



## International Boundary and Water Commission United States Section

### Rio Grande Flood Control Levees El Paso County, Texas Fact Sheet August 2007

#### BACKGROUND

The U.S. Section of the International Boundary and Water Commission (USIBWC) constructed the Rio Grande Canalization Project in the 1930s and 1940s to ensure delivery of water to Mexico in conformance with the Convention of 1906 and to provide flood protection to adjacent lands in the United States. The Rio Grande Canalization Project covers 106 river miles from Percha Dam, NM to American Dam in El Paso, TX and includes 130 miles of flood control levees in New Mexico and Texas.

Several years ago, the USIBWC identified a need to make major improvements to the flood control features of the Rio Grande Canalization Project while at the same time implementing environmental enhancements. The USIBWC is participating in a collaborative effort with project stakeholders, including the Elephant Butte Irrigation District, World Wildlife Fund, the U.S. Fish and Wildlife Service, the Southwest Environmental Center, and others to develop alternatives for environmental enhancements that would be implemented in conjunction with work on the flood control levees. Implementation of environmental enhancements will be based on the Record of Decision for the Rio Grande Canalization Project Environmental Impact Statement, which is expected to be issued by 2009. All work is subject to the availability of federal appropriations.

Immediately downstream of the Canalization Project is the Rio Grande Rectification Project, which covers 86 river miles along the international boundary from El Paso, TX – Cd. Juarez, Chih. to Fort Quitman, TX. The International Boundary and Water Commission, United States and Mexico (IBWC), constructed the Rectification Project in the 1930s to stabilize the international boundary and provide flood protection for both countries. The Project includes flood control levees in both the United States and Mexico. The USIBWC in August 2007 released a Draft Programmatic Environmental Impact Statement for the Rectification Project and other Rio Grande flood control projects in Texas.

Through Central El Paso-Juarez, the IBWC maintains the Chamizal Project, a 4-mile long segment of the Rio Grande that was relocated and lined in concrete in the 1960s to resolve a longstanding boundary dispute between the United States and Mexico.

#### TERMINOLOGY

- Levee – An elevated earthen berm parallel to the river channel that protects adjacent property from floodwaters.
- Freeboard – A term that reflects how far below the top of the levee the water will reach. FEMA requires freeboard of 3 feet for the 100-year flood event.
- Overtopping – Refers to floodwaters rising above the top of the levee. Where there is levee overtopping, adjacent property would flood.

## **USIBWC STUDIES AND MODELING**

The USIBWC has studied the levee system in El Paso County and has modeled the effect of the 100-year flood event. Based on these studies, the USIBWC has determined potential areas of freeboard encroachment (meaning there would be less than 3 feet between the calculated water surface elevation and the top of the levee) and levee overtopping in the United States as follows:

- Upper Valley and Canutillo Area of El Paso County: Freeboard encroachment for 12 miles and levee overtopping for a total of 2 miles.
- American Dam (near Asarco) to beginning of the concrete-lined Chamizal Channel (near the Paso del Norte Bridge): Freeboard encroachment for 2 miles.
- End of the concrete-lined Chamizal Channel (upstream of Ascarate Park) to below the Ysleta-Zaragoza Bridge: Freeboard encroachment for 7.4 miles
- Below the Ysleta-Zaragoza Bridge to the Hudspeth County line: Freeboard encroachment for 3 miles.

Additional studies are currently underway in the reach from American Dam to Fort Quitman in Hudspeth County, which will provide more accurate data regarding potential freeboard encroachment or levee overtopping in this reach.

## **FEMA MAPPING**

Based on the results of its studies, the USIBWC has informed FEMA that it cannot certify that the Rio Grande levee system in El Paso County will be able to contain the 100-year flood with the required 3 feet of freeboard. Because the USIBWC cannot certify all Rio Grande flood control levees, FEMA has developed draft flood insurance rate maps that reflect areas that could be inundated as if the levee system did not exist at all.

## **USIBWC PLAN TO RAISE LEVEES**

The USIBWC has a plan to raise the Rio Grande flood control levees in El Paso County as follows:

End of the concrete-lined Chamizal Channel (upstream of Ascarate Park) to Ysleta-Zaragoza Bridge

### **COMPLETED**

- Raise levees for 7.4 miles as needed in a 9.2-mile reach by various amounts, from inches in some areas to as much as 3 feet. Construction began May 2007 and completed July 2007. USIBWC intends to certify this segment as meeting FEMA criteria pending installation of levee closures by the City of El Paso and the USIBWC.
- Cost: \$958,757

Paisano Double Gates area near Asarco to start of the concrete-lined Chamizal Channel

### **UNDERWAY**

- Raise levee for 1.1 miles as needed in this 2.08-mile segment
- Work commenced August 2007 with September 2007 completion date.
- Estimated Cost: \$150,000

Install additional gaging stations to monitor flood events

### **UNDERWAY**

- Two gaging stations to be installed at the Bridge of the Americas and the Ysleta-Zaragoza Bridge. Expected completion Fall 2007.
- Estimated Cost: \$25,000.

### Upper Valley and Canutillo Area in El Paso County

- Raise levees by 4 feet for .56 miles near Borderland Bridge.
- Raise levees by 3 feet for a total of .76 miles upstream of Borderland Bridge and downstream of Country Club Bridge.
- Raise levees by 2 feet for a total of 3 miles at various sites in this reach.
- Raise levees by 1 foot for a total of 8.7 miles at various sites in this reach.
- Complete structural repairs of levees.
- Estimated cost: \$6.5 million for levees + \$1 million for structural repairs. Subject to availability of federal appropriations.

### Canutillo Floodwall

- Construct a floodwall for 1.5 miles on the east side of the river at Canutillo.
- Estimated cost: \$13.3 million. Subject to availability of federal appropriations.

## **SEDIMENT AND DREDGING**

The USIBWC has a program to dredge the river to remove sediment at key sites. In the Upper Valley and Canutillo area, proposed work is being evaluated as part of the Canalization Project Environmental Impact Statement and the collaborative process with stakeholders.

### Sediment Removal in the Upper Valley and Canutillo Area of El Paso County

- Remove sediment along 10 river miles.
- Estimated cost: \$20.6 million. Subject to availability of federal appropriations.

### Sediment Removal within the Chamizal Project

#### **UNDERWAY**

- 200,000 cubic yards. Worked started in May 2007.
- Estimated cost: \$1.5 million. Congressman Silvestre Reyes secured \$650,000 for the USIBWC in FY 2007. Sediment is being removed from a 1.2-mile reach through a cooperative effort of the U.S. and Mexican Sections of the Commission.

## **OTHER IMPROVEMENTS**

USIBWC has identified the need for additional Rio Grande infrastructure improvements:

#### **UNDERWAY**

- Replacement of gates on drainage structures, El Paso to Fort Quitman
- Estimated cost: \$500,000

## **COORDINATION WITH MEXICO**

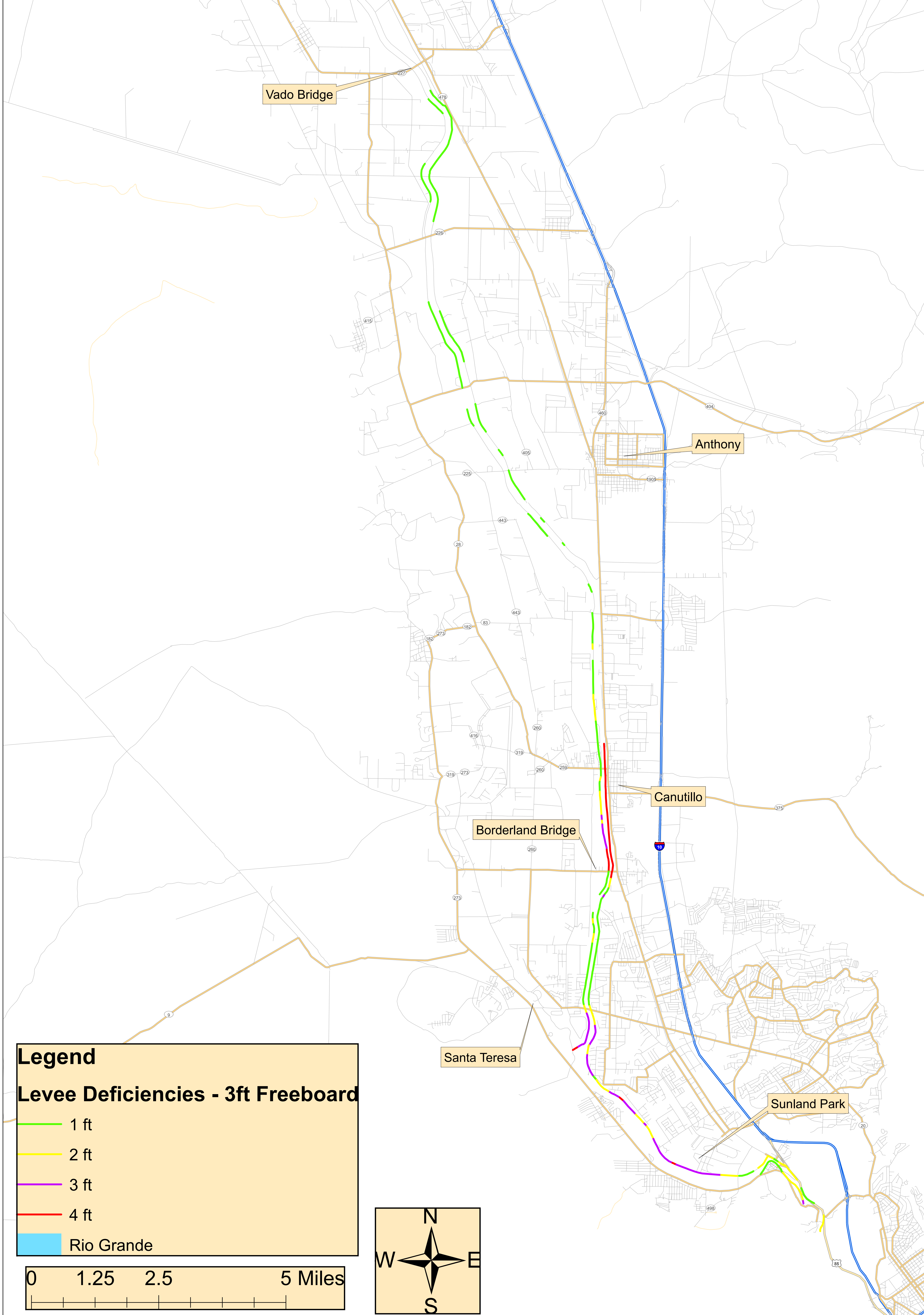
The U.S. Section of the International Boundary and Water Commission has been coordinating with the Mexican Section regarding sediment removal and levee improvements in the international reach of the Rio Grande. The two Sections have developed a coordinated plan for improvements in the reach from American Dam (near Asarco) downstream 91 miles to Ft. Quitman in Hudspeth County.

## **CONTACT INFORMATION**

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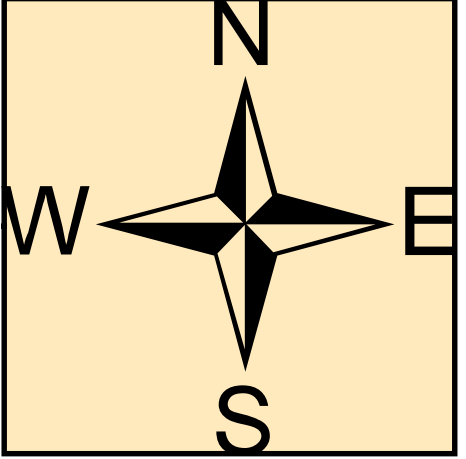
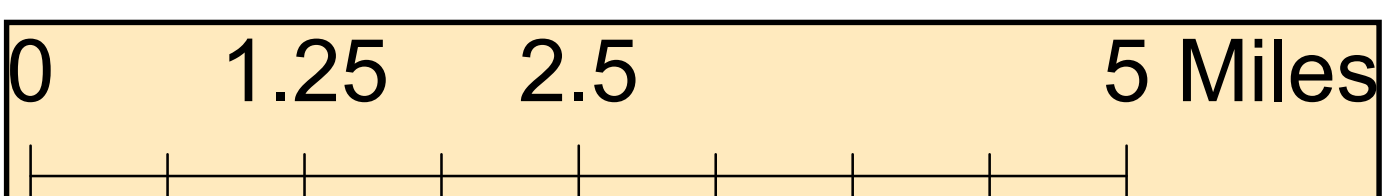
# Canutillo/Upper Valley Segment Canalization Project 100-year Flood Deficiencies FLO-2D Model Data - 3ft Freeboard



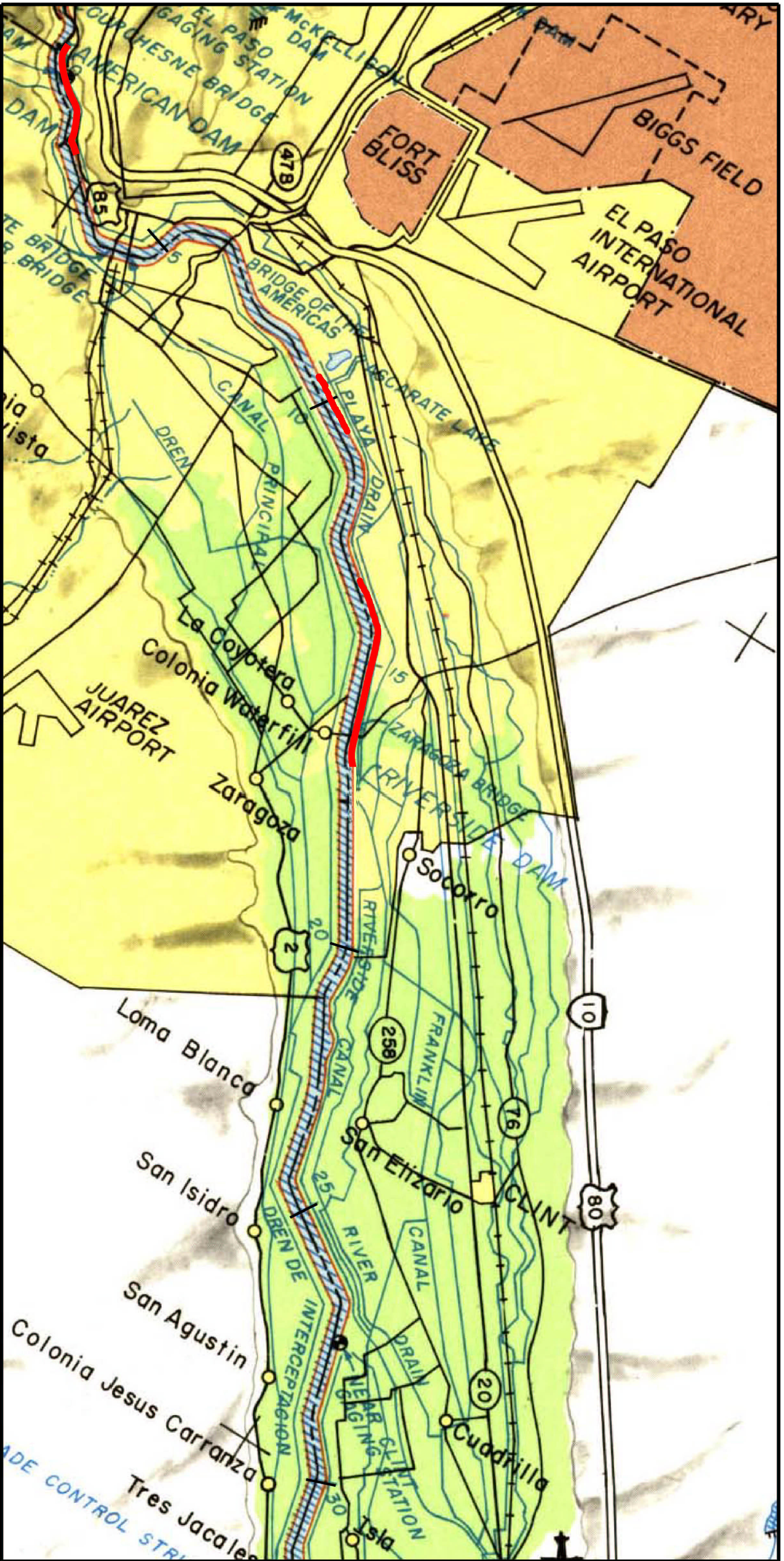
## Legend

### Levee Deficiencies - 3ft Freeboard

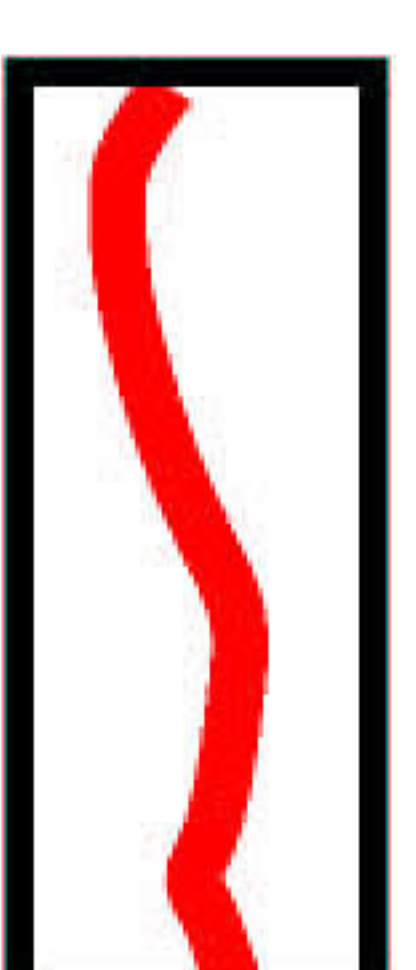
- 1 ft
- 2 ft
- 3 ft
- 4 ft
- Rio Grande





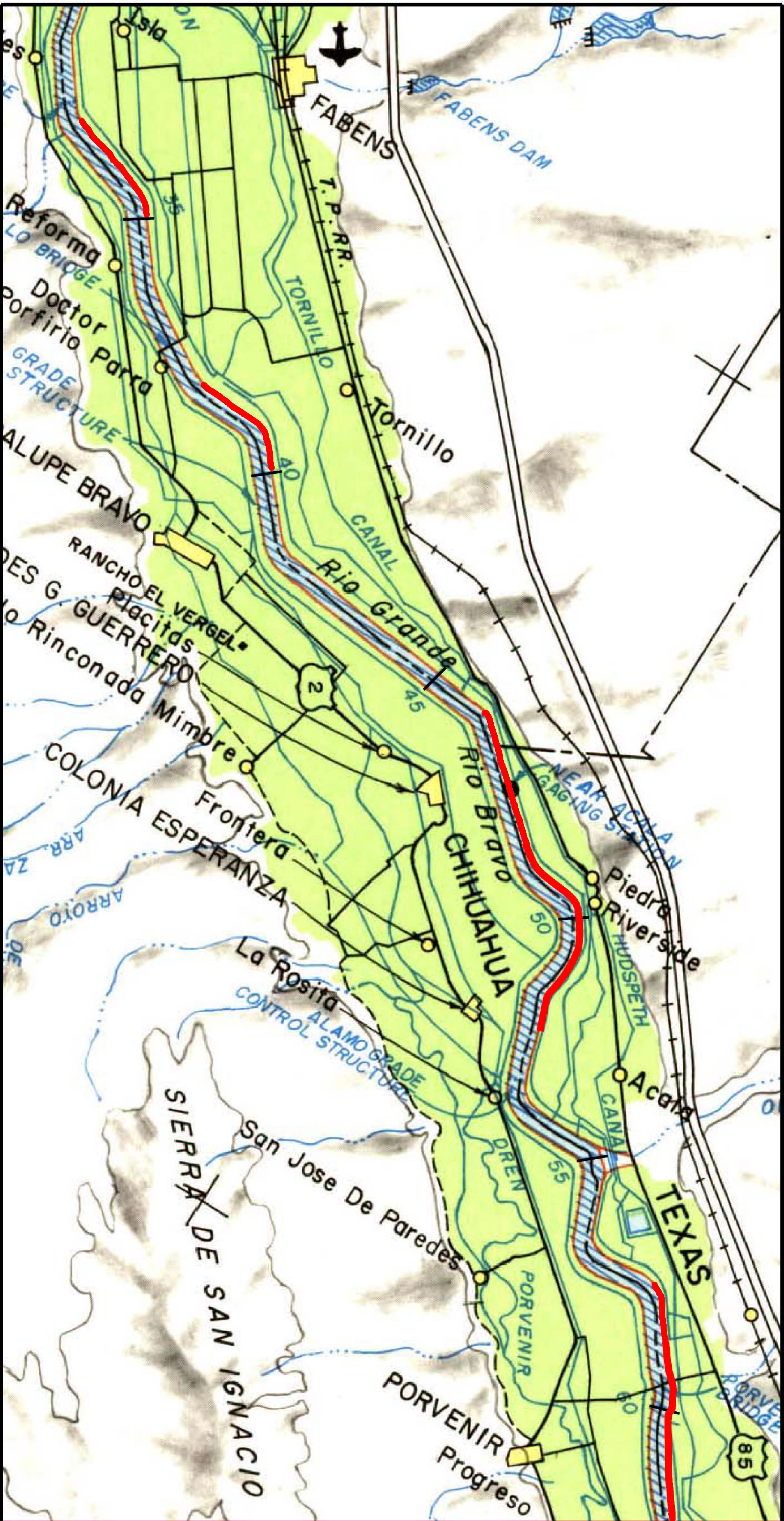


RECTIFICATION

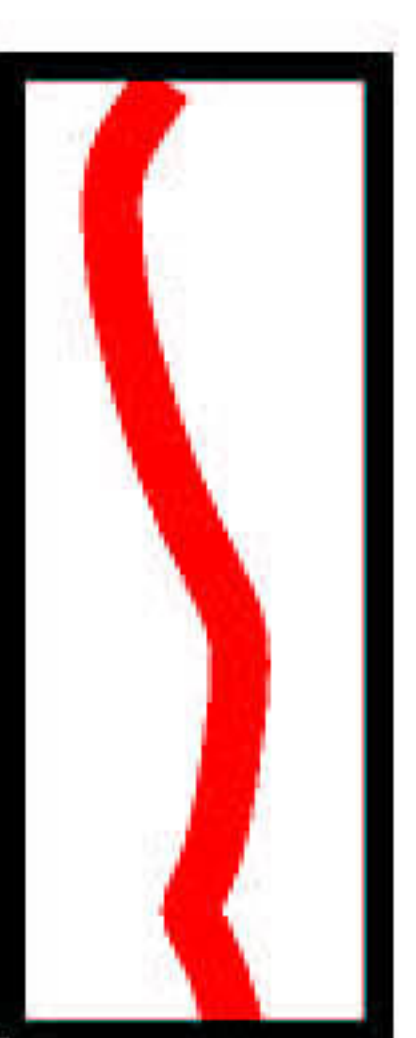


LEVEE WITH LESS THAN 3' FREEBOARD





RECTIFICATION



LEVEE WITH LESS THAN  
3' FREEBOARD