

Galveston County Consolidated Drainage District & the City of Friendswood

Working Together for Resilient Drainage Solutions

APWA Monthly General Membership Meeting – May 2025

Jil Arias, PE, CFM, ENV SP
Director of Engineering
City of Friendswood

In Partnership with:
Samantha Haritos, CFM, ENV SP
Chief Operating Officer of Financial Procurement,
Partnerships and Strategic Planning
GCCDD

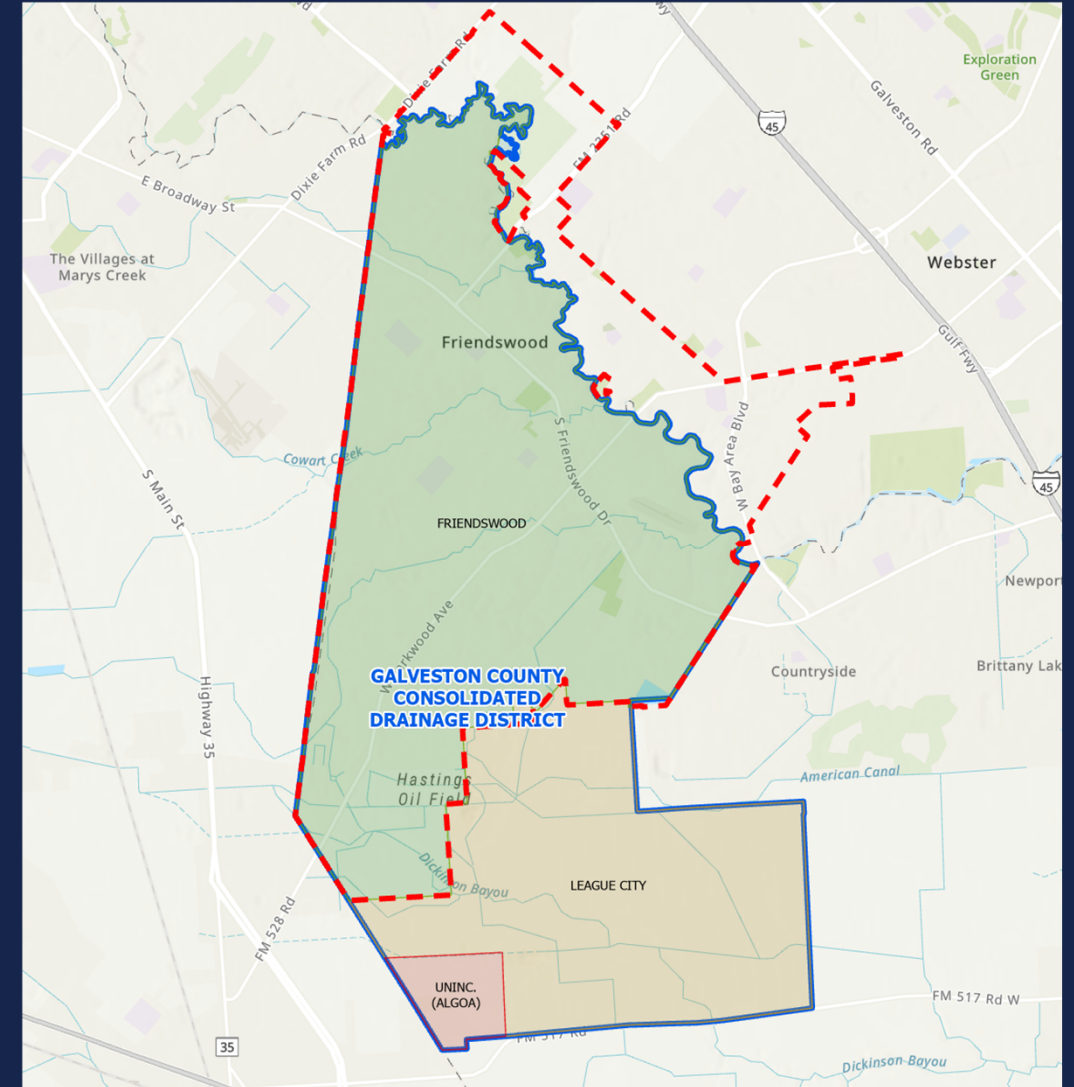


Introduction

Welcome and Introductions

Today's Focus: City–GCCDD Partnerships
for Flood Control

Improving Resiliency Through
Collaboration

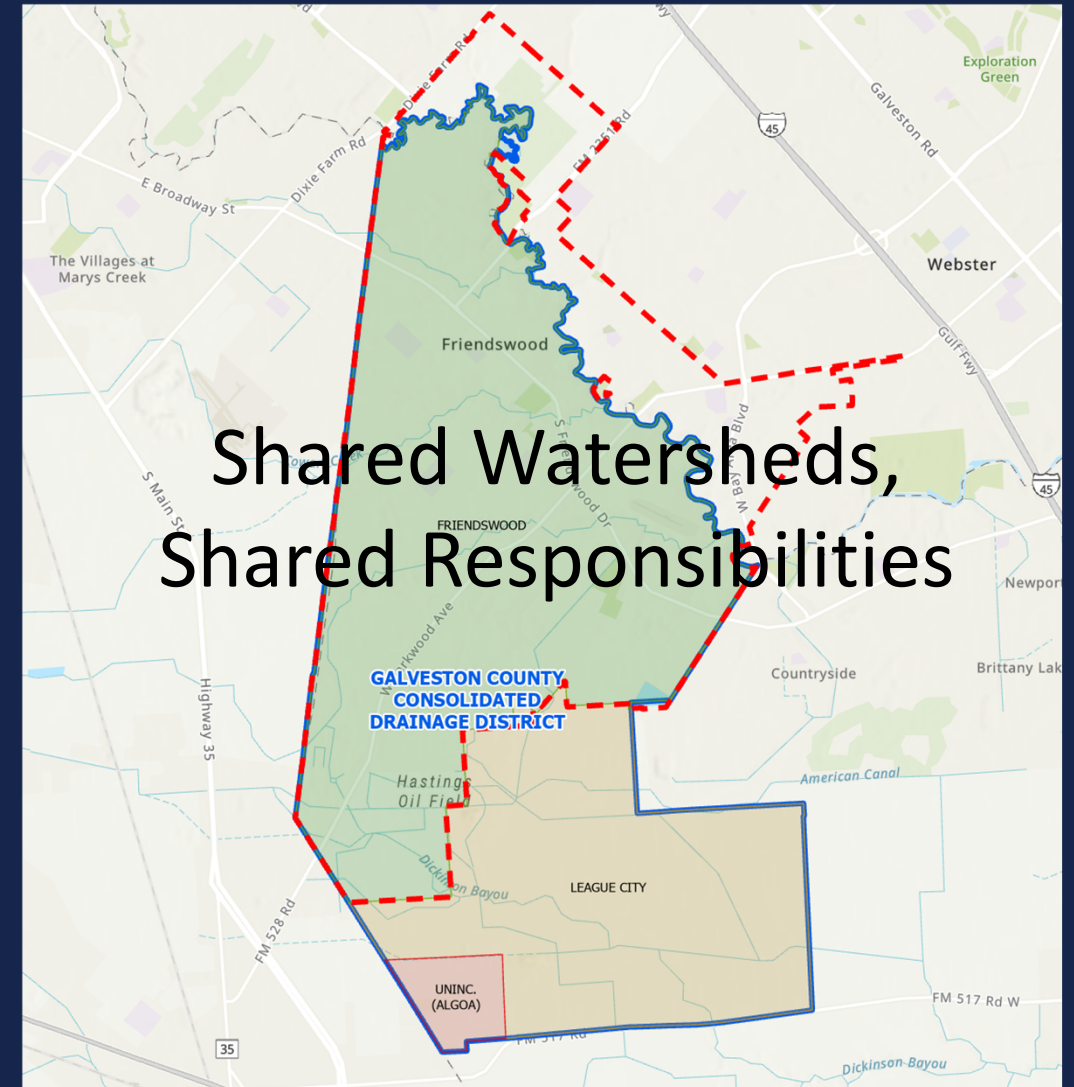


Why Collaboration Matters

Shared Watersheds, Shared Responsibility

Drainage Doesn't Follow Jurisdictions

Leveraging Strengths Across Agencies



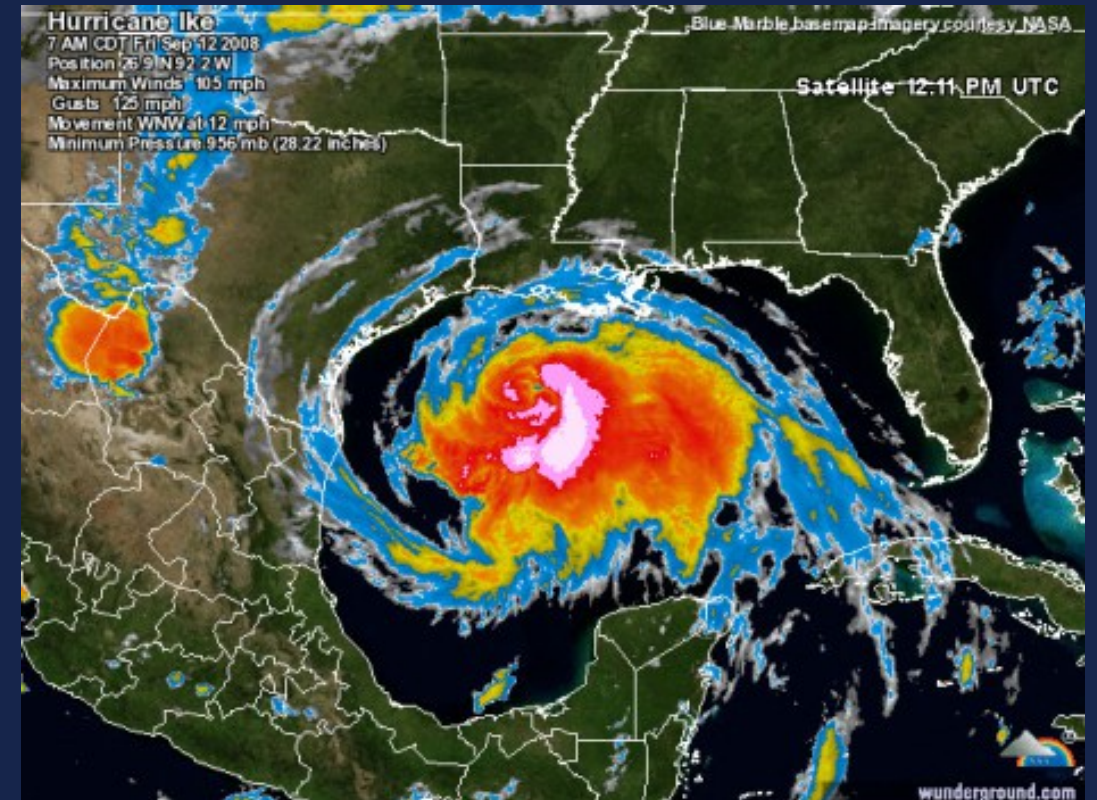
Overview of Partnership History

Collaboration began after Hurricane Ike
(2008)

GCCDD GM Joseph Anderson committed to
partnering with the City

15+ Years of Interlocal Agreements (ILAs)

Dozens of Joint Drainage Initiatives



Legacy Projects: A Foundation of Trust

Harold Whitaker Detention Basin

Clearview Detention Basin (ILA
Expansion Signed)

3 Detention Basins – Queens &
Castlewood (Cowards Creek)

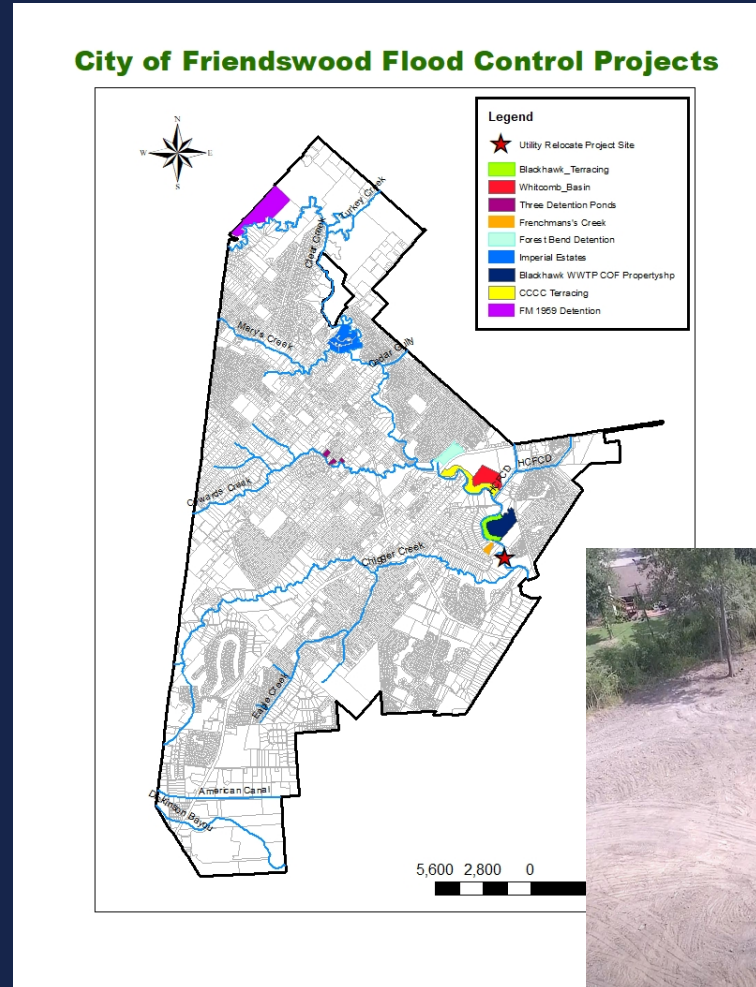


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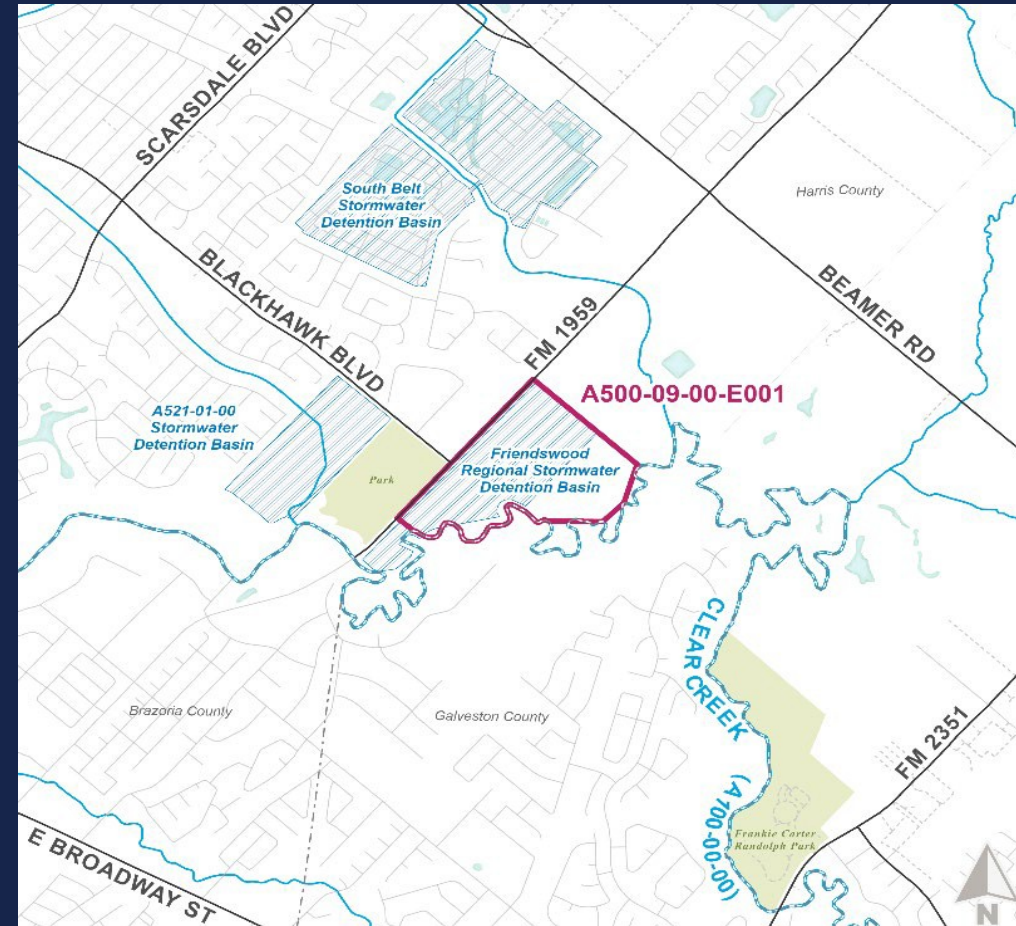


The Big One: Friendswood Regional Detention Basin

Stakeholders: Friendswood, GCCDD, HCFCD, Galveston County

GCCDD Contribution: \$3.5M

Final Design Underway



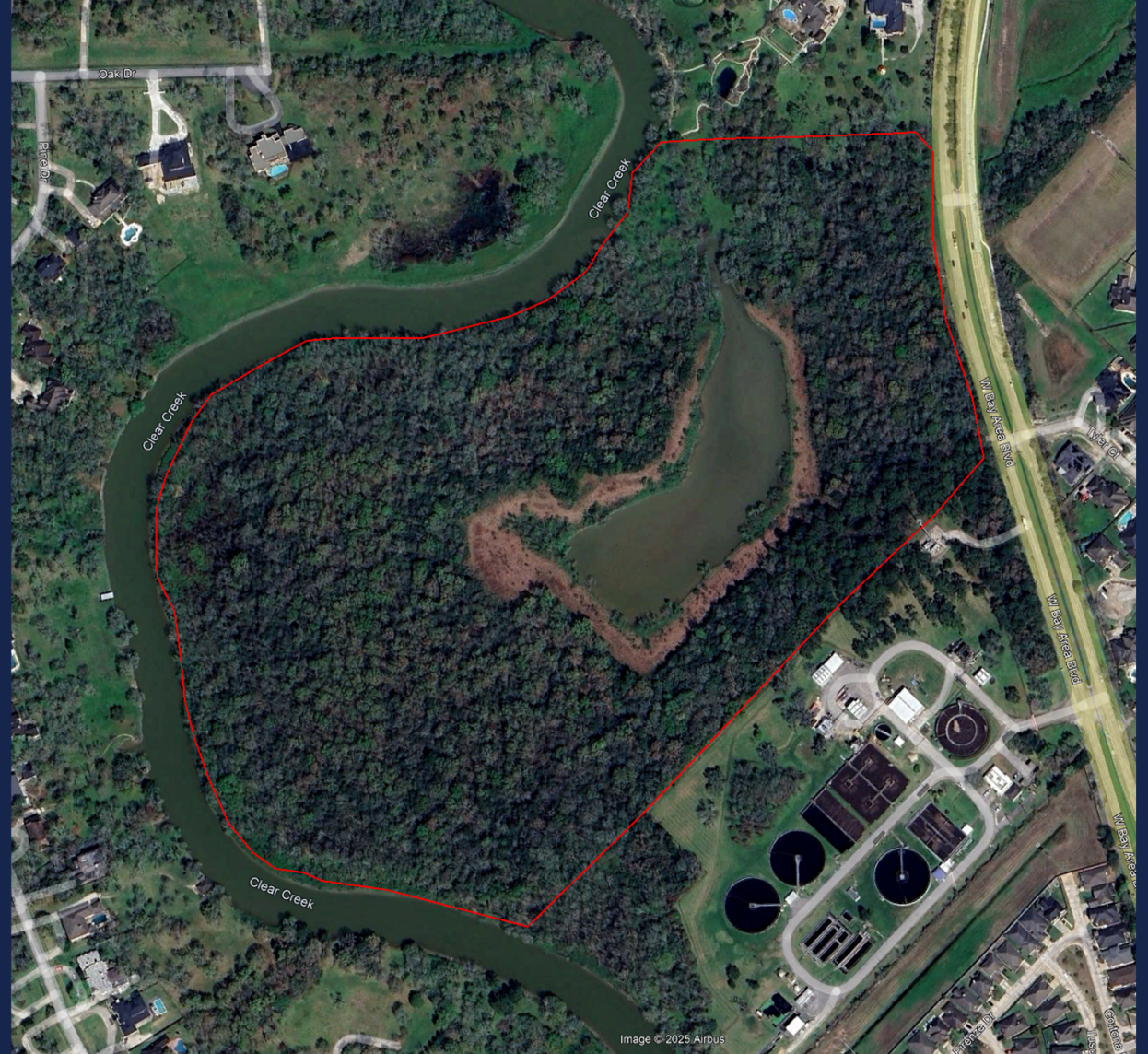
Blackhawk Flood Control Project: The Next Frontier

FEMA FMA Scoping Grant Secured

Inline/Offline Detention Near
Whitcomb Project

GCCDD Exploring Full Engineering
Design

Future Design & Construction
Opportunity

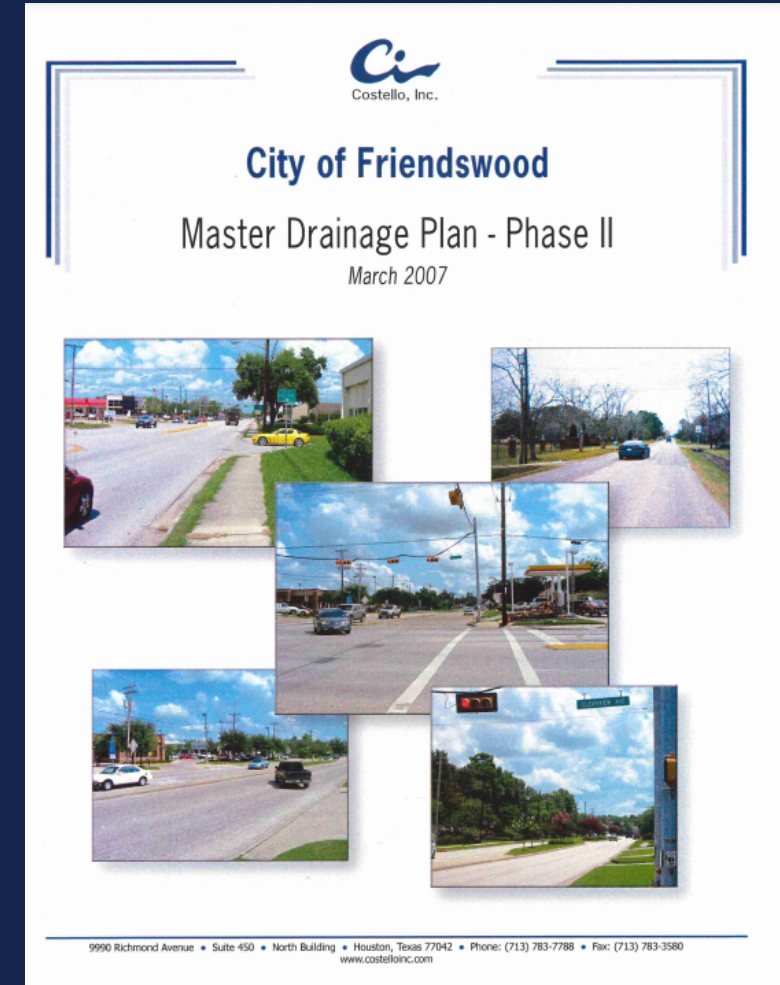


Joint Approach in the Master Drainage Plan

Friendswood MDP Kicked Off

GCCDD Participation from the Start

Shared Goals & Project Alignment



Lessons Learned & What's Next

Clear Roles + Constant
Communication = Success

Moving from Reactive to Proactive

Regional Thinking, Local Action



TM



*Resilience happens when
local and regional efforts
move together.*

Galveston County Consolidated Drainage District
APWA April Meeting
Southeast Branch



GENERAL PROJECT UPDATE

CHIEF OPERATING OFFICER – SAMANTHA HARITOS, CFM, ENV SP
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FRIENDSWOOD REGIONAL DETENTION BASIN

Stakeholders Include: Friendswood, Galveston County, Galveston County Consolidated Drainage District, and Harris County Flood Control District

Kickoff for Engineering Design in December 2024 (Contractor is Gauge Engineering)

Moving forward with Alternative 2 from Preliminary Engineering (70 Acre Dry Bottom Basin that Avoids Archeological Site)

Submitted Wetland Report for Jurisdictional Determination from USACE for Wetland Sites (4.25 Acres)

Rough Grading Construction 65% (December 2024)

Timeline – Engineering Design – 12 Months

Construction – Will Find Out During Engineering Design – Likely 24-36 Months

Cost – HCFCD Working on Update

GCCDD Cost (\$3,500,000 towards Entire Project)

Currently in Engineering Design Phase. Construction Phase RFP through Harris County Flood Control District Winter 2025/Spring 2026

CLEAR LAKE GATE AND PUMPS PROPOSAL



CLEAR LAKE GATE AND PUMPS PROPOSAL

Pump station proposed for Clear Creek has proposed capacity of 20,000 cfs (making it one of the largest stations in the world!)

Baseline 2D Hydrodynamic Model Setup and Scenario Analysis

- a. Surge Only Scenarios: 1 00-yr, 500-yr
- b. Precipitation Only Scenarios: 1 0-yr, 25-yr, 1 00-yr, 500-yr
- c. Compound Scenarios

Pump and Gate Scenarios Analysis and Optimalization

- Investigate how pumps and gates configurations can be optimized
- Determine number of pumps required and their capacities

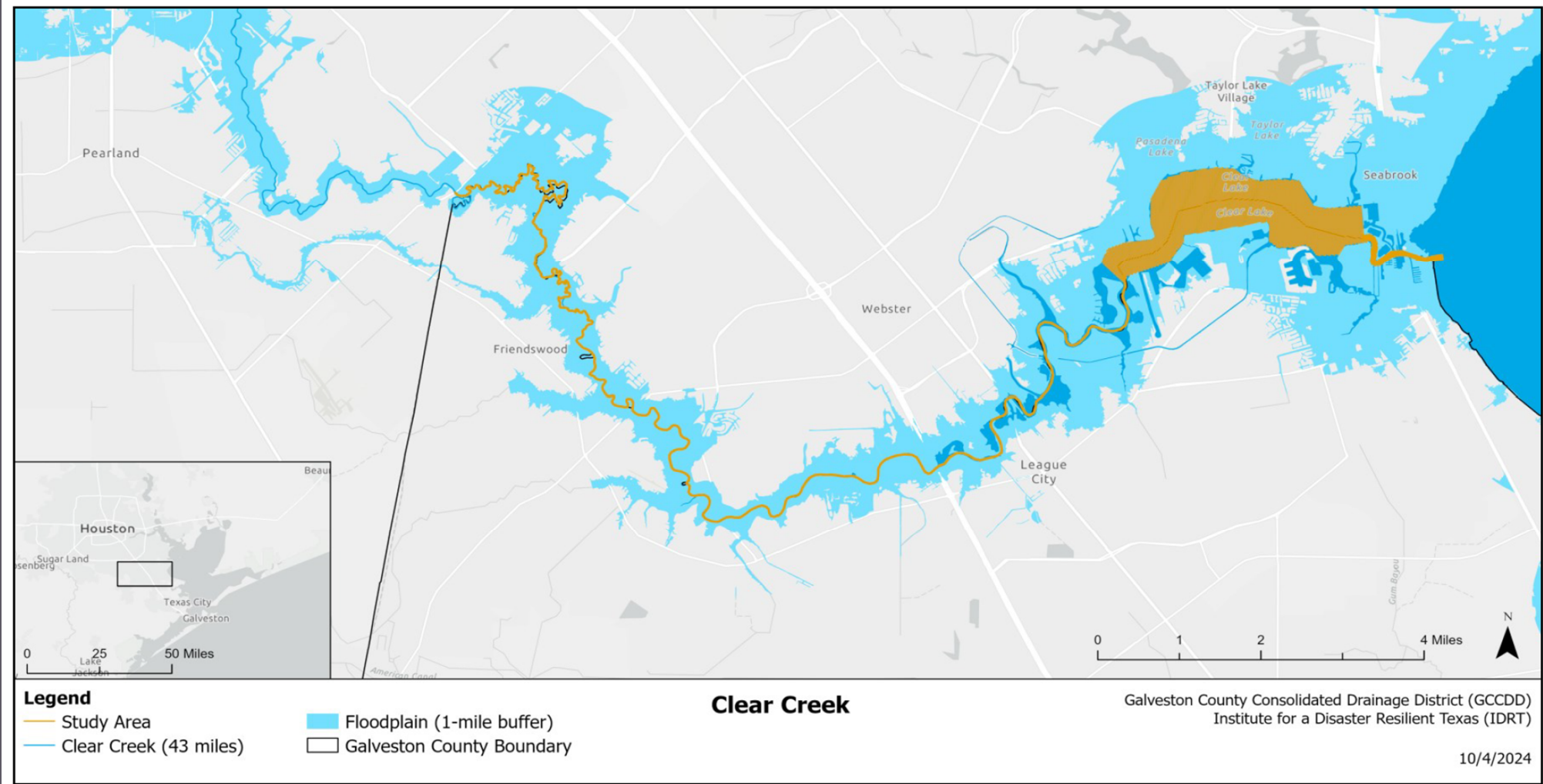
Deliverables include Report and PowerPoint Presentation for Broad Audience

Timeline – 12 Months

Total Cost - \$195,0000 (Includes all Indirect Costs)

Planning Level Study with Texas A&M Institute for Disaster Resiliency

CLEAR CREEK AND CLEAR LAKE SEDIMENTATION STUDY



Boundaries: Clear Creek at FM2351 to Clear Lake's confluence with Galveston Bay

CLEAR CREEK AND CLEAR LAKE SEDIMENTATION STUDY

Comprehensive reconnaissance study to assess **channel obstructions** and **sedimentation patterns** over time.

Highly technical reconnaissance approach will utilize:

- a. 2D Side Scanning Sonar
- b. Bathymetric Transects
- c. Drone Mapping (3D Lidar)
- d. Drone Multi-Spectral Mapping – Vegetation
- e. Sediment Cores

Deliverables:

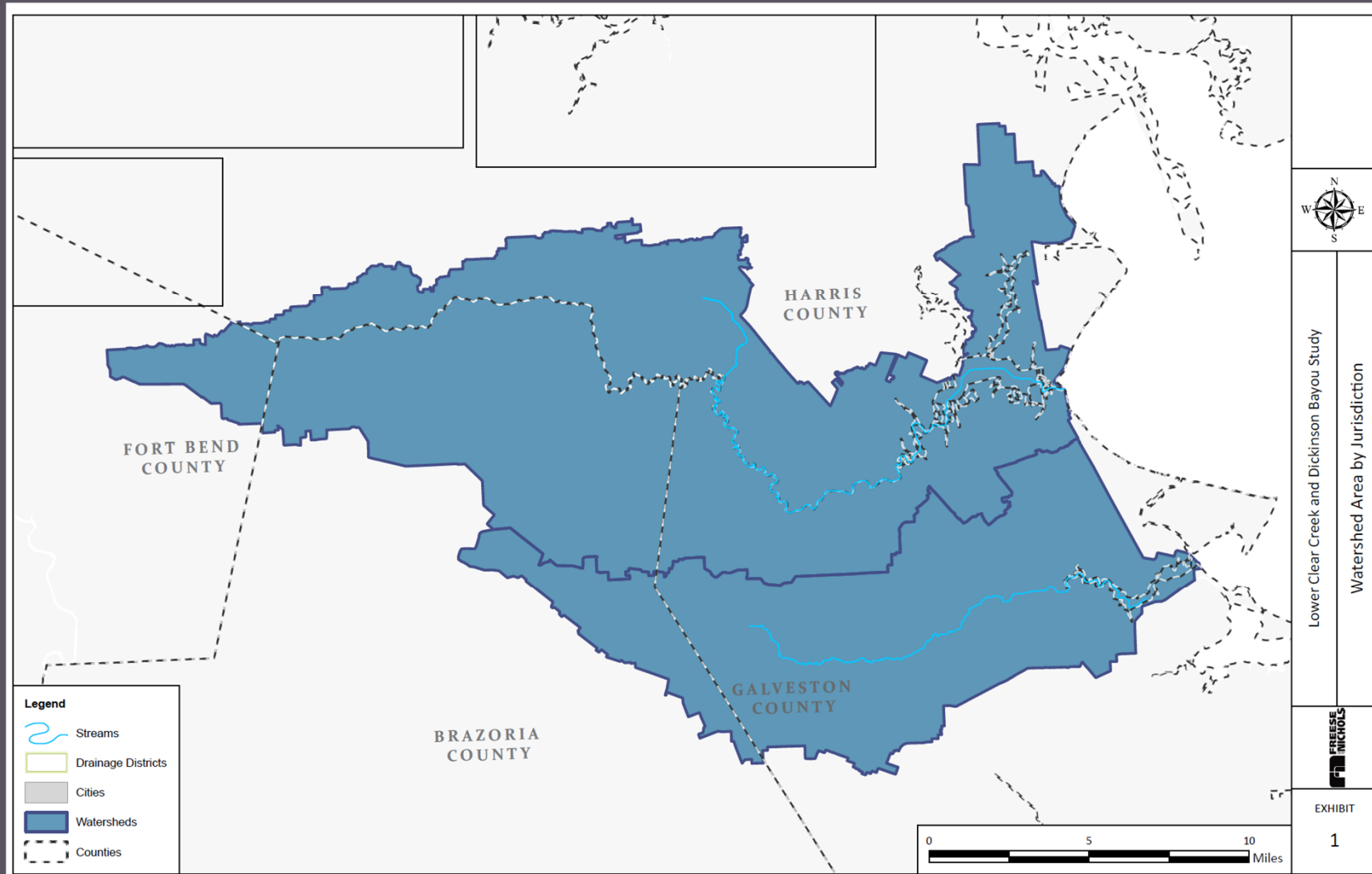
- 2D Maps Identifying - Sedimentation hotspots, wetland health, physical obstructions
- High Resolution Spatial Datasets
- Report and PowerPoint Presentation for Broad Audience

Timeline – 6 to Months

Total Cost - \$261,000 (Direct Costs Only)

Data Collection and Analysis with Texas A&M Institute for Disaster Resiliency

LOWER CLEAR CREEK AND DICKINSON BAYOU FEASIBILITY STUDY



LOWER CLEAR CREEK & DICKINSON BAYOU FEASIBILITY STUDY

Approved in WARDA 2022 but Federal Funding Never Allocated

Feasibility Study will be a Section 203 Study with USACE Review

Working with Stakeholders and USACE to get Study Moving ASAP

Representative Weber is Recommending Federal Appropriations (Fingers Crossed)

Section 203 Process – Enables more Flexibility with Benefit Cost Assessment Process
- Can Fast Track the Project Timeline

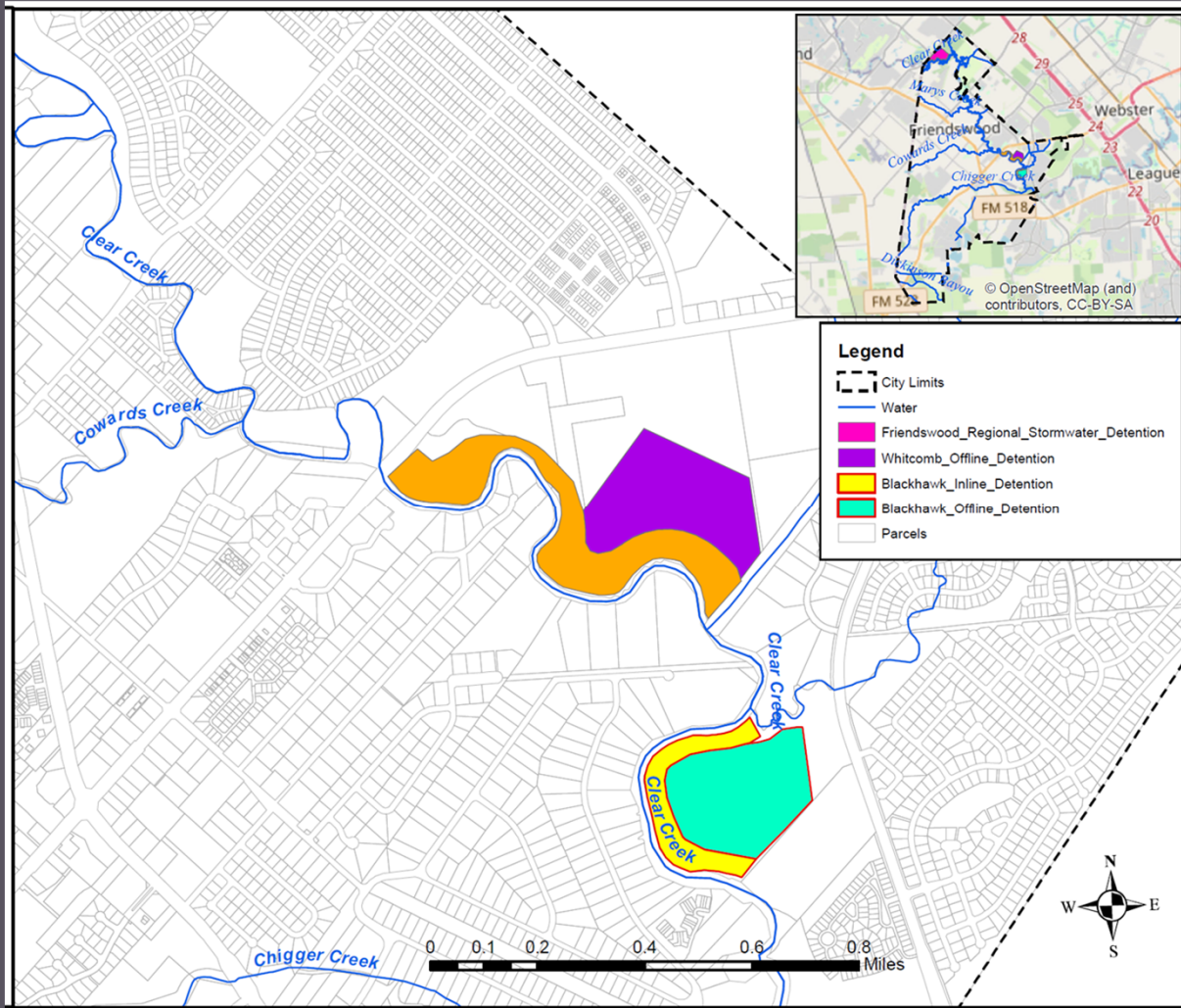
Timeline – 3 Years (36 Months)

Local Cost - \$3,000,000 (Fund Study) + USACE Review Fees

(Working to Receive State or Federal Funding to Assist with Additional Costs)

Feasibility Level Study – Will study large scale projects and determine Preferred Alternative(s)

BLACKHAWK INLINE AND OFFLINE DETENTION PROJECT



Partnership Project

Friendswood
GCCDD
Galveston County
Possibly Additional Stakeholders

Benefits

Works with the Whitcomb Inline/Offline
Detention Project
Up to 1 Ft Water Surface Elevation
Reduction

Timeline

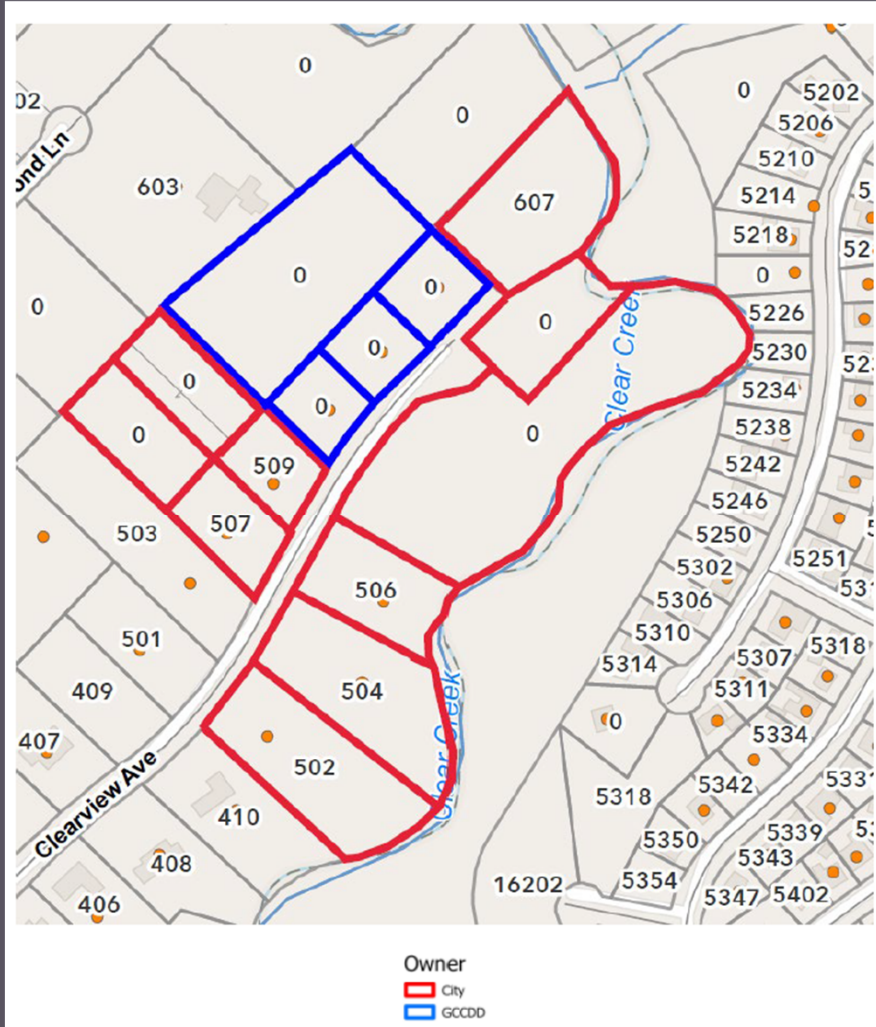
Engineering Design – 12 to 18 Months

Estimated Cost

Engineering - \$1 to \$1.5 Million
Construction - \$12.5 Million

Engineering Design Level Study – RFQ will come out in 2025 or Early 2026

CLEAR VIEW FLOOD MITIGATION PROJECT



Partnership Project

Friendswood
GCCDD

Benefits

Studying

Timeline

Engineering Design – 10 to 12 Months

Construction - Start Summer 2026

Estimated Cost

Engineering - \$1 to \$1.5 Million

Construction – Unknown

Engineering Design Level Study – Engineering Under Way – BCA will Determine Project Concept. Construction RFQ as Early as Winter/Spring 2026

GCCDD MASTER DRAINAGE PLAN

GCCDD Board Approved \$400,000 for Dickinson Bayou MDP

Looking for Additional Grant Funding for Clear Creek MDP

Looking for Cost Effective Ways to Study Cost/Benefit of New Project Alternatives in Order to Prepare a CIP

Assessing Easements, Regional Detention, Updates to Design Criteria Manual, Acquisition Planning, Repetitive Loss Study and Plan of Action

Timeline – Each Phase 12 – 18 Months

Total Cost - \$400,000 Dickinson Bayou / \$1,000,000 Clear Creek

Planning Study – Dickinson Bayou RFQ Summer 2025 / Clear Creek RFQ in 2026/2027

UPCOMING RFP'S AND RFQ'S

- 1) Debris RFP – May 2025
- 2) Asset Management GIS / Disaster Damage Assessment GIS Tool RFP – Summer 2025
- 3) Mowing RFP – Summer 2025
- 4) Small Projects / Repairs RFP – Summer 2025
- 5) Dickinson Bayou Master Drainage Plan RFQ – Summer 2025
- 6) Blackhawk Inline / Offline Detention Engineering Design RFQ – Late 2025 / Early 2026
- 7) Clear Creek Master Drainage Plan RFQ – Second Half 2026 / Early 2027
- 8) Clear View Construction – Dependent on Engineering Design - 2026
- 9) Repair Projects for Bank Erosion – Engineering Design and/or Construction – 2025 / 2026
- 10) Friendswood Regional Stormwater Detention Basin Construction RFP via HCFCD – Late 2025 / Early 2026
- 11) Further Out – Engineering Design RFQ's for Dredging Projects along Clear Creek and Dickinson Bayou. Dependent upon Studies and Permitting with USACE

Looking to Expand our Vendor List!!!

Contact Information:

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