



Tom Ramsey, P.E., Commissioner
Harris County Precinct 3

April 19, 2021

AGENDA ITEM

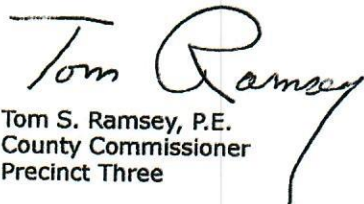
Members of Commissioners Court
Administration Building
Harris County, Texas

Members of the Court:

Commissioner of Precinct Three requests that the County Judge execute a Texas Water Code Section 15.005 Memorandum of Understanding between Harris County, Harris County Flood Control District and the Willow Fork Drainage District for the purpose of supporting an application for funding from the Texas Water Development Board.

Your consideration and approval of this request is appreciated.

Sincerely,


Tom S. Ramsey, P.E.
County Commissioner
Precinct Three

TR:cj

TEXAS WATER CODE SECTION 15.005 MEMORANDUM OF UNDERSTANDING

This is a Memorandum of Understanding (MOU) between the Board of Directors of Willow Fork Drainage District ("WFDD") and the Commissioners Court of Harris County, Texas on behalf of Harris County, Texas (the "County") and the Harris County Flood Control District (the "District").

WHEREAS, pursuant to Texas Water Code § 15.005 and 31 Texas Administrative Code § 363.408, if the Executive Administrator determines that an application has flood control as one of its purposes and that the watershed in which the project is located is partially located outside the political subdivision making the application, the applicant must submit a written memorandum of understanding relating to the management of the watershed in which the project is to be located, signed by all governing bodies of eligible political subdivisions located in the project watershed; and

WHEREAS, WFDD has filed an application with the Texas Water Development Board for funding a Project, which is described in attached Exhibit A and has flood control as one of its purposes; and

WHEREAS, WFDD has determined that the watershed in which the Project is located is partially located within the jurisdiction of the County and the District; and

NOW THEREFORE, in consideration of the benefits to the Barker Reservoir Watershed and the State of Texas, WFDD, the County and the District agree to the following:

1. WFDD will provide annual progress updates to the County and District as the Project develops and changes.
2. WFDD will notify the County and District of any potential change in impacts to the County and the District within the calendar quarter of the identified change.
3. The County and the District will provide constructive input to WFDD as the Project develops and changes.
4. WFDD, the County and the District will work cooperatively for the management of the Barker Reservoir Watershed.

Wendy Duncan, President
Willow Fork Drainage District

Lina Hidalgo, County Judge, on behalf of Harris
County, Texas and Harris County Flood Control District

APPROVED AS TO FORM:

CHRISTIAN D. MENESEE
HARRIS COUNTY ATTORNEY

By  D9FE316CE1BA4BE...

Laura Fiorentino Cahill
Senior Assistant County Attorney



Willow Fork Drainage District Barker Reservoir Flood Risk Reduction and Park Project PROJECT OVERVIEW

December 16, 2020



Who is the Willow Fork Drainage District (WFDD)

Willow Fork Drainage District was created by an Order of the Texas Water Commission, predecessor to the Texas Commission on Environmental Quality (TCEQ), on February 20, 1985, to finance the acquisition and construction of major outfall drainage facilities, trunk storm sewer facilities, and related drainage projects.

WFDD covers approximately 5,718 acres of land, of which approximately 5,247 are located within Fort Bend County, Texas, and approximately 471 acres are located within Harris County, Texas. The Barker Reservoir and Barker Dam form the eastern and southern boundaries of the District, respectively.

District Board of Directors:

- ✓ Wendy Duncan, President
- ✓ Dan Smith, Vice President
- ✓ Gregg Nady, Assistant Vice President
- ✓ John Poulter, Secretary
- ✓ Joe Robinson, Assistant Secretary and Investment Officer



- ✓ 15+ Miles of Drainage Channels
- ✓ 50+ Miles of Storm Sewer and Outfalls

- WJ7**
- WEED**
WHERE EVERY DRAINAGE IS RIGHT

Overall Reservoir Profile



Existing Reservoir Data

Maximum Pool ~ 104'

Surface Area ~ 16,543 Acres

Flood Storage ~ 209,600 Ac-Ft

(210± Astrodomies Full of Water)

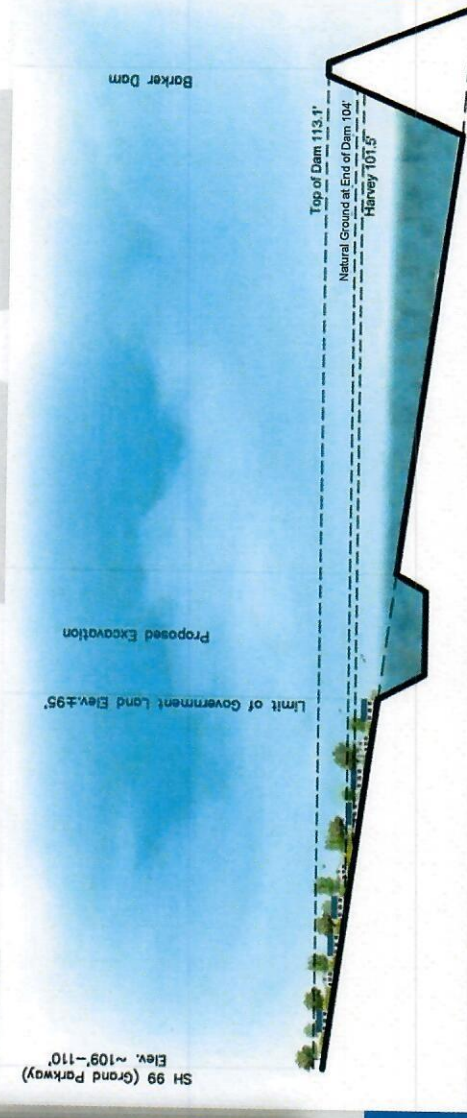
Government Owned Capacity

Maximum Pool ~ 95'

Surface Area ~ 12,036 Acres

Flood Storage ~ 82,921 Ac-Ft

(85± Astrodomies Full of Water)



Project Objective

To Increase Barker Reservoir Storage, on a cost-effective basis, while simultaneously creating an active park space, a Positive Environmental Outcomes through Coastal prairie restoration, and establishing aquatic features and wetlands

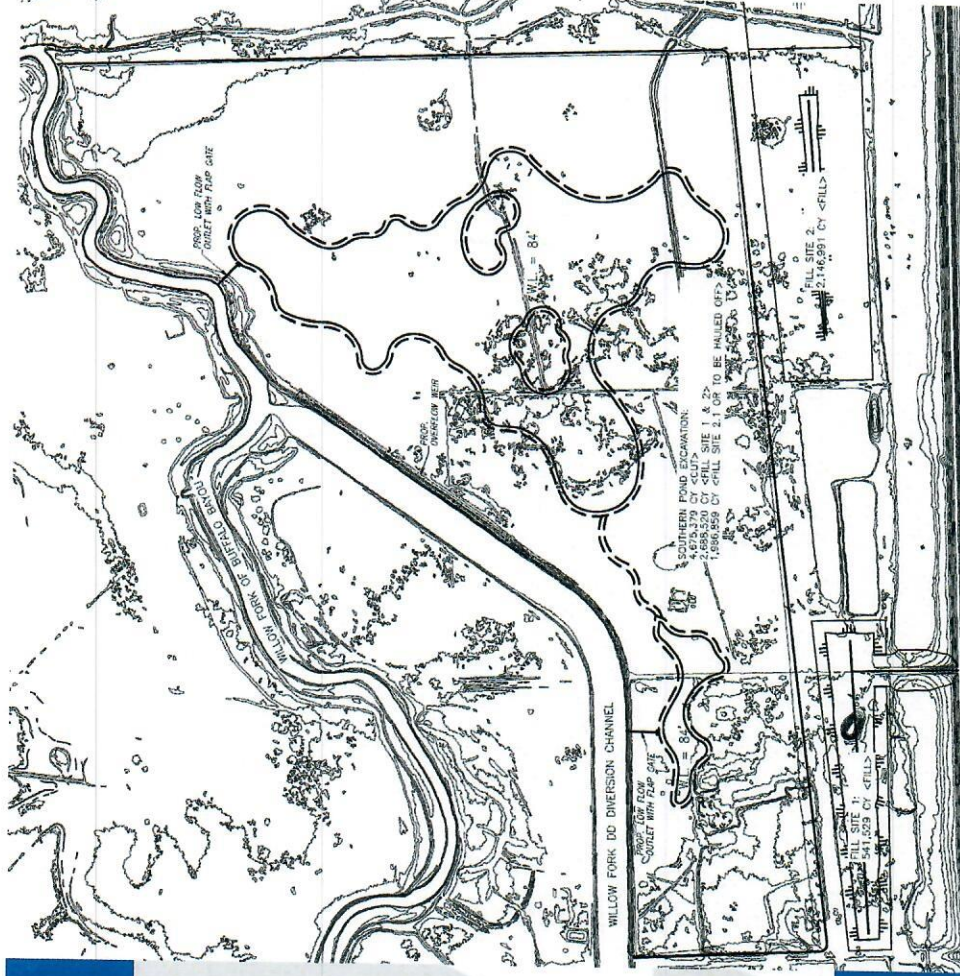
Preliminary Design (Layout)

- ✓ Excavation Area ~ 340 Acres
- ✓ Fill Areas ~ 82 Acres
 - ✓ Used to Stockpile Material
 - ✓ Reduced Costs
 - ✓ Potential Future Park Space
- ✓ Total Project Area ~ 422 Acres
 - ✓ 3.5% of Government Owned Land within the Reservoir
- ✓ Excavation
 - ✓ 4,675,000 Cubic Yards
 - ✓ Hauled Off (\$15/CY Est.) ~ \$70M
 - ✓ Stockpiled (\$4/CY Est.) ~ \$19M

	Existing Storage (Acre-Ft)	Additional Storage (Acre-Ft)	Total Storage (Acre-Ft)
Maximum Storage (Below 104.0)	209,600 (210± Astrodomes)	5,000 (5± Astrodomes)	214,600 (2% Increase)
Government Owned Storage (Below 95.0)	82,921 (85± Astrodomes)	3,000 (3± Astrodomes)	85,920 (4% Increase)

Actual Storage to be Determined after USACE Reviews Project and a Detailed Environmental Assessment is Completed

Conceptual



Program

- Proposed Ponds: 3,600,000 sf
- Trails: 7.0 miles
- Dog Park: 350,000 sf
- BMX Park: 422,000 sf
- Playground: 37,000 sf

Additional Aquatic Features

New Trails

Environmental Ecosystem

Wetlands



Establishing wetland ecosystem to promote wildlife and biodiversity.

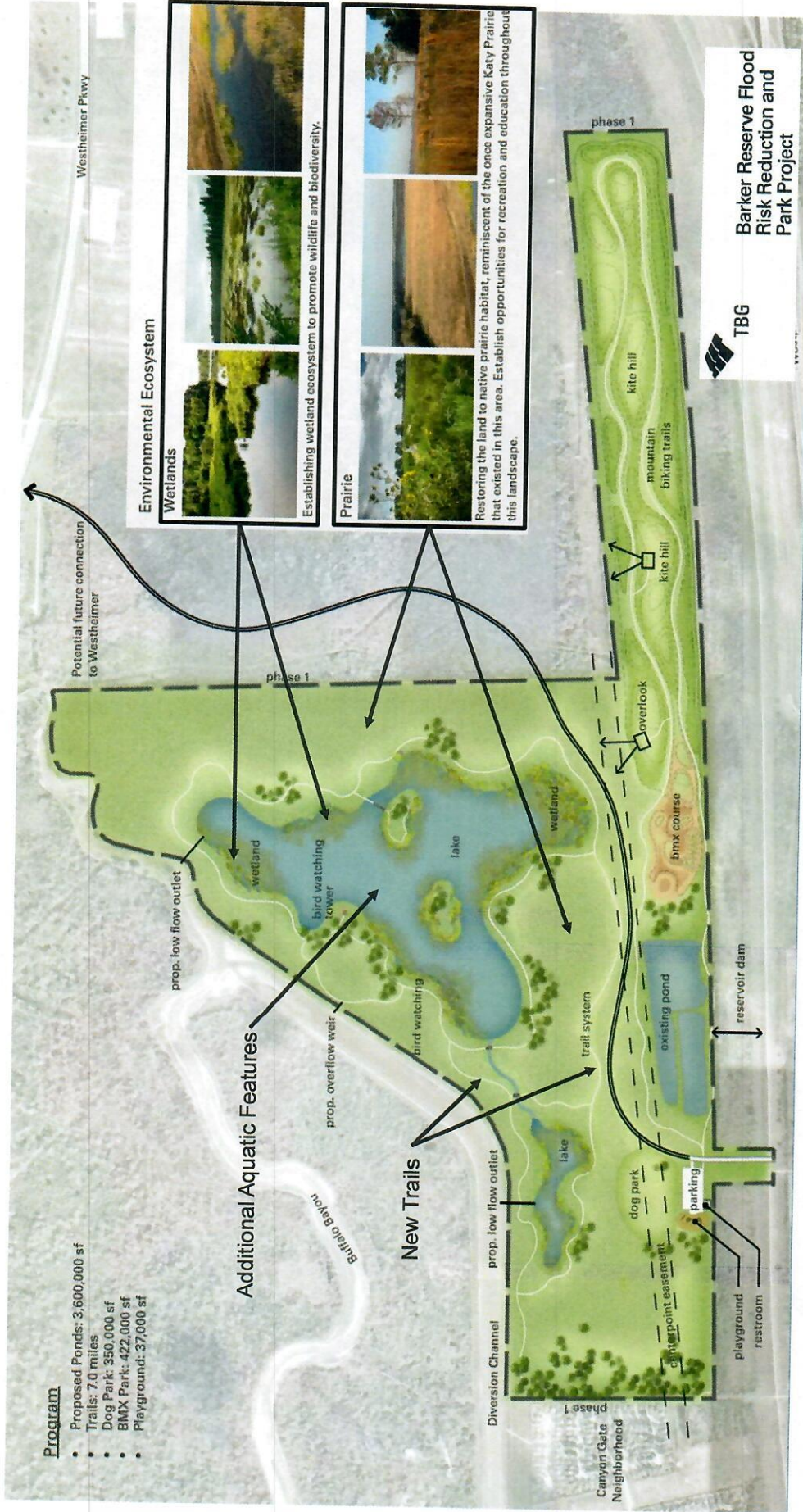
Prairie



Restoring the land to native prairie habitat, reminiscent of the once expansive Katy Prairie that existed in this area. Establish opportunities for recreation and education throughout this landscape.



Barker Reserve Flood Risk Reduction and Park Project



Flood Risk Reduction (Community Benefit)

Historical Events

- ✓ 2016 Tax Day
- ✓ No Reports of Flooding from Reservoir

	Event Actual / Estimate	With 3,000 Ac-Ft Add. Storage ⁽¹⁾	Difference
Peak WSE	95.2	95.0	- 2.4 Inches
Peak Flood Storage (Ac-Ft)	85,350	82,920	- 2.8%
Conceptual Actual Benefits to be Determined after Initial Review by the USCAE			

- ✓ 2017 Hurricane Harvey
- ✓ 4,000+ Structures Flooded Upstream

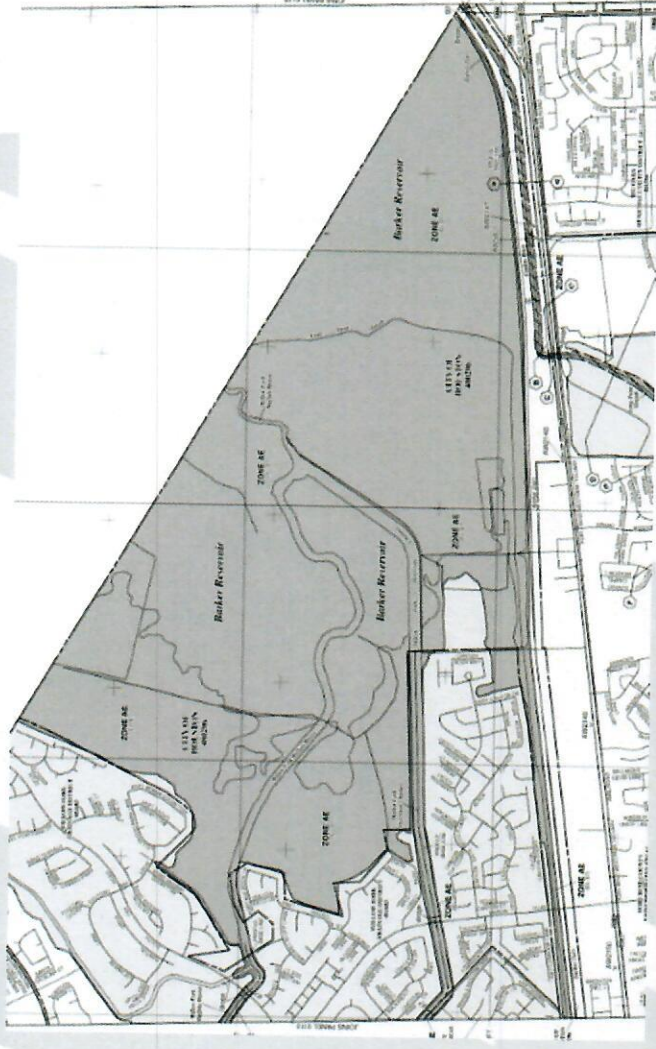
	Event Actual / Estimate	With 3,000 Ac-Ft Add. Storage ⁽²⁾	Difference
Peak WSE	101.5	101.43	- 0.8 Inches
Peak Flood Storage (Ac-Ft)	171,500	169,000	- 1.5%
Conceptual Actual Benefits to be Determined after Initial Review by the USCAE			

Flood Risk Reduction (Community Benefit)

Paper / Design Floods

- ✓ Addressing Atlas 14 Changes to FEMA FIRMS

BFE	Effective BFE	Est. BFE with Atlas 14 ⁽¹⁾	Est. BFE with Add. Storage ⁽¹⁾
Peak Flood Storage (Ac-Ft)	97.2	99.0	98.8
Peak Flood Area (Acres)	106,700	130,100	127,400
	12,610	13,500	13,300
Conceptual Actual Benefits to be Determined after Initial Review by the USCAE			



Parks / Enhanced Quality of Life (Community Benefit)

- ✓ Increased Park Space and Features (Nature Observation, Aquatic Areas, Etc.)
- ✓ Approximately 350 to 450 Acres (Including the Fill Site) of new Park Space creating opportunity for additional open space activities, community education programs and increased environmental benefits.
- ✓ Additional Trails to Connect to Existing Regional System



Wetlands / Nature Habitats (Environmental Benefits)

- ✓ Environmental Enhancements
 - ✓ Wetlands Habitats ~ 25+ Acres ⁽¹⁾
 - ✓ Aquatic Habitats ~80+ Acres ⁽¹⁾
 - ✓ Water Quality / Sediment Controls
- ✓ Educational Opportunities
 - ✓ Texas Master Naturalists
 - ✓ Scout / Youth Programs
 - ✓ Other Public Educational Programs
 - ✓ Butterflies, Plants, Fish, Other Wildlife



⁽¹⁾ Number of Acres of Wetlands and Aquatic Habitat Could Increase Depending on Future Environmental Assessment that will have to be Completed for Final Approval.

Maintenance and Operations (USACE Benefits)

- ✓ Maintenance
 - ✓ WFDD to Maintain including
 - ✓ Vegetation Control (Natural Plantings)
 - ✓ Sediment/Silt Removal
- ✓ Operations
 - ✓ Gives USACE Additional Flood Storage
 - ✓ Incorporates into Future USACE Activities
 - ✓ Demonstrates Partnership Potential for Future Projects within Addicks and Barker

