FINAL ENVIRONMENTAL ASSESSMENT

RIO GRANDE RECTIFICATION PROJECT: FLOOD CONTROL IMPROVEMENTS INTERNATIONAL DAM TO RIVERSIDE DIVERSION DAM, EL PASO COUNTY, TEXAS

United States Section,
International Boundary and
Water Commission
El Paso, Texas

COVER SHEET

FINAL ENVIRONMENTAL ASSESSMENT
AND
FINDING OF NO SIGNIFICANT IMPACT

RIO GRANDE RECTIFICATION PROJECT

FLOOD CONTROL IMPROVEMENTS
INTERNATIONAL TO RIVERSIDE DIVERSION DAM

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

Proposed Action: Raising the approximate 15-mile International to Riverside Diversion Dam Levee System in El Paso, El Paso County, Texas to meet current requirements for flood control.

Report Designation: Environmental Assessment

Abstract: The United States Section of the International Boundary and Water Commission (USIBWC) is preparing an Environmental Assessment (EA) for a proposed action to raise the levee system from International Dam to Riverside Diversion Dam. The levee system under consideration for this EA, approximately 15-miles long, is located entirely in El Paso County, Texas.

The levee reach is one of the priority areas within the Rio Grande Rectification Project targeted for flood control improvements. The need for improvements to the levee system was determined by hydraulic modeling completed by the USIBWC in 2003. The USIBWC hydraulic study for this reach indicated that an increase in levee height would be required to meet design criteria for flood protection. The range of increase is from 0.5 to 2.5 feet for an approximate 8.14-mile levee segment. The increase in levee height would expand the levee footprint by lateral extension of the structure. Levee footprint increases in this reach will occur within the USIBWC right-of-way and extend primarily toward the riverside of the existing levee.

The Environmental Assessment assesses potential environmental impacts of the Proposed Action and the No Action Alternative. A Finding of No Significant Impact was issued for the Proposed Action, including mitigation measures, based on a review of the facts and analyses contained in the Environmental Assessment.

The Federal Emergency Management Agency (FEMA) decertification of USIBWC levees in El Paso County, Texas and Dona Ana County, New Mexico, in February 2006 has resulted in the need to upgrade the levees to FEMA criteria; draft Digital Flood Insurance Rate Maps will be issued in the spring of 2007. The USIBWC plans to raise approximately 8.14-miles of USIBWC levees within the El Paso city limits to meet the minimum 3 feet of freeboard criteria. This will enable USIBWC to partially certify the reach from American Dam to Riverside Dam in the Rio Grande Rectification Project before the end of calendar year 2007.

FINDING OF NO SIGNIFICANT IMPACT

FLOOD CONTROL IMPROVEMENTS: INTERNATIONAL DAM TO RIVERSIDE DIVERSION DAM LEVEE SEGMENT, WITHIN THE RIO GRANDE RECTIFICATION PROJECT, EL PASO COUNTY TEXAS

AGENCY

United States Section, International Boundary and Water Commission, United States and Mexico.

PROPOSED ACTION AND BACKGROUND

The United States Section of the International Boundary and Water Commission (USIBWC) has prepared this Environmental Assessment (EA) for the proposed action to raise the levee system within the reach from International Dam to Riverside Diversion Dam. The levee system under consideration for this EA, approximately 15-miles long, is located entirely in El Paso County, Texas.

Within this reach the USIBWC identified 8.14 miles of levee system as one of the priority areas within the Rio Grande Rectification Project for flood control improvements. The need for improvements to the levee system was determined by hydraulic modeling completed by the USIBWC in 2003. The USIBWC hydraulic study for this reach indicated that an increase in levee height would be required to meet design criteria for flood protection. An increase from 0.5 to 2.5 feet is anticipated for an approximate 8.14-mile levee segment. The increase in levee height would occur on the crown of the levee, which will not expand the levee footprint by lateral extension of the structure. Levee increases in this reach will occur within the existing footprint of the levee and the USIBWC right-of-way.

The Environmental Assessment assesses potential environmental impacts of the Proposed Action and the No Action Alternative. A Finding of No Significant Impact was issued for the Proposed Action, including mitigation measures, based on a review of the facts and analyses contained in the Environmental Assessment.

FEMA decertification of USIBWC levees in El Paso County, TX and Dona Ana County, New Mexico, in February 2006, has resulted in the need to upgrade the levees to FEMA criteria; draft Digital Flood Insurance Rate Maps will be issued in spring of 2007. The USIBWC plans on raising approximately 8.14-miles of USIBWC levees within the city limits of El Paso to meet the minimum 3 feet of freeboard criteria. This will enable USIBWC to partially certify the reach from American Dam to Riverside Dam in the Rio Grande Rectification Project before the end of calendar year 2007.

ALTERNATIVES TO THE PROPOSED ACTION

A No Action Alternative was evaluated for the flood control improvements to the International Dam downstream to Riverside Diversion Dam. This alternative will retain the existing configuration of the system, as designed over 70 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 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 International Dam to Riverside Diversion Dam segment 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.

LEVEE SYSTEM EVALUATION

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 International Dam to Riverside Diversion Dam segment, 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. The USIBWC will not be able to certify this levee segment to meet FEMA requirements.

PROPOSED ACTION

Biological Resources

The USIBWC does not anticipate any significant effects for any of the 18 threatened and endangered species listed in El Paso County. No wetlands are located within the construction corridor.

Cultural Resources

Improvements to the International Dam to Riverside Diversion Dam segment will not affect known archaeological resources, by mechanical excavation or by burial under the expanded levee footprint. No Historic-age resources would be affected by this project.

Water Resources

Improvements to the levee system would increase flood containment capacity to control the design flood event and will not cause any changes in water surface elevation.

Land Use

The expansion would take place completely within the existing levee footprint and USIBWC ROW. There is a minimum potential for impacts on urban areas since no residential developments are located near the levee segment.

Community Resources

In terms of socioeconomic resources, the influx of federal funds into El Paso County from the levee improvement would have a short-term positive local economic impact limited to the construction period. No adverse impacts to disproportionately high minority and low-income populations were identified for construction activities. Moderate utilization of public roads is required during construction; a temporary increase in access road use would be required for equipment mobilization to staging areas and material shipments.

Environmental Health Issues

Estimated air emissions of five criteria pollutants during construction represent less than 1 percent of the El Paso County annual emissions inventory. 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. A database search identified no waste storage or disposal sites within the expanded levee footprint and its vicinity.

Best Management Practices

Engineering design measures will be used, including optimization of the levee expansion alignment to avoid impacts on water resources and other existing structures. Riverside expansion will be used for a majority of the segment from the Zaragosa International Bridge upstream to the end of the Chamizal. During construction, best management practices will include soil stabilization with water and silt fences. To protect vegetation, the construction corridor will be re-seeded with native herbaceous vegetation.

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 International Dam to Riverside Diversion Dam levee segment 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.

5/16/07

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

Date

FINAL ENVIRONMENTAL ASSESSMENT
RIO GRANDE RECTIFICATION PROJECT

FLOOD CONTROL IMPROVEMENTS
INTERNATIONAL DAM

TO RIVERSIDE DIVERSION DAM

Prepared by:

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

MAY 2007

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ACRONYMS AND ABBREVIATIONS

AQCR	air quality control region
BMP	best management practice
cfs	cubic feet per second
CWA	Clean Water Act
dB	Decibel
dbA	A-weighted sound level in dBs
DNL	day-night average sound level
EA	environmental assessment
EIS	environmental impact statement
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
HPA	high probability area
IBWC	International Boundary and Water Commission
NAAQS	National Ambient Air Quality Standards
MxIBWC	Mexican Section, International Boundary and Water Commission
NEPA	National Environmental Policy Act
NRCS	Natural Resources Conservation Service
NWR	National Wildlife Refuge
RCRA	Resource Conservation and Recovery Act
RGRP	Rio Grande Rectification Project
ROW	right-of-way
SWP3	stormwater pollution prevention plan
T&E	threatened and endangered
TARL	Texas Archaeological Research Laboratory
TASA	Texas Archaeological Sites Atlas
TCEQ	Texas Commission on Environmental Quality
THC	Texas Historical Commission
TPWD	Texas Parks and Wildlife Department
U.S.C.	United States Code
USEPA	U.S. Environmental Protection Agency
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USIBWC	United States Section, International Boundary and Water Commission

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 prepared this Final Environmental Assessment (EA) for the proposed action of raising the levee system from the International Dam to Riverside Diversion Dam in El Paso County, Texas. This reach of levee system is part of the Rio Grande Rectification Project that extends approximately 86 river miles beginning from American Dam in El Paso County downstream to Little Box Canyon near Fort Quitman in Hudspeth County.

1.2 USIBWC AUTHORITY

The USIBWC identified the International Dam to Riverside Diversion Dam as a priority area for improved flood containment. This levee reach extends approximately 15 miles, from International Dam downstream to the Riverside Diversion Dam. The USIBWC will raise approximately 8.14 of the 15 miles of levee within this reach. The need for levee improvements was determined from hydraulic modeling results in 2003 indicating that height increases from 0.5 to 2.5 feet would be required to meet current design criteria for flood protection. In addition, the potential for FEMA decertification of USIBWC levees in El Paso County, Texas, in February 2006, has resulted in the need to upgrade the levees to FEMA criteria; draft Digital Flood Insurance Rate Maps will be issued in spring of 2007. If the USIBWC cannot certify its levees, many residents will be required to purchase flood insurance.

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 is 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 International Dam to Riverside Diversion Dam reach:

- 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 lands 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 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). 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. 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 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).

The most recent information was 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 proposed levee system improvements for each resource area evaluated and discussed separately in this EA.

1.4 ENVIRONMENTAL COORDINATION AND COMPLIANCE ANALYSIS

Table 1.1 is a summary of potential regulatory and/or permitting requirements potential compliance issues, and anticipated level of environmental coordination.

Table 1.1 Summary of Environmental Coordination and Compliance

Agency	Regulation	Level of USIBWC Coordination with Agency
USFWS	Endangered Species Act of 1973 (PL 93-205) and amendments of 1988 (Public Law 100-478) USFWS Coordination Act 916 U.S.C. 661 *et seq*.) Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. 703-712; Ch. 128; July 13, 1918; 40 Stat. 755)	Consultation to determine whether migratory birds and T&E species could be affected. Section 7 of the Act requires formal consultation if significant adverse impacts to federally listed species could occur due to the proposed action. Requires federal agencies to consult with USFWS regarding impact of proposed action.
TPWD	Chapters 67 and 68 of the TPWD Code, and Section 65.171-65.184 of the Texas Administrative Code	Coordination concerning impacts on wildlife.
USACE	Section 10 of the Rivers and Harbors Act of 1899 Section 404 of the Clean Water Act (33 U.S.C. 1344, known as section 404)	Pre-permit application. If Waters of the United States are impacted, mitigation plan and permit application would be required.
TCEQ	Section 401 of the Clean Water Act (33 U.S.C. 1344; known as Section 401)	Consultation letter. 401 Certification, coordination is typically a function of USACE permit process. The agency might suggest 404/401 permit conditions and mitigation measures.
USEPA	Section 404 of the Clean Water Act Section 26.040 of Texas Water Code and Section 402 of Clean Water Act	Coordinate Construction Site Stormwater TPDES permit and Stormwater Pollution Prevention Plan. Coordination with the City of El Paso will be conducted.
State Historic Preservation Office	National Historic Preservation Act of 1966, as amended (16 U.S.C. 470 *et seq.)*	Ensure compliance with Section 106. May suggest permit conditions and mitigation measures.

1.5 ORGANIZATION OF THE ENVIRONMENTAL ASSESSMENT

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 to the International Dam to Riverside Diversion Dam levee reach.

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

Section 6 describes the contributors to the EA preparation.

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

Support documentation is provided in Appendices as follows:

Appendix A: Detailed maps of levee alignment, right-of-way and expansion area.

Appendix B: Photographic survey of levees, expansion area, and vegetation

Appendix C: Correspondence

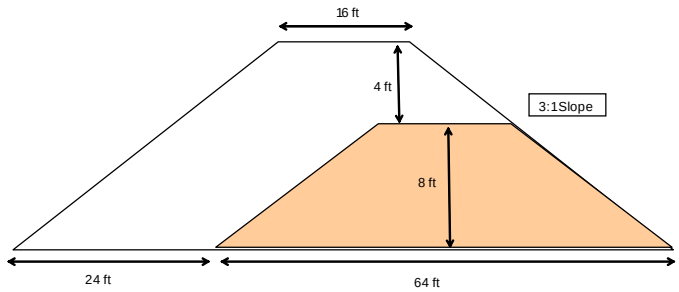
SECTION 2
DESCRIPTION OF PROPOSED ACTION

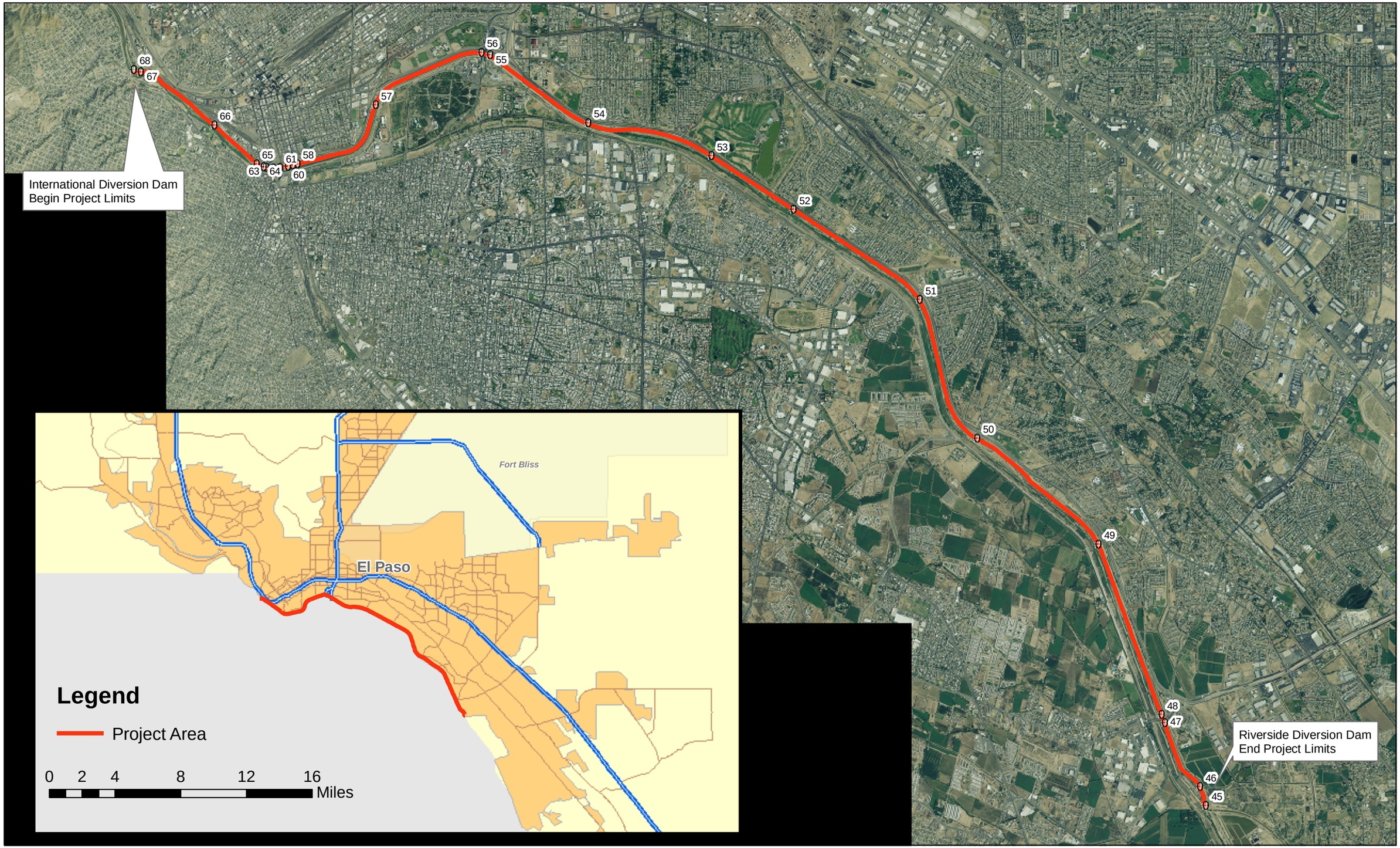
This section presents a description of the Proposed Action for flood control improvements of the International Dam to Riverside Diversion Dam reach within the Rio Grande Rectification Project. A summary of potential environmental impacts, subsequently discussed in Section 4, is provided at the end of Section 2. A map of the International Dam to Riverside Diversion Dam depicts the levee extent (Figure 2.1). Appendix A presents detailed maps of levee alignment, right-of-way and potential expansion area.

2.1 LEVEE SYSTEM DESCRIPTION

The International Dam to Riverside Diversion Dam is a levee reach within the Rio Grande Rectification Project (RGRP). The RGRP was constructed between 1934 and 1938; it extends 86 river miles beginning at American Dam in El Paso County downstream to Little Box Canyon near Fort Quitman in Hudspeth County. The purpose of the project is to stabilize the international river boundary and to provide flood protection for both countries in urban, suburban, and agricultural areas. The RGRP was constructed by straigthening the river channel and developing a narrow floodway by constructing levees on both sides of the river. The channel straightening process removed several meanders and resulted in a reduction in the river length from 155 to 86 miles. Four grade control structures were also installed: Island, Tornillo, Alamo, and Guayuco. The average channel depth along the RGRP is 3 to 5 feet. The width of the pilot channel is between 66 and 100 feet and its capacity is 1,000 cfs. The floodway width averages about 590 feet and its capacity is 11,000 cfs. The project includes 85.4 miles of levees on the U.S. side, and 83.7 miles of levees on the Mexico side. The average levee height is 7.2 feet; the average levee crown is 20 feet.

The proposed levee system improvements for the reach from International Dam to Riverside Diversion Dam are primarily located in the upper reach of the RGRP within the city limits of El Paso. The existing levee is a raised trapezoidal earth-made structure with a crown 16 feet wide, a typical height ranging from 6 to 10 feet, and a 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 cross-section is shown in the diagram below.





0 0.5 1 2 3 4
Miles

1 inch equals 4,598.416180 feet

Legend

0 Station ID

Levee Centerline

Project Footprint

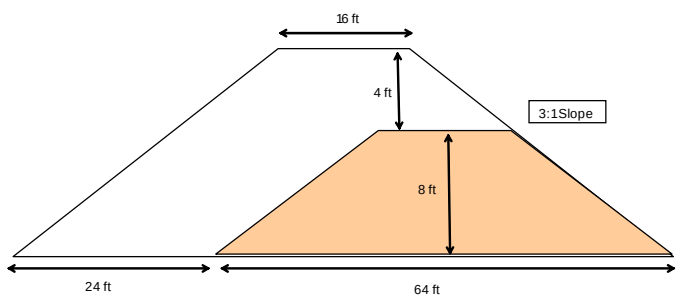
Figure 2.1- Project Location Map
International Dam to Riverside Diversion Dam
Rio Grande Rectification Project
Flood Control Improvements
Environmental Assessment
USIBWC, April 2007

2.2 PROPOSED ACTION

The Proposed Action would increase flood containment capacity of the International Dam to Riverside Diversion Dam levee reach to meet the 3-foot freeboard design criterion for flood protection. Within this reach, approximately 8.14-miles of levee require height increases between 0.5 and 2.5 feet to reach the design freeboard requirements.

The increase in levee height would result in an expansion of the levee footprint by lateral extension of the structure. Expansion corridor width is commonly measured as the distance from the current levee centerline to the toe of the expanded levee. Thus, the distance from centerline to the toe is 32 feet for the existing levee, and 44 feet for the expanded levee (32 feet current distance to the toe plus a 12-foot expansion). While the centered levee expansion is commonly used in other projects, an offset expansion is anticipated due to constraints from existing infrastructure and limited ROW. For the majority of the project the offset expansion would take place entirely on the riverside of the existing levee especially in the segment downstream from the Chamizal to the Zaragosa International Bridge. In other instances, levee expansion will occur on the landside of the existing levee.

Using the offset expansion option, for a typical levee cross-section, shown in the diagram below (8 feet elevation, 3:1 slope, and 16-foot crown), a 4-foot increase in levee height would result in a 24-foot offset increase of the footprint. The current footprint width value of 64 feet would expand to 88 feet as a result of the increased levee height.



Riverside expansion (from the riverside shoulder of the crown toward the river) would be required when constraints on the centered expansion are present. These constraints include the presence of the Rio Grande American Canal Extension Project (RGACE) along the segment from below the Chamizal to the Zaragosa International Bridge.

2.3 OTHER ACTIONS WITH POTENTIAL CUMULATIVE IMPACTS

The United States Department of Interior, Bureau of Reclamation recently published the draft EA for the *El Paso County Riverside Canal and Structure Improvement Project*, January 2007. The project consists of cement lining approximately 3-miles of the Riverside Canal beginning at the terminus of the Rio Grande American Canal Extension Project near the Riverside Diversion Dam.

As authorized in the 1964, American-Mexican Chamizal Convention Act (Public Law 88-300, 78 Stat. 184, 22 U.S.C. 277d-17), the USIBWC in coordination with the Mexican Section, of the IBWC and the City of El Paso are planning to remove accumulated sediment within the Chamizal concrete lined channel. This project is contingent upon receipt of funding.

2.4 SUMMARY COMPARISON OF ENVIRONMENTAL CONSEQUENCES OF THE ALTERNATIVES

No Action Alternative

The No Action Alternative would retain the current configuration of the levee system from International Dam to Riverside Diversion Dam, 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. The USIBWC would not be able to certify its levee system, and FEMA would issue flood rate insurance maps showing no levee system for the project area. Residents within a non-certified levee system will be advised to purchase flood insurance.

Proposed Action

Table 2.1 summarizes potential environmental consequences of the proposed improvements to the International Dam to Riverside Diversion Dam levee reach. The proposed increase in levee height would provide improved flood protection. The levee footprint would modify approximately 9.22 acres, the majority of which is composed of low quality herbaceous vegetation along the levee slopes.

Table 2.1 Summary of Environmental Impacts for the International Dam to Riverside Diversion Dam Proposed Action

RESOURCE AREA	Environmental Impacts
Biological Resources *(Section 4.1)*	*Vegetation*. Improvements to the International Dam to Riverside Diversion Dam levee reach would remove remove 9.22 acres of low quality herbaceous vegetation. *Wildlife*. Removal of the herbaceous vegetation would have a minimum impact on wildlife habitat. No impacts are anticipated to species (state and federal) with potential habitat near the levee expansion areas (see Table 4.2). *Wetlands*. No wetlands would be impacted by the potential levee expansion.
Cultural Resources *(Section 4.2)*	*Archaeological Resources*. Levee improvements will have no impacts to known historic or prehistoric archaeological resources. *Historical and Architectural Resources*. Historic Resources located within levee expansion areas would not be impacted by construction activities.
Water Resources *(Section 4.3)*	*Flood Control*. Improvements to the levee system would increase flood containment capacity to control the design flood event. *Water Flow*. Levee footprint expansion to the riverside of the levee would not affect water bodies. The RGACE channel is adjacent to the existing levee and has the potential to be impacted during construction. Best management practices including silt fences and erosion control measures will be utilized to minimize impacts.
Land Use *(Section 4.4)*	*Urban Areas*. The project area is off limits to the public. The upper limit of the proposed project consists mainly of industrial areas as the Burlington Northern Railyard is nearby. At the lower reach of the project there is no potential for impacts to residential areas since residential developments are located on the north side of the Loop 375 Highway. All work will occur on the existing USIBWC levee and ROW.

RESOURCE AREA	Environmental Impacts
Community Resources *(Section 4.5)*	*Socioeconomic Resources*. Influx of federal funds into El Paso County from the levee improvement would have a short term but positive local economic impact limited to the construction period. *Environmental Justice*. No adverse impacts to disproportionately high minority and low-income populations were identified for the proposed action. *Transportation*. Minimum utilization of public roads is required during construction; a temporary increase in access road use would be required for equipment mobilization to staging areas within USIBWC property.
Environmental Health Issues *(Section 4.6)*	*Air Quality*. Estimated emissions offive criteria pollutants (USEPA 2007) during construction will be minimal and temporary in nature. *Noise*. There would be a moderate increase in ambient noise levels due to construction activities. No long-term and regular exposure is expected above noise threshold values.

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 International Dam to Riverside Diversion Dam levee reach. 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

The RGRP area is within the northern Trans-Pecos region of the Chihuahuan Desert. This region includes all sections of the Chihuahuan Desert in the U.S. and the northernmost sections of the desert of Mexico (McMahan 1984). Climatic condition throughout the study area is classified as semi-arid continental, characterized by fairly hot summers, mild winters, and short temperate spring and fall seasons. Precipitation averages 7.7 inches per year (Parsons 2001). The Trans-Pecos region of the Chihuahuan Desert is historically a mosaic of grasslands and desert shrublands (McMahan 1984). Most of the project area consists of mixed grass-forblands. The levee system grasses are mowed regulary to ensure suitable design flood features.

The levees are raised trapezoidal compacted-earth structures, with a crown width of 16 to 20 feet, an average height of 7.2 feet, and side slopes of 3:1. The levee slopes are grass covered, and are dominated by Bermuda grass, Russian thistle, silverleaf nightshade, and London rocket. The levee slopes are frequently mowed to prevent the encroachment of woody plants onto the levee slopes.

3.1.2 Wildlife

Typical wildlife that could inhabit the project area include black-tailed jackrabbit, desert cottontail, cotton rat, ground squirrels, mourning dove, meadowlark, kestrel, red-tail hawk, burrowing owl and other non-game animals and birds.

3.1.3 Threatened and Endangered Species

Within the RGRP area, there are several species listed as federally threatened or endangered, and several additional species which are listed as threatened or endangered by the State of Texas

(TPWD, 2007) Table 3.1. The project area is within El Paso County and there are several federal and state listed T&E species, as follows:

- 9 species of bird;
- 2 species of fish (extirpated);
- 3 species of mammals (probably extirpated);
- 3 species of reptiles;
- 1 species of plant.

Table 3.1 Federal and State Threatened and Endangered Species in Study Area

Common Name	Scientific Name	Federal Status	State Status	Description
BIRDS				
Northern Aplomado Falcon	*Falco femoralis septentrionalis*	Endangered	Endangered	Brushy Prairie and yucca flats
American Peregrine Falcon	*Falco peregrinus anatum*	Delisted	Endangered	Resident in west Texas
Arctic Peregrine Falcon	*Falco peregrinus tundrius*	Delisted	Threatened	Currently a potential migrant through most of state, winters along gulf coast
Interior Least Tern	*Sterna antillarum athalassos*	Listed Endangered	Endangered	Subspecies is listed only when inland (more than 50 miles from a coastline); nests along sand and gravel bars within braided streams, rivers; also known to nest on man-made structures (inland beaches, wastewater treatment plants, gravel mines, etc); eats small fish and crustaceans, when breeding forages within a few hundred feet of colony
Mexican Spotted Owl	*Strix occidentalis lucida*	Listed Threatened	Threatened	Remote, shaded canyons of coniferous mountain woodlands (pine and fir); nocturnal predator of mostly small rodents and insects; day roosts in densely vegetated trees, rocky areas, or caves
Southwestern Willow Flycatcher	*Empidonax Traillii extimus*	Listed Endangered	Endangered	Thickets of willow, cottonwood, mesquite, and other species along desert streams
Whooping crane	*Grus americana*	Endangered	Endangered	Summer marshes and prairie potholes; winter coastal marshes and prairies
Piping Plover	*Charadruis melodus*	Threatened	Threatened	Flat sparsely vegetated sandy beaches; unconsolidatedshore/sandbars
Western Yellow-billed cuckoo	*Coccyzus americanus occidentalis*	Candidate		Status applies only to western populations beyond the Pecos River drainage
FISHES				
Bluntnose shiner	*Notropis simus*		Threatened	Extirpated; Rio Grande; main river channel, often below obstructions over substrate of sand, gravel, and silt; damming and irrigation practices presumed major factors contributing to decline
Rio Grande silvery minnow	*Hybognathus amarus*	Listed Endangered	Endangered	Extirpated; historically Rio Grande and Pecos river systems and canals
MAMMALS				
Black bear	*Ursus americanus*	Threatened similarity appearance	Threatened	Due to field characteristics similar to Louisiana Black Bear treated as federal and state listed threatened

Gray wolf	*Canis lupus*	Listed Endangered	Endangered	Extirpated formerly known throughout the western two thirds of the state in forests, brushlands and grasslands
Black-footed ferret	*Mustela nigripes*	Listed Endangered	Endangered	Extirpated; inhabited prairie dog towns in the general area
REPTILES				
Chihuahua Desert lyre snake	*Trimophodon vilkinsonii*		Threatened	Mostly crevice dwelling in predominantly limestone-surfaced desert; Franklin Mountains
Mountain short-horned lizard	*Phrynosoma hernandesi*		Threatened	Diurnal, usually in open shrubby, or openly wooded areas with sparse vegetation at ground level; burrows into soil or occupies rodent burrows when inactive
Texas horned lizard	*Phrynosoma cornutum*		Threatened	Open, arid and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush or scrubby trees
PLANTS				
Sneed's pincushion cactus	*Escobaria sneedii var sneedii*	Listed Endangered	Endangered	Dry limestone outcrops on rocky slopes in desert mountains of Chihuahua Desert

3.2 CULTURAL RESOURCES

A Class I records check and field reconnaissance of the project area from American Dam to Riverside Diversion Dam were conducted by the USIBWC for the Rio Grande American Canal Extension Project (RGACE) (USIBWC 1993). The data indicated that only one property (the Franklin Canal) nominated to the National Register of Historic Places was near the proposed project location for the RGACE. In 1999 the Department of Homeland Security Office of Border Protection (formerly the United States Department of Justice, Immigration and Naturalization Service) performed a Class III (100% pedestrian) survey of the same project area. The survey did not locate any historic or prehistoric sites either listed, eligible to be listed, or potentially eligible to the National Register of Historic Places within the project area.

3.3 WATER RESOURCES

3.3.1 Hydrology

The base flow of the Rio Grande below International Dam is minimal and is typically subsurface flow throughout the year because upstream users divert the river. A dry streambed is predominant throughout most of the project reach from International Dam to Riverside Diversion Dam.. Water diversions from the Rio Grande occur at American Dam and International Dam for users in the United States and Mexico, respectively.

3.3.2 Flood Control

The RGRP is of relatively large scale with steep topography and a narrow floodway predominant in the downstream reach of the project. The project was constructed by straightening the river channel and developing a narrow floodway by constructing levees on both sides of the river. The channel straightening process removed several meanders and resulted in a reduction in the river length from 155 to 86 miles. Four grade control structures were also installed: Island, Tornillo, Alamo, and Guayuco. The average channel depth along the RGRP is 3 to 5 feet. The width of the channel is between 66 and 100 feet and its capacity is 1,000 cubic feet per second (cfs). The floodway width averages about 590 feet and its capacity is 11,000 cfs. The project includes 85.4 miles of levees on the U.S. side, and 83.7 miles of levees on the Mexico side. The average levee height is 7.2 feet, the average top width is 20 feet.

3.3.3 Water Quality

The project area is part of the water quality management Segment 2308 of the Rio Grande, as defined by the Texas Commission on Environmental Quality. Segment 2308 extends from the International Dam to the Riverside Diversion Dam. Flows in Segment 2308 are limited by water diversions upstream at the American and International dams. The designated uses of this segment include limited aquatic life, and non-contact recreation. These designated uses were fully supported (2003 Regional Assessment of Water Quality in the Rio Grande Basin).

3.4 LAND USE

Current land use along the International Dam to Riverside Diversion Dam levee system corridor consists primarily of urban areas and is within the El Paso city limits. The USIBWC levee system is off limits to public use. The United States Border Patrol utilizes the levee system for border protection activities.

3.5 COMMUNITY RESOURCES

3.5.1 Socioeconomics

The proposed project corridor is located within the southern portion of El Paso County within the city limits of El Paso. Table 3.2 presents the population characteristics of El Paso County based on the 2000 Census (U.S. Census Bureau 2007).

Table 3.2 El Paso County Population Characteristics.

Race	Number	Percent
Hispanic or Latino (any race)	531,654	78.2%
White (non Hispanic)	115,535	17%
Black or African American	18,671	2.7%
American Indian and Alaska Native	2,057	0.3%
Asian	6,148	0.9%
Other	5,557	0.8%
Total Population	679,622	100%

Employment

The economy of the El Paso region is based primarily on the service, retail trade, and government sectors. El Paso County is also high in the manufacturing and transportation industries (Texas Workforce Commission 2007). The estimated total employment for the county increased 6.3 percent from 2000 to 2005.

Income

Median and household income for El Paso County (reported in 1999 dollars) was $39,927, whereas family income was $45,861. Per capita income was $19,617 (reported in 1999 dollars) for El Paso County. Approximately 12 percent of all families in El Paso County were reported to be below the poverty level in the 2000 Census (U.S. Census Bureau 2007).

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 will be suffered by the non-minority population and/or non-low income population.

The project corridor from International Dam to Riverside Diversion Dam is an unpaved service road with restricted public access. 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 border protection activities.

Levee height increases will allow the levee segment from International Dam downstream to Riverside Diversion Dam to be certified and meet FEMA requirements.

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 levee system for the RGRP area transgresses through the southern portions of El Paso and Hudspeth counties, and is located within AQCR 153, or the El Paso-Las Cruces-Alamogordo Interstate AQCR. This AQCR includes Doña Ana, Lincoln, Sierra, and Otero Counties in New Mexico, and Brewster, Culbertson, El Paso, Hudspeth, Jeff Davis, and Presidio Counties in Texas. As of April 2005, the USEPA designated air quality within all counties of AQCR 153 to be under attainment status for all criteria pollutants, with the exception of Doña Ana and El Paso Counties (USEPA 2006a). El Paso County is designated nonattainment, classification moderate, for Carbon Monoxide (CO) and Particulate Matter (PM_{10}).

The emissions data for El Paso 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) identified 26 companies and agencies in El Paso County as contributors of point source emissions. Potential stationary sources of criteria pollutant and hazardous air pollutant emissions within El Paso County include manufacturing plants, landfills, refineries, and utilities and gasoline facilities. (TCEQ 2007).

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 (dB), 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 project corridor is entirely urban.

Typical outdoor noise sources near the project corridor include State Highway Loop 375 (Border Freeway). Noise sources from heavy equipment at typical construction sites range from 84 to 96 dba (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 International Dam to Riverside Diversion Dam levee reach up to 1 mile from the levee corridor identified 14 toxic release sites, 158 hazardous waste sites, and 6 multi-activity sites. One water discharger was identified in the search.

SECTION 4
ENVIRONMENTAL CONSEQUENCES

Section 4 presents an analysis of the environmental consequences of the No Action Alternative and proposed improvements for the levee reach from International Dam to Riverside Diversion Dam. Resource areas are presented in the same sequence used for the description of the affected environment in Section 3: biological resources; cultural resources; water resources; land use, community resources; and environmental health issues. No indirect or cumulative impacts associated with other projects have been identified for the proposed levee improvement project.

4.1 BIOLOGICAL RESOURCES

4.1.1 Vegetation

No Action Alternative

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

Proposed Action

Improvements to the levee corridor would affect approximately 9.22 acres of plant communities through excavation and fill activities. The impacts would occur on the levee slope where fill would be added, and in some instances within the expanded levee footprint area at the toe of the existing levee. Several cottonwood trees were identified along the reach from the Chamizal downstream to Riverside Diversion Dam, however the amount of fill needed for this reach will not require a significant footprint expansion. Based on the 3:1 ratio and the average amount of fill needed (0.34-foot) the levee footprint would be expanded up to 1-foot at the riverside toe. No impacts to the existing cottonwoods are anticipated. The vegetation communities impacted along the levee slopes are primarily low quality plants dominated by Bermuda grass, Russian thistle, and London rocket. Improvements in the upper project reach, downstream of International Diversion Dam, will impact similar vegetation communities. In this reach the levee will be expanded on the landside to avoid any impacts. Areas impacted will be re-seeded with native grasses and forbes to establish vegetation. Short-term impact on grassland communities in the area of levee expansion for the levee system corridors would occur.

4.1.2 Wildlife

No Action Alternative

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

Proposed Action

A minimal loss of habitat for wildlife would occur under the Proposed Action. The project site receives heavy travel by Border Patrol Agents 24 hours and 7 days a week. USIBWC utilize the levee system throughout the week for operations and maintenance activities. Although not listed, Burrowing owls are frequent occupants of the levee system and may potentially be impacted. Confirmed burrowing owl dens were inspected by USIBWC and Texas

Parks and Wildlife staff to verify if the dens were empty (no eggs or young) and blocked to avoid any potential for occupancy during the construction period. Dens with eggs or young will be avoided or relocated as per U.S. Fish and Wildlife guidelines.

4.1.3 Threatened and Endangered Species

Table 4.2 lists potential impacts to T&E species habitat due to flood control improvements to the International Dam to Riverside Diversion Dam levee reach.

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.

Table 4.2 Potential Effect of Levee Construction on Listed Federal and State-Listed Species Potentially Present

	Common Name	Association with Project Corridor Habitat	Potential Effect
Species	Texas horned lizard	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.	Not likely to affect
	Interior least tern	Nests along sand and gravel bars of braided streams, rivers, inland channels, and some lakes.	Not likely to affect – Construction activities will occur on the existing levee crown and/or expanded area adjacent to the levee only.
	Whooping crane	Potential migrant	Not likely to affect
	Piping Plover	Potential migrant	Not likely to affect – Construction activities will occur on the existing levee crown and/or expanded area adjacent to the levee only.

Proposed Action

Levee expansion activities on the riverside project would result in minimal impacts to habitat for T&E species. The herbaceous plant communities present along the project corridor are dominated by invasive grasses, and provides little suitable habitat for reptiles.

4.2 CULTURAL RESOURCES

4.2.1 Historic and Prehistoric Archaeological Resources

No Action Alternative

No adverse affects are anticipated, as the current levee configuration would be retained**.**

Proposed Action

Proposed improvements to the International Dam to Riverside Diversion Dam would occur entirely within the existing levee footprint and in some cases the riverside expanded footprint. The existing corridor has been previously impacted during original levee construction; during the Rio Grande American Canal Extension, and the recent Border Patrol Fence and Lighting projects. Impacts to archaeological and Historic properties are not anticipated. Section 106 clearance has been previously obtained within the project corridor for the above mentioned acitivities.

4.3 WATER RESOURCES

4.3.1 Hydrology

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

For the *Proposed Action*, improvements to the Levee System would not affect water flow or downstream water bodies.

4.3.2 Flood Control

No Action Alternative

The No Action Alternative would retain the current configuration of the levee reach between the International Dam and the Riverside Diversion Dam, and maintain the level of protection currently associated with this system. Under severe storm events, 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 in the 2003 hydraulic model prepared by USIBWC. The improvements would allow the USIBWC to certify the levee segment and meet FEMA requirements.

4.3.3 Water Quality

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

For the *Proposed Action*, improvements to the Levee System would not affect water quality within the project corridor, as all construction activity would occur away from the river channel. Best management practices would be implemented in areas that are adjacent to existing water bodies, such as the Rio Grande American Canal Extension and adjacent irrigation facilities.

4.4 LAND USE

No Action Alternative

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

Proposed Action

Levee height increases would occur within the existing levee footprint and entirely within the USIBWC ROW. The footprint expansion, if necessary, would primarily occur on the riverside or landside as dictated by the presence of infrastructure constraints (RGACE channel). Levee height increases of 1.12-foot in the 1.41-mile upper project reach (International Dam) will result in a 3.36 footprint expansion to the landside. The lower project reach from below the Chamizal to the Zaragosa Bridge (6.73 miles) will require approximately 0.34 to.2.5 feet of fill and result in a 1 to 18-foot riverside footprint expansion for a total length of 8.14-miles.

4.5 COMMUNITY RESOURCES

4.5.1 Socioeconomics

No Action Alternative

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

Proposed Action

The impacts of the proposed levee improvments on socioeconomic resources and environmental justice would be positive, however temporary in nature. The direct influx of federal funds into El Paso County would be a positive impact on local businesses.

4.5.2 Environmental Justice

No Action Alternative

Under the No Action Alternative, improvements to the International Dam to Riverside Diversion Dam reach would not occur; therefore, the current condition of minority and low-income populations would remain unchanged. No action could potentially have a negative impact on local communities due to increased costs for flood insurance.

Proposed Action

Data indicate that El Paso has disproportionately high minority and low-income populations. A small but positive economic input to the local community would be anticipated as a result of the proposed levee construction project. As a result, no adverse impacts to disproportionately high minority and low-income populations are expected from construction of the International Dam to Riverside Diversion Dam levee improvements. Levee improvements would allow the USIBWC to certify the levee segment and reduce the potential risk to personal safety and property as a result of Rio Grande flooding.

4.6 ENVIRONMENTAL HEALTH

4.6.1 Air Quality

No Action Alternative

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

Proposed Action

Improvements to the International Dam to Riverside Diversion Dam levee reach would have minimal impact to air quality through excavation and fill activities. Potential impacts would be a slight increase in criteria air pollutants within El Paso County. The temporary nature and use of best management practices would result minimal impacts to the annual emissions inventory. Table 4.7 summarizes the additional estimated criteria pollutants associated with the Proposed Action, as well as the percent increase above the existing El Paso County emissions inventory. Estimates were calculated for 15 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 (2001) as applied to a similar levee expansion project in the Rio Grande Canalization Project. Estimated emissions for all five criteria pollutants represent less than 1 percent of the El Paso County annual emissions inventory.

Table 4.7 Air Emissions for Improvements to the International Dam to Riverside Diversion Dam Levee System

	Emissions (tons per year)				
Parameter	**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
International Dam to Riverside Diversion Dam (8.14 miles)	4.48	41.11	17.18	3.26	45.67
El Paso County emissions inventory**	1,991	24,391	146,871	20,823	13,991
Proposed Levee Improvements Emissions as a Percent of El Paso County Emissions	0.22%	0.17%	0.01%	0.02%	0.33%

** Unit data for levee construction from the USIBWC Rio Grande Canalization Project EIS (Parsons 2003).*
*** USEPA: www.epa.gov/air/data/index.html.*

4.6.2 Noise

No Action Alternative

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

Proposed Action

Improvements to the International Dam to Riverside Diversion Dam levee reach 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. Construction noise would be limited to an 8.14 mile linear area consisting of: 1.41-miles downstream of International Dam and 6.73-miles upstream from the Zaragosa International Bridge. For the purposes of this EA, it is estimated that the shortest distance between an equipment noise source and a receptor in an urban area would be a person(s) 100 feet off-site. Given the restricted access to 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.

4.6.3 Hazardous and Toxic Waste

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 International Dam to Riverside Diversion Dam levee reach would not be affected by waste storage and disposal sites. No waste storage and disposal sites were identified within the proposed project area.

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 flood control improvements of the International Dam to Riverside Diversion Dam levee reach. Best management practices represent specific actions for minimizing impacts to natural 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 categories.

5.1 ENGINEERING MEASURES

5.1.1 Water Resources

The USIBWC will employ BMPs to protect water resources (such as the irrigation canals) that will include:

- Sediment barriers/fences will be installed in construction areas along the levee system, as well as equipment staging areas to prevent sedimentation.
- During the project construction, methods such as wetting the soil would be employed to prevent erosion from unvegetated slopes and/or corridors.

5.1.2 Vegetation Resources

Areas impacted will be re-seeded with native vegetation.

5.1.3 Mitigation Measures

If natural resources cannot be fully protected from adverse impact through best management practices, then mitigation measures will be implemented as necessary. Mitigation is the action that would compensate for unavoidable losses of sensitive vegetation and wildlife during project construction. Natural resources mitigation may include revegetation of disturbed areas and/or improvement in areas more suitable for enhancement.

SECTION 6
LIST OF PREPARERS

6.1 LIST OF CONTRIBUTORS

Table 6.1 lists contributors to the preparation of the Environmental Assessment for improvements to the International Dam to Riverside Diversion Dam Levee System.

Table 6.1 Preparers of the Environmental Assessment

Name	Agency	Degree	Years Experience
Gilbert G. Anaya	USIBWCSupervisory Environmental Protection Specialist	M.S. Environmental Science	17
Daniel Borunda	USIBWC Environmental Protection Specialist	M.S. Fisheries and WildlifeScience	10
R. Steve Fox	USIBWC Environmental Protection Specialist	M.S. Natural Resources	31
Raymundo Aguirre	USIBWC Engineering Division	Ph.D. Civil Engineering	49
Antonio Solo	USIBWC, Upper Rio Grande Projects, Project Manager	Civil Engineering	27
Susan Daniel	USIBWC, General Counsel	Juris Doctor	14

SECTION 7
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APPENDIX A

DETAILED MAPS OF PROJECT AREA

1 inch equals 563.201433 feet

0 405 810 1,620 2,430 3,240 Feet

Legend

0 Station ID

Levee Centerline

Project Footprint

Figure A.1- Project Overview
International Dam to Upper Chamizal Segment

Rectification Project Flood Control Improvements
Environmental Assessment
USIBWC, April 2007

1 inch equals 1,236.664733 feet

0 900 1,800 3,600 5,400 7,200 Feet

Legend

0 Station ID

Levee Centerline

Project Footprint

Figure A.2- Project Overview
Chamizal Segment - Concrete Channel

Rectification Project Flood Control Improvements
Environmental Assessment
USIBWC, April 2007

1 inch equals 1,903.621205 feet

0 1,400 2,800 5,600 8,400 11,200 Feet

Legend

0 Station ID

Levee Centerline

Project Footprint

Figure A.3- Project Overview
End of Chamizal to Yabrough Drive

Rectification Project Flood Control Improvements
Environmental Assessment
USIBWC, April 2007

1 inch equals 1,654.304340 feet

0 550 1,100 2,200 3,300 4,400 Feet

Legend

0 Station ID

Levee Centerline

Project Footprint

Figure A.4- Project Overview
Yabrough Drive to Zaragosa International Bridge

Rectification Project Flood Control Improvements
Environmental Assessment
USIBWC, April 2007

1 inch equals 843.398452 feet

0 320 640 1,280 1,920 2,560 Feet

Legend

Station ID

Levee Centerline

Project Footprint

Figure A.5- Project Overview
Zaragosa International Bridge to Riverside Diversion Dam

Rectification Project Flood Control Improvements
Environmental Assessment
USIBWC, April 2007

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APPENDIX B

PHOTOGRAPHIC SURVEY OF LEVEE EXTENT, VEGETATION, AND ANIMAL SPECIES

METHOD: A photographic survey was conducted of the Rio Grande Rectification Project (RGRP) from International Dam downstream to Riverside Diversion Dam in the section of levees that require raising and expansion to meet the Federal Emergency Management Agency (FEMA) criteria for certification. The field survey was conducted on March 26, 2006 to determine if there is any impact to the vegetation and animal species within the expanded levee footprint. A swath of 24 feet from the toe (bottom) of the levee was used in the survey taking into account the maximum footprint needed to raise the levee four feet on the riverside.

Location 1- 0.1 miles below International Dam

The International Dam is a diversion dam used by Mexico to divert its share of water allotted under the Treaty of 1906. In August 2006, heavy rains resulted in flood conditions in this area and a large amount of sediment was deposited on the floodplain (photo 1). The side of the levee contains sparse vegetation (non-native) and the floodplain was void of any at the time of the survey. It is estimated that the levee will have to be raised one foot in this section resulting in an expansion of six feet.

The photo shows the maximum distance of the expanded levee footprint (24 ft) looking upstream to the dam. This section only contained two Palo Verde trees, saltcedar (less than 5 feet) and some dry grasses along the side slope.

Location 2- 0.2 miles below International Dam

The top of the levee coordinates for survey (31 deg 45' 39.650 N, 106 deg 30; 22.530" W). The river channel is closer to levee at this point compared to Location 1. On the landside of the levee, there is additional room to expand because there is a road next to the levee. Vegetation is greater in this area due to the proximity of the levee with the river. The top of the levee consists of a flex-base (gravel-type) road.

Photo of survey point looking up to the top of levee.

The photograph below, is an upstream view of the RGACE wasteway crossing the levee in-between Locations 1 & 2. Near the background of this photograph is the downstream side of the wasteway and adjacent to it is willow (Salix spp.). Willow is riparian vegetation. Riparian plants are dependent on water in the river or in saturated soil within the root zone of the plants. The species of willow may be S. gooddingii, Gooding willow, or S. exigua, coyote willow. No suitable habitat for Southwestern willow flycatcher (SWF) exists within this area because SWF requires dense riparian habitats. Of the approximately 11 shrubs of willow located within 24 feet of the toe of the levee on the river side at most of Location 2, about four of 11 shrubs, Shrub #1, #2, #3, and #4, two (#1 and #2) adjacent to the wasteway and two (#3 and #4) further downstream in Location 2, could be effected by work. The quantification of two (at wasteway) of those four shrubs is described in the following:

Shrub, designation number	**No. Stems** (mainly consist of)	**Diameter** waist height (inch)
#1	3	1/2
#2	18	3/4

Photo below, shows the 24-foot distance from the toe of levee, out into the floodplain. The photograph also shows the sandy soil with mostly brush, palo verde, salt cedar (Tamarix ramosissima), and Bermuda grass (Cynodon dactylon). This photograph shows some of the 11 shrubs of willow initially described in Photo 4 above. This is a portion of Location 2.

Downstream view of Location 2. This photograph shows more of the 11 shrubs of willow initially described in Photo 4 above. This is a portion of Location 2. The shrubs potentially effected, #3 and #4, are described as follows:

Shrub, designation number	**No. Stems** (mainly consist of)	**Diameter** waist height (inch)
#3	3	1/16
#4	3	1/16

Of the 11 shrubs mentioned in Photo 4 above, that occur in Location 2 within 24 feet of the levee toe on the river-side, the following describes the seven shrubs of willow that would not be affected by the work:

Shrub, designation number	**No. Stems** (mainly consist of)	**Diameter** waist height (inch)
#5	9	1
#6	8	1/4
#7	10	1/8
#8	12	1/8
#9	6	1/16
#10	12	1/4
#11	10	1/4

The photograph below is likely of non-woody weedy invasive "pioneer" species of non-natives, such as mustard (Family: Brassicaceae, also known as Cruciferae) and thistle (Russian thistle, Salsola australis).

Saltcedar with characteristic flower bloom mixed with other vegetation

Photo below, shows a Salix spp. (willow), or Baccharis spp. (seepwillow) shrub. There is one shrub of willow that could be affected by work in the zone of six feet from the toe of the levee on the river-side. The subject shrub, not necessarily this one in Photo (9), is in the downstream portion of Location 2. The subject shrub is mainly five stems 1¼ " diameter at waist height.

Non-woody plant.

The following photograph shows Palo Verde, a small tree, growing on the side slope of the levee. Retama (Parkinsonia aculeate) is native to South America, and widely naturalized in the Southwest and South. Littleleaf Palo Verde (Cercidium microphyllum) and Blue Palo Verde (C. floidum) are Sonoran Desert species. There is a three-way hybrid between Retama, Littleleaf Palo Verde and Blue Palo Verde called Desert Museum Palo Verde that is described on the website under "Chihuahuan Desert Plants" (Source: http://museum.utep.edu).

Vegetation found along the wasteway.

Upstream of the wasteway to Location 2 (white vehicle). Dirt road at Location 2 next to the Paisano Bridge.

The Rio Grande at Location 2.

Screwbean mesquite, Prosopis pubescens. River-side.

Location 3- 0.25 miles below International Dam (31 deg 45’ 35.920” N, 106 deg 30’ 18.218” W) The vegetation density is similar to Location 2.

Upstream view of location. Footprint expansion would occur on the landside to avoid impacts to riparian areas.

Downstream view of location.

Erosion that is occurring in portions of the levee in this section.

Upstream view of vegetation along slope of levee and proximity of river.

Tree tobacco (Nicotiana glauca) possibly.

Downstream view of river moving away from levee.

Location 4- 0.3 miles below International Dam. Photo (27). I observed a male and a female house finch (Carpodacus mexicanus) in the area.

Downstream view from top of levee.

Photo (28). There are four shrubs of willow in the area. Three of those are generally near the toe of the levee, and the fourth shrub is approximately at 24 feet away from the toe of the levee. The description of the three shrubs near the toe of the levee follows:

Shrub, designation number	**No. Stems** (mainly consist of)	**Diameter** waist height (inch)
#1	8	1/16
#2	10	1/2
#3	10	1/4

The description of the fourth shrub at approximately 24 feet away from the toe of the levee follows:

Shrub, designation number	**No. Stems** (mainly consist of)	**Diameter** waist height (inch)
#4	7	1/16

Tape measure showing 24 foot expansion footprint. The latest assessment indicates that the levee in this section will only need to be raised 1 foot and only require six feet of expansion. The expansion could be accomplished on the landside to avoid any impacts to vegetation at this point.

The transition from grasses to brush occurs at the 24 foot mark from the toe of the levee. This area would not be impacted (upstream view).

Downstream view of grass/brush line.

Location 5- 0.4 miles below International Dam (31 deg 45’ 29.808 N, 106 deg 30’ 7.810 W)

This reach is heavily disturbed by vehicular traffic and a dirt road that runs along the toe of the levee on the riverside. There is dry grass and two large trees next to the levee.

Upstream view of site.

Downstream view.

The 24 foot levee expansion ends on the dirt road. The expansion would only extend six feet on the riverside impacting very little vegetation.

Typical view from the dirt road looking upstream.

Cottonwood (Populus deltoids).

A previous effort to add vegetation was done using concrete pipe to house various trees such as cottonwoods, mesquite, and ocotillo. Most of the trees are dead with the exception of a few. The concrete pipes may have to be removed as part of the levee raising if there is not enough room on the landside.

Location 6- 0.5 miles below International Dam (31 deg 45' 29.808" N, 106 deg 30' 7.810" W)

Area	Vegetation
The levee road.	There are five seepwillow (Baccharis sp.) trees on the side of the road.
The levee slope.	The slope is dry and with very little vegetation and much of it is low-lying vegetation and that is dead from lack of moisture.
The upper terrace of the Rio Grande.	The terrace contains Bermuda grass (Cynodon dactylon). This upper terrace holds little possibility of being subject to fill material from the work.

Typical view of levee slope with some trees that were planted on the side. There is very little vegetation.

Photo showing 24 foot expansion footprint. The levee would now only be extended six feet only reaching the first patch of brush on the bottom center of this photo.

Upstream view of site from twenty four foot mark.

Location 7- 0.6 miles below International Dam (31 deg 45’ 26.655 N, 106 deg 30’ 3.090 W)

Area	Vegetation and Birds
The levee road.	On the upstream, river-side, there are two large seepwillow (Baccharis sp.) trees and five small ones. There is a large tree along the river-side. There is a large screwbean mesquite, Prosopis pubescens, on the landside.
The levee slope.	Dry.
The upper terrace of the Rio Grande.	The upper terrace is a very large grassy area. This upper terrace holds little possibility of being subject to fill material from the work. A large screwbean mesquite, Prosopis pubescens, is at the ditch on the landside. At the upstream side, in the upper terrace of the river-side, the large sandy patch had a male and a female killdeer (Charadrius vociferous).
The Stormwater ditch.	Flows; about 1 cubic foot per second.

View from 24 foot mark to the levee.

Downstream view from 24 foot mark.

Upstream view from 24 foot mark.

Location 8- 0.65 miles from International Dam

Storm water return crossing levee.

Medium sized tree found near the levee that will not be impacted.

Location 9- 0.7 miles below International Dam (31 deg 45' 23.401" N, 106 deg 29' 58.601" W)

Area	Vegetation and Birds
The levee road.	On the upstream, river-side, there are two large seepwillow (Baccharis sp.) stumps along the river-side. A female western meadowlark (Sturnella neglecta)-like bird was catching a large terrestrial insect. A male and a female house finch (Carpodacus mexicanus) were at the downstream side of the stumps. There are two large screwbean mesquite, Prosopis pubescens. On the landside of the road is a pair of swallows (barn swallow, Hirundo rustica).
The levee slope.	There are gopher holes in the side, and it appears that field mice are using some.
The upper terrace of the Rio Grande.	The upper terrace is a very large grassy area. This upper terrace holds little possibility of being subject to fill material from the work.
The Stormwater ditch.	The same one as above, is in the vicinity.

Burrowing Owl location. Owl was seen leaving burrow during the survey. No other owls were seen in this reach of the levee.

Typical view from top of levee. The dirt road still follow the levee with very little vegetation.

Area	Vegetation and Birds
The levee road.	DHS Pole #88. There is a small screwbean mesquite, Prosopis pubescens, on the river-side and a large one on the landside. On the landside of the road is swallows (barn swallow, Hirundo rustica) flying over the Rio Grande American Canal Extension Project canal open water and fence area.
The levee slope.	One western burrowing owl (Athene cunicularia) flew to Rio Grande.
The upper terrace of the Rio Grande.	The terrace contains Bermuda grass (Cynodon dactylon).

Potential burrow hole that had no traces of being occupied.

Location 10- 0.8 miles below International Dam (31 deg 45' 19.700" N, 106 deg 29' 54.155" W)

Area	Vegetation and Birds
The levee road.	There are Poles in the road and railroad train tracks on the landside of the road. On the landside of the road is six swallows (barn swallow, Hirundo rustica).
The levee slope.	The slope is dry and the vegetation is low-lying and most is dried out. There is some chance of fill from work on the river-side of the levee. There are stumps (six) of seepwillow (Baccharis sp.) trees on the river-side.
The upper terrace of the Rio Grande.	The terrace contains Bermuda grass (Cynodon dactylon). A small side-channel is between the river and the grassy upper terrace.

Downstream view of levee with dry, fallen trees and dry brush and grasses.

Downstream view of levee.

Grass is about 1 foot tall at 24 foot mark.

Halfway toward mile 0.9, there are two large trees close the toe of the levee. The floodplain narrows directly across where the trees are located.

Location 11- 0.9 miles below International Dam (31 deg 45 ‘ 15.965” N, 106 deg 29’ 48.808” W)

Area	Vegetation and Birds
The levee road.	There is a Pole along the road. The landside of the road has the railroad track close-by.
The levee slope.	There are two possible native shrubs n the slope. There is a chance of fill from work on the river-side of the levee.
The upper terrace of the Rio Grande.	The terrace contains mainly sand, with a little Bermuda grass (Cynodon dactylon). Two large cottonwood (Populus deltoides) trees are 24’ from the toe of the levee. Two mallards () flew upstream over the river.

Adjacent, downstream, of the area of the cottonwoods is a very steep levee on the river-side with a very narrow upper terrace that is adjacent to the Rio Gande. Approximately 40% of the strip of terrace at the toe of the levee to the outer edge where remotely possible levee repair of the slightly eroded slope would occur was inventoried for the main plant – willow shrubs. The said edge of this inventory area is where fill map cover the area. The following is the results of the inventory conducted:

Shrub, designation number	**No. Stems** (mainly consist of)	**Diameter** waist height (inch)
#1	3	1/8
#2	3	1/8

#3	2	1/2
#4	5	1/8
#5	3	1/8
#6	9	1/8
#7	4	1/16
#8	8	1/4
#9	2	1/8
#10	6	1/4
#11	2	1
#12	20 20 2	1/4 1/8 1.5
#13	5	1/8
#14	10	1/8
#15	4	1.5
#16	10	1/16
#17	3	1.5
#18	10	1/6
#19	5	1/16
#20	7	1.5
#21	5	1/2
#22	2 6	1.5 1/16
#23	2 11	1 1/16

#24	2 7	1.5 1/16
#25	3	1.5
#26	5	1/4
#27	3	1/16
SURVEY INCOMPLETE	THERE ARE MORE SHRUB	

The levee slopes become more steep at this point followed by increased vegetation close to the levee. The river channel is close to the levee similar to mile 0.2.

The vegetation is over six feet tall close to the bank of the river with smaller brush, saltcedar and grass closer to the toe of the levee. The vegetation is of this type from 0.9 to 0.95 miles.

At 0.95 miles, the channel returns to the center of the floodplain and the vegetation decreases to what is being typically seen in this reach. The tree is outside the expansion footprint and would not be impacted.

Upstream view at 0.1 miles looking at the vegetation line at 0.95 miles as it nears the toe of the levee.

Location 12- 8 miles upstream of Riverside Dam (31 deg 44' 12.10 N, 106 deg 23' 14.71" W)

Typical Levee segment downstream of the Chamizal. Vegetation consists primarily of tumbleweeds and bermuda grass.

Burrowing owl dens were discovered throughout the reach from Riverside Diversion Dam to the end of the Chamizal. Burrowing owls are pairing up to begin the breeding season. Coordination with Texas Parks and Wildlife and the United States Fish and Wildlife Service will allow breeding pairs to be relocated if necessary.

Facing the river channel, note discharge channel into Rio Grande and adjacent buried petroleum pipeline.

Another Burrowing owl den spotted on levee slope.

Gopher holes directly upstream from Border Patrol marker no. 35.

Location 13- 6.5 miles upstream of Riverside Dam (31 deg 44' 49.28 N, 106 deg 24' 22.22" W)

Burrowing owl den on levee slope

Ground squirrel spotted at base of levee slope

Location 14- 2.3 miles upstream of Riverside Dam (31 deg 41’ 22.69 N, 106 deg 20’ 43.40” W)

Burrowing owl spotted halfway down levee slope.

A pair of owls spotted flying out of den. Meadowlark also observed at the site.

Burrowing owl den at metal box (piezometer)

Location 15- 1 mile upstream of Ysleta Bridge, 2 mi upstream of Riverside Dam (31 deg 41’ 6.16 N, 106 deg 20’ 35.78” W)

Burrowing owl den on slope of levee, which appears occupied due to debris at mouth of den.

Den coordinates were recorded with a GPS.

Burrowing owl den located on crown of levee slope

Burrowing owl

Slope of levee where burrowing owls occupied. Looking downstream.

Location 16- 0.4 miles upstream of Ysleta Bridge, 1.4 mi upstream of Riverside Dam (31 deg 40’ 39.12 N, 106 deg 20’ 23.76” W)

Three dead cottonwoods upstream from survey point 117c. Distance from toe of levee ranges from 22 to 24 feet. Vegetation on banks is mostly tumbleweed and Bermuda grass.

Cottonwoods, one alive and one dead, within 20 feet of the levee toe.

Location 17- 0.2 mi upstream of Ysleta Bridge, 1.2 mi upstream of Riverside Dam (31 deg 40’ 31.18 N, 106 deg 20’ 19.48” W)

Line of cottonwoods, three alive and the rest dead. In the distance is a live tree near survey point 117c (yellow posts).

Upstream of Zaragosa Bridge looking downstream.

Location 18- Zaragosa Bridge, 1 mi upstream of Riverside Dam (31 deg 40’ 19.37 N, 106 deg 20’ 15.02” W)

Levee at Ysleta Bridge, looking upstream

Gopher holes on south river side levee slope.

Location 19- 0.8 mi upstream of Riverside Dam (31 deg 40’ 9.63 N, 106 deg 20’ 10.28” W)

Three live cottonwoods are growing within a tenth of a mile from each other. This cottonwood is approximately 18 feet from levee toe.

Light poles are approximately 22 feet from levee toe. Note proximity of light pole to dead cottonwood.

Location 20- 0.6 mi upstream of Riverside Dam (31 deg 39’ 57.68 N, 106 deg 20’ 5.08” W)

Looking upstream at cottonwoods. Dead cottonwood, foreground. Alive cottonwoods, background.

Location 21- 0.4 mi upstream of Riverside Dam (31 deg 39’ 51.09 N, 106 deg 20’ 1.75” W)

Typical levee slope with minimal vegetation.

Mourning doves feeding.

Border Patrol electric boxes on levee slope

Levee toe is at Border Patrol access road. Light poles are 19 feet from levee toe.

RGACE side of levee. Expansion will occur to the riverside.

Location 22- just upstream of Riverside Dam (31 deg 39' 32.22 N, 106 deg 19' 47.15" W)

Typical vegetation on banks is: barley-type and Bermuda grasses, purple night shade, and typical weeds. Birds spotted include swallows and mourning dove.

Guardrail at RGACE, facing upstream of Riverside Dam.

Facing downstream, guardrail discharge from RGACE to Rio Grande.

Levee system looking upstream from the Riverside headgates.

Salt cedar at landside of levee. Levee will be expanded to the landside in this area.

Looking upstream from bridge.

Bridge at diversion gates.

APPENDIX C

CORRESPONDENCE

United States Department of the Interior
FISH AND WILDLIFE SERVICE
Ecological Services - LRGV SubOffice
Phone: (956) 784-7560 Fax: (956) 787-0547
Rt. 2 Box 202-A
Alamo, TX 78516
May 7, 2007

Mr. Daniel Borunda
United States Section,
International Boundary and Water Commission
4171 N. Mesa, Suite C-100
El Paso, Texas 79902

Consultation No. 21410-2007-I-0227

Dear Mr. Borunda:

This responds to a letter and EA received on April 12, 2007 regarding the effects of the proposed action to raise the International Dam to Riverside Diversion Dam levee on species federally-listed or proposed for listing as threatened or occurring within El Paso County, Texas. In addition, your project was evaluated with respect to wetlands and other important fish and wildlife resources.

It's the Service's understanding that The United States Section, International Boundary and Water Commission (USIBWC) is proposing levee system improvements for the reach from International Dam to Riverside Diversion Dam are primarily located in the upper reach of the Rio Grande Rectification Diversion Dam are primarily located within the city limits of El Paso. The Proposed Action would increase flood containment capacity of the International Dam to meet the 3-foot freeboard design criterion for flood protection. Within this reach, approximately 8.14-miles of levee require height increases between 0.5 and 2.5 feet to reach the design freeboard requirements.

The increase in levee height would result in an expansion of the levee footprint by lateral extension of the structure. The distance from centerline to the toe is 32 feet for the existing levee, and 44 feet for the expanded levee (32 feet current distance to the toe plus a 12-foot expansion). While the centered levee expansion is commonly used in other projects, an offset expansion is anticipated due to constraints from existing infrastructure and limited ROW. For the majority of the project, the offset expansion would take place entirely on the riverside of the existing levee especially in the segment downstream from the Chamizal to the Zaragosa Bridge. In other instances, levee expansion will occur on the landside of the existing levee.

Using the offset expansion option, for a typical levee cross-section, (8 feet elevation, 3:1 slope, and 16-foot crown), a 4-foot increase in levee height would result in a 24-foot offset increase of the footprint. The current footprint width value of 64 feet would expand to 88 feet as a result of the increased levee height. Riverside expansion (from the riverside shoulder of the crown toward the river) would be required when constraints on the centered expansion are present. These constraints include the presence of the Rio Grande American Canal Extension Project along the segment from below the Chamizal to the Zaragosa International Bridge.

The levees are raised trapezoidal compacted-earth structures, with a crown width of 16 to 20 feet, an average height of 7.2 feet, and side slopes of 3:1. The levee slopes are grass covered, and are dominated by Bermuda grass, Russian thistle, silverleaf nightshade, and London rocket. The levee slopes are frequently mowed to prevent the encroachment of woody plants onto the levee slopes.

Improvements to the levee corridor would affect approximately 9.22 acres of plant communities through excavation and fill activities. Several cottonwood trees were identified along the reach from the Chamizal downstream to riverside Diversion Dam, however the amount of fill needed for this reach will not require a significant footprint expansion. Based on the 3:1 ratio and the average amount of fill needed (0.34-foot) the levee footprint would be expanded up to 1-foot at the riverside toe. No impacts to the existing cottonwoods are anticipated. Improvements in the upper project reach, downstream of International Diversion Dam, will impact similar vegetation communities. In this reach, the levee will be expanded on the landside to avoid any impacts. Areas impacted will be re-seeded with native grasses and forbs to establish vegetation. Short-term impact on grassland communities in the area of levee expansion for the levee system corridors would occur. Salt cedar can be removed and replaced with native willow trees.

Burrowing owls are frequent occupants of the levee system and may potentially be impacted. Confirmed burrowing owl dens were inspected by USIBWC and Texas Parks and Wildlife Department staff to verify if the dens were empty (no eggs or young) and blocked to avoid any potential for occupancy during the construction period. Breeding burrowing owls are found from April to September in the El Paso County area and should be avoided if a den with eggs, young or breeding pair is located within the project area until the burrowing owl has left the den. Regarding other important fish and wildlife resources, please keep in mind that many bird species protected under the Migratory Bird Treaty Act may nest in any area containing trees or other suitable habitat. As the Federal agency responsible for the protection of migratory birds, the Service recommends vegetation disturbances potentially associated with these activities avoid the general nesting period of March through August <u>or</u> that areas proposed for disturbance be surveyed first for nesting birds, in order to avoid the inadvertent destruction of nests, eggs, etc.

Your agency has made a determination that this project would not result in any adverse impacts on federally listed threatened or endangered species or critical habitat. Based on the above understanding the Service believes your agency has complied with section 7(a)(2) of the Endangered Species Act. We appreciate the opportunity to provide pre-planning information and look forward to providing any further assistance.

If we can be of further assistance, please contact Ernesto Reyes at the above letterhead and telephone number.

Sincerely,

Ernesto Reyes Jr.

Ernesto Reyes Jr.
Senior Fish & Wildlife Biologist
For
Allan M. Strand
Field Supervisor

cc:
Field Supervisor, U.S. Fish and Wildlife Service, Corpus Christi, TX

>>> "Debra Beene" <Debra.Beene@thc.state.tx.us> 5/8/2007 5:36 PM >>>

Mr. Anaya: we received the draft EA for the proposed International Dam to Riverside Diversion Dam Flood Control Projects. The text suggest that a cultural resources field reconnaissance and a 100% pedestrian survey was completed for this project. The SHPO consultation should be included in the EA and please provide the report references for the survey reports. As long as this is added to the EA, we have no further cultural resource concerns. Below: Cultural Resource segments of the draft EA. Good Luck with the project, beene

debra l. beene
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regional archeologist, lower pecos
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Cultural Resource segments of the draft EA:

<<Picture (Metafile)>>

<<Picture (Metafile)>>

<<Picture (Device Independent Bitmap)>>

Texas Department of Transportation

13301 GATEWAY BLVD. WEST • EL PASO, TEXAS 79928-5410 • (915) 790-4200

May 24, 2007

Mr. Daniel Borunda
United States Section,
International Boundary and Water Commission
4171 N. Mesa, Suite C-100
El Paso, Texas 79902

RE: Rio Grande Rectification Project Flood Control Improvements Draft Environmental Assessment (EA) and Finding of No Significant Impact

Dear Mr. Borunda:

Thank you for the opportunity to review the draft environmental document referenced above. The Texas Department of Transportation has no comments on the draft document covering the proposed flood control work in the levee.

If you have any questions, please feel free to contact Mary Telles-Goins at (915) 790-4324.

Sincerely,

Charles H. Berry, Jr., P.E.
District Engineer