



STATUS UPDATE ON FEMA ACCREDITATION OF RIO GRANDE FLOOD CONTROL LEVEES

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United States Section**

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February 12, 2015



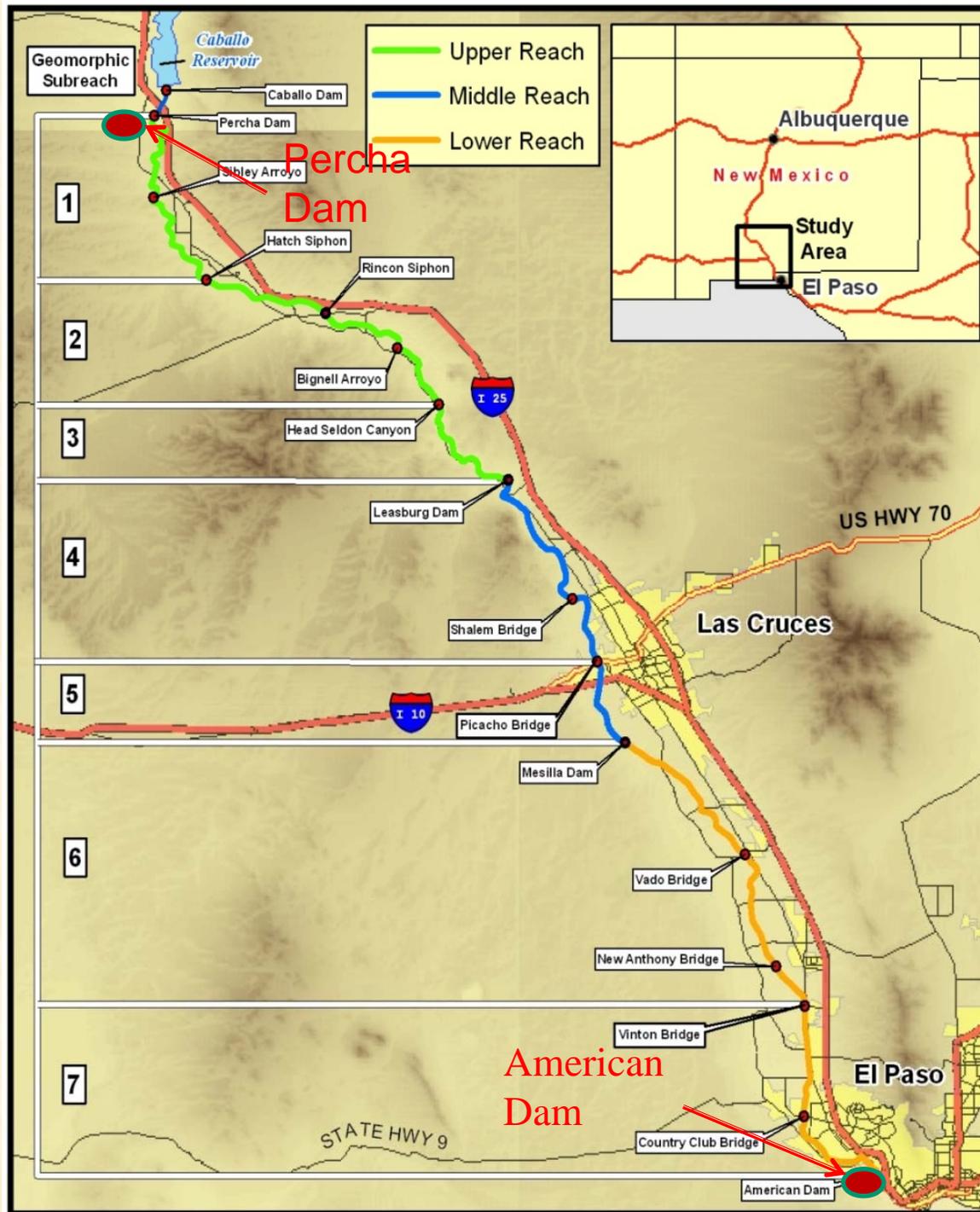
Study Area

Rio Grande Canalization Project (RGCP)

- **From Percha Dam to American Dam**
 - Reach of 105.4 miles

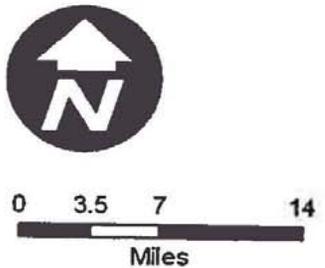
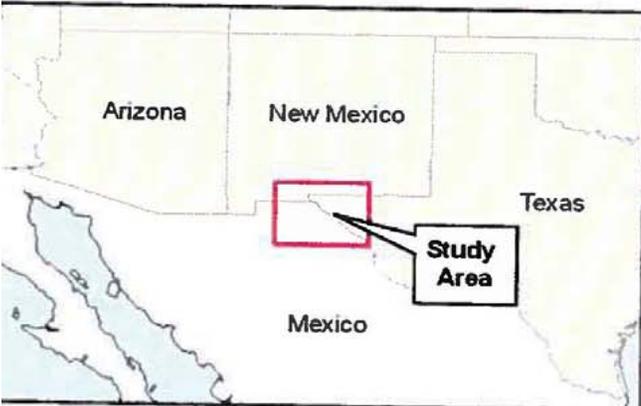
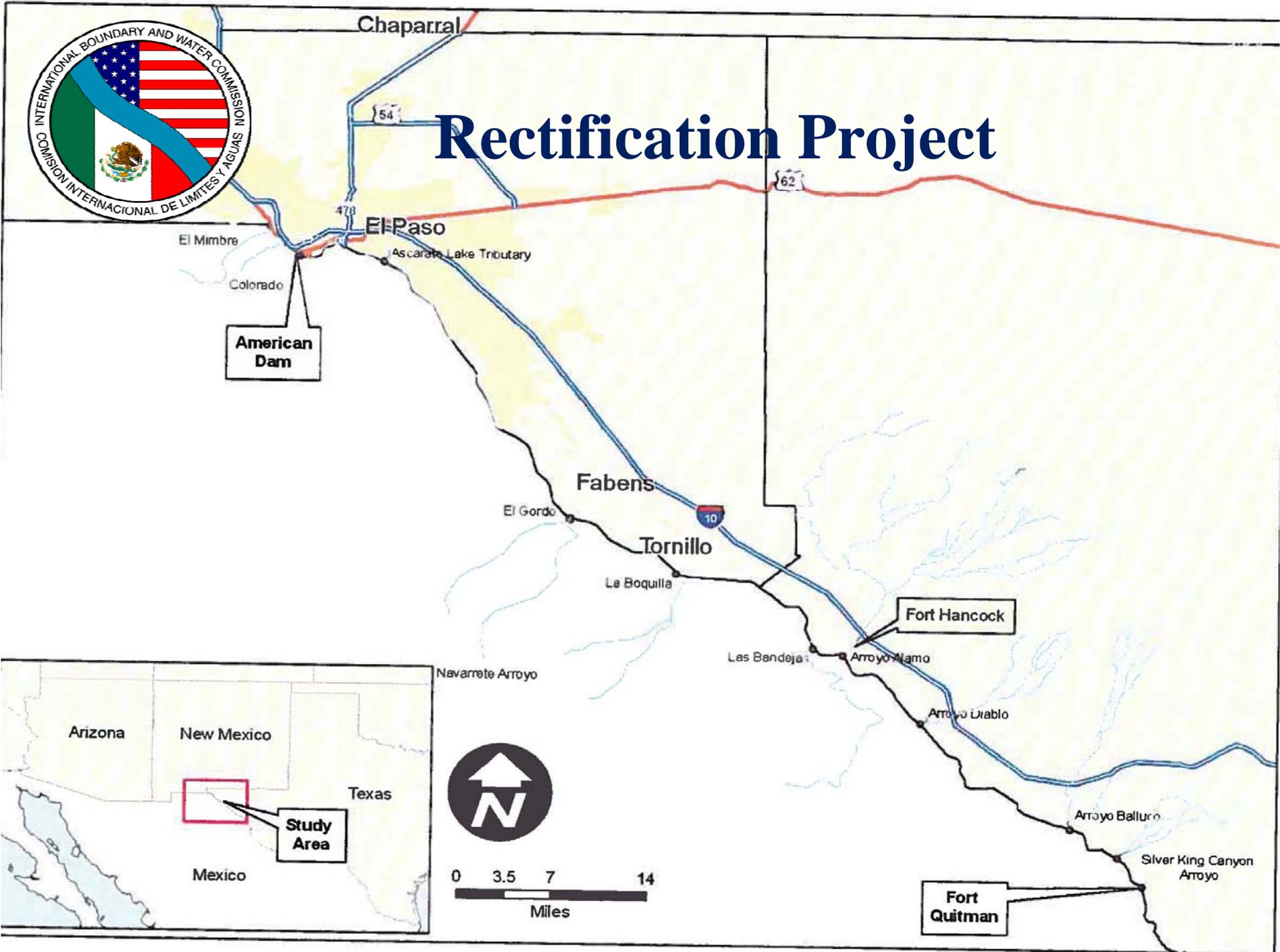
Rectification Reach

- **From American Dam to Little Box Canyon**
 - Reach of 93.6 miles





Rectification Project





Background

- **The USIBWC has rehabilitated several sections of the Rio Grande Canalization Project (RGCP) and Rectification Project levees as part of the American Recovery and Reinvestment Act (2009)**
- **The USIBWC has completed the submittals of several packages representing rehabilitated levee segments to FEMA for levee accreditation.**



FEMA Levee Accreditation

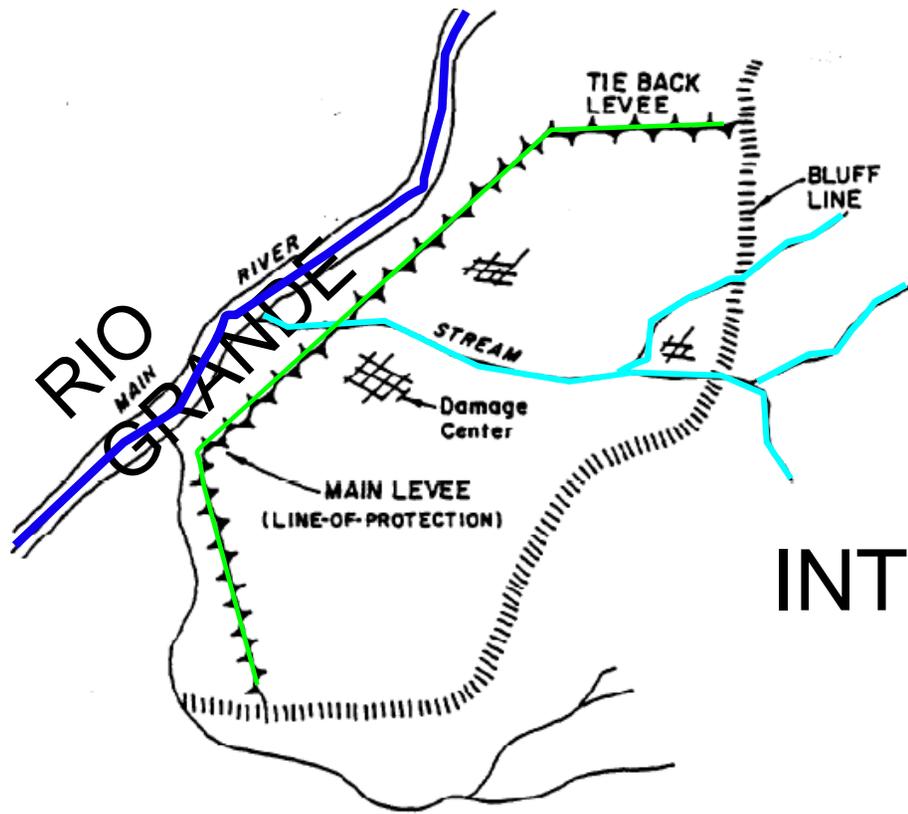
- **A FEMA accredited levee system is a levee system that meets the requirements of Title 44, Chapter 1, Section 65.10 of the Code of Federal Regulations (44 CFR 65.10) ‘Mapping of Areas Protected by Levee Systems’**
- **Such a levee system is shown on the Federal Insurance Rate Map (FIRM) as providing protection from the 1-percent-annual chance flood (100-year flood).**



Requirements for FEMA Levee Accreditation

Must Meet 44 CFR 65.10 Standards. These include:

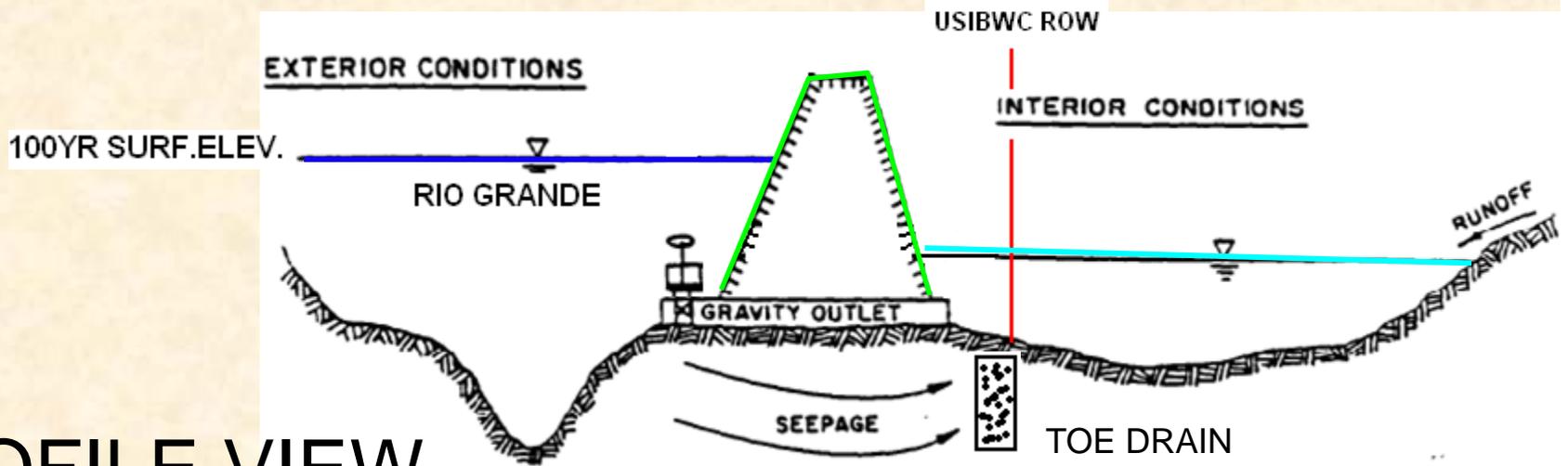
- **Hydraulic Models to Determine Water Surface Elevations (WSEL) and Establish Minimum Top of Levee Elevations (TOLE) – with Freeboard**
- **Geotechnical Analysis**
- **Embankment Stability**
- **Interior Drainage Analysis**
- **Operations & Maintenance (O&M) Plans**



PLAN VIEW



INTERIOR DRAINAGE



PROFILE VIEW



USIBWC Submittals Completed for FEMA Levee Accreditation

Completed as of February 12, 2015

- **Canutillo Phase 1, Doña Ana County**
- **Hatch West Levee, Doña Ana County**
- **Mesilla Phase 1, Doña Ana County**
- **Rectification Project (International Dam to Riverside Weir), El Paso**
- **Draft FEMA review comments received for above and are being addressed.**
- **Mesilla Phase 2 (Being Assembled)**



USIBWC Submittals Completed for FEMA Levee Accreditation

Completed as of February 12, 2015

- **Common Levee**
- **Mission Levee Phase I**
- **Mission Levee Phase II**
- **DHS Levee/Wall Segment O-04A**
- **DHS Levee/Wall Segment O-04C**
- **DHS Levee/Wall Segment O-05**
- **DHS Levee/Wall Segment O-06A**
- **DHS Levee/Wall Segment O-06B & C**



USIBWC Submittals Completed for FEMA Levee Accreditation

- **DHS Levee/Wall Segment O-07**
- **DHS Levee/Wall Segment O-08**
- **DHS Levee/Wall Segment O-09 Phases I**
- **DHS Levee/Wall Segment O-09 Phases II**
- **DHS Levee/Wall Segment O-10**
- **North Banker Floodway Levee**
- **Mission Levee Improvements at Bentsen Palm Drive, UID, Penitas Railroad Crossing**
- **Main Floodway**



USIBWC Submittals Completed for FEMA Levee Accreditation

- **North Floodway – Two Structures 172 & 413**
- **North Floodway Phase 1**



FEMA Draft Review Comments

- **Nature of comments**
 - **Freeboard**
 - **Geotechnical Analysis**
 - **Embankment Stability**
 - **Tie-Ins**
 - **Hydraulic Independence**
 - **Interior Drainage Analysis**
 - **Site Specific O&M Plans**
 - **Closures**



FEMA LAMP Process

**LAMP = Levee Analysis and Mapping Procedure
for Non-Accredited Levees**

- **Takes into account that non-accredited levees may still provide a measure of flood protection.**



Analysis and Mapping Procedures for Non-Accredited Levee Systems

New Approach

July 2013

RiskMAP
Increasing Resilience Together



FEMA LAMP Process

- **Mapping along Non-Accredited Levee Reaches**
- **Mapping Techniques (Natural Valley being considered by FEMA for RGCP and Rectification Reaches)**
- **Interactive stakeholder engagement by FEMA throughout the analysis and mapping process**
- **Interim flood maps with Zone D**
- **Will be replaced with floodplains that fully account for levee protection after levee accreditation**



Natural Valley Procedure

- **Hydraulic modeling without the levee impeding flow.**
- **Levee will remain in ground profile.**
- **Will not prevent water from moving landward.**



Natural Valley Procedure

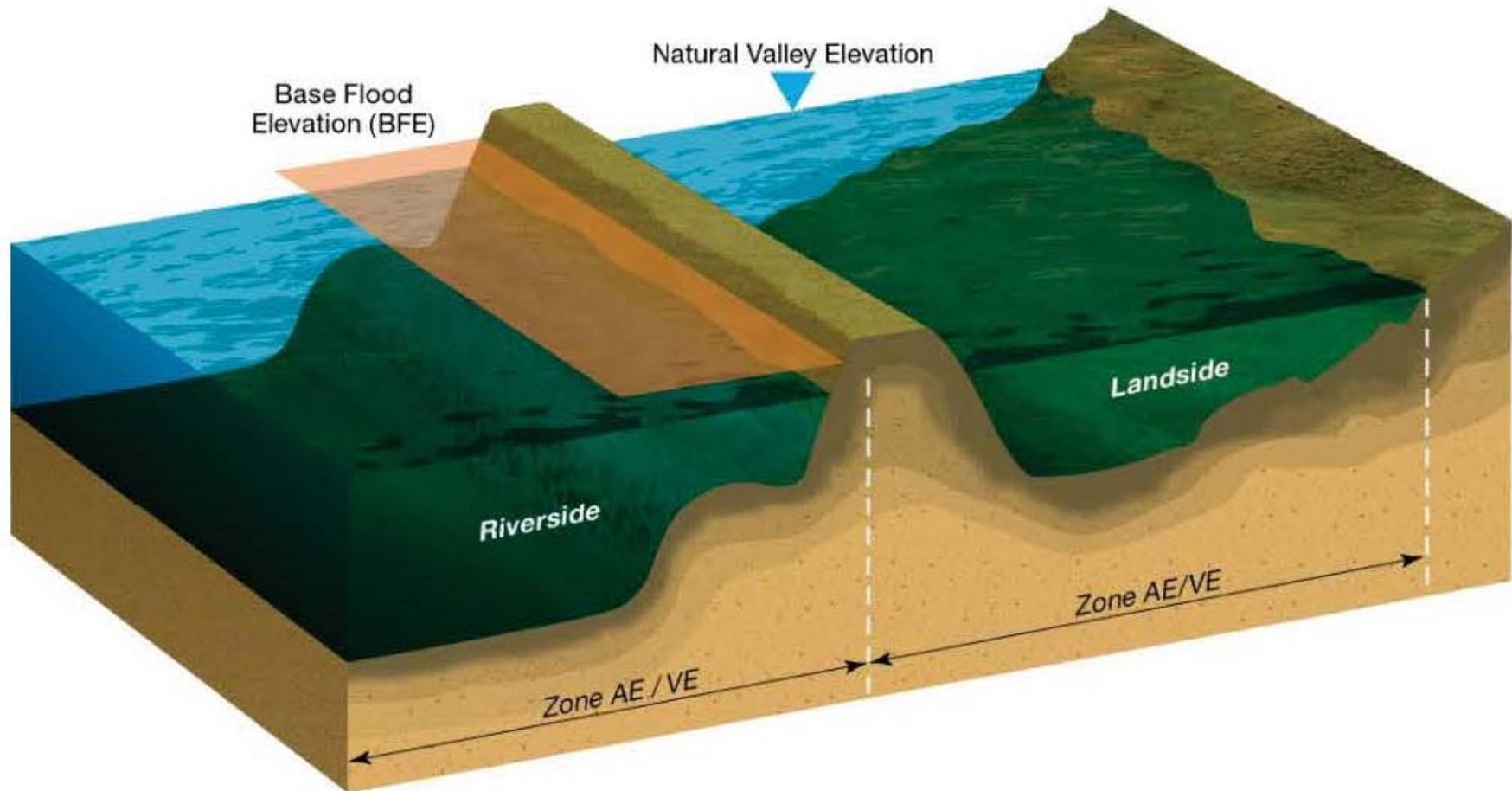


Figure 4-9. Natural Valley Cross Section View



Zone D

- **Defined as “undetermined, but possible, flood hazards”**
- **FEMA will use Zone D designation to map possible 1-percent-annual-chance flood inundation areas landward of non-accredited levee systems**
- **No federally mandated flood insurance purchase requirement in Zone D areas**



Seclusion Method

- **FEMA may seclude levee area to prevent ongoing projects from being stopped.**
- **Levee area will reflect current effective floodplain.**
- **The areas will be revisited when new levee procedures are final based on data and consultation with stakeholders.**



Coordination Meetings with FEMA

- **June 18, 2014: Met with FEMA and discussed procedure to follow ahead**
- **Dec 10, 2014: Attended meeting of FEMA with communities where FEMA explained the LAMP process.**
- **USIBWC continues to coordinate with FEMA**



FY 2015 BUDGET LEVEE IMPROVEMENTS

Construction Budget Approx. \$18 M

Levee Improvements Being Considered: Sunland Park Forensic Geotechnical Investigation

- **Vado East Levee (1.08 miles levee from upstream of Del Rio Drain outlet to Three Saints Lateral / Wasteway No. 19) – about \$ 9 M**
- **Wasteways Phase 1 and Phase 2 – about \$1.5 M**
- **Courchesne NEMEXAS Phase 1 (\$16 M)**
Phase 1 = Phase 1A + Phase 1B
(To address flooding in the Anapra area)



QUESTIONS



INSTALLATION OF SOUND INSULATION PANELS AT COUNTRY CLUB BRIDGE FLOODGATES

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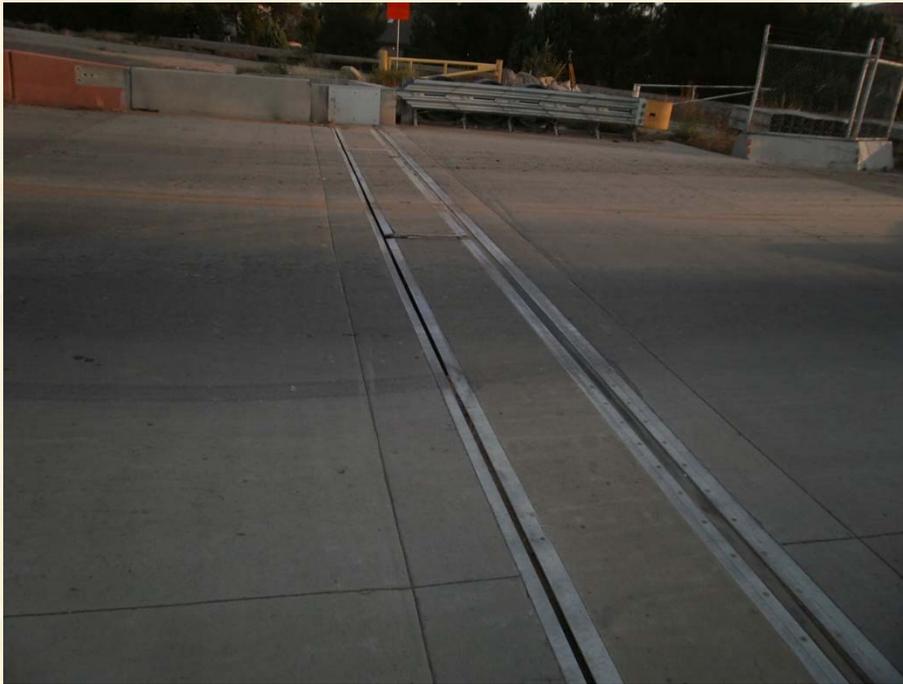


COUNTRY CLUB BRIDGE FLOODGATE

- **Floodgate was installed to meet FEMA minimum top of levee elevation standards for protection against the base flood (1-percent-chance flood)**
- **Residents in the area reported significant noise when the vehicles went over the floodgate**
- **In response these complaints, the USIBWC coordinated with the City of El Paso and installed sound insulation panels (Accoustical Solutions, Inc.) in Nov 2-3, 2014**



Floodgate Structure Prior to Opening



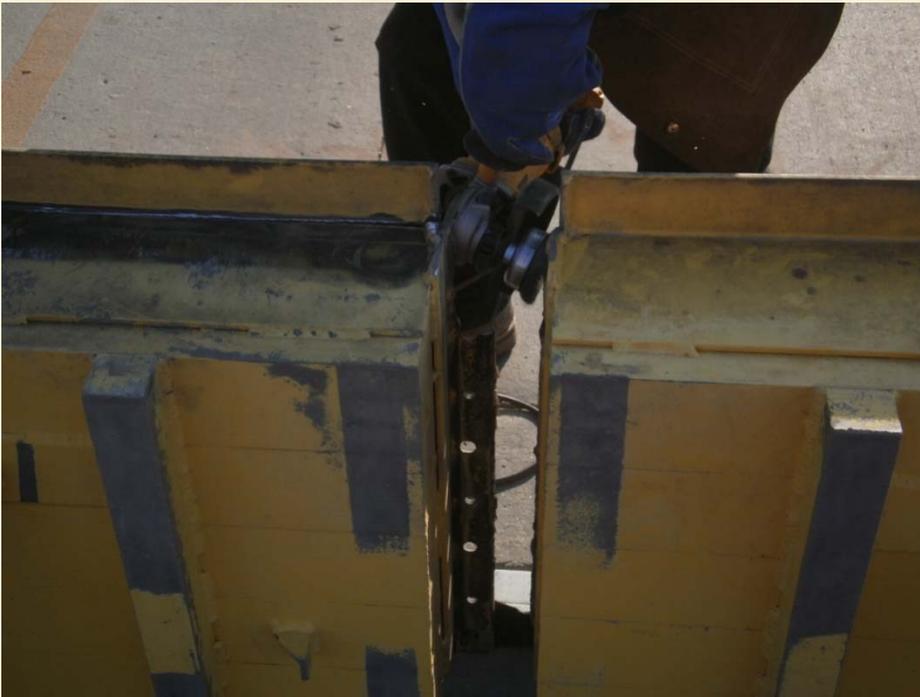
Facing North



**South End of Structure
Jersey Barrier Set on Top**



Impact Areas Inside of Structure that Makes Contact Caused by Traffic



**Impact Areas of Structure. Discolored Areas Where Top
Plate Contacts Bottom Plate**



Sling Attachment Points of Structure Prior to Opening



**Attachment Point
Plate Removal**



**Attachment Point
Plate Cover Removal**



Attaching and Securing Sling



Attaching of Sling to Lift Points Via Shackles



Preparing to Open Structure (Crane)



Opening of Structure



Opening of Left Section



Opening of Left Section



Conditions Inside of Structure



Right Section



Left Section



Removal of Debris/Mud Accumulation Inside of Structure



**Breaking up of
Compacted Soils**



**Shoveling out of Compacted
Soils and Debris**



Removal of Debris/Mud Accumulation Inside of Structure



**Using Compressed Air to
Remove Leftover Loosened
Debris**



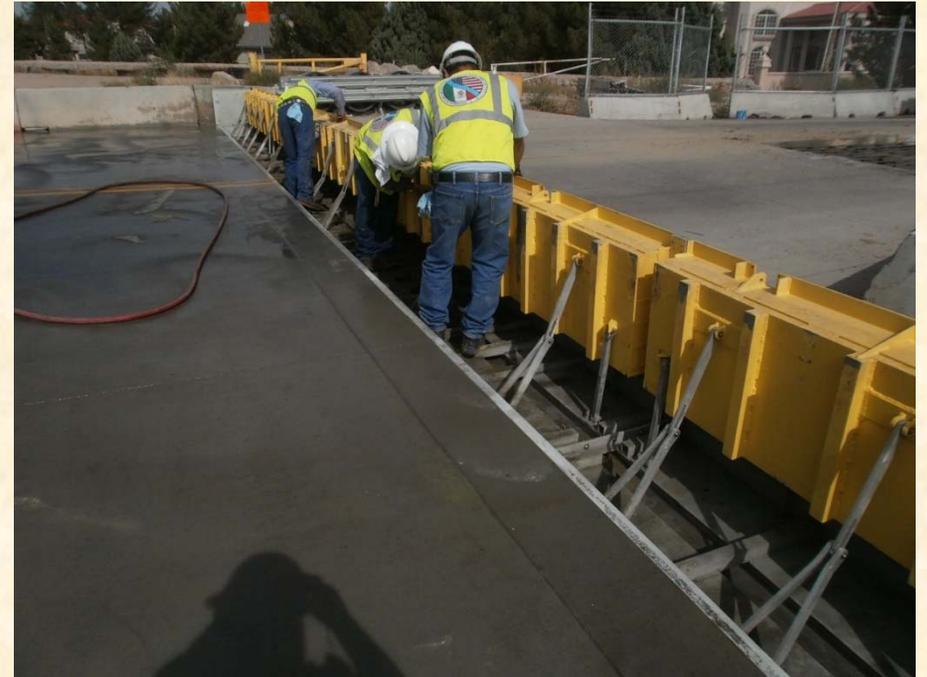
**Pressure Washing of
Structure**



Removal of Debris/Mud Accumulation Inside of Structure



Cleaning Complete



**Wiping Down of Structure
Prior to Installing Tiles**



Installation of Tile Inside of Structure



Installation of Tile



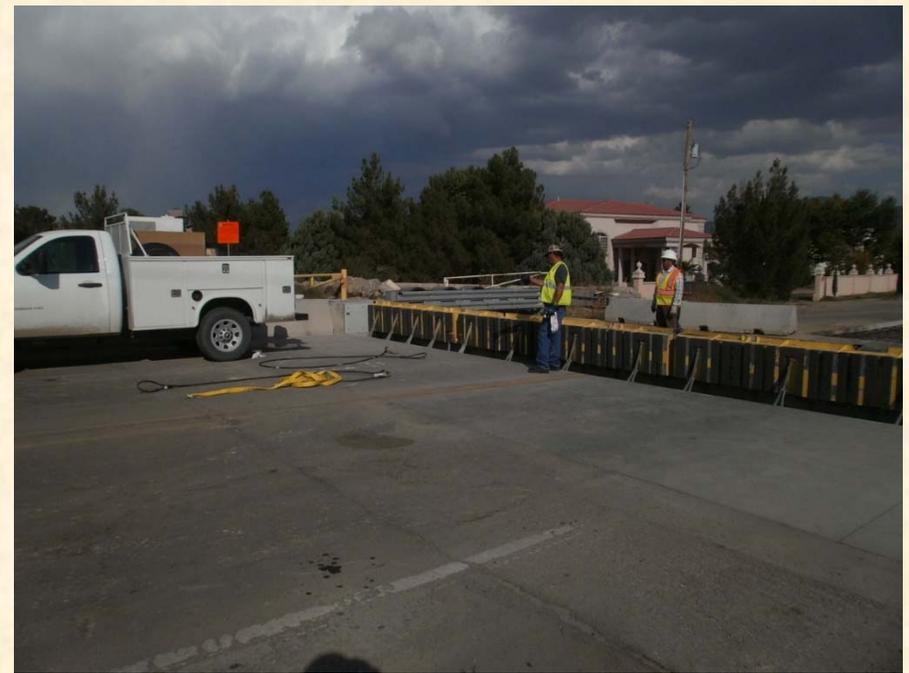
Installation of Tile Complete



Installation of Tile Inside of Structure



Installation of Tile Completed



Installation of Tile Completed



Lowering of Structure





Feedback on Noise Problem