

Final Environmental Assessment
Improvements to the Mission and
Common Levee Systems

February 2007

Lead Agency:
United States Section,
International Boundary and
Water Commission

El Paso, Texas



Cooperating Agency:
Texas Parks and Wildlife
Department



Technical Support:

PARSONS
Austin, Texas



COVER SHEET
ENVIRONMENTAL ASSESSMENT
AND
FINDING OF NO SIGNIFICANT IMPACT

IMPROVEMENTS TO THE
MISSION AND COMMON LEVEE SYSTEMS

Lead Agency: United States Section, International Boundary and Water Commission

Cooperating Agency: Texas Parks and Wildlife Department

Proposed Action: Raising approximately 17 miles of the Mission and Common Levee Systems to meet current requirements for flood control.

Report Designation: Environmental Assessment

Abstract:

The USIBWC is considering raising the 12.0-mile Mission Levee System and the 5.3-mile Common Levee System to meet current flood control requirements. The proposed action would increase the height of the levee up to 8 feet depending on location. The height increase would also result in expansion of the levee footprint by lateral extension of the structure. Levee footprint increases for both the Mission and Common Levee systems would occur within the USIBWC right-of-way and extend primarily toward the riverside of the existing levee. Along sections of the Mission Levee System, structural improvements such as slurry walls may be required in segments with seepage potential. In an approximate 1-mile reach, a mechanically stabilized earth structure would be built along the existing levee crown to avoid footprint extension beyond the existing right-of-way easements. A number of natural resources management areas are located near or adjacent to the levee system, including units of the Lower Rio Grande Valley National Wildlife Refuge System and the Bentsen-Rio Grande Valley State Park.

The Environmental Assessment assesses potential environmental impacts of the Proposed Action and the No Action Alternative. Potential impacts on natural, cultural, and other resources were evaluated and mitigation measures were incorporated into the Proposed Action. A Finding of No Significant Impact was issued for the Proposed Action based on a review of the facts and analyses contained in the Environmental Assessment.

FINDING OF NO SIGNIFICANT IMPACT

IMPROVEMENTS TO THE MISSION AND COMMON LEVEE SYSTEMS

AGENCY

United States Section, International Boundary and Water Commission (USIBWC) in cooperation with the Texas Parks and Wildlife Department (TPWD).

BACKGROUND

The USIBWC is authorized to construct, operate, and maintain any project or works projected by the United States of America on the Lower Rio Grande Flood Control Project (LRGFCP) as authorized by the Act of the 74th Congress, Sess. I Ch. 561 (H.R. 6453), approved August 19, 1935 (49 Stat. 660), and codified at 22 USC Section 277, 277a, 277b, 277c, and Acts amendatory thereof and supplementary thereto. The LRGFCP was constructed to protect urban, suburban, and highly developed irrigated farmland along the Rio Grande delta in the United States and Mexico.

The USIBWC, in cooperation with the TPWD, prepared this Final Environmental Assessment (Final EA) for the proposed action of raising the Mission and Common Levee Systems located in Hidalgo County, Texas to improve flood control. These two adjacent levee systems are part of the LRGFCP that extends approximately 180 miles from the Town of Peñitas in south Texas to the Gulf of Mexico. The Mission Levee extends approximately 12 miles along the Rio Grande, downstream from the Town of Peñitas. The Common Levee System, approximately 5.3 miles long, consists of the Common Levee and Anzalduas Dike, which connects the Common Levee to Anzalduas Dam.

PROPOSED ACTION

The Proposed Action would increase flood containment capacity of the Mission and Common Levee Systems to meet the 3-foot freeboard design criterion for flood protection. Height increases between 2 and 6 feet are typically needed to reach the design freeboard value throughout the Mission Levee System. For the Common Levee, typical increases in levee height range from 3 to 8 feet, and for the Anzalduas Dike, from 0 to 4 feet. The increase in levee height will also expand the levee footprint by lateral extension of the structure.

Along with the increase in levee height, structural improvements will also be required for levee segments throughout the downstream reach of the Mission Levee and the Common Levee System where seepage is a potential problem. These improvements will consist of either a slurry cutoff barrier or a riverside impermeable liner.

ALTERNATIVES TO THE PROPOSED ACTION

A *No Action Alternative* was evaluated for the Mission and Common Levee Systems. This alternative will retain the existing configuration of the two systems, as designed over 30 years ago, and the current level of protection currently associated with this system. Under severe storm events, current containment capacity may be insufficient to fully control Rio Grande flooding, with risks to personal safety and potential property damage.

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 which included provisions for both the content and procedural aspects of the required Environmental Assessment. The USIBWC completed an EA of the potential environmental consequences of raising the Mission and Common Levee Systems to meet current requirements for flood control. The EA, which supports this Finding of No Significant Impact, evaluated the Proposed Action and No Action Alternative.

MISSION LEVEE SYSTEM PROPOSED ACTION AND ALTERNATIVES

NO ACTION ALTERNATIVE

The No Action Alternative was evaluated as the single alternative action to the Proposed Action. The No Action Alternative will retain the current configuration of the Mission Levee System, with no impacts to biological and cultural resources, land use, community resources, or environmental health issues. In terms of flood protection, however, current containment capacity under the No Action Alternative may be insufficient to fully control Rio Grande flooding under severe storm events, with associated risks to personal safety and property.

PROPOSED ACTION

Biological Resources. Improvements to the Mission Levee corridor would affect *plant communities* through excavation and fill activities. Impacts would occur on the levee sidewalls where fill will be added, and within the expanded levee footprint area. Potential acreage removed and impacts to four vegetation communities identified along the Mission Levee project area are as follows: 1) removal of up to 34.2 acres of *mesquite-acacia woodland*, in various stages of succession, along the levee corridor, (approximately 19 percent of thorn woodland located within the levee right-of-way); 2) removal of up to 77.5 acres of *herbaceous vegetation* along the levee corridor; impacts would be short-term as herbaceous vegetation would be rapidly re-established and is represented primarily by Bufflegrass, an invasive species; 3) up to 1.1 acres of *wetlands/riparian communities* will be modified along an irrigation intake channel; these communities are represented primarily by phragmites – arundo emergent and semi-emergent plants; and 4) minimum removal of *agricultural lands* is anticipated, less than 0.5 acre.

Thorn woodlands and wetlands along the Mission levee corridor provide the best quality wildlife habitat. Some wildlife species may utilize these areas as transit corridors, but that usage is likely limited. Natural resource areas with quality wildlife habitat adjacent to the riverside of the Mission Levee system occupy approximately 33 percent of the 12.1 miles total length, as follows: 2.4 miles along the Lower Rio Grande Valley (LRGV) National Wildlife Refuge; 1.3 miles along the Bentsen-Rio Grande Valley State Park; and 0.3 mile along the Chihuahua Woods Preserve. Based on regional distribution, 26 Threatened and Endangered (T&E) species habitat could be found in the project area. Improvements to the existing levee system are not likely to affect those habitats. Consultation with TPWD and the U.S. Fish & Wildlife Service (USFWS) will be conducted to schedule construction activities to minimize potential impacts on those species and their habitat.

Twenty-one *wetlands* and open water areas that met criteria as jurisdictional waters of the United States were identified within the Mission Levee right-of-way (ROW). None of these wetlands will be directly impacted by the levee expansion project. A single wetlands area, located outside the current levee ROW but within the potential levee expansion area, will be impacted by construction activities at the new levee crossing at the Peñitas Pumping Plant intake channel. Construction activities may remove approximately 1 acre from wetlands that flank the irrigation intake channel.

Cultural Resources. According to a preliminary cultural resources evaluation conducted in support of the EA preparation, improvements to the Mission Levee System have a potential to impact *historic archaeological materials* at six locations, as well as a known prehistoric archaeological resource (41HG143). No areas considered to be high probability for the occurrence of unknown prehistoric archaeological sites were identified in previous studies or during the current archival research. However, areas of historic occupation sometimes contain a prehistoric component and should also be considered as possible locations for prehistoric archaeological sites because European settlers also considered prehistorically utilized landform surfaces (stable surfaces) as desirable living surfaces. Four *historic-age resources* exist within the current Mission Levee ROW and are engineering elements of the levee system. These resources will likely be redesigned to some extent by proposed modifications to the levee, or may undergo a moderate visual impact by encroachment of the expanded levee footprint. One additional historical resource, the La Lomita Chapel, is located near the Mission Levee project within a National Register of Historic Places District, but outside the potential effects area.

Water Resources. Improvements to the levee system will increase flood containment capacity to control the design flood event as evaluated by hydraulic modeling. A minimum increase in floodwater surface elevation, less than 1 inch, is anticipated as a result of the levee height increase for the Mission Levee System. Levee footprint expansion will not affect water bodies with exception of the new crossing at the Peñitas Pumping Plant intake channel.

Land Use. The approximate 113-acre expansion of the Mission Levee will impact mostly herbaceous vegetation dominated by invasive species (approximately 78 acres). Up to 34 acres of thorn woodland, a higher quality habitat, will also be removed. Removal of agricultural lands will be limited to 0.5 acre. Construction impacts along

sections of the Riverside Subdivision of Madero will be temporarily affected by construction activities.

Community Resources. Improvements to the Mission Levee System, individually or in combination with the Common Levee System, represent an influx of federal funds into Hidalgo County and will have a positive local economic impact; however, the benefit will be limited to the construction period and represents less than 0.2 percent of the annual county employment, income, and sales values. No adverse impacts to disproportionately high minority and low-income populations were identified. Minimum utilization of public roads during construction is anticipated; a temporary increase in access road use will be required for equipment mobilization to staging areas.

Environmental Health Issues. Improvements to the Mission Levee System represent less than 1 percent of the Hidalgo County annual emissions inventory for five air criteria pollutants. Moderate increases in ambient noise levels will result from excavation and fill activities, with no transient or long-term exposures above threshold values for adverse impacts. No waste storage or disposal sites were identified within the expanded Mission Levee footprint and its vicinity.

Indirect Impacts. No significant indirect impacts of the Mission Levee Improvements were identified.

Best Management Practices and Mitigation. Engineering design measures will include optimization of the levee expansion alignment to the extent possible to avoid impact to sensitive vegetation and natural resources management areas, including Bentsen-Rio Grande Valley State Park and the LRGV National Wildlife Refuge. Mitigation for cultural resources, as required, will be coordinated between the Texas Historic Commission and the USIBWC. Levee expansion will be rerouted across the Edinburg irrigation intake channel to protect the historic-age Peñitas pumping station. Prior to construction, site surveys will determine the type (herbaceous or woody) vegetation to be removed and separation between construction corridor(s) and boundaries of wetlands.

During construction, best management practices (BMP) include development of a storm water pollution prevention plan to minimize impacts of receiving waters, including use of sediment barriers and soil wetting to minimize erosion. To the extent possible, construction activities will be scheduled to occur outside the migratory bird nesting season.

Following construction, expanded levees and the construction corridor will be promptly revegetated using native herbaceous or wooded indigenous species, as agreed with the natural resources management agency where the corridor is located.

COMMON LEEVE SYSTEM PROPOSED ACTION AND ALTERNATIVES

NO ACTION ALTERNATIVE

The No Action Alternative was evaluated as the single alternative action to the Proposed Action. The No Action Alternative will retain the current configuration of the Common Levee System, with no impacts to biological and cultural resources, land use, and soil, community resources, or environmental health. In terms of flood protection, however, current containment capacity under the No Action Alternative may be insufficient to fully control Rio Grande flooding under severe storm events, with associated risks to personal safety and property.

PROPOSED ACTION

Biological Resources. The Common Levee System corridor runs primarily through agricultural areas. Approximately 1 mile of the total length of the 5.2-mile levee system runs along two units of the LRGV National Wildlife Refuge. No thorn woodland will be removed along the levee expansion, while 3.9 acres of low density woodland will be removed along Anzalduas Dike. The 3.9 acres along the Anzalduas Dike represent 10 percent of the total area of thorn woodland within the Common Levee System (including both the Common Levee and the Anzalduas Dike areas). A single wetlands/open water area located within the Common Levee ROW is located outside the 100-foot buffer area for the proposed levee expansion, and will not be affected by construction activities. Removal of T&E species habitat, including woodland habitat suitable for the ocelot, would be minimal along the Common Levee System corridor. For other species whose habitat is potentially present near the levee corridor, construction activities will be scheduled to minimize impacts to those species and their habitat.

Cultural Resources. No areas of high probability for the occurrence of unknown prehistoric archaeological sites have been reported along the Common Levee System, and none were identified during the current archival research conducted in preparation of the EA. Preliminary investigations indicate that two historic-age resources exist within the current Common Levee System ROW and are engineering elements of the levee system. These resources will undergo minor modifications at the levee tie-ins, or may undergo a moderate visual impact by the encroachment of the expanded levee footprint.

Water Resources. The Common Levee System was evaluated with the updated hydraulic model to determine if changes to water surface elevations will be affected by the proposed improvements to the levee system. As in the case of the Mission Levee System, a minimum increase in floodwater surface elevation is anticipated as a result of the levee height increase.

Land Use. The proposed expansion of the Common Levee System will occur entirely within the ROW. No urban development is located near the proposed levee expansion area. The expansion will remove approximately 62 acres of herbaceous vegetation along the Common Levee and approximately 6 acres of herbaceous vegetation along the Anzalduas Dike. Alignment of the levee expansion will be adjusted to minimize removal

of established wooded vegetation along the Gabrielson and Cottam Units of the LRGV National Wildlife Refuge. Anzalduas Dam County Park, adjacent to Anzalduas Dike, will be temporarily affected during project construction. No impacts to agricultural lands are anticipated.

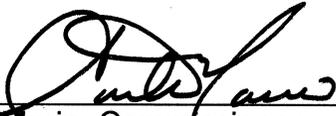
Community Resources. Improvements to the Common Levee System, individually or in combination with the Mission Levee System, represent an influx of federal funds into Hidalgo County that will have a positive local economic impact; however, the benefit will be limited to the construction period and represents less than 0.2 percent of the annual county employment, income, and sales values. No adverse impacts to disproportionately high minority and low-income populations were identified. Minimum utilization of public roads during construction is anticipated; a temporary increase in use of the access road will be required for equipment mobilization to staging areas.

Environmental Health Issues. Construction of the Common Levee System represents less than 1 percent of the Hidalgo County annual emissions inventory for five air criteria pollutants. Moderate increases in ambient noise levels will result from excavation and fill activities, with no transient or long-term exposures above threshold values for adverse impacts. No waste storage or disposal sites were identified within the expanded levee footprint and its vicinity.

Best Management Practices and Mitigation. Engineering design measures will include optimization of the levee expansion alignment to the extent possible to avoid impact to sensitive vegetation and natural resources management areas within the LRGV National Wildlife Area. Mitigation for cultural resources, as required, will be coordinated between the Texas Historic Commission and the USIBWC. During construction, BMPs include development of a storm water pollution prevention plan to minimize impacts of receiving waters, including use of sediment barriers and soil wetting to minimize erosion. Following construction, expanded levees and the construction corridor will be promptly revegetated using native herbaceous indigenous species.

DECISION

Based on my review of the facts and analyses contained in the Environmental Assessment, I conclude that implementation of the Proposed Action to raise the Mission Levee and Common Levee Systems will 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.



Carlos Marin, Commissioner
International Boundary and Water Commission,
United States Section

12/21/06
Date

ENVIRONMENTAL ASSESSMENT
IMPROVEMENTS TO THE MISSION AND COMMON LEVEE SYSTEMS

Lead Agency:

**UNITED STATES SECTION,
INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES AND MEXICO**

Cooperating Agency:

**TEXAS PARKS AND
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USIBWC Contract IBM04D0002, Task Order IBM05T0022

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ACRONYMS AND ABBREVIATIONS

amsl	above mean sea level
AQCR	air quality control region
AST	aboveground storage tank
BMP	best management practices
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CFR	Code of Federal Regulations
cfs	cubic feet per second
dba	A-weighted sound level in decibels
DNL	day-night average sound level
EA	environmental assessment
EIS	environmental impact statement
ERNS	Emergency Response Notification System of Spills
FM	farm-to-market
GENS	generator of hazardous waste
HPA	high probability area
IBWC	International Boundary and Water Commission
LGGROUP	LopezGarcia Group
LRGFCP	Lower Rio Grande Flood Control Project
LRGV	Lower Rio Grande Valley
MSE	mechanically stabilized earth
NAAQS	National Ambient Air Quality Standards
NABA	North American Butterfly Association
MxIBWC	Mexican Section, International Boundary and Water Commission
NEPA	National Environmental Policy Act
NPL	National Priority List
NRCS	Natural Resources Conservation Service
RCRA	Resource Conservation and Recovery Act
ROW	right-of-way
SWP3	storm water pollution prevention plan
T&E	threatened and endangered
TCEQ	Texas Commission on Environmental Quality
TPWD	Texas Parks and Wildlife Department
TSD	transport, storage, and disposal
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
USIBWC	United States Section, International Boundary and Water Commission
UST	underground storage tank

SECTION 1

PURPOSE OF AND NEED FOR THE PROPOSED ACTION

This section discusses the purpose of and need for the proposed action; the authority of the United States Section, International Boundary and Water Commission (USIBWC) to conduct the project as part of its mission; the scope of the environmental review; a summary of environmental compliance requirements; and the organization of this document.

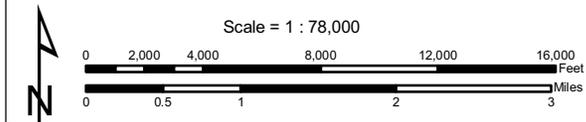
1.1 PURPOSE OF AND NEED FOR ACTION

The USIBWC, in cooperation with the Texas Parks and Wildlife Department (TPWD), prepared this Draft Environmental Assessment (EA) for the proposed action of raising the Mission and Common Levee Systems located in Hidalgo County, Texas. These two adjacent levee systems are part of the Lower Rio Grande Flood Control Project (LRGFCP) that extends approximately 180 miles from the Town of Peñitas in south Texas to the Gulf of Mexico.

The USIBWC identified the Mission and Common Levee Systems as priority areas for improved flood containment. The Mission Levee extends 12.1 miles along the Rio Grande, downstream from the Town of Peñitas. The Common Levee System, 5.2 long, consists of the Common Levee and Anzalduas Dike, which connects the levee to Anzalduas Dam. The need for levee improvements was determined from hydraulic modeling results indicating that typical height increases of up to 8 feet would be required to meet current design criteria for flood protection along the Mission and Common Levee Systems (USIBWC 2003a).

In addition to the flood containment evaluation, the Engineer Research and Development Center of the U.S. Army Corps of Engineers (USACE) was commissioned by the USIBWC to assess structural integrity of the entire LRGFCP levee system (USACE 2003). The assessment identified a need for structural improvements along a number of segments of the Mission and Common Levee Systems where seepage control would likely be required.

Figure 1.1 presents an overview of the project area in south Texas. Levee miles along each system are numbered starting from their upstream reach: from the Town of Peñitas for the Mission System, and from Anzalduas Dam for the Common Levee System.



Mission and Common Levee Systems
 Figure 1.1- Project Location Map



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1.2 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 (MxIBWC). 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, the third of which covers the proposed raising of the Mission and Common Levee Systems:

- 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 and 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 land along the Rio Grande from floods through levee and floodway projects, and solution of border sanitation and other border water quality problems;
- Preservation of the Rio Grande and Colorado River as the international boundary; and
- Demarcation of the land boundary.

1.3 SCOPE OF THE ENVIRONMENTAL REVIEW

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 issued regulations to implement NEPA that include provisions for both the content and procedural aspects of the required environmental analysis. In 1978, the Council on Environmental Quality 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 Specifics Aspects of the Environment and Applicable Executive Orders* (46 FR 44083, September 2, 1981; Appendix 501-A). These federal regulations establish both the administrative process and substantive scope of the environmental impact evaluation designed to ensure that deciding authorities have a proper understanding of the potential environmental consequences of a contemplated course of action. The Council on Environmental Quality regulations requires that an EA:

- Briefly provide evidence and analysis to determine whether the proposed action might have significant effects that would require preparation of an environmental impact

statement (EIS). If analysis determines that the environmental effects would not be significant, a Finding of No Significant Impact is prepared;

- Facilitate the preparation of an EIS, when required; or
- Aid an agency's compliance with NEPA when no EIS is necessary.

This EA identifies and evaluates the potential environmental consequences that may result from implementation of the Proposed Action and No Action alternative. It also characterizes the affected environment and describes, when required, mitigation measures to prevent or minimize impacts to environmental resources. The following resource areas are analyzed for potential environmental consequences: biological resources; cultural resources; water resources; land use; and community resources (socioeconomics, environmental justice, and transportation). Environmental health issues are also evaluated (air quality, noise, and hazardous and toxic waste).

Analyses of environmental resources for the affected environment and environmental consequences are based on a potential impact corridor around the existing Mission and Common Levee Systems, and the proposed area for partial rerouting of the levee system across the Edinburg intake channel (at Project Mile 0.6 of the Mission Levee System).

Analyses of environmental consequences also include potential indirect impacts adjacent to the levee corridor and the region depending on the resource and its relationship to the proposed action and alternatives. Reference values for air quality, cultural resources, socioeconomics, and environmental justice are evaluated on a regional basis (county level).

Results of studies conducted in support of the EA preparation were reported in the document *Technical Support Studies for the Environmental Assessment of Flood Control Improvements to the Mission and Common Levee Systems* (Parsons 2006). Findings of these studies were used to document baseline conditions for biological resources, cultural resources, wetlands, and waste storage and disposal. The report also documents potential performance of the levee system based on hydraulic model simulations, and an evaluation of environmental compliance requirements and coordination activities. A copy of the Technical Support Studies report was previously provided in CD format with the Draft EA.

The most recent information is used for the impact analyses. Impacts are considered for the time period covered under the construction period and subsequent flood control improvement conditions. Potential environmental consequences of the Mission and Common Levee Systems for each resource area evaluated are discussed separately in Section 4 of this EA.

1.4 ENVIRONMENTAL COORDINATION AND COMPLIANCE ANALYSIS

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
Biological Resources		
U.S. Fish and Wildlife Service (USFWS)	Endangered Species Act of 1973 (Public Law 93-205) and amendments of 1988 (Public Law 100-478) FWS Coordination Act (916 USC 661, <i>et seq.</i>)	Section 7 of the Act requires formal consultation when significant adverse impacts to federally-listed threatened and endangered species, and migratory birds, could occur. Consultation with USFWS regarding impacts on various units of the LRGV National Wildlife Refuge adjacent to the levee systems.
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 <i>Mission Levee:</i> Bentsen-Rio Grande Valley State Park	Coordination with Wildlife Division concerning potential impacts of the levee raising project to wildlife. Coordination with State Parks Division concerning potential impacts on park tracts.
The Nature Conservancy	<i>Mission Levee:</i> Chihuahua Woodlands Preserve	Coordination concerning potential impacts on Chihuahua Woodlands Preserve.
North American Butterfly Association (NABA)	<i>Mission Levee:</i> NABA International Butterfly Park	Coordination concerning potential impacts on future development areas of the International Butterfly Park.
Cultural Resources		
Texas Historic Commission (THC)	National Historic Preservation Act of 1966, as amended (16 USC 470, <i>et seq.</i>)	Compliance with Section 106 requirements for potential impacts to archaeological and historic resources.
Water Resources		
U.S. Army Corps of Engineers (USACE)	<i>Mission Levee:</i> Section 10 of the Rivers and Harbors Act of 1899 Section 404 of the Clean Water Act (33 USC 1344)	Permit application for crossing the intake channel of the Peñitas Pumping Plant. Mitigation plan and permit application for potential impacts to wetlands.
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 NPDES construction permit and Storm Water Pollution Prevention Plan preparation. Section 404 Certification; coordination is typically a function of the USACE permitting process.
Other Issues		
Natural Resources Conservation Service (NRCS)	Farmland Protection Policy Act	Determination that no unique or prime farmland would be affected by the federal project.
U.S. Customs and Border Patrol	Levee Road Usage	Coordination during construction activities.

Agency or Organization	Regulation or Issue	Level of USIBWC Coordination
City of Mission	<i>Mission Levee:</i> Military Road expansion. <i>Mission Levee;</i> La Lomita Chapel Historical Park	Compliance of expansion plans with updated flood control requirements. Coordination for construction work in the park vicinity.
Hidalgo County	<i>Anzalduas Dike:</i> Anzalduas Dam County Park	Coordination for construction work along the park.
Irrigation Districts	<i>Mission Levee:</i> Modifications to intake channel and construction along irrigation canals	Hidalgo County Irrigation District No. One: changes to intake channel in front of the Peñitas Pumping Plant. United Irrigation District of Hidalgo County: levee construction along an approximately 3-mile segment of the Mission Main Canal. Hidalgo County Irrigation District No. 19: levee construction along a 1.7-mile segment of the Granjeno Canal.

1.5 ORGANIZATION OF THE ENVIRONMENTAL ASSESSMENT

This Environmental Assessment is composed of the following sections:

Section 1 identifies the purpose of and need for the Proposed Action, defines the scope of the environmental review, and provides an environmental coordination and compliance analysis.

Section 2 describes the Proposed Action and No Action Alternative, and summarizes potential environmental impacts.

Section 3 presents information on the affected environment, providing a basis for analyzing the impacts of the Proposed Action.

Section 4 analyzes the environmental consequences of the flood control improvements of the Mission and Common Levee Systems.

Section 5 describes best management practices for construction and potential mitigation actions.

Section 6 describes the consultation process and lists persons and agencies consulted, and contributors to the EA preparation.

Section 7 is a list of cited references and source documents relevant to preparation of the EA.

Support documentation includes detailed maps of levee alignment, right-of-way, and potential expansion area (Appendix A) and environmental assessment consultation and review comments (Appendix B).

SECTION 2 DESCRIPTION OF PROPOSED ACTION

This section presents a description of the Proposed Action for improvements of the Mission Levee System and Common Levee System. A summary of potential environmental impacts, subsequently discussed in Section 4, is provided at the end of Section 2. An overview of the Mission and Common Levee Systems is presented in Figures 2.1 and 2.2, respectively.

2.1 LEVEE SYSTEM DESCRIPTION

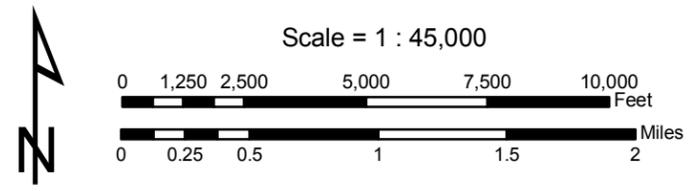
The Mission Levee extends approximately 12 miles south of the City of Mission, from the Town of Peñitas to its junction with the Banker/Main Floodway (U.S. interior floodway). The Common Levee System encompasses the Common Levee and Anzalduas Dike. The Common Levee extends approximately 4.5 miles along the Banker/Main Floodway to its junction with the River Levee segment surrounding the City of Hidalgo. Anzalduas Dike is an approximate 0.7 mile segment that extends from the north end of Anzalduas Dam to the upstream end of the Common Levee.

The Mission and Common Levee Systems are part of the LRGFCP that extends approximately 180 miles from the Town of Peñitas in south Texas to the Gulf of Mexico. The LRGFCP was constructed to protect urban, suburban, and highly developed irrigated farm lands in the Rio Grande delta from floods, in both the United States and Mexico. The LRGFCP includes 102 miles of grass-covered earthen structures along the United States margin of the Rio Grande and Anzalduas Diversion Dam. The dam diverts floodwaters into a United States interior floodway system (Banker/Main Floodway) flanked by 168 miles of levees. A second dam, Retamal Diversion Dam, routes Rio Grande floodwaters into Mexico's interior floodway. The distance between the United States and Mexican levees along the Rio Grande ranges from approximately 400 feet to 3 miles.

2.1.1 Mission Levee System

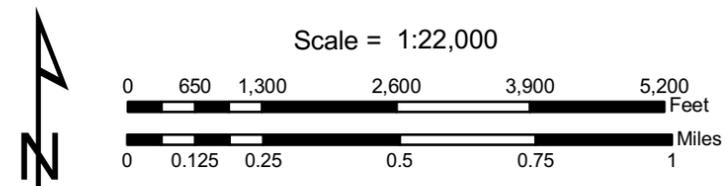
The Mission Levee System is illustrated in Figure 2.1. More detailed information is presented in 2-mile segments in Appendix A (Figures A1 through A6). The Mission Levee extends approximately 12 miles south of the City of Mission, from the Town of Peñitas (Mile 0.0) to its junction with the Banker Floodway (U.S. Interior floodway). The levee right-of-way (ROW) runs primarily through agricultural areas. Two irrigation canals border approximately 5 miles of the levee, on the landside: the Mission Main Canal (Project Miles 5.3 to 8.3), and the Granjeno Canal (Project Miles 10.2 to 12). The following wildlife management areas are located along the levee ROW or its vicinity:

- The Abram West, Abram East, La Parida Banco, El Morillo Banco, and Madero Units of the U.S. Fish and Wildlife Service (USFWS) Lower Rio Grande Valley (LRGV) National Wildlife Refuge.



- ▲ Mile Markers
- Existing Levee Footprint
- USFWS National Wildlife Refuge
- The Nature Conservancy Preserve
- TPWD State Park

Mission Levee System
Figure 2.1 - Location Map
 Environmental Assessment
 International Boundary and Water Commission
 United States Section
PARSONS



- ▲ Mile Markers
- Existing Levee Footprint
- USFWS National Wildlife Refuge
- Anzalduas County Park

**Common Levee System
Figure 2.2 - Location Map**

Environmental Assessment
International Boundary and Water Commission
United States Section

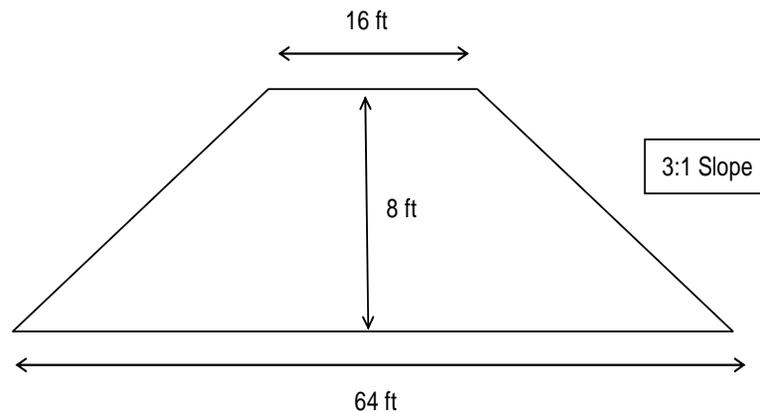


PARSONS

- Three tracts recently incorporated by the TPWD into the Bentsen-Rio Grande Valley State Park that are located within, or adjacent to, the levee ROW.
- One tract on the riverside of the levee acquired by the Nature Conservancy is part of the Chihuahuah Woods Preserve.
- A land parcel largely used in agriculture, acquired by the North American Butterfly Association (NABA) for additional development of the International Butterfly Park. NABA is a membership-base, not-for-profit organization working to increase conservation of butterflies in the United States, Mexico, and Canada.

Urban development in the vicinity of the Mission Levee System is primarily limited to the unincorporated towns of Peñitas, Abram, and Madero. Nearly all residential areas are located near the levee landside with the single exception of the Chimney Park trailer/RV park in Madero, located along the riverside of the levee at Project Miles 10.1 to 10.4. No residential developments are located, or allowed, within the levee system ROW.

The existing levee is a raised trapezoidal compacted-earth structure with a crown width of 16 feet, a typical height ranging from 6 to 10 feet, and an approximate 3:1 side slope ratio (units of horizontal run in feet per foot of vertical rise). The existing levee footprint ranges from 50 to 80 feet, depending on location. A typical levee cross-section is shown in the diagram below.



The levee crown is an unpaved service road with restricted public access throughout most of the Mission Levee System. In the downstream reach, part of the levee crown is a public road that includes a segment of Military Road along the Mission Inlet Closure (Project Miles 8.3 to 9.1). The levee crosses the intake channels of the Edinburg Canal and the Mission Main Canal. Across the Edinburg intake channel, the levee structure is replaced by a concrete retaining wall attached to the Peñitas Pumping Plant of the Hidalgo County Irrigation District No. One (Project Mile 0.6). The levee structure is complemented by a concrete retaining wall at the crossing of the Mission Main Canal of the United Irrigation District of Hidalgo County (Project Mile 5.3).

2.1.2 Common Levee System

Figure 2.2 illustrates the Common Levee and Anzalduas Dike components of the Common Levee System. More detailed information is presented in Appendix A (Figures A7 and A8). Similar to the previously described Mission Levee geometry, the Common Levee System is a raised trapezoidal, compacted-earth structure with a typical height from 8 to 10 feet, and an approximate 3:1 side slope ratio (units of horizontal run in feet per foot of vertical rise). The existing levee footprint ranges from 60 to 80 feet, depending on location.

Anzalduas Dike

Anzalduas Dike, the upstream reach of the levee system, is an approximate 0.7-mile segment that extends from the north end of Anzalduas Dam to the dike junction with the Common Levee at the Banker weir. The entire length of Anzalduas Dike is adjacent to Anzalduas Dam County Park, operated and maintained by Hidalgo County. Most of the park land was acquired by the USIBWC as part of the flood control project and subsequently leased to the County for operation.

Common Levee

The Common Levee extends approximately 4.5 miles along the Banker/Main Floodway (Project Mile 0.7) to its junction with the River Levee segment surrounding the City of Hidalgo (Project Mile 5.2). This levee system serves as both the River Levee and the Banker/Main Floodway Levee.

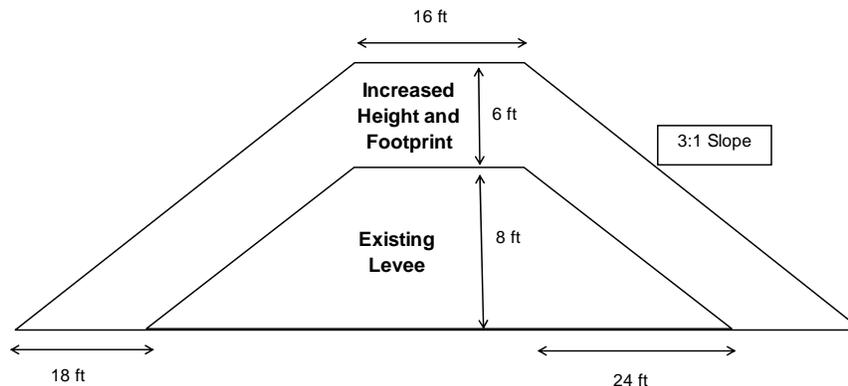
The Common Levee ROW runs mainly through agricultural areas. There are no irrigation canals or residential developments on either side of the Common Levee. Parcels owned in fee by the USIBWC occupy the Banker Floodway that extends from the Banker Weir (Project Mile 0.7) to Rincon Road (Project Mile 2.6). On the riverside, this reach of the levee is almost entirely flanked by the Gabrielson and Cottam Units of the LRGV National Wildlife Refuge.

Downstream from Rincon Road (Project Mile 2.6), the floodway is referred to as the Main Floodway. Within the Main Floodway, parcels in which the USIBWC has flowage easements are privately owned. These parcels serve as flood easements used for annual crop agriculture where building of permanent structures, or development of woody vegetation, are not allowed. On the downstream reach of the Common Levee, outside the Main Floodway, agricultural parcels occupy most of the land (Project Miles 2.6 to 5.1).

2.2 PROPOSED ACTION

The Proposed Action would increase flood containment capacity of the Mission and Common Levee Systems to meet the 3-foot freeboard design criterion for flood protection. Throughout the Mission Levee System, height increases between 2 and 6 feet are typically needed to reach the design freeboard value. For the Common Levee, typical increases in levee height range from 3 to 8 feet, and for the Anzalduas Dike, from 0 to 4 feet.

The proposed increase in levee height would also expand the levee footprint by lateral extension of the structure. For a typical cross-sectional area (8-foot elevation, 3:1 slope, and 16-foot crown), a 6-foot increase in levee height would result in a 36-foot offset increase in footprint. In this example, a current width value of 64 feet would expand to 100 feet as a result of the increased levee height. A typical cross-sectional area of the expanded levee is shown in the diagram below.



Expansion corridor width is commonly measured as the distance from the current levee centerline to the toe of the expanded levee. In the previous example, the distance from centerline to the toe is 32 feet for the existing levee, and 50 feet for the expanded levee (32 feet current distance to the toe plus an 18-foot expansion).

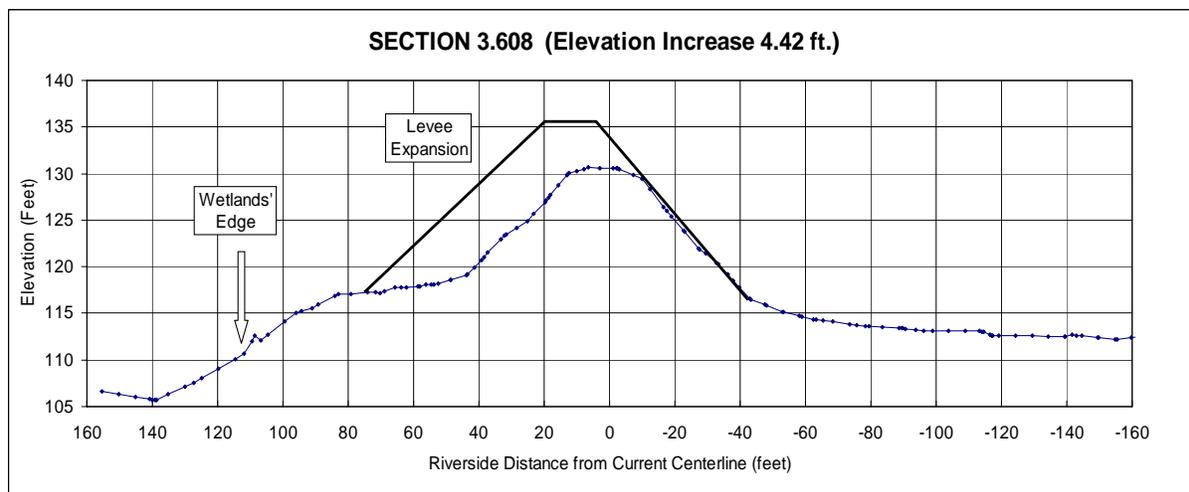
Along with the increase in levee height, structural improvements would also be required for levee segments throughout an approximate 7.5-mile reach of the Mission Levee System where seepage is a potential problem (downstream of Project Mile 4.7). Structural improvements are also likely required for the Common Levee. These improvements would consist of either a slurry cutoff barrier or a riverside impermeable liner. The slurry barrier would be installed at a closed trench on the riverside toe of the expanded levee. The impermeable liner would be buried to a specified depth (18-30 inches) along the levee slope, and from some distance from the riverside toe to above the riverside shoulder of the levee.

2.2.1 Mission Levee System

Levee Alignment

While the centered levee expansion previously described is commonly used, an offset expansion is used when required due to insufficient ROW availability or existing infrastructure. This offset expansion would take place entirely on the landside of the levee or the riverside, as allowed by the available ROW. Landside expansion, away from the river, is the preferred engineering option because it maximizes the containment capacity of the flood control system.

A typical expansion is illustrated below for a cross-sectional area at Project Mile 3.608 where the required increase in levee elevation is 4.42 feet. The height increase would extend the levee riverside toe to an approximate 73-foot distance from the current centerline from a current value of 40 feet. Taking into account a temporary 12-foot access corridor that would be required during construction, the potential direct impact corridor at that location would be 85 feet from centerline. The diagram below also indicates a minimum 40-foot separation between the expanded levee toe and the edge of wetlands present at that location, as determined during field surveys.



Landside expansion is the preferred engineering option throughout more than half of the Mission Levee System. For approximately 5 miles of the flood control system, however, riverside expansion would be required due to the presence of irrigation canals on the landside of the levee. These canals extend from Project Miles 5.3 to 8.3 (Mission Main Canal), and from Project Miles 10.2 to 12 (Granjeno Canal).

Crossing of the Edinburg Irrigation Intake Channel

The existing levee system crosses the Edinburg irrigation intake channel at Project Mile 0.6. At this location, a concrete floodwall attached to the Peñitas Pumping Plant is used instead of the compacted-earth levee structure. For the increase in levee height, the Peñitas Pumping Plant, a potential historical site, would not be modified by the project. Levee

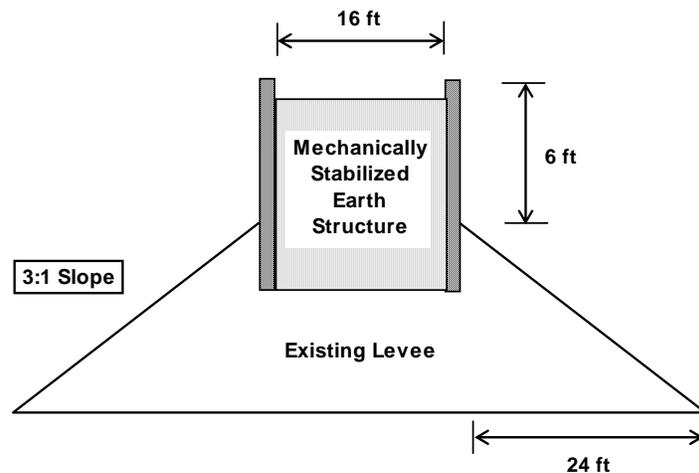
expansion would be accomplished by construction of a new crossing, using an earthen embankment similar to that used in the remaining levee system. The embankment, placed away from the pumping plant, would provide a new roadway for traffic crossing over the channel. To maintain the operability of the pumping plant, the new embankment would be built over intake pipes with a diameter similar to those of the pumping plant intake. This crossing of the intake channel, which would be approximately 500 feet long, is the only segment of the improved Mission Levee requiring construction outside the current ROW.

Military Road Expansion

A segment of Military Road runs along Project Miles 8.3 to 9.1 of the levee system (the Mission Inlet Closure). Military Road expansion is a project currently being implemented by the City of Mission and Hidalgo County as a separate project from the levee improvement by the USIBWC. This road project, in agreement with the USIBWC, has been designed to meet height requirements of the Mission Levee flood control system.

Madero Reach of the Levee System

An approximate 0.5-mile segment of the Mission Levee System, from Project Miles 10.0 to 10.5, runs along a trailer/RV park on the riverside of Madero. Along this reach, the narrow ROW available restricts lateral expansion of the levee. As an alternative, the current levee alignment and footprint would be retained by building a mechanically stabilized earth (MSE) structure to increase levee height and obtain the required flood containment capability. The MSE is a raised structure composed of compacted earth reinforced with concrete face panels and placed along the existing levee crown. The top of the existing levee would be excavated to a maximum depth of 4 feet to accommodate the structure base. The excavation depth would decrease as the structure height decreases, but a minimum of 1 foot of excavation would be required to tie the new construction to the impervious core of the existing levee. The diagram below illustrates a conceptual cross-sectional area of an MSE structure for a 6-foot increase in levee height.



2.2.2 Common Levee System

Levee footprint increases for the Common Levee/Anzalduas Dike would occur entirely within the ROW. Footprint expansion outside the Banker/Main Floodway is the preferred option to maximize its flood containment capacity. This alignment would be partially modified when warranted to minimize footprint expansion impacts to the Gabrielson and Cottam Units of the LRGV National Wildlife Refuge and other established wooded vegetation.

2.3 ALTERNATIVES CONSIDERED AND ELIMINATED FROM DETAILED STUDY

Raising the floodwall in place at the Peñitas Pumping Plant was considered to increase flood containment at that location. The alternative was removed from consideration because it would disrupt pumping plant operations and impact a potential historical structure. Continuing the levee across the intake channel was determined to be a better option to continue plant operations and provide a roadway for traffic crossing over the channel.

2.4 OTHER ACTIONS WITH POTENTIAL CUMULATIVE IMPACTS

Complete environmental impact analysis of the alternatives must consider cumulative impacts due to other actions. A cumulative impact, as defined by the Council on Environmental Quality (40 CFR 1508.7), is the "...impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts will be evaluated, regardless of which agency (federal or non-federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." The USIBWC reviewed a number of reasonably foreseeable actions with potential cumulative effects. Two projects were identified along the Mission Levee System, and none for the Common Levee System.

- *Military Road Expansion.* The City of Mission will expand the Military Road segment along the Mission Inlet closure, from a two-lane to a four-lane roadway. Since this project has been coordinated with the USIBWC, this segment of Military Road will be raised to match the increased levee elevation required for flood protection.
- *Anzalduas International Bridge:* The City of McAllen, in cooperation with other public and private organizations, will build a new international bridge that will cross the Common Levee System. No adverse effects of the bridge construction on the improved levee system is anticipated because the structure will be built over pillars with several feet of clearance above the new levee elevation. Conversely, levee improvements will not impact the bridge structure because the levee clearance will allow adequate operation of construction equipment.

2.5 SUMMARY COMPARISON OF ENVIRONMENTAL CONSEQUENCES OF THE ALTERNATIVES

2.5.1 Mission Levee System

No Action Alternative

The No Action Alternative would retain the current configuration of the Mission Levee System with no impacts to biological and cultural resources, land use, community resources, or environmental health issues. In terms of flood protection, however, current containment capacity under the No Action Alternative may be insufficient to fully control Rio Grande flooding under severe storm events, with associated risks to personal safety and property.

Proposed Action

Table 2.1 summarizes potential environmental consequences of the proposed improvements to the Mission Levee System. The proposed increase in levee height would provide improved flood protection. The levee footprint would modify approximately 113 acres, the majority of which (78 acres) is composed of herbaceous vegetation.

Table 2.1 Summary of Environmental Impacts for the Mission Levee Proposed Action

RESOURCE AREA	Environmental Impacts
Biological Resources (Subsection 4.1)	<p><i>Vegetation.</i> Improvements to the Mission Levee would remove approximately 78 acres of herbaceous vegetation, 34 acres of Mesquite-Acacia woodland, and 0.5 acre of agricultural land.</p> <p><i>Wildlife.</i> Removal of approximately 34 acres of Mesquite-Acacia woodland may have a negative impact on wildlife habitat. Of the 25 threatened and endangered species with potential habitat near the ROW and levee expansion areas, only ocelot habitat would be negatively affected.</p> <p><i>Wetlands.</i> The single identified wetlands area (1.1 acres) is located within the Mission Levee expansion area, but is outside the ROW. There are approximately 40 acres of other wetlands/riparian communities along the levee, none directly impacted by levee construction.</p>
Cultural Resources (Subsection 4.2)	<p><i>Archaeological Resources.</i> Levee improvements have a low potential to impact one known prehistoric archaeological resource. Impacts to historic archaeological materials at six locations are possible but not likely to be significant.</p> <p><i>Historical and Architectural Resources.</i> Resources located within levee expansion areas may be impacted by construction activities. Four potential historic-age engineering resources within the current ROW may be impacted by construction activities. Impacts to those resources are possible but not likely to be significant.</p>
Water Resources (Subsection 4.3)	<p><i>Flood Control.</i> Improvements to the Mission Levee System would increase flood containment capacity to control the design flood event with a negligible increase in water surface elevation.</p> <p><i>Water Flow.</i> Levee footprint expansion would not affect water bodies.</p>
Land Use (Subsection 4.4)	<p><i>Natural Resources Management Areas.</i> The proposed expansion would take place within the ROW. Removal of up to 34 acres of woodlands adjacent to the levee would be required.</p> <p><i>Agricultural Lands.</i> Irrigation canals along 4.7 miles of levee would be temporarily affected by construction activities. A levee segment would be rerouted across the Edinburg intake channel.</p> <p><i>Urban Areas.</i> Potential impacts would be limited to temporary effects by construction activities along the Riverside Subdivision of the Town of Madero.</p>

RESOURCE AREA	Environmental Impacts
Community Resources (Subsection 4.5)	<p><i>Socioeconomic Resources.</i> An influx of federal funds into Hidalgo County from proposed levee improvement activities would have a positive local economic impact limited to the construction period and representing less than 0.2 percent of the annual county employment, income, and sales values.</p> <p><i>Environmental Justice.</i> No adverse impacts to disproportionately high minority and low-income populations were identified for construction activities.</p> <p><i>Transportation.</i> Moderate utilization of public roads would occur during construction. A temporary increase in access road use would be required for equipment mobilization to staging areas.</p>
Environmental Health Issues (Subsection 4.6)	<p><i>Air Quality.</i> Estimated emissions for five criteria pollutants represent less than 1 percent of the Hidalgo County annual emissions inventory.</p> <p><i>Noise.</i> There would be a moderate increase in ambient noise levels due to excavation and fill activities. No long-term and regular exposure is expected above noise threshold values.</p> <p><i>Waste Storage and Disposal Sites.</i> A database search identified no waste storage or disposal sites within the expanded levee footprint and its vicinity.</p>

2.5.2 Common Levee System

No Action Alternative

The No Action Alternative would retain the current configuration of the Common Levee/Anzalduas Dike, with no impacts to biological and cultural resources, land use and soil, community resources, or environmental health issues. In terms of flood protection, however, current containment capacity under the No Action Alternative may be insufficient to fully control Rio Grande flooding under severe storm events, with associated risks to personal safety and property.

Proposed Action

Table 2.2 summarizes potential environmental consequences of the Proposed Action. The alternative would provide improved flood protection. The Common Levee/Anzalduas Dike expansion would modify a combined total of approximately 104 acres of land. In the Common Levee, the majority of modification (62 acres) would occur in herbaceous vegetation. In the Anzalduas Dike area, 6 acres of herbaceous vegetation would be modified.

**Table 2.2 Summary of Environmental Impacts for the Common Levee System
Proposed Action**

RESOURCE AREA	Environmental Impacts
Biological Resources (Subsection 4.1)	<p><i>Vegetation.</i> The Common levee expansion would remove approximately 62 acres of herbaceous vegetation. The Anzalduas Dike expansion would remove approximately 6 acres of herbaceous vegetation and 4 acres of Mesquite-Acacia woodland.</p> <p><i>Wildlife.</i> Removal of 4 acres of Mesquite-Acacia woodland would have a minimum impact on wildlife habitat.</p> <p><i>Wetlands.</i> There are no wetlands/riparian communities located within the Common Levee System expansion area.</p>
Cultural Resources (Subsection 4.2)	<p><i>Archaeological Resources.</i> There are no known prehistoric or historic archaeological resources in the ROW of the Common Levee System.</p> <p><i>Historical and Architectural Resources.</i> Historical or architectural resources located within levee expansion areas may be impacted due to construction activities, but those impacts are not likely to be significant. No areas with a high probability for archaeological resources have been reported along the levee system. Two potential historic-age engineering resources, part of the flood control system, would be temporarily impacted.</p>
Water Resources (Subsection 4.3)	<p><i>Flood Control.</i> Improvements to the Common Levee System would increase flood containment capacity to control the design flood event with a negligible increase in surface water elevation.</p> <p><i>Water Flow.</i> Levee footprint expansion would not affect water bodies.</p>
Land Use (Section 4.4)	<p>The expansion would take place almost entirely within the ROW, with minimum removal of wooded vegetation. No impacts on agricultural land are anticipated. Anzalduas Dam County Park would be temporarily impacted by construction activities.</p>
Community Resources (Subsection 4.5)	<p><i>Socioeconomic Resources.</i> An influx of federal funds into Hidalgo County from the levee improvement would have a positive local economic impact limited to the construction period and representing less than 0.2 percent of the annual county employment, income, and sales values.</p> <p><i>Environmental Justice.</i> No adverse impacts to disproportionately high minority and low-income populations were identified for construction activities.</p> <p><i>Transportation.</i> Minimum utilization of public roads would occur during construction. A temporary increase in access road use would be required for equipment mobilization to staging areas.</p>
Environmental Health Issues (Subsection 4.6)	<p><i>Air Quality.</i> Estimated emissions for five criteria pollutants represent less than 1 percent of the Hidalgo County annual emissions inventory.</p> <p><i>Noise.</i> Moderate increase in ambient noise levels through excavation and fill activities. No long-term and regular exposure is expected above noise threshold values.</p> <p><i>Waste Storage and Disposal Sites.</i> A database search identified no waste storage or disposal sites within the expanded levee footprint and its vicinity.</p>

SECTION 3 AFFECTED ENVIRONMENT

This section describes resources in the potential area of influence of the levee construction project. The sequence of resource areas presented in this section matches the sequence used in Section 4 to discuss environmental consequences potentially associated with implementation of improvements to the Mission and Common Levee Systems. Baseline conditions are discussed in this section as follows:

- Biological resources;
- Cultural resources;
- Water resources;
- Land use;
- Community resources; and
- Environmental health.

3.1 BIOLOGICAL RESOURCES

3.1.1 Vegetation

Regional Vegetation

The Lower Rio Grande Valley covers an approximate 150-mile segment of the Rio Grande that extends from Falcon Reservoir Dam to the river opening into the Gulf of Mexico. The Lower Rio Grande Valley is part of the Tamaulipan region of southern Texas and northeastern Mexico where multiple vegetation communities and warm average temperatures provide a highly diversified wildlife habitat. Annual rainfall in the area, ranging from 16 to 35 inches, increases from west to east. Monthly rainfall is lowest in January and February, and highest in May and June.

Thorn woodland is predominant in the Tamaulipan region where areas of shallow soil and rapid drainage generally support that type of vegetation. A few species of plants account for the bulk of the brush vegetation, including mesquite (*Prosopis spp.*), various species of acacia (*Acacia spp.*), desert hackberry (*Celtis pallida*), javelina-brush (*Microrhamnus ericoides*), cenizo (*Atriplex canescens*), common bee-brush (*Lippia ligustrina*), Texas prickly pear (*Opuntia spp.*), and tasajillo or desert Christmas cactus (*Opuntia leptocaulis*). Parts of the region support grasslands of very diverse composition due to the highly variable soil and moisture conditions, while lines of riparian vegetation are present within the few river valleys (World Wildlife Fund 2001). Grassland vegetation was somewhat more extensive prior to the 19th century, but continuous grazing and other factors altered the plant communities (USIBWC 2003b).

Levee Corridor

Vegetation within the levee ROW and potential expansion corridor of the Mission and Common Levee Systems were evaluated in field surveys conducted to identify habitat and plant communities, as listed below. Results of studies conducted in support of this EA preparation are reported in the document *Technical Support Studies for the Environmental Assessment of Flood Control Improvements to the Mission and Common Levee Systems* (Parsons 2006) previously provided in CD format with the Draft Environmental Assessment.

- October 5, 2005. Initial reconnaissance of the Mission Levee System, and identification of landmarks and selection of target areas for habitat evaluation and wetlands surveys.
- December 1-2, 2005. Vegetation surveys and habitat evaluation of lands adjacent to the levee. An inspection of the project area was conducted with Mr. Jeff Ruppert, Manager of the LRGV National Wildlife Refuge.
- January 18-20, 2006. Delineation of potential jurisdictional wetlands in the immediate vicinity of the levee construction areas along the Mission Levee System.
- March 16, 2006. Field investigation of the Common Levee System to verify plant communities and levee separation from a wetlands area located in the Gabrielson Unit of the LRGV National Wildlife Refuge.

Vegetation classifications for the project area are adapted from Diamond, *et al.* 1987 and Diamond 1993 and the 1996 National Vegetation Classification System in use by USFWS and TPWD. Based on literature review and field surveys, the following four vegetation community classifications were identified as occurring within the project area: a) Woodlands/Thornscrub; b) Herbaceous; c) Wetlands/Riparian communities; and d) Agricultural, as described below. In addition to these four plant communities, developed areas were also mapped, including roads, urban areas, and other impervious cover.

Woodlands / Thornscrub

Mesquite - Acacia Woodland. This woodland occurs over moderately to poorly drained soil, primarily in the south Texas Plains and the Coastal Prairie. It is a natural disturbance type of river floodplains and depressions that may succeed to Sugarberry (*Celtis laevigata*)-dominated forest, especially on floodplains of major streams. It is an even more widespread anthropogenic disturbance community, with introduced woody species such as Retama (*Parkinsonia aculeata*) and possibly Chinese tallow (*Sapium sebiferum*). In wet areas, Sweet acacia (*Acacia farnesiana*) often forms nearly pure stands or occurs as scattered individuals within a matrix of weedy grasses during the course of secondary succession. This woodland may grade into Black-brush (*Acacia rigidula*) or Guajillo (*Acacia berlandieri*) shrublands in south Texas and Little bluestem (*Schizachyrium scoparium*) grasslands in the Coastal Prairie.

Herbaceous

Bufflegrass – Dominant Grassland. This herbaceous community occupies levee slopes and open grassland area, and is dominated by Bufflegrass (*Cenchrus ciliaris*) and sand dropseed (*Sporobolus cryptandrus*). Occurrences of grasses once found in the Cane Bluestem – False rhodesgrass Grasslands -include False rhodesgrass (*Chloris pluriflora*), Cane bluestem

(*Bothriochloa barbinodis*), Buffalograss (*Buchloe dactyloides*), Curly mesquite (*Hilaria belangeri*), and Common speargrass (*Heteropogon contortus*). Woody species once common include Honey mesquite (*Prosopis glandulosa*), Sweet acacia (*Acacia farnesiana*), and Black-brush (*Acacia rigidula*).

Wetlands / Riparian Communities

Texas Ebony - Anacua Forest. Occurs in wooded borrow sites. Evergreen subtropical community once occurred as dense forests with 15-meter canopies and large diameter subtropical trees. Larger tree species (both in diameter and height) may include Texas ebony (*Pithecellobium ebanum*), anacua (*Ehretia anacua*), and great leadtree (*Leucaena pulverulenta*). Snake eyes (*Phaulothamnus spinescens*), haujillo (*Havardia pallens*), spiny hackberry (*Celtis pallida*), lotebush (*Ziziphus obtusifolia*), and honey mesquite (*Prosopis glandulosa*) may occur as tall shrubs or small trees. In most of the former borrow areas within the project area, black willow (*Salix nigra*), sweet acacia, and retama dominate. Former borrow areas characterized by infrequent flooding exhibit a stronger mesquite component.

Typha/Phragmites Emergent Wetlands (former materials borrow sites). Typically found on borrow sites and storm-water collection areas. Often dominated by giant reed (*Phragmites spp.* or *Arundo donax*) or cattail (*Typha spp.*) with a fringe of sea-oxeye daisy (*Borrchia arborescens*), and spikerush (*Scirpus spp.*).

Drainage Ditches. Typically are irrigation ditches, mostly open vegetation, with emergent species such as cattail, and occasional honey mesquite.

Open Water. Can be found in irrigation channels and flooded borrow pits, where water depth exceeds 1 meter.

Agricultural

Active Agricultural Field. These areas are currently subject to cultivation of crops. Common crops include corn, cotton, and various garden crops.

Fallow Field. These agricultural areas are not currently under cultivation.

Table 3.1 lists acreage by plant community classes along the Mission and Common Levee Systems for the entire ROW and within the potential levee footprint expansion area. The Mesquite-Acacia Woodland and herbaceous communities are predominant and equally represented within the ROW, while herbaceous communities are predominant in the potential levee expansion area. Along the Mission Levee ROW, nearly 40 acres of wetlands/riparian communities are present, but none would be directly impacted by levee construction. A graphical representation of vegetation communities distribution along the levee ROW are provided in Section 3 of the Technical Support Studies Report previously provided in CD format with the Draft EA.

Table 3.1 Acreages of Plant Communities along Levee ROW and Expansion Area

Plant Community	Mission Levee System Acreage		Common Levee Acreage		Anzalduas Dike Acreage	
	Right of Way	Levee Expansion	Right of Way	Levee Expansion	Right of Way	Levee Expansion
Mesquite-Acacia Woodland	184.1	34.2	2.5	0.0	36.2	3.9
Herbaceous Vegetation	185.7	77.5	84.4	61.8	57.6	6.2
Wetlands / Riparian Communities	66.8	1.1*	1.3	0.0	0.0	0.0
Agricultural	5.7	0.5	3.6	0.0	0.0	0.0
Total Plant Communities	442.3	113.3	91.8	61.8	93.8	10.1
Urban/Developed	1.3	0.7	0.0	0.0	0.0	0.0

* Removal by a new levee crossing over an irrigation intake canal located outside USIBWC ROW

3.1.2 Wildlife

Regional Wildlife

From a regional perspective, the proposed levee improvement area is located within the Lower Rio Grande Valley. The levee corridor is adjacent to various units of the LRGV National Wildlife Refuge. The LRGV National Wildlife Refuge is a component of a multi-partner effort attempting to connect and protect blocks of habitat, known locally as a Wildlife Corridor (USFWS 2005a). The Wildlife Corridor partnership includes USFWS, TPWD, National Audubon Society, The Nature Conservancy, and private owners, and extends over 25,000 acres within Hidalgo County. Additional blocks of habitat are located in Cameron, Willacy, and Starr Counties (USIBWC 2003b).

Common LRGV wildlife species include whitetail deer (*Odocoileus virginianus*), turkey (*Meleagris gallopavo*), javelina (*Pecari tajacu*), bobwhite quail (*Colinus virginianus*), scaled quail (*Callipepla squamata*), white-winged dove (*Zenaida asiatica*), mourning dove (*Zenaida macroura*), cottontail rabbit (*Sylvilagus floridanus*), jackrabbit (*Lepus californicus*), waterfowl, and a variety of nongame birds. The region also provides important wintering habitat for migratory birds, including many species of passerines, raptors, sandhill cranes (*Grus Canadensis*), ducks, and geese. In addition to the more common wildlife species, a number of unique and rare animals occur in the region (World Wildlife Fund 2001). The distribution of many wildlife species is limited, either partially or entirely, to the Tamaulipan Biotic Province, and some are found exclusively within the LRGV.

There are approximately 67 mammals of potential occurrence in the LRGV, including federally listed species, such as the jaguarundi (*Felis yagouaroundi cacomitli*) and ocelot (*Felis pardalis*). The mammals are dominated by rodents (24 species) and bats (13 species). Some common mammals which may be encountered in the LRGV are the common raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), coyote (*Canis latrans*), Mexican ground squirrel

(*Spermophilus mexicanus*), and the bobcat (*Felis rufus*), beaver (*Castor canadensis*), and nutria (*Myocastor coypus*) (USIBWC 2003b).

There are approximately 500 species of birds that potentially occur in the LRGV. The dominant numbers of bird species are represented by wood warblers (44 species), geese and ducks (30 species), sparrows and towhees (26 species), raptors (25 species), and tyrant flycatchers (25 species). Many species pass through the LRGV on their way to summer breeding or wintering grounds because of the convergence of the Central and Mississippi Flyways. The LRGV is the point where many tropical birds reach their northernmost ranges (Fermata 2003).

Amphibians and reptiles are also well represented in the LRGV, with approximately 76 species that potentially occur in Hidalgo County. The reptiles consist of snakes (29 species), lizards (19 species), turtles (six species), and one crocodile. The amphibians consist of frogs and toads (18 species), and three species of salamanders (USIBWC 2003b).

Levee Corridor

High quality wildlife habitat in the Mission and Common Levee Systems corridor is found primarily in tracts of the LRGV National Wildlife Refuge, Bentsen-Rio Grande Valley State Park, and the Chihuahua Woods Preserve, which is owned by The Nature Conservancy. Plant communities considered high quality habitat include thorn woodlands and wetlands/riparian areas. Grassland habitat and former agricultural sites are dominated by non-native species (primarily buffleggrass), and are considered low value habitat.

3.1.3 Threatened and Endangered Species

Habitat requirements and life history for each federal and state-listed species potentially occurring along the Mission and Common Levee Systems corridor were identified through literature review. Sources of information included threatened and endangered (T&E) species fact sheets published by natural resource agencies, species recovery plans, and scientific literature. Table 3.2 lists federal and State-listed species potentially occurring along the levee corridor. A detailed analysis is provided in Section 5 of the Technical Support Studies Report prepared in conjunction with this EA (Parsons 2006). A copy of this report was previously provided in CD format with the Draft EA.

**Table 3.2 Threatened and Endangered Species Habitat
Potentially Occurring within the Levee Corridor**

	Scientific Name	Listing Status		Association with Project Area Habitat
		Federal	State	
Plant Species	<i>Ayenia limitaris</i>	E	E	Terraces and floodplains within borrow sites that have thick riparian canopy cover.
Amphibian Species	<i>Siren spp.</i>	-	T	Wet or semi-wet areas; aestivates in the ground during dry periods; breeding season from February to June.
	<i>Notophtalmus meridionali</i>	-	T	Riparian and other moist soil areas along flood-side of levee.
	<i>Smilisca baudinii</i>	-	T	Wet or semi-wet areas; eggs laid in temporary rain pools; breeding coincides with rainy months, usually May –October.
Reptile Species	<i>Alligator mississippiensis</i>	T	-	Irrigation ditch and wetlands areas in northern part of study area, Mission Canal.
	<i>Coniophanes imperialis</i>	-	T	Sandy soil areas of borrow sites; eggs laid April through June.
	<i>Drymarchon corais</i>	-	T	Mesquite and Mesquite-Acacia woodlands of borrow sites and along flood-side of levee. Also, along dense riparian communities in flood-side ditches.
	<i>Leptodeira septentrionalis</i>	-	T	Thorn brush woodlands, dense thickets bordering ponds and streams, semi arboreal, nocturnal.
	<i>Crotaphytus reticulatus</i>	-	T	Open brush grasslands; thorn-scrub vegetation, usually on well drained gravelly or sandy soil.
	<i>Phrynosoma cornutum</i>	-	T	Open arid or semi-arid regions with sparse vegetation, grass, cactus, scattered brush or scrubby trees, burrows into soil, utilizes rodent burrows or hides under surface litter.
	<i>Gopherus berlandieri</i>	-	T	Open scrub woods, arid brush, grass/cactus association, shallow depressions at base of bush or cactus or underground burrow or hides under surface cover.
Bird Species	<i>Falco peregrinus anatum</i>	DL*	E	Potential migrant, nests in West Texas.
	<i>Falco peregrinus tundrius</i>	DL*	T	Potential migrant.
	<i>Glaucidium brasilianum cactorum</i>	-	T	Riparian corridors and mesquite thickets; roosts in small caves and recesses on slopes of low hills during the day; breeds April – August.

Table 3.2 Threatened and Endangered Species Habitat Potentially Occurring within the Levee Corridor (continued)

	Scientific Name	Listing Status		Association with Project Area Habitat
		Federal	State	
Bird Species (continued)	<i>Asturina nitidus</i>	-	T	Mature woodlands of river valleys and adjacent semiarid mesquite and scrub grasslands.
	<i>Chondrohierax uncinatus</i>	-	T	Dense tropical and subtropical forests, but does occur in open woodlands, uncommon to rare in most of its range.
	<i>Sterna antillarum athalassos</i>	E	E	Nests along sand and gravel bars of braided streams, rivers, inland channels, and some lakes.
	<i>Camptostoma imberbe</i>	-	T	Mesquite woodlands in close proximity to Rio Grande, frequents cottonwood (<i>Populus</i> spp.), willow, elm (<i>Ulmus</i> spp.), and great leadtree, breeds April through July.
	<i>Pachyrhamphus aglaiae</i>	-	T	Riparian corridors and mesquite thickets, open forest, and mangroves (<i>Avicennia</i> spp.); breeds April – July.
	<i>Aimophila botterii texana</i>	-	T	Grassland plains or parklands with scattered bushes or shrubs, sagebrush (<i>Artemisia</i> spp.), mesquite, or yucca. Rests on ground in a low clump of grasses.
	<i>Parula pitiayuma</i>	-	T	Dense woodlands or parklands, riparian corridors, shrublands with dense underbrush. Breeds April – July.
Mammal Species	<i>Oryzomys couesi</i>	-	T	Cattail-bulrush marsh, with a shallower zone of emergent grasses; shade trees around shoreline; breeds April – August.
	<i>Felis yagouaroundi cacomitli</i>	E	E	Dense, thorny thickets of southern Texas with a proximity to a water source. Cacti, mesquite, cat claw (<i>Smilax</i> spp.), spiny hackberry, and other spine-studded vegetation often characterize habitat.
	<i>Felis pardalis</i>	E	E	Dense, thorny thickets of southern Texas with a proximity to a water source. Spiny hackberry, lotebush, black-brush, and mesquite characterize habitat where a line of sight is limited to approximately 5 feet.
	<i>Lasiurus ega</i>	-	T	Associated with sabal palms (<i>Sabal</i> spp.) near Brownsville, breeds in late winter, ranges far for insects.

DL: Under consideration for delisting

3.1.4 Wetlands and Aquatic Habitat

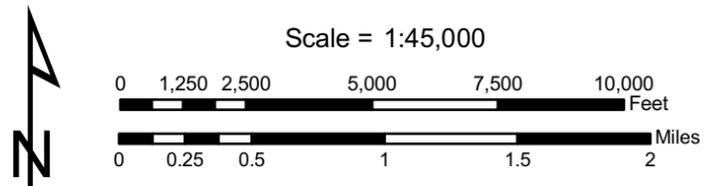
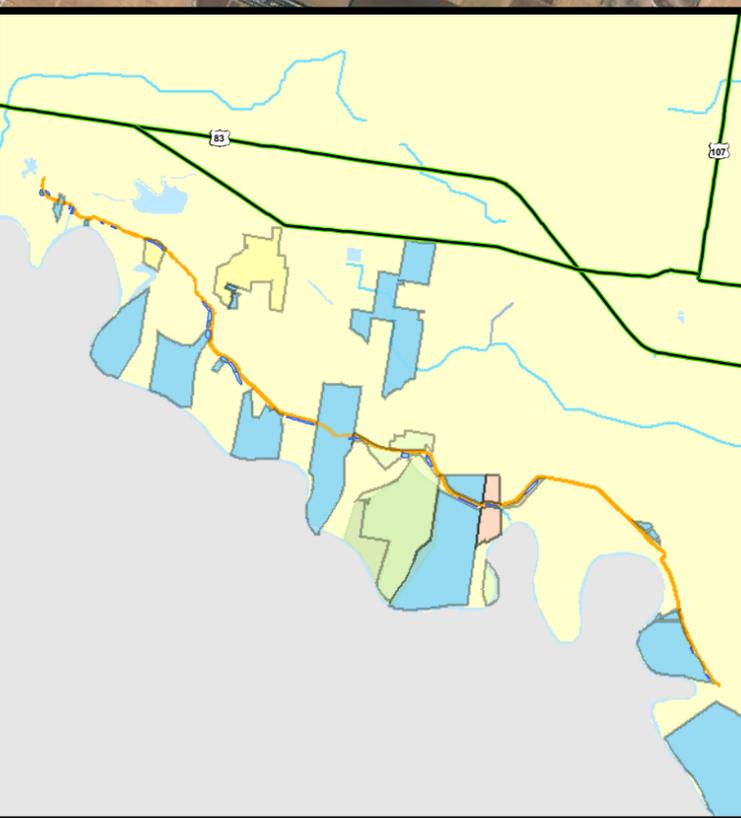
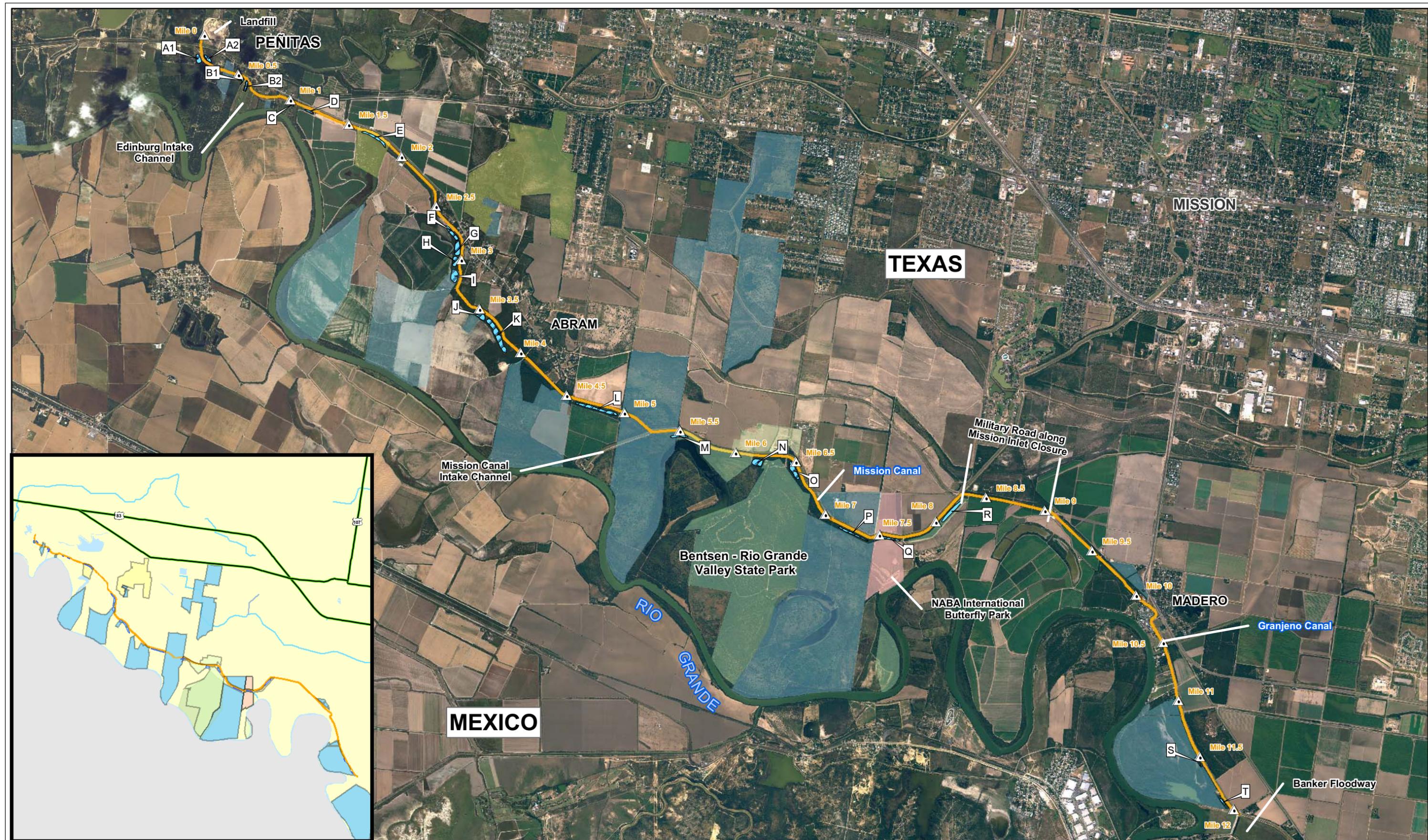
Mission Levee System

Twenty-one wetlands and open water areas that met criteria as potential jurisdictional waters of the United States were identified within the Mission Levee ROW, and are shown in Figure 3.1. Potential wetlands areas were initially identified using aerial photography, soil maps, and National Wetlands Inventory data. Specific wetlands delineations and analysis is provided in Section 4 of the Technical Support Studies Report prepared in conjunction with this EA (Parsons 2006). Table 3.3 indicates the extent of wetlands along the Mission Levee ROW.

Table 3.3 Wetlands within Mission Levee ROW

Wetlands Name	Location (Project Mile)	Description	Acreage within ROW *
A	0.2	Phragmites – Arundo Emergent and Semi-emergent	1.41
B-1	0.5	Phragmites – Arundo Emergent and Semi-emergent	0.10
C	1.0	Phragmites – Arundo Semi-emergent (Temp Flooded)	0.25
D	1.2	Emergent - Typha dominant	0.50
E	1.7	Wooded former borrow site	2.40
F	2.7	Wooded former borrow site	1.92
G	2.9	Wooded former borrow site	2.66
H	3.0	Wooded former borrow site	1.71
I	3.2	Wooded former borrow site	2.98
J	3.5	Wooded former borrow site	2.38
K	3.6	Wooded former borrow site	6.45
L	4.7	Wooded former borrow site	4.33
M	5.5	Wooded former borrow site	2.51
N	6.2	Wooded former borrow site	0.19
O	6.6	Wooded former borrow site	2.90
P	7.3	Wooded former borrow site	1.82
Q	7.6	Wooded former borrow site	1.01
R	8.1	Wooded former borrow site	3.21
S	11.5	Wooded former borrow site	0.32
T	11.9	Wooded former borrow site	1.50
		Total Mission Levee (acres)	40.6

* Wetlands identified as B-2 in Figure 3.1 are located outside the ROW.



- Mile Markers
- The Nature Conservancy Preserve
- Existing Levee Footprint
- USFWS National Wildlife Refuge
- Wetlands
- TPWD State Park
- NABA International Butterfly Park

Mission Levee System
Figure 3.1 - Wetlands Location Map

Technical Support Studies
 International Boundary and Water Commission
 United States Section



PARSONS

A single wetlands area was located near the potential levee expansion area, but outside the current levee ROW. This area, identified in Figure 3.1 as Wetlands B-2, would be subject to impacts from construction activities. Fill activities in Wetlands B-2 (1.07 acres) would require a Section 10 and Section 404 permit. Section 404 and Section 10 permitting requirements would be pursued under a single USACE permit application.

Common Levee System

One wetlands/open water area was identified within the Common Levee ROW. This area, however, is located outside the 100-foot buffer area for levee expansion. The lack of wetlands features within the 100-foot buffer (jurisdictional or otherwise) was documented during a site investigation.

3.2 CULTURAL RESOURCES

The proposed project lies within the Los Caminos del Rio Heritage Project corridor, an area of regional, national, and international prehistoric, historic, and architectural significance located along the lower Rio Grande River (Sánchez 1994). The project area lies entirely within late Holocene fluvial deposits (Cooper, *et al.* 2002: Figure 9). The floodplain deposits are dominated by silt and sand, while deposits within old meander loops are dominated by mud (Brewton, *et al.* 1976). Surface landforms within the project area are believed to be no older than 3,500 years based on a reduction of the fluvial gradient, expansion of the fluvial-deltaic plain, reduction of sediment transport, and increased aridity (Cooper, *et al.* 2002). Although these deposits have been heavily modified by channel migration, some areas of stable landforms remain. The existence of a 900-year-old cypress tree located adjacent to the Mission Levee attests to some floodplain landform stability for the last millennium, at least at this locality. Additionally, the King Banco, a channel segment abandoned in 1869, retains considerable topographic relief (Neel 2006). Cultural resources locations and previous survey areas are presented in Figures 3.2 to 3.5 for the Mission Levee System and Figures 3.6 and 3.7 for the Common Levee System.

3.2.1 Previous Cultural Resources Studies

Previous cultural resources studies between 1990 and 2004 in the immediate vicinity of the project consist of two linear surveys (Crawford 1984; Whitsett and Jurgens 1992), and five aerial surveys (Feit and Jarvis 2004; Hartmann, *et al.* 1995; Keller 1995; McCulloch and Warren 1998; and TxDOT/FHWA 1978). One prehistoric campsite, 41HG143, was recorded in 1990 by a local avocational archaeologist (Kumpe 1990). The site is located entirely within a currently operating landfill near the tieback of the Mission Levee, west of the Town of Peñitas (see Figure 3.8). The site was attributed to the Late Archaic period, and current data indicates that the site has been graded away by ongoing landfill activity.

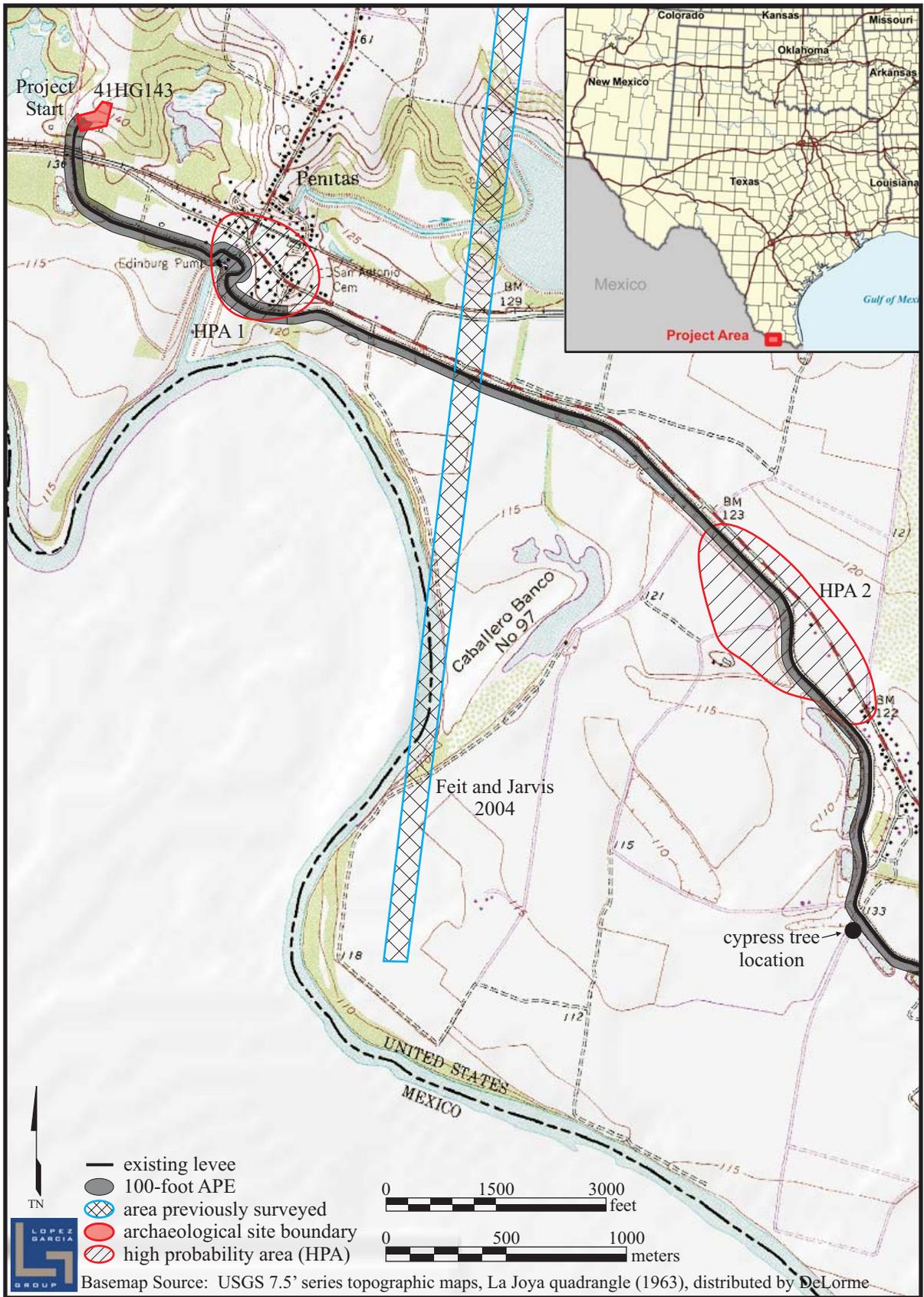


Figure 3.2 Cultural Resources in Upper 3-mile Common Levee Reach

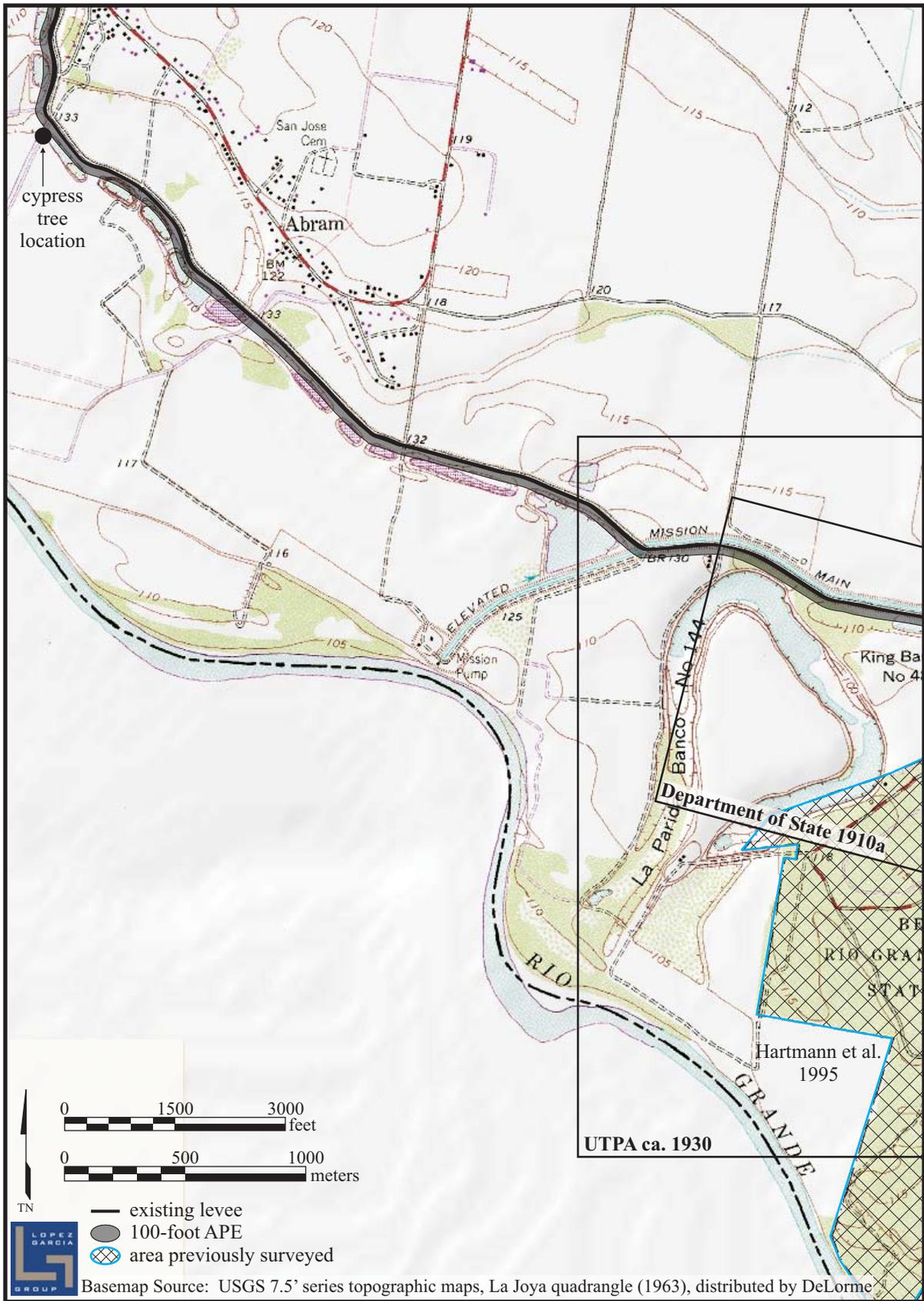


Figure 3.3 Cultural Resources in Project Miles 3 to 6

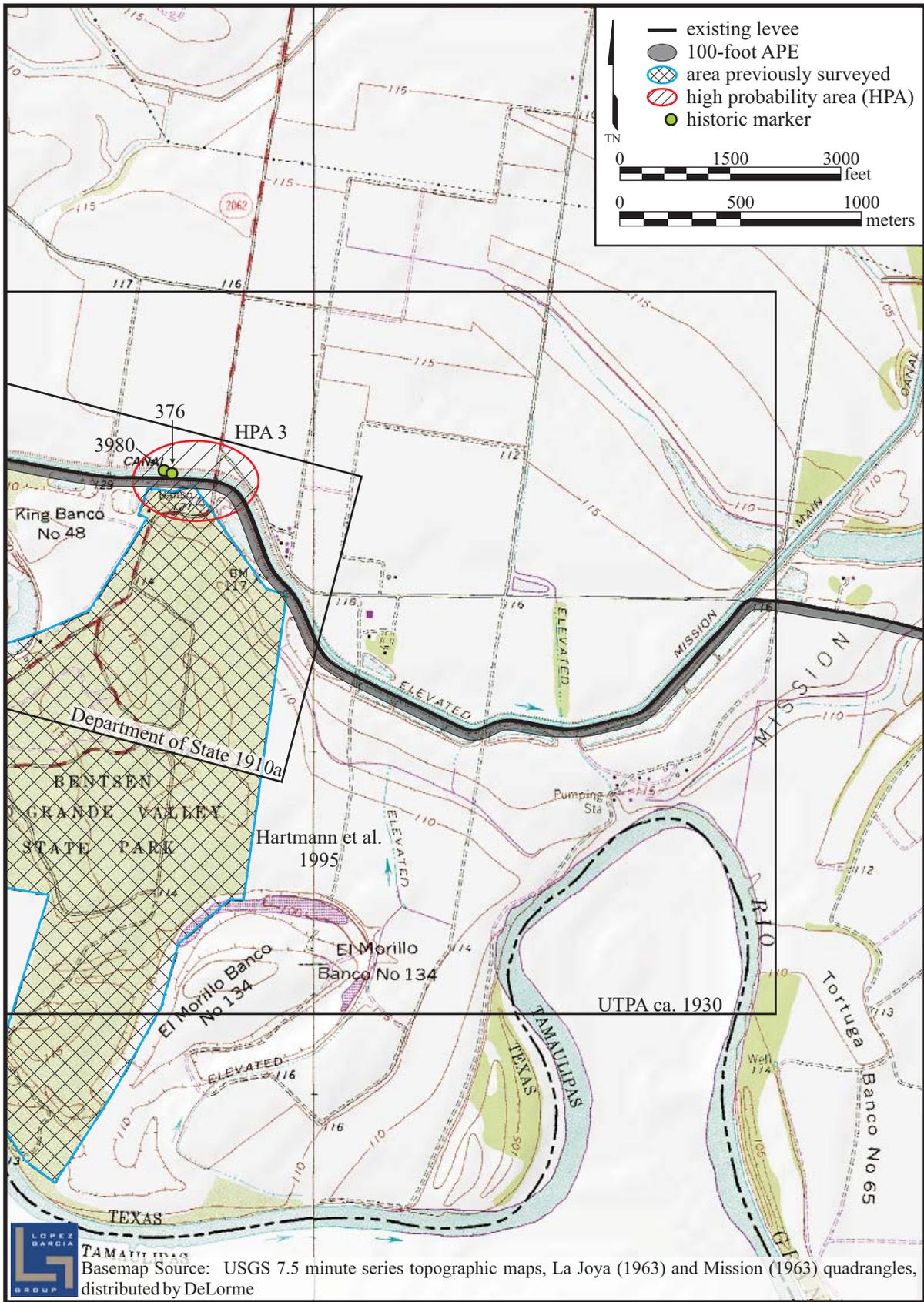


Figure 3.4 Cultural Resources in Project Miles 6 to 9

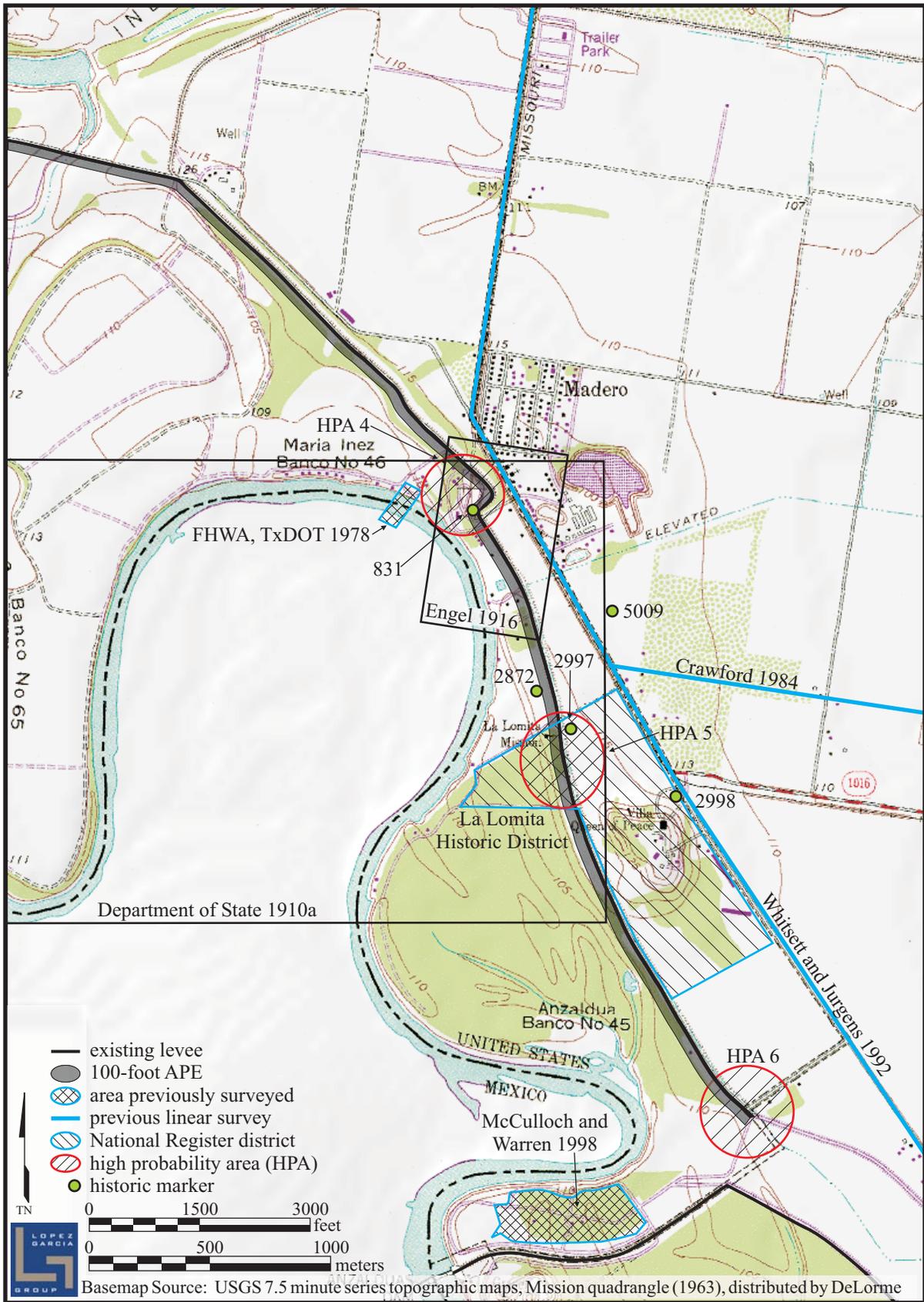


Figure 3.5 Cultural Resources in Project Miles 9 to 12

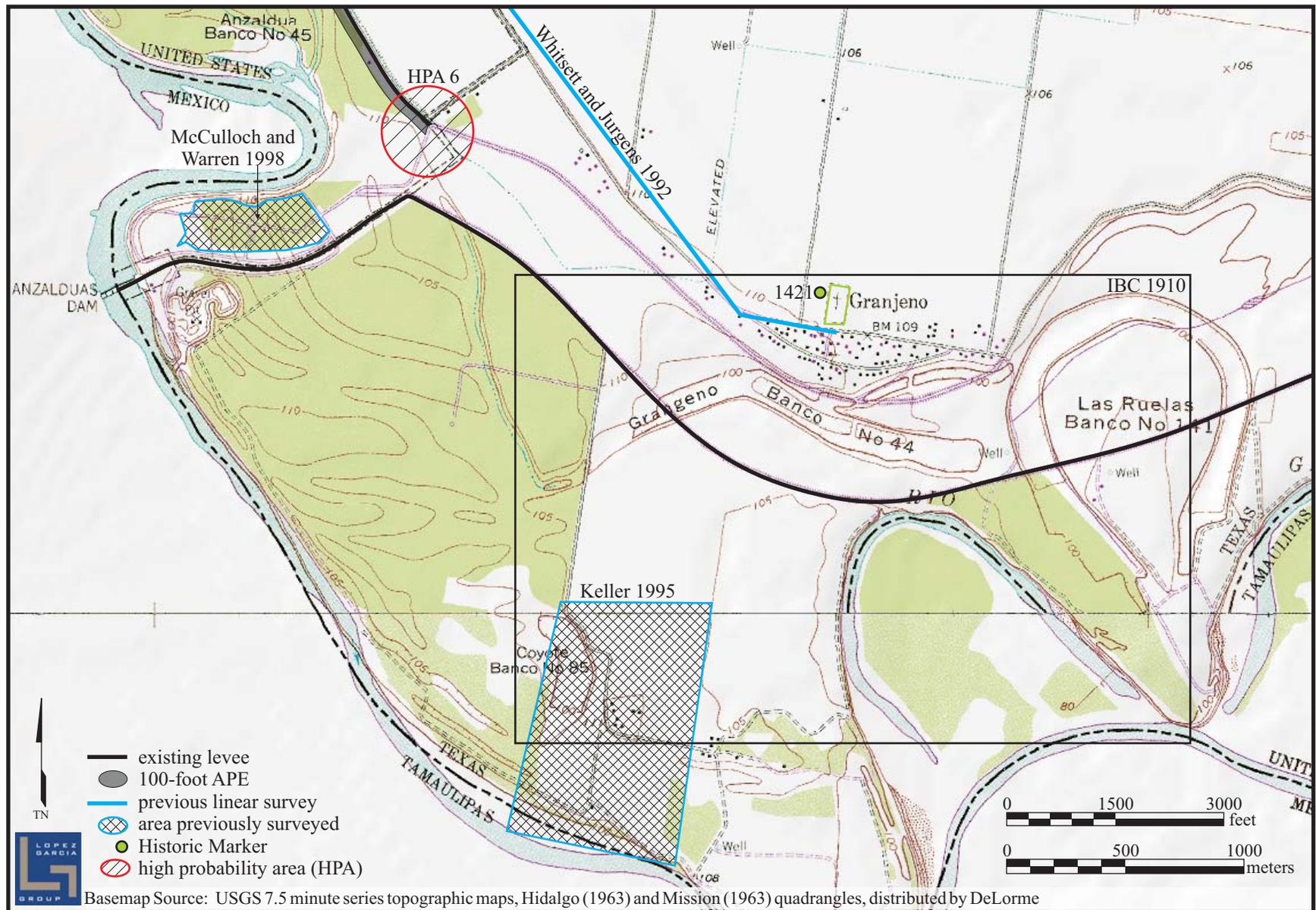


Figure 3.6 Cultural Resources in Upper Reach of the Common Levee

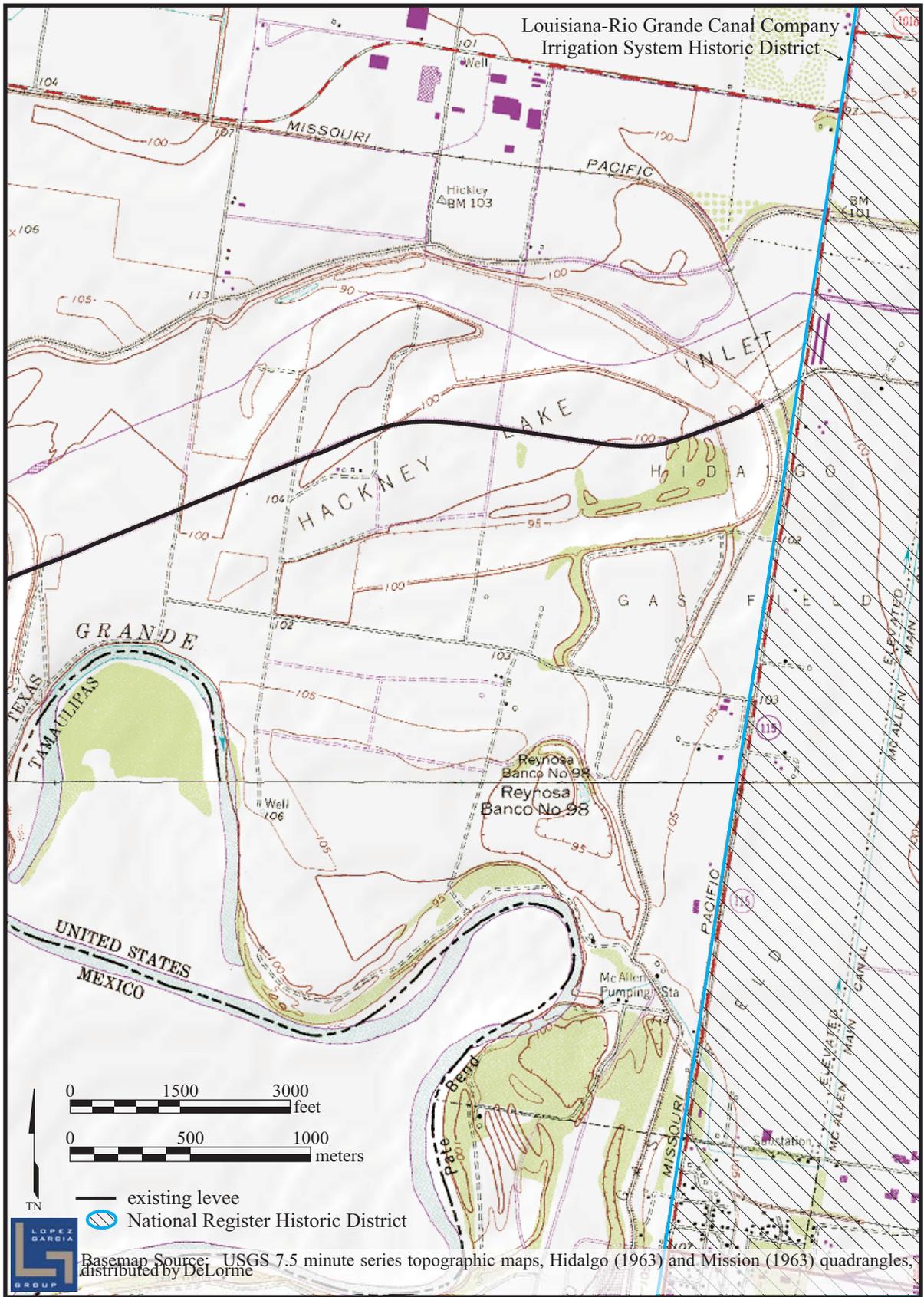


Figure 3.7 Cultural Resources in Lower Reach of the Common Levee



Figure 3.8. Location of site 41HG143 showing ongoing landfill activity.

In 2004 Hicks and Company performed an intensive survey for an electrical transmission line corridor through Starr and Hidalgo counties (Feit and Jarvis 2004). The transmission line corridor crosses the Mission Levee just east of the town of Peñitas. No sites were recorded in the vicinity of the current project area during the investigation.

Crawford 1984

The State Department of Highways and Public Transportation (SDHPT) conducted a linear survey for the relocation of FM 1016 north of the project area (see Figure 3.4). It was not stated if this was an intensive survey, and no sites were recorded (Crawford 1984).

Whitsett and Jurgens 1992

The Texas Water Development Board conducted one linear survey in 1992 along the Old Military Road (which parallels the Mission Levee along a portion of the project) and Farm-to-Market Road (FM) 1016 (Whitsett and Jurgens 1992). It was not stated if this was an intensive survey. The 4.9-mile-long sanitary sewer line survey was completed from the town of Granjeno¹ to the sewage disposal plant located north of the town of Madero (see Figures 3.5 and 3.6), and one site (41HG145) was recorded.

Feit and Jarvis 2004

In 2004 Hicks and Company performed an intensive survey for an electrical transmission line corridor through Starr and Hidalgo counties (Feit and Jarvis 2004). The transmission line corridor crosses the Mission Levee just east of the town of Peñitas (see Figure 3.2). No sites were recorded in the vicinity of the current project area during this investigation.

Hartmann et al. 1995

In 1995 an areal survey was completed 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 and was performed within the 588-acre park located adjacent to the southern edge of the Mission Levee ROW (Hartmann *et al.* 1995) (see Figures 3.3 and 3.4). During this study a “poorly developed paleosol” was identified within one of the backhoe trenches between 47 and 100 centimeters (cm) below surface (Hartmann *et al.* 1995:20–21). The locations of the two backhoe trenches were on the western boundary of the park at least 2,000 m south of the Mission Levee (Hartmann *et al.* 1995:18, Figure 8).

The paleosol is described as a 51-cm-thick layer of dark grayish brown clay of crumb texture and containing 36 alternating laminae of silt and clay. Three alternating silt/clay/silt soil zones were recorded above the paleosol and are capped by a 2-cm-thick modern A horizon. The horizontal extent of the paleosol is not known. The thick nature of the paleosol indicated to Hartmann *et al.* (1995:21, 28) that soil deposition and soil development processes were occurring concurrently and that the land surface was stable throughout the period of soil

¹ This historic locale is variously spelled Granjeno and Grangeno in historic documents. Grangeno typically refers to the historic ranch at this location from which the town of Granjeno evolved.

accumulation. The upper 2 m of alluvial deposits within the park was interpreted as being of recent age, although no specific date range or geomorphologic analysis was presented.

One area consisting of historic metal and glass artifacts dating no earlier than 1950 and associated with concrete debris was located at the northern edge of the BRGVSP adjacent to the Mission Levee ROW (Hartmann et al. 1995:25–27). The debris was not considered to be 50 years old at that time and therefore was not recorded as an archaeological site. The area is located within the previously designated HPA of 16LJ1 by Cooper et al. (2002:B-8). The material remains have now reached 50 years of age, and it is recommended that they be reinvestigated and evaluated only if additional ROW is acquired from the BRGVSP in this area. It is not anticipated that additional ROW will be acquired from the BRGVSP.

McCulloch and Warren 1998

In 1997 an areal survey was conducted at Anzalduas Park, which abuts the north ROW of the Common Levee near Anzalduas Dam (see Figure 3.6). The 19-acre intensive survey was conducted to assess the impacts of the installation of a sprinkler system and the construction of public restrooms in the park (McCulloch and Warren 1998). No cultural materials were located during the survey.

Keller 1995

Again in 1995, a large block intensive survey of approximately 186 acres was conducted along the Rio Grande River south of the town of Granjeno (see Figure 3.6). Southern Archaeological Consultants performed the survey for the City of Los Fresnos (Keller 1995). No cultural materials were located during the survey.

TxDOT/FHWA 1978

In 1978 an areal survey was conducted for the Texas Department of Transportation (TxDOT) on behalf of the Federal Highway Administration (FHWA) for an international bridge crossing at Madero (see Figure 3.5). No information on this survey was located in an abstracts search of the Texas Archaeological Sites Atlas (TASA).

La Lomita Historic District 1978

One National Register district, the La Lomita Historic District, is located adjacent to the Mission Levee and abuts the project ROW (see Figure 3.5). The district was recorded in 1978 and covers 122 acres. The La Lomita Chapel, an adobe structure built in 1899, is located within the district and lies close to the project ROW (TASA 2005). The chapel building has been recorded as a Texas State Historic Landmark (SAL), and Historical Marker Number 2997 is located near the entry door on the western side of the building.

Cooper et al. 2002

Most importantly, previous research by Cooper *et al.* (2002) has been conducted to determine the potential for archaeological sites along the 180-mile length of the Lower Rio Grande Flood Control Project (LRGFCP) of which the current MCLS project area is a part. The three part program consisted of archival research for information of historic and prehistoric

resources at facilities in Austin, Hidalgo, Mercedes, Brownsville and Edinburg, a geoarchaeological assessment of the archaeological potential of near surface sediments by the excavation of numerous backhoe trenches, and a vehicular reconnaissance survey of the floodway (Cooper *et al.* 2002:63). Cooper *et al.* (2002) identified 12 areas as having a high potential for historic archaeological resources within the Mission and Common Levee study corridors, as defined at that time. These 12 areas were designated as high probability areas (HPAs) (Cooper *et al.* 2002:B-8, B-9, and B-12). Six of these previously identified HPAs are located within the currently defined MCLS corridor. No areas were identified that were considered as having a high probability for the occurrence of prehistoric archaeological resources.

A cultural resources evaluation of the Mission and Common Levee Systems was conducted by Neel (2006) in support of the EA preparation. The evaluation included research from online, archival, and published reports to supplement previous research by Cooper, *et al.* (2002). In addition, photographic documentation of landforms and resources along the project route was made for the Mission Levee System (November 29 through December 2, 2005), and the Common Levee System (March 7 and 8, 2006). No artifacts were collected during the course of that documentation. Evaluation methods and detailed findings were reported in the document *A Cultural, Architectural and Engineering Resources Evaluation of the Mission and Common Levee Systems, Hidalgo County, Texas* provided with the Draft EA in electronic format. No systematic intensive archaeological surveys have been undertaken for the Mission and Common Levee Systems.

3.2.2 Historical and Prehistoric Cultural Resources

Historical Resources

Previous studies in the form of archival research and a cultural resources assessment have been conducted to determine the potential for archaeological sites along the 180-mile length of the LRGFCP (Cooper, *et al.* 2002). Twelve areas were reported as having high potential for historic archaeological resources (designated HPAs) within the LRGFCP study corridor (Cooper, *et al.* 2002). Six of these HPAs are located within the currently defined Mission Levee corridor and include locations of structures as depicted on the 1916 Mission quadrangle map and the Hedley and Lomitas Ranch locations (Neel 2006). The HPAs for historic cultural resources were identified by overlaying the current levee footprint onto historical map data (Neel 2006). The six areas identified as HPAs for the Mission Levee project area are described below and shown in Figures 3.2 and 3.5 (numbered from west to east along the project route). Parenthetical numbers in the text are those assigned to the resource by Cooper, *et al.* (2002). No HPAs were reported for the Common Levee System.

- *HPA 1 (16LJ6)*. The area around the community of Peñitas is shown to contain standing structures on the 1916 Mission, Texas, topographic sheet (U.S. Geological Survey [USGS 1916]) (see Figure 3.2).
- *HPA 2 (16LJ3)*. The area northwest of the community of Abram is shown to contain standing structures on the 1916 Mission, Texas, topographic sheet (USGS 1916) (see Figure 3.2).

- *HPA 3 (16LJI)*. The rural area adjacent to the levee is shown to contain standing structures of the Hedley Ranch on two historic maps as well as the ruins of the King Ranch (Department of State 1910a); Although the structures depicted on the 1910 map are located well away from the levee, additional undocumented structures associated with this ranch complex may have existed in the area of the levee modification. A historic artifact scatter with associated concrete debris was reported by Hartmann, *et al.* (1995) near this location; however, no ROW is proposed to be acquired in this area.
- *HPA 4 (B45-1)*. An American army camp and a building associated with the old Edinburg Pumping Plant are depicted on a 1916 army map (Engel 1916) and occur within the area of potential effect (see Figure 3.5). Also depicted on this map, outside the area of potential effect, are structures of the United Irrigation Company Pumping Plant (Sanchez 1994) and “ruins.” Structures associated with the Lomitas Ranch are depicted in this general location on the Anzaldua and Maria Inez Banco maps of 1910 (Department of State 1910a). The “ruins” depicted on the Engel map may be associated with the Lomitas Ranch.
- *HPA 5 (NRMII)*. The levee extends along the northern edge of the La Lomita National Register of Historic Places District (see Figure 3.5). The 1899 La Lomita Chapel is adjacent to the southern side of the levee. Several large trees are located between the chapel and the levee and within the levee ROW which might indicate the location of former structures on this historic site (Neel 2006).
- *HPA 6 (16MII)*. The rural area adjacent to the levee at the juncture with the Banker Floodway is shown to contain standing structures on the 1916 Mission, Texas, topographic sheet (USGS 1916) (see Figure 3.5). Construction of the Banker Floodway resulted in extensive land modification of the proposed project area. It is unlikely that any intact archaeological resources exist within this HPA.

Four additional areas of potential historic archaeological resources were identified during the archival research conducted in support of the EA of the Mission and Common Levee Systems (Neel 2006). These resources are former buildings associated with the ruins of the King Ranch, the United Irrigation Company Pumping Plant, a 1916 army camp, and historic debris reported by Hartmann, *et al.* (1995). These four additional resources all fall within HPAs previously identified by Cooper, *et al.* (2002).

Prehistoric Cultural Resources

One previously recorded prehistoric archaeological site, 41HG143, is located east of the tieback of the Mission Levee west of the Town of Peñitas. The site is listed in the Texas Archeological Sites Atlas (Neel 2006). No systematic intensive archaeological surveys have been undertaken for the Mission and Common Levee Systems. Site 41HG143 is located within and at the western edge of the active Town of Peñitas landfill (Figure 3.8). Based on visual observation conducted during the current study, site 41HG143 is reevaluated as having been destroyed by previous and ongoing landfill activities.

3.2.3 Architectural and Engineering Resources

Previous research has been conducted to determine if historic-age buildings and structures are known to be present along the LRGFCP (Cooper, *et al.* 2002). Only one structure, the La Lomita Chapel, was identified by Cooper, *et al.* (2002:B-12) as occurring within the current project area and was designated as HPA MRMI1.

Preliminary investigations conducted for preparation of this EA indicate five major historic-age resources exist within the current levee ROW and are engineering elements of the levee and floodway systems (Neel 2006). The five engineering features are (1) a weir gate structure at the Border Pacific Railroad crossing near Peñitas, (2) the Edinburg Pumping Plant and floodwall, (3) the Mission Main Canal weir gate structure, (4) the Banker Floodway spillway structure, and (5) Anzalduas Dam. These resources, prefixed by the designation ENG, are described below, and their locations are depicted on Figure 3.9. A sixth structure, the La Lomita Chapel, is located beyond the current ROW, but this structure may be visually impacted by encroachment of the expanded levee footprint

ENG 1—A weir gate structure at the Border Pacific Railroad crossing near Peñitas;

ENG 2—The Edinburg Pumping Plant and floodwall;

ENG 3—The Mission Main Canal weir gate at the Mission Levee crossing;

ENG 4—The Banker Floodway spillway structure; and

ENG 5—Anzalduas Dam.

In addition to the major structures listed above, 25 minor historic-age resources consisting of small weir gates and one siphon were documented along the river side of the levee at various locations (Neel 2006). Twenty-three of the structures are along the Mission Levee, and two are along the Common Levee System. The locations of these historic resources are presented in Figure 3.9.

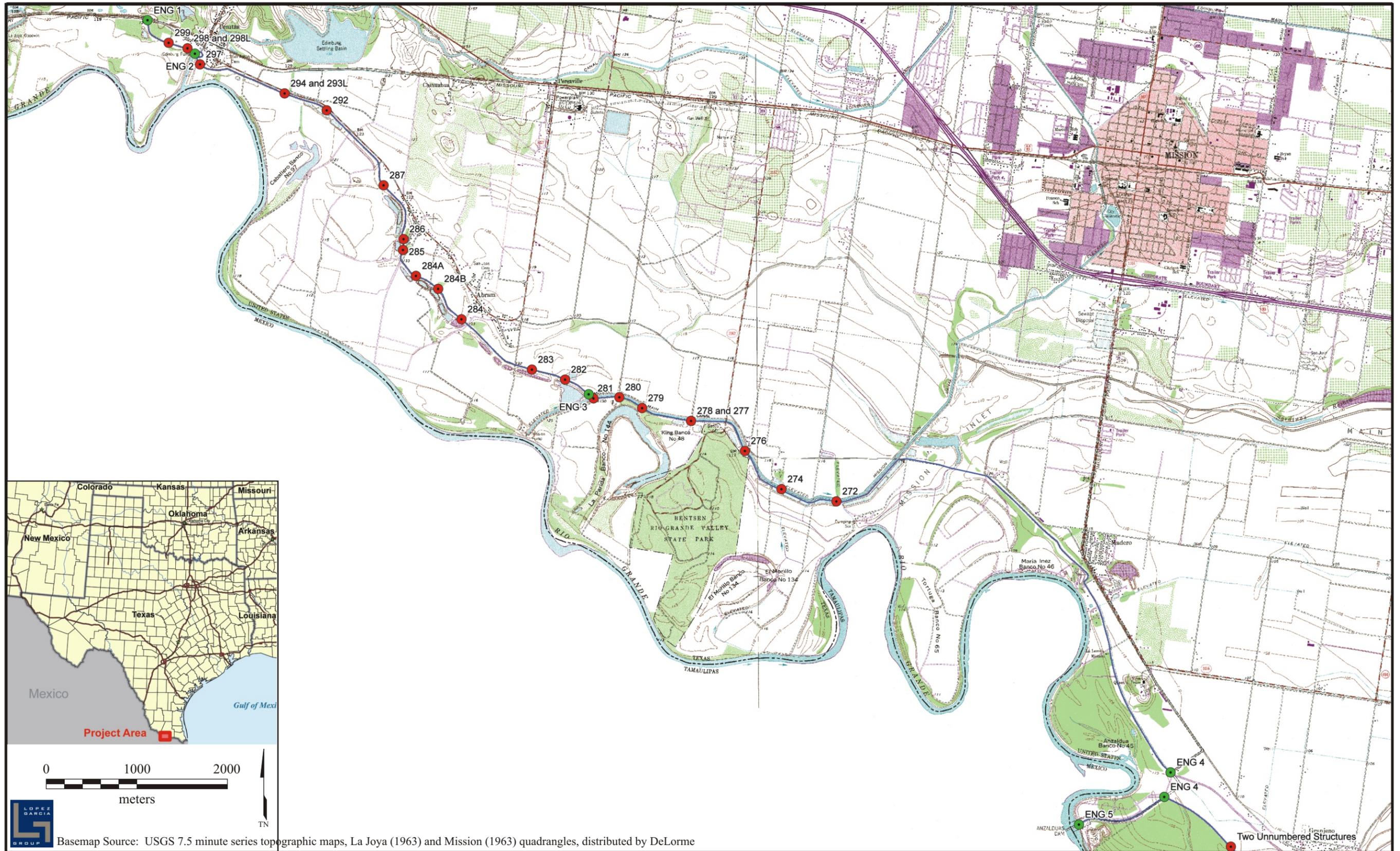


Figure 3.9. Locations of major and minor engineering structures along the Mission and Common Levee Systems

[MAJOR STRUCTURES SHOWN IN GREEN, MINOR STRUCTURES IN RED]

3.3 WATER RESOURCES

3.3.1 Regional Flood Control

Lower Rio Grande Flood Control Project

In 1932 an agreement was reached between the United States and Mexico to develop a coordinated plan for an international project to protect the Lower Rio Grande Valley (LRGV) against flooding from the Rio Grande in both countries. This agreement, which later resulted in the Lower Rio Grande Flood Control Project, was developed by the IBWC. The USIBWC and MxIBWC are each responsible for meeting treaty obligations within their national boundaries.

The LRGFCP is designed for flood protection of urban, suburban, and highly developed irrigated farm lands in the Rio Grande delta in both countries. The LRGFCP flood levees are grass-covered earthen structures, with a distance between the United States and Mexican levees ranging from approximately 400 feet to 3 miles (USIBWC 1992). The LRGFCP is jointly operated by the USIBWC and MxIBWC to convey excess floodwaters of the Rio Grande to the Gulf of Mexico through the river and United States and Mexican interior floodways.

The LRGFCP facilities on the United States side are located in Hidalgo, Cameron, and Willacy Counties, Texas, with the river levee beginning near the Town of Peñitas at the head of the delta, about 180 river miles from the Gulf of Mexico. The United States interior floodway system is flanked by 168 miles of levees covering the natural channel of the Arroyo Colorado, and 102 miles of levees along the Rio Grande (USIBWC 1980).

The LRGFCP includes the Anzalduas Diversion Dam, completed in 1960, and the Retamal Diversion Dam, completed in 1973. Joint ownership of Anzalduas and Retamal Dams is a responsibility of the United States and Mexico via the USIBWC, and MxIBWC. Operation and maintenance is shared equally between both countries.

The design flood for the LRGFCP is based on a peak flow of 250,000 cubic feet per second (cfs) at Rio Grande City, which attenuates to 235,000 cfs at Peñitas. During the design flood, Anzalduas Diversion Dam and Retamal Diversion Dam would each divert 105,000 cfs into the United States and Mexico, respectively. Flow diversion during the design flood would limit flood flows through the Brownsville-Matamoros area to 20,000 cfs. The USIBWC and MxIBWC coordinate operation of these dams to ensure both dams divert equal flows into the respective countries during significant flood events.

Mission Levee System

The Mission Levee System extends 12.1 miles south of the City of Mission, from the Town of Peñitas (Mile 0.0) to its junction with the Banker Floodway (U.S. interior floodway). The levee ROW runs primarily through agricultural areas. Two irrigation canals border approximately 5 miles of the levee, on the landside: the Mission Main Canal (Project Miles 5.3 to 8.3), and the Granjeno Canal (Project Miles 10.2 to 12).

Flood Containment Capacity. The current Mission Protective Levee System does not meet design criteria for the design flood event. The need for improvements to the 12-mile levee system and current levee elevation data was generated during the levee structural condition study conducted in October 2003 by the USACE. Water flood elevations were obtained from hydraulic model results. A 3-foot freeboard value is the design criterion for the Mission Levee System. The current levee elevation would not meet this freeboard requirement. Table 3.4 lists, in 0.5-mile intervals, current freeboard and potential levee height increase for the Mission Levee System.

Table 3.4 Mission Levee Current Freeboard and Potential Height Increase

Project Mile (from Peñitas)	Water Surface Elevation (ft. amsl)*	Levee Elevation (ft. amsl)*	Levee Freeboard (ft.)	Required Height Increase (ft.)	Riverside Expansion (ft. from centerline)
0.0	134.4	135.2	0.9	2.1	44.8
0.5	134.1	135.0	0.9	2.1	44.6
1.0	133.8	134.2	0.4	2.6	47.6
1.5	133.5	133.7	0.3	2.7	48.4
2.0	133.2	133.1	-0.1	3.1	50.6
2.5	132.9	132.6	-0.4	3.4	52.3
3.0	132.7	131.8	-0.9	3.9	55.4
3.5	132.5	131.2	-1.2	4.2	57.5
4.0	132.3	131.4	-0.9	3.9	55.4
4.5	132.0	130.9	-1.2	4.2	57.0
5.0	131.8	130.4	-1.3	4.3	58.0
5.5	131.5	130.2	-1.3	4.3	57.7
6.0	131.2	129.2	-1.9	4.9	61.6
6.5	130.9	128.7	-2.2	5.2	63.0
7.0	130.2	128.3	-1.9	4.9	61.6
7.5	129.3	126.8	-2.5	5.5	65.1
8.0	128.9	126.6	-2.3	5.3	63.8
8.5	128.5	126.5	-2.0	5.0	62.1
9.0	128.1	126.1	-2.0	5.0	62.0
9.5	127.7	126.0	-1.7	4.7	60.2
10.0	127.2	125.2	-2.0	5.0	61.9
10.5	126.4	124.0	-2.3	5.3	64.1
11.0	124.3	123.7	-0.6	3.6	53.8
11.5	122.2	123.2	1.0	2.0	44.2
12.0	122.0	121.6	-0.4	3.4	52.2

* Elevations in feet above mean sea level (amsl)

Structural Condition. The 2003 USACE study identified structural deficiencies along a significant segment of the Mission Protective Levee System (USACE 2003). These three condition indicators are as follows:

- *Overall condition.* The Mission Levee System falls within the Acceptable range (values from 7 to 10).
- *Material type.* Most of the Mission Levee System falls into the Intermediate to Good categories (mainly clay and mixed soil, values from 2.0 to 3.5). The downstream reach of the levee, however, is built of marginal quality materials (primarily sand, values from 1.0 to 1.5).
- *Geology.* This factor appears to be very limiting throughout most of the Mission Levee System because channels or courses of high conductivity are present under the levee.

Common Levee System

Anzalduas Dike, the upstream reach of the levee system, is a 0.7-mile segment that extends from the north end of Anzalduas Dam to the dike junction with the Common Levee at the Banker weir. The Common Levee extends approximately 4.5 miles along the Banker/Main Floodway (Project Mile 0.7) to its junction with the River Levee segment surrounding the City of Hidalgo (Project Mile 5.2). Environmental effects of raising the Hidalgo Protective Levee System were evaluated in a previous EA (USIBWC 2005).

Flood Containment Capacity. The current Common Levee System does not meet design criteria for the design flood event. The need for improvements to the 5.2-mile levee system and updating of the current levee elevation data was determined by hydraulic modeling conducted by the USIBWC, as reported in the document *Hydraulic Model of the Rio Grande and Floodways Within the Lower Rio Grande Flood Control Project, June 2003* (USIBWC 2003a). The study updated findings of a prior 1992 study by incorporating new structures and geometrical data, as well as changes due to land use and agricultural practices, and increased reliability of the hydraulic model with enhanced software capabilities. For the Common Levee, the hydraulic study indicated that typical increases in levee height would range from 1 to 7 feet to meet the 3-foot levee freeboard design criteria. For Anzalduas Dike, height increases would range from 0 to 4 feet. Table 3.5 lists, in 0.2-mile intervals, current freeboard and potential levee height increase for the Common Levee/Anzalduas Dike.

Structural Condition. The 2003 USACE study identified structural deficiencies along a significant segment of the Common Levee System (USACE 2003). These three condition indicators are:

- *Overall condition.* The Common Levee System falls within the Marginal range (values from 4.0 to 7.0), primarily due to geological conditions.
- *Material type.* The Common Levee System falls almost entirely into the Good category (mainly clay with some mixed soil, values from 3.0 to 3.5). The upstream reach is built of Marginal quality materials (primarily sand, values from 1.0 to 1.5).
- *Geology.* This factor appears to be very limiting throughout most of the Common Levee System, as channels or courses of high conductivity are present under the levee.

Table 3.5 Current Freeboard of the Common Levee/Anzalduas Dike and Potential Height Increase

Project Mile (from Anzalduas Dam)	Water Surface Elevation (ft. amsl)*	Levee Elevation (ft. amsl)*	Levee Freeboard (ft.)	Required Height Increase (ft.)	Centered Expansion (ft. from centerline)
0.0	122.5	125.4	2.9	0.1	32.4
0.2	122.6	122.2	-0.4	3.4	42.3
0.4	122.7	122.0	-0.7	3.7	43.0
0.6	122.8	122.2	-0.6	3.6	42.8
0.8	122.4	122.1	-0.2	3.2	41.7
1.0	122.2	120.2	-1.9	4.9	46.8
1.2	121.6	119.8	-1.8	4.8	46.4
1.4	121.0	118.8	-2.2	5.2	47.5
1.6	120.4	118.2	-2.2	5.2	47.6
1.8	119.8	118.2	-1.5	4.6	45.7
2.0	119.2	117.7	-1.5	4.5	45.4
2.2	118.9	117.4	-1.5	4.6	45.7
2.4	118.6	117.2	-1.4	4.4	45.1
2.6	118.2	116.6	-1.6	4.6	45.7
2.8	117.7	116.5	-1.2	4.2	44.7
3.0	117.4	116.1	-1.3	4.3	44.8
3.2	117.2	115.6	-1.7	4.7	46.0
3.4	117.1	115.4	-1.7	4.7	46.0
3.6	116.9	114.8	-2.0	5.0	47.1
3.8	116.7	115.2	-1.5	4.5	45.4
4.0	116.5	114.6	-2.0	5.0	46.9
4.2	116.4	112.8	-3.6	6.6	51.9
4.4	116.3	112.8	-3.5	6.5	51.4
4.6	116.2	112.4	-3.8	6.7	52.2
4.8	116.1	112.4	-3.7	6.7	52.0
5.0	116.0	111.8	-4.2	7.2	53.5
5.2	116.0	111.5	-4.4	7.4	54.1

* Elevations in feet above mean sea level

3.3.2 Water Flow

Flow of the Rio Grande is highly variable and tightly managed. Along the LRGFCP, including the Mission and Common Levee Systems, the flow is dictated by the needs of agriculture and crop watering schedules. Low water flow conditions characterize the river,

with minimum values from September to February. Severely reduced flows occur, frequently due to increased water demands from a growing urban and industrial population, reduced riparian habitat and ground cover, proliferation of exotic aquatic vegetation, and recent drought conditions. Rio Grande water is currently fully allocated, with agricultural use constituting 82 to 90 percent of the water in the LRGV (USIBWC 2003b).

Two other factors that impact flow in the Rio Grande are water storage and storms. There are two large international reservoirs on the lower Rio Grande, International Amistad Reservoir, near Del Rio, Texas, and International Falcon Reservoir, near Zapata, Texas. These reservoirs store water for agricultural use, public water supply, and recreational activities, and provide storage capacity for control of floods. Storm water is managed by 270 miles of levees that channel flow into and out of diversions and floodways. During non-flood conditions, irrigation/municipal water and local drainage flow into the floodways through approximately 500 irrigation and drainage structures.

The single water resource located within the Mission Levee project area is the Edinburg intake channel connected to the lower Rio Grande.

3.4 LAND USE

3.4.1 Mission Levee System

Current land use along the Mission Levee System was evaluated along a corridor potentially affected by the levee improvement project using three main categories: natural resources management areas, agricultural lands, and urban areas.

Natural Resources Management Areas

The following wildlife management areas are located along the levee or its vicinity:

- Five large tracts of land acquired by the USFWS and incorporated into the LRGV National Wildlife Refuge (Abram West, Abram East, La Parida Banco, El Morillo Banco, and Madero Units).
- Three tracts adjacent to the levee ROW recently incorporated by the TPWD into the Bentsen-Rio Grande Valley State Park.
- One tract on the riverside of the levee acquired by The Nature Conservancy as part of the Chihuahua Woods Preserve.
- A land parcel riverside of the levee, formerly used in agriculture, acquired by the North American Butterfly Association for additional development of the International Butterfly Park. The park headquarters are located across the Mission Main Canal.

Agricultural Land

Agricultural land flanks approximately 90 percent of the landside of the levee. On the riverside, agricultural parcels intermixed with natural resources management areas account for approximately one half of the land adjacent to the levee.

Urban Areas

Urban development in the vicinity of the Mission Levee System is limited to the unincorporated Towns of Peñitas, Abram, and Madero. With the exception of the Riverside Subdivision of Madero, nearly all residential areas are located on the levee landside. No residential developments are located, or allowed, within the levee system ROW.

3.4.2 Common Levee System

Natural Resources Management Areas

Anzalduas Dike, the upstream reach of the levee system, runs entirely along Anzalduas Dam County Park, operated and maintained by Hidalgo County. Most of the park land was acquired by the USIBWC as part of the flood control project and subsequently leased to the County for operation.

Along the Banker Floodway, which extends from the Banker Weir (Project Mile 0.7) to Rincon Road (Project Mile 2.6), the riverside of the Common Levee is almost entirely flanked by the Gabrielson and Cottam Units of the LRGV National Wildlife Refuge.

Agricultural Land

The Common Levee ROW runs primarily through agricultural areas. There are no irrigation canals on either side of the Common Levee. Parcels owned in fee by the USIBWC occupy the Banker Floodway.

Downstream from Rincon Road (Project Miles 2.6 to 5.2), the floodway is referred to as the Main Floodway. Within the Main Floodway, where the USIBWC has flowage easements, parcels are privately owned. These parcels serve as flood easements used for annual crop agriculture where building of permanent structures or development of woody vegetation, are not allowed. On the downstream reach of the Common Levee, outside the Main Floodway, agricultural parcels occupy most of the land.

Urban Areas

There are no irrigation canals or residential developments on either side of the Common Levee System.

3.5 COMMUNITY RESOURCES

3.5.1 Socioeconomics

The Mission and Common Levee Systems are located in the southern portion of Hidalgo County. The nearest populated areas to the proposed levee improvement area are the Cities of Hidalgo southeast of the levee system; Granjeno, Madero, and Mission to the northwest; McAllen and Pharr to the north; and Las Milpas to the northeast.

Population

Hidalgo County’s total population in 2000 was approximately 569,463, a 33 percent increase from 383,545 in 1990 (U.S. Census Bureau 2000). The largest populated cities within the county are McAllen with a population of 106,414; Mission, population 45,000; and Pharr, population 46,660. The City of Hidalgo had a 2000 population of 7,322. The largest racial category for the county is “Hispanic or Latino” (Table 3.6). The median age for Hidalgo County is 27 years, with a 48 percent male and 52 percent female population. According to the 2000 U.S. Census, Hidalgo County has 192,658 total housing units; 81 percent of which are occupied (U.S. Census Bureau 2000).

Table 3.6 Racial Composition of Hidalgo County

Race	Number	Percent
Hispanic or Latino (any race)	503,100	88.3%
White	59,423	10.4%
Black or African American	1,934	0.3%
American Indian and Alaska Native	428	0.1%
Asian	3,635	0.6%
Other	1,371	0.3%
Total Population	569,463	100%

Employment

Hidalgo County’s total full-time and part-time employment in 2001 was 217,418 (Bureau of Economic Analysis 2003). The largest employment sectors in terms of jobs were federal, state, and local government; trade, transportation and utilities; and education and health services with 43,699, 35,337, and 25,335 jobs, respectively. The unemployment rate in 2002 was 12.1 percent (Texas Economic Development 2005). Farm employment makes up approximately 2 percent of the county’s total employment (Bureau of Economic Analysis 2003). In 1997 there were approximately 1,373 farms totaling 635,884 acres in the county. The surrounding area near the proposed levee improvement area is primarily agricultural.

Income

Income and poverty figures obtained from the 2000 census for Hidalgo County are provided in Table 3.7 (U.S. Census Bureau 2000). Hidalgo County records show that 41,725, or 31.3 percent of the families, and 201,865, or 35.9 percent of individuals are below the poverty line. The average per capita annual income is \$9,899.

Table 3.7 Hidalgo County Income Data

Income and Poverty Characteristics	Hidalgo County
Total population	569,463
Total number of families	133,186
Median family income	\$ 26,009
Families below the poverty line (31.3%)	41,725
Individuals below the poverty line (35.9%)	201,865
Total number of households (81% occupancy)	156,709
Median household income	\$ 24,863
Per capita income (dollars)	\$ 9,899

3.5.2 Environmental Justice

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, was issued by the president on February 11, 1994. The Executive Order requires a federal agency to make "...achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations." As such, a proposed action must be evaluated in terms of an adverse effect that:

- Is predominantly borne by a minority population and/or low-income population; or
- Would be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that would be suffered by the non-minority population and/or non-low income population.

Information from Tables 3.6 and 3.7 indicate that Hidalgo County has disproportionately high minority (approximately 88 percent) and low-income populations (individuals – 35.9 percent) in relation to the State of Texas.

3.5.3 Transportation

Hidalgo County is an important thoroughway for agricultural products. The major artery for highway traffic is U.S. Highway 281, which connects Hidalgo County with cities to the north. Also important is U.S. Highway 83 which traverses the county from east to northwest. Hidalgo County has an extensive network of state and farm-to-market roads. The two spans of the Hidalgo-Reynosa International Bridge, the Pharr-Reynosa Bridge and the Progreso Bridge over the Rio Grande serve as crossing points between Mexico and the United States. A new bridge, the Anzalduas International Bridge, is in the design phase. Two major rail systems serve Hidalgo County.

The Mission Levee crown is an unpaved service road with restricted public access throughout most of the system. The service road is utilized by the USIBWC as a service road for levee maintenance and vegetation management. The service road is also used extensively

by the U.S. Border Patrol for immigration control, and by the USFWS for access to the LRGV National Wildlife Refuge. In the downstream 3-mile reach of the system, part of the levee crown is a public road that includes the Military Road segment along the Mission Inlet Closure (Project Miles 8.3 to 9.1). The levee crosses the intake channels of the Edinburg Canal and the Mission Main Canal. Across the Edinburg intake channel, the levee structure is replaced by a concrete retaining wall attached to the Peñitas Pumping Plant of the Hidalgo County Irrigation District No. One (Project Mile 0.67).

The Anzalduas Dike is a service road with restricted public access that runs along the Anzalduas Dam County Park. The Common Levee serves as an unpaved service road with limited public access.

3.6 ENVIRONMENTAL HEALTH

3.6.1 Air Quality

The Clean Air Act, Title 42, Section 7407 of the U.S. Code, states that Air Quality Control Regions (AQCR) shall be designated in interstate and major intrastate areas as deemed necessary or appropriate by a federal administrator for attainment and maintenance of concentration-based standards called National Ambient Air Quality Standards (NAAQS). The U.S. Environmental Protection Agency (USEPA) classifies air quality within an AQCR according to whether the concentrations of criteria air pollutants in the atmosphere exceed primary or secondary NAAQS. All areas within each AQCR are assigned a designation of attainment, nonattainment, unclassifiable attainment, or not designated attainment for each criteria air pollutant.

An attainment designation indicates that air quality within an area is as good as or better than the NAAQS. The proposed levee improvement area is located within AQCR 213, or the Brownsville-Laredo AQCR. This AQCR is located completely within the State of Texas, covering Cameron County, Hidalgo County, Jim Hogg County, Starr County, Webb County, Willacy County, and Zapata County. As of April 2005, the USEPA designated air quality within all counties of AQCR 213 to be under attainment status for all criteria pollutants (USEPA 2005). The emissions data for Hidalgo County are used for analysis purposes because the activity associated with the alternatives would be localized in the narrow area along the river, and emissions from the activities would not likely affect the more distant counties within the AQCR.

The Texas Commission on Environmental Quality (TCEQ) has identified 12 companies in Hidalgo County as contributors of point source emissions. Potential stationary sources of criteria pollutant and hazardous air pollutant emissions within Hidalgo County include the Rio Grande Valley Sugar growers, Inc., several oil mills and refineries, and utilities and gasoline facilities (TCEQ 2004). Area emission sources for Hidalgo County, as designated generally by USEPA, include waste disposal and recycling, highway and off-highway vehicles, and other miscellaneous emission sources (USEPA 1999).

The area and stationary point source emission inventory for Hidalgo County for calendar year 1999, the latest available data from USEPA as of May 2005 (USEPA 1999) is as follows:

- Carbon monoxide, 151,085 tons per year;
- Volatile organic compounds, 27,812 tons per year;
- Nitrogen dioxide, 19,726 tons per year;
- Sulfur oxides, 1,127 tons per year; and
- Particulate matter greater than 10 micrometers, 61,819 tons per year.

3.6.2 Noise

Guidelines

Noise is defined as sound that is undesirable because it interferes with speech and hearing, is intense enough to damage hearing, or is otherwise annoying. Noise levels often change with time. To compare sound levels over different time periods, several descriptors have been developed that take into account this time-varying nature. These descriptors are used to assess and correlate the various effects of noise on humans.

The day-night average sound level (DNL) is a measure of the total community noise environment. DNL is the average A-weighted sound level in decibels, or dBA, over a 24-hour period, with a 10 dBA adjustment added to the nighttime levels (between 10:00 p.m. and 7:00 a.m.). This adjustment is an effort to account for increased human sensitivity to nighttime noise events. DNL was endorsed by the USEPA for use by federal agencies. DNL is an accepted unit for quantifying annoyance to humans by general environmental noise, including aircraft noise. The Federal Interagency Committee on Urban Noise developed land use compatibility guidelines for noise (U.S. Department of Transportation 1980). Potential adverse effects of noise include annoyance, speech interference, and hearing loss.

Annoyance. Noise annoyance is defined by the USEPA as any negative subjective reaction to noise by an individual or group. Typically 15 to 25 percent of persons exposed on a long-term basis to DNL of 65 to 70 dBA would be expected to be highly annoyed by noise events, and over 50 percent at DNL greater than 80 (National Academy of Sciences 1977).

Speech Interference. In a noisy environment, understanding speech is diminished when speech signals are masked by intruding noises. Based on a variety of studies, DNL 75 dBA indicates there is good probability for frequent speech disruption. This level produces ratings of “barely acceptable” for intelligibility of spoken material. Increasing the level of noise to 80 dBA reduces the intelligibility to zero, even if the people speak in loud voices.

Hearing Loss. Hearing loss is measured in dBs and refers to a permanent auditory threshold shift of an individual’s hearing. The USEPA (USEPA 1974) recommended limiting daily equivalent energy value of equivalent sound level of 70 dBA to protect against hearing impairment over a period of 40 years. Hearing loss projections must be considered conservative as the calculations are based on an average daily outdoor exposure of 16 hours. It is recommended that no residential uses, such as homes, multi-family dwellings, dormitories, hotels, and mobile home parks, be located where the noise is expected to exceed a DNL of 65 dBA. Some commercial and industrial uses are considered acceptable where the noise level exceeds DNL of 65 dBA. For outdoor activities, the USEPA recommends DNL of 55 dBA as

the sound level below which there is no reason to suspect that the general population will be at risk from any of the impacts of noise (USEPA 1974).

Baseline Noise Levels

Land use and zoning classifications in the area surrounding the proposed levee improvement area provide an indication for potential noise impact. Land surrounding the Mission and Common Levee Systems is predominantly managed as wildlife refuge areas and agricultural land. No sensitive noise receptors such as schools, churches, and medical facilities are located in or surrounding the Mission and Common Levee Systems.

Typical outdoor noise sources near the levee system include vehicles, pickup trucks, diesel tractor mowers, and other farm machinery. Noise sources such as mowers at 100 feet, a diesel truck, or scrapers used to grade levee roads at 50 feet are approximately 70 dBA, 88 dBA, and 89 dBA, respectively (CERL 1978).

3.6.3 Hazardous and Toxic Waste

Hazardous materials are those substances defined by the Comprehensive Environmental Response, Compensation, and Liability Act, as amended by the Superfund Amendments and Reauthorization Act, and the Toxic Substances and Control Act. Hazardous waste is defined under the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA). In general, both hazardous substances and waste include substances that, because of their quantity, concentration, and physical, chemical, or infectious characteristics, may present a danger to public health and/or welfare and to the environment when released or improperly managed.

Waste disposal activities at or near the proposed levee improvement area were reviewed to identify areas where industrial processes occurred, solid and hazardous waste were stored, disposed, or released; and hazardous materials or petroleum or its derivatives were stored or used. A data search on waste storage and disposal sites along the Mission and Common Levee Systems was conducted by Banks Information Systems. The search extended along the entire levee system, up to 0.5 miles from the levee corridor centerline. Detailed data are reported in the document *Technical Support Studies for the Environmental Assessment of Flood Control Improvements to the Mission and Common Levee Systems* (Parsons 2006).

The identification of hazardous and toxic waste disposal and the storage site near the project area included the following databases:

- The National Priority List (NPL);
- RCRA Corrective Actions and associated Transport, Storage, and Disposal (TSD) list;
- State equivalent priority list;
- State equivalent Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) list;
- Sites currently or formerly under review by the USEPA;

- RCRA-permitted transport, storage, and disposal facilities;
- RCRA-registered generator of hazardous waste (GENS);
- Registered underground storage tanks, including leaking underground storage tanks;
- Registered aboveground storage tanks;
- Sites permitted as solid waste landfills, incinerators, or transfer stations;
- Emergency Response Notification System of Spills (ERNS) list; and
- State spills list.

Mission Levee System

Results of the data search along the Mission Levee System, including the search radius (up to one-half mile) by individual database, are shown in Table 3.8. No waste storage and disposal sites were identified for the project area. Two sites within one-quarter mile of each other were identified at Peñitas, one solid waste landfill site (SWL) and one storage tank site (underground storage tanks [UST]/aboveground storage tanks [AST]). Neither of these sites would affect, or be affected by, the levee construction project.

Table 3.8 Summary Search Report for the Mission Levee System

Database	Database Updated	Search Radius	Levee Corridor	1/8 Mile	1/4 Mile	1/2 Mile	Total
NPL	11-07-05	1.00	0	0	0	0	0
CERCLIS	10-07-05	0.50	0	0	0	0	0
NFRAP	08-01-04	0.25	0	0	0	-	0
RCRA TSD	09-22-05	0.50	0	0	0	0	0
RCRA COR	12-10-05	1.00	0	0	0	0	0
RCRA GENS	12-10-05	0.50	0	0	0	-	0
ERNS	12-31-04	0.25	0	0	0	-	0
State Sites	01-05-05	1.00	0	0	0	0	0
SWL	09-16-02	0.50	0	0	1	0	1
Other	06-27-05	0.25	0	0	0	-	0
Regular UST/AST	07-13-05	0.25	0	1	0	-	1
Leaking UST	06-27-05	0.50	0	0	0	0	0
Total Sites			0	1	1	0	2

Common Levee System

Results of the data search along the Common Levee System, including the search radius (up to one-half mile) by individual database, are shown in Table 3.9. No waste storage and disposal sites were identified for the project area.

Table 3.9 Summary Search Report for the Common Levee System

Database	Database Updated	Search Radius	Levee Corridor	1/8 Mile	1/4 Mile	1/2 Mile	Total
NPL	01-13-06	1.00	0	0	0	0	0
CERCLIS	01-13-06	0.50	0	0	0	0	0
NFRAP	01-13-06	0.25	0	0	0	-	0
RCRA TSD	02-16-06	0.50	0	0	0	0	0
RCRA COR	02-16-06	1.00	0	0	0	0	0
RCRA GENS	02-16-06	0.50	0	0	0	-	0
ERNS	12-31-05	0.25	0	0	0	-	0
State Sites	01-05-05	1.00	0	0	0	0	0
SWL	09-16-02	0.50	0	0	0	0	0
Other	03-14-06	0.25	0	0	0	-	0
Regular UST/AST	01-14-06	0.25	0	0	0	-	0
Leaking UST	06-27-05	0.50	0	0	0	0	0
Total Sites			0	0	0	0	0

SECTION 4 ENVIRONMENTAL CONSEQUENCES

Section 4 presents an analysis of the environmental consequences of the No Action Alternative and proposed improvements for the Mission Levee and the Common Levee projects. Resource areas are presented in the same sequence used in Section 3 for the description of the affected environment: biological resources; cultural resources; water resources; land use, community resources; and environmental health issues.

4.1 BIOLOGICAL RESOURCES

4.1.1 Vegetation

Mission Levee System

No Action Alternative

No impacts are anticipated as the current levee configuration would be retained.

Proposed Action

Improvements to the Mission Levee corridor would affect plant communities through excavation and fill activities. Impacts would occur on the levee sidewalls where fill would be added, and within the expanded levee footprint area. The vegetation communities identified during field surveys fall into one of the following classes: a) Mesquite-acacia woodland; b) Herbaceous, represented primarily by Bufflegrass-dominant grassland; c) Wetlands/Riparian communities, represented primarily by phragmites – arundo emergent and semi-emergent plants; and d) Agricultural. Table 4.1 shows potential acreage removed and impacts to each vegetation community for the Mission levee. Within the proposed project area, several tracts of land are owned and/or managed by federal, state, or private agencies. Table 4.2 shows potential vegetation removal by vegetation type and natural resources land manager.

Common Levee System

No Action Alternative

No impacts are anticipated as the current levee configuration would be retained.

Proposed Action

Similar to the Mission Levee, vegetation would be impacted by excavation and fill activities. Table 4.1 shows potential acreage removed and impacts to each vegetation community for the Common Levee and for the Anzalduas Dike. Potential vegetation removed by area and natural resources management organization is shown in Table 4.2.

Table 4.1 Impacts to Vegetation within Mission and Common Levee System Corridors

Plant Community	Mission Levee Acreage Removed	Common Levee System		Impact Characterization
		Common Levee Acreage Removed	Anzalduas Dike Acreage Removed	
Mesquite-Acacia Woodland	34.2	0.0	3.9	Woodlands along the levee systems are in varying stages of succession. The removal of thorn woodland along the Mission Levee is approximately 19% of the total thorn woodland area in the ROW. No removal of thorn woodland would take place along the Common Levee System. Along the Anzalduas Dike, removal of thorn woodland would be approximately 11% of the total thorn woodland area in the ROW.
Herbaceous	77.5	61.8	6.2	Short-term impact on grassland communities in the area of levee expansion for the levee system corridors would occur. An invasive species, Buffleggrass, is predominant throughout the herbaceous areas. Herbaceous vegetation can be rapidly re-established.
Wetlands	1.1	0.0	0.0	Along the Mission Levee System, a single wetlands area located outside the ROW would be impacted by the proposed levee relocation across the Edinburg Intake Channel. No wetlands/riparian communities are present along the proposed Common Levee System expansion area or in the Anzalduas Dike expansion area.
Agricultural	0.5	0.0	0.0	Removal of limited agricultural areas along the Mission levee will have minimal impact. There is no agricultural area within the Common Levee System expansion area or in the Anzalduas Dike expansion area.

Table 4.2 Vegetation Removal by Natural Resources Managing Organization for Riverside Expansion Scenario

Natural Resources Managing Organization	Mesquite-Acacia Woodland (acres)	Herbaceous Vegetation (acres)	Wetlands Vegetation (acres)
Mission Levee System			
Texas Parks and Wildlife	1.8	3.8	0.0
U.S. Fish and Wildlife Service	4.1	1.0	0.0
The Nature Conservancy	0.6	2.0	0.0
NABA International Butterfly Park	0.4	0.3	0.0
<i>Total for Mission Levee</i>	6.9	7.1	0.0*
Common Levee			
U.S. Fish and Wildlife Service	0.0	0.0	0.0
Anzalduas Dike			
Anzalduas Dam Park**	3.9	6.2	0.0

* Approx. 1.1 acre wetlands removal from a new irrigation intake canal crossing outside right-of-way.

** USIBWC land leased to Hidalgo County as a day-use park

4.1.2 Wildlife

Mission Levee System

No Action Alternative

No impacts are anticipated as the current levee configuration would be retained.

Proposed Action

The value of vegetation to wildlife along the Mission Levee corridor depends on the quantity of habitat and the relative successional stage of the vegetation (quality of habitat). The thorn woodlands and wetlands areas along the Mission Levee corridor may provide the best quality wildlife habitat. The herbaceous and agricultural areas are dominated by invasive or cultivated species, and provide little suitable habitat for most wildlife species. Some wildlife species may utilize these areas as transit corridors, but the usage is likely limited. Natural resource areas with quality wildlife habitat adjacent to the riverside of the Mission Levee System occupy approximately 4 miles, or 33 percent of the 12.1-mile total length (2.4 miles along the LRGV National Wildlife Refuge; 1.3 miles along the Bentsen-Rio Grande Valley State Park; and 0.3 miles along the Chihuahua Woods Preserve).

The Mission Levee expansion would remove approximately 34 acres of thorn woodland, which is approximately 19 percent of the thorn woodland that occurs within the ROW. Potential removal of higher value thorn woodland, however, would require a recovery period of over 25 years to achieve a community structure similar to current conditions. Although not considered unique, the limited extent of thorn woodland accentuates its value as wildlife habitat.

During the field surveys, 23 wetlands meeting the criteria as jurisdictional waters of the United States were located near the levee expansion area. The combined extent of those wetlands is approximately 41 acres. Approximately 1 acre of Wetlands B-2, located along the Edinburg irrigation intake channel but outside the levee ROW, would be impacted by the proposed levee relocation across the channel.

Common Levee System

No Action Alternative

No impacts are anticipated as the current levee configuration would be retained.

Proposed Action

The Common Levee System corridor runs primarily through agricultural areas, but some wildlife habitat is located near the proposed levee expansion area. Approximately 1 mile of the total 5.2-mile Common Levee System runs along two units of the LRGV National Wildlife Refuge. Approximately 4 acres of thorn woodland would be removed along the ROW in the Anzalduas Dike area within the Anzalduas Dam Park. No wetlands were identified during field surveys within the Common Levee System expansion area nor within the Anzalduas Dike area.

4.1.3 Threatened and Endangered Species

Preferred habitat types for each T&E species potentially occurring in Hidalgo County were compared to the habitat types identified during field surveys to evaluate their likelihood of occurrence. The habitat determination was categorized according to USFWS guidelines as follows:

- *Not Likely Present*: no suitable habitat identified;
- *Potentially Present*: habitat present but there are no records of species occurrence in the vicinity;
- *Likely Present*: habitat present and species are known to occur in the vicinity; and
- *Present*: observed.

For those species considered potentially or likely present in the area, a determination of the effect of each action on those species was made. The determination of effect includes vegetation that may be altered or removed, water resources used by the species (if appropriate), and the effects of construction activities such as noise and disturbance during breeding activities. Table 4.3 lists potential impacts of the Mission and Common Levee Systems improvements to T&E species habitat.

Mission Levee System

No Action Alternative

No impacts are anticipated as the current levee configuration would be retained. No T&E species potentially present in the area would be adversely affected.

Proposed Action

Levee expansion activities on the riverside corridor of the Mission Levee would remove some habitat for T&E species. There are 24 species considered potentially present in the vicinity of the levee corridor, and of these, only potential habitat for the ocelot would be removed. The Mission Levee expansion would remove approximately 34 acres of thorn woodlands. However, the quality of that habitat is relatively low for ocelots. Utilization of the habitat by the species would likely be limited to transit corridors due to the need ocelots have for higher shrub density. The herbaceous plant communities present in the ROW are dominated by invasive grasses (primarily Bufflegrass), and provides little suitable habitat for ocelots, except possibly as a transit corridor.

Unforeseen adverse effects may be prevented by timing construction activities to avoid breeding and nesting seasons of T&E species. Consultation with TPWD and USFWS would be needed to schedule construction activities to minimize potential impacts on species and species habitat (see Table 4.3).

Table 4.3 Potential Impacts of Mission and Common Levee Improvements on Federally Listed Threatened and Endangered Species

	Common Name	Scientific Name	Potential Effect
Plant Species	Texas ayenia	<i>Ayenia limitaris</i>	Not likely to affect
Amphibian Species	South Texas siren	<i>Siren</i> spp.	Not likely to affect – Avoidance of potential habitat during construction
	Black spotted newt	<i>Notophthalmus meridionali</i>	Not likely to affect – Avoidance of potential habitat during construction
	Mexican treefrog	<i>Smilisca baudinii</i>	Not likely to affect – Avoidance of potential habitat during construction
Reptile Species	American alligator	<i>Alligator mississippiensis</i>	Not likely to affect
	Black-striped snake	<i>Coniophanes imperialis</i>	Not likely to affect – Timing of construction to avoid nesting season impacts (April – June)
	Indigo snake	<i>Drymarchon corais</i>	Not likely to affect
	Northern cat-eyed snake	<i>Leptodeira septentrionalis</i>	Not likely to affect
	Reticulate collard lizard	<i>Crotaphytus reticulatus</i>	Not likely to affect
	Texas horned lizard	<i>Phrynosoma cornutum</i>	Not likely to affect
	Texas tortoise	<i>Gopherus berlandieri</i>	Not likely to affect
Bird Species	American peregrine falcon	<i>Falco peregrinus anatum</i>	Not likely to affect – Timing of construction activities to limit impacts
	Arctic peregrine falcon	<i>Falco peregrinus tundrius</i>	Not likely to affect – Timing of construction activities to limit impacts
	Cactus ferruginous pygmy-owl	<i>Glaucidium brasilianum cactorum</i>	Not likely to affect
	Gray hawk	<i>Asturina nitidus</i>	Not likely to affect
	Hook-billed kite	<i>Chondrohierax uncinatus</i>	Not likely to affect
	Interior least tern	<i>Sterna antillarum athalassos</i>	Not likely to affect – Timing of construction activities to avoid breeding season (April – June)
	Northern beardless-tyrannulet	<i>Camptostoma imberbe</i>	Not likely to affect – Timing of construction activities to avoid breeding season (April – July)
	Rose-throated becard	<i>Pachyramphus aglaiae</i>	Not likely to affect
	Texas Botteri's sparrow	<i>Aimophila botterii texana</i>	Not likely to affect – Timing of construction activities to limit impacts
	Tropical parula	<i>Parula pitiayuma</i>	Not likely to affect
	Mammal Species	Coues' rice rat	<i>Oryzomys couesi</i>
Gulf Coast jaguarundi		<i>Felis yagouaroundi cacomitli</i>	Not likely to affect
Ocelot		<i>Felis pardalis</i>	Not likely to affect
Southern yellow bat		<i>Lasiurus ega</i>	Not likely to affect

Common Levee System

No Action Alternative

No impacts are anticipated as the current levee configuration would be retained. No T&E species potentially present in the area would be adversely affected.

Proposed Action

The Common Levee System expansion would remove approximately 4 acres of thorn woodlands. However, the quality of this habitat is relatively low for ocelots, and the areas are too small to be included as a substantial portion of typical ocelot home range. If ocelots used this habitat, it would likely be as a transit corridor. For other species potentially present within the levee corridor, consultation with USFWS would be needed to schedule construction activities to minimize potential impacts on species and species habitat (see Table 4.3).

4.1.4 Jurisdictional Wetlands and Aquatic Habitat

Mission Levee System

No Action Alternative

There are no anticipated impacts to jurisdictional wetlands because the current levee configuration would be retained.

Proposed Action

Twenty-one wetlands and open water areas that met criteria as jurisdictional waters of the United States were identified within the Mission Levee ROW. None of these wetlands would be directly impacted by the levee expansion project. Table 4.4 lists the wetlands identified during surveys, the acreage, and river mile location of each wetland identified, and the potential impacts to wetlands within the ROW. Landside expansion alignment would avoid direct impacts to wetlands A, G, and L located less than 100 feet from the levee centerline (Table 4.4).

Figure 4.1 present cross-sectional areas illustrating the likely separation between the levee expansion and the edge of wetlands located in the levee vicinity. The cross-sectional areas represent river mile as indicated in Table 4.4. Edge locations of the wetlands were determined during field studies conducted in support of the impacts evaluation (Parsons 2006). Levee expansion presented in Figure 4.1 represents riverside alignment, a worst-case scenario in terms of impacts to wetlands.

A single wetlands area is located within the potential levee expansion area, but outside the current levee ROW. This area, identified in Figure 3.1 as Wetlands B-2, would be subject to impacts from construction activities due to the new crossing of the Peñitas Pumping Plant intake channel. Construction activities would partially remove wetlands that flank the irrigation intake channel, approximately 1 acre (Parsons 2006).

Common Levee/Anzalduas Dike System

No Action Alternative

There are no anticipated impacts to jurisdictional wetlands as the current levee configuration would be retained.

Proposed Action

One wetlands/open water area was identified within the Common Levee/Anzalduas Dike ROW. This area, however, is located outside the 100-foot buffer area for the proposed levee expansion, and would not be affected by construction activities.

Table 4.4 Potential Impacts on Wetlands within Mission Levee ROW

Wetlands Name	Description	Approximate River Mile (Cross-Section No.)	Acreage within ROW	Minimum Distance from Centerline
A	Phragmites – Arundo Emergent and Semi-emergent	0.2	1.41	94 ft. *
B-1	Phragmites – Arundo Emergent and Semi-emergent	0.5	0.10	>100 ft.
C	Phragmites – Arundo Semi-emergent (Temp Flooded)	1.0	0.25	>100 ft.
D	Emergent - Typha dominant	1.2	0.50	110 ft.
E	Wooded former borrow site	1.7	2.40	102 ft.
F	Wooded former borrow site	2.7	1.92	>100 ft.
G	Wooded former borrow site	2.9	2.66	97 ft. *
H	Wooded former borrow site	3.0	1.71	105 ft.
I	Wooded former borrow site	3.2	2.98	>100 ft.
J	Wooded former borrow site	3.5	2.38	110 ft.
K	Wooded former borrow site	3.6	6.45	110 ft.
L	Wooded former borrow site	4.7	4.33	98 ft. *
M	Wooded former borrow site**	5.5	2.51	>100 ft.
N	Wooded former borrow site**	6.2	0.19	>100 ft.
O	Wooded former borrow site **	6.6	2.90	>100 ft.
P	Wooded former borrow site	7.3	1.82	>100 ft.
Q	Wooded former borrow site	7.6	1.01	>100 ft.
R	Wooded former borrow site*	8.1	3.21	116 ft.
S	Wooded former borrow site	11.5	0.32	>100 ft.
T	Wooded former borrow site	11.9	1.50	112 ft.

* Levee expansion away from these wetlands (landside expansion) will avoid potential direct impacts.

** Wetlands located within States lands or managed by the TPWD.

Figure 4.1
Cross-Sectional Areas of Wetlands Separation from Levee Expansion Area

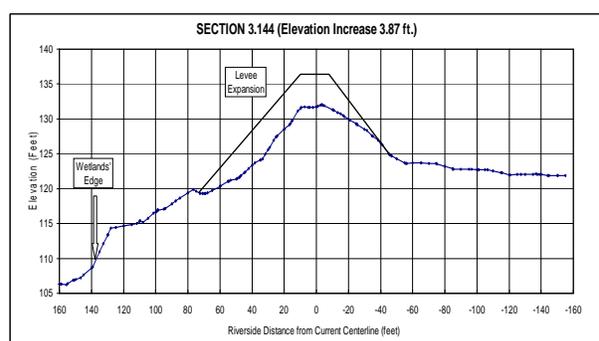
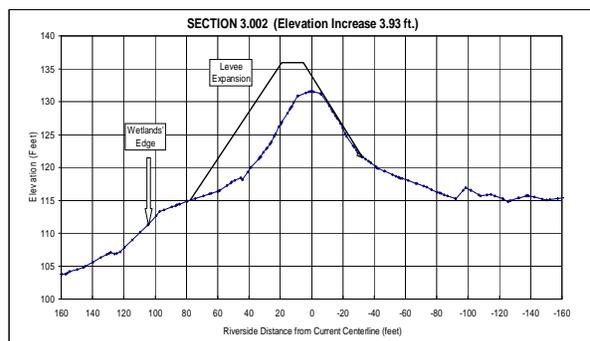
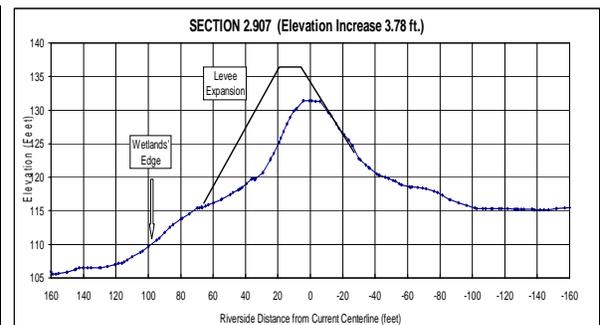
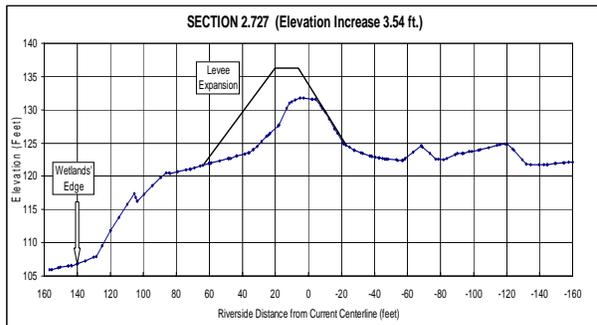
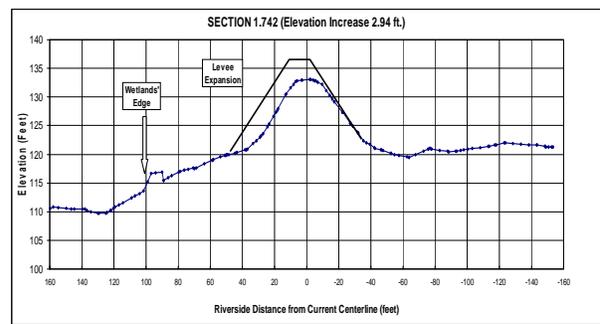
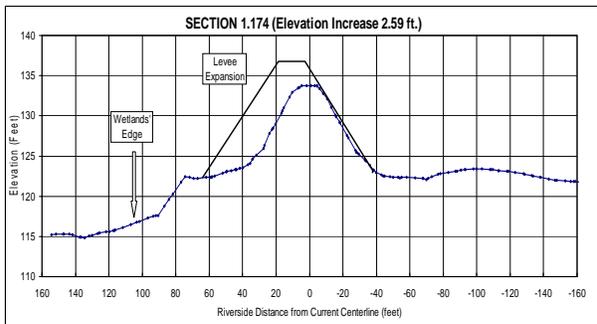
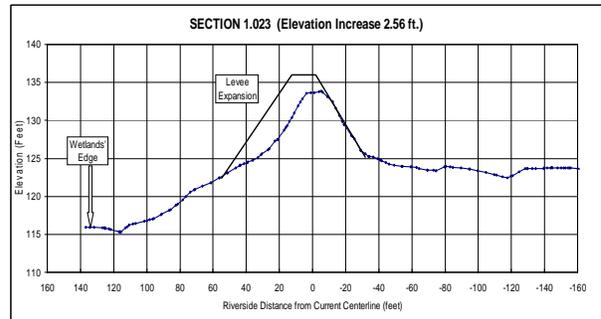
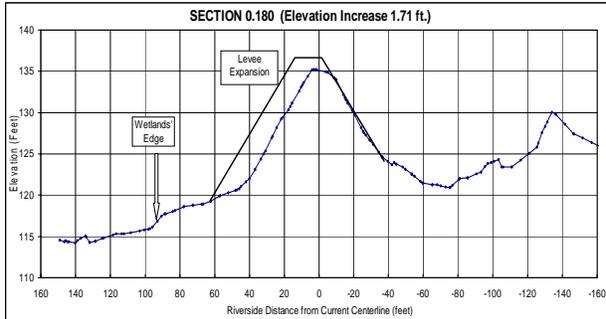
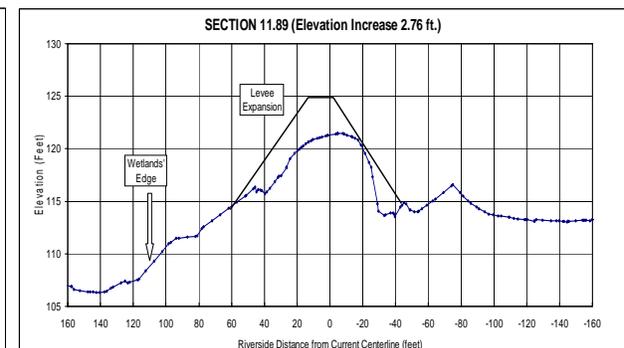
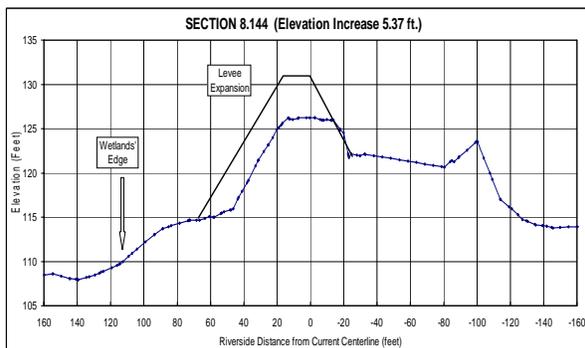
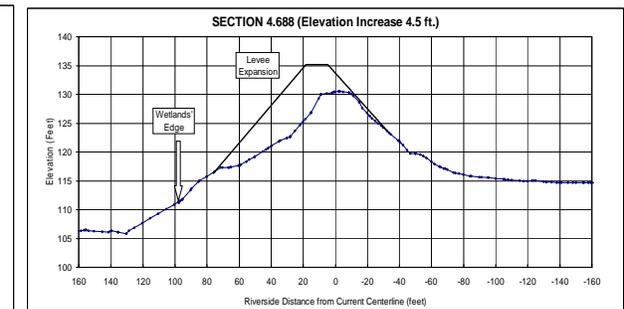
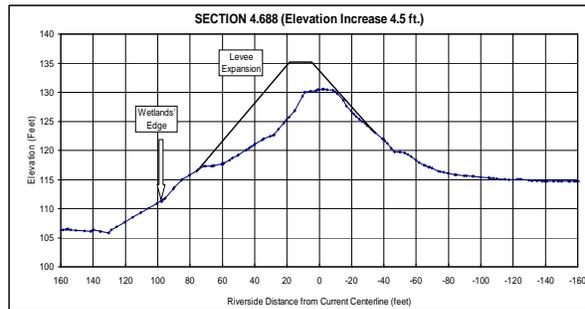
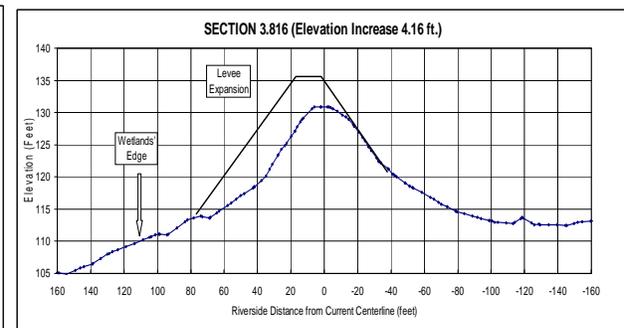
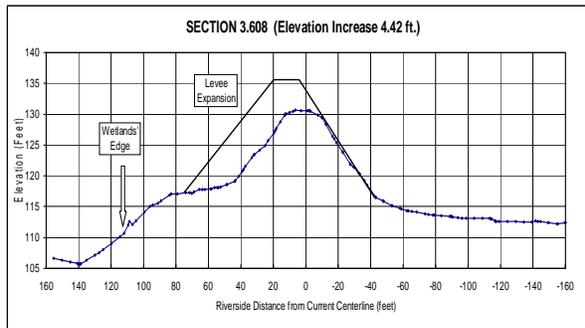
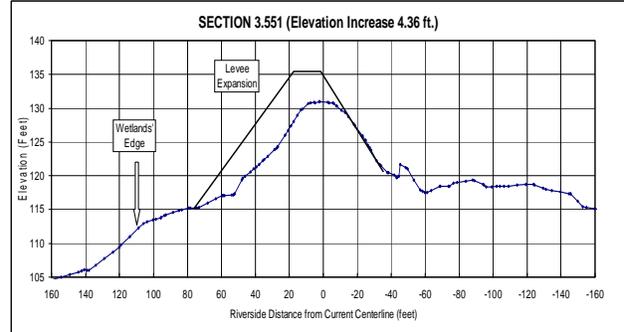
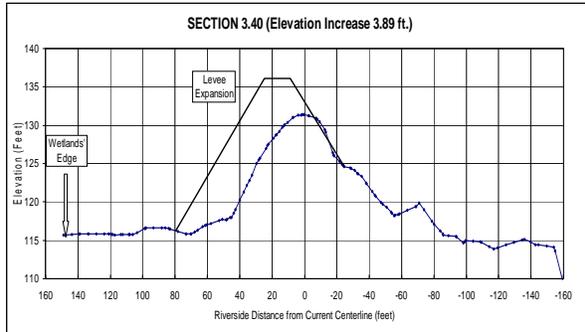


Figure 4.1 (continued)
Cross-Sectional Areas of Wetlands Separation from Levee Expansion Area



4.2 CULTURAL RESOURCES

4.2.1 Historic and Prehistoric Cultural Resources

Mission Levee System

No Action Alternative

No impacts are anticipated, as the current levee configuration would be retained.

Proposed Action

Proposed improvements to the Mission Levee System may impact six HPAs that could contain historic archaeological materials. Archaeological resources may be impacted by mechanical excavation or by burial if the levee footprint is expanded or new ROW is acquired. These areas, identified in a previous study (Cooper, *et al.* 2002), are:

1. The community of Peñitas. The area around the community of Peñitas is shown to have contained standing structures in 1916 (USGS 1916). Historic archaeological deposits associated with these structures may be present in this area. There is a low probability of impacts as the levee is in the fringe of the HPA. The levee change is minimum and no excavation is required.
2. The community of Abram. The area northwest of the community of Abram is shown to have contained standing structures in 1916 (USGS 1916). Historic archaeological deposits associated with these structures may be present in this area. There is a low probability of impact as there will be no excavation required.
3. The Hedley Ranch and the ruins of the King Ranch. These structures, as depicted on the 1910 USGS map, are located well away from the levee; additional undocumented structures may have existed in the area of the levee modification. A historic artifact scatter with associated concrete debris was reported by Hartmann, *et al.* (1995) near this location but would not be impacted because is outside the construction area.
4. The United Irrigation Company and Edinburg Pumping Plants, a 1916 U.S. Army camp, and Lomitas Ranch. Historic archaeological deposits associated with these structures may be present in this area. The current levee footprint will not be expanded at this location. There is no impact to the site.
5. The La Lomita Historic District. The Mission Levee System extends along the northern edge of the La Lomita National Register of Historic Places District (see Figure 3.3). The 1899 La Lomita Chapel is adjacent to the southern side of the Mission Levee but is beyond the current ROW. The project will be coordinated with the City of Mission for flood protection and is endorsed by the City.
6. Former structures located near the juncture of the Mission Levee and the Banker Floodway. The rural area adjacent to this area is shown to have contained standing structures in 1916 (USGS 1916). The construction of the Banker Floodway resulted in extensive land modification to the proposed project area. It is unlikely that any intact archaeological resources exist within this HPA, therefore, no impacts are expected.

Improvements to the levee system have no impact to a known prehistoric archaeological resource (41HG143) at one location. The site is located in a currently active landfill. Current data indicate that the site has been destroyed by previous and ongoing landfill activities.

No areas considered to be of high probability for the occurrence of unknown prehistoric archaeological sites were identified in previous studies or during the archival research.

Common Levee System

No Action Alternative

No impacts are anticipated, as the current levee configuration would be retained.

Proposed Action

No significant impacts are anticipated, as no areas considered to be high probability for the occurrence of unknown prehistoric archaeological sites were identified in previous studies or during the archival research conducted in support of the EA preparation (Neel 2006).

4.2.2 Architectural and Engineering Resources

Mission Levee System

No Action Alternative

No impacts are anticipated, as the current levee configuration would be retained.

Proposed Action

Preliminary investigations indicate four major historic resources exist within the current Mission Levee ROW and are engineering elements of the levee and floodway systems. These engineering features, illustrated in Figure 3.9, are:

1. A weir gate structure at the Border Pacific Railroad crossing near Peñitas (ENG 1). This historic-age resource may be physically impacted by the proposed undertaking.
2. The Edinburg Pumping Plant and floodwall (ENG 2). Although the structure would remain unmodified and would not be directly impacted by proposed levee modifications, the visual impact of the partial levee relocation across the irrigation intake channel would need to be evaluated.
3. The Mission Main Canal weir gate structure (ENG 3). The existing weir gate structure would be retained, but the concrete retaining wall attached to the structure would be raised to match the proposed new levee elevation.
4. The Banker Floodway spillway structure (ENG 4). The structure may be minimally affected only at the levee tie-in, or may undergo a visual impact by encroachment of the proposed expanded levee footprint or levee height.

In addition to the major structures listed above, 23 minor historic-age resources consisting of small weir gates and one siphon were documented along the riverside of the Mission Levee at various locations (see Figure 3.9). These resources may be affected by proposed modifications to the levee system, but no significant impacts are anticipated.

Common Levee System

No Action Alternative

No impacts are anticipated, as the current levee configuration would be retained.

Proposed Action

Preliminary investigations indicate two major historic resources exist within the current Common Levee System ROW, both engineering elements of the levee and floodway systems: the Banker Floodway spillway structure (ENG 4) and Anzalduas Dam (ENG 5). These two historic-age resources may be minimally affected only at levee tie-in, or may undergo a visual impact by encroachment if the proposed levee footprint or levee height is expanded. Two minor historic-age resources along the riverside of the Common Levee (a square box and a cylinder with a ladder structure) may require some modifications.

4.3 WATER RESOURCES

4.3.1 Flood Control

Mission Levee System

No Action Alternative

The No Action Alternative would retain the current configuration of the Mission Levee System, as designed over 30 years ago, and maintain the current level of protection currently associated with this system. Under severe storm events, current containment capacity may be insufficient to fully control Rio Grande flooding with risks to personal safety and property.

Proposed Action

Improvements to the levee system would increase flood containment capacity to control the design flood event as evaluated by hydraulic modeling. A minimum change in water elevation, less than 1 inch, would be anticipated as a result of the levee height increase for the Mission Levee System. In areas where there are structural deficiencies in the Mission Levee System, the proposed levee expansion would address those deficiencies during construction to improve the overall performance of the Mission Levee along this reach of the LRGFCP.

Common Levee System

No Action Alternative

The No Action Alternative would retain the current configuration of the Common Levee System, as designed over 30 years ago, and maintain the current level of protection currently associated with this system. Under severe storm events, current containment capacity may be insufficient to fully control Rio Grande flooding with risks to personal safety and property.

Proposed Action

The Common Levee System was evaluated with the updated hydraulic model to determine potential changes to water surface elevation would be affected by the proposed levee system improvements. A minimum change in water elevation, less than 1 inch, would be anticipated as a result of the levee height increase.

4.3.2 Water Flow

Under the No Action Alternative, no impacts are anticipated as the current levee configuration would be retained.

For the Proposed Action, improvements to the Mission and Common Levee Systems would not affect water flow or downstream water bodies.

4.4 LAND USE

Mission Levee System

No Action Alternative

No impacts are anticipated as the current levee configuration would be retained.

Proposed Action

Expansion of the Mission Levee System would occur almost entirely within the ROW. The expansion would primarily occur on the riverside of the levee due to the presence of irrigation canals along large levee segments. Landside expansion is only considered in the upper reaches of the Mission Levee where ROW is available and irrigation canals are absent. Potential impacts were evaluated in terms of natural resources management areas, agricultural lands, and urban areas.

Natural Resources Management Areas. The approximate 113-acre expansion of the Mission Levee System would impact mostly herbaceous vegetation dominated by invasive species (approximately 78 acres). Approximately 34 acres of thorn woodland, a higher quality habitat, would also be removed.

Agricultural Land. Removal of agricultural land would be limited to 0.5 acre. This removal would be associated with the need for additional ROW to reroute the levee across the Edinburg intake channel. Along irrigation canals, Mission Levee expansion would take place on the riverside, opposite to the canal location. Those canal segments along the levee would be temporarily affected by levee construction activities, as follows:

- Hidalgo County Irrigation District No. One: Changes would be made in the intake channel in front of the Peñitas Pumping Plant at Mission Project Mile 0.6. The current floodwall attached to the Peñitas Pumping Plant would be replaced by an earthen embankment placed across the intake channel in front of the existing plant. The new embankment would be built over intake pipes of a diameter similar to those of the existing intake lines. The plant itself would remain operational, and modifications of the existing structure would not be required.
- United Irrigation District of Hidalgo County: Levee construction would take place along an approximate 3-mile segment of the Mission Main Canal. Headwall structures at the Main Mission Canal crossing would need to be raised. Potential impacts would be limited to the construction period.
- Hidalgo County Irrigation District No. 19: Levee construction would take place along a 1.7-mile segment of the Granjeno Canal. Potential impacts would be limited to the construction period.

Urban Areas. Urban development in the vicinity of the Mission Levee System is limited to the unincorporated towns of Peñitas, Abram, and Madero, located on the levee landside. Along the riverside subdivision of Madero, the increase in levee height would take place in the form of a mechanically stabilized structure, without footprint expansion. Construction impacts along the riverside subdivision of Madero would be temporarily affected by construction; following construction the modified levee would continue to serve as a public-access road.

Common Levee System

No Action Alternative

No impacts are anticipated as the current levee configuration would be retained.

Proposed Action

The proposed Common Levee System expansion would occur entirely within the ROW. No urban development is located near the proposed levee expansion area. The expansion would remove approximately 72 acres, 68 acres of which are herbaceous vegetation. Approximately 4 acres of thorn woodland would also be removed, which is potentially higher quality habitat. Alignment of the levee expansion would be adjusted to minimize removal of established wooded vegetation along the Gabrielson and Cottam Units of the LRGV National Wildlife Refuge. Anzalduas Dam County Park, adjacent to Anzalduas Dike, would be temporarily affected during project construction. No impacts to agricultural land are anticipated (Table 4.1).

4.5 COMMUNITY RESOURCES

4.5.1 Socioeconomics

Mission Levee System

No Action Alternative

No impacts to community resources are anticipated as the current levee configuration would be retained.

Proposed Action

The analyses of impacts of the footprint expansion on socioeconomic resources and environmental justice were based on changes in employment, income, and business volume as indicator criteria, as well as the disproportionate number of minority or low-income populations potentially affected by the proposed levee improvements.

The direct influx of federal funds into Hidalgo County would be \$15,500,000 on the basis of construction costs. This influx of funds would have a small but positive local economic impact, representing an increase of \$52,529,702 in direct and indirect sales. Job creation is estimated at 481 in direct and indirect employment. The positive impact would be limited to the anticipated 1-year construction period. Table 4.5 illustrates the magnitude of the economic influx relative to reference values for Hidalgo County.

Table 4.5 Potential Economic Impacts Improvements to the Mission Levee System

Evaluation Criteria	Unit Value for Rio Grande Levees ^a	Raising of Mission Levee	Annual Value for Hidalgo County	Increase Relative to County
Local Expenditures	\$1,000,000	\$15,500,000	Not applicable	
Direct Employment	19	295		
Indirect Employment	12	186		
Total Employment	31	481	180,121 ^b	0.27%
Direct Sales Volume	\$1,274,065	\$19,748,008		
Indirect Sales Volume	\$2,114,948	\$32,781,694		
Total Sales Volume	\$3,389,013	\$52,529,702	\$ 10,375 million ^c	0.51%
Direct Income	\$554,814	\$8,599,617		
Indirect Income	\$452,466	\$7,013,223		
Total Income	\$1,007,280	\$15,612,840	\$5,637 million ^d	0.28%

^a Unit data for levee construction from the USIBWC Rio Grande Canalization Project (Parsons 2004).

^b Total of the labor force (16 years and older) employed in 2000 (U.S. Census Bureau 2000).

^c Gross sales for Hidalgo County in 2004 (Texas Comptroller 2005).

^d Based on a 2000 per capita income of \$9,899 and an Hidalgo County population of 569,463.

Common Levee System

No Action Alternative

No impacts to community resources are anticipated as the current levee configuration would be retained.

Proposed Action

As with the proposed Mission Levee expansion, proposed improvements to the Common Levee System would provide a direct influx of Federal funds, limited to the project duration. The estimated cost of the Common Levee improvements over a 5.1-mile reach of the existing levee is estimated at \$6,900,000, representing an increase of \$23,384,190 in direct and indirect sales. Job creation is estimated at 214 persons in direct and indirect employment. Table 4.6 describes the magnitude of the economic influx in Hidalgo County.

Table 4.6 Potential Economic Impacts Improvements to the Common Levee System

Evaluation Criteria	Unit Value for Rio Grande Levees ^a	Raising of Common Levee	Annual Value for Hidalgo County	Increase Relative to County
Local Expenditures	\$1,000,000	\$6,900,000	Not applicable	
Direct Employment	19	131		
Indirect Employment	12	83		
Total Employment	31	214	180,121 ^b	0.12%
Direct Sales Volume	\$1,274,065	\$8,791,049		
Indirect Sales Volume	\$2,114,948	\$14,593,141		
Total Sales Volume	\$3,389,013	\$23,384,190	\$ 10,375 million ^c	0.23%
Direct Income	\$554,814	\$3,828,217		
Indirect Income	\$452,466	\$3,122,015		
Total Income	\$1,007,280	\$6,950,232	\$5,637 million ^d	0.12%

a Unit data for levee construction from the USIBWC Rio Grande Canalization Project (Parsons 2004).

b Total of the labor force (16 years and older) employed in 2000 (U.S. Census Bureau, 2000).

c Gross sales for Hidalgo County in 2004 (Texas Comptroller 2005).

d Based on a 2000 per capita income of \$9,899 and an Hidalgo County population of 569,463.

4.5.2 Environmental Justice

Mission Levee System

No Action Alternative

Under the No Action Alternative, current condition of minority and low-income populations would remain unchanged as improvements to the levee system would not occur.

Proposed Action

Data indicate that Hidalgo County has disproportionately high minority (approximately 88 percent) and low-income populations (individuals – 35.9 percent); however, construction activities would not occur in residential or workplace areas associated with these populations. A small but positive economic input to the local community would occur as a result of the levee improvements. As a result, no adverse impacts to disproportionately high minority and low-income populations are expected from construction of the Mission Levee improvements.

Common Levee System

No Action Alternative

Under the No Action Alternative, improvements to the Common Levee System would not occur; the current condition of minority and low-income populations would remain unchanged.

Proposed Action

Expansion of the Common Levee System would result in a small but positive economic input to the local community, including minority and low-income populations.

4.5.3 Transportation

Mission Levee System

No Action Alternative

No impacts are anticipated as the current levee system configuration would be retained.

Proposed Action

Proposed improvements to the Mission Levee would have moderate impacts on local transportation. During levee construction, a temporary increase in use of the access road would take place during placement of equipment in the staging areas. Subsequent construction activities would also impact the local transportation as fill material would be imported from sources outside the levee system. Following completion of the levee improvement project, the levee road would continue providing service for USFWS and Border Patrol activities, and limited public access.

Common Levee System

No Action Alternative

No impacts are anticipated as the current levee system configuration would be retained.

Proposed Action

As with the Mission Levee, fill material for expansion of the Common Levee System would be imported, with a temporary increase in the use of local roads.

4.6 ENVIRONMENTAL HEALTH

4.6.1 Air Quality

Mission Levee System

No Action Alternative

No impacts are anticipated as the current configuration of the levee system would be retained.

Proposed Action

Improvements to the Mission Levee System would impact air quality through excavation and fill activities. Potential impacts would be a slight increase in criteria air pollutants within Hidalgo County. Table 4.7 summarizes the additional estimated criteria pollutants associated with the Proposed Action, as well as the percent increase above the existing Hidalgo County emissions inventory. Estimates were calculated for 12.1 miles of levee construction for the levee height increase. Unit air emissions estimates for these activities followed common construction practices and methods (Means 2002) and emission factors reported by USEPA (1996) as applied to a similar levee expansion project in an upper reach of the Rio Grande (Parsons 2003). Estimated emissions for all five criteria pollutants represent less than 1 percent of the Hidalgo County annual emissions inventory.

Table 4.7 Air Emissions for Improvements to the Mission and Common Levee Systems

Parameter	Emissions (tons per year)				
	Sulfur Oxides	Nitrogen Dioxides	Carbon Monoxide	Volatile Organic Compounds	Particulate Matter (PM ₁₀)
Unit emissions per mile of levee height increase*	0.55	5.05	2.11	0.4	5.61
Hidalgo County emissions inventory**	1,127	19,726	151,085	27,812	61,819
<i>Mission Levee System (12.1 miles)</i>					
Estimated emissions (tons/year)	6.66	61.1	25.5	4.84	67.8
Emissions relative to Hidalgo Co.	0.59%	0.31%	0.02%	0.02%	0.11%
<i>Common Levee System (5.2 miles)</i>					
Estimated emissions (tons/year)	2.86	26.3	11.0	2.08	29.2
Emissions relative to Hidalgo Co.	0.25%	0.13%	0.01%	0.01%	0.05%

* Unit data for construction from the USIBWC Rio Grande Canalization Project EIS (Parsons 2003:Table 4.11-1).

** USEPA 1999, the most recent available data as of May 2006.

Common Levee System

No Action Alternative

No impacts are anticipated as the current configuration of the levee system would be retained.

Proposed Action

Improvements to the Common Levee System would impact air quality through excavation and fill activities. Potential impacts would be a slight increase in criteria air pollutants within Hidalgo County (Table 4.7).

4.6.2 Noise

Mission Levee System

No Action Alternative

No impacts from noise are anticipated, as the current levee configuration would be retained.

Proposed Action

Improvements to the Mission Levee System would increase ambient noise levels through the use of trucks to bring additional fill material to the site and fill activities associated with the levee improvement project. For the purposes of this EA, it is estimated that the shortest distance between an equipment noise source and a receptor in a rural area would be a person(s) 100 feet off-site. Given the rural nature of the area, it is also unlikely a person other than a worker would be within 100 feet of the site boundary during activities. However, if a person were within this distance, the person could be exposed to noise as high as 74 to 83 dBA.

It is anticipated that construction activities would occur between 7:30 a.m. and 5:00 p.m., 5 days per week for the duration of the project. However, individuals would not be exposed during entire noise-producing period. Under these conditions, persons would not be exposed to long-term and regular noise above 75 BA. As stated in Subsection 3.6.2, DNL 75 dBA during the noise event indicates a good probability for frequent speech disruption, producing ratings of “barely acceptable” for intelligibility of spoken material. Therefore, nearby persons should not experience loss of hearing, but may experience frequent speech disruption.

Common Levee System

No Action Alternative

No impacts from noise are anticipated, as the current levee configuration would be retained.

Proposed Action

As with the Mission Levee expansion, noise may be expected from the trucks driving the fill material to the site and the fill activities.

4.6.3 Hazardous and Toxic Waste

Mission Levee System

No Action Alternative

No impacts from waste storage and disposal sites are anticipated, as the current levee configuration would be retained.

Proposed Action

Improvements to the Mission Levee System would not be affected by waste storage and disposal sites. No waste storage and disposal sites were identified within the proposed Mission Levee project area. Two sites within one-quarter mile of each other, were identified; one a solid waste landfill site, and the other a storage tank site. Neither of these sites would affect, nor be affected by the proposed levee construction project.

Common Levee System

No Action Alternative

No impacts from waste storage and disposal sites are anticipated, as the current levee configuration would be retained.

Proposed Action

No waste storage and disposal sites were identified within the proposed Common Levee project area, and no waste storage and disposal sites were identified within one-half mile of the project area.

4.7 INDIRECT AND CUMULATIVE EFFECTS

Following completion of the proposed levee improvement project, the levee road would continue providing service for Border Patrol activities. The increased levee elevation has a potential to facilitate patrol activities by providing an improved line of vision from the levee road.

SECTION 5

BEST MANAGEMENT PRACTICES AND MITIGATION ACTIONS

Section 5 describes best management practices (BMP) and mitigation measures addressing potential impacts of the Proposed Action for Improved Flood Control of the Mission and Common Levee Systems. Best management practices represent specific actions for minimizing impacts to natural and cultural resources. Mitigation measures compensate for potential adverse effects of the Proposed Action that cannot be prevented through BMPs. These BMPs and mitigation measures are organized within the engineering, natural resources, and cultural resources categories.

5.1 ENGINEERING MEASURES

5.1.1 Best Management Practices

To protect vegetation and wetlands, the following BMPs would be utilized:

- A storm water pollution prevention plan (SWP3) would be developed during project design to minimize impacts to receiving water, as specified by USEPA regulations for construction projects. The SWP3 would include construction areas along the levee system, as well as equipment staging areas. To prevent sedimentation, sediment fences and/or sediment barriers around wetlands would be installed while construction occurs in affected areas.
- During the project construction, methods such as wetting the soil would be employed to prevent erosion from unvegetated slopes and/or corridors.
- During the project construction, existing access points to the levee road will remain in service; because no modifications will be made to the levee 3:1 slope ratio, lateral access to the levee road will continue as currently available.
- After construction is complete, the expanded levee would be re-vegetated with herbaceous vegetation.
- Construction near La Lomita Park would be coordinated with the Parks Department of the City of Mission to facilitate access to the park and minimize equipment operation in its vicinity due to the presence within the park boundaries of La Lomita Chapel, a Texas State Historic Landmark.

5.1.2 Engineering Design Measures

- Levee expansion alignment would be optimized, to the extent possible, to avoid impacts to wooded vegetation, wetlands, and other natural resources. Landside

expansion alignment would be used over more than half of the Mission and Common Levee Systems, avoiding potential impacts to various natural resources management areas in upstream reaches of the Mission Levee (Project Miles 0 to 5.3) and the Common Levee (Project Miles 0.8 through 2.5).

- Levee rerouting across the Edinburg irrigation intake channel would be adopted to avoid modification of the Peñitas Pumping Plant, a historical-age structure, and to minimize construction impacts on its operation.

5.2 NATURAL RESOURCES

5.2.1 Best Management Practices

To protect vegetation, the following BMPs would be utilized:

- After construction is complete, it is likely that in most areas the construction corridor would be abandoned. The construction corridor may be re-vegetated with herbaceous or woody vegetation at the discretion of the natural resources management agency where the corridor is located.
- Final surveys prior to the start of the project will determine the types (herbaceous or woody) and amounts of vegetation to be removed. Herbaceous vegetation is expected to rapidly reestablish upon project completion. Woody vegetation may be re-vegetated elsewhere on the site (see mitigation actions below), depending on quantity and quality of vegetation removed.

To protect wetlands, the following BMPs would be utilized:

- Final surveys prior to the start of the project will determine separation between the construction corridor and boundaries of nearby wetlands, as identified during a previously completed field survey. Wetlands boundaries would be marked with high visibility fencing or high visibility flagging to prevent incursion into wetlands during project construction.
- After project completion, fencing/flagging markers around wetlands areas would be removed and, if warranted to preserve the integrity or functionality of those wetlands, fringe vegetation removed during the marking/survey process would be re-planted.

To protect wildlife, the following BMPs would be utilized:

- Construction activities along natural resources management areas would be scheduled to occur outside the April 1 through July 15 migratory bird nesting season.

- The topographic survey to be conducted for engineering design of levee improvements will define the extent of wooded habitats that would be removed. If thorn woodland is removed, then re-vegetation may occur in adjacent or other locations, at the discretion of the natural resources management agencies (see mitigation below).

To protect other resources or uses of the area, the following BMPs would be utilized:

- Construction activities along the Bentsen-Rio Grande Valley State Park would be minimized when the park experiences an influx of tourists. It is possible that the influx of tourists would coincide, in part, with the migratory bird nesting season.

5.2.2 Mitigation Measures

If natural resources cannot be fully protected from adverse impacts through BMPs, then mitigation measures would be adopted. Mitigation is the action that would compensate for unavoidable losses of sensitive vegetation, wetlands, or wildlife during project construction.

Natural resources mitigation may include at least the following:

- Revegetation would be used as mitigation for unavoidable impacts to vegetation. Revegetation would be performed with native species that occur in habitats that would be impacted, or with native plants indigenous to Hidalgo County. Table 5.1 presents a list of appropriate grasses, forbs, vines, shrubs, and trees compiled by the TPWD.
- If thorn woodland is removed during construction, woody plant revegetation would occur in areas where such revegetation will provide the most benefit. That is, replanting may take place elsewhere on the property where previous disturbance occurred, or in areas where woody vegetation is desired for continuity of habitat. A 2:1 replacement ratio is recommended by the TPWD for high quality woodlands, and a 1:1 ratio for herbaceous vegetation. Target plant density revegetation would be at the discretion of the natural resources management organization where the removal occurred.
- An approximate 1-acre section of wetlands surrounding an irrigation intake channel is expected to be removed during levee rerouting across the Edinburg intake channel. A Section 404 permit application would be submitted to the USACE for review and approval, and mitigation actions would implemented as agreed with the USACE.

Table 5.1 Hidalgo County Native Indigenous Grasses, Forbs, Vines, Shrub and Trees

Scientific Name	Common Name
GRASSES	
<i>Andropogon gerardii</i>	Big Bluestem
<i>Andropogon glomeratus</i>	Bushy Bluestem
<i>Aristida purpurea</i>	Purple Threeawn
<i>Bothriochloa longipaniculata</i>	Longspike Beardgrass
<i>Bothriochloa torreyana</i>	Silver Beardgrass
<i>Bouteloua hirsuta</i>	Hairy Grama
<i>Bouteloua rigidisetata</i>	Texas Grama
<i>Bouteloua trifida</i>	Red Grama
<i>Bromus texensis</i>	Texas Brome
<i>Buchloe dactyloides</i>	Buffalo Grass
<i>Chloris cucullata</i>	Hooded Windmillgrass
<i>Chloris texensis</i>	Texas Windmill Grass
<i>Dichanthelium</i> spp.	Rosettegrass
<i>Digitaria californica</i>	California Cottontop
<i>Digitaria cognata</i>	Fall Witchgrass
<i>Eragrostis intermedia</i>	Plains Lovegrass
<i>Eragrostis spectabilis</i>	Purple Lovegrass
<i>Eragrostis spicata</i>	Spicate Lovegrass
<i>Hilaria belangeria</i>	Curlymesquite
<i>Leersia monandra</i>	Bunch Cutgrass
<i>Leptochloa fascicularis</i>	Bearded Sprangletop
<i>Leptochloa filiformis</i>	Red Sprangletop
<i>Neeragrostis reptans</i>	Creeping Lovegrass
<i>Panicum hirsutum</i>	Hairy Panicum
<i>Panicum virgatum</i>	Switchgrass
<i>Paspalum langei</i>	Rustyseed Paspalum
<i>Paspalum lividum</i>	Longtom
<i>Paspalum plicatulum</i>	Brownseed Panicum
<i>Trichloris pluriflora</i>	Multiflowered False Rhodesgrass
<i>Tridens texanus</i>	Texas Tridens
<i>Schizachyrium scoparium</i>	Little Bluestem
<i>Setaria geniculata</i>	Knot-root Bristlegrass
<i>Setaria leucopyla</i>	Plains Bristlegrass
<i>Setaria macrostachya</i>	Plains Bristlegrass
<i>Setaria scheelei</i>	Southwestern Bristlegrass
<i>Setaria texana</i>	Texas Bristlegrass
<i>Sporobolus buckleyi</i>	Buckley Dropseed

Table 5.1 Hidalgo County Native Indigenous Grasses, Forbs, Vines, Shrub and Trees (continued)

Scientific Name	Common Name
FORBS	
<i>Abutilon fruticosum</i>	Indian Mallow
<i>Abutilon trisulcatum</i>	Amantillo
<i>Achyranthes aspera</i>	Chaff-Flower
<i>Ambrosia psilostachya</i>	Western Ragweed
<i>Aster spinosa</i>	Spiny Aster
<i>Aster subulatus</i>	Hierba del Marano
<i>Calyptocarpus vialis</i>	Straggler Daisy
<i>Celosia nitida</i>	Albahaca Cockscomb
<i>Chenopodium berlandieri</i>	Berlandier Goosefoot
<i>Chenopodium murale</i>	Nettleleaf Goosefoot
<i>Cyperus rotundus</i>	Purple Nutsedge
<i>Galium aparine</i>	Clingon Bedstraw
<i>Gaura parviflora</i>	Gaura
<i>Helianthus annuus</i>	Common Sunflower
<i>Herrisantia crispa</i>	Net-vein Herrisantia
<i>Heterotheca latifolia</i>	Camphor Weed
<i>Malvastrum americanum</i>	Malva Loca
<i>Nicotiana repanda</i>	Wild Tobacco
<i>Oxalis stricta</i> (=dillenii)	Yellow Wood-Sorrel
<i>Parietaria pensylvanica</i>	Pellitory
<i>Petiveria alliacea</i>	Garlic-Weed
<i>Phoradendron tomentosum</i>	Mistletoe
<i>Plantago rhodosperma</i>	Red-seeded Plantain
<i>Plumbago scandens</i>	Hierba de Alacran
<i>Ratibida columnaris</i>	Mexican Hat
<i>Rhynchosida physocalyx</i>	Rhynchosida
<i>Ruellia drummondiana</i>	Wild Petunia
<i>Ruellia runyonii</i>	Wild Petunia
<i>Sida spinosa</i>	Prickly Sida
<i>Solanum americanum</i>	American Nightshade
<i>Solanum triquetum</i>	Texas Nightshade
<i>Sonchus oleraceus</i>	Sow Thistle
<i>Stellaria prostrata</i>	Chickweed
<i>Urtica chamaedryoides</i>	Nettle
<i>Verbesina encelooides</i>	Cowpen Daisy
<i>Verbesina microptera</i>	Frostweed
VINES	
<i>Cardiospermum halicacabum</i>	Balloon-Vine
<i>Cissus incisa</i>	Marine Ivy, Ivy Treebine
<i>Clematis drummondii</i>	Barbas de Chivato
<i>Cocculus diversifolius</i>	Snailseed Vine
<i>Matelea reticulata</i>	Pearl Milkweed

Table 5.1 Hidalgo County Native Indigenous Grasses, Forbs, Vines, Shrub and Trees (continued)

Scientific Name	Common Name
VINES (cont.)	
<i>Sarcostemma cynanchoides</i>	Climbing Milkweed, Twine Vine
<i>Serjania brachycarpa</i>	Shortfruit Serjania Vine
<i>Smilax bona-nox</i>	Cat Brier
<i>Urvillea ulmacea</i>	Urvillea
SHRUBS	
<i>Acacia greggii</i> var. <i>greggii</i>	Catclaw
<i>Acacia greggii</i> var. <i>wrightii</i>	Wright's Acacia
<i>Adelia vaseyi</i>	Vasey's Adelia
<i>Amyris texana</i>	Chapotillo
<i>Baccharis neglecta</i>	Roosevelt Willow
<i>Bernardia myricifolia</i>	Oreja de Raton
<i>Chromolaena odorata</i>	Crucita
<i>Forestiera angustifolia</i>	Elbowbush
<i>Karwinskia humboldtiana</i>	Coyotillo
<i>Malpighia glabra</i>	Barbados Cherry
<i>Mimosa pigra</i>	Zarza, Black Mimosa
<i>Opuntia leptocaulis</i>	Tasajillo
<i>Opuntia lindheimeri</i>	Texas Prickley Pear
<i>Phaulothamnus spinescens</i>	Snake Eyes
<i>Xylosma flexuosa</i>	Brush Holly
<i>Zanthoxylum fagara</i>	Colima
<i>Ziziphus obtusifolia</i>	Lotebush
TREES	
<i>Acacia farnesiana</i>	Huisache
<i>Celtis laevigata</i> var. <i>laevigata</i>	Hackberry
<i>Celtis pallida</i>	Granjeno*
<i>Condalia hookeri</i>	Brasil*
<i>Diospyros texana</i>	Texas Persimmon
<i>Ebenopsis ebano</i>	Texas Ebony
<i>Ehretia anacua</i>	Anacua
<i>Fraxinus berlandieriana</i>	Mexican Ash
<i>Guaiaacum angustifolium</i>	Guayacan*
<i>Leucaena pulverulenta</i>	Tepeguaje
<i>Parkinsonia aculeata</i>	Retama
<i>Prosopis glandulosa</i> var. <i>glandulosa</i>	Honey Mesquite
<i>Salix nigra</i>	Black Willow
<i>Sapindus saponaria</i> var. <i>drummondii</i>	Soap-Berry Tree
<i>Sideroxylon celastrina</i>	Coma*
<i>Taxodium mucronatum</i>	Montezuma Cypress
<i>Ulmus crassifolia</i>	Cedar Elm

* These species are also present in shrub form

5.3 CULTURAL RESOURCES

5.3.1 Best Management Practices

The levee expansion area includes the Peñitas Pumping Plant, a potentially significant historical-age structure part of the levee system. To avoid modifications to the plant, and to maintain its operability, it is anticipated that this levee segment will be rerouted across the Edinburg irrigation intake channel, away from the structure. Crossing of the man-made channel has a very low probability for archaeological resources to be encountered during construction. If buried cultural materials are encountered, the contractor would cease work in the immediate area and notify the State Historic Preservation Officer.

5.3.2 Mitigation Measures

The environmental assessment of the Mission and Common Levee Systems indicates that mitigation measures would not be required for the levee improvement project as impacts on identified cultural resources are possible but not likely significant. If potentially significant impacts are subsequently identified during the design phase, mitigation measures would be developed and a more detailed assessment of potential impacts would be provided to the THC as part of the ongoing National Historic Preservation Act Section 106 consultation. Documentation on Section 106 consultation is provided in Appendix B.

SECTION 6 ENVIRONMENTAL COMPLIANCE AND COORDINATION

6.1 CONSULTATION PROCESS

6.1.1 Cooperating Agency Support

A letter of cooperation in preparation of this Environmental Assessment was sent to various potential stakeholders by the USIBWC on November 8, 2005. The Texas Parks and Wildlife Department agreed to provide technical support and review in preparation of this EA as a cooperating agency (December 28, 2005 letter from Mr. Michael E. Berger, TPWD Director of Wildlife Division to Mr. Steve Smullen of USIBWC). Request for cooperation correspondence is included in Appendix B.

The USACE indicated its interest in becoming a cooperating agency in the levee project evaluation if EA findings lead to preparation of an EIS (November 28, 2005 letter to Mr. Steve Smullen from Fred L. Anthamatten, Assistant Chief, Regulatory Branch).

6.1.2 Identification of Potential Impacts and Issues

Potential impacts and issues were identified during consultation meetings and correspondence. Consultation conducted is briefly described below by agency or organization. Consultation correspondence is included in Appendix B.

Texas Parks and Wildlife Department

The TPWD, as cooperating agency in preparing the EA, supported its preparation through meetings and conference calls and submittal of review comments on the Preliminary EA and Draft Technical Support Studies Report. Technical reviewers are subsequently listed in Table 6.2.

U.S. Fish and Wildlife Service

The USFWS submitted a reply to a December 22, 2005 request for consultation by the USIBWC (February 15, 2006 letter from Mr. Jeff Rupert to Mr. Gilbert Anaya). Meetings with Mr. Jeff Rupert were conducted during habitat surveys along the Mission Levee on December 2, 2005, and Common Levee on March 15, 2006.

The Nature Conservancy

Ms. Lisa Williams attended a consultation meeting with USFWS on March 15, 2006. A description of the proposed action was sent to Ms. Williams prior to the meeting.

U.S. Army Corps of Engineers

The USACE submitted a reply to a December 22, 2005 request for consultation by the USIBWC (December 29, 2005 notification to Mr. Carlos Peña). The USACE assigned Ms. Marie Patillo as point of contact for the levee improvement project, and Tracking Number 200502171 for future consultation and permit applications. On May 12, 2006, the USIBWC submitted the Technical Support Studies Report to assist the USACE in evaluating potential impacts of the levee improvement project on waters of the United States, wetlands, and natural resources. A June 1, 2006 letter from the USACE provided an approved wetlands jurisdictional determination in agreement with recommendations of the Technical Support Studies Report.

Texas Historical Commission

The agency submitted a reply to a December 22, 2005 request for consultation by the USIBWC (January 23, 2006 letter from Ms. Amy Hammons to Mr. Gilbert Anaya). The THC requested additional support documentation on historic and pre-historic cultural resources prior to the project evaluation. On May 12, 2006, the USIBWC submitted the Cultural Resources Evaluation Report (Neel 2006) to assist the THC in evaluating potential impacts of the levee improvement project on cultural resources. On June 14, 2006, the THC requested clarifications and additional information on the evaluation of potential impacts and cultural resources baseline information. Following telephone consultation by the USIBWC, THC recommendations were incorporated into the Draft EA and the revised Cultural Resources Evaluation Report.

City of Mission

A December 22, 2005 consultation letter was sent by the USIBWC to the City of Mission Parks and Recreation Department regarding potential impacts on the La Lomita City Park. Mr. Ruben Diaz, Director of the Public Works Department was also identified for subsequent consultation because of the City's planned expansion of the Old Military Road along the Mission Inlet segment of the levee.

Irrigation Districts

The December 22, 2005 consultation letter was sent to the following irrigation districts potentially affected by the levee improvement project:

- Hidalgo County Irrigation District No. One: new levee crossing of the Edinburg intake channel near the Peñitas Pumping Plant;
- Hidalgo County Irrigation District No. 19: levee height increase along a 1-7 mile segment of the Granjeno Canal segment; and
- United Irrigation District of Hidalgo County: levee height increase along a Mission Main Canal segment, approximately 3-miles long, and modification of the existing crossing of the intake channel to match the new levee elevation.

The Hidalgo County Irrigation District No. One indicated potential requirements for an intake channel crossing near the Peñitas Pumping Plant (January 6, 2006 letter from Mr. Bobby R. McDaniel, General Manager, to Mr. Gilbert Anaya).

6.1.3 Comments on Draft EA

Texas Parks and Wildlife Department

The TPWD, as cooperating agency in preparing the EA, provided comments on the preliminary version of the Draft EA (June 30, 2006 letter from Ms. Kathy Boydston to Mr. Gilbert Anaya). The TPWD requested additional graphic and tabulated information on potential impacts to vegetation along the project area, and the Bentsen-Rio Grande Valley State Park, and proposed mitigation actions. Comments on potentially affected cultural resources were also provided. Comments and recommendations provided were addressed by the USIBWC in the Draft EA prior to its distribution. The TPWD indicated concurrence with the Finding of No Significant Impact in a November 30, 2006 letter to the USIBWC.

Natural Resources Conservation Service

Following review of the Draft EA, the NRCS indicated concurrence with the Finding of No Significant Impact and compliance with the Farmland Protection Policy Act (October 16, 2006 letter from Mr. James M. Greenwade to the USIBWC).

Texas Commission on Environmental Quality

TCEQ indicated that impacts to water of the United States, including wetlands, would require application for a Department of the Army permit under Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act (October 26, 2006 letter from Mr. L'Oreal W. Stepney to Mr. Gilbert Anaya).

Texas Historical Commission

THC submitted comments on the Draft EA, requesting additional information on historical and archaeological resources potentially affected by the project and modifications to the cultural resources evaluation conducted in support of the EA preparation (October 26, 2006 letter from Ms. Hannah Vaughan to Mr. Gilbert Anaya). Subsequently, the USIBWC provided a response to comments and requested documentation; concurrence with a determination of possible but not significant impacts of the project on cultural resources was also requested (November 21, 2006 letter from Mr. Gilbert Anaya to Ms. Hannah Vaughan). THC indicated that agency concurrence would require more detailed information on the proposed action and determination of historic resources eligibility (December 20, 2006 letter from Ms. Amy Hammons to Mr. Gilbert Anaya). On February 22, 2007, the USIBWC notified THC that, as part of the ongoing Section 106 consultation, additional proposed action information will be provided following completion of the conceptual design and preparation of a Memorandum of Agreement with the THC (February 23, 2007 letter from Mr. Gilbert Anaya to Ms. Amy Hammons).

North America Butterfly Association

Following review of the Draft EA, NABA requested USIBWC clarification on potential impacts of the project and access to the International Butterfly Park (October 31, 2006 letter from Ms. Sue Sill to Mr. Gilbert Anaya).

6.2 PERSONS AND AGENCIES CONSULTED

Consultation on biological, cultural, and water resources, and land issues, has been in writing, by phone, or during consultation meetings with agency and city representatives listed below.

Biological Resources

Jeff Rupert, Refuge Manager
Lower Rio Grande Valley National Wildlife
Refuge
U.S. Fish and Wildlife Service

Ernesto Reyes
Ecological Services
U.S. Fish and Wildlife Service

Russell Hooten, Habitat Assessment
Biologist
Texas Parks and Wildlife Department
Wildlife Habitat Assessment Program

Kay Jenkins, Natural Resources
Coordinator
State Parks Division, Region 2
Texas Parks and Wildlife Department

Lisa Williams, Director
Tamaulipan Thornscrub Project
The Nature Conservancy of Texas

Sue Sill, Ph.D., Executive Director
NABA International Butterfly Park
North American Butterfly Association

Cultural Resources

Mark H. Denton
Director, State & Federal Review Section
Archaeology Division
Texas Historical Commission

Amy Hammons
Division of Architecture
Texas Historical Commission

Water Resources

Lloyd Mullins, Unit Leader
Corpus Christi Field Office, Galveston District
U.S. Army Corps of Engineers

Lori Hamilton
Texas Commission on Environmental Quality
Water Quality Division, MC-150

Land Use Issues

Ruben Diaz, Director
City of Mission Public Works Dept.

Joe Villegas, Director
City of Mission Parks and Recreation Dept.

Sergio Saenz, Manager
Anzalduas Dam County Park
Hidalgo County Precinct No. 3

Lee Gernants, Director
Hidalgo County Water Conservation & Irrigation
District No. 19

Bobby R. McDaniel, General Manager
Hidalgo County Irrigation District No. One

John de la Garza, Director
United Irrigation District of Hidalgo County

James Greenwade, Soil Scientist
Natural Resources Conservation Service
Soil Survey Section USDA-NRCS

Cruz J. Rodriguez,
Assistant Chief Patrol Agent, McAllen Sector
U.S. Customs and Border Protection

6.3 LIST OF CONTRIBUTORS

Tables 6.1 and 6.2 list contributors to the preparation of this Environmental Assessment for improvements to the Mission and Common Levee Systems, and development of technical support studies.

Table 6.1 Preparers of the Environmental Assessment and Technical Studies

Name	Organization	Degree	Years Experience	Project Role
R. C. Wooten	Parsons	Ph.D. Biology/Ecology	34	Technical director; NEPA compliance
Carlos Victoria-Rueda.	Parsons	Ph.D., Environmental Engineering	22	Project manager; water and soil analyses
James Hinson	Parsons	M.S. Wildlife Science	16	Vegetation and wildlife analyses; field studies supervision
Namir Najjar	Parsons	Ph.D., Water Resources Engineering	9	Hydraulic modeling
Taylor Houston	Parsons	M.S, Geography-Environmental Resources	6	Wetlands and land use
Jill Noel	Parsons	M.S. Botany	8	Vegetation and community resources
Sherrie Keenan	Parsons	B.A., Journalism	28	Technical editor
Charles Neel	LGGROUP	B.A., Archaeology	16	Cultural resources evaluation

Table 6.2 Technical Review of the Environmental Assessment

Name	Agency	Degree	Years Experience	Project Role
Gilbert Anaya	USIBWC Environmental Protection	M.S. Environmental Science	17	Project manager; NEPA compliance; document review
Raymundo Aguirre	USIBWC Engineering Division	Ph.D. Civil Engineering	49	Engineering, hydraulics and hydrology; document review
Enrique Reyes	USIBWC O&M Division	B.S., P.E., Civil Engineering	32	LRGFCP Project Manager; document review
Kay Jenkins	TPWD, State Parks Natural Resources Program	M.S. Forestry, M.S. Environmental Science	10	Document review
Russell Hooten	TPWD Wildlife Division	M.S. Biology	14	Document review

SECTION 7 REFERENCES

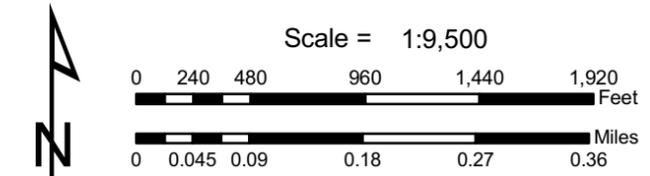
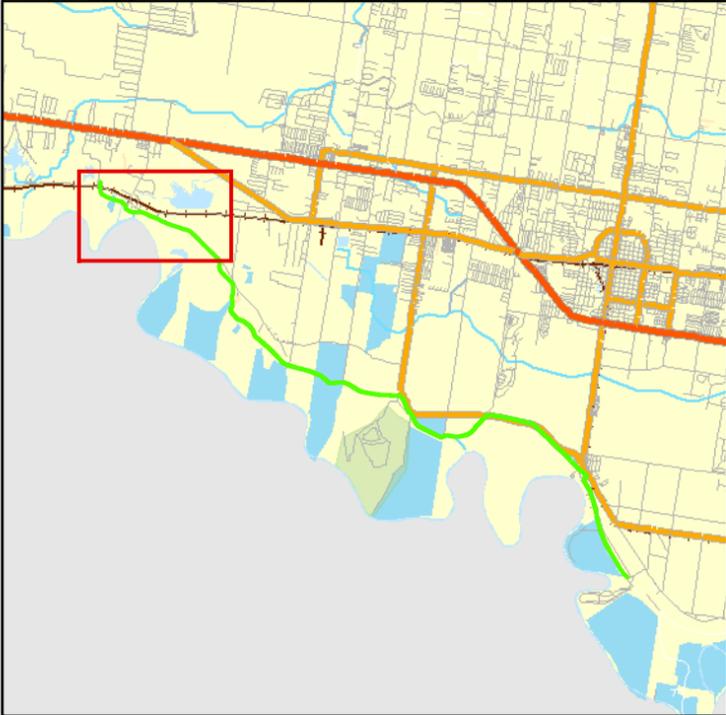
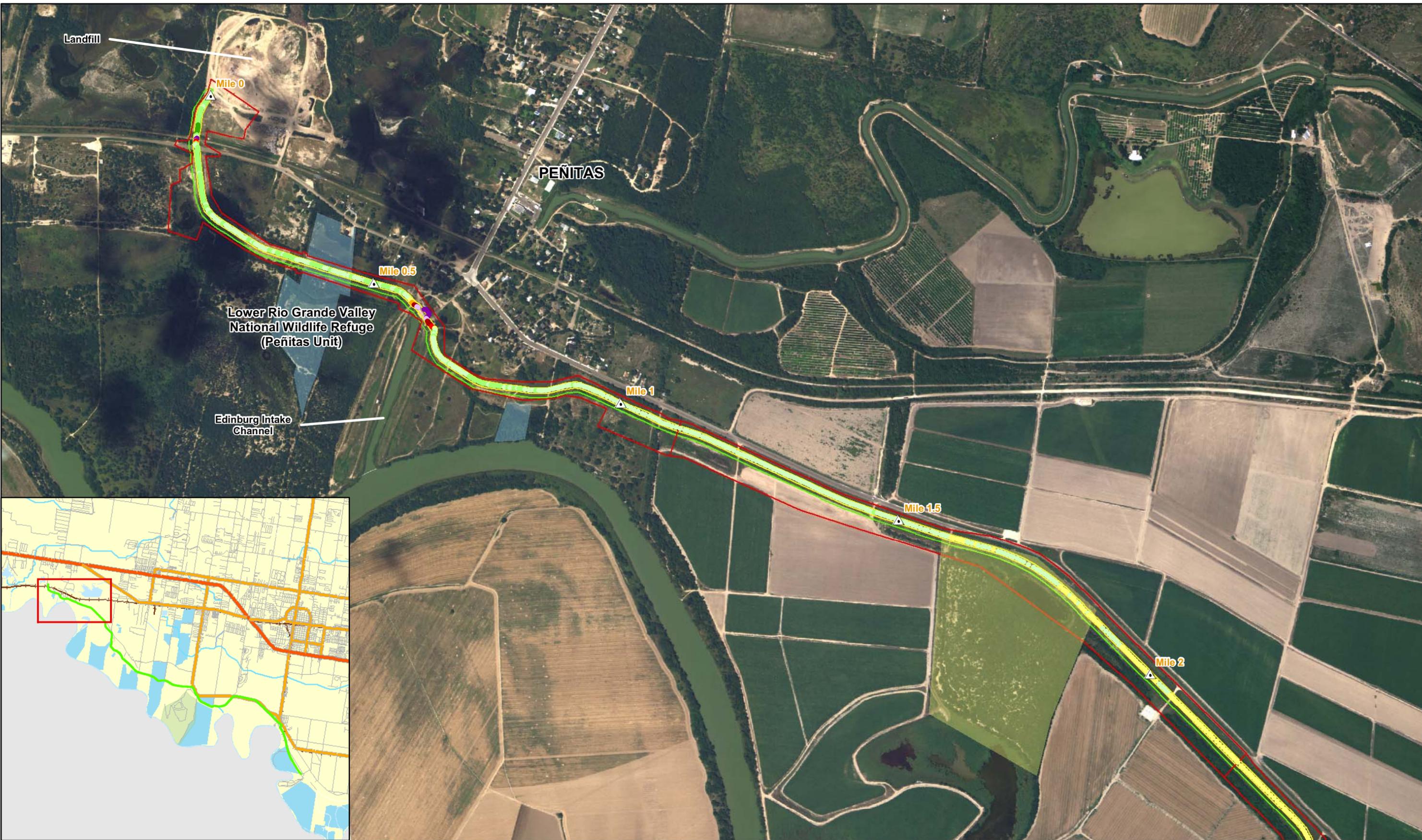
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APPENDIX A

DETAILED MAPS OF LEVEE ALIGNMENT, RIGHT-OF-WAY AND POTENTIAL EXPANSION AREA



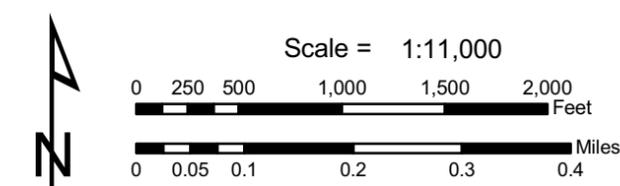
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- Right of Way
- Riverside Footprint Expansion
- Existing Levee Footprint
- TPWD State Park
- USFWS National Wildlife Refuge
- The Nature Conservancy Preserve
- Freeboard/Overtop**
- +5 ft overtop
- 4 to 5 ft overtop
- 3 to 4 ft overtop
- 2 to 3 ft overtop
- 1 to 2 ft overtop
- 0 to 1 ft overtop
- 0 to 1 ft freeboard
- 1 to 2 ft freeboard
- 2 to 3 ft freeboard

Mission Levee System Miles 0.0 to 2.0
Figure A1

Environmental Assessment
 International Boundary and Water Commission
 United States Section



PARSONS



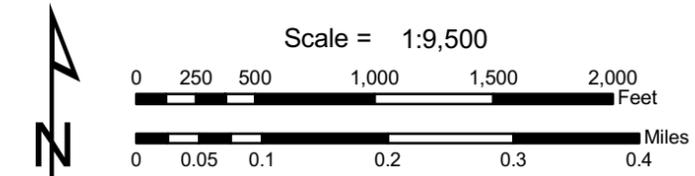
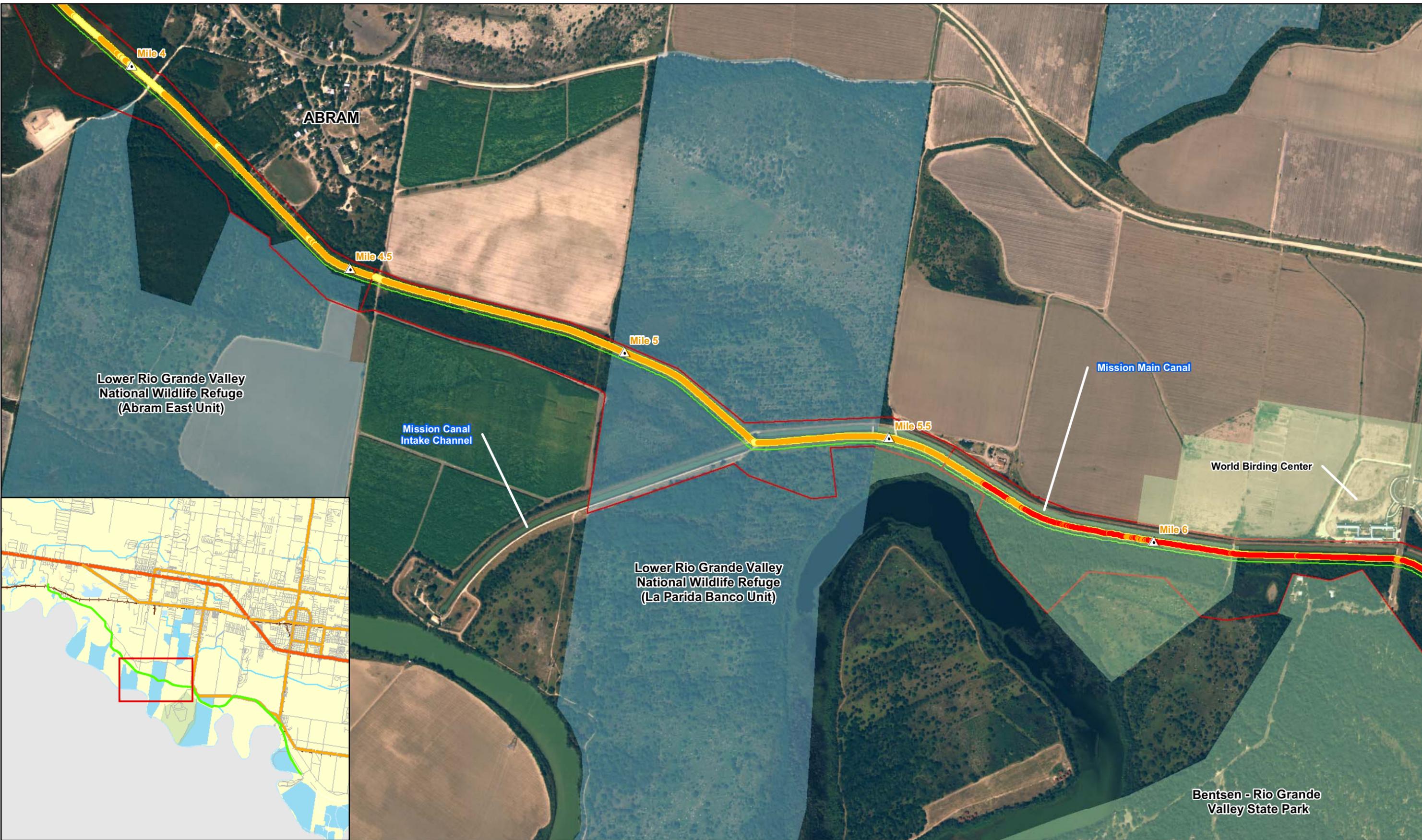
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- Freeboard/Overtop**
- +5 ft overtop
- 4 to 5 ft overtop
- 3 to 4 ft overtop
- 2 to 3 ft overtop
- 1 to 2 ft overtop
- 0 to 1 ft overtop
- 0 to 1 ft freeboard
- 1 to 2 ft freeboard
- 2 to 3 ft freeboard

Mission Levee System Miles 2.0 to 4.0
Figure A2

Environmental Assessment
 International Boundary and Water Commission
 United States Section



PARSONS

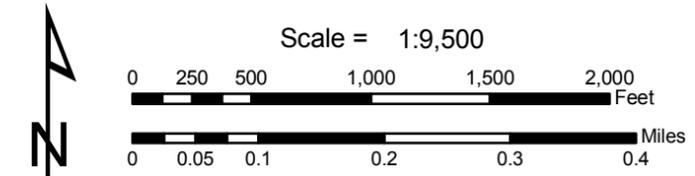


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|-----------------------------------|----------------------------------|--------------------------|-----------------------|
| ▲ Mile Markers | — Riverside Footprint Expansion | Freeboard/Overtop | ● 1 to 2 ft overtop |
| □ Right of Way | □ Existing Levee Footprint | ● +5 ft overtop | ● 0 to 1 ft overtop |
| □ TPWD State Park | □ USFWS National Wildlife Refuge | ● 4 to 5 ft overtop | ● 0 to 1 ft freeboard |
| □ The Nature Conservancy Preserve | □ USFWS National Wildlife Refuge | ● 3 to 4 ft overtop | ● 1 to 2 ft freeboard |
| | | ● 2 to 3 ft overtop | ● 2 to 3 ft freeboard |

Mission Levee System Miles 4.0 to 6.0
Figure A3

Environmental Assessment
 International Boundary and Water Commission
 United States Section





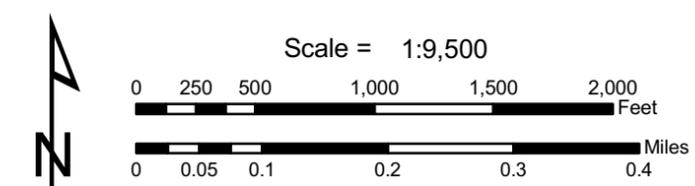
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|-----------------------------------|----------------------------------|--------------------------|-----------------------|
| ▲ Mile Markers | — Riverside Footprint Expansion | Freeboard/Overtop | ● 1 to 2 ft overtop |
| □ Right of Way | □ Existing Levee Footprint | ● +5 ft overtop | ● 0 to 1 ft overtop |
| □ TPWD State Park | □ USFWS National Wildlife Refuge | ● 4 to 5 ft overtop | ● 0 to 1 ft freeboard |
| □ The Nature Conservancy Preserve | | ● 3 to 4 ft overtop | ● 1 to 2 ft freeboard |
| | | ● 2 to 3 ft overtop | ● 2 to 3 ft freeboard |

Mission Levee System Miles 6.0 to 8.5
Figure A4

Environmental Assessment
 International Boundary and Water Commission
 United States Section



PARSONS

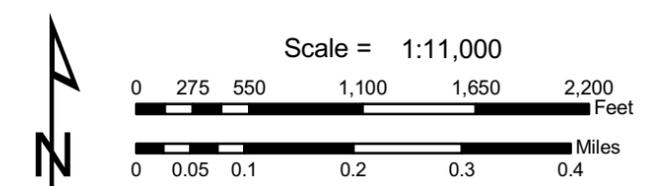


Mission Levee System Miles 8.5 to 10.5
Figure A5

Environmental Assessment
 International Boundary and Water Commission
 United States Section



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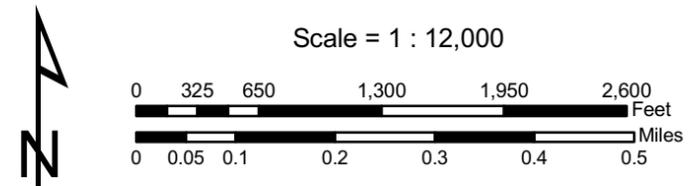
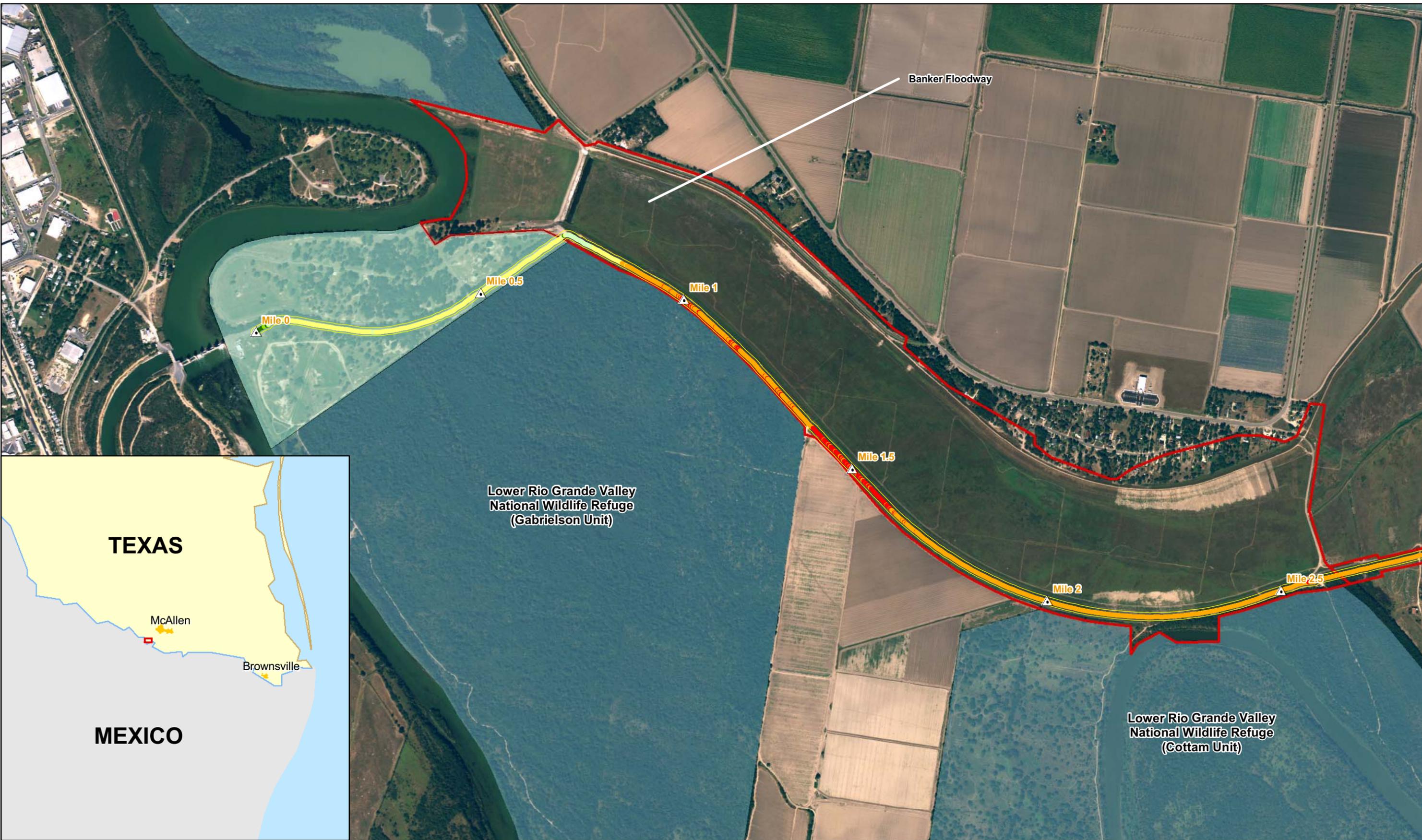
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- Right of Way
- Riverside Footprint Expansion
- Existing Levee Footprint
- TPWD State Park
- USFWS National Wildlife Refuge
- The Nature Conservancy Preserve
- Freeboard/Overtop**
- +5 ft overtop
- 4 to 5 ft overtop
- 3 to 4 ft overtop
- 2 to 3 ft overtop
- 1 to 2 ft overtop
- 0 to 1 ft overtop
- 0 to 1 ft freeboard
- 1 to 2 ft freeboard
- 2 to 3 ft freeboard

Mission Levee System Miles 10.5 to 12
Figure A6

Environmental Assessment
 International Boundary and Water Commission
 United States Section



PARSONS



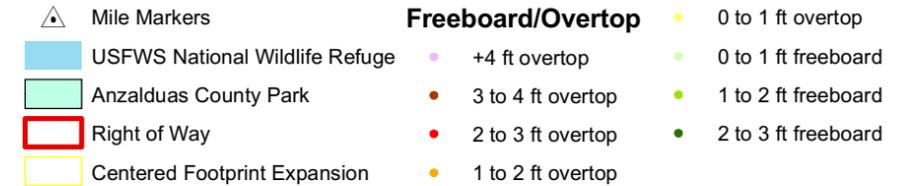
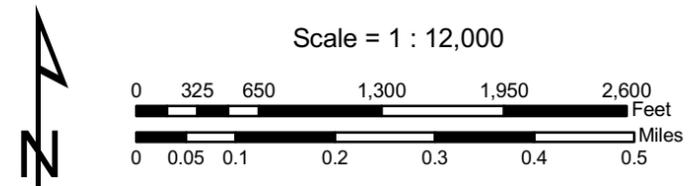
- ▲ Mile Markers
 - USFW National Wildlife Refuge
 - Anzalduas County Park
 - Right of Way
 - Centered Footprint Expansion
- Freeboard/Overtop**
- +4 ft overtop
 - 3 to 4 ft overtop
 - 2 to 3 ft overtop
 - 1 to 2 ft overtop
 - 0 to 1 ft overtop
 - 0 to 1 ft freeboard
 - 1 to 2 ft freeboard
 - 2 to 3 ft freeboard

Common Levee System Miles 0.0 to 2.5
Figure A7

Environmental Assessment
 International Boundary and Water Commission
 United States Section



PARSONS



Common Levee System Miles 2.5 to 5
Figure A8

Environmental Assessment
International Boundary and Water Commission
United States Section



PARSONS

Appendix B

ENVIRONMENTAL ASSESSMENT CONSULTATION AND COMMENTS

November 8, 2005

Mr. Jeff Rupert, Refuge Manager
Lower Rio Grande Valley National Wildlife Refuge
U.S. Fish and Wildlife Service
Rt. 2, Box 202-A
Alamo, Texas 78516

Subject: Preparation of an Environmental Assessment of the Mission Protective Levee System

Dear Mr. Rupert:

The United States Section of the International Boundary and Water Commission (USIBWC) is the lead agency in preparing an Environmental Assessment (EA) for a proposed action to raise a portion of the Mission Levee System along the Rio Grande in Hidalgo County, Texas. The levee system is part of the USIBWC Lower Rio Grande Flood Control Project that extends from the town of Peñitas, Texas to the Gulf of Mexico, a distance of about 180 river miles. For this project, the Mission Levee extends for approximately nine miles from Anzalduas Dam upstream to Peñitas, which is the upstream end of the levee system. The USIBWC is requesting your office to be a cooperating agency for the EA preparation as this action could potentially affect an area under your jurisdiction. In accordance with section 1501.6 of the Council on Environmental Quality regulations, cooperating agencies participate in the National Environmental Policy Act (NEPA) and scoping process, make staff available for technical and information exchange and meet with the lead agency as needed during the EA process.

Alternatives that are being considered will raise the Mission Levee anywhere from 4 to 12 feet, depending on the reach. The levees are earthen structures with a 3:1 slope on both the riverside and landside. Landside raising is from the riverside shoulder of the crown toward the land. Riverside raising is from the landside shoulder of the crown toward the river. Both of these alternatives change the horizontal alignment. Raising the levee on both sides maintains the horizontal alignment, but increases the size of the levee footprint on both sides of the centerline. In areas where right of way (ROW) is lacking, the use of mechanically stabilized earth may be used. The width of the levee on the Old Mission Inlet Closure will need to be expanded to accommodate the improvements to Military Road, part of which is on the levee system. Structural improvements such as a riverside impermeable liner or slurry barrier may be required where seepage is a problem.

The project will take into consideration biological resources on several tracts of the Lower Rio Grande Valley National Wildlife Refuge, as well as Benson State Park. The footprint expansion into the refuge would primarily be a ROW issue, as it could affect small

sections of adjacent high quality wildlife habitat. The levee expansion could affect waters of the United States and wetlands. The project could also potentially affect storm water quality due to sediment release during levee construction. The location of the wetlands could be indirectly affected and may be subject to a United States Army Corps of Engineers (USACE) Section 10/404 permit(s).

Please respond within 21 calendar days to our request to be a cooperating agency for the Environmental Assessment of the Mission Levee System. I'd like to thank you in advance for your consideration of this request and look forward to working you on this project. Should you have any questions, please feel free to contact me at (915) 832-4749, or to our project coordinator, Gilbert Anaya at (915) 832-4702.

Sincerely,

Steve Smullen, P.E.
Acting Principal Engineer
Engineering Department

Same letter sent to:

Ms. Kay Jenkins
Texas Parks and Wildlife Department
CCA/CPL Marine Development Center
4300 Waldron Road
Corpus Christi, Texas 78418

Ms. Kathy Boydston
Texas Parks and Wildlife Department
Wildlife Habitat Assessment Program
4200 Smith School Road
Austin, Texas 78744-3291

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

Mr. Mark Fisher
Texas Commission on Environmental Quality
Water Quality Division, MC-150
P.O. box 13087
Austin, Texas 78711-3087

Ms. Debra L. Beene
Texas Historical Commission
Archaeology Division
P.O. Box 12276
Austin, Texas 78711-2276

Ms. Amy Hammons
Texas Historical Commission
Architecture Division
P.O. Box 12276
Austin, Texas 78711-2276

Mr. Tim Meade
Texas Department of Transportation
Environmental Affairs Division
125 E. 11th Street
Austin, Texas 78701-2483



DEPARTMENT OF THE ARMY
GALVESTON DISTRICT, CORPS OF ENGINEERS

P.O. BOX 1229

GALVESTON, TEXAS 77551-1229

REPLY TO
ATTENTION OF:

November 28, 2005

Regulatory Branch

SUBJECT: Preparation of an Environmental Assessment of the Mission Protective Levee System

Steve Smullen
Acting Principal Engineer
Engineering Department
International Boundary and Water Commission
The Commons, Building C, Suite 310
4171 North Mesa Street
El Paso, Texas 79902-1444

Dear Mr. Smullen:

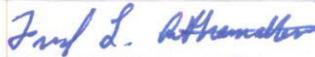
This is in response to your November 8, 2005, letter to Mr. Lloyd Mullins requesting the U.S. Army Corps of Engineers (USACE) participate as a cooperating agency in preparing an Environmental Assessment (EA) for proposed levee expansion of the Mission Levee System along the Rio Grande in Hidalgo County, Texas. According to your letter the proposed levee expansion may potentially affect waters of the U.S., including wetlands.

Council on Environmental Quality (CEQ) Regulations at 40 C.F.R. 1508.5 identify a cooperating agency as any Federal agency other than the lead agency which has jurisdiction by law or special expertise with respect to any environmental impact involved in a proposal (or a reasonable alternative) for legislation or other major Federal action significantly affecting the quality of the human environment. Therefore, the role of a cooperating agency is generally limited to participating in preparation of an Environmental Impact Statement (EIS) rather than an EA. If the United States Section of the International Boundary and Water Commission (USIBWC) EA concludes the proposed levee improvements significantly affect the quality of the human environment, an EIS would be required. In the event an EIS is required, the USACE may accept an invitation to participate as a cooperating agency in accordance with 40 C.F.R. 1501.6. Pending a decision to prepare an EIS, we remain available to answer any questions you may have regarding jurisdictional waters of the U.S.

RT	STAFF	INT	DATE
	COMMISSIONER		
	PE - OPERATIONS		
	PE - ENGINEERING		
	CHIEF ADMIN OFFICER		
	FOREIGN AFFAIRS		
	HUMAN CAPITAL MGMT		
	LEGAL COUNSEL		
	PUBLIC AFFAIRS OFFICE		
	STRATEGIC PLANNING OFFICE		
	SEC OFFICE		
	CHIEF SECURITY OFFICER		
	AUDITOR		
	BUDGET DIVISION		
	ACQUISITION DIVISION		
	OPERATIONAL SUPPORT DIV.		
	DAM DIVISION		
	ENGINEERING SERVICES DIV.		
	WATER ACCOUNTING DIV.		
	ENVIRONMENTAL MGMT DIV.		
	INFORMATION MGMT DIV.		
	LOGISTICS		
	COMM & RECORDS		

In preparing the EA, I recommend that you contact Mr. Lloyd Mullins of our Corpus Christi Field Office at 361-814-5847, ext. 123, to discuss submitting your request for a jurisdictional determination. Our Corpus Christi Field Office can assist you in identifying the extent of waters of the U.S., including wetlands, within the proposed project. If you have any additional questions please feel free to contact Mr. Mullins at the above number.

Sincerely,



Fred L. Anthamatten
Assistant Chief, Regulatory Branch

Copy Furnished:

Lloyd Mullins, PE-RCC



TEXAS HISTORICAL COMMISSION

The State Agency for Historic Preservation

RICK PERRY, GOVERNOR

JOHN L. NAU, III, CHAIRMAN

F. LAWRENCE OAKS, EXECUTIVE DIRECTOR

STATE	DATE	STATE	TR
COMMISSIONER			
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PE - ENGINEERING			
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FOREIGN AFFAIRS			
HUMAN CAPITAL (HR)			
LEGAL ADVISOR			
PUBLIC AFFAIRS OFFICE			
STRATEGIC PLANNING OFFICE			
CEO OFFICE			
CHIEF SECURITY OFFICER			
AUDITOR			
STATE ARCHIVES			
ACQUISITION DIVISION			
FINANCIAL SERVICES DIV.			
CRM			
ENGINEERING SERVICES DIV.			
WATER ACCOUNTING DIV.			
ENVIRONMENTAL MGMT DIV.			
INFORMATION MGMT DIV.			
LOGISTICS			

December 13, 2005

Steve Smullen
International Boundary and Water Commission
The Commons, Bldg. 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.
Mission Protective Levee System, Hidalgo County (106/USIBWC)**

Dear Mr. Smullen,

Thank you for your correspondence describing the above referenced project. 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).

Our agency is always willing to review environmental assessment information specific to historic and pre-historic cultural resources. Submission of this type of documentation would initiate the Section 106 process between our two agencies. When this information has been gathered our historians, architectural, and archeological review staff will evaluate and reply with comments.

We look forward to receiving information concerning the proposed undertaking. Thank you for your cooperation in this federal review process, and for your efforts to include our agency in the early stages of this project.

Yours truly,

Amy Hammons, Project Reviewer
for: F. Lawrence Oaks, State Historic Preservation Officer

cc: Rick DeJulio
Hidalgo County Historical Commission
707 North 15th Street
McAllen, TX 78501



December 28, 2005

Mr. Steve Smullen
International Boundary and Water Commission
The Commons, Building C
4171 N. Mesa, Suite 310
El Paso, TX 79902

RE: Cooperating agency status of TPWD in the Mission Protective Levee System project, Hidalgo County, Texas

Dear Mr. Smullen:

This letter is in response to your request for Texas Parks and Wildlife Department (TPWD) to participate as a cooperating agency for the preparation of an Environmental Assessment (EA) addressing potential impacts associated with a proposed levee raising project in Hidalgo County, Texas.

The project proposed by the International Boundary and Water Commission (IBWC) would raise a nine mile segment of the Mission Protective Levee System along the Rio Grande between the Anzalduas Dam and the city of Peñitas. At this early stage of project development, several alternatives are being considered. As a result of raising the levee its footprint would also increase thus potentially requiring additional right-of-way (ROW). Additional ROW needs could affect properties managed by TPWD (i.e., Bentsen-Rio Grande Valley State Park, units of the Las Palomas Wildlife Management Area). As this project could potentially affect resources managed by this agency, TPWD would like to participate as a cooperating agency in the process of preparing the EA.

We appreciate the opportunity to be involved in this project and look forward to working with the IBWC. If we can be of further assistance, please do not hesitate to call Russell Hooten in Corpus Christi at (361) 825-3240.

Sincerely,

Michael E. Berger, Ph.D.
Director, Wildlife Division

MB:RH:sm.11470

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FORT WORTH
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EXECUTIVE DIRECTOR



Take a kid
hunting or fishing

Visit a state park
or historic site

December 28, 2005

“name”

“title”

“agency”

“address”

Re.: Request for review/determination of potential environmental impacts
Mission Protective Levee System Improvements, Hidalgo County, Texas

Dear “name”:

The United States Section of the International Boundary Water Commission (USIBWC) is preparing an Environmental Assessment for a Proposed Action to raise the Mission Protective Levee System along the Rio Grande in Hidalgo County, Texas. This 12-mile levee segment, extending from the Town of Peñitas to 1 mile upstream of Anzalduas Dam, was identified as a priority area to improve flood containment. The existing levee is a trapezoidal compacted-earth structure with a typical height ranging from 6 to 10 feet. The existing levee footprint ranges from 50 to 80 feet, depending on location.

The Proposed Action would increase flood containment capacity of the system by raising height of the existing levee from 3 to 6 feet while expanding the levee footprint by lateral extension of the structure. A 6-foot increase in levee height would result in a 36-foot offset increase of the footprint. Levee footprint increases for the most part would take place on the levee’s riverside, within the USIBWC levee right-of-way. Structural improvements, such as a slurry barrier, would also be required for levee segments throughout an approximate 7.5-mile reach of the levee system with seepage potential. Levee material would be acquired from commercial sources.

According to the National Environmental Policy Act (NEPA), the USIBWC must assess the potential environmental impacts of the proposed and alternative actions. In accordance with Executive Order 12372, *Intergovernmental Review of Federal Programs*, the USIBWC is requesting input on the Proposed Action from other federal, state and local agencies, as well as other potential stakeholders. Please identify any resources within your organization’s purview that may be potentially impacted, and issues and concerns associated with implementing the Proposed Action. To assist your office in this review, we have included a Proposed Action description with illustrative maps of the levee alignment and project area.

The levee right-of-way covers primarily agricultural areas, but several large tracts of land in the area have been acquired by the U.S. Fish and Wildlife Service, and incorporated into the Lower Rio Grande Valley (LRGV) National Wildlife Refuge. Two irrigation canals border approximately 5 miles of the landside levee: the Mission Main Canal, and the Granjeno Canal. Urban development along the Mission Protective Levee System is largely limited to sections of the unincorporated towns of Peñitas, Abram, and Madero. Nearly all residential areas are located on the vicinity of the levee landside with the exception of the Riverside Subdivision of Madero.

Potentially affected resources and issues associated with raising the Mission Protective Levee System are the following:

- Levee construction work through levee right-of-way easements located within, or in proximity to, a number of tracts of the LRGV National Wildlife Refuge. The Bentsen-Rio Grande Valley State Park is also located in the vicinity of levee system, but outside the proposed expansion area.
- A number of borrow sites for materials used for construction of the Mission Protective Levee System in the mid 1970s. Some of those sites, located in the levee vicinity but likely outside the proposed expansion area, have standing water and developed wetlands vegetation.
- Potential crossing of a new floodwall across the Edinburg intake channel (Hidalgo County Irrigation District No. 1), near the existing pump house. The intake channel connects directly to the Rio Grande.
- Military Road expansion along a 0.7-mile section of the levee system (the Mission Inlet Closure), a planned project of the Texas Department of Transportation.
- Levee construction work along sections of the Mission Main Canal (United Irrigation District of Hidalgo County), and Granjeno Canal (Hidalgo County Irrigation District No. 19).
- The likely need for raising the levee in some locations without footprint expansion, using a concrete-reinforced structure, particularly along the Riverside Subdivision of Madero where levee right-of-way is insufficient.
- Construction work in the vicinity of La Lomita Chapel, a Historical Park of the City of Mission.

Your assistance in providing information is greatly appreciated. Please provide any comments or information by January 20, 2006. Responses should be sent directly to:

Mr. Gilbert Anaya
United States Section,
International Boundary and Water Commission
4171 N. Mesa, Suite C-100
El Paso, TX 79902
gilbertanaya@ibwc.state.gov

Sincerely,

Name and Title

Attachment:

Description of Proposed Action

DISTRIBUTION LIST

Mr. Jeff Rupert, Refuge Manager,
Lower Rio Grande Valley National Wildlife Refuge
U.S. Fish and Wildlife Service
Rt. 2, Box 202-A
Alamo, TX 78516
Phone (956) 784-7521

Mr. Ernesto Reyes
U.S. Fish and Wildlife Service, Ecological Services
Rt. 2, Box 202-A
Alamo, TX 78516
Phone (956) 784-7560

Ms. Kathy Boydston
Texas Parks and Wildlife Department
Wildlife Habitat Assessment Program
4200 Smith School Road
Austin, Texas 78744-3291
Phone (512) 389-4800

Mr. Baldomero Loya, Assistant Park Manager
Bentsen-Rio Grande State Park
Texas Parks and Wildlife Department
2800 S. Bentsen Palm Drive (FM 2062)
Mission, Texas 78572
Phone (956) 585-1107

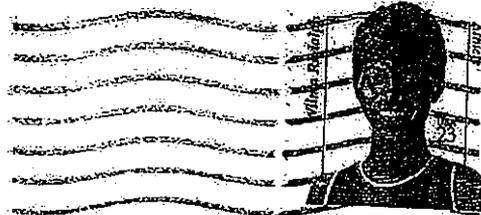
Mr. Lloyd Mullins
Unit Leader, Corpus Christi Field Office
U.S. Army Corps of Engineers
5151 Flynn Parkway, Suite 306
Corpus Christi, Texas 78411-4318
Phone (361) 814-5850

Ms. Amy Hammons
Texas Historical Commission
Architecture Division
P.O. Box 12276
Austin, Texas 78711-2276
Phone (512) 463-8952

Ms. Lori Hamilton
Texas Commission on Environmental Quality
Water Quality Division, MC-150
P.O. Box 13087
Austin, TX 78711-3087
Phone (512) 239-0683

Mr. Mario Jorge, P.E., District Engineer
Texas Department of Transportation

Department of the Army
US Army Corps of Engineers
Regulatory Field Office
5151 Flynn Parkway Suite 306
Corpus Christi, TX 78411-2431



IBWC
ATTENTION: CARLOS PENA JR
THE COMMONS BLDG C
4171 N MESA ST STE 100
EL PASO TX 79902-1444

0271444



SUBJECT: IBWC Mission Levee Improvements
Hidalgo Co

Dear Applicant:

Your project has been given the tracking number 200502171 and
has been assigned to MARIE PATILLO.

Please be advised that applications received in this office are assigned on a first-come, first-served basis. Once the application is assigned, please allow the project manager time to review your application. He/she will contact you if further information is required.

Please reference the above number on any future correspondence to this office. Our telephone number is 361-814-5847.

Thank you.

**HIDALGO COUNTY
IRRIGATION DISTRICT
NO. ONE**

**1904 N. Expressway 281
P.O. BOX 870
EDINBURG, TX. 78540**

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(956)383-3886 FAX: (956)383-5593
e-mail address: rustyhcid1@www.rioplexwireless.com

Jan. 6, 2006

Mr. Gilbert Anaya
United States Section, International Boundary and Water Commission
4171 N. Mesa, Suite C – 100
El Paso, Tx 79902

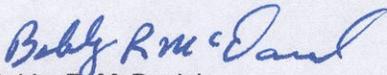
Re: Request for review/determination of potential environmental impacts for the Mission Protective
Levee System Improvements, Hidalgo County, Texas

Dear Sir,

The Districts Penitas Pumping Plant will be affected by this project. It is located in the proposed project's levee south of Penitas Texas. The river wall of this plant was designed at the approximate current levee height and thus some modification to the building will be necessitated.

Another Option would be to reroute the levee to the south of our pumping plant. This would require some sort of gated structure at the inlet crossing and the acquisition of Right of Way.

Sincerely Yours,



Bobby R. McDaniel
General Manager
Hidalgo County Irrigation District No. One



TEXAS
HISTORICAL
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The State Agency for Historic Preservation

RICK PERRY, GOVERNOR

JOHN L. NAU, III, CHAIRMAN

F. LAWERENCE OAKS, EXECUTIVE DIRECTOR

January 23, 2006

Gilbert Anaya
International Boundary and Water Commission
4171 N. Mesa Street, Suite C-100
El Paso, TX 79902

**Re: *Project review under Section 106 of the National Historic Preservation Act of 1966
Mission Protective Levee System, Hidalgo County (106/USIBWC)***

Dear Mr. Anaya,

Thank you for submitting documentation for the above referenced project. 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).

Your comments on the proposed scope of work currently under consideration for the Mission Protective Levee System were received by our agency on December 29, 2005. However, as per Section 106 legislation (36 CFR Part 800.4), your agency should also provide identification of any historic resources in the area of potential effect along with your description of work. This information is required for our review staff to evaluate the proposed work as required. At this time our official response to your December 29, 2005 submission is that more information is necessary in order to provide a determination of effect for the proposed work.

After speaking with your consultant (Carlos Victoria, PARSONS) on January 23, 2006, it is our understanding that the cultural resource information required will be submitted to our office in the coming month. After receipt of the additional documentation, our agency will provide official comment to your office.

We look forward to receiving information concerning the proposed undertaking. Thank you for your cooperation in this federal review process, and for your efforts to include our agency in the early stages of this project.

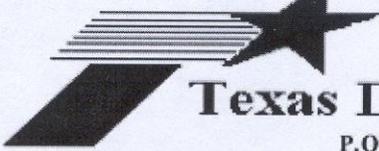
Yours truly,

A handwritten signature in blue ink, appearing to read "Amy Hammons".

Amy Hammons, Project Reviewer

for: F. Lawrence Oaks, State Historic Preservation Officer

cc: Rick DeJulio
Hidalgo County Historical Commission
707 North 15th Street
McAllen, TX 78501



Texas Department of Transportation

P.O. Box 1717; Pharr, Texas 78577-1717 : (956)702-6100

January 20, 2006

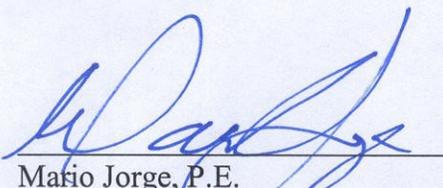
Mr. Gilbert Anaya
United States Section, International Boundary and Water Commission
4171 N. Mesa, Suite C-100
El Paso, TX 79902

Subject: Review of potential environmental impacts for the Mission Protective Levee System Improvements, Hidalgo County, Texas

Dear Mr. Anaya:

The Pharr District of the Texas Department of Transportation has reviewed the report for the Mission Protective Levee System Improvements and offers the following comment. Under the 4th bullet on page #7 under the potentially affected resources and issues, the Military Road expansion references a planned project of the Texas Department of Transportation. Please revise the bullet to describe it as a local government project not a Texas Department of Transportation project. The proposed project on this section of Military Road is not a Texas Department of Transportation project. The city and county have proposed this as a future project. These improvements should be coordinated with the local governments. Feel free to call myself at 956-702-6100 if you have any questions or concerns.

PHARR DISTRICT ENGINEER
956-702-6100



Mario Jorge, P.E.
Pharr District Engineer

cc: Hector Gonzalez, P.E.
District File



February 6, 2006

Mr. Gilbert Anaya
United States Section, International Boundary and Water Commission
4171 N. Mesa, Suite C-100
El Paso, TX 79902

Re: Request for review/determination of potential environmental impacts for the
Mission Protective Levee System Improvements, Hidalgo County, Texas

Dear Mr. Anaya:

Texas Parks and Wildlife Department (TPWD) staff received a letter, dated December 22, 2005, stating that the United States Section, International Boundary Water Commission (USIBWC) is preparing an Environmental Assessment for a Proposed Action to raise a 12-mile levee segment, extending from the town of Peñitas to one mile upstream of Anzalduas Dam, of the Mission Protective Levee System along the Rio Grande in Hidalgo County, Texas. According to the letter, the Proposed Action would provide for three additional feet of flood containment capacity above the design flood flow on the United States side by raising the height of the existing levee from three to six feet while expanding the levee footprint by lateral extension of the structure. Information in the letter states that most of the levee footprint increases would occur within the USIBWC levee right-of-way. Other structural improvements, such as a slurry barrier, would also be required for levee segments throughout a 7.5-mile reach of the levee system with seepage potential.

TPWD is a cooperating agency in the development of the Environmental Assessment. TPWD State Parks Division and Wildlife Division staff have reviewed the preliminary project description and accompanying maps of the Proposed Action for improvements to the Mission Protective Levee System. The preliminary plans indicate that as much as 20 acres of property belonging to the Bentsen-Rio Grande State Park may be impacted by the proposed levee footprint expansion. This potential impact to the state park property was not indicated in the project description and may be due to USIBWC staff being unaware that this property was part of 168 acres of land recently donated to TPWD. The area that may be impacted by the proposed project through levee footprint expansion contains early succession woodland dominated by huisache (*Acacia farnesiana*), retama (*Parkinsonia aculeate*) and spiny hackberry (*Celtis pallida*). This habitat occurs along 1.5 miles of the proposed project area.

In order to adequately assess potential impacts associated with the project, the Environmental Assessment provided for review should, at a minimum, include an inventory of existing natural resources occurring in the project area. Specific evaluations should be designed to predict project impacts upon these natural resources and sufficient documentation should be supplied to accurately interpret the value of the natural resources involved and the extent to which the project will impact these resources. This can be accomplished with aerial and ground photography, such as

To manage and conserve the natural and cultural resources of Texas and to provide hunting, fishing and outdoor recreation opportunities for the use and enjoyment of present and future generations.

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hunting or fishing



Visit a state park
or historic site

provided in the current document, with overlays indicating the extent of the project boundaries and anticipated impacts within those boundaries. More detailed information outlining the requirements and expectations of this Department concerning environmental assessment and impact statements are attached in a document entitled, "TPWD Suggested Guidelines for Preparation of Environmental Assessment Documents."

In general, TPWD recommends construction activities avoid wetland habitats, forested riparian drainages and dense, mature woody vegetation. Performing construction activities within existing right-of-ways (ROWs) and in previously disturbed areas is supported by TPWD as this generally minimizes adverse impacts to fish and wildlife resources and habitat. However, because the Lower Rio Grande Valley is one of the most biologically diverse regions in the world, potential to encounter wildlife within any of the anticipated project areas does exist. Drainages, intake channels and isolated wetlands such as occur within the proposed project area often develop vegetation along their banks that may provide food sources, cover or nesting sites for wildlife including migratory birds. These areas may especially be heavily utilized by migratory birds during fall and spring migration. The waterbodies themselves may also support other food sources (e.g., insects) that may attract birds, reptiles or small mammals.

Contiguous mature Tamaulipan brush, a unique ecosystem located in the Lower Rio Grande Valley of south Texas and in northern Mexico, occurs within Bentsen-Rio Grande State Park along other segments of the proposed project, and adjacent to the USIBWC right-of-way. This dense brush provides valuable feeding, nesting and protective cover habitat for many resident and migrating wildlife species. This habitat is essential to the conservation of two endangered species, the Ocelot (*Leopardus pardalis*) and Jaguarondi (*Herpailurus yaguarondi*) that use it for cover. The Tamaulipan brush provides habitat for more than 500 vertebrate species and 1,200 plant species, many of which are state and federal listed. Attached is the state list of rare, threatened and endangered species with potential to occur in Hidalgo County.

The Migratory Bird Treaty Act (MBTA) provides for a year round closed season for non-game birds and prohibits the taking of migratory bird nests and eggs. Construction activities that would involve clearing, trampling or trimming vegetation should be scheduled outside the March through August migratory bird nesting season of each year the project is authorized. If such activities can not be scheduled outside of the nesting season, affected areas should be surveyed for migratory bird nest sites prior to construction or future maintenance activities. In addition, since raptors nest in late winter and early spring, all construction activities as identified above should be excluded from a minimum zone of 100 meters around any raptor nest during the period of February 1- July 15.

Also, activities that would place fill material into waters of the United States are regulated by the U.S. Army Corps of Engineers (COE). Proposed construction

Mr. Gilbert Anaya

Page 3

February 6, 2006

activities that would impact aquatic resources (e.g., earthen embankment across the Edinburg Canal intake channel) should be coordinated with the COE-Corpus Christi Field Office (361-814-5850).

Due to the potential of the proposed project to impact valuable habitat within Bentsen-Rio Grande State Park and along other segments of the project, TPWD recommends that staff from USIBWC and TPWD meet to discuss the proposed project boundaries and methods for avoiding, minimizing and compensating for the proposed impacts to the valuable habitats. Early discussions and site visits with TPWD will assist both agencies in their cooperative effort to produce the Environmental Assessment for the project. Please contact Kay Jenkins, 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 to set up a meeting/site visit regarding this project and its potential impact to wildlife habitat, specifically within Bentsen-Rio Grande State Park.

Sincerely,



Kathy Boydston
Wildlife Habitat Assessment Program
Wildlife Division

KB:RH:DR:KJ:sm.11553

Attachments (2)



INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES AND MEXICO

OFFICE OF THE COMMISSIONER
UNITED STATES SECTION

MAY 12 2006

Ms. Kay Jenkins, Natural Resources Coordinator
State Parks Division, Region 2
Texas Parks and Wildlife Department
715 Highway 35 South
Rockport, Texas 78382

Subject: Request for review of potential environmental impacts USIBWC Mission Levee
Improvements, Hidalgo County, Texas

Dear Ms. Jenkins:

This letter is a follow-up to our initial November 8, 2005 notice for review and comments of the proposed project as a cooperating agency. Since that date, the United States Section, International Boundary and Water Commission (USIBWC) has conducted technical studies in support of the evaluation of potential impacts. In a letter from the Texas Parks and Wildlife Department (TPWD) dated February 6, 2006, initial concerns of the Proposed Action included addressing potential impacts to properties owned or managed by the TPWD that included Bentsen-Rio Grande Valley State Park and units of Las Palomas Wildlife Management Area and that activities avoid sensitive habitat and minimized impacts. Since that time, we hope that ongoing discussions and feedback, we have received through correspondence and meetings are addressing these environmental concerns.

A copy of the draft Technical Support Studies report is included to assist your department in this review. The studies included an analysis of vegetation communities potentially affected by the levee improvement project, and habitat determinations for wildlife and threatened and endangered species. Also included is a copy of the Proposed Action to Increase Levee Height for Improved Flood Control. We appreciate the cooperation that the TPWD has provided to the USIBWC on this project as well as past activities.

Your assistance in identifying any issues and concerns associated with implementing the Proposed Action is greatly appreciated. If possible, please provide any comments to my attention by June 7, 2006. Should you have any questions, please feel free to call me at (915) 832-4702.

Sincerely,

Gilbert G. Anaya

Supervisory Environmental Protection Specialist
Environmental Management Division

Attachments:
As Stated



INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES AND MEXICO

MAY 12 2006

OFFICE OF THE COMMISSIONER
UNITED STATES SECTION

Ms. Marie C. Patillo, Project Manager
U.S. Army Corps of Engineers
Galveston District
5151 Flynn Parkway, Suite 306
Corpus Christi, Texas 78411

Subject: Tracking No. 200502171
Request for review/determination of potential environmental impacts
USIBWC Mission Levee Improvements, Hidalgo County, Texas

Dear Ms. Patillo:

The United States Section, International Boundary Water Commission (USIBWC) is preparing an Environmental Assessment for a Proposed Action to raise the Mission and Common Levee Systems along the Rio Grande in Hidalgo County, Texas. These two adjacent levee systems, with a combined length of 17 miles, were identified as priority areas to improve flood containment. The Proposed Action would increase flood containment capacity by raising height of the existing levee from 1 to 8 feet while expanding the levee footprint by lateral extension of the structure. Included is a Proposed Action description with illustrative maps of the project area and levee alignment.

This letter is a follow-up to our initial December 29, 2005 consultation (Tracking No. 200502171). Since that date, the USIBWC has conducted technical studies in support of the evaluation of potential impacts. A copy of the draft Technical Support Studies report is included to assist your office in this review. The studies included an analysis of vegetation communities potentially affected by the levee improvement project, and habitat determinations for wildlife and threatened and endangered species. Also included is an assessment of potential jurisdictional wetlands near the project area along the Mission Levee; most identified wetlands correspond to former materials borrow sites used in the mid 1970s for levee construction. Typically, those sites have standing water and have developed wetlands vegetation. Cross-

sectional areas of the levee are presented indicating separation between the potential levee expansion area and wetlands' edge, as determined in field studies.

Your assistance in identifying any issues and concerns associated with implementing the Proposed Action is greatly appreciated. If possible, please provide any comments to my attention by June 7, 2006.

Sincerely,

A handwritten signature in black ink that reads "Gilbert G. Anaya". The signature is written in a cursive style with a large initial 'G'.

Gilbert G. Anaya
Supervisory Environmental Protection Specialist
Environmental Management Division

Attachments:

Description of Proposed Action
Draft Technical Support Studies Report



INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES AND MEXICO

OFFICE OF THE COMMISSIONER
UNITED STATES SECTION

Mr. Mark Denton, RPA
Director, State and Federal Review Section
Archaeology Division
Texas Historical Commission
P.O. Box 12276
Austin, TX 78711-2276

Subject: Project review under Section 106 of the National Historic Preservation Act of 1966 for
Improvements to the Mission and Common Levee Systems (106/USIBWC)

Dear Mr. Denton:

This is a follow-up to the January 23, 2006 letter from the Texas Historical Commission requesting additional information for review of the proposed undertaking by the United States Section, International Boundary and Water Commission (USIBWC) to raise the Mission Levee System. This 12-mile levee segment along the Rio Grande in Hidalgo County, Texas was identified as a priority area to improve flood containment.

Subsequently to our initial December 29, 2005 consultation, the project area was expanded to include 5 miles of the Common Levee System, adjacent to the Mission Levee. Attached is an updated description of the proposed undertaking (*Proposed Action to Increase Levee Height to Improve Flood Control, Mission and Common Levee Systems*).

In response to your request for cultural resources support information, a description of current conditions was prepared along with a preliminary evaluation of potential impacts related to the proposed undertaking. Findings of this evaluation are presented in the attached report recently completed by the LGGROUP (*A Cultural, Architectural, and Engineering Resources Evaluation of Proposed Improvements to the Mission and Common Levee Systems, Hidalgo County, Texas*).

According to the LGGROUP preliminary evaluation, improvements to the Mission Levee System have a potential to impact historic archaeological resources at six locations, as well as one known prehistoric archaeological resource (41HG143). No areas were identified in previous studies or during the current archival research that were considered to be high probability areas (HPAs) for the occurrence of unknown prehistoric archaeological sites. In a previous report by Cooper et al. (2002) however, areas of historic occupation sometimes contain a prehistoric component, as European settlers also considered prehistorically utilized landform surfaces (stable surfaces) as desirable living surfaces. Therefore, the areas of potential historic resources designated above should also be considered as possible locations for prehistoric archaeological sites.

Along the Common Levee System, no known prehistoric archaeological resources and no HPAs for unknown prehistoric archaeological resources were identified in previous or current studies (Cooper et al. 2002; Neel 2006).

Preliminary investigations also indicate that five historic resources exist within the current Mission and Common Levee right-of-way and are engineering elements of the levee system. These resources will likely be redesigned by proposed modifications to the levee, or may undergo a visual impact by the encroachment of the expanded levee footprint. One additional historic resource, the La Lomita Chapel, a recorded Texas Historic Landmark, is located very near the Mission Levee System within a National Register Historic District and is likely to be visually impacted by expansion of the levee footprint. In addition to these major historic resources, 25 minor resources of weir gates and a standpipe are probably of historic-age and were also recorded within the Mission and Common Levee Systems right-of-way.

Your assistance in reviewing the proposed undertaking is greatly appreciated. Your comments and recommendations will be addressed in the Draft Environmental Assessment currently under development for agency review. If possible, please provide a response to my attention by June 7, 2006. If you have any questions, please feel free to call me at (915) 832-4702.

Sincerely,



Gilbert G. Anaya
Supervisory Environmental Protection Specialist
Environmental Management Division

Enclosures:

As stated



INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES AND MEXICO

OFFICE OF THE COMMISSIONER
UNITED STATES SECTION

Ms. Amy Hammons
Texas Historical Commission
Architecture Division, Area 6
P.O. Box 12276
Austin, Texas 78711-2276

Subject: Project review under Section 106 of the National Historic Preservation Act of 1966 for
Improvements to the Mission and Common Levee Systems (106/USIBWC)

Dear Mr. Denton:

This is a follow-up to the January 23, 2006 letter from the Texas Historical Commission requesting additional information for review of the proposed undertaking by the United States Section, International Boundary and Water Commission (USIBWC) to raise the Mission Levee System. This 12-mile levee segment along the Rio Grande in Hidalgo County, Texas was identified as a priority area to improve flood containment.

Subsequently to our initial December 29, 2005 consultation, the project area was expanded to include 5 miles of the Common Levee System, adjacent to the Mission Levee. Attached is an updated description of the proposed undertaking (*Proposed Action to Increase Levee Height to Improve Flood Control, Mission and Common Levee Systems*).

In response to your request for cultural resources support information, a description of current conditions was prepared along with a preliminary evaluation of potential impacts related to the proposed undertaking. Findings of this evaluation are presented in the attached report recently completed by the LGGROUP (*A Cultural, Architectural, and Engineering Resources Evaluation of Proposed Improvements to the Mission and Common Levee Systems, Hidalgo County, Texas*).

According to the LGGROUP preliminary evaluation, improvements to the Mission Levee System have a potential to impact historic archaeological resources at six locations, as well as one known prehistoric archaeological resource (41HG143). No areas were identified in previous studies or during the current archival research that were considered to be high probability areas (HPAs) for the occurrence of unknown prehistoric archaeological sites. In a previous report by Cooper et al. (2002) however, areas of historic occupation sometimes contain a prehistoric component, as European settlers also considered prehistorically utilized landform surfaces (stable surfaces) as desirable living surfaces. Therefore, the areas of potential historic resources designated above should also be considered as possible locations for prehistoric archaeological sites.

Along the Common Levee System, no known prehistoric archaeological resources and no HPAs for unknown prehistoric archaeological resources were identified in previous or current studies (Cooper et al. 2002; Neel 2006).

Preliminary investigations also indicate that five historic resources exist within the current Mission and Common Levee right-of-way and are engineering elements of the levee system. These resources will likely be redesigned by proposed modifications to the levee, or may undergo a visual impact by the encroachment of the expanded levee footprint. One additional historic resource, the La Lomita Chapel, a recorded Texas Historic Landmark, is located very near the Mission Levee System within a National Register Historic District and is likely to be visually impacted by expansion of the levee footprint. In addition to these major historic resources, 25 minor resources of weir gates and a standpipe are probably of historic-age and were also recorded within the Mission and Common Levee Systems right-of-way.

Your assistance in reviewing the proposed undertaking is greatly appreciated. Your comments and recommendations will be addressed in the Draft Environmental Assessment currently under development for agency review. If possible, please provide a response to my attention by June 7, 2006. If you have any questions, please feel free to call me at (915) 832-4702.

Sincerely,



Gilbert G. Anaya
Supervisory Environmental Protection Specialist
Environmental Management Division

Enclosures:

As stated



DEPARTMENT OF THE ARMY
GALVESTON DISTRICT, CORPS OF ENGINEERS
Corpus Christi Regulatory Field Office
5151 Flynn Parkway, Suite 306
Corpus Christi, Texas 78411-4318

REPLY TO
ATTENTION OF

June 1, 2006

Regulatory Branch

SUBJECT: D-18157

International Boundary and Water Commission
Attention: Gilbert G. Anaya
The Commons, Building C, Suite 100
4171 N. Mesa Street
El Paso, Texas 79902

Gentlemen:

This is in reference to your letters, dated December 27, 2005 and May 12, 2006, concerning the proposal to raise the Mission and Common Protective Levee Systems along the Rio Grande. The project will include raising the levee height an additional 3 to 6 feet, with a resulting increase in the width of the levee footprint of up to 36 feet, along a 12-mile levee segment extending from the town of Penitas to the Banker Floodway (Mission Levee) and a 5.1-mile segment that extends from the Anzalduas Dam to the River Levee segment surrounding the city of Hidalgo (Common Levee) in Hidalgo County, Texas as shown on the enclosed plans in 3 sheets.

Based on the information you submitted, most of the levee footprint increases would occur within the United States International Boundary and Water Commission right-of-way (ROW) on the riverside of the Mission and Common levees. In those areas where there is not sufficient ROW, the levee footprint would be retained at its current size and alignment, with a mechanically stabilized earth structure installed on the existing levee crown. According to the information included in your document entitled "Environmental Assessment of Flood Control Improvements", 40.6 acres of wetlands were delineated within the Mission Levee ROW. Included within that acreage was approximately 38.3 acres described as "wooded former borrow sites", which were listed as borrow sites used in the mid 1970's for levee construction. Cross-sections of the proposed levee expansion indicate that the expansion boundaries would not encroach on the edge of these wetland areas. However, best management practices, such as maintaining silt fences around the work area, must be utilized when working in or near wetlands to prevent erosion and protect water quality. An additional single wetland area was identified as outside the current levee ROW, but within the potential levee expansion area, and would be subject to impacts from construction

activities. Work activities in this area may affect 1.07 acres of adjacent wetlands and open water areas within the Edinburg intake channel from the Rio Grande. One area of wetlands was identified within the Common Levee ROW; however, it is located outside of the 100-foot buffer area for levee expansion.

The Rio Grande is a navigable water of the U.S. and is regulated by the Corps of Engineers (Corps) under Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act. Under Sections 10 and 404, activities that involve work in waters of the U.S., including the discharge of dredged and/or fill material, requires a Department of the Army (DA) permit. Any activities that involve or result in the discharge of dredged or fill material, including associated excavation activities, in and around the Edinburg Canal may require a Department of the Army permit. A copy of the wetland delineation sheets should be provided for any wetland areas that will be impacted by the proposed work. In addition, you should submit an application and project plans for Corps review prior to the initiation of the project.

This determination has been conducted to identify the limits of the Corps of Engineers' Clean Water Act jurisdiction for the particular site identified in this request. This determination may not be valid for the wetland conservation provision of the Food Security Act of 1985, as amended. If the owner or their tenant are USDA program participants or anticipate participation in the USDA programs, then they should request a certified wetland determination from the local office of the Natural Resources Conservation Service prior to starting work.

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:

James E. Gilmore, Appeal Review Officer
Southwestern Division, CESWD-CMO-E
1100 Commerce Street, Room 8E9
Dallas, Texas 75242-0216

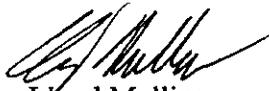
Telephone: 469-487-7061; FAX: 469-487-7190

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it 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 by July 31, 2006.

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

This approved determination is valid for five years from the date of this letter unless new information warrants revision before the expiration date. Please reference the determination number D-18157 in future correspondence pertaining to this project. If you have questions concerning this matter, please contact Marie C. Pattillo at the letterhead address or by telephone at 361-814-5847.

Sincerely,



Lloyd Mullins
Unit Leader,
Corpus Christi Regulatory Field Office

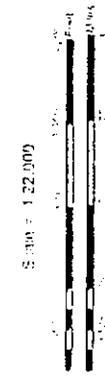
Enclosures

D-18157



TEXAS

MEXICO



Common Levee System
 Figure 2.2 - Location Map
 Technical Support Studies
 International Boundary and Wire Commission
 United States Section

PARSONS

- 1 to 2 ft overtop
- 0 to 1 ft overtop
- +5 ft overtop
- 4 to 5 ft overtop
- 3 to 4 ft overtop
- 2 to 3 ft overtop
- 1 to 2 ft freeboard
- 1 to 2 ft freeboard
- 2 to 3 ft freeboard

Location Map - Common Levee System
 D-18157
 USI BWC
 Hidalgo County, Texas
 Page 2 of 3

D-18157



Mission Levee System
 Figure 4.2 Wetlands A-C Location
 Prepared by Parsons
 for the U.S. Army Corps of Engineers
 in support of the
 Lower Rio Grande Valley National Wildlife Refuge
 Rehabilitation Project
 Mission Levee System
 Wetlands A-C Location

PARSONS

Location Map - Wetlands Impact (B-2)
 D-18157
 NSI & WC
 Hidalgo County, TX
 Page 3 of 3



Applicant: Internal Boundary and Water Commission		File #: D-18157	Date: 1 June 2006
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 II of the following identifies your rights and options regarding jurisdictional determination of the permit. Additional information may be found in [Title 17, Chapter 170, Subchapter 170-01](#), and [Title 17, Chapter 170, Subchapter 170-02](#) of the Corps regulations at [40 CFR Part 17](#).

- 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 jurisdictional determination (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.

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.

If you have questions regarding this decision and/or the appeal process you may contact:

Marie C. Pattillo, Project Manager
U.S. Army Corps of Engineers, CESWG-PE-RCC
Corpus Christi Regulatory Field Office
5151 Flynn Parkway, Suite 306
Corpus Christi, Texas 78411-4318
Telephone 361-814-5847; FAX 361-814-5912

If you only have questions regarding the appeal process you may also contact:

James E. Gilmore, Appeal Review Officer
CESWD-CMO-E, 1100 Commerce Street, Room 8E9
Dallas, Texas 75242-0216
Telephone: 214-767-2457; FAX: 214-767-9021
Email: James.E.Gilmore@usace.army.mil

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 authorized agent.

Date:

Telephone number:



TEXAS
HISTORICAL
COMMISSION

The State Agency for Historic Preservation

RICK PERRY, GOVERNOR

JOHN L. NAU, III, CHAIRMAN

F. LAWRENCE OAKS, EXECUTIVE DIRECTOR

June 14, 2006

Gilbert G. Anaya
International Boundary and Water Commission
The Commons, Bldg. 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
Mission & Common Levee Systems, Hidalgo County (106/USIBWC)***

Dear Mr. Anaya,

Thank you for correspondence describing the above referenced project. 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).

Our Archeology Division staff, led by Debra Beene, noted several conflicting statements in your submitted documentation. Please contact her at 512-463-5865 to discuss concerns. Further review will proceed when the archeological survey field report is submitted to our agency. Architectural historic resources were noted on Page 14 of your report but did not appear to be documented in such a way that our architectural historians could provide a determination of eligibility; contact Hannah Vaughan at 512-463-6046 to coordinate submission of necessary documentation.

When submitting the next documentation packet, please comment on the degree to which potential undertaking has been discussed with owners/users of buildings such as the Edinburg Pumping Station and La Lomita Chapel. Thank you for your cooperation in this federal review process, and for your efforts to include our agency in the early stages of this project.

Yours truly,

A handwritten signature in cursive script, appearing to read "Amy Hammons".

Amy Hammons, Project Reviewer
for: F. Lawrence Oaks, State Historic Preservation Officer



June 30, 2006

Mr. Gilbert Anaya
United States Section, International Boundary and Water Commission
4171 N. Mesa, Suite C-100
El Paso, TX 79902

COMMISSIONERS

JOSEPH B.C. FITZSIMONS
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FORT WORTH

ROBERT L. COOK
EXECUTIVE DIRECTOR

Re: Review of Preliminary Environmental Assessment for Improvements to the Mission and Common Levee System and review of potential environmental impacts USIBWC Mission Levee Improvements, Hidalgo County, Texas

Dear Mr. Anaya:

This letter is in response to your request for a review of the environmental documents regarding the proposed improvements to the Mission and Common Levee System in Hidalgo County, Texas. Texas Parks and Wildlife Department (TPWD) is a cooperating agency in the development of the Environmental Assessment for the project. TPWD State Parks Division and Wildlife Division staff reviewed the following documents, dated May 2006, associated with the project:

Preliminary Environmental Assessment: Improvements to the Mission and Common Levee Systems

Technical Support Studies: Mission and Common Levee Systems: Environmental Assessment of Flood Control Improvements

Proposed Action to Increase Levee Height for Improved Flood Control

The following comments and recommendations are provided to further assist your planning efforts and to minimize effects of this project upon fish, wildlife, habitat and cultural resources.

The Mission and Common Levee System are adjacent levee systems that are part of the Lower Rio Grande Flood Control Project. The Mission Levee System extends approximately 12 miles downstream from the Town of Peñitas to the Banker Floodway. The Common Levee System is composed of the Common Levee and the Anzalduas Dike. The Dike is an approximate 0.7-mile long segment that extends from the Anzalduas Dam to the junction with the Common Levee at the Banker Floodway. The Common Levee extends approximately 4.5 miles downstream to the junction with the River Levee segment near the City of Hidalgo. In order to meet current design criteria for

To manage and conserve the natural and cultural resources of Texas and to provide hunting, fishing and outdoor recreation opportunities for the use and enjoyment of present and future generations.



Take a kid
hunting or fishing



Visit a state park
or historic site

flood protection and correct structural deficiencies in the levees, the proposed project would require a height increase of two to six feet throughout the Mission Levee System, an increase of three to eight feet for the Common Levee System and a height increase of zero to four feet for the Anzalduas Dike. A slurry barrier would also be required for a 7.5 mile segment of the Mission Levee System downstream from Project Mile 4.7 to address a potential seepage issue. Both levees primarily traverse agricultural areas; however, areas adjacent to the Mission Levee System include lands managed by the U.S. Fish and Wildlife Service (USFWS), TPWD, The Nature Conservancy (TNC), and the North American Butterfly Association (NABA); the majority of the riverside of the Common Levee System is bordered by two units of the USFWS Lower Rio Grande National Wildlife Refuge.

There are four tracts of land within or adjacent to the Mission Levee System right-of-way (ROW) that comprise Bentsen-Rio Grande Valley State Park. The two central tracts contain the new headquarters for the park and the World Birding Center north of the Mission Levee System and the old headquarters and campgrounds south of the Mission Levee System. The western tract is located south of the Mission Levee System and the northern portion of it is within the ROW. The eastern tract is a linear tract that runs parallel to the south side of the Mission Levee System and may lie entirely within the ROW.

None of the documents reviewed by State Parks and Wildlife Division staff were clear on the exact width of the proposed levee footprint expansion and associated work corridor. In Section 2.3 on page 2-6 of the *Technical Support Studies*, it is suggested that for a typical cross-sectional area, a 6-foot increase in levee height would result in a 36-foot offset increase in footprint. Section 2.3.1 on the same page indicates that levee footprint increases would take place within the existing ROW and mostly on the riverside of the levee from the landside shoulder of the crown toward the river due to the presence of irrigation canals along large levee segments. Section 3 of the report states that habitat classifications were verified during field surveys, focusing on a narrow construction corridor (levee expansion area) on either side of the levee, but the width of the corridor is not identified. Later in the same section, the report states that when the ROW boundary identification was uncertain, a vegetation survey corridor defined as a 100-foot buffer extending from the levee centerline along the entire riverside length of the levee was used. The survey corridor encompasses the increased levee footprint width according to the

report. The report does not clarify if the widths of the “construction corridor” or the “survey corridor” included equipment access and staging areas.

Also, inconsistencies occur between the text in the body of the *Preliminary Environmental Assessment* and the text in several tables. Page 2-6 states that levee footprint expansion of the Mission Levee System would take place within the ROW, yet Table 2.1 states that expansion would take place “almost completely” in the ROW. Similarly, Page 2-7 states expansion of the Common Levee would occur “entirely” within the ROW, yet Table 2.2 states expansion would take place “almost entirely” in the ROW. Table 3.1, which lists the type and extent of vegetation communities within the existing ROW and levee expansion areas for both levee systems, indicates that the amount of woodland and herbaceous vegetation in the Common Levee expansion area is greater than that of the ROW. As the levee expansion area is *within* the ROW, it is unclear how the area (*i.e.*, acres) of woodland or herbaceous vegetation could be greater in the expansion area than in the ROW of the Common Levee. Finally, the acreage of impacts to vegetation reported in Table 4.1, while consistent with Table 3.1 for the Mission Levee System, are not consistent for the woodland impacts for the Common Levee System. TPWD requests clarification on these points.

Mission Levee System/Bentsen-Rio Grande Valley State Park

The majority of potential impacts resulting from the expansion of the Mission Levee System would be to grassland communities dominated by introduced species. Disturbance to these grassland areas would likely result in minimal impacts to fish and wildlife resources. Following construction, these areas are expected to recover quickly. TPWD recommend seeding as quickly as possible following construction to minimize potential erosion and sedimentation from disturbed areas.

Approximately 17 percent (34.2 of 198.1 acres) of the existing Mesquite-Acacia woodland in the Mission Levee System ROW would be removed to accommodate the expansion of the levee. Mesquite-Acacia woodland in the ROW occur within and adjacent to tracts of Bentsen-Rio Grande Valley State Park. TPWD staff visited the proposed project site within the three-mile long reach from Mile 5.5 to Mile 8.5 on June 7, 2006 and June 27, 2006. The western and eastern tracts of Bentsen-Rio Grande Valley State Park are wooded and the vegetation line is as close as 30 feet from the riverside toe of the existing levee in the western tract and as close as 10 feet from the riverside

toe of the existing levee in the eastern tract. Based on the proposed increase in levee footprint offset of 36 feet on the riverside of the levee, woodland habitats on these two tracts of TPWD owned property would be impacted by the project. The polygon colors used to represent woodland vegetation communities and delineate state park property in Figure 3.3 and 3.4 of the *Technical Support Studies* do not facilitate determining whether or not any of the 34.2 acres of Mesquite – Acacia Woodland communities identified in Table 3.1 of the report are located within the state park boundaries. While TPWD staff agrees with the report's characterization of plant communities within the ROW east of Bentsen Palm Drive as Mesquite – Acacia Woodland, the vegetation west of Bentsen Palm Drive is better described as Sugarberry – Huisache – Granjeno Woodland.

As stated in previous correspondence with TPWD, contiguous mature woodland habitat is a unique ecosystem located in the Lower Rio Grande Valley of south Texas and in northern Mexico. In addition to providing habitat essential to the conservation of the ocelot (*Leopardus pardalis*) and jaguarondi (*Herpailurus yaguarondi*), this dense brush also provides valuable feeding, nesting and protective cover habitat for many resident and migrating wildlife species. TPWD appreciates that any vegetation clearing would be scheduled to occur outside of the migratory bird nesting season. Avoiding impacts to nesting habitat during the March through August nesting season will ensure that potential impacts to nesting migratory birds can be avoided and is supported by TPWD.

While impacts to woodland habitats would be considered minimal throughout the project corridor as a whole, the occurrence of this habitat type in an area isolated from agricultural or development pressures increases its value as wildlife habitat. Based on the figures provided in the *Preliminary Environmental Assessment*, woodland habitat along the riverside of the levee links the Abrams Unit and the La Parida Banco Unit of the Lower Rio Grande Valley National Wildlife Refuge between project mile 4.5 and 5.0. As required by the National Environmental Policy Act (NEPA), §1502.14(f), 1502.16(h), 1503.3(d), 1505.2(c), 1505.3, and 1508.20, the Environmental Assessment should include a mitigation plan demonstrating that mitigation measures would be initiated sequentially from avoidance and minimization to compensation for unavoidable impacts to woodland habitat.

The woodland habitats and wooded former borrow sites located on the state park and on adjacent tracts provide valuable habitat for wildlife, including

federally and state-listed threatened and endangered species. Clearing woodland communities or removing the buffer around the wetlands could impact ocelot, jaguarondi, indigo snakes, collared lizard, horned lizard and Texas tortoise. Impacts to woodland habitat could also destroy nesting sites of ferruginous pygmy owl and gray hawk. Filling or draining wetlands in the project area may impact lesser sirens, black-spotted newt, Mexican tree-frog and Coue's rice rat. Table 4.2 in the *Preliminary Environmental Assessment* should reflect these potential impacts to federally-listed threatened and endangered species.

The amount of woodland habitats on the western and eastern tracts of Bentsen-Rio Grande Valley State Park that are located within the project work corridor (including vehicle/equipment access and staging areas) would need to be determined before TPWD staff can assess the proposed project's potential impacts to the State's natural resources on these tracts. It would be helpful to reviewers if the graphs representing the cross-sectional areas of wetlands separation from levee expansion area in Attachment 4A in the *Technical Support Studies* and in Figure 4.1 in the *Preliminary Environmental Assessment* were labeled with the same letters or titles corresponding to the wetlands identified in Figure 3.1 in the *Preliminary Environmental Assessment*. It appears that no graphs representing the cross-sectional areas of wetlands separation from levee expansion area are provided in either document for wetlands "M", "N" and the one in between that has not been delineated as of yet. TPWD staff would need to review these cross-sectional areas before assessing the proposed project's impacts to wetlands owned or managed by TWPD. Once digital files that delineate the entire project work corridor/footprint are provided to TPWD, staff will be better able to assess the proposed project's impacts to the natural resources in Bentsen-Rio Grande Valley State Park. At that time, TPWD staff will work with the IBWC and its agents to develop a plan to avoid, minimize and mitigate impacts to the natural resources on the park sites as required by NEPA. When the project is implemented, TPWD will require IBWC to install fencing to mark the project corridor and protect remaining adjacent habitats on State Park properties.

In addition to the wetland identified as "M" on the western tract of Bentsen-Rio Grande Valley State Park, TPWD staff manages another wooded former borrow site on the western tract as a wetland by providing water to it seasonally. Sugarberry and black willow trees are found in this former borrow site located between wetlands "M" and "N". This site is not identified as a

jurisdictional wetland in any of the documents reviewed by TPWD staff. TPWD staff at Bentsen-Rio Grande Valley State Park has also historically managed the wetland identified as "N" in Figure 3.1 in the *Preliminary Environmental Assessment* by providing water to it. This wetland and the previously described wetland that has yet to be delineated are currently being flooded by State Parks staff. Finally, the wooded former borrow site labeled "R" is located within the eastern tract of Bentsen-Rio Grande Valley State Park.

Bentsen-Rio Grande Valley State Park Cultural Resources

Although there are no recorded archeological sites in the IBWC levee easement that runs through (and tangent to) four tracts of Bentsen State Park, a cursory review of historic maps from the early twentieth century suggests numerous historic features may be impacted by the proposed project. These features include the King Ranch in the western tract of Bentsen State Park (south of the existing levee), the Hedley and Las Nuevas Ranches within and/or north of the central tract of the park, and the old Military Telegraph Road built in the mid nineteenth century that ran through the central and north central tracts of the park. In terms of prehistoric archeology, recent archeological investigations in Rio Grande alluvium north of the park (Ringstaff et al 2003), have encountered buried prehistoric archeological deposits at site 41HG184 dating to 3000 and 5000 years B.P. In addition, immediately north of the eastern tract of Bentsen State Park is a recorded stratified site 41HG186. The site, recorded in 2002, is considered potentially eligible for listing to the National Register of Historic Places.

Considering the potential for both historic and prehistoric cultural resources in the area, it is the recommendation of TPWD cultural resources staff that a cultural resources survey with historic background map review, intensive archeological survey, and geomorphic assessment be conducted in any area of ground disturbance including (but not limited to) the proposed project area and staging areas in order to be compliant with Section 106 and the Texas Antiquities Code.

Common Levee System

Impacts to fish and wildlife habitat resulting from proposed footprint expansion of the Common Levee System should be minimal. However, this determination is contingent upon clarification of impacts to vegetation along

Mr. Gilbert Anaya

Page 7

June 30, 2006

the Common Levee System. In addition to the inconsistencies previously mentioned, Section 4 of the *Preliminary Environmental Assessment*, page 4.3 states that “no thorn woodland would be removed” along the Common Levee System corridor yet page 4-5 implies that *some* woodland habitat, potentially providing ocelot habitat, would be removed. TPWD recommends revising the language in the *Preliminary Environmental Assessment* to clearly state that no potentially high quality thorn woodland habitat would be removed as a result of improvements to the Common Levee system

TPWD appreciates the opportunity to participate as a cooperating agency in this project. Please contact TPWD if you have any questions regarding our comments. The Point of Contact (POC) for the State Parks/Natural Resources Program is Kay Jenkins (361-790-0325), the POC for the State Parks/Cultural Resources Program is Chris Ringstaff (361-790-0320), and the POC for Wildlife Habitat Assessment is Russell Hooten (361-825-3240).

Sincerely,

A handwritten signature in cursive script that reads "Kathy Boydston".

Kathy Boydston
Wildlife Habitat Assessment Program
Wildlife Division

KB:RH:DR:KJ.dg



INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES AND MEXICO

OFFICE OF THE COMMISSIONER
UNITED STATES SECTION

AUG 04 2006

Ms. Amy Hammons, Project Reviewer
Texas Historical Commission
P.O. Box 12276
Austin, Texas 78711-2276

Subject: Project Review under Section 106 of the National Historic Preservation Act of 1966,
Mission & Common Levee Systems, Hidalgo County (106/USIBWC)

Dear Ms. Hammons:

Thank you for your June 14, 2006 letter providing comments on the Mission and Common Levee Systems documentation submitted by the United States Section, International Boundary and Water Commission (USIBWC). As recommended in your letter, clarifications were requested from Ms. Debra Beene and Ms. Hannah Vaughan on changes and additional data needed for our next submittal.

Comments and recommendations by THC on the Cultural Resources Evaluation prepared by the Lopez-Garcia Group have been addressed and/or incorporated into a revised report. A copy of this report will be provided to the THC along with our next submittal, the Draft Environmental Assessment (EA). The EA includes an evaluation of potential significant impacts to archaeological resources as well as all identified historical structures in the area of potential effect. The EA also documents previous correspondence with regulatory agencies and other stakeholders, including owners of the Edinburg Pumping Station and La Lomita Chapel Park.

The documents will be sent to you in the near future for your review. I appreciate your continued cooperation on this project and will be available to answer any questions. Please feel free to call me at (915) 832-4702.

Sincerely,

for Gilbert G. Anaya
Supervisory Environmental Protection Specialist
Environmental Management Division



September 13, 2006

Carlos Victoria-Rueda, Ph.D.
Parsons
8000 Centre Park Drive, Suite 200
Austin, TX 78754

Re: Comments for "Section 5. BMPs and Mitigation Actions for inclusion in the Preliminary Environmental Assessment for Improvements to the Mission and Common Levee System, Hidalgo County, Texas

Dear Dr. Victoria-Rueda:

This letter is in response to the proposed best management practices and proposed mitigation actions associated with the levee improvement project referenced above. Texas Parks and Wildlife Department (TPWD) is a cooperating agency in the development of the Environmental Assessment (EA) for the project. TPWD State Parks Division and Wildlife Division staff reviewed the draft of Section 5, Best Management Practices and Mitigation Actions, and offer the following comments and recommendations.

Natural Resources-BMPs

Regarding migratory birds, TPWD recommends the language be revised to reflect that construction would be scheduled to occur outside the migratory bird *nesting* season which is from April 1 through July 15.

Natural Resources-Mitigation Measures

In order to remove any ambiguity, TPWD recommends including language that specifies that plant species used in revegetation efforts be native species that currently occur in the habitats that would be impacted by the project or natives indigenous to Hidalgo County. This will decrease the likelihood of selecting plants that may be native to Texas but not appropriate for the area. Attached are lists of appropriate grasses, forbs, shrubs and trees that have been compiled by TPWD staff.

TPWD also recommends including a mitigation ratio for unavoidable impacts to vegetation based on acreage. For high quality woodland impacts, TPWD recommends a 2:1 replacement ratio; for impacts to herbaceous vegetation, TPWD recommends a 1:1 replacement ratio. TPWD staff can provide

To manage and conserve the natural and cultural resources of Texas and to provide hunting, fishing and outdoor recreation opportunities for the use and enjoyment of present and future generations.

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Dr. Victoria-Rueda

Page 2

recommended planting densities for shrubs and trees to help determine the number of plants required to compensate for unavoidable impacts.

TPWD appreciates the opportunity to participate as a cooperating agency in this project. Please contact TPWD if you have any questions regarding our comments. The Point of Contact (POC) for the State Parks/Natural Resources Program is Kay Jenkins (361-790-0325), the POC for the State Parks/Cultural Resources Program is Chris Ringstaff (361-790-0320), and the POC for Wildlife Habitat Assessment is Russell Hooten (361-825-3240).

Sincerely,

A handwritten signature in cursive script that reads "Kathy Boydston".

Kathy Boydston
Wildlife Habitat Assessment Program
Wildlife Division

KB:RH:DR:KJ.hb

Attachment

Scientific Name

Common Name

Scientific Name	Common Name
<i>Andropogon gerardii</i>	Big Bluestem
<i>Andropogon glomeratus</i>	Bushy Bluestem
<i>Aristida purpurea</i>	Purple Threeawn
<i>Bothriochloa longipaniculata</i>	Longspike Beardgrass
<i>Bothriochloa torreyana</i>	Silver Beardgrass
<i>Bouteloua hirsuta</i>	Hairy Grama
<i>Bouteloua rigidetata</i>	Texas Grama
<i>Bouteloua trifida</i>	Red Grama
<i>Bromus texensis</i>	Texas Brome
<i>Buchloe dactyloides</i>	Buffalo Grass
<i>Chloris cucullata</i>	Hooded Windmillgrass
<i>Chloris texensis</i>	Texas Windmill Grass
<i>Dichanthelium</i> spp.	Rosettegrass
<i>Digitaria californica</i>	California Cottontop
<i>Digitaria cognata</i>	Fall Witchgrass
<i>Eragrostis intermedia</i>	Plains Lovegrass
<i>Eragrostis spectabilis</i>	Purple Lovegrass
<i>Eragrostis spicata</i>	Spicate Lovegrass
<i>Hilaria belangeria</i>	Curlymesquite
<i>Leersia monandra</i>	Bunch Cutgrass
<i>Leptochloa fascicularis</i>	Bearded Sprangletop
<i>Leptochloa filiformis</i>	Red Sprangletop
<i>Neeragrostis reptans</i>	Creeping Lovegrass
<i>Panicum hirsutum</i>	Hairy Panicum
<i>Panicum virgatum</i>	Switchgrass
<i>Paspalum langei</i>	Rustyseed Paspalum
<i>Paspalum lividum</i>	Longtom
<i>Paspalum plicatulum</i>	Brownseed Panicum
<i>Trichloris pluriflora</i>	Multiflowered False Rhodesgrass
<i>Tridens texanus</i>	Texas Tridens
<i>Schizachyrium scoparium</i>	Little Bluestem
<i>Setaria geniculata</i>	Knot-root Bristlegrass
<i>Setaria leucopyla</i>	Plains Bristlegrass
<i>Setaria macrostachya</i>	Plains Bristlegrass
<i>Setaria scheelei</i>	Southwestern Bristlegrass
<i>Setaria texana</i>	Texas Bristlegrass
<i>Sporobolus buckleyi</i>	Buckley Dropseed

Scientific Name	Common Name	Form
<i>Abutilon fruticosum</i>	Indian Mallow	F
<i>Abutilon trisulcatum</i>	Amantillo	F
<i>Achyranthes aspera</i>	Chaff-Flower	F
<i>Ambrosia psilostachya</i>	Western Ragweed	F
<i>Aster spinosa</i>	Spiny Aster	F
<i>Aster subulatus</i>	Hierba del Marano	F
<i>Calyptocarpus vialis</i>	Straggler Daisy	F
<i>Celosia nitida</i>	Albahaca, Cockscomb	F
<i>Chenopodium berlandieri</i>	Berlandier Goosefoot	F
<i>Chenopodium murale</i>	Nettleleaf Goosefoot	F
<i>Cyperus rotundus</i>	Purple Nutsedge	F
<i>Galium aparine</i>	Clingon Bedstraw	F
<i>Gaura parviflora</i>	Gaura	F
<i>Helianthus annuus</i>	Common Sunflower	F
<i>Herrisantia crispa</i>	Net-vein Herrisantia	F
<i>Heterotheca latifolia</i>	Camphor Weed	F
<i>Malvastrum americanum</i>	Malva Loca	F
<i>Nicotiana repanda</i>	Wild Tobacco	F
<i>Oxalis stricta (=dillenii)</i>	Yellow Wood-Sorrel	F
<i>Parietaria pensylvanica</i>	Pellitory	F
<i>Petiveria alliacea</i>	Garlic-Weed	F
<i>Phoradendron tomentosum</i>	Mistletoe	F
<i>Plantago rhodosperma</i>	Red-seeded Plantain	F
<i>Plumbago scandens</i>	Hierba de Alacran	F
<i>Ratibida columnaris</i>	Mexican Hat	F
<i>Rhynchosida physocalyx</i>	Rhynchosida	F
<i>Ruellia drummondiana</i>	Wild Petunia	F
<i>Ruellia runyonii</i>	Wild Petunia	F
<i>Sida spinosa</i>	Prickly Sida	F
<i>Solanum americanum</i>	American Nightshade	F
<i>Solanum triquetum</i>	Texas Nightshade	F
<i>Sonchus oleraceus</i>	Sow Thistle	F
<i>Stellaria prostrata</i>	Chickweed	F
<i>Urtica chamaedryoides</i>	Nettle	F
<i>Verbesina enceloides</i>	Cowpen Daisy	F
<i>Verbesina microptera</i>	Frostweed	F
<i>Cardiospermum halicacabum</i>	Balloon-Vine	V
<i>Cissus incisa</i>	Marine Ivy, Ivy Treebine	V
<i>Clematis drummondii</i>	Barbas de Chivato	V
<i>Cocculus diversifolius</i>	Snailseed Vine	V
<i>Matelea reticulata</i>	Pearl Milkweed	V
<i>Sarcostemma cynanchoides</i>	Climbing Milkweed, Twine Vine	V
<i>Serjania brachycarpa</i>	Shortfruit Serjania Vine	V
<i>Smilax bona-nox</i>	Cat Brier	V
<i>Urvillea ulmacea</i>	Urvillea	V

Scientific Name	Common Name	Form
<i>Acacia greggii</i> var. <i>greggii</i>	Catclaw	S
<i>Acacia greggii</i> var. <i>wrightii</i>	Wright's Acacia	S
<i>Adelia vaseyi</i>	Vasey's Adelia	S
<i>Amyris texana</i>	Chapotillo	S
<i>Baccharis neglecta</i>	Roosevelt Willow	S
<i>Bernardia myricifolia</i>	Oreja de Raton	S
<i>Chromolaena odorata</i>	Crucita	S
<i>Forestiera angustifolia</i>	Elbowbush	S
<i>Karwinskia humboldtiana</i>	Coyotillo	S
<i>Malpighia glabra</i>	Barbados Cherry	S
<i>Mimosa pigra</i>	Zarza, Black Mimosa	S
<i>Opuntia leptocaulis</i>	Tasajillo	S
<i>Opuntia lindheimeri</i>	Texas Prickley Pear	S
<i>Phaulothamnus spinescens</i>	Snake Eyes	S
<i>Xylosma flexuosa</i>	Brush Holly	S
<i>Zanthoxylum fagara</i>	Colima	S
<i>Ziziphus obtusifolia</i>	Lotebush	S
<i>Celtis pallida</i>	Granjeno	S/T
<i>Condalia hookeri</i>	Brasil	S/T
<i>Guaiacum angustifolium</i>	Guayacan	S/T
<i>Sideroxylon celastrina</i>	Coma	S/T
<i>Capsicum annuum</i> var. <i>glabriusculum</i>	Chile Piquin	ss
<i>Eupatorium incarnatum</i>	Boneset	ss
<i>Heimia salicifolia</i>	Hachinal	ss
<i>Rivina humilis</i>	Pigeon Berry	ss
<i>Salvia coccinea</i>	Tropical Sage	ss
<i>Siphonoglossa pilosella</i>	Tube Tongue	ss
<i>Lippia alba</i>	Bushy Lippia	ss/S
<i>Acacia farnesiana</i>	Huisache	T
<i>Celtis laevigata</i> var. <i>laevigata</i>	Hackberry	T
<i>Diospyros texana</i>	Texas Persimmon	T
<i>Ebenopsis ebano</i>	Texas Ebony	T
<i>Ehretia anacua</i>	Anacua	T
<i>Fraxinus berlandieriana</i>	Mexican Ash	T
<i>Leucaena pulverulenta</i>	Tepeguaje	T
<i>Parkinsonia aculeata</i>	Retama	T
<i>Prosopis glandulosa</i> var. <i>glandulosa</i>	Honey Mesquite	T
<i>Salix nigra</i>	Black Willow	T
<i>Sapindus saponaria</i> var. <i>drummondii</i>	Soap-Berry Tree	T
<i>Taxodium mucronatum</i>	Montezuma Cypress	T
<i>Ulmus crassifolia</i>	Cedar Elm	T



Natural Resources Conservation Service
101 South Main Street
Temple, TX 76501-7602

October 16, 2006

International Boundary and Water Commission
4171 N. Mesa Street, Suite C-100
El Paso, Texas 79902

Attention: Gilbert Anaya, EMD, Environmental Protection Specialist

Subject: LNU-Farmland Protection-
Draft EIS for improvements to Mission and Common Levee Systems
Hidalgo County, Texas

We have reviewed the information provided concerning the proposed improvements to the Mission Protective Levee System and the Common Levee system in Hidalgo County, Texas, as outlined in your letter of September 25, 2006. This is part of a Draft EIS and Finding of No Significant Impact for this project as required by the International Boundary and Water Commission. We have reviewed the project as required by the Farmland Protection Policy Act (FPPA).

Your plans indicate that you will typically be increasing the footprint of the levee due to increasing the height and top width. Although about 50 percent of the soils are classified as Important Farmland Soils, most of this land is currently not being farmed and is owned by the levee district. Much is in herbaceous vegetation along the foot slope of the levee and not currently being farmed. The levee improvements will have little impact on prime farmlands. The FPPA law states "Actions that include assistance provided to purchase, maintain, renovate, or replace a structure that already exists in not subject to the act." The main impact will be loss of soil from the borrow area which will be from commercial sources. We have completed an AD-1006 form indicating that we concur that a Finding of No Significant Impact (FONSI) should be granted.

I have attached a completed AD-1006 (Farmland Conversion Impact Rating) form for this project. Thanks for the quality resource materials you submitted to evaluate this project. If you have any questions please call James Greenwade at (254)-742-9960, Fax (254)-742-9859.

Thanks,

A handwritten signature in black ink that reads "James M. Greenwade". The signature is fluid and cursive, written over the typed name.

James M. Greenwade
Soil Scientist
Soil Survey Section
USDA-NRCS, Temple, Texas

FARMLAND CONVERSION IMPACT RATING

PART I (To be completed by Federal Agency)		Date Of Land Evaluation Request		9-25-2006	
Name of Project		Mission and Common Levee systems		Federal Agency Involved	
				International Boundary and Water Commission	
Proposed Land Use		Flood Control		County and State	
				Hidalgo County, Texas	
PART II (To be completed by NRCS)			Date Request Received By		Person Completing Form: James
			NRCS		Greenwade
			9-27-2006		
Does the site contain Prime, Unique, Statewide or Local Important Farmland? (If no, the FPPA does not apply - do not complete additional parts of this form)			YES	NO	Acres Irrigated
			<input type="checkbox"/>	x <input type="checkbox"/>	Average Farm Size
Major Crop(s)		Farmable Land In Govt. Jurisdiction		Amount of Farmland As Defined in FPPA	
		Acres: %		Acres: %	
Name of Land Evaluation System Used		Name of State or Local Site Assessment System		Date Land Evaluation Returned by NRCS	
PART III (To be completed by Federal Agency)			Alternative Site Rating		
			Site A	Site B	Site C
			Site D		
A. Total Acres To Be Converted Directly					
B. Total Acres To Be Converted Indirectly					
C. Total Acres In Site					
PART IV (To be completed by NRCS) Land Evaluation Information					
A. Total Acres Prime And Unique Farmland					
B. Total Acres Statewide Important or Local Important Farmland					
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted					
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value					
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)					
PART VI (To be completed by Federal Agency) Site Assessment Criteria (Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)		Maximum Points	Site A	Site B	Site C
1. Area In Non-urban Use		(15)			
2. Perimeter In Non-urban Use		(10)			
3. Percent Of Site Being Farmed		(20)			
4. Protection Provided By State and Local Government		(20)			
5. Distance From Urban Built-up Area		(15)			
6. Distance To Urban Support Services		(15)			
7. Size Of Present Farm Unit Compared To Average		(10)			
8. Creation Of Non-farmable Farmland		(10)			
9. Availability Of Farm Support Services		(5)			
10. On-Farm Investments		(20)			
11. Effects Of Conversion On Farm Support Services		(10)			
12. Compatibility With Existing Agricultural Use		(10)			
TOTAL SITE ASSESSMENT POINTS		160			
PART VII (To be completed by Federal Agency)					
Relative Value Of Farmland (From Part V)		100			
Total Site Assessment (From Part VI above or local site assessment)		160			
TOTAL POINTS (Total of above 2 lines)		260			
Site Selected:		Date Of Selection		Was A Local Site Assessment Used?	
				YES <input type="checkbox"/> NO <input type="checkbox"/>	
Reason For Selection:					
Name of Federal agency representative completing this form:					Date:

Kathleen Hartnett White, *Chairman*
Larry R. Soward, *Commissioner*
Martin A. Hubert, *Commissioner*
Glenn Shankle, *Executive Director*



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

October 26, 2006 •

Mr. Gilbert Anaya, EMD
United States Section
International Boundary and Water Commission
4171 North Mesa, Suite C-100
El Paso, Texas 79902

Re: Draft Environmental Assessment- Mission and Common Levee Systems

Dear Mr. Anaya:

The Texas Commission on Environmental Quality (TCEQ) is in receipt of the September 2006 Draft Environmental Assessment (EA) - Improvements to the Mission and Common Levee System. The United States Section International Boundary and Water Commission (USIBWC) is considering alternatives to raise the Levee System to meet current flood control requirements. The Draft EA assessed potential environmental impacts of the proposed action and the no action alternative.

The Mission Levee system extends 12.1 miles along the Rio Grande downstream from the Town of Peñitas. The Common Levee System, extends 5.2 miles downstream of the Mission Levee and includes the Common Levee and Anzalduas Dike which connects the levee to the Anzalduas Dam.

As stated in the Draft EA, the proposed action alternative would raise existing levee height along the Mission Levee System from 2 to 6 feet, the Common Levee from 3 to 8 feet, and the Anzalduas Dike from 0 to 4 feet. Raising the levee height would increase the levee footprint as well. Structural improvements are also part of the project. According to the Draft EA, USIBWC will have to apply for a Department of the Army (Corps) permit under Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act for impacts to waters of the United States, including wetlands.

The TCEQ looks forward to working with the USIBWC and the Corps during the permitting process. If you have any questions, please contact Ms. Sidne Tiemann of the Water Quality Division MC-150, P.O. Box 13087, Austin, Texas 78711-3087. Ms. Tiemann may also be contacted by e-mail at stiemann@tceq.state.tx.us, or by telephone at (512) 239-4606.

Sincerely,

A handwritten signature in cursive script, appearing to read "L. Stegney".

L'Oreal W. Stegney, P.E., Director
Water Quality Division

LWS/SGT/jp



TEXAS HISTORICAL COMMISSION

The State Agency for Historic Preservation

RICK PERRY, GOVERNOR

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F. LAWRENCE OAKS, EXECUTIVE DIRECTOR

October 30, 2006

Gilbert Anaya EMD
United States Section International Boundary and Water Commission
4171 N Mesa Ste C 100
El Paso TX 79902

RE: Project review under Section 106 of the National Historic Preservation Act and the Antiquities Code of Texas,
Improvements to the Mission and Common Levee Systems

Dear Mr. Anaya:

Thank you for contacting us regarding the above referenced project. This letter serves as comment on the Draft Environmental Assessment and *A Cultural, Architectural, An Engineering Resources Evaluation of the Proposed Improvements to the Mission and Common Levee Systems* from the State Historic Preservation Officer, the Executive Director of the Texas Historical Commission (THC).

In regards to architectural resources, review staff led by Hannah Vaughan has reviewed the documentation you submitted and has the following comments. We concur with your determination that a more thorough survey of cultural resources within the area of potential effect will be necessary once the nature of the undertaking is determined. This information is required for our staff to provide determinations of eligibility for this proposed undertaking.

More information will also be needed for our staff to provide determinations of effect for the proposed undertaking. Many above ground resources, including the La Lomita Historic District and Chapel, appear to be near the levee and are already subject to grading problems that have had negative impacts on the Chapel. We suggest that your project team coordinate with the City of Mission's ongoing efforts to stabilize the Chapel to avoid any further damage to this particular resource. When evaluating your documentation for effect, we ask that you provide information regarding how increasing the levee height will direct water away or to the surrounding resources.

In regards to archeological resources, review staff led by Debra Beene has reviewed the documentation and has the following comments: there are six HPAs for archeological cultural resources and historic structures that must be surveyed and assessed prior to any ground disturbance; and that the Bentsen-Rio Grande Valley SP should be resurveyed and assessed if additional right of way (ROW) is acquired. In addition, Site 41HG143 has been assessed as destroyed; however, the field crew simply drove the route and did not walk the site area. It may very well be that the site is destroyed, but we need more information. Please submit the site's topographic location map transposed onto the new landfill location map, as well as the site map and site data from earlier investigations and recent photographs.

Six surveys are referenced in the first paragraph, of these, three are briefly discussed in paragraph two; the following three paragraphs discuss the state park survey; etc. For each of the

six surveys: one linear survey, one site recording survey, and four aerial surveys. Please clarify the type of survey and provide its formal title. The block survey referenced on p. 4 is not included in this list unless it is the site recording survey. The aerial survey of Anzálduas Park is also described as a shovel testing survey. Please use standard professional terms to describe the previous investigations.

Please organize this section and consider subtitles for the independent discussions of each survey, as they are difficult to follow.

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 Hannah Vaughan at 512/463-6046.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Hannah Vaughan', with a long horizontal flourish extending to the right.

Hannah Vaughan, Historian
for F. Lawrence Oaks, SHPO

P. O. Box 878
Mission, Texas 78573
Phone: (956) 583-9009
FAX: (956) 583-0081
www.naba.org/nababp/

NABA International Butterfly Park



October 31, 2006

Gilbert Anaya, EMD
Unites States Section
International Boundary and Water Commission
4171 N. Mesa, Suite C-100
El Paso, TX 79902

Subject: Review of Draft Environmental Assessment – Improvements to the Mission and Common Levee Systems.

Dear Mr. Anaya:

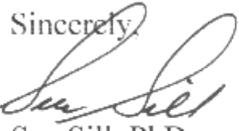
Thank you for the opportunity to review and respond to the draft environmental assessment for the levee enhancement project. This is an important project for our community, and for NABA International Butterfly Park, which we are developing in Mission, between mile 7 & 8 of the levee project.

Our comments, questions and concerns are as follows:

- Since the Mission Main Canal coincides with the levee as it passes through the Butterfly Park, we assume the levee will be raised on both sides of the canal, and widened accordingly.
- We have developed gardens and parking on the north side of the levee, up to the edge of the right-of-way. We are interested in knowing if and how our improvements will be impacted.
- Table 4-2 notes that no vegetation removal will be needed for the riverside expansion of the levee as it passes through the Butterfly Park. Actually, a nice stand of mesquite-acacia woodland occurs along the borrow ditch, which we assume will be destroyed.
- We would like to know if mitigation for this woodland removal can be done on Butterfly Park property, under the direction of our staff and according to our development plans.

We appreciate the opportunity to review this draft and to voice our questions and concerns.

Sincerely,


Sue Sill, PhD
Executive Director



INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES AND MEXICO

NOV 21 2006

OFFICE OF THE COMMISSIONER
UNITED STATES SECTION

Ms. Hannah Vaughan, Historian
Texas Historical Commission
P.O. Box 12276
Austin, Texas 78711

Subject: Request for concurrence with not likely significant impacts determination
Project review under Section 106 of the NHPA, Improvements to the Mission and Common
Levee Systems

Dear Ms. Vaughan:

In response to your letter of October 30, 2006, regarding the Draft EA for proposed improvements to the Mission and Common Levee Systems, the USIBWC has addressed THC's recommendations and concerns for protection of cultural resources. Attached are updates of the cultural resources documents previously submitted, reflecting requested changes, as follows:

- A response to comments indicating how recommendations and concerns were addressed.
- Updated Draft EA sections on cultural resources baseline conditions and detailed impact evaluation by individual HPAs and relevant architectural historical structure (Sections 3.2 and 4.2, respectively).
- Evaluation of Cultural, Architectural, and Engineering Resources prepared by LGGROUP in support of the EA.

The environmental evaluation of cultural resources, as presented in those documents, indicates that impacts to some of those resources are possible but not likely significant. After THC has the opportunity to review the submitted material, the USIBWC requests concurrence with this evaluation. If the need to update the mitigation section of the Draft EA (Section 5) is identified, requested changes will be incorporated into the Final EA.

Since the proposed levee improvements are a regional priority for flood protection of the City of Mission and surrounding areas, the USIBWC appreciates receiving your response by November 30, 2006. Thank you for your cooperation in the development of this flood control project.

Sincerely,

Gilbert G. Anaya
Supervisory Environmental Protection Specialist
Environmental Management Division

November 20, 2006 Response to Comments
Texas Historical Commission, October 30, 2006 Letter to the USIBWC
Prepared by Parsons and LGGROUP

Draft Environmental Assessment
Improvements to the Mission and Common Levee Systems

THC Comment 1, 2nd Paragraph:

We concur with your determination that a more thorough survey of cultural resources within the area of potential effect will be necessary once the nature of the undertaking is determined. This information is required for our staff to provide determinations of eligibility for this proposed undertaking.

Response:

The Draft environmental assessment (EA) included all resources older than 50 years found within or near the area of potential effects, regardless of their actual eligibility. This is a conservative approach that allows subsequent determination of eligibility only of those resources significantly impacted. An individual discussion for each resource, presented in Section 4.2 of the Draft EA, concluded that effects were possible but not likely to be significant. There is full definition of the proposed undertaking, levee footprint expansion, for evaluation of impacts. Detailed aerial photographs provided in Appendix A of the Draft EA, graphically indicate the maximum potential extent of the expansion corridor.

THC Comment 2, 3rd Paragraph:

More information will also be needed for our staff to provide determinations of effects for the proposed undertaking. Many above ground resources, including the La Lomita Historic District and Chapel, appear to be near the levee and are already subject to grading problems that have had negative impacts on the Chapel. We suggest that your project team coordinate with the City of Mission's ongoing efforts to stabilize the Chapel to avoid any further damage to avoid any further damage to this particular resource. When evaluating your documentation for effect, we ask that you provide information regarding how increasing the levee height will direct water away or to the surrounding resources.

Response:

While the levee runs near the park boundary, the historical Chapel is located well inside the park and more that 200 feet from the levee expansion corridor. The levee has no potential to structurally affect the historical structure or influence the park drainage as the levee is located downhill and actually receives runoff from the park. Regardless of location, standard engineering practices require runoff and sediment control along the entire 16-mile construction area.

Increasing levee height is a high priority project for protection of the City of Mission, and will be implemented in close coordination with the City. As indicated in Section 6 of the Draft EA, consultation on potential impacts has been conducted with Mr. Ruben Diaz, Director of the Mission Public Works Department, and with Mr. Joe Villegas, Director of the City's Parks and

Recreation Department, who is directly responsible for management of the La Lomita Chapel Park.

THC Comment 3, 4th Paragraph:

In regards to archaeological resources, review staff led by Debra Beene has reviewed the documentation and has the following comments: there are six HPAs for archaeological cultural resources and historic structures that must be assessed and surveyed prior to any ground disturbance; and that the Bentsen-Rio Grande Valley SP should be resurveyed if additional right-of-way (ROW) is acquired.

USIBWC Response:

Impacts evaluation in Section 4.2 has been updated to present individual discussions by each individual HPA. In all cases, it was concluded that the potential for ground disturbance is minor or non-existent and, thus, possible impacts are not likely to be significant. There will be no ROW acquisition, as levee expansion will remain well within the existing ROW (see locations of ROW and expansion corridor in the detailed aerial photographs presented in Appendix A of the Draft EA). Furthermore, EA preparation is a cooperative effort with the Texas Parks and Wildlife Department that includes documentation review by Mr. Chris Ringstaff, Cultural Resources Coordinator of Region 2 of the State Parks Division.

THC Comment 4, 4th Paragraph:

In addition, Site 41HG143 has been assessed as destroyed; however, the field crew simply drove the route and did not walk the site area. Please submit the site's topographic location transposed onto the new landfill location map, as well as the site map and site data from earlier investigations and recent photographs.

USIBWC Response:

To address this comment, the updated LGGROUP report (enclosed) includes a new Figure 8 showing the location of 41HG143 fully overlapping with an active landfill. Levee height at this location is minimal, less than 2 feet (see Figure A1 of the Draft EA). This new figure will also be incorporated into Section 3.2 of the Final EA.

THC Comment 5, 5th and 6th Paragraphs:

Six surveys are referenced in the first paragraph, of these, three are briefly discussed in paragraph two; the following three paragraphs discuss the state park survey, etc. For each of the six surveys: one linear, one site recording survey, and four aerial surveys. Please clarify the type of survey and provide a formal title. The block survey referenced on p. 4 is not included in this list unless it is the site recording survey. Please use standard professional terms to describe the previous investigations. Please consider subtitles for the independent discussions of each survey, as they are difficult to follow.

USIBWC Response:

To address Ms. Beene's recommendations, LGGROUP updated its report (enclosed) and presented individual discussions of the six surveys under separate subtitles.



November 30, 2006

Mr. Gilbert Anaya
United States Section,
International Boundary and Water Commission
4171 N. Mesa, Suite C-100
El Paso, TX 79902

Re: Review of Draft Environmental Assessment for Improvements to the
Mission and Common Levee System, Hidalgo County, Texas

Dear Mr. Anaya:

Texas Parks and Wildlife Department (TPWD) staff recently received your request for review of the Draft Environmental Assessment (DEA) prepared for the project referenced above. TPWD was a cooperating agency in the development of the EA.

Following a review of the document and based on the incorporation of TPWD's recommended mitigation measures, TPWD concur with the finding of no significant impact (FONSI) for the project.

TPWD appreciates the opportunity to have participated as a cooperating agency in this project. If you have any questions, please contact TPWD. The Point of Contact (POC) for the State Parks/Natural Resources Program is Kay Jenkins (361-790-0325), the POC for the State Parks/Cultural Resources Program is Chris Ringstaff (361-790-0320), and the POC for Wildlife Habitat Assessment is Russell Hooten (361-825-3240).

Sincerely,

Kathy Boydston
Wildlife Habitat Assessment Program
Wildlife Division

KB:RH.hb

cc: Kay Jenkins, TPWD, State Parks Division

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December 20, 2006

Gilbert G. Anaya
International Boundary and Water Commission
The Commons, Bldg. 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
Mission & Common Levee Systems, Hidalgo County (106/USIBWC)***

Dear Mr. Anaya,

Thank you for correspondence describing the above referenced project. 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).

Our review staff appreciates the updates to your Draft Environmental Assessment (EA) that are frequently sent to our agency, along with replies to questions or additional information in response to our requests. However, it does not seem appropriate at this time to concur with your request for impact evaluation. November 2006 notes issued with your request letter note that "a more thorough survey of cultural resources within the area of potential effect will be necessary once the nature of the undertaking is determined" and that "more information will also be needed for our staff to provide determinations of effects for the proposed undertaking."

Please contact our office when the federal agency has defined a scope of work, and is prepared to provide determinations of eligibility and effect for the proposed undertaking. Please contact our Archeology Division staff, led by Debra Beene, at 512-463-5865 to discuss and further archeological concerns. Contact Hannah Vaughan at 512-463-6046 to coordinate submission of subsequent documentation. Thank you for your cooperation in this federal review process, and for including our agency in the early stages of this project.

Yours truly,

A handwritten signature in black ink, appearing to read "Amy Hammons".

Amy Hammons, Project Reviewer
for: F. Lawrence Oaks, State Historic Preservation Officer



INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES AND MEXICO

OFFICE OF THE COMMISSIONER
UNITED STATES SECTION

Ms. Amy Hammons
Texas Historical Commission
P.O. Box 12276
Austin, Texas 78711-2276

Subject: Project Review under Section 106 of the National Historic Preservation Act of 1966 for the Mission & Common Levee Systems, Hidalgo County (106/USIBWC)

Dear Ms. Hammons:

I'd like to thank you for the comments provided to me and other USIBWC personnel. I think we will be able to provide the information needed for Section 106 reviews as we move forward with our levee rehabilitation projects. Based on information currently available, the environmental assessment for the Mission and Common Levee Systems has concluded that impacts to identified cultural resources are possible but not likely significant. Once the conceptual design of the levee improvements is completed, the USIBWC will continue Section 106 consultation to ensure full compliance with THC requirements for protection of cultural resources. At that time, additional information will be provided along with a request for concurrence with the finding of possible but not likely significant impacts on cultural resources.

As indicated in the December 28th, 2006 letter, and subsequent telephone consultations, additional documentation to be provided by the USIBWC will consist of:

- A more detailed description of the proposed action based on conceptual design information;
- Determination of eligibility of identified historical structures older than fifty years, and
- Additional support documentation on avoidance/mitigation actions to be adopted for protection of eligible structures.

The USIBWC is currently preparing a Memorandum of Agreement with the THC that will specify requirements for support documentation on the impacts evaluation and need for field studies. As done for previous projects, the USIBWC will continue to work with the THC to ensure full compliance of the Lower Rio Grande levee improvement projects with Section 106 requirements for protection of cultural resources. If you have any questions, please call me at (915) 832-4702.

Sincerely,

Gilbert Anaya

Supervisory Environmental Protection Specialist
Environmental Management Division