

# **DRAFT SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT**

## **FLOOD CONTROL IMPROVEMENTS TO THE RIO GRANDE CANALIZATION PROJECT FROM VINTON TO CANUTILLO, EL PASO COUNTY, TEXAS (CANUTILLO PHASE II)**

*Supplemental to Final Environmental Assessment for  
Flood Control Improvements to the Rio Grande Canalization Project, December 2007*



Prepared by:

United States Section, International Boundary and Water Commission

El Paso, Texas

May 16, 2017

## COVER SHEET

### **Draft Supplemental Environmental Assessment and Mitigated Finding of No Significant Impact**

### **Flood Control Improvements to the Rio Grande Canalization Project from Vinton to Canutillo, El Paso County, Texas (Canutillo Phase II)**

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

**Preferred alternative:** Canutillo Phase II Levee Improvements

**Report Designation:** Supplemental Environmental Assessment (EA)

**Abstract:** The USIBWC is considering constructing a flood control improvement project along the Rio Grande located within a portion of the Rio Grande Canalization Project protective levee system in El Paso County, Texas along approximately 5.66 miles on the east bank from just north of Vinton Road Bridge, south through the Canutillo area, and downstream to Borderland Bridge.

The purpose is to construct a flood control structure with the following objectives:

- 1) Eliminate levee deficiencies within the Vinton to Canutillo reach and provide flood protection to withstand the 100-year flood with a minimum of 2 feet freeboard;
- 2) Maintain the design flood capacity of the RGCP; and
- 3) Enable the USIBWC to obtain accreditation of levees by the Federal Emergency Management Agency (FEMA).

In the *Final Environmental Assessment on Flood Control Improvements to the Rio Grande Canalization Project*, dated December 2007, the USIBWC proposed to conduct flood control improvements along approximately 52-miles of east and west levees within the RGCP. The proposed action included the construction of a new flood control structure in the Canutillo Area; however, details of the proposed structure were not available and were not analyzed in the 2007 EA.

This Supplemental Environmental Assessment evaluates potential environmental impacts of the No Action Alternative and the Preferred Alternative. The Preferred Alternative calls for the construction of a combination of 3 miles of new earthen levees and 2.64 miles of concrete floodwall where limited right of way or physical space exists between the river and the railroad. The Preferred Alternative would also require the construction of a floodgate at the Canutillo Bridge and ten new drainage structures with bank stabilization, and modification of an existing drainage structure on ephemeral streams. Scour protection blankets would be required on some sections of the earthen levee that are close to the river bank. Permits would be required from

the Burlington Northern Santa Fe Railroad for work within the railroad right of way. An Individual Permit would be required from the U.S. Army Corps of Engineers for dredge and fill of Waters of the United States, per the Clean Water Act Sections 404 and 401. Six additional alternatives were considered and evaluated in previous analyses but were either found to not meet the purpose and need or were impractical.

Potential impacts on natural, cultural, and other resources were evaluated. While the Preferred Alternative does have adverse impacts to riparian vegetation, Waters of the United States, and access to the river for recreation, the USIBWC has proposed mitigation to restore over 35 acres of native riparian habitat on the floodplain. Mitigation would be part of required permits for construction. A Mitigated Finding of No Significant Impact has been prepared for the Preferred Alternative based on a review of the facts and analyses contained in the Supplemental Environmental Assessment.

# MITIGATED FINDING OF NO SIGNIFICANT IMPACT

## Flood Control Improvements to the Rio Grande Canalization Project from Vinton to Canutillo, El Paso County, Texas (Canutillo Phase II)

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

### II. BACKGROUND

The Rio Grande Canalization Project (RGCP) was authorized by the Act of June 4, 1936, 49 Stat. 1463, Public Law No. 648 to facilitate compliance with the Convention concluded with Mexico on May 21, 1906, (TS 455), providing for the equitable division of waters of the Rio Grande, and to properly regulate and control the water supply for use in the two countries. The Act authorized the construction, operation, and maintenance of the project in accordance with the plan in the Engineering Report of December 14, 1935. The RGCP consists of a narrow river corridor that extends 105.4 miles along the Rio Grande, from below Percha Dam in Sierra County, New Mexico to American Dam in El Paso, Texas. A levee system for flood control extends 57 miles over the west side and 74 miles over the east side of the Rio Grande. USIBWC has been conducting levee improvement projects, including under the American Recovery and Reinvestment Act, in order to obtain accreditation of the levee system by the Federal Emergency Management Agency (FEMA) under the Code of Federal Regulations (CFR) in 44 CFR 65.10.

The USIBWC prepared an Environmental Assessment (EA) entitled “*Final Environmental Assessment Flood Control Improvements to the Rio Grande Canalization Project*,” dated December 2007, to improve flood control along sections of the 106-mile RGCP levee system. The EA covered levee rehabilitation by raising the existing levees between 1 to 4 feet for the entire reach. The EA proposed action included the construction of a new flood control structure in the Canutillo Area; however, details of the proposed structure were not available and were not analyzed in the EA.

In the 2007 EA, USIBWC determined that three sections of the levee system either did not have levees or did not have sufficient right of way to raise the levees. One of those flood control protection gaps was analyzed in the July 2014 “*Final Supplemental Environmental Assessment: Flood Control Improvements to the Rio Grande Canalization Project in Vado, New Mexico*.”

This Supplemental Environmental Assessment (SEA) addresses another of these areas lacking adequate flood protection, in Vinton and Canutillo in El Paso County, Texas. In this reach of the levee system, there currently is no flood control protection on the east river side. The Burlington Northern Santa Fe (BNSF) Railroad bed currently acts as the flood protection; as such, this section of the levee system cannot currently be accredited by the Federal Emergency Management Agency (FEMA).

The purpose is to construct a flood control structure with the following objectives:

- 1) Eliminate levee deficiencies within the Vinton to Canutillo reach and provide flood protection to withstand the 100-year flood with a minimum of 2 feet freeboard;
- 2) Maintain the design flood capacity of the RGCP; and
- 3) Enable the USIBWC to obtain accreditation of levees by FEMA.

### **III. ALTERNATIVE ACTIONS CONSIDERED**

A No Action Alternative would retain the existing configuration of levees and associated deficient level of flood protection. The railroad would continue to act as the ad-hoc levee. There would continue to be risks to personal safety and potential property damage. In addition, the USIBWC could not obtain FEMA accreditation for the area levees.

The Preferred Alternative calls for the construction of a combination of 3 miles of new levees and 2.6 miles of concrete floodwall where limited right of way or physical space exists between the river and the railroad. The Preferred Alternative also requires 11 drainage structures be constructed or improved, and a flood gate at the Canutillo Bridge. Scour protection is required in locations where the levee is close to the river bank and at drainage structures.

Additionally, six other alternatives were considered and evaluated in previous analyses, but all were eliminated from consideration because they were either found to not meet the purpose and need or were impractical.

### **IV. NEPA REGULATORY BACKGROUND**

Pursuant to National Environmental Policy Act (NEPA) guidance (40 CFR 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 in 2007 for levee improvements in the RGCP and a Supplemental EA of the potential environmental consequences of a floodwall in the Vinton and Canutillo area. The Supplemental EA, which supports this Mitigated Finding of No Significant Impact, evaluated the Preferred Alternative that would satisfy the purpose and need and the No Action Alternative.

## **V. SUMMARY OF ENVIRONMENTAL CONSEQUENCES OF THE NO ACTION ALTERNATIVE**

The No Action Alternative would retain the current configuration of the Rio Grande floodplain below the RGCP, with no impacts to biological and cultural resources, and water resources. In terms of flood protection, however, current containment capacity in the lower RGCP under the No Action Alternative may be reduced during Rio Grande flooding under severe storm events, with associated risks to personal safety and property. 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, property, and transportation systems. The USIBWC would not be able to certify the levee system segments, that are being targeted for improvements, as meeting FEMA requirements and therefore residents residing within the FEMA flood zone would be required to maintain flood insurance policies.

## **VI. SUMMARY OF ENVIRONMENTAL CONSEQUENCES OF THE PREFERRED ALTERNATIVE**

### ***Biological Resources***

The Preferred Alternative would require clearing and grubbing of the floodplain. This would follow with placement of fill material for construction of a new levee. The floodplain is managed for flood protection and vegetation is mowed annually and, therefore, consists of low quality weeds and invasive plant species. In floodplain areas for the new levee, no riparian woodland communities would be impacted; impacts on vegetation would be limited to low quality vegetation of very limited value as wildlife habitat.

The Preferred Alternative also calls for the construction of a floodwall, which would entail removal of approximately 8.6 acres of riparian vegetation along the river's edge. Riparian vegetation consists of mature native willows, sporadic native and nonnative trees, nonnative saltcedar and shrubs such as mule-fat.

Significant effects are anticipated on vegetation and wildlife habitat in the vicinity of the floodwall and areas requiring scour protection due to the removal of riparian habitat consisting of mature willows and other native vegetation. The USIBWC would mitigate for the loss of habitat by enhancing 35.22 acres of riparian area through the harvesting and replanting of willows along the construction zone as well as expansion of the willow habitat on the east bank and in the areas of new levee construction. Additionally, the USIBWC would monitor the area for 5 years to ensure species proliferation through augmentation of lost plantings and control of invasive species.

### ***Cultural Resources***

USIBWC has extensively surveyed the RGCP for cultural resources. Improvements from the Preferred Alternative are not expected to adversely affect known archaeological or historical resources.

### ***Water Resources***

Improvements to the levee system would restore flood containment capacity to control the design flood event with a negligible increase in water surface elevation and would not affect water resources. Water quality would likely not be affected because construction would utilize best management practices to control erosion.

Groundwater resources may temporarily be impacted during floodwall construction due to dewatering requirements. Additionally, impacts are anticipated to approximately 10 acres of open water where the floodplain would be constructed within the channel, or where drainage structures would be constructed across ephemeral arroyos. USIBWC would obtain appropriate permits for fill of Waters of the U.S., and USIBWC has drafted a rigorous mitigation plan to address adverse impacts on the river corridor, which would require review and approval of the U.S. Army Corps of Engineers.

### ***Community Resources***

Regarding environmental justice, no adverse impacts are anticipated. The area surrounding the project area has a high majority of low-income, minority residents. USIBWC anticipates that the improved flood control in the area would positively impact local residents by reducing the requirement to buy flood insurance and provide protection to residents and businesses.

The floodwall at the Vinton Bridge would impact the existing hike and bike trail. USIBWC has modified plans to allow pedestrian traffic in some sections of the floodwall to connect existing recreation trails. The presence of a floodwall may limit other recreation activities along the riverbank.

### ***Environmental Health***

Improvements to the levee system would have minimal impact to air quality through construction activities. Air emissions during construction would be limited to heavy equipment operation during normal working hours. There would be a moderate but temporary increase in ambient noise levels due to construction activities. No long-term and regular exposure is expected to be above noise threshold values.

## **VII. MITIGATION AND BEST MANAGEMENT PRACTICES**

USIBWC anticipates applying for an individual permit under the Clean Water Act Section 401/404 from the U.S. Army Corps of Engineers for the construction of the floodwall in the river and on the bank. The permit would include a compensatory mitigation plan, which proposes to mitigate 35.22 acres to restore the habitat to its current conditions except at locations of the floodwall and areas of scour protection. The proposed mitigation area would include approximately a 35-foot swath of riparian zones along 14,500 linear feet on the east bank and 30,000 linear feet on the west bank in the project area. The mitigation would include plantings and recruited riparian-zone vegetation along the river bank. Mature native vegetation in the disturbed area of the floodwall would be harvested and moved to mitigation areas in the project area.

Mitigation would include:

- Removal of exotic species in mitigation areas before construction begins,
- Harvesting of vegetation in disturbed areas prior to disturbance,
- Replanting of harvested native vegetation,
- Watering of planted vegetation,
- Establishment of a No Mow Zone,
- Modification of existing leases to incorporate the mitigation area;
- Implementation of a nonnative and invasive species control plan, and
- Implementation of BMPs during construction.

Best management practices during and after construction would include measures to protect soil, vegetation, wildlife, cultural resources, water resources, and air quality as well as to address noise pollution and trash, waste, and hazardous materials. Examples include the use of sediment barriers and soil wetting to minimize erosion and dust; to protect wildlife, construction activities would be scheduled to occur, to the extent possible, outside the March to August bird migratory season.

## VIII. DECISION

Federal agencies may rely on mitigation measures in determining that the overall effects would not be significant, in an Environmental Assessment, as discussed in a) Part 40 CFR 1508.20, b) Council on Environmental Quality (CEQ) Memorandum issued January 14, 2011 on the *Appropriate Use of Mitigation and Monitoring and Clarifying the Appropriate Use of Mitigated Findings of No Significant Impact*, and c) CEQ Memorandum dated March 23, 1981 *Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations*. Per USACE permit requirements, USIBWC would implement a rigorous mitigation plan. Based on my review of the facts and analyses contained in the Supplemental Environmental Assessment, I conclude that implementation of the Preferred Alternative to construct new levees and floodwalls to improve the Rio Grande Canalization Project Levee System from Vinton to Canutillo, Texas, together with the proposed mitigation activities, would not have a significant impact. Levee system improvements do not preclude USIBWC support or implement regional initiatives for river trail projects, habitat improvement, and management of natural resources within the floodway. 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.

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

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Date



**Draft Supplemental Environmental Assessment:  
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TO THE RIO GRANDE CANALIZATION PROJECT FROM  
VINTON TO CANUTILLO, EL PASO COUNTY, TEXAS  
(CANUTILLO PHASE II)**

*Supplemental to Final Environmental Assessment for  
Flood Control Improvements to the Rio Grande Canalization Project, December 2007*



Prepared By:

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

MAY 16, 2017

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## ACRONYMS AND ABBREVIATIONS

APE	Area of potential effect
BNSF	Burlington Northern Santa Fe Railroad
CFR	Code of Federal Regulations
CEQ	Commission on Environmental Quality
CY	Cubic yard
EA	Environmental Assessment
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FEM	Field Environmental Monitor
FEMA	Federal Emergency Management Agency
MBTA	Migratory Bird Treaty Act
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
RGCP	Rio Grande Canalization Project
ROD	Record of Decision
SEA	Supplemental Environmental Assessment
SHPO	State Historical Preservation Officer
T&E	threatened and endangered
TCEQ	Texas Commission on Environmental Quality
THC	Texas Historical Commission
TPWD	Texas Parks and Wildlife Department
TXDOT	Texas Department of Transportation
U.S.	United States
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USIBWC	International Boundary and Water Commission, United States Section

## **SECTION 1 PURPOSE OF AND NEED FOR ACTION**

### **1.1 BACKGROUND OF THE RIO GRANDE CANALIZATION PROJECT**

The Rio Grande Canalization Project (RGCP) was authorized by the Act of June 4, 1936, 49 Stat. 1463, Public Law No. 648 to facilitate compliance with the Convention concluded with Mexico on May 21, 1906, (TS 455), providing for the equitable division of waters of the Rio Grande, and to properly regulate and control the water supply for use in the two countries. The Act authorized the International Boundary and Water Commission, United States Section (USIBWC) to construct, operate, and maintain the project in accordance with the plan in the Engineering Report of December 14, 1935.

The RGCP consists of a narrow river corridor that extends 105.4 miles along the Rio Grande, from below Percha Dam in Sierra County, New Mexico to American Dam in El Paso, Texas (Figure 1-1). A levee system for flood control extends 57 miles over the west side and 74 miles over the east side of the Rio Grande (USIBWC 2004b).

### **1.2 PREVIOUS STUDIES FOR FLOOD CONTROL IMPROVEMENTS**

In 1999, the USIBWC identified the need to make improvements to the flood control features of the RGCP while at the same time implementing environmental enhancements. The USIBWC published the final *Environmental Impact Statement (EIS) for River Management Alternatives for the Rio Grande Canalization Project* in August 2004 (USIBWC 2004b). The 2004 EIS described the flood control improvements that were identified in coordination with the United States Army Corps of Engineers (USACE), Albuquerque District, in 1996. The Record of Decision (ROD) was signed in June 2009 by USIBWC Commissioner Bill Ruth.

Because the ROD was not yet signed in 2007 when USIBWC was in the initial planning phase for levee improvements, the USIBWC developed an Environmental Assessment for the levee improvement projects in the Canalization Project. In December 2007, the USIBWC published the *Final Environmental Assessment Flood Control Improvements to the Rio Grande Canalization Project* and the associated Finding of No Significant Impact for the preferred alternative. The environmental impacts associated with the proposed flood control improvements described in the 2007 EA are tiered from the 2004 Final EIS. This allowed the USIBWC to meet the Federal Emergency Management Agency (FEMA) requirements for levee certification (44 Code of Federal Regulations (CFR) 65.10). The 2007 EA document assessed the environmental impacts to improving the RGCP levee system by raising and expanding the footprint along approximately 52 miles of east and west levees within the current levee system. The EA analyzed raising the levees between 1 to 4 feet in order to have 3 feet of freeboard during a 100-year flood event as required by FEMA for levee certification.

Between 2007 and 2014, USIBWC completed much of the design work and construction work for the levee improvements, except for areas that were identified as not having levees or insufficient

right of way to implement improvements. As per 40 CFR 1502.20, federal agencies are authorized to tier from existing environmental documents to focus on issues “ripe for decision.” USIBWC addressed one of three major levee gap areas in the July 2014 *Final Supplemental Environmental Assessment: Flood Control Improvements to the Rio Grande Canalization Project in Vado, New Mexico* and the associated Finding of No Significant Impact for the preferred alternative. The Vado, NM stretch did not have an existing levee and had limited right of way since the river encroached onto the Burlington Northern Santa Fe (BNSF) Railroad right of way. The Vado project consisted of realigning just over a quarter-mile of the Rio Grande in order to make space to construct a levee.

The Vinton to Canutillo area is another levee gap area which was mentioned but not analyzed in the 2007 EA. Levee deficiencies in this area have been documented in several studies:

- In 1975, the USIBWC completed a *Report on Improvements Needed for Rio Grande Canalization Project, New Mexico and Texas*, which documented levee deficiencies in the Canutillo area and recommended flood control improvements with a combination of levees and a floodwall (USIBWC 1975).
- USIBWC briefly evaluated environmental impacts to proposed improvements in to the Canutillo to Borderland area, including 1,200 feet of concrete wall, in the 1974 *Environmental Statement: Improvements Needed for Rio Grande Canalization Project, New Mexico and Texas* (USIBWC 1974).
- In 1996, the USACE conducted hydrologic and hydraulic analyses (HEC-2) for the 105-mile RGCP. The report identified levee deficiencies in the Canutillo area and recommended that the USIBWC build 7,500 feet of concrete floodwall on the east side and raise a portion of the west side levee in the Canutillo area to contain the 100-year flood event (USACE 1996).
- In October 2005, the report study *Upper Rio Grande Water Operations Model FLO-2D Model Development Below Caballo Dam (URGWOM)* was prepared for the USIBWC and USACE using FLO-2D Model Development (USACE 2005). The report documented flood control deficiencies on the west bank that USIBWC since addressed with levee raising funded by the 2009 American Recovery and Reinvestment Act; the completed west levee was constructed as Canutillo Phase I. The 2005 report also indicated that, for a 100-year flood event, on the east side, a total of 14,000 feet of the railroad embankment would be either overtopped or encroached. This included 2,500 feet of the railroad embankment located upstream of the Canutillo bridge and 11,500 feet of the railroad embankment downstream of the Canutillo bridge. The remaining east side deficiencies are referred to as Canutillo Phase II.
- In February of 2007, the USIBWC contractor S&B Infrastructure, Ltd. completed the *Development of Alternatives for Canutillo Flood Control Improvements, Rio Grande Canalization Project*, which identified and evaluated two build alternatives, one no-build alternative of property buyout, and the no action alternative (USIBWC 2007a).
- The 2007 report also proposed, but did not analyze, a third build alternative, which was analyzed in the August 2013 *Rehabilitation Improvements for the Rio Grande Canalization Protective Levee System Canutillo Phase II, El Paso County, Texas: 100% Design Documentation Report* by URS Group, Inc. (USIBWC 2013a; USIBWC 2013b). This latter alternative has been developed into the Preferred Alternative in this Supplemental EA.

### **1.3 PROJECT AREA**

The Project Area covered under this Supplemental EA is the 5.7-mile area on the east floodplain of the RGCP from just north of the Vinton Bridge in Vinton, Texas continuing downstream through Canutillo, Texas to Borderland Bridge in El Paso County, Texas. The levee improvements here are referred to as Canutillo Phase II. Maps of the vicinity and project area are shown in Figures 1-1 and 1-2, respectively.

### **1.4 PURPOSE AND NEED**

In the stretch of the Rio Grande in the Project Area, no levee exists along the east bank of the river, and the BNSF railroad embankment is currently serving as the flood containment structure. Levee deficiencies in this area for the design flood have been well documented (USIBWC 1974; USIBWC 1975; USACE 1995; USIBWC 2007; USIBWC 2013b), as discussed in Section 1.2. Current flood control deficiencies not only pose a public safety threat but also prevent FEMA levee accreditation for the National Flood Insurance Program under 44 CFR 65.10.

The 2007 EA briefly discussed the need for flood control improvements in the Canutillo area, and stated that “the USIBWC proposes to construct a new flood control structure approximately 5.8 miles on the east bank of the river beginning at the Borderland Bridge to upstream of the Vinton Bridge. This work is subject to availability of funds.” The 2007 EA did not analyze any specifics of the flood control structure because the projects were still were still being developed.

The USIBWC prepared this Supplemental EA to analyze environmental impacts for flood control improvement alternatives that were not considered in the 2007 EA, principally a floodwall, in the Project Area. The purpose is to construct a flood control structure with the following objectives:

- 1) Eliminate levee deficiencies within the Vinton to Canutillo reach and provide flood protection to withstand the 100-year flood with a minimum of 2 feet freeboard;
- 2) Maintain the design flood capacity of the RGCP; and
- 3) Enable the USIBWC to obtain accreditation of levees by FEMA.

### **1.5 SCOPE OF THE ENVIRONMENTAL REVIEW**

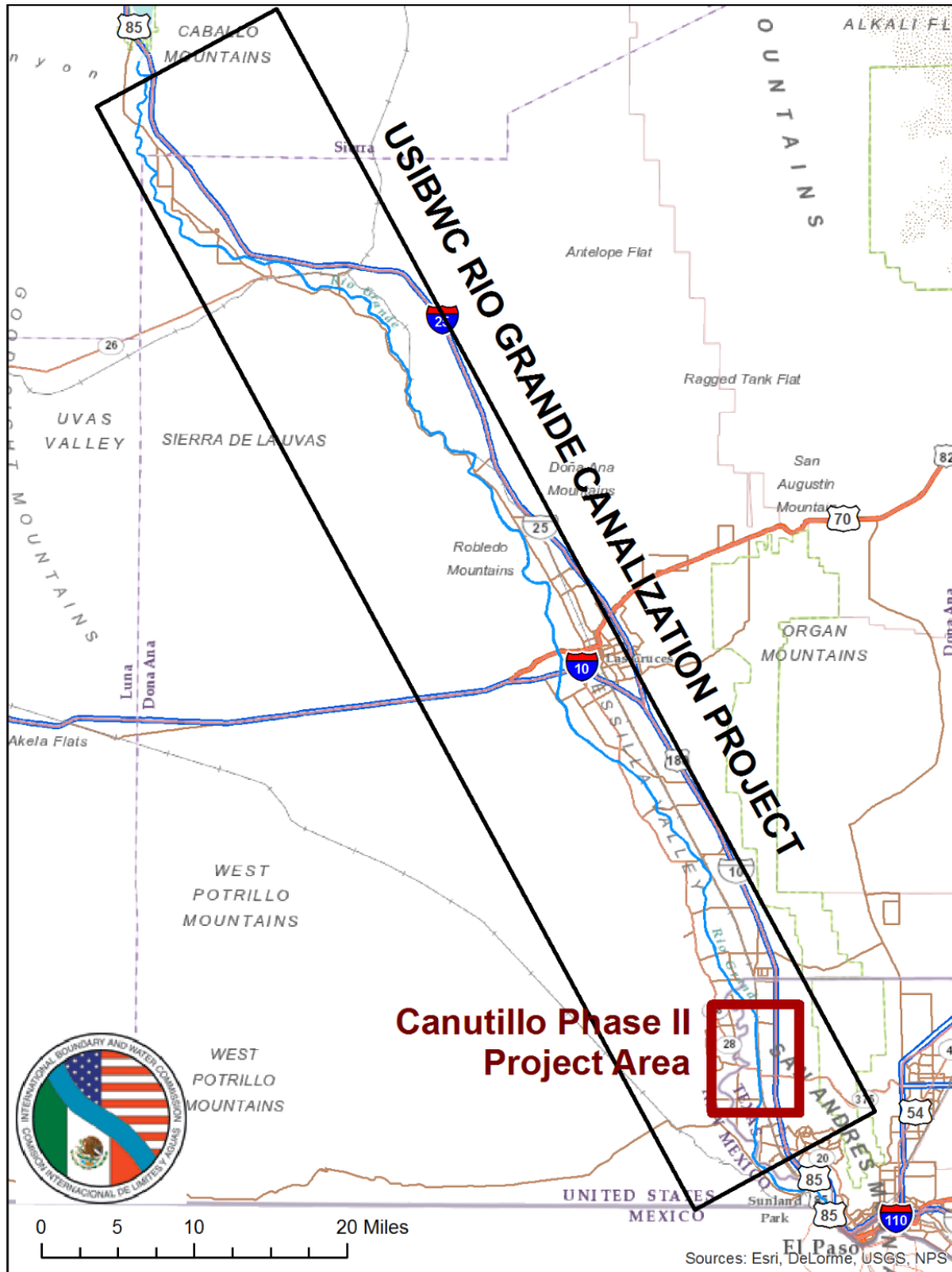
Federal agencies are required to take into consideration the environmental consequences of proposed and alternative actions in the decision-making process under the National Environmental Policy Act (NEPA) of 1969, as amended. The USIBWC regulations for implementing NEPA are specified in *Operational 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.

This Supplemental EA identifies and evaluates the potential environmental consequences that may result from implementation of two alternatives: the Preferred Alternative and the No Action alternative. The following resource areas are analyzed for potential environmental consequences:

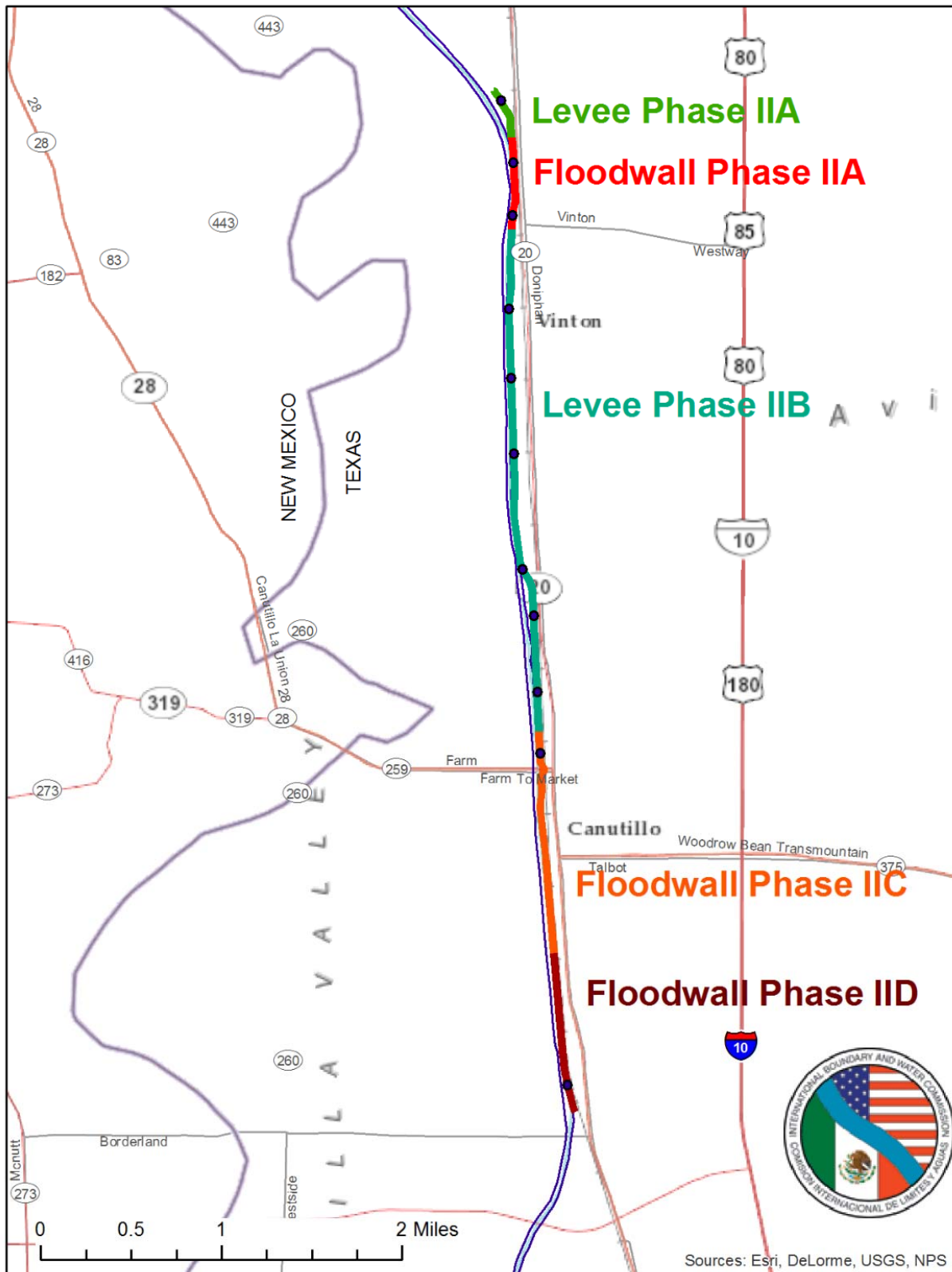
- biological resources (vegetation and habitat, wildlife, and threatened and endangered species),
- cultural resources,
- water resources (flood control, water quality, groundwater, and waters of the U.S.),
- community resources (environmental justice and recreation), and
- environmental health (air quality and noise pollution).

Analyses of environmental resources for the affected environment and environmental consequences are based on a potential impact corridor extending from Vinton to Canutillo, Texas. Analyses of environmental consequences also include potential indirect impacts to the river corridor and the region depending on the resource and its relationship to the preferred alternative and the no action alternative.





**Figure 1-1 Vicinity Map of the Rio Grande Canalization Project and the Canutillo Phase II Project Area**



**Figure 1-2 Project Area**

## SECTION 2 DESCRIPTION OF PROPOSED ALTERNATIVES

### 2.1 SUMMARY OF ALTERNATIVES EVALUATED

This Supplemental EA evaluates two alternatives: the No Action Alternative and the Canutillo Phase II Preferred Alternative. These are discussed below and summarized in Table 2-1.

Name	Flood Control Improvements	Description	Advantages	Disadvantages	Opinion of Probable Cost
No Action	No Action, No Build	<ul style="list-style-type: none"> <li>• Status quo</li> <li>• No construction and no land acquisition</li> </ul>	<ul style="list-style-type: none"> <li>• No construction or acquisition cost</li> </ul>	<ul style="list-style-type: none"> <li>• Possibility of flooding not eliminated</li> <li>• FEMA, insurance providers, and landowners would continue to pay damages on recurring flood events</li> <li>• Levee system can't be accredited (Doesn't meet purpose and need)</li> </ul>	\$27,417,805 <sup>1</sup>
Canutillo Phase II	Construct New Levee and East Floodwall within USIBWC ROW	<ul style="list-style-type: none"> <li>• 3.0 miles of earthen levee</li> <li>• 2.6 miles of concrete floodwall</li> <li>• A flood gate at Canutillo Bridge</li> </ul>	<ul style="list-style-type: none"> <li>• Contains the 100-year flood with 3 feet of freeboard</li> <li>• FEMA, insurance providers, and landowners would not incur flood damages</li> </ul>	<ul style="list-style-type: none"> <li>• Cost</li> <li>• Floodwall within the channel</li> </ul>	\$73,034,866 <sup>2</sup>

1 – cost of flood damages from USIBWC 2007 Opinion of Probable Cost for a single 100-year event.

2 – from USIBWC 2013 Opinion of Probable Cost

### 2.2 CANUTILLO PHASE II PREFERRED ALTERNATIVE

The Canutillo Phase II Preferred Alternative involves the construction of a combination of new levee and new concrete floodwall. Figure 1-2 shows the sections of floodwall and earthen levee.

This alternative would increase flood containment capacity of the RGCP levee system as well as meet the requirements listed in Section 1.3. Construction of the east flood control structure slightly increase water levels of a 100-year flood on the west side, but the west levee would still have 2-3 feet of freeboard.

This alternative requires construction of 3.02 miles of new earthen levee. The earthen levee would include toe drains to prevent against underseepage.

Due to right of way constraints with BNSF, and no existing floodplain in the southern portion of the Project Area, the Preferred Alternative also requires construction of 2.64 miles of a floodwall, which would be a T-wall founded on shallow foundations, with footings into the sand aquifer. The floodwall would have footings as deep as 30 feet. The typical floodwall section and details are shown in Figures 2-1 and 2-2. Detailed drawings and station numbers are located in Appendix A.

For budgeting purposes, the project is broken into four phases as listed in Table 2-2.

Construction Phase	Phase Stations	Floodwall		Levee		Total Phase Length (mi)
		Station	Length (mi)	Station	Length (mi)	
Phase IIA	5000+00.00 to 5039+32.02	5011+96.76 to 5039+32.02	0.51	5000+00.00 to 5011+96.76	0.23	0.74
Phase IIB	5039+32.02 to 5186+51.49	None	0	5039+32.02 to 5186+51.49	2.79	2.79
Phase IIC	5186+51.49 to 5252+23.03	5186+51.49 to 5252+23.03	1.24	None	0	1.24
Phase IID	5252+23.03 to 5299+06.12	5252+23.03 to 5299+06.12	0.89	None	0	0.89
		Total Floodwall	2.64	Total Levee	3.02	5.66

In order to remain within the USIBWC ROW, the new structure would need to be built at least 50 feet away from the existing railroad centerline to ensure the flood control structure is within to the USIBWC ROW. Fifteen-foot wide construction easements would still be required for some sections of the construction, in all four phases. Some arroyos require drainage structures or arroyo grading within the railroad ROW, and Phase IID would have work within 25 feet of the railroad. USIBWC would seek permits from BNSF for this work.

Approximately 2.2 out of the 2.6 total miles of floodwall would be built along the existing bank or within the existing Rio Grande channel. In addition, approximately 0.35 miles of the levee segment would require scour protection along the bank. USIBWC would seek an Individual Permit with the USACE for compliance with Clean Water Act Section 401.

The Preferred Alternative would also construct 10 new drainage structures (Arroyos 2 through 11) and reconstruct one drainage structure (Arroyo 1). Vinton Road Bridge and Canutillo Avenue Bridge are existing roadway structures that would be impacted by levee construction, and Canutillo

Bridge would require a floodgate.

Seepage would emerge from the drain at the landside toe and would then flow either laterally through the drain or on the ground surface to the arroyos. Dewatering is required for the installation of the T-wall footings. Depending on the relative elevations of the water on the riverside and landside, seepage would emerge at either the riverside or landside ends of the proposed culverts through a grid pattern of floor relief valves in the culvert apron slabs.

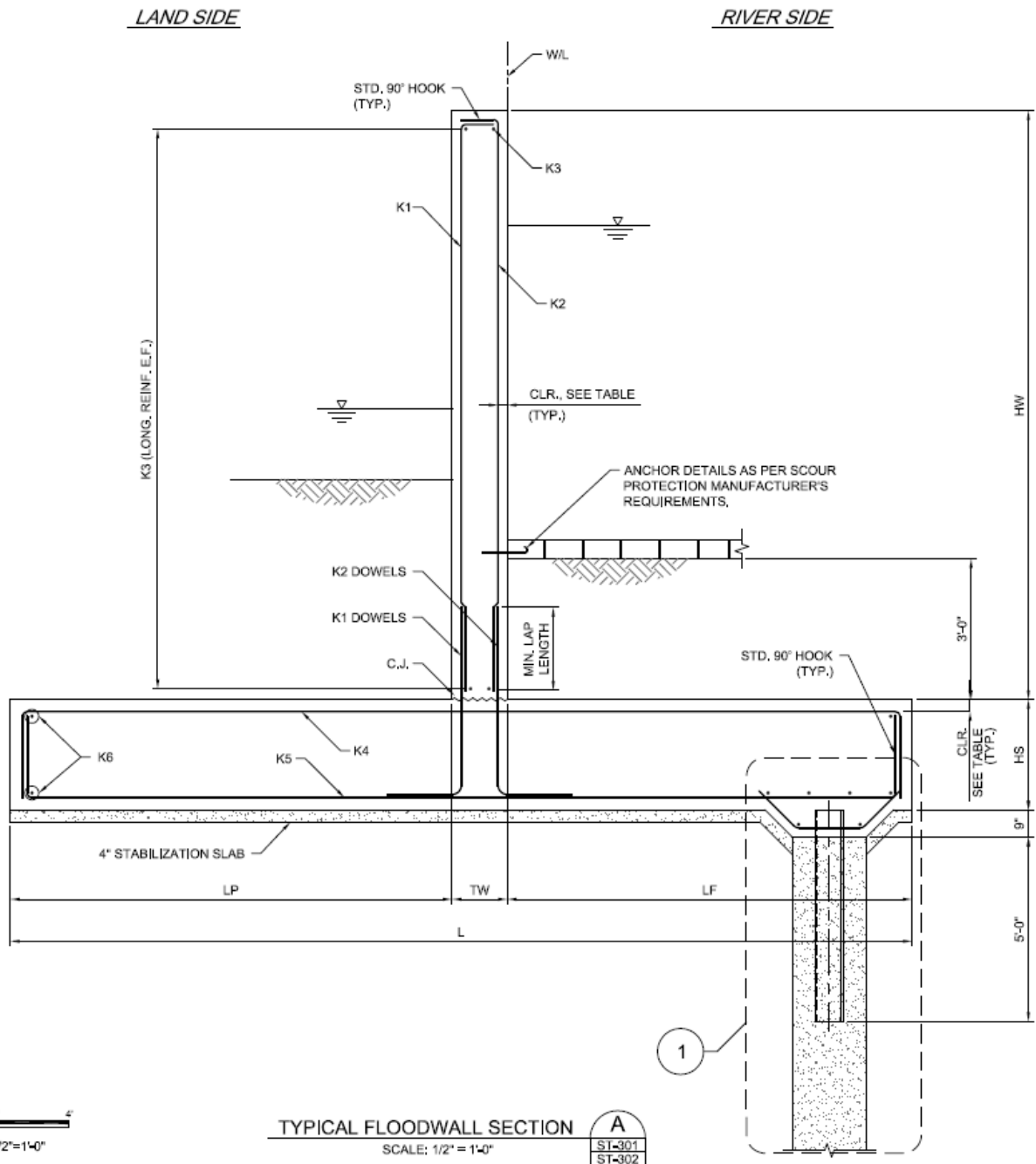
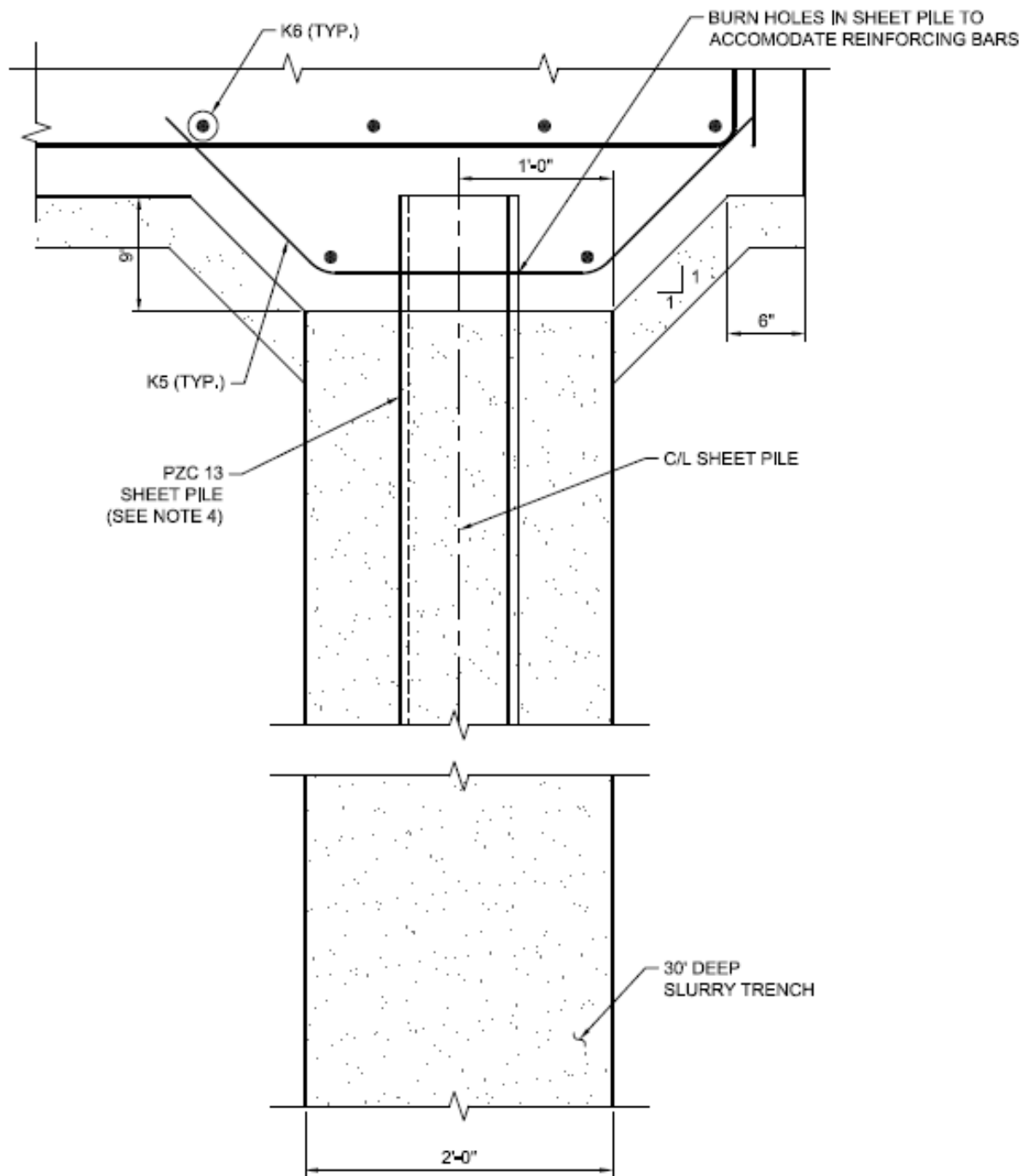


Figure 2-1 – Typical Floodwall Section



DETAIL 1  
 SCALE: 1-1/2" = 1'-0"

**Figure 2-2 – Typical Floodwall Section, Detail**

## **2.3 NO ACTION ALTERNATIVE**

The No Action Alternative would continue the current configuration and existing levee deficiencies. The No Action Alternative does not meet the purpose and need for flood protection and FEMA accreditation. The current flood 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, including the railroad system. The USIBWC would not be able to certify its levee system, and FEMA flood rate insurance maps would show no levee system for the project area. Residents within a non-certified levee system would be required to purchase flood insurance if the home has an existing mortgage. Residents who own their homes would be advised to purchase flood insurance. Potential flooding in the area could impact adjacent areas with adequate levee protection from back flows on the landside.

## **2.4 ALTERNATIVES CONSIDERED BUT NOT ANALYZED**

In 2007, USIBWC considered numerous additional alternatives and evaluated several of them in depth. These alternatives were eliminated because they did not meet the purpose and need or were not considered practicable.

Although FEMA does have criteria for the partial accreditation of a levee system with gaps (Levee Analysis and Mapping Procedure released July 2013) (FEMA 2017), the process has not been spelled out completely. USIBWC has determined it is not practicable to obtain levee certification for alternatives with gaps because the FEMA criteria is not well defined, and the levee gaps have the potential to adversely impact upstream and downstream levees and residents. All alternatives that left levee gaps were eliminated as not practicable and not meeting the purpose and need.

In 2007, the USIBWC evaluated alternatives involving realigning or raising the railroad embankment. However, in 2008, BNSF notified USIBWC that BNSF requires a minimum of 50 feet of right of way each side the centerline of the main track for accessibility and to maintain existing track. BNSF also indicated that the railroad company had plans to expand the track in the same area and denied USIBWC's request to encroach in BNSF right of way for construction. Therefore, USIBWC eliminated all alternatives that required realigning or raising the railroad.

The alternatives and the reasoning for elimination are summarized in Table 2-3.

Table 2-3. Alternatives Considered but not Evaluated in this Supplemental EA					
Flood Control Improvements	Description	Advantages	Disadvantages	Opinion of Probable Cost <sup>1</sup>	Reason Eliminated
Action, No Build; Land Acquisition	<ul style="list-style-type: none"> <li>Acquisition of 1,377 properties owned by different owners</li> </ul>	<ul style="list-style-type: none"> <li>FEMA, insurance providers, and landowners would not incur damages from possible flooding</li> <li>No construction cost</li> </ul>	<ul style="list-style-type: none"> <li>High property buyout cost</li> <li>Condemnation is a possibility for landowners unwilling to sell their properties</li> <li>Difficult and time consuming to acquire and/or condemn properties</li> <li>Acquisition/condemnation process may last many years</li> <li>Railroad is unprotected</li> </ul>	\$71,266,108	Levee gap creates difficulty obtaining levee accreditation
Realign Section of Railroad Profile and Construct East Floodwall	<ul style="list-style-type: none"> <li>Construct 3.2 miles of earthen levee</li> <li>Construct 2.5 miles of concrete floodwall</li> <li>Flood gate at Canutillo Bridge</li> <li>Realign 1.07 miles of railroad track</li> <li>Acquire 6.19 acres of additional right of way</li> </ul>	<ul style="list-style-type: none"> <li>Contains the 100-year flood with 3 feet of freeboard</li> <li>FEMA, insurance providers, and landowners would not incur flood damages</li> <li>Minimizes the length of railroad relocation and downtime to rail line through construction phasing</li> </ul>	<ul style="list-style-type: none"> <li>Encroaches into railroad right-of-way</li> <li>Requires purchase of additional right-of-way</li> <li>Requires coordination with railroad officials</li> </ul>	\$13,641,420	BNSF considers this option unfeasible
Raise Section of Railroad Profile and Construct East Floodwall (Alternative 3B in 2007 Report)	<ul style="list-style-type: none"> <li>Construct 4 miles of earthen levee</li> <li>Construct 1.7 miles of concrete floodwall</li> <li>Flood gates at Canutillo Bridge</li> <li>Raise 1.16 miles of railroad track</li> </ul>	<ul style="list-style-type: none"> <li>Contains the 100-year flood with 3 feet of freeboard</li> <li>FEMA, insurance providers, and landowners will not incur damages from flood events</li> <li>No encroachment</li> </ul>	<ul style="list-style-type: none"> <li>Increased impact to railroad operations during construction due to limited phasing options.</li> <li>Temporary rail required for construction</li> </ul>	\$14,395,234	BNSF considers this option unfeasible



	<ul style="list-style-type: none"> <li>0 acres of additional right of way acquisition</li> </ul>	<ul style="list-style-type: none"> <li>into railroad right-of-way</li> <li>Raises Rail Bridge for Rio Grande Tributary</li> </ul>			
Channel and Levee Improvement S, Realign Section of Railroad Profile and Construct East Floodwall (Alternative 4 in 2007 Report)	<ul style="list-style-type: none"> <li>Construct 3.3 miles of new levee</li> <li>Construct 2.4 miles floodwall</li> <li>Relocate 1.07 miles of railroad track</li> <li>Flood gates at Canutillo Bridge</li> <li>Acquire 6.19 acres of new ROW</li> <li>Dredge 325,000 CY of river</li> </ul>	<ul style="list-style-type: none"> <li>Lowers the 100-yr Water Surface Elevation</li> </ul>	<ul style="list-style-type: none"> <li>A combination of raised levees and channel grading is required to contain the 100-yr flood and maintain 3 feet of freeboard</li> <li>Removal of sediment is temporary and recurring.</li> <li>Maintaining channel grade would have high maintenance cost</li> </ul>	\$16,900,149	BNSF considers this option unfeasible
Deeping and Widening the river channel towards the West	<ul style="list-style-type: none"> <li>Dredge River, unknown quantity</li> </ul>	<ul style="list-style-type: none"> <li>No floodwall</li> </ul>	<ul style="list-style-type: none"> <li>Dredge channel</li> <li>East Levee may be required anyway, which would require fill of up to 60 acres of the channel to move the river</li> <li>Removal of sediment is temporary and recurring.</li> <li>Maintaining channel grade would have high maintenance cost</li> </ul>	Not evaluated	Levee gap creates difficulty obtaining levee accreditation
Relocating the West Levee	<ul style="list-style-type: none"> <li>Acquire property to the west of the existing west levee</li> <li>Reconstruct the west levee in the new location</li> </ul>	<ul style="list-style-type: none"> <li>No floodwall</li> </ul>	<ul style="list-style-type: none"> <li>Acquisition of property</li> <li>East Levee may be required anyway, which would require fill of up to 60 acres of the channel to move river</li> <li>West levee improvements completed around 2010 under American Recovery and Reinvestment Act</li> </ul>	Not evaluated	Levee gap creates difficulty obtaining levee accreditation

1 – from USIBWC 2007

## **2.5 SUMMARY COMPARISON OF ENVIRONMENTAL CONSEQUENCES**

Environmental impacts of the Preferred Alternative and the No Action Alternative are summarized below and in Table 2-4. Environmental impacts are discussed in detail in Section 3.

### **No Action Alternative**

The No Action Alternative would retain the current configuration of the levee system with no impacts to biological and cultural resources, 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, including the railroad system. The USIBWC would not be able to certify its levee system, and FEMA flood rate insurance maps would show no levee system for the project area. Residents within a non-certified levee system would be required to purchase flood insurance if the home has an existing mortgage. Residents who own their homes would be advised to purchase flood insurance.

### **Preferred Alternative**

The primary focus of the Preferred Alternative is to address known or potential flood control deficiencies in the RGCP. The Preferred Alternative would improve the containment capacity by constructing new flood control levee and concrete floodwall. The proposed action would provide improved flood protection along the RGCP. However, the construction of the floodwall would impact natural resources. Vegetation and habitat would be removed, and the river channel would be impacted by the construction of the floodwall on the bank and in the river. Impacts would be offset by proposed mitigation. Additionally, recreation may be impacted, and there could be temporary impacts from noise and air pollution as well as groundwater pumping during construction.

**Table 2-4 Summary of Environmental Resources Affected by the Preferred Alternative and the No Action Alternative**

<b>ENVIRONMENTAL RESOURCE</b>	<b>EFFECTS OF THE PREFERRED ALTERNATIVE</b>	<b>EFFECTS OF NO ACTION ALTERNATIVE</b>	<b>Section in this EA</b>
<b>Biological Resources</b>			
A. Vegetation and Habitat	Adversely Affected but Mitigated	Not Affected	3.1.1
B. Wildlife	Not Significantly Affected	Not Affected	3.1.2
C. Threatened and Endangered Species	Not Significantly Affected	Not Affected	3.1.3
<b>Cultural Resources</b>			
A. Archaeological and Historic Resources	Not Affected	Not Affected	3.2
<b>Water Resources</b>			
A. Flood Control	Affected Positively	Adversely Affected	3.3.1
B. Water Quality	Not Affected	Not Affected	3.3.2
C. Groundwater	Temporarily Affected	Not Affected	3.3.3
D. Waters of the US	Adversely Affected but Mitigated	Not Affected	3.3.4
<b>Community Resources</b>			
A. Environmental Justice	Affected Positively	Adversely affected	3.4.1
B. Recreation	Adversely affected	Not Affected	3.4.2
<b>Environmental Health</b>			
Air Quality and Noise	Temporarily Affected	Not Affected	3.5.1 and 3.5.2

## SECTION 3 CURRENT CONDITIONS AND ENVIRONMENTAL CONSEQUENCES

This section describes resources in the potential area of influence of the project. For more detailed information please refer to the USIBWC 2004 EIS and the 2007 EA. Only those components of the environment that could be affected by the project are discussed. The consequences of the No Action Alternative and the Preferred Alternative are discussed immediately after the description of each resource component. Appendix B shows photos of reconnaissance visits from March 2017 and December 2006.

### 3.1 BIOLOGICAL RESOURCES

#### 3.1.1 Vegetation and Wetlands

The RGCP is located in 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 conditions throughout the study area are 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 et al. 1984). The levee and floodplain grasses are mowed regularly to ensure suitable design flood features and to prevent degradation of the structural integrity of the levees. (USIBWC 2007)

USIBWC has evaluated the existing habitat and wetlands in the project area in several studies (USIBWC 2011c; USIBWC 2014; USIBWC 2017) as well as field surveys in March 2017. There are no wetlands in the project area (USIBWC 2014). Field surveys from 2010 documented 14.3 acres of riparian habitat and 7.11 acres of riparian emergent habitat. There is limited native riparian vegetation, mostly in narrow strips along the river banks, mixed with nonnative saltcedar. Vegetation is characterized by coyote willow (*Salix exigua*) and mule fat (*Baccharis viminea*) in the shrub layer; and threesquare (*Schoenoplectus americanus*) and common reed (*Phragmites australis*) in the herbaceous layer (USIBWC 2014).

#### ***Anticipated Effects: No Action Alternative***

No impacts are anticipated, as there would be no construction.

#### ***Anticipated Effects: Preferred alternative***

No wetlands would be impacted, since no wetlands were identified in the floodplain in this stretch.

Construction of the floodwall, scour protection, and drainage structures would affect 8.6 acres of native riparian vegetation, namely coyote willows mixed with saltcedar. Areas of vegetation impacts are shown in Appendix C. Note: USIBWC considers the riparian and open water impact areas outlined in Appendix C as preliminary. Field verification is pending and the affected acreage may be modified slightly. The areas outlined by

contractors that impact riparian vegetation are likely less because some vegetation was included from what is routinely mowed floodplain.

In the southern portion of the Project Area, vegetation along the bank is routinely removed by the railroad in areas where the bank falls within the railroad ROW. A review of historical aerial imagery shows that the area near the southern portion of the Project Area was cleared in 2015. In these areas the existing vegetation is limited to nonnative saltcedar and some native willows, but it not mature vegetation.

Other areas, such as south of the Canutillo Bridge, the bank is within USIBWC ROW but adjacent to the railroad or in other areas not accessible to equipment, and the vegetation has not been maintained. Large native and nonnative trees occur along this stretch, including mature native velvet ash, Gooddings willows, and coyote willows. There was also a mature invasive elm. See photos in Attachment B from March 2017 reconnaissance visit.

USIBWC would mitigate to offset impacts to the riparian vegetation. See Section 4 on Mitigation for more information.

The floodplain is managed by the USIBWC for flood flow containment by mowing vegetation annually. Therefore, the floodplain does not possess natural habitat, primarily containing invasive species and weeds. The construction of the new levee would have no adverse, significant impacts to the vegetation in the floodplain.

### **3.1.2 Wildlife**

Typical wildlife that could inhabit the RGCP include black-tailed jackrabbit, desert cottontail, cotton rat, ground squirrels, mourning dove, meadowlark, kestrel, red-tail hawk, skunks, burrowing owls, several species of waterfowl, and other non-game animals (USIBWC 2007).

Habitat could potentially be utilized by migratory birds (USIBWC 2004a; USIBWC 2007). The Rio Grande is a major migratory flyway for numerous bird species, particularly waterfowl, shore birds, and those associated with riparian habitats. USIBWC must comply with the Migratory Bird Treaty Act (MBTA). The MBTA protects migratory birds, their parts, nests, and eggs thereof during their nesting season. The U.S. Fish and Wildlife Service (USFWS) has determined that the nesting season for the region including the RGCP area is March 1 through August 31.

#### ***Anticipated Effects: No Action Alternative***

No impacts are anticipated, as there would be no construction.

#### ***Anticipated Effects: Preferred Alternative***

A loss of habitat for wildlife would occur under the Preferred Alternative. The removal of vegetation is limited to 8.6 acres of riparian habitat along the length of the floodwall. As discussed in the previous section, the USIBWC would mitigate for the loss of habitat by replacing lost riparian habitat (See Section 4.1). In addition, whenever possible, work would be planned to occur outside of the bird nesting season. If work continues into the bird breeding season the areas proposed for disturbance would be surveyed and avoidance

measures followed in order to prevent the inadvertent destruction of nests or eggs (See Section 4.2).

### **3.1.3 Threatened and Endangered Species**

USIBWC is required to evaluate impacts to threatened and endangered (T&E) species per the Endangered Species Act of 1973, as amended. The USIBWC has conducted several biological surveys along the RGCP (Parsons 2001; USIBWC 2004a; USIBWC 2011; USIBWC 2017). Of the 14 species listed as endangered, threatened, candidate, proposed, or experimental nonessential population, four have been documented or have the potential to occur in the RGCP and are listed in Table 3-1 (USIBWC 2017). Species classified as "unlikely to occur" were not included in this EA but are described in more detail in the previous studies. Threatened and endangered species potentially occurring in El Paso County, Texas are available in the *Updated Biological Assessment for Long-Term River Management of the Rio Grande Canalization Project*, Appendix B (USIBWC 2017). There is no critical habitat designated in the RGCP for T&E species.

The project area is not identified as a nesting area for the flycatcher, the yellow-billed cuckoo, or any other endangered species. The project area does not provide suitable breeding or migratory habitat for the flycatcher or the cuckoo (USIBWC 2011; USBR 2013c; USIBWC 2017), and no breeding or migrant flycatchers or yellow billed cuckoos have been documented in the project area (USBR 2013a; USBR 2013b; USBR 2017).

#### ***Anticipated Effects: No Action Alternative***

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

#### ***Anticipated Effects: Preferred alternative***

No T&E species within the levee corridor would be adversely affected by the Preferred Alternative. There is no critical habitat designation on the project area, nor is there currently any suitable habitat for T&E species documented.

<b>Common Name (Species Name)</b>	<b>Status</b>	<b>County where listing Applies</b>	<b>Range or Habitat Requirements</b>	<b>Potential for Occurrence in RGCP</b>	<b>Potential timeframe for Occurrence</b>
Southwestern Willow Flycatcher ( <i>Empidonax traillii extimus</i> )	E	Sierra and Doña Ana Counties, El Paso County	Associated with moist riparian areas throughout the year. Documented on some RGCP restoration sites.	Known to occur	Breeding resident during summer; migrates to tropics
Northern Aplomado falcon ( <i>Falco femoralis septentrionalis</i> )	E and ENEP	Sierra and Doña Ana Counties, El Paso County	Documented at Mesilla Valley Bosque State Park in 2010. Associated with open grassland or savannah with scattered trees or shrubs. Experimental population in NM.	Known to occur	Nests spring to summer. Non-migratory
Least tern ( <i>Sterna antillarum</i> )	E	Sierra and Doña Ana Counties	Migratory species occurring in North America during the breeding season, when it is associated with water (e.g. lakes, reservoirs, rivers) Documented in the RGCP including at Mesilla	Known to occur	Possible breeding resident summer
Yellow-billed Cuckoo ( <i>Coccyzus americanus</i> )	T	Sierra and Doña Ana Counties, El Paso County	Western subspecies nests preferentially in large patches of moist cottonwood-willow woodland, where it prefers high canopy closure for nesting. Documented on some proposed RGCP restoration sites	Known to occur	Breeding resident summer

E = Endangered T=Threatened ENEP=Experimental, Non-essential Population

### **3.2 CULTURAL RESOURCES**

The USIBWC has conducted intensive and extensive archeological evaluations for cultural resources in the RGCP, including evaluations for levee construction and habitat restoration projects (USIBWC 2001, USIBWC 2005, USIBWC 2009b, USIBWC 2009c, USIBWC 2011a, USIBWC 2011b). Extensive archaeological and architectural investigations of the RGCP were completed in advance of major RGCP flood control improvements, including proposed new floodwalls and levee construction (USIBWC 2009b, USIBWC 2009c). In areas of high probability of cultural resources, intensive investigations were conducted for site-specific construction areas (USIBWC 2011b). In addition, USIBWC completed cultural resource surveys for lands designated as potential habitat restoration sites (USIBWC 2011a).

An integral part of the National Historic Preservation Act (NRHP) Section 106 process is the delineation of the area within which archaeological and architectural resources would be affected or are likely to be affected. The Area of Potential Effect (APE) as defined by 36 CFR 800.16(d) represents: the geographic area or areas within which an undertaking may directly or indirectly

cause alterations in the character or use of historic properties [*i.e.*, NRHP-eligible resources], if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking.

In this area of investigation, no historic buildings or structures, other than bridges and facilities associated with irrigation facilities, were identified (USIBWC 2001; USIBWC 2009c; USIBWC 2011b). The Elephant Butte Irrigation District (EBID) was listed in the National Register of Historic Places (NRHP) as a Historic District in 1997. The period of significance for the EBID is 1906-1942. The district is listed in the NRHP under Criterion A for its association with agriculture and Criterion C for its engineering and design aspects. EBID's Anthony Drain/East Drain is found in the project area.

The Texas Historic Sites Atlas database and previous USIBWC investigations of the project area were consulted for information about known archaeological sites that occurred in the project area. A review of the database in March 2017 showed there are three sites within or along the proposed area: 41EP6787, 41EP6119, and 41EP5430.

USIBWC received project concurrence letters from the Texas Historical Commission (THC) in March and June of 2009. USIBWC will verify the concurrence because one of the sites was recorded after the concurrence letters were received for USIBWC projects.

***Anticipated Effects: No Action Alternative***

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

***Anticipated Effects: Preferred alternative***

Proposed physical improvements to levee system would occur entirely within the floodplain and river channel. The three sites listed above are within the APE; however, the sites are either not eligible for listing under the NRHP or are outside the USIBWC Right-of-Way (ROW) and outside the limits of construction; therefore, physical impacts to archaeological properties are not anticipated.

The ground disturbance during construction of the floodwall has the potential to unearth any undocumented buried sites or artifacts. USIBWC will follow standard procedure and best management practices to stop construction work if cultural resources are found during construction and conduct cultural investigations.

### **3.3 WATER RESOURCES**

#### **3.3.1 Flood Control**

The RGCP flood control system was designed to provide protection from the 100-year storm event, a storm of large magnitude with a very low probability of occurrence. The flood control levees extend for 57 miles along the west side of the RGCP and 74 miles on the east side, for a combined total of 131 miles. Naturally elevated bluffs and canyon walls contain flood flows along portions of the RGCP that do not have levees (*i.e.* Selden Canyon). The levees range in height and have slopes of about 3H:1V (horizontal to vertical) on the river side and 2.5H:1V on the land side. The levees have a gravel maintenance road along the top. The levees are positioned



on average about 750 to 800 feet apart north of Mesilla Dam and 600 feet apart south of Mesilla Dam. The floodway between the levees is generally level or uniformly sloped toward the channel. The floodway contains mostly grasses, some shrubs, and widely scattered trees. The bank of the channel at the immediate edge of the floodway is typically vegetated with a narrow strip of brush and trees.

Many levees in the RGCP were raised during recent levee reconstruction as per the original EA requirements. Some areas have limited space and USIBWC ROW to construct levees. The east Vado, New Mexico section, for example, required the river to be realigned to the west in order to create sufficient space to build the levee between the railroad and the river. This Vado section was completed in 2016 and USIBWC is working on compensatory mitigation for USACE permitting for dredge and fill of the river.

The Project Area in Canutillo is another area with limited USIBWC ROW to build a levee. A new levee would be built in areas where there is sufficient space in the floodplain, but in other areas a floodwall is required. The BNSF railroad is currently acting as a flood control structure, but the railroad embankment does not meet the flood control requirements for FEMA, nor would it protect against a 100-year flood. See Appendix B for photos of the current system.

***Anticipated Effects: No Action Alternative***

The No Action Alternative would retain the current configuration of the levee and maintain the deficient 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 as well as damage to farmlands located along the river. The risk of flooding would remain elevated for those areas identified by the hydraulic models.

***Anticipated Effects: Preferred Alternative***

Improvements to the levee system would provide reduced risk of flooding to landward areas from the 100-year flood event (also base flood, design flood). The improvements would allow the USIBWC to meet FEMA accreditation requirements. With a FEMA accredited levee, residents on the landward side would not need to purchase flood insurance.

However, construction of the proposed east levee/floodwall will cause minor levee freeboard deficiencies on the west levee (USIBWC 2013b). The west levee freeboard deficiencies may be attributed to hydraulics (less capacity in the Rio Grande due to floodwall/levee being constructed) and/or more refined modeling used with the design. It is uncertain what impact the reduced freeboard will have on levee accreditation for the west levee and local residents. USIBWC will continue to work with FEMA on the accreditation of the west levee.

### **3.3.2 Water Quality**

Water quality in the Texas portion of the RGCP is defined by Texas by designated uses of the river. As required by the Clean Water Act Section 303b, states regularly submit to the U.S. Environmental Protection Agency (USEPA) a surface water quality report that provides a summary for each reach, designated use attainment, and identifies any potential water quality concerns.

For the project area, the RGCP segment is contained entirely within Rio Grande Segment 2314, *Rio Grande Above International Dam*, from International Dam in El Paso County to the New Mexico State Line in El Paso County (TCEQ 2015). The designated uses of the segment are high aquatic life, primary contact recreation, fish consumption, and public water supply (TCEQ 2015). According to Texas' most recent monitoring data evaluation, this section is impaired for bacteria and has a screening concern for high levels of chlorophyll-a (TCEQ 2015).

***Anticipated Effects: No Action Alternative***

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

***Anticipated Effects: Preferred alternative***

Construction in the Rio Grande channel would occur outside of irrigation season when there is little or no water in the river channel. Avoidance measures and best management practices would be implemented to avoid impacts to water quality. Implementation of BMP's would reduce or eliminate erosion and downstream sedimentation and the consequential effects to water quality. Construction would follow stormwater protection permits and water quality certification requirements issued by TCEQ.

### **3.3.3 Groundwater**

The Project Area is located in the Mesilla Basin. The chemical quality of the water in the shallower part of the aquifer is influenced by the quality of the water in the Rio Grande. The depth of fresh water varies in from 150 feet to as much as 1,400 feet below land surface. The water in the shallower part of the aquifer is generally more mineralized than that in the deeper part. The aquifer receives recharge by infiltration of runoff around the basin margins, and from seepage from the Rio Grande, ephemeral streams, canals, and excess irrigation water. (USIBWC 2014).

USIBWC has installed a series of groundwater monitoring wells throughout the RGCP floodplain on USIBWC habitat restoration sites. USIBWC monitoring data from 2013 to 2017 from wells in Vinton just north of the Project Area indicate shallow groundwater levels vary from approximately 3 feet to 14 feet below the surface.

The Project Area is directly east of El Paso Water's Canutillo wellfield. Many local residents in the local communities of Canutillo, Vinton, Westway, and Anthony rely on groundwater for their domestic water supply, and farmers in both Texas and New Mexico to the west of the Project Area rely on groundwater for farming purposes.

***Anticipated Effects: No Action Alternative***

No impacts are anticipated, as the current levee configuration would be retained and no construction would be done.

***Anticipated Effects: Preferred alternative***

Construction in the Rio Grande channel would likely occur outside of irrigation season when there is little or no water in the river channel. However, dewatering would be required for construction of the floodwall deep footings. Dewatering may impact local groundwater. The contractor would install construction dewatering systems that pre-drain

groundwater to 2 feet below the bottom of excavations during river stages equal to the base flow. Dewatering may impact the local groundwater levels, however, a dewatering plan has not been drafted and the volumes are unknown. The level of impacts is currently not quantifiable, but USIBWC anticipates that any possible impacts to local groundwater levels would recover during the irrigation season.

### **3.3.4 Waters of the United States**

Field surveys in 2010 documented approximately 131 acres of open water habitat in the project area (USIBWC 2014).

The USACE and USEPA regulations (33 CFR 320-331 and 40 CFR 230) authorize the USACE to require compensatory mitigation for unavoidable impacts to wetlands and other jurisdictional waters of the United States.

#### ***Anticipated Effects: No Action Alternative***

No impacts are anticipated, as there would be no construction.

#### ***Anticipated Effects: Preferred alternative***

Impacts analysis indicated that a total of 10.2 acres of open water would be impacted by the construction (see Appendix C).

Impacts would be from the construction of new drainage structures across ephemeral arroyos, scour protection blankets along the banks where the earthen levee is close to the river bank, and from the construction of portions of the floodwall within the river channel.

In some portions of the floodwall, particularly Phase IID the southernmost section of the floodwall, the riverbank is outside of the USIBWC ROW, and the floodwall is proposed to be constructed in the channel starting at the USIBWC ROW, 50 feet from the railroad centerline. The river between the floodwall and the existing bank along the railroad would be backfilled.

Note: As stated in Section 3.1.1, USIBWC considers the riparian and open water impact areas outlined in Appendix C as preliminary. Field verification is pending and the affected acreage may be modified slightly. Open water impacts may be greater than identified in Appendix C because not all the areas of the river requiring backfill between the river and the floodwall were included in the impacts.

Because the proposed Canutillo Phase II Preferred Alternative would impact waters of the U.S., the USIBWC would apply for a Clean Water Act Section 404 permit from USACE. USIBWC would mitigate according to the USACE-approved compensatory mitigation plan, summarized in Section 4.

## 3.4 COMMUNITY RESOURCES

### 3.4.1 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 preferred alternative must be evaluated to determine whether any adverse impacts are predominantly borne by a minority population and/or low-income population; or adverse impacts would be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that would be suffered by the non-minority population and/or non-low income population.

El Paso County has approximately 82 percent Hispanic population based on U.S. Census Bureau data (USCB 2017a). The Canutillo area (Census Tracts 102.21 and 102.16) is 92% Hispanic (USCB 2017b). In addition, the area residents are typically low-income.

#### *Anticipated Effects: No Action Alternative*

Negative adverse impacts are anticipated as the current levee configuration would be retained, and potential for levee overtopping and flooding nearby areas would remain. FEMA would require flood insurance for residents located in flood zones where RGCP levee certification cannot occur. Hispanic populations would be impacted by flood insurance requirements. Future impacts to the railroad maintenance road and levee could occur in the event of large floods or if the river erodes the river bank supporting the railroad.

#### *Anticipated Effects: Preferred alternative*

Positive impacts are anticipated as a result of the levee rehabilitation effort. The RGCP levee system would meet the design criteria for flood protection, and the USIBWC would be able to certify its levees as required by FEMA. Subsequently, residents would not be required to obtain flood insurance.

However, construction of the east floodwall would cause minor freeboard deficiencies on the west levee. It is uncertain the impact on levee accreditation of the west levee and local residents. The impact on the west levee is less than one foot, and USIBWC anticipates certifying the levee with at least 2 feet of freeboard.

### 3.4.2 Recreation

The USIBWC currently leases about 358 acres of floodway to municipalities, counties, or state government for designated recreational areas. There is currently one recreational lease within the Project Area. The floodplain north of the Vinton Bridge includes the hike and bike trail maintained by El Paso County. The bike trail continues on the west bank south of the Vinton Bridge. There is no recreation lease on the east floodplain south of the Vinton Bridge in the Project Area.

***Anticipated Effects: No Action Alternative***

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

***Anticipated Effects: Preferred alternative***

Construction of the floodwall at Vinton Bridge would impact the hike and bike trail north of the Vinton Bridge in the northern section of the Project Area. USIBWC has modified plans to allow pedestrian traffic in some sections of the floodwall to connect existing recreation trails.

Unofficial recreation south of the Vinton Bridge may also be impacted, as the floodwall would block public access to the river from the east bank along the 2.5 miles of floodwall.

Mitigation areas include the riverbank and floodplain on the west bank that is leased to the County of El Paso, so the lease would have to be modified to incorporate mitigation areas.

### **3.5 ENVIRONMENTAL HEALTH**

Environmental health aspects which are relevant to the discussion of the action include noise pollution and air pollution. Other environmental health aspects include hazardous agents and chemical exposures, which USIBWC has determined insignificant and not discussed further, although BMPs (Section 4.2) are included to ensure there are no issues with hazardous agents.

#### **3.5.1 Noise Pollution**

Noise pollution is defined as unwanted or disturbing sound that either interferes with normal activities such as sleeping, conversation, or disrupts or diminishes one's quality of life (USEPA 2013). Typical outdoor noise sources near the RGCP river corridor include highways, local streets, agriculture equipment, residential and commercial areas (USIBWC 2007).

***Anticipated Effects: No Action Alternative***

No impacts from noise are anticipated, as the No Action Alternative would not require any construction.

***Anticipated Effects: Proposed Alternatives***

The proposed action would increase ambient noise levels during the construction phase. Construction noise would be limited to the immediate construction zone. 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, although nighttime construction could occur if the construction schedule requires it. Nearby residents and local wildlife may be adversely impacted by noise pollution on a temporary basis during construction.

#### **3.5.2 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 RGCP levee transgresses through AQCR 153. 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 (USIBWC 2007). NAAQS standards exist for six criteria pollutants: carbon monoxide, lead, nitrogen dioxide, ozone, particle pollution, and sulfur dioxide.

***Anticipated Effects: No Action Alternative***

No impacts from air pollution are anticipated, as the No Action Alternative would not require any construction.

***Anticipated Effects: Proposed Alternatives***

The proposed action would cause minimal air pollution during the construction phase. Construction air pollution would be limited to hydrocarbon fumes and carbon dioxide from the operation of heavy equipment on a temporary basis during construction. Air pollutants for NAAQS standards are not anticipated, and exhaust from the heavy machinery is not expected to produce sufficient amount of air pollutants to exceed environmental health criteria.

### **3.7 CUMULATIVE IMPACTS**

USIBWC does not anticipate that other projects would have cumulative impacts. Below is a description of ongoing projects in the region.

The Texas Department of Transportation (TXDOT) is planning a Doniphan Drive Corridor Plan (TXDOT 2017). The TxDOT El Paso District is developing a Corridor Plan for a 15-mile section of Doniphan Drive (State Highway 20) between the Texas/New Mexico state line and Racetrack Drive in El Paso. The Plan “will document the community’s future vision in regard to transportation and development for Doniphan Drive beginning in 2016 through 2040. One of the results of this process will be the identification of a set of projects for short-, medium- and long-term implementation. The development of this plan will be accomplished through a process including data collection, public outreach, analysis of current and future transportation needs, and identification of potential projects” (TXDOT 2017).

The USACE is conducting a feasibility study for Northwest El Paso area flood risk management (USACE 2017). The study will incorporate a floodplain management plan and examine structural and non-structural solutions to existing flooding problems in the study area, and will be integrated with USIBWC design analyses.

The USIBWC is participating in a collaborative effort with project stakeholders: EBID, USFWS, Reclamation, and others to implement environmental enhancements that are currently being implemented following the issuance of the 2009 Record of Decision for the RGCP (USIBWC 2009). The ROD requires the agency to implement a variety of approaches to land management, including cessation of mowing in designated areas, elimination of grazing leases throughout the project, and habitat restoration activities such as salt cedar extraction, chemical treatment of salt cedar, installation of groundwater monitoring wells, possible construction of irrigation infrastructure, planting of native trees, channel maintenance, and possible construction of

sediment control infrastructure. The 2009 ROD also required the USIBWC to prepare an updated River Management Plan for the RGCP. The River Management Plan was finalized in December of 2016.

Further upstream of the project area, the USIBWC re-aligned a portion of the Rio Grande in Vado, NM in 2016 in order to construct an east levee where the river was abutting the railroad. USIBWC received an Individual Permit from the USACE for this project, including on-site and off-site mitigation.

Further downstream, one additional project to finalize the rehabilitation of the RGCP levee system is under consideration. The areas in the Courchesne-NeMexas Reach, which extends from Mexico-Texas border at American Dam in El Paso, Texas upstream through the New Mexico-Texas Border at Courchesne Bridge to the Country Club area in Doña Ana County, NM. Those levee reaches include proposed floodwalls, new levees, and planned improvements of existing levees. These areas also have levee design concerns that will require different alternatives to solve the engineering challenges in those areas.

The City of Sunland Park, along with cooperating organizations, is proposing to continue construction of approximate 3.75-miles of pedestrian and bicycle trail along the east side of the Rio Grande from Country Club Bridge to the end of the existing trail about 0.75 miles upstream of Sunland Park Bridge. The proposed project requires the use of USIBWC property and a license or permit would be required from the USIBWC. The project is currently in the developmental stages and specific engineering designs/profiles have not been submitted for review by the USIBWC.

The New Mexico State Parks has expressed interest in implementing a proposed trail alignment of the Rio Grande Trail System. This work would focus on the southern part of the state from Belen downstream to the Texas state line. New Mexico State Parks would also establish a coordinating council comprised of land managers and stakeholders. Local work groups would be convened to develop criteria for trails. Generally, the Rio Grande trail concept is a multi-use trail for hiking and biking and equestrian when feasible. Width and trail materials would vary. Multi-use trails could use natural surfaces for equestrian, and an adjoining but separate more stable surface for other users. If the proposed project requires the use of USIBWC property, a license or permit would be required from the USIBWC. USIBWC is unaware of the current status of this project.

In January 2017, the Bureau of Reclamation finalized a Record of Decision on the Continued Implementation of the 2008 Operating Agreement for the Rio Grande Project, New Mexico and Texas (USBR 2017a). This maintains the status quo operation of the Rio Grande Project from Elephant Butte Dam downstream to American Dam.

### **3.8 UNAVOIDABLE ADVERSE IMPACTS, AND IRRETRIEVABLE COMMITMENTS OF RESOURCES**

A commitment of resources is irreversible when its direct or indirect impacts limit the future availability of a resource. An irretrievable commitment refers to the use of consumption or resources that is neither renewable nor recoverable for later use by future generations. The commitment of resources refers primarily to the use of nonrenewable resources such as fossil fuels, water, labor, and electricity.

The Preferred Alternative would use fuels during construction and construction materials such as concrete and steel. The floodwall sections would alter the river bank with concrete structures. Unavoidable adverse impacts include the minimal noise and air quality pollution that would be generated during the construction of the Preferred Alternative. In addition, the public who previously used the river areas for recreation would have limited opportunities in floodwall areas; approximately 2.64 miles of river bank access would be limited.



## SECTION 4 MITIGATION MEASURES

The preferred alternative would cause adverse environmental impacts in that the river channel and riparian habitat would be affected. To mitigate the environmental impacts, the USIBWC will:

1. Implement a Mitigation Plan in accordance with USACE. The mitigation plan is described in Section 4.1.
2. Implement best management practices (BMPs) during construction to minimize impacts to natural resources. BMPs are described in Section 4.2.

### 4.1 MITIGATION PLAN

The construction of the floodwall will have unavoidable impacts to riparian vegetation and jurisdictional waters of the United States. The USACE and USEPA regulations (33 CFR 320-331 and 40 CFR 230) authorize the USACE to require compensatory mitigation for unavoidable impacts to wetlands and other jurisdictional waters of the United States. USIBWC will apply for a Clean Water Act Section 404 permit from USACE for this project. The following proposed mitigation plan was prepared in accordance with the Section 404 guidelines as well as 33 CFR Parts 325 and 332, and 40 CFR Part 230.

Furthermore, the Commission on Environmental Quality (CEQ) has provided guidance on the use of mitigation and supports the use of mitigation to lead to a Finding of No Significant Impact (FONSI). Per 40 CFR 1508.20, as described in the CEQ Regulations, agencies can use mitigation to reduce environmental impacts in several ways. Mitigation includes:

- Avoiding an impact by not taking a certain action or parts of an action;
- Minimizing an impact by limiting the degree or magnitude of the action and its implementation;
- Rectifying an impact by repairing, rehabilitating, or restoring the affected environment;
- Reducing or eliminating an impact over time, through preservation and maintenance operations during the life of the action; and
- Compensating for an impact by replacing or providing substitute resources or environments.

The USIBWC proposes to mitigate for the total loss of 8.6 acre of riparian habitat and 10 acres of channel fill in the project area by restoring the affected environment and enhancing 35.22 acres of area along the riverbank, except along the floodwall or where armoring of the bank is necessary to prevent future erosion.

USIBWC proposes to establish an onsite riparian area along the western riverbank similar to that present today. The proposed area will include approximately a 35-foot swath of riparian zones along 14,500 linear feet on the east bank and 30,000 linear feet on the west bank of planted and recruited riparian-zone vegetation on a 3:1 slope along the river bank, resulting in approximately 35.22 acres of habitat (Figures 4-1a and 4-1b).

Mitigation will include:

- Removal of exotic species in mitigation areas before construction begins,
- Harvesting of native vegetation in disturbed areas prior to disturbance,
- Replanting of harvested native vegetation,
- Watering of planted vegetation,
- Establishment of a No Mow Zone,
- Modification of existing leases to incorporate the mitigation area,
- Implementation of a nonnative and invasive species control plan, and
- Implementation of BMPs during construction (see Section 4.2).

Mitigation will begin prior to the construction of the floodwall. USIBWC will remove exotic vegetation, namely saltcedar, in the mitigation areas. Saltcedar debris will be hauled away, burned or mulched on site.

Existing native willow trees on the impacted areas will be harvested prior to construction and replanted on the mitigation sites. The mature willow trees lining the river channel will be harvested, stockpiled in water if necessary, and replanted along the mitigation sites. Species for harvesting will be coyote willows, Goodding's willows (also called black willows), and cottonwood trees, as well as available native shrubs such as three leaf sumac, New Mexico olive, desert willow, false indigo, and baccharus/seep willow. Harvesting will preferably be done by taking the entire root ball using an excavator or similar machinery, but poles may also be harvested. Native trees will be planted at mitigation areas at a density of approximately 425 poles per acre; therefore, approximately 15,000 willow poles will be planted. Poles will be planted near the bank in clustered areas where soil conditions are suitable, along the entire length of the mitigation area. Patches of existing native plants will be left undisturbed. Approximately 500 shrubs will be planted at the mitigation areas.

Construction will likely be scheduled to occur in the dry season (non-irrigation season) from October to March. Construction and mitigation contractors will be required to share schedules, so that trees can be scheduled to be harvested prior to the beginning of the construction. They will be immediately replanted at the mitigation areas, or stored in water for a limited time prior to planting.

USIBWC will establish a No-Mow Zone along thirty-five feet of the river bank to allow the river's edge and embankment to recruit mesic and wetland vegetation similar to that present today including three square, coyote willow, mule fat, acacia, and other species. This vegetation will naturally recruit and establish on the near-shore embankment.

Mitigation operations will be performed in accordance with guidance as published in the USDA New Mexico Natural Resources Conservation Service and the New Mexico Association of Conservation Districts guide entitled, "*A Guide for Planning Riparian Treatments in New Mexico*" (USDA-NRCS 2007). USIBWC Contractors will apply certain restoration techniques to increase the percent cover of the plantings. Such techniques may include planting several poles per hole to increase survival rate and density, as well as lopping off the top of the poles at the ground level at random and scattered holes to promote leafout from the base of the pole in order

to increase density and percent cover.

At all mitigation sites, USIBWC Contractors will also be required to water the planted poles with water trucks at least once in the first season after planting but prior to irrigation releases in order to promote root growth and plant vigor.

In addition, USIBWC will initiate a nonnative and invasive species control plan including herbicide spraying, cutting, and pulling as necessary on a biannual basis before and after the rainy season. Particular species among others to be controlled include salt cedar and common reed.

This mitigation plan accommodates environmental conditions in the river including low and highly variable rainfall, controlled and intermittent river flows, and vegetation cover that is usually controlled by land management practices of the USIBWC, including mowing and cutting. This onsite mitigation plan, using both plantings of harvested vegetation and natural recruitment of vegetation, will establish vegetative cover similar to that present but with more diversity of cover and structure over a larger area. In addition, this plan will provide as much as practicable onsite mitigation through the enhancement of a riparian habitat zone on the river.

The mitigation sites will be 30 to 35 feet wide as this has been determined to promote endangered flycatcher activity such as migration and foraging. These sites will enhance the much larger flycatcher habitat and breeding zones being developed for the 2009 ROD. Mitigation work conducted under this SEA will complement upstream restoration work under the ROD (USIBWC 2009a).

Some of the mitigation areas are on floodplain that is under lease to the County of El Paso for a recreation park. This lease will be amended to incorporate mitigated areas.

Monitoring will occur for at least five years. The monitoring will consist of replacing dead pole plantings or harvested trees with new willow pole plantings, invasive species will be removed when identified, and USIBWC floodplain maintenance will avoid the mitigated riparian zones.

Details of the proposed monitoring plan are subject to change after public notice and concurrence from USACE for permitting requirements.

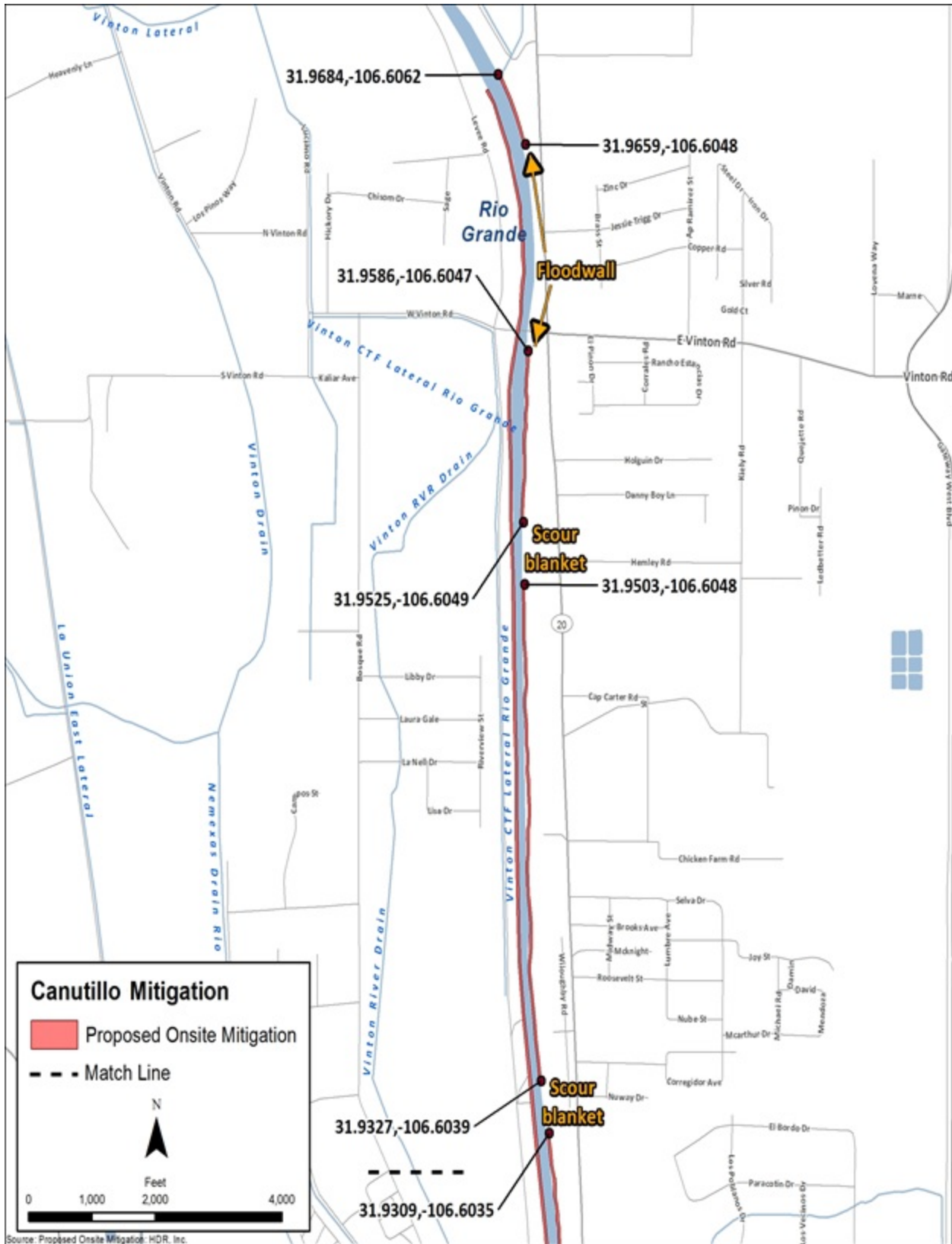


Figure 4-1a Canutillo Mitigation, north end, map 1 of 2

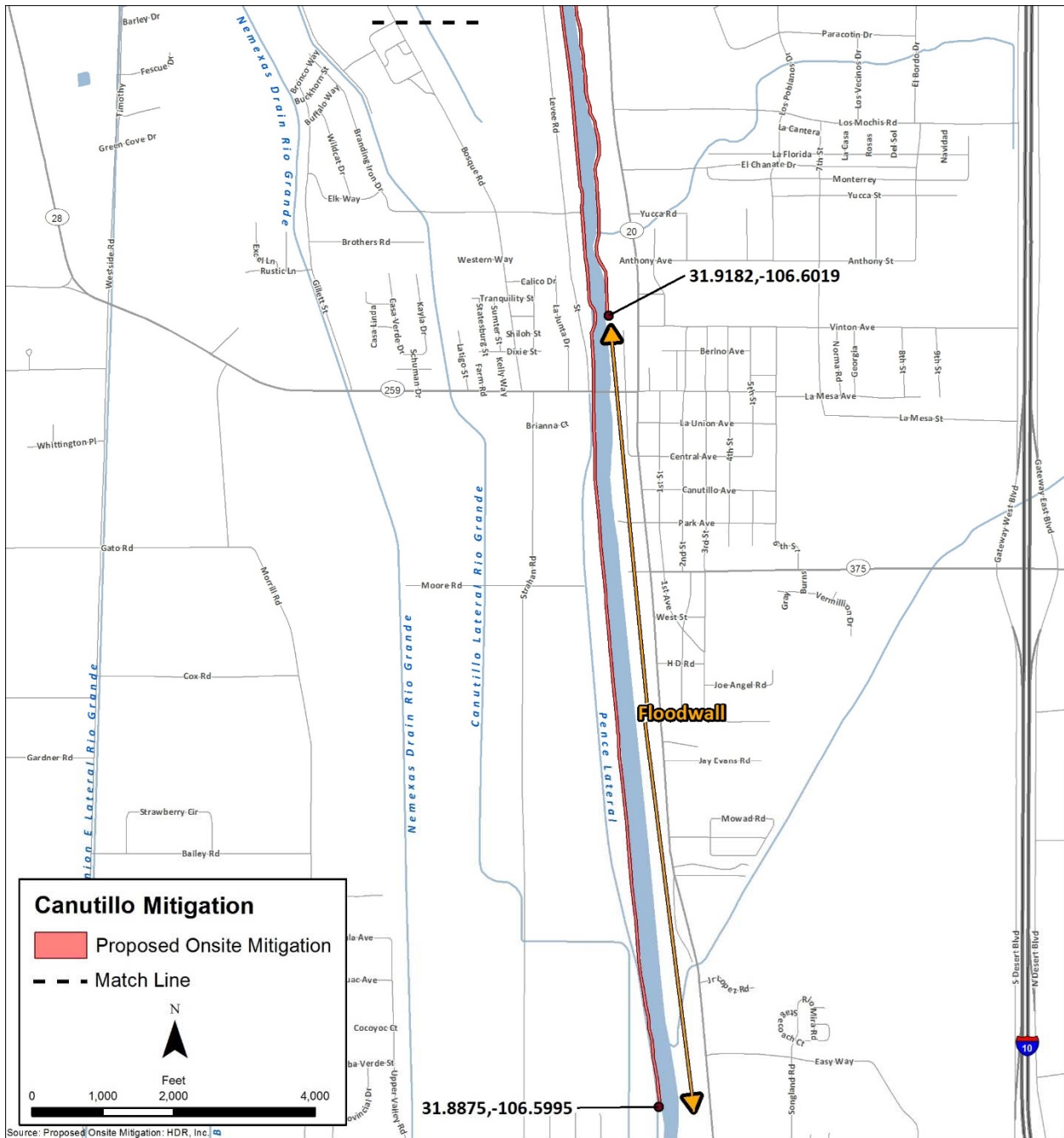


Figure 4-1b Canutillo Mitigation, south end, map 2 of 2

## 4.2 Best Management Practices

In addition to mitigation of the affected environment, USIBWC will also require that the construction contractor follow certain BMPs before, during, and after construction. These BMPs are documented in USIBWC’s River Management Plan and will be incorporated into USIBWC’s Mitigation Plan. The following practices will be specified in the construction statement of work, as appropriate.

#### **4.2.1 MITIGATION DURING PROJECT PLANNING AND CONSTRUCTION**

- Construction work will be done during the dry season. In recent years, the river channel only has water during irrigation season, which is typically around April through August. The river channel contains primarily sands and possesses little aquatic or biological resources. Conducting activities during the dry season lessens the impacts of erosion and water quality.
- A Field Environmental Monitor (FEM) will be on-site to ensure all environmental regulations are being followed.
- Contractor will use disturbed areas or areas that will be used later in the construction period for staging, parking, and equipment storage.
- Contractor will incorporate BMPs relating to project area delineation, water sources, waste management, and site restoration into project planning and implementation for road construction and maintenance.
- Contractor will clearly demarcate the perimeter of all areas to be disturbed during construction or maintenance activities using flagging or temporary construction fence, and no disturbance outside that perimeter will be authorized.
- Water storage on the project area will be in on-ground containers located on upland areas, not in washes.

#### **4.2.1 SOILS**

- Vehicular traffic associated with the construction activities and operational support activities will remain on established roads to the maximum extent practicable.
- Areas with highly erodible soils will be given special consideration when designing the proposed project to ensure incorporation of various erosion control techniques, such as straw bales, silt fencing, aggregate materials, wetting compounds, and rehabilitation, where possible, to decrease erosion during construction.
- All materials such as gravel or topsoil will be obtained from existing developed or previously used sources to include the existing soils within the floodplain and not from undisturbed areas adjacent to the project area. Deliveries of materials and equipment will be limited to the designated disturbance area.
- Site rehabilitation will include re-vegetating.

#### **4.2.2 VEGETATION**

- Levees and floodplain will be reseeded post construction with USIBWC- and NRCS-approved native grass seed.
- Reseeding will be with materials free of non-native plant seeds and other plant parts. Since natural materials cannot be certified as completely weed-free, if such materials are used, there will be follow-up monitoring to document establishment of non-native plants, and appropriate control measures will be implemented during the monitoring period.
- Construction will be designed such that riparian habitat is disturbed last and that plant species are immediately transplanted.
- Contractor will document any establishment of non-native plants and will implement appropriate control measures as well as control noxious weeds using USEPA-approved herbicides.

#### **4.2.3 WILDLIFE RESOURCES**

- To the extent possible, work will not be performed during migratory bird breeding season. If work must be done during bird breeding season, bird surveys will be performed to ensure no nests or birds are affected during construction. Avoidance measures will be used if nests are found.

#### **4.2.4 CULTURAL RESOURCES**

- A field environmental monitor and the USIBWC archaeologist will monitor the construction site to determine if any cultural resources are encountered during ground disturbing activity.
- If any cultural resources are discovered during construction, all work will immediately stop and the USIBWC will contact the SHPO and implement recovery works to preserve the cultural resources prior to construction resuming in the project area.

#### **4.2.5 WATER RESOURCES**

- Standard construction procedures will be implemented to minimize potential for erosion and sedimentation during construction.
- All work would cease during heavy rains and would not resume until conditions are suitable for the movement of equipment and material.
- The refueling of machinery will be completed following accepted guidelines, and all vehicles will have drip pans during storage to contain minor spills and drips. No refueling or storage will take place within 100 feet of drainages or the river channel.
- Construction contractor will be required to develop and follow a Stormwater Pollution Prevention Plan and obtain appropriate construction stormwater permits.
- Erosion control measures and appropriate BMPs will be implemented before, during, and after construction activities as appropriate.

#### **4.2.6 AIR QUALITY**

- Mitigation measures will be incorporated to ensure that fugitive dust and other air quality constituents emission levels do not rise above the minimum threshold as required per 40 CFR 51.853(b)(1).
- Dust suppression methods will minimize airborne particulate matter created during construction activities.
- Construction equipment and vehicles will be required to be maintained in good operating condition to minimize exhaust emissions.

#### **4.2.7 NOISE**

- Applicable Occupational Safety and Health Administration (OSHA) regulations and requirements will be followed.
- On-site activities would be restricted to daylight hours to the greatest extent practicable, although nighttime construction could occur if the construction schedule requires it.
- Construction equipment will possess properly working mufflers and would be kept properly tuned to reduce backfires.

#### 4.2.8 TRASH, WASTE, AND HAZARDOUS MATERIALS

- Drip pans underneath equipment, containment zones used when refueling vehicles or equipment, and other measures are to be included.
- Nonhazardous waste materials and other discarded materials, such as construction waste, will be immediately removed from the construction and maintenance sites. This will assist in keeping the project area and surroundings free of litter and will reduce the amount of disturbed area needed for waste storage.
- Disposal of all food-related trash items such as wrappers, cans, bottles, and food scraps will be in closed containers and remove them daily from the project site.
- BMPs will include proper handling, storage, and/or disposal of hazardous and/or regulated materials.
- A construction contractor Spill Prevention, Control and Countermeasure (SPCC) Plan will be developed and implemented at construction and maintenance sites to ensure that any toxic substances are properly handled and that escape into the environment is prevented. All personnel will be briefed on the implementation and responsibilities of this plan.
- Any spill of reportable quantities will be contained immediately within an earthen dike, and the application of an absorbent (e.g., granular, pillow, sock) will be used to absorb and contain the spill. All spills will be reported to the designated USIBWC point of contact for the project. Furthermore, a spill of any petroleum liquids (e.g., fuel) or material listed in 40 CFR 302 Table 302.4 of a reportable quantity must be cleaned up and reported to the appropriate federal and state agencies. All waste oil and solvents will be recycled.
- Solid waste receptacles will be maintained at construction staging areas. Non-hazardous solid waste (trash and waste construction materials) will be collected and deposited in on-site receptacles.
- Solid waste will be collected and disposed of by a local waste disposal contractor.
- All non-recyclable hazardous and regulated wastes will be collected, characterized, labeled, stored, transported, and disposed of in accordance with all applicable federal, state, and local regulations, including proper waste manifesting procedures.
- Disposal of used batteries or other small quantities of hazardous waste will be handled, managed, maintained, stored, and disposed of in accordance with applicable federal and state rules and regulations for the management, storage, and disposal of hazardous materials, hazardous waste and universal waste. Additionally, to the extent practicable, all batteries will be recycled locally.
- Where handling of hazardous and regulated materials does occur, the contractor will collect and store all fuels, waste oils, and solvents in clearly labeled tanks or drums within a secondary containment system that consists of an impervious floor and bermed sidewalls capable of containing the volume of the largest container stored therein.



## SECTION 5 PUBLIC INVOLVEMENT

### 5.1 AGENCY COORDINATION

This section discusses consultation and coordination that will occur during the preparation of this document. This includes contacts made during development of the proposed action, other alternatives considered, and preparation or distribution of the Draft Supplemental EA. Copies of agency coordination letters are presented in Appendix D. Formal and informal coordination will be conducted with the following agencies:

- Texas State Historic Preservation Office (SHPO)
- U.S. Fish and Wildlife Service (USFWS)
- United States Environmental Protection Agency (USEPA), Region 6
- U.S. Army Corps of Engineers (USACE)
- Texas Commission on Environmental Quality (TCEQ)
- Texas Parks and Wildlife (TPWD)

### 5.2 PUBLIC INFORMATION AND REVIEW

In accordance with NEPA, a 30-day review period of the Draft Supplemental EA was provided via a Notice of Availability in the Federal Register, posted on the USIBWC website located at [www.ibwc.gov/EMD/EIS\\_EA\\_Public-comment.html](http://www.ibwc.gov/EMD/EIS_EA_Public-comment.html), and a local mailing (Appendix D).

## SECTION 6 LIST OF PREPARERS

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Elizabeth Verdecchia	USIBWC Natural Resources Specialist	M.A.G. Applied Geography; NEPA Graduate Certificate	17	Preparer
Xochitl Aranda	USIBWC Civil Engineer			Reviewer
Andrea Glover, P.E.	USIBWC Civil Engineer			Reviewer

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