Levee Safety in Texas

- What’s Happening At FEMA
- What’s Happening At USACE
- What’s Happening in North Texas
- What’s Happening along the Texas Coast
- Observations and Recommendations
What’s Happening at FEMA?

- Risk MAP
- Levee Accreditation Rules and Regs – 44CFR65.10
- Levee Analysis and Mapping Procedure
- BW - 12
- National Academy Levee Study (2013)
- Federal Flood Risk Management Standard – New Executive Order 13690 (amends EO 11988)
What's Happening at the USACE?

- Levee Safety EC
- Flood Protection Structure Accreditation Task Force
- EAPs
- Periodic Inspections
- Levee Screening
- Levee Safety Action Classification
- Risk Assessments
- System Wide Improvement Framework
- Climate Change
North Central Texas Levees

- Dallas/Tarrant/Denton
- Higher Design Standards
- Dallas County
  - Non-Federal (accredited)
  - Federal (non-accredited)
• City of Irving
  – First FP Ordinance in 1977
  – Major Studies – Delaware and Hackberry Creek
  – Higher Standards
    • Finished Floors – 2 feet above 100-year
    • CDC Criteria along Elm and West Fork of Trinity River
• Need for Certification/Accreditation
  – Vegetation removal
• Need for Certification/Accreditation
  – Wall Failures
• Need for Certification/Accreditation
  – Add. Geotechnical Analysis
Need for Certification/Accreditation
  – Slide Repairs
• Need for Certification/Accreditation
  – Slurry Cutoff Project
  – EC Levee Remediation Project
  – Current issues w/ Certification
• USACE Periodic Inspections
  – IFCD-1 First P.I. in 2013

• Rated “U” for system wide deficiencies
  – Height
  – Seepage
  – Desiccation cracking
  – Bridge Pier Penetration

• Next scheduled PI - 2018
• Levee Safety Action Classification (LSAC)
  – Class I – Urgent and Compelling
  – Class V – Normal

• IFCD -1 Rating (East Cell Only)
  – For Prior to Overtopping - Average
  – For Overtopping – Slightly above Average

• Communication Plan – Fall 2015
• Focused on USACE and FEMA
  – East Cell Levee Remediation Project
  – West Cell Levee Remediation Project - ?
Irving Challenges

• On-going Projects
  – SH 183 Project
  – TRA Lines
• Future Projects
  – West Cell Levee Remediation
  – Old Texas Stadium Development
  – Diamond Interchange
• Expenses
• USACE 408 Approvals
• FEMA Accreditation
Non-Federal System
Denton County Levee Improvement District No. 1

- Accredited, but for how long?
- Challenges
  - New H&H Studies
  - Channel Siltation
  - Property boundaries
- Plan of Reclamation
  - 500-year + 3 ft. freeboard
Port Arthur
Hurricane Flood Protection Levee

- Federal – 24 miles Earthen Levee, 5 Miles of Floodwall
- Owned operated and maintained by Jefferson County Drainage District #7
- Population – 80,000
- Five major refineries supplying almost 50% of Jet fuel used in US
Port Arthur
What’s Happening

- FEMA DFIRM Update initiated in 2006
- Hurricane Ike in 2008 (150 year event)
- Texas Coastal Storm Surge/Wave Analysis completed in 2012
- Executed PAL Agreement on May 23, 2012
- Preliminary DFIRMs – Aug 2012
- Levee Periodic Inspection Report in Oct 2012 - MA
- LSAC to LSOG in June 2013
- Certification Submittal for FEMA Levee Accreditation in May 2014
Port Arthur
Alligator Bayou Pump Station

• Proposed SW Pump Station – 1.5 million gpm
• FEMA Grant (75%) Approved in 2006 (Rita)
• Corps (Galveston) – Major 408 Req’d
• Initial 408 Submittal in April 2011
• 408 approved in Jan 2013
• 2013 Project Bid - $60M
Observations

• Many Levees in Texas
• Programs continue to Evolve
  – FEMA
    • Plan to deal with Non-accredited Levees
    • NFIP (BW-12)
    • New WRDA???
  – USACE Levee Safety Program
    • Final Levee Safety EC
    • WRDA???
Observations

• Coastal Levee Procedures lag Riverine Levee Procedures

• 408 Approval Process
  – It is a challenge to satisfy USACE on Geotechnical and EA issues
  – Lengthy review at District Level
  – Once past the District level, Reviews proceed much more timely

• Evaluations of Federal Levees take time and $

• New H&H Studies can lead to certification issues
Recommendations from the Locals

• Recognize each levee system is unique and this must be factored into the evaluation process.
• Translate FEMA/USACE coordination to the local level
• Effective Public Outreach
• Develop the concept of Tolerable Risk on system by system basis
• Incentives for good levee safety practices are needed
  – Resiliency design
  – Interim Risk Reduction Measures
  – Need to become factors in FEMA’s accreditation process
Questions?

High Water at New Orleans - 1903