

Addicks and Barker Dams Mega Project and Integrated Flood Risk Management Initiatives in the Metropolitan Houston Region

Sharon M. Tirpak
Deputy Chief Project Management Branch
USACE, Galveston District

27 FEB 2017



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Buffalo Bayou & Tributaries, Addicks & Barker Dams Dam Safety Modification Study (Phase 1) Mega Project

Location: Houston, Texas

Program: Dam Safety (Phase 1)

Phase: Construction

Authorized Total Project Cost: \$129,883,340

Total Construction Contract Cost: \$73,767,327

Sponsor: 100% Federal

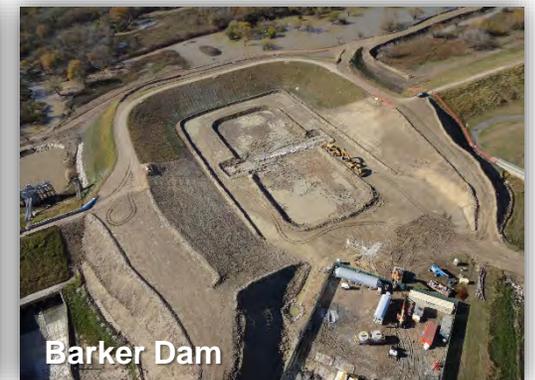
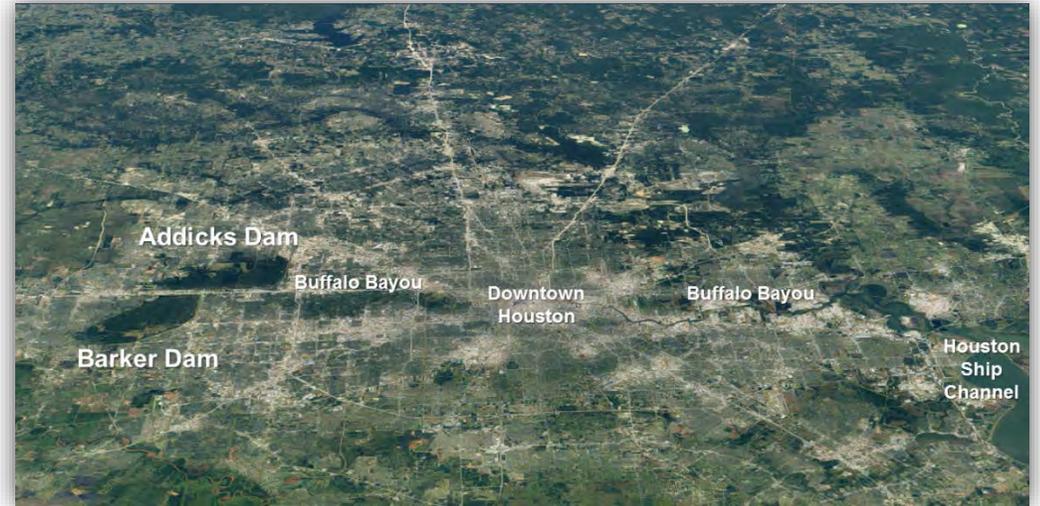
Purpose: Flood Damage Reduction

Dam Safety Action Classification: DSAC 1

Dam Safety Issues: High risk associated with the seepage and piping beneath, around, and near the outlet works structure conduits

Population at Risk: 1.2 million

Potential Economic Consequences: \$60 billion



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Addicks and Barker Dams Dam Safety Modification Study Phase 2

Location: Houston, Texas

Program: Dam Safety (Phase 2)

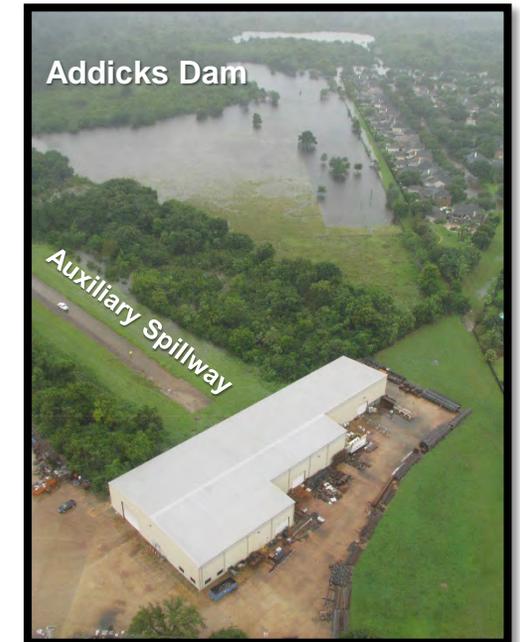
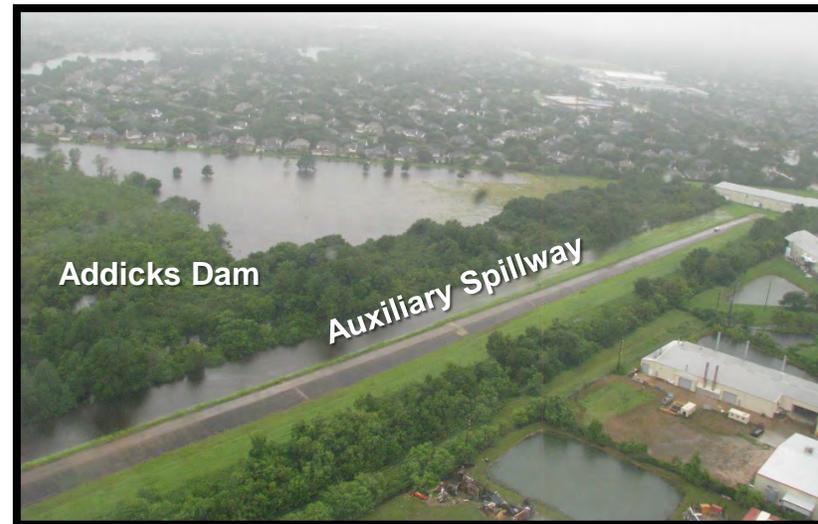
Phase: Potential New Start Study Capability

Sponsor: 100% Federal

Purpose: Flood Damage Reduction

Scope:

- Assess residual risks associated with flood risk impacts to structures in the pool area upstream of both reservoirs and downstream along Buffalo Bayou
- Comprehensively evaluate the life safety, environmental, industrial and economic impacts of potential end-around flooding and land use.
- Involves local, state and federal stakeholder engagement



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Buffalo Bayou and Tributaries Section 216 Study

Authorization: Section 216 of Flood Control Act of 1970

Program: Flood Risk Management (FRM)

Phase: Potential New Study Start Capability

Non-Federal Sponsor: Harris County Flood Control District

Purpose: Flood Risk Management

Scope: Address residual risks associated with flood risk impacts to structures in the pool area upstream of both reservoirs and downstream along Buffalo Bayou

Cost Share: 50/50 (Federal/Non-Federal)

Potential FRM Measures:

- Additional reservoir/dam
- Increased reservoir storage capacity
- Reservoir water level equalization
- Improved outlet discharge capacity
- Improved inflow and outlet discharge channels
- Acquisition of flowage easements and buyouts
- Changes in dam operation plan
- Harris County may develop ways to better inform residents of their risks



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Metropolitan Houston Regional Watershed Assessment

Authorization: Section 729 of WRDA 1986, as amended

Type of Project: Flood Risk Management (FRM)

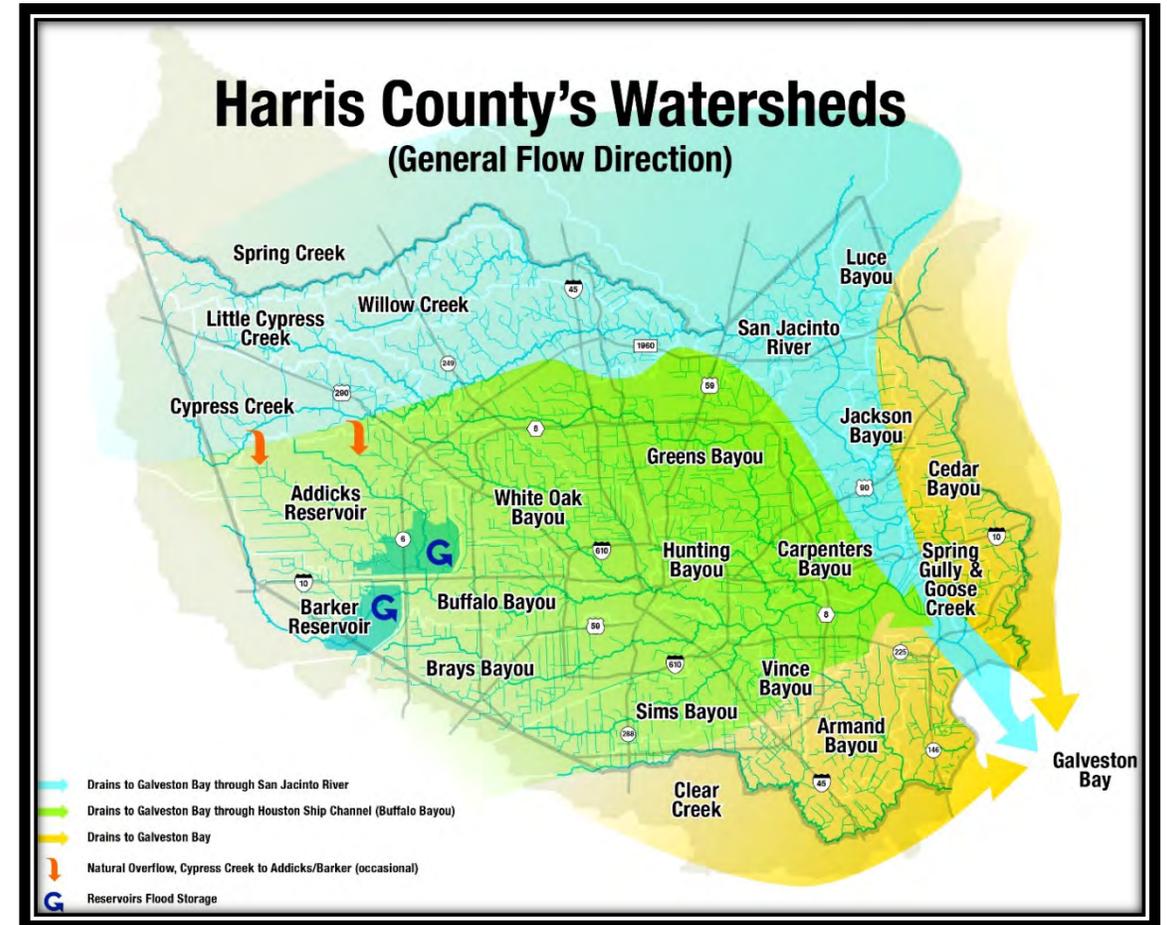
Project Phase: Potential New Study Start Capability

Non-Federal Sponsor(s): Harris County Flood Control District and City of Houston

Cost Share: 75/25 (Federal/Non-Federal)

Purpose:

- Characterize performance of flood risk management features in the Metropolitan Houston Region as an integrated system of 22 watersheds
- Understand how development patterns are affecting watershed hydrology across systems
- Update statistics of extreme precipitation events for systems simulation to explain current and future potential flooding problems



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Metropolitan Houston Regional Watershed Assessment

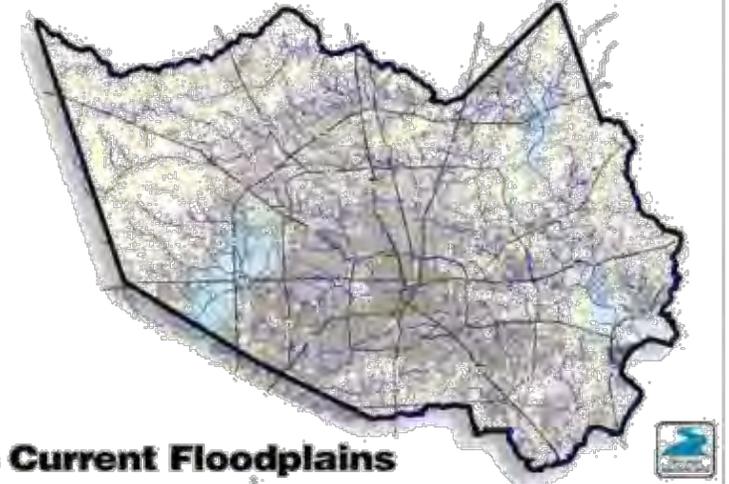
Scope:

- Network of reservoir/dams, detention/retention basins, flood routing channels, and other similar FRM features in the region
- Municipal drainage network that flows into region's FRM system
- Analysis of floodplain management practices with associated discharges that feed into municipal drainage network

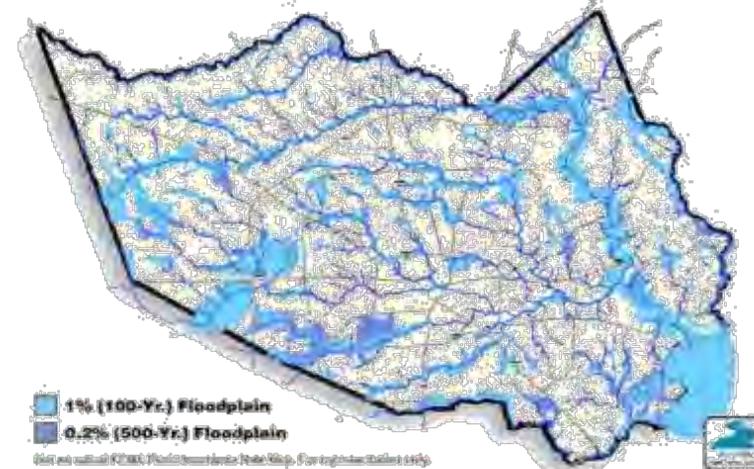
Intended Outcome Is A Single Document That:

- Governments at all levels can use for identifying and prioritized partnering opportunities to pursue across available agency programs
- Stakeholders can review and understand results of assessment, pursuant to purpose and scope
- Elected officials can use to engage constituents and governments at all levels in supporting prioritized FRM actions

Total Drainage Network



Harris County's Current Floodplains



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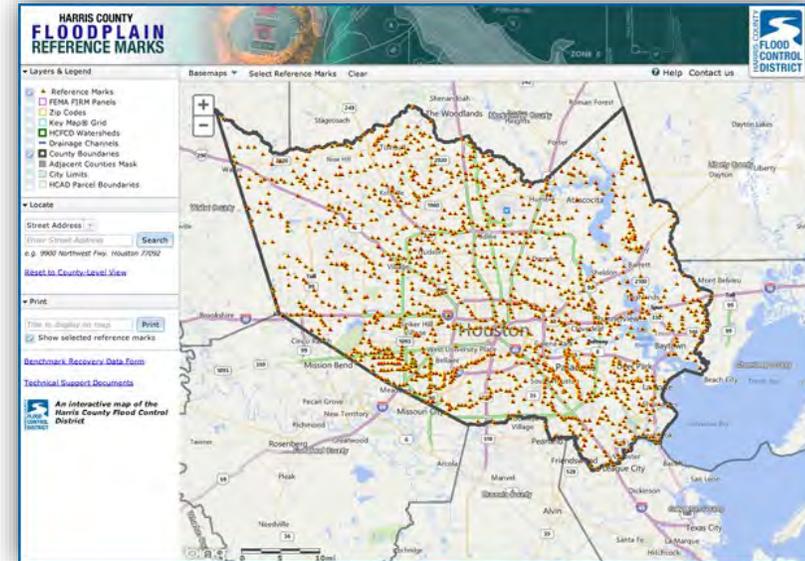




Metropolitan Houston Regional Watershed Assessment

Example opportunities that could come from assessment include:

- Identification of high priority improvements to FRM systems and connecting urban watershed municipal drainage networks
- Local government updating of flood plain management measures for developers
- Pursuit of new Water Resources Development Act (WRDA) authorities for USACE partnership with Non-Federal Sponsors (NFSs) (e.g., HCFCD, City of Houston), to advance cost shared investigations for making construction recommendations to Congress

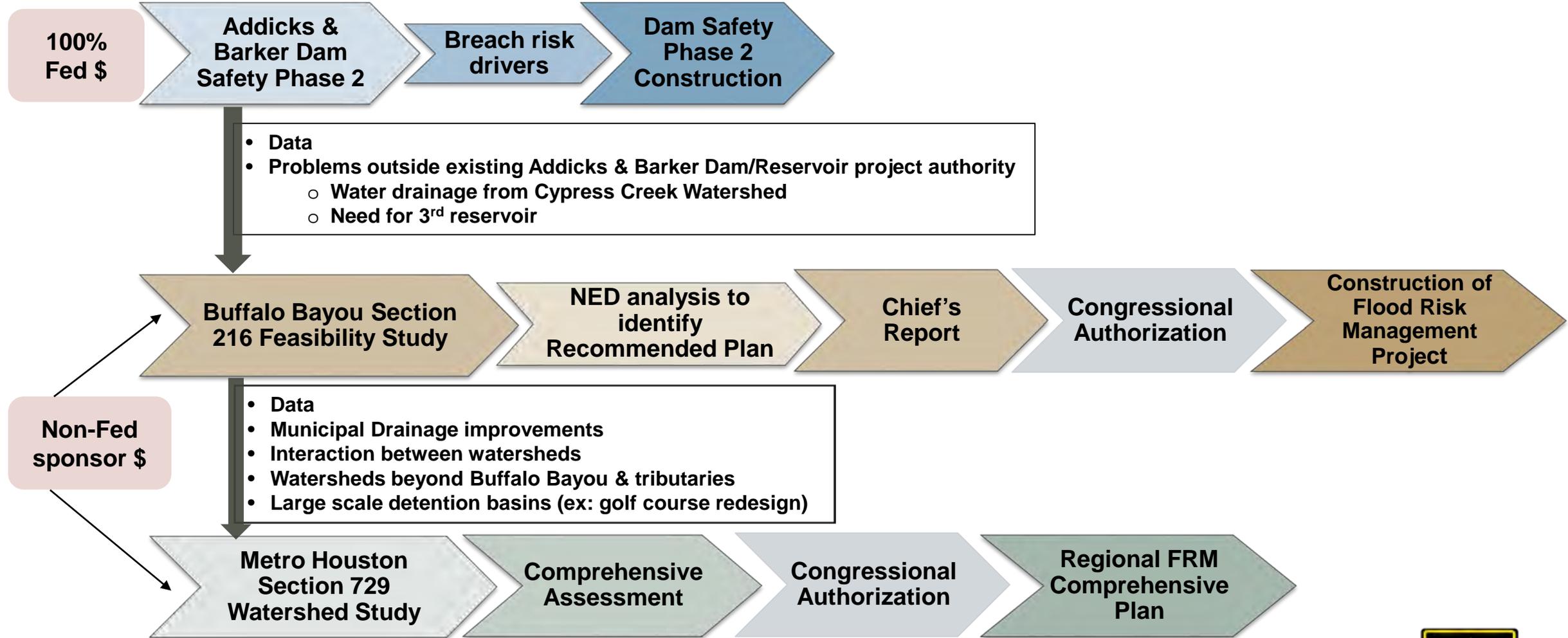


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Integrated Approach to Metropolitan Houston FRM Studies/Assessment



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Metropolitan Houston FRM Projects, Studies, and Assessments

PROJECT	AUTHORIZATION	PHASE	COST SHARING	DESCRIPTION
Addicks & Barker Dam Safety Phase 1	H.D. 456, 75 th Congress, 2 nd Session 1938 modified by 1954 Flood Control Act	Construction (ongoing)	100% Federal (FED)	Addresses seepage and piping issues associated with the outlet work structures on both dams
Addicks & Barker Dam Safety Phase 2	H.D. 456, 75 th Congress, 2 nd Session 1938 modified by 1954 Flood Control Act	Dam Safety Study/ Construction (proposed)	100% FED	Assess incremental risk, overtopping with breach and residual risk in pool area and downstream, including life safety
Buffalo Bayou & Tributaries Sec 216 Feasibility	Sec 216 of the Flood Control Act of 1970 (review of completed projects)	General Investigations - New Start (proposed)	Potential non-Federal sponsor: Harris County Flood Control District: 50/50% FED/Non-FED	Address incremental risk, overtopping with breach and residual risks associated with flood risk impacts to structures in the pool area and upstream and downstream of both reservoirs, including life safety
Houston Regional Watershed Assessment	WRDA 1986, Sec 729, as amended by WRDA 2000 and 2007	General Investigations - New Start (proposed)	Potential non-Federal sponsor: Harris County Flood Control District: 75/25% FED/Non-FED	Develop a watershed management plan to provide a system wide approach to water resource management of 22 primary watersheds within Harris County



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