



Lower Rio Grande Flood Control Project

Rio Grande and U.S. Floodway System

Commissioner Edward Drusina
October 30, 2010

HISTORY OF LOWER RIO GRANDE FLOOD CONTROL



Harlingen, 1967 Flood

- **1932 – Binaltional plan for flood control; new levees constructed in later years**
- **1967 – Hurricane Beulah caused widespread flooding**
- **1968-1970 - Flood control improvements developed**
- **2007-present – USIBWC increases levee height to meet FEMA requirements**
- **No levees ever constructed upstream from Peñitas**



LOWER RIO GRANDE FLOOD CONTROL PROJECT FEATURES

- 180 river miles from Peñitas to the Gulf; includes features in Hidalgo, Cameron, and Willacy Counties
- 270 miles of U.S. levees along the river and floodways
- U.S. floodway system includes Banker Floodway, Main Floodway, North Floodway, and Arroyo Colorado
- Retamal Dam – diverts Mexico's share of floodwaters into Mexico's interior floodway system



Rio Grande levee near Brownsville, 7/19/10



LOWER RIO GRANDE FLOOD CONTROL PROJECT FEATURES

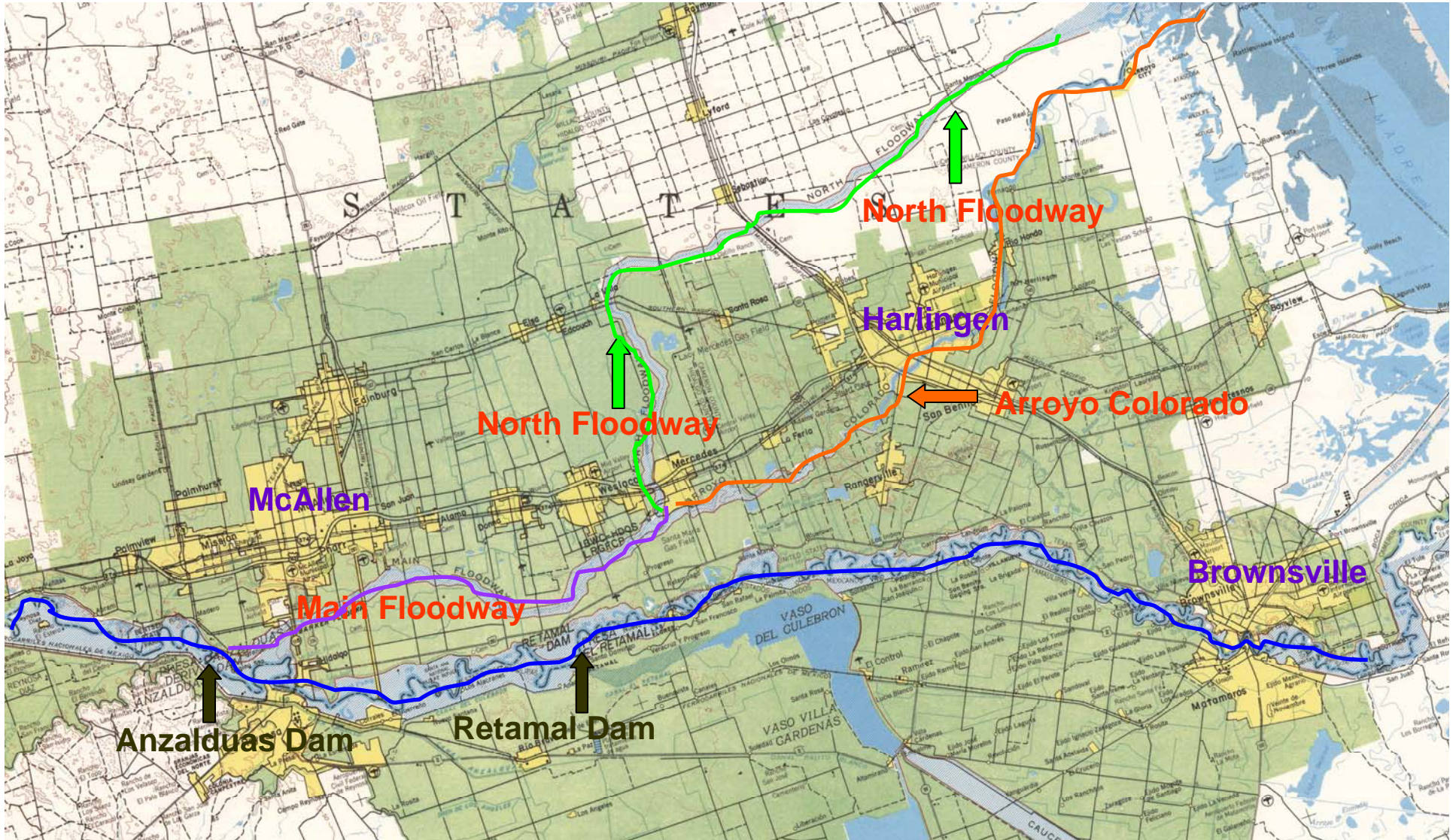


Gaging station at Banker Weir Inlet

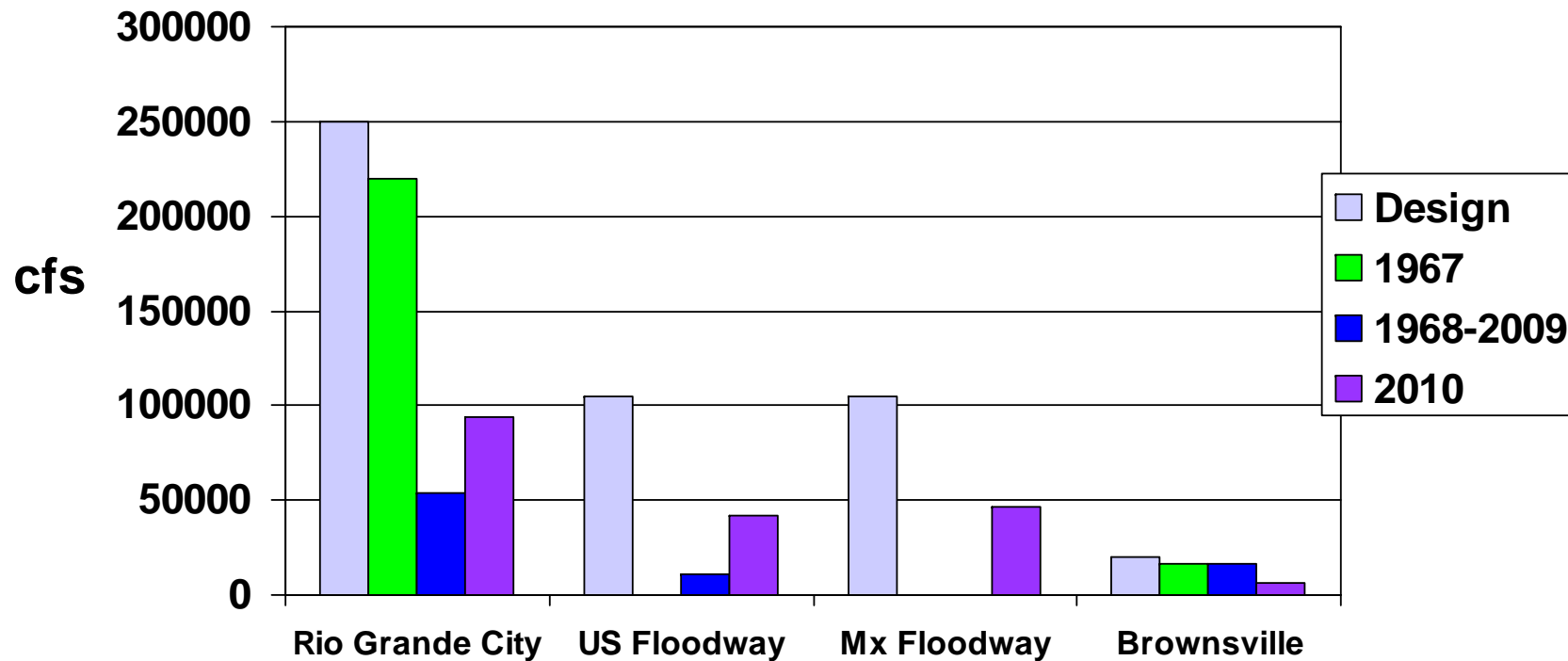
- Anzalduas Dam – diverts U.S. share of floodwaters into the U.S. interior floodway system
- Diversion of floodwaters into the U.S. interior floodways allows Commission to control flows in the Rio Grande at Brownsville-Matamoros
- 420 drain structures and 180 irrigation structures cross levee
- Gaging stations to measure water flow
- Upstream from the project, Falcon Dam holds back floodwaters



LOWER RIO GRANDE FLOOD CONTROL PROJECT



DESIGN FLOOD, HISTORIC FLOWS



FLOOD FLOW AT VARIOUS SITES



2010 FLOOD OPERATIONS DIVERSIONS INTO THE FLOODWAYS

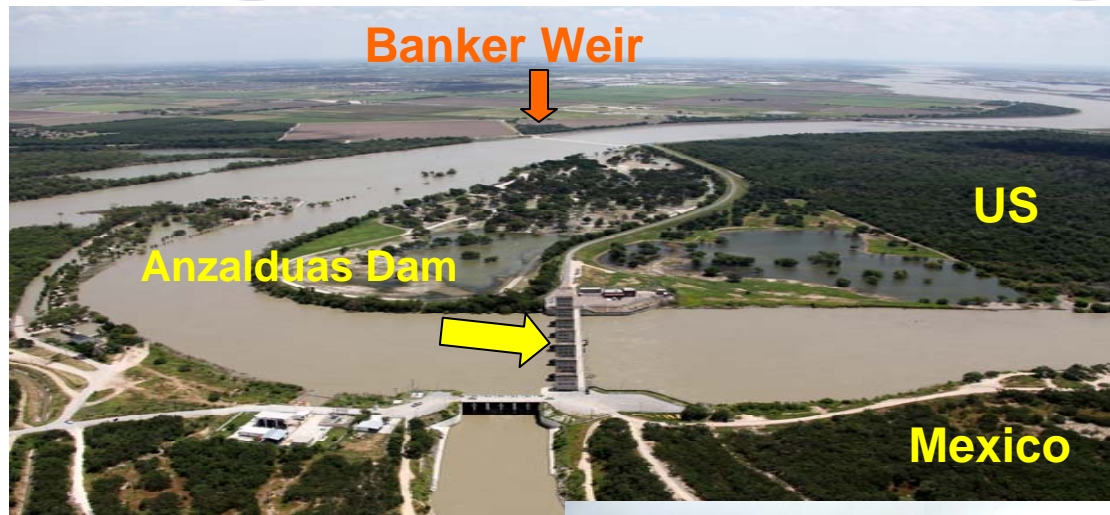
- Per Minutes, most Rio Grande flood flow is diverted into U.S. and Mexican floodways
- Mexico diversions are made at Retamal Dam
- U.S. diversions are made at Anzalduas Dam
- Diversions into U.S. occurred July 8-Aug. 9, Sept. 24-Oct. 20
- Last diversion occurred in 1988



Anzalduas Dam on 7/8/10



2010 FLOOD OPERATIONS DIVERSIONS INTO THE FLOODWAY



Banker Weir pre-diversion



Banker Weir on July 8, 2010



2010 FLOOD OPERATIONS DIVERSIONS INTO THE FLOODWAY



FM 507 at North Floodway

- Floodway is designed to convey flood flows even though there is some development in it
- Flood flows affected:
 - Roads across the floodway
 - Homes and businesses in the floodway
 - Parks, golf courses
 - Crops
- Entities with structures in the floodway are well aware of flood risks



2010 FLOOD OPERATIONS LEVEE PERFORMANCE

N. Floodway near Weslaco & Mercedes



- Levees performed very well
- Recent improvements ensured levees were in the best condition in years



2010 FLOOD OPERATIONS LEVEE PERFORMANCE



- Minor problems experienced
 - Erosion – Vegetation in recently-completed Banker Floodway levee was not well established, some erosion occurred
 - Sand boils
 - Seepage
 - Cracks
 - Water surface elevation higher than expected in some areas



2010 FLOOD OPERATIONS EDINBURG PUMPING PLANT

- Concrete floodwall attached to Pumphouse at Peñitas provided flood protection in the past
- Due to the age of the structure, concern that it could fail under flood conditions
- USIBWC and Hidalgo County coordinated to construct an earthen berm behind the pump house to provide emergency protection; permanent fix is underway



2010 FLOOD OPERATIONS IRRIGATION & DRAINAGE STRUCTURES

- During flood operations, USIBWC controls the structures
 - Gates are closed to prevent floodwaters from leaving the river and floodway
 - When gates are closed, drainage on the landside must be pumped over the levee
 - Some problems with seepage through structures
 - Vandalism/tampering with structures causes problems



COMMUNICATIONS

- USIBWC closely coordinated with the TCEQ and the Texas Division of Emergency Management State Operations Center (SOC), which have established communications protocols
- USIBWC information routed to local officials via the SOC and TCEQ
- SOC provided e-mail updates to communities
- SOC conducted conference calls twice daily at which USIBWC provided briefings; some calls had over 500 participants
- USIBWC provided updates on the agency web page and via news releases
- National Weather Service communicates flood advisories, forecasts, warnings



RECOVERY ACT PROJECTS



- \$220 M to USIBWC for levee work; 100% awarded
- Purpose of Recovery Act is to preserve and create jobs, stimulate the economy, and invest in long-term infrastructure improvements
- \$74.2 M (33.9%) already paid to contractors
- 864 jobs already created or preserved
- Construction began in 2009; some projects are complete

Recovery Act sign is unveiled during 2009 levee groundbreaking ceremony



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