INTERNATIONAL BOUNDARY AND WATER COMMISSION, UNITED STATES AND MEXICO

Steve Smullen, Acting Principal Engineer

Rio Grande Citizens' Forum

May 2, 2007

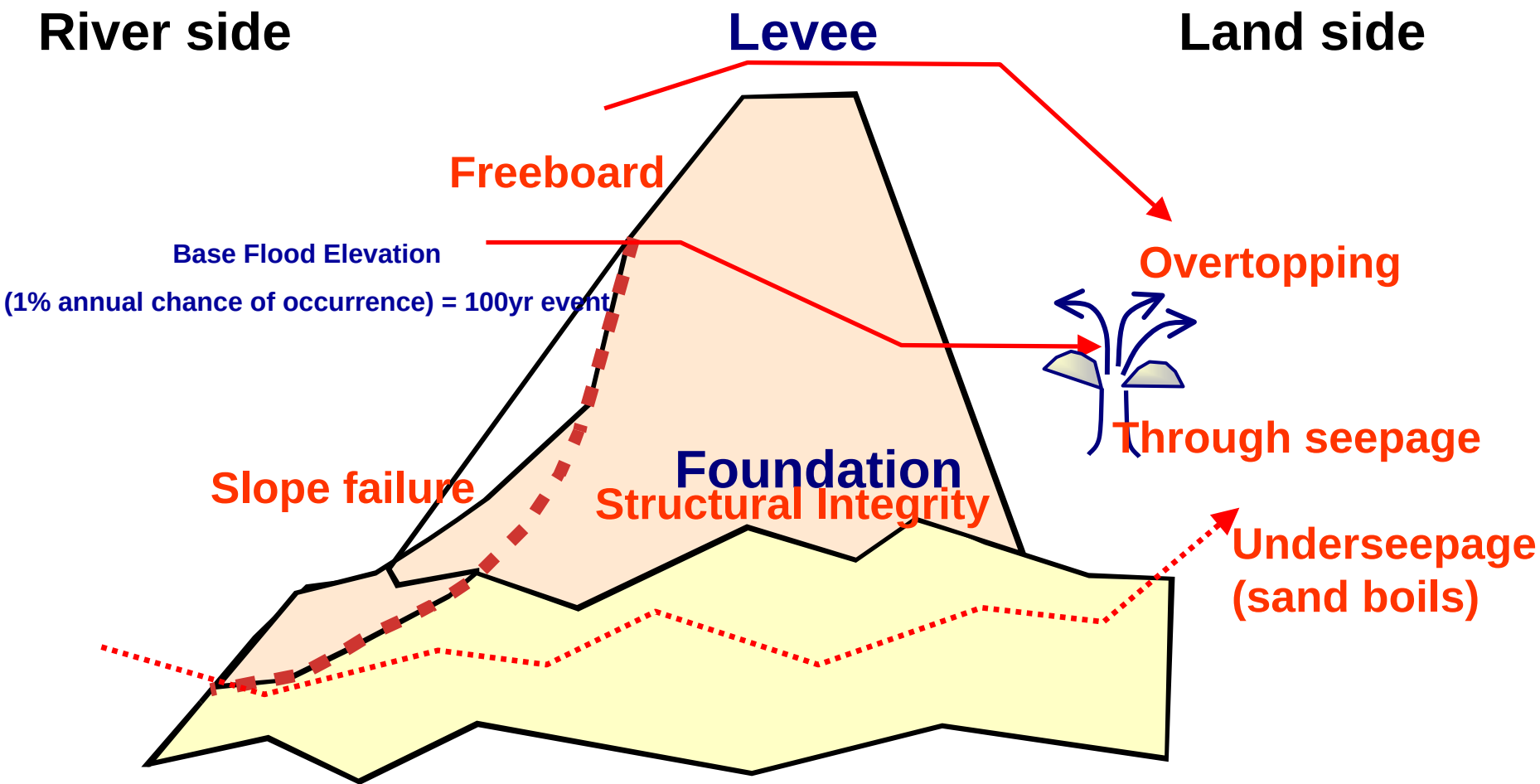
Rio Grande Canalization Project

- Constructed 1938-1943
- Water delivery and flood control project
- 106 river miles from Percha Dam, NM to American Dam at El Paso, TX
- 130 miles of flood control levees

EIS – Canalization Project

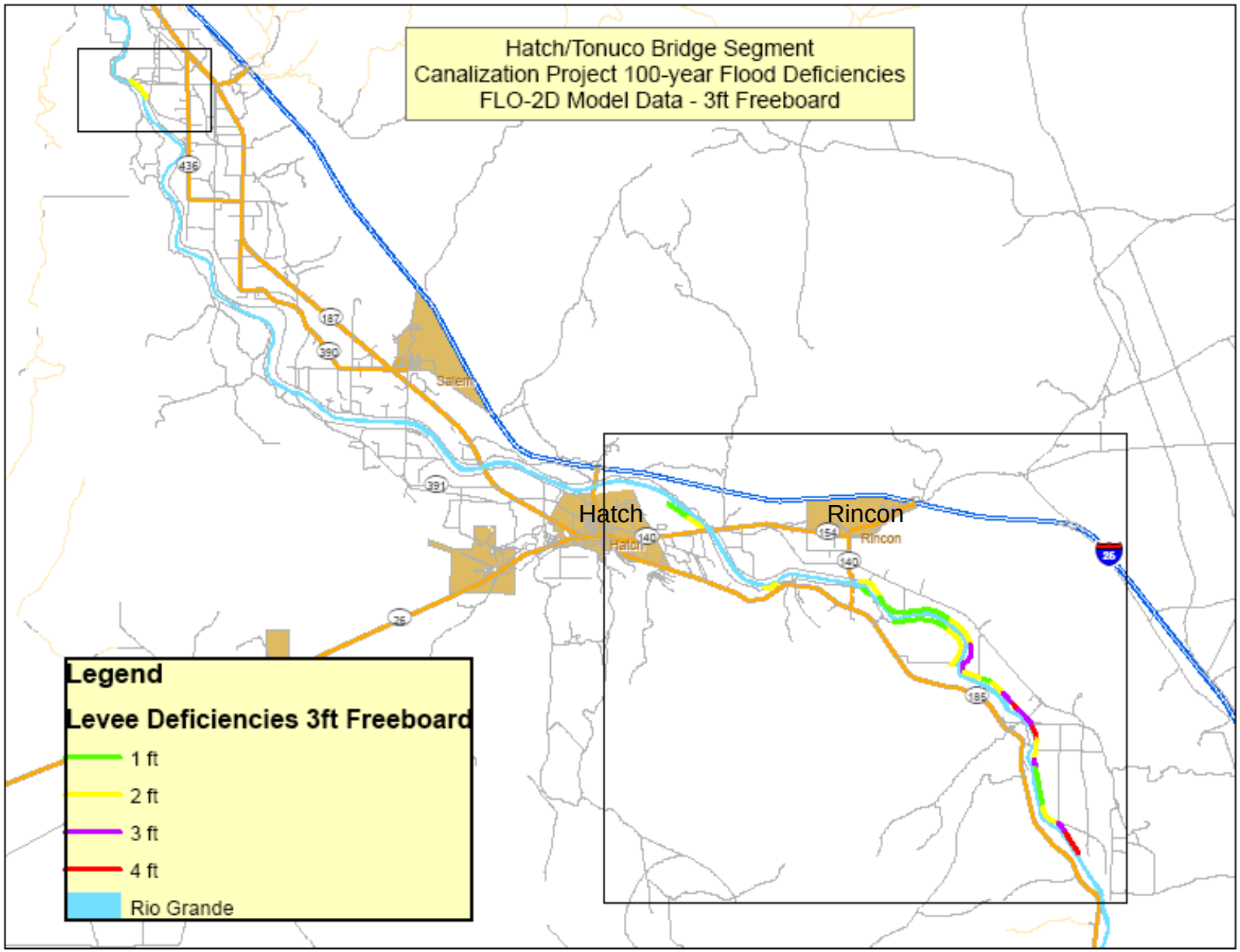
- Rio Grande Canalization Project EIS analyzes alternatives for environmental restoration/enhancement and flood control
- Selection of an alternative/Record of Decision is on hold pending outcome of collaborative process between environmental groups and EBID
- Construction of environmental enhancements and levee improvements are subject to availability of federal appropriations

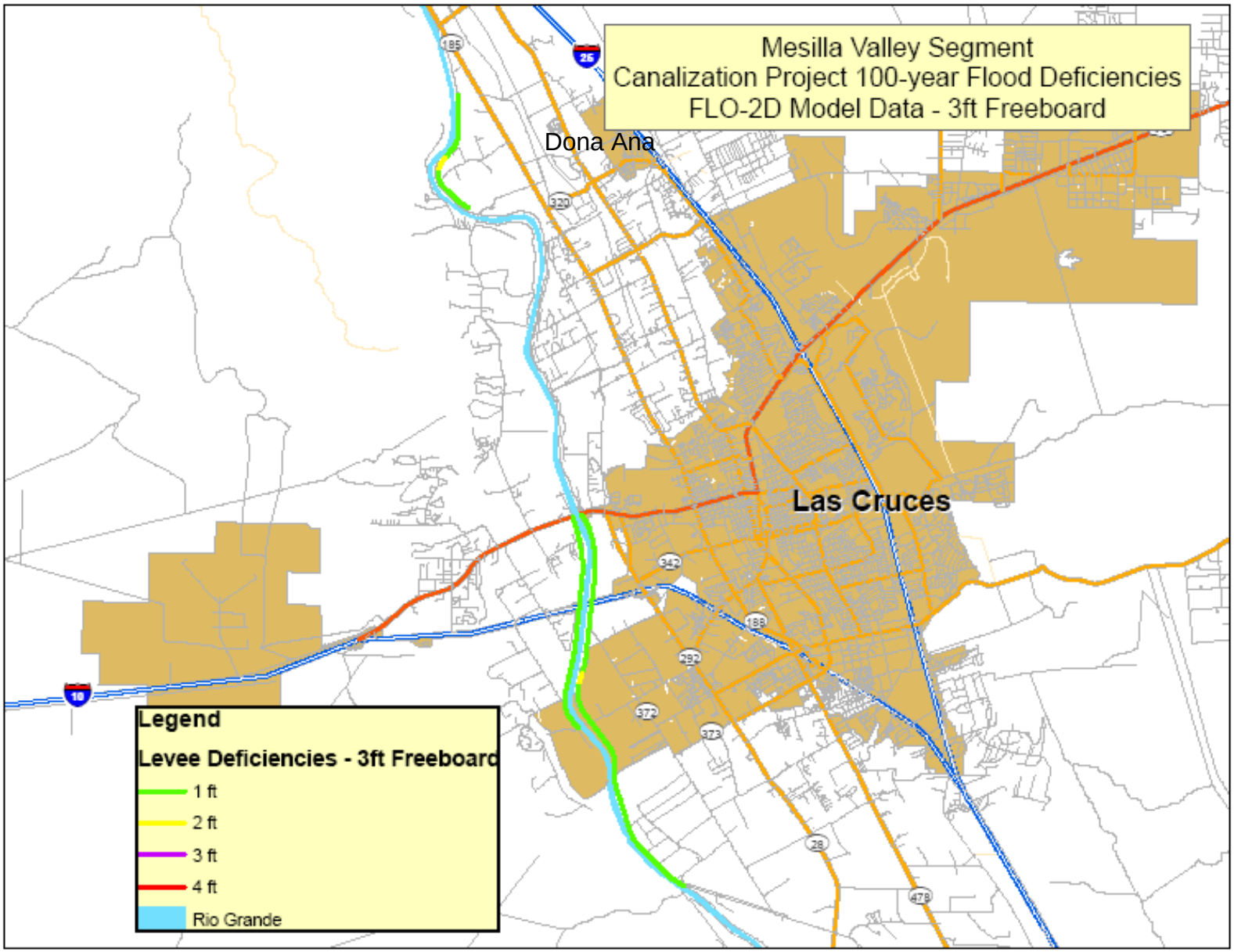
Levee Terminology

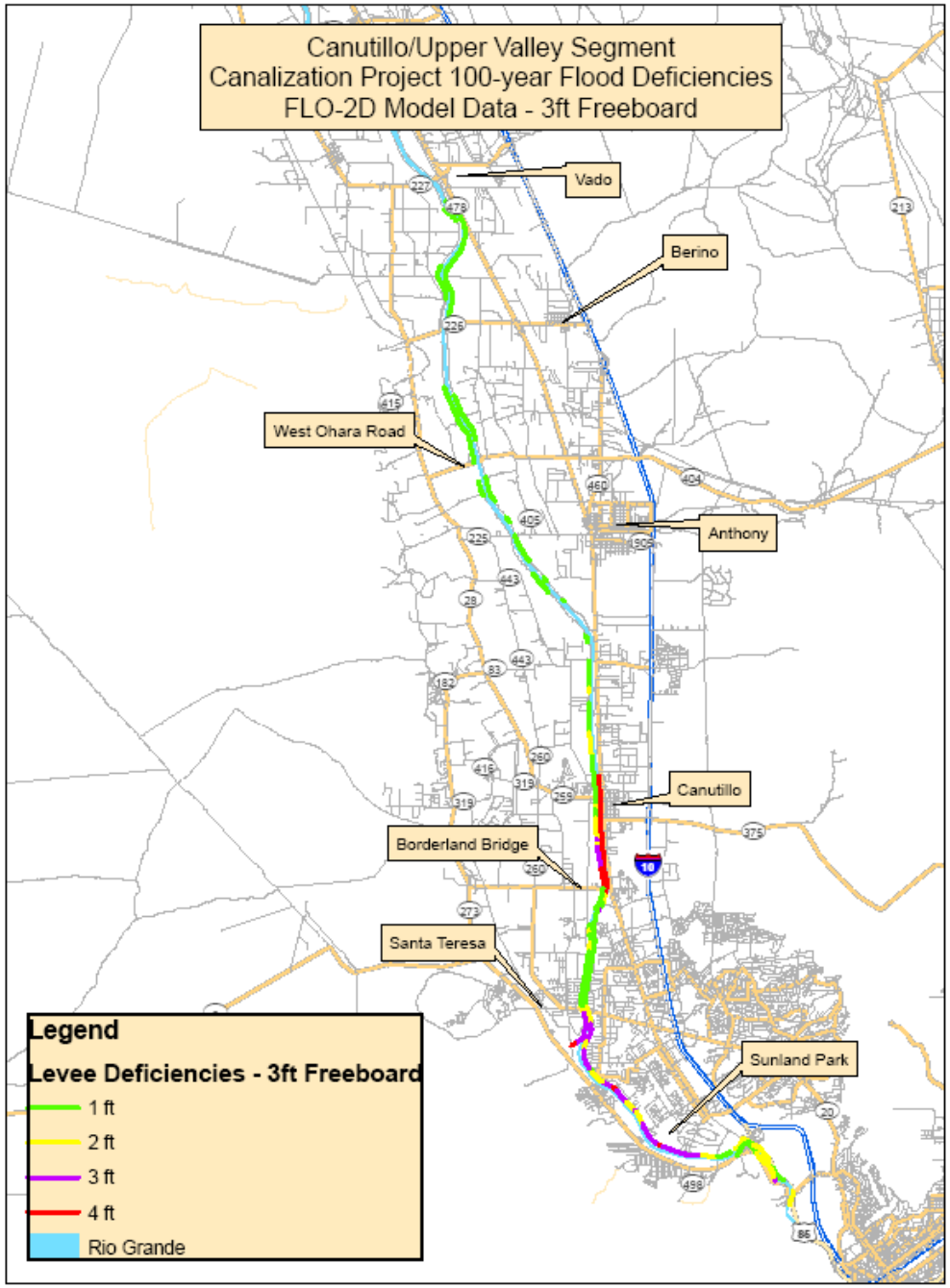


Levee Status – Doña Ana County

- Levee height is deficient for 38 miles in Doña Ana County – deficient means less than 3 feet of freeboard for the 100 year return frequency flow
- Based on results of recent FLO2D modeling done by Corps of Engineers to extend their Upper Rio Grande Water Operations Model from Caballo Dam to El Paso
- Approximately 8 miles of levee have zero freeboard and are subject to overtopping in the 100 year flood (Tonuco, Sunland Park)
- Cost to raise levees in Doña Ana County is estimated $19.8 million


Hatch/Tonuco Bridge Segment
Canalization Project 100-year Flood Deficiencies
FLO-2D Model Data - 3ft Freeboard
Hatch
Rincon
Legend
Levee Deficiencies 3ft Freeboard
1 ft
2 ft
3 ft
4 ft
Rio Grande


Mesilla Valley Segment
Canalization Project 100-year Flood Deficiencies
FLO-2D Model Data - 3ft Freeboard
Dona Ana
Las Cruces
Legend
Levee Deficiencies - 3ft Freeboard
1 ft
2 ft
3 ft
4 ft
Rio Grande


Canutillo/Upper Valley Segment
Canalization Project 100-year Flood Deficiencies
FLO-2D Model Data - 3ft Freeboard
Vado
Berino
West Ohara Road
Anthony
Canutillo
Borderland Bridge
Santa Teresa
Sunland Park
Legend
Levee Deficiencies - 3ft Freeboard
1 ft
2 ft
3 ft
4 ft
Rio Grande

Levee Status – Doña Ana County

- USIBWC proposes to raise levees :
  - Hatch/Rincon/Tonuco Bridge area – 10.48 miles ($6.5 million)
  - Mesilla Valley – 11.55 miles ($4.3 million)
  - Vado to American Dam – 16.0 miles ($8.9 million)

Levee Status – El Paso County within Canalization Project

- USIBWC proposes to raise levees :
  - Vado to American Dam –
    - 13 miles in Texas ($6.5 million)
    - 6.6 miles levee, 1.5 mile floodwall at Canutillo - $13.6 million

Flood Mapping

- FEMA is updating flood insurance rate maps
- Draft maps for Doña Ana County released April 2007
- Draft maps for El Paso County to be released shortly
- FEMA requires levees to contain the 100-year flood with 3 ft. freeboard
- USIBWC notified FEMA last year that it could not certify all levees as meeting this requirement
- USIBWC levees were not overtopped in 2006

Flood Mapping

- FEMA will map flood risk as if the levees did not exist at all
- FEMA has a public appeal and protest process
- USIBWC will propose additional state-of-the-art modeling to accurately map flood risk
- USIBWC believes FEMA's model may overestimate flood risk
- Simplified methodology does not take into account levees in place, volume of flow, attenuation due to infiltration, or the lower water surface which is present in a wider floodplain.

FIRM – Picacho Bridge / I-10

Dona Ana

FIRM – Mesquite / Vado

Dona Ana

Funding and Priorities–Doña Ana Co

- Priority are levee reaches subject to overtopping/failure in urban areas.
- USIBWC will work with FEMA and recommend map revisions based on FLO2D model – may require additional funding for further analysis
- Partial certification (Picacho to Mesilla Bridge) is being considered contingent on funding
- Sediment removal to be accomplished using annual O&M funding
  - completed in FY 06- 07 at Trujillo, Hershey, Placitas, & Thurman Arroyos, above Mesilla Dam and from Canutillo to American Dam
  - proposed for FY 08-10 at Rincon and Sibley Arroyos, Hatch and Salem Bridges

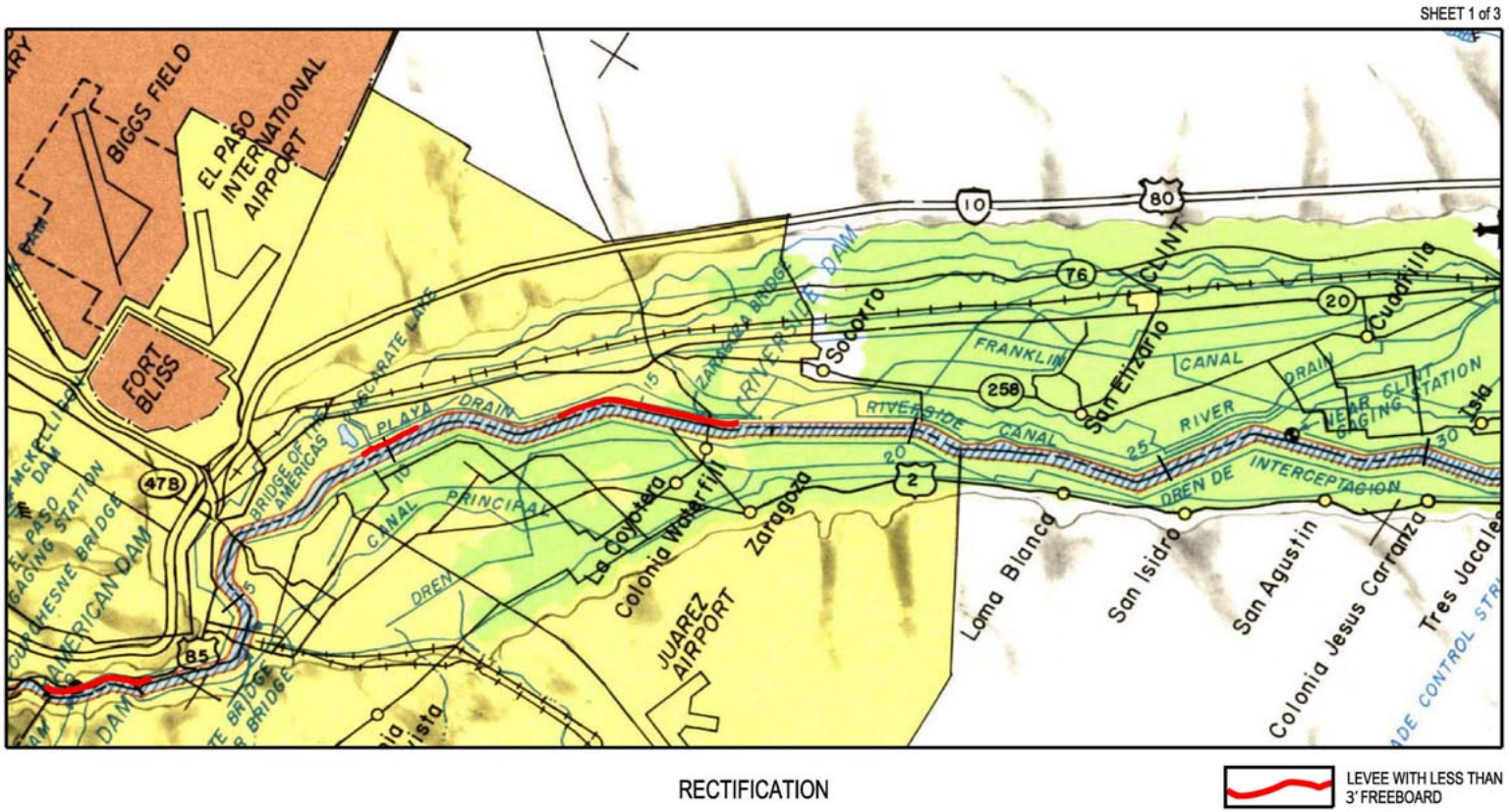
Rio Grande Rectification Project

- Constructed in 1930s
- El Paso, TX-Cd. Juarez to Ft. Quitman, TX
- Boundary stabilization and flood control project
- 85 miles of U.S. levee

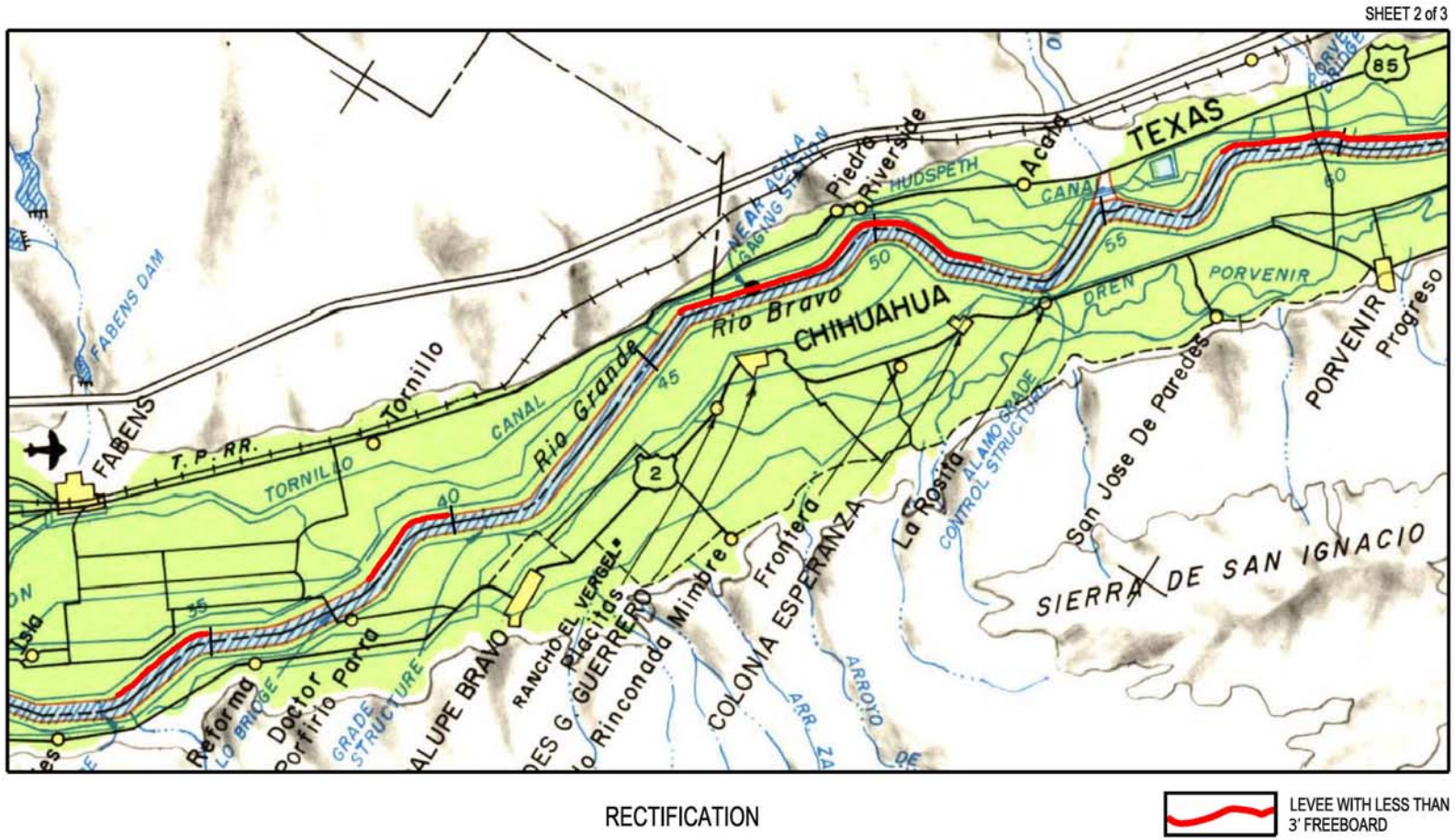
Levee Status – Rectification Project

- Levee height is deficient for 46 miles in El Paso and Hudspeth Counties, with approximately 11 miles of overtopping, mostly in the extreme lower reach
- Cost to raise levees in Rectification Project is estimated at $34.4 million
- Corps of Engineers is extending URGWOM to Fort Quitman using FLO2D, completion scheduled for July 2007.

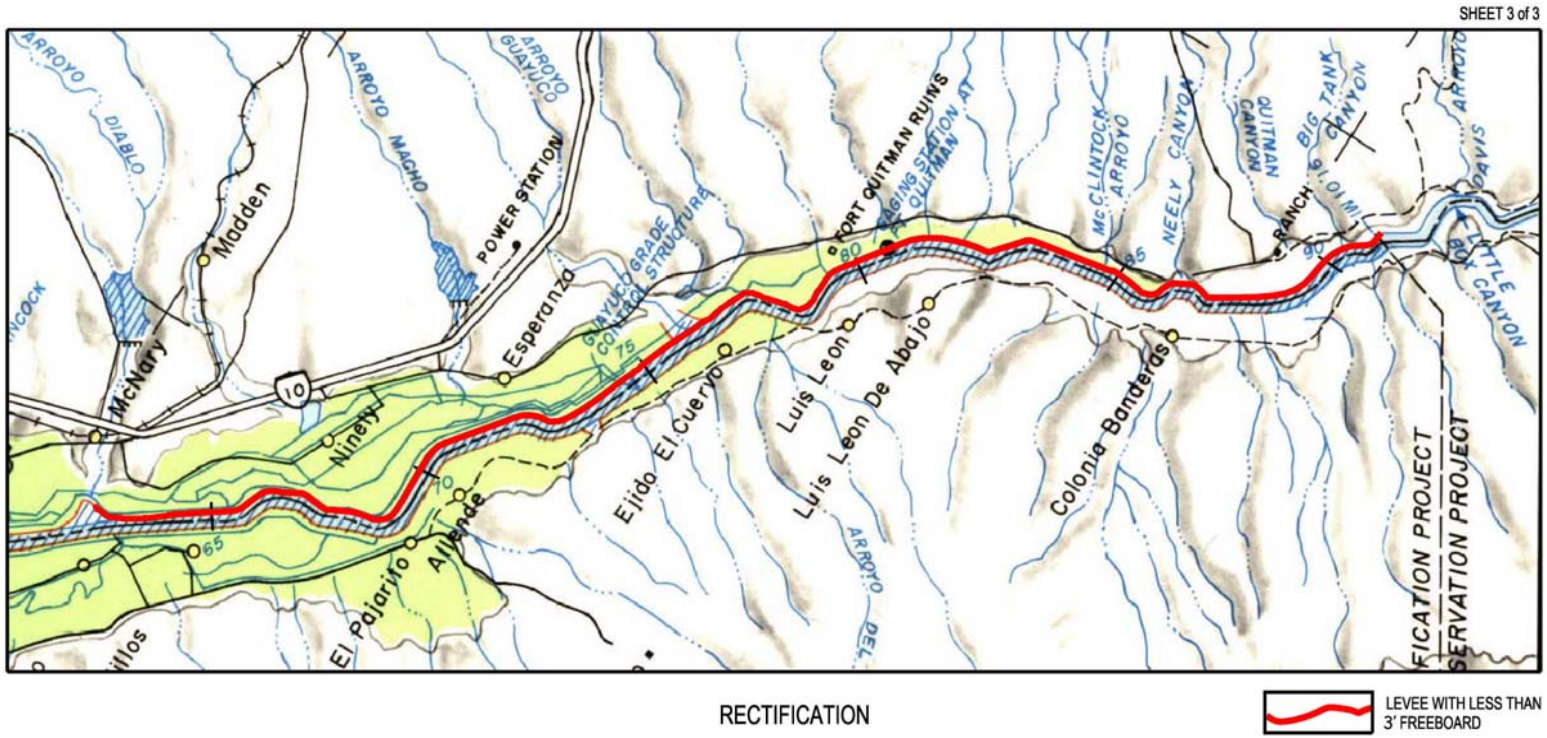
Rectification Project- Levee Deficiency



Rectification Project - Levee Deficiency



Rectification Project - Levee Deficiency



Rectification Project Improvements

- American Dam to Beginning of Chamizal Channel - Freeboard encroachment for 2 miles – $2.7M
- End of Chamizal to Old Riverside Dam (downstream of Ysleta-Zaragoza Bridge) – 7.4 miles of freeboard encroachment – $1.5M (with US forces)
- Old Riverside Dam to Hudspeth County Line: 3 miles of freeboard encroachment. - $1.2M
- Hudspeth County Line to Little Box Canyon (end of Project) -23 miles of freeboard encroachment - $15.0M
- Hudspeth County Line to Little Box Canyon (end of Project) -11 miles of levee overtopping - $14.0M

Rectification Project –Partial Certification

- USIBWC plans to certify Rectification levee from International Dam to Ysleta-Zaragoza Bridge area by early 2008.
- Affected Area:
  - .5 miles of improvements from International Dam to the beginning of the Chamizal
  - 7.4 miles of levee raising from end of Chamizal (upstream of Ascarate Park) to Ysleta-Zaragoza Bridge
- Estimated Completion – 9 months for 7.9 miles for 3 ft. of freeboard
- Estimated Cost - $1.5 million
- Funding available in current fiscal year

Rectification Project – Environmental Considerations

- Draft Environmental Assessment completed April 2007 (FONSI) for International Dam to Ysleta-Zaragoza Bridge reach
  - Burrowing owl survey and relocation completed in April
  - Construction to begin mid May 2007
- Release of Draft Programmatic EIS in May 2007

Sediment Removal – Chamizal Project

- 200,000 cubic yards.
- Estimated cost: $1.5 million.
- Funding available to initiate a limited effort during FY 07.
- The U.S. Section and the Mexican Section are developing a joint plan for sediment removal and levee improvements in the international reach of the Rio Grande. CONAGUA is providing the funding for the work by Mexico.

INTERNATIONAL BOUNDARY AND WATER COMMISSION, UNITED STATES AND MEXICO

U.S. Section

(915) 832-4100

www.ibwc.state.gov