTMENT 4200 SMITH SCHOOL ROAD AUSTIN, TEXAS 78744 PH-512/479-4897 (WORK)

---

**Specimen:**

---

## Element Occurrence Record

**Scientific Name:** Pithecellobium ebano-ehretia anacua series

**Occurrence #:** 7      **Eo Id:** 3506

**Common Name:** Texas Ebony-anacua Series

**Track Status:** Track all extant and selected historical EOs

**TX Protection Status:**

**Global Rank:** G2

**State Rank:** S1

**Federal Status:**

---

### Location Information:

**Watershed:**

12110208 - South Laguna Madre

**County Name:**

Hidalgo

**State:**

TX

**Mapsheet:**

26098-B3, Mission

26098-A3, Hidalgo

**Directions:**

FM 1016 SOUTH OF MADERO 2 MILES, THEN WEST 0.5 MILE

---

### Survey Information:

**First Observation:** 1985

**Survey Date:** 1985-04-03

**Last Observation:** 1985-04-03

**Eo Type:**

**Eo Rank:** BC

**Eo Rank Date:**

**Observed Area:** 730.00

---

### Comments:

**General Description:** HETEROGENEOUS; PART IS EBONY-ANACUA POTENTIAL, MOST IS SUGARBERRY-ELM POTENTIAL; NOW ELM-ANACUA-HACKBERRY-BLUEWOOD; SOME EBONY ON DRIER SITES

**Comments:**

**Protection Comments:** WITH PROTECTION AND MGMT, THIS COULD BE A VALUABLE SITE

**Management**

**Comments:**

---

**Data:**

**EO Data:**

---

### Managed Area:

**Managed Area Name**

---

### Reference:

**Citation:**

SCHUMACHER, ROBERT. SANTA ANA NWR, RT 1, BOX 202A, ALAMO, TX 78516.

2011-03-04

## Element Occurrence Record

---

Specimen:

---

# Element Occurrence Record

**Scientific Name:** Pithecellobium ebano-phaulothamnus spinescens series

**Occurrence #:** 3      **Eo Id:** 5751

**Common Name:** Texas Ebony-snake-eyes Series

**Track Status:** Track all extant and selected historical EOs

**TX Protection Status:**

**Global Rank:** G2

**State Rank:** S2

**Federal Status:**

---

## Location Information:

### Watershed:

12110208 - South Laguna Madre

### County Name:

Hidalgo

### State:

TX

### Mapsheet:

26098-B4, La Joya

### Directions:

FM 374, 1 MILE EAST OF JCT 492, THEN SOUTH 0.1 MILE

---

## Survey Information:

### First Observation:

### Survey Date:

### Last Observation:

### Eo Type:

### Eo Rank:

### Eo Rank Date:

**Observed Area:** 20.00

---

## Comments:

**General Description:** NOT VISITED - PROBABLY "GO-BACK"

### Comments:

### Protection

### Comments:

### Management

### Comments:

---

## Data:

### EO Data:

---

## Managed Area:

### Managed Area Name

---

## Reference:

### Citation:

SCHUMACHER, ROBERT. SANTA ANA NWR, RT 1, BOX 202A, ALAMO, TX 78516.

Element Occurrence Record

---

Specimen:

---

## Element Occurrence Record

**Scientific Name:** Prosopis glandulosa-acacia smallii series

**Occurrence #:** 4      **Eo Id:** 5940

**Common Name:** Mesquite-huisache Series

**Track Status:** Track all extant and selected historical EOs

**TX Protection Status:**

**Global Rank:** G5

**State Rank:** S5

**Federal Status:**

---

### Location Information:

**Watershed:**

**County Name:**

**State:**

**Mapsheet:**

Hidalgo

TX

26098-B4, La Joya

**Directions:**

SEASONALLY FLOODED TERRACES ALONG RIO GRANDE HIKING TRAIL, SOUTHERN END OF BENTSEN-RIO GRANDE VALLEY SP

---

### Survey Information:

**First Observation:**

**Survey Date:** 1990-03-21

**Last Observation:** 1990

**Eo Type:**

**Eo Rank:** D

**Eo Rank Date:** 1990-03-21

**Observed Area:**

---

### Comments:

**General** DISTURBANCE TYPE WITH DENSE GROUND COVER OF WEEDY SPECIES

**Description:**

**Comments:**

**Protection**

**Comments:**

**Management**

**Comments:**

---

### Data:

**EO Data:** DESCRIPTION AND PLANT LIST IN DLI REPORT, SITE 3

---

### Managed Area:

**Managed Area Name**

BENTSEN-RIO GRANDE VALLEY STATE PARK

---

### Reference:

**Citation:**

TEXAS PARKS & WILDLIFE DEPARTMENT. 1990. BENTSEN-RIO GRANDE VALLEY STATE PARK. SUMMARY OF REPRESENTATIVE PLANT COMMUNITIES.

## Element Occurrence Record

---

Specimen:

---

## Element Occurrence Record

**Scientific Name:** Siren sp. 1

**Occurrence #:** 2

**Eo Id:** 7293

**Common Name:** South Texas Siren (Large Form)

**Track Status:** Track all extant and selected historical EOs

**TX Protection Status:** T

**Global Rank:** GNRQ      **State Rank:** SNR

**Federal Status:**

---

### Location Information:

**Watershed:**

12110208 - South Laguna Madre

**County Name:**

Hidalgo

**State:**

TX

**Mapsheet:**

26098-B4, La Joya

26098-B3, Mission

**Directions:**

BENTSEN STATE PARK, 5.0 MILES SOUTH-SOUTHWEST OF MISSION

---

### Survey Information:

**First Observation:** 1970-04-16

**Survey Date:**

**Last Observation:** 1983

**Eo Type:**

**Eo Rank:** A

**Eo Rank Date:**

**Observed Area:**

---

### Comments:

**General**

**Description:**

**Comments:** TCWC SPECIMEN COLLECTED 16 APRIL; #33086 C. DAVIS 4-16-70

**Protection**

**Comments:**

**Management**

**Comments:**

---

**Data:**

**EO Data:**

---

### Managed Area:

**Managed Area Name**

BENTSEN-RIO GRANDE VALLEY STATE PARK

---

### Reference:

## Element Occurrence Record

### Citation:

Judd, F.W. 1985. Status of *Siren intermedia texana*, *Notophthalmus meridionalis*, and *Crotaphytus reticulatus*. Final Report. USFWS Coop. Ag. 14-16-0002-81-923. 60 pp.

FLORES VILLELA, OSCAR AND RONALD A. BRANDON. 1992. SIREN LACERTINA (AMPHIBIA: CAUDATA) IN NORTHEASTERN MEXICO AND SOUTHERN TEXAS. ANN. CARNEGIE MUS. 61(4): 289-291.

---

### Specimen:

Texas Tech University Museum, Lubbock. 1983. F.W. Judd, Catalog # ? TTU.

Texas A & M University, Texas Cooperative Wildlife Collection. 1970. C. Davis, Catalog # 33086 TCWC. 16 April 1970.

---

# Element Occurrence Record

**Scientific Name:** Siren sp. 1

**Occurrence #:** 9

**Eo Id:** 1997

**Common Name:** South Texas Siren (Large Form)

**Track Status:** Track all extant and selected historical EOs

**TX Protection Status:** T

**Global Rank:** GNRQ      **State Rank:** SNR

**Federal Status:**

---

## Location Information:

### Watershed:

12110208 - South Laguna Madre

### County Name:

Hidalgo

### State:

TX

### Mapsheet:

26098-B3, Mission

26098-C3, Alton

26098-B2, Pharr

26098-A3, Hidalgo

26098-B4, La Joya

### Directions:

3.5 MILES SOUTHWEST OF McALLEN

---

## Survey Information:

**First Observation:** 1960-04-19

**Survey Date:**

**Last Observation:** 1961-09-02

**Eo Type:**

**Eo Rank:**

**Eo Rank Date:**

**Observed Area:**

---

## Comments:

### General

#### Description:

**Comments:** COLLECTED 19 APRIL 1960, AND 2 SEPTEMBER 1961

### Protection

#### Comments:

### Management

#### Comments:

---

## Data:

**EO Data:** IN SALTY DRAINAGE DITCH

---

## Managed Area:

**Managed Area Name**

## Element Occurrence Record

---

### Reference:

#### Citation:

FLORES VILLELA, OSCAR AND RONALD A. BRANDON. 1992. SIREN LACERTINA (AMPHIBIA: CAUDATA) IN NORTHEASTERN MEXICO AND SOUTHERN TEXAS. ANN. CARNEGIE MUS. 61(4): 289-291.

---

### Specimen:

Texas A & M University, Texas Cooperative Wildlife Collection. 1961. D.R. Blankinship, Catalog # 17524 TCWC. 2 September 1961.

Texas A & M University, Texas Cooperative Wildlife Collection. 1960. D.R. Blankinship, Catalog # 17523 TCWC. 19 April 1960.

---

## Element Occurrence Record

**Scientific Name:** Siren sp. 1

**Occurrence #:** 20

**Eo Id:** 1753

**Common Name:** South Texas Siren (Large Form)

**Track Status:** Track all extant and selected historical EOs

**TX Protection Status:** T

**Global Rank:** GNRQ      **State Rank:** SNR

**Federal Status:**

---

### Location Information:

**Watershed:**

13090001 - Los Olmos

**County Name:**

Hidalgo

**State:**

TX

**Mapsheet:**

26098-C5, Sullivan City

26098-C4, Citrus City

26098-B4, La Joya

26098-B5, Los Ebanos

**Directions:**

1 MILE WEST OF LA JOYA (= 10 MILES WEST OF MISSION) IN LAKE LA JOYA

---

### Survey Information:

**First Observation:** 1941-12-23

**Survey Date:**

**Last Observation:** 1958-05-15

**Eo Type:**

**Eo Rank:**

**Eo Rank Date:**

**Observed Area:**

---

### Comments:

**General**

**Description:**

**Comments:** TNHC SPECIMENS COLLECTED 15 MAY; BCB SPECIMENS (PARATYPES) COLLECTED 23 DECEMBER

**Protection**

**Comments:**

**Management**

**Comments:**

---

### Data:

**EO Data:** BCB SPECIMENS TAKEN FROM WEEDS AT EDGE OF LAKE AT 1600 TO 1630 HRS ON A COOL AND CLOUDY DAY.

---

### Managed Area:

**Managed Area Name**

## Element Occurrence Record

---

### Reference:

#### Citation:

FLORES VILLELA, OSCAR AND RONALD A. BRANDON. 1992. SIREN LACERTINA (AMPHIBIA: CAUDATA) IN NORTHEASTERN MEXICO AND SOUTHERN TEXAS. ANN. CARNEGIE MUS. 61(4): 289-291.

---

### Specimen:

University of Texas at Austin, Texas Natural History Collection. 1958. A.G. Flury, Catalog # 27995 TNHC. 15 May 1958.

Baylor University, Bryce C. Brown Collection at Strecker Museum. 1941. B.C. Brown, Catalog # 75-78, 349-351 BCB, SM. 23 December 1941. Paratypes.

---

# Element Occurrence Record

**Scientific Name:** Tillandsia baileyi

**Occurrence #:** 7      **Eo Id:** 124

**Common Name:** Bailey's ballmoss

**Track Status:** Track all extant and selected historical EOs

**TX Protection Status:**

**Global Rank:** G2G3      **State Rank:** S2

**Federal Status:**

---

## Location Information:

### Watershed:

13090001 - Los Olmos

12110208 - South Laguna Madre

### County Name:

Hidalgo

### State:

TX

### Mapsheet:

26098-B5, Los Ebanos

26098-B4, La Joya

### Directions:

Population 1 - 2 mi southwest of La Joya; Population 2 - 2 mi south of La Joya

---

## Survey Information:

**First Observation:** 1940

**Survey Date:**

**Last Observation:** 1940-11-11

**Eo Type:**

**Eo Rank:**

**Eo Rank Date:**

**Observed Area:**

---

## Comments:

### General

**Description:**

**Comments:**

### Protection

**Comments:**

### Management

**Comments:**

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## Data:

**EO Data:** Population 1 - collected on 11 November 1940; Population 2 - two specimens, one of which was collected on 11 November 1940

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## Managed Area:

**Managed Area Name**

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## Reference:

2011-03-04

## Element Occurrence Record

**Citation:**

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**Specimen:**

Harvard University, Gray Herbarium, Cambridge, MA. 1940. H.R. Reed #36063, Specimen # ? GH. 11 November 1940.

Texas A & M University, Tracy Herbarium. 1940. V.L. Cory #36061, Specimen # 43048 TAES. 11 November 1940.

Texas A & M University, Tracy Herbarium. 1940. H. R. Reed #36062, Specimen # 43045 TAES. 11 November 1940.

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# Element Occurrence Record

**Scientific Name:** Ulmus crassifolia-celtis laevigata series

**Occurrence #:** 5

**Eo Id:** 5968

**Common Name:** Cedar Elm-sugarberry Series

**Track Status:** Track all extant and selected historical EOs

**TX Protection Status:**

**Global Rank:** G4

**State Rank:** S4

**Federal Status:**

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## Location Information:

### Watershed:

13090001 - Los Olmos

### County Name:

Hidalgo

### State:

TX

### Mapsheet:

26098-B4, La Joya

### Directions:

1.6 MILES DUE SOUTH FROM LA JOYA

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## Survey Information:

**First Observation:** 1985

**Survey Date:** 1985-04-02

**Last Observation:** 1985-04-02

**Eo Type:**

**Eo Rank:** C

**Eo Rank Date:**

**Observed Area:** 70.00

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## Comments:

**General Description:** SUGARBERRY-MESQUITE-GRANJENO-CEDAR ELM-BLUEWOOD; HIGHLY IMPACTED; NOT MUCH EBONY AND ONLY A FEW CEDAR ELMS

**Comments:** THIS TRACT WILL END UP IN MEXICO WITH A FEW MORE FLOODS

### Protection

#### Comments:

### Management

#### Comments:

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## Data:

### EO Data:

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## Managed Area:

### Managed Area Name

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## Reference:

### Citation:

DIAMOND, D. D. 1985. FIELD SURVEY TO THE LOWER RIO GRANDE VALLEY OF APRIL 1-5, 1985.

## Element Occurrence Record

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Specimen:

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## Element Occurrence Record

**Scientific Name:** Ulmus crassifolia-celtis laevigata series

**Occurrence #:** 28

**Eo Id:** 6515

**Common Name:** Cedar Elm-sugarberry Series

**Track Status:** Track all extant and selected historical EOs

**TX Protection Status:**

**Global Rank:** G4

**State Rank:** S4

**Federal Status:**

---

### Location Information:

**Watershed:**

**County Name:**

**State:**

**Mapsheet:**

Hidalgo

TX

26098-B4, La Joya

**Directions:**

TERRACES ALONG EL MORILLA BANCO, SOUTHEAST CORNER OF BENTSEN-RIO GRANDE VALLEY SP

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### Survey Information:

**First Observation:**

**Survey Date:** 1990-03-21

**Last Observation:** 1990

**Eo Type:**

**Eo Rank:** C

**Eo Rank Date:** 1990-03-21

**Observed Area:**

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### Comments:

**General**

**Description:**

**Comments:**

**Protection**

**Comments:**

**Management**

**Comments:**

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**Data:**

**EO Data:** DESCRIPTION AND PLANT LIST IN DLI REPORT, SITE 2

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### Managed Area:

**Managed Area Name**

BENTSEN-RIO GRANDE VALLEY STATE PARK

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### Reference:

**Citation:**

TEXAS PARKS & WILDLIFE DEPARTMENT. 1990. BENTSEN-RIO GRANDE VALLEY STATE PARK. SUMMARY OF REPRESENTATIVE PLANT COMMUNITIES.

## Element Occurrence Record

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**Specimen:**

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