

Nature-based Stormwater Infrastructure (NbSI) Capacity Building Workshops for Lower Galveston Bay Region

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Scope of Work

- Working with subcommittees input to identify communities and areas in existing WBPs to host workshops that support implementation of nature – based stormwater infrastructure.
- We've proposed 2-4 multi-prong workshop series. That first targets adult education and elected officials and decision makers, NGICP professional PDH hours, and final 7-12 grade student education.
- We've proposed 1-2 field days to include visits to sites in the targeted region(s) that showcase existing NbSI demonstration projects to potentially new audiences.



Plan and Subcommittee Priorities

- SPO2 Workshops and Events
- SPO4 Local Government Outreach
- PEA1 Key Issues Engagement
- PEA 2 Adult Education and Training
- PEA 3 High School Student Workshop Training
- NPS 1 Implementing WBPs
- NPS 2 NPS Education
- NPS 4 NPS Workshops and Speaking Engagements

PPE:

- Opportunities to host workshops /networking events to provide technical assistance to local leadership.
- Workforce Development
- Empowering K-12 /adult education to positively impact their community through environmental education and scientific literacy
- Connecting new audience to existing on the ground projects

WSQ:

- Supporting management measures and watershed-based plans through adaptive management, workforce development, and technical assistance.

Budget: Total Request \$88,031

Budget Category	Cost for Work to be Performed
Salary / Wages (3 staff)	\$50,545.00
Fringe Benefits (18.9% plus 1272 ins.)	\$12,726.00
Travel (3 staff multiple trips)	\$1,336.00
Supplies	\$1,665.00
Equipment	\$0.00
Contractual	\$0.00
Construction	\$0.00
Other (venue costs, speaker stipends)	\$3,800.00
Total Direct Cost	\$70,072.00

Distribution Base Amount (identify Base type below)	\$ 69,072
Indirect Cost Rate for Reimbursement	26%
Total Indirect Costs	\$ 17,959

Regional Water Workforce Pathways

Building the next generation of licensed water and wastewater operators



FY2028 WSQ PRIORITY

Supporting management measures and watershed-based plans through adaptive management, workforce development, and technical assistance.

REGIONAL NEED

1 in 3 water and wastewater operators is nearing retirement.
reference: texaswatercareers.com

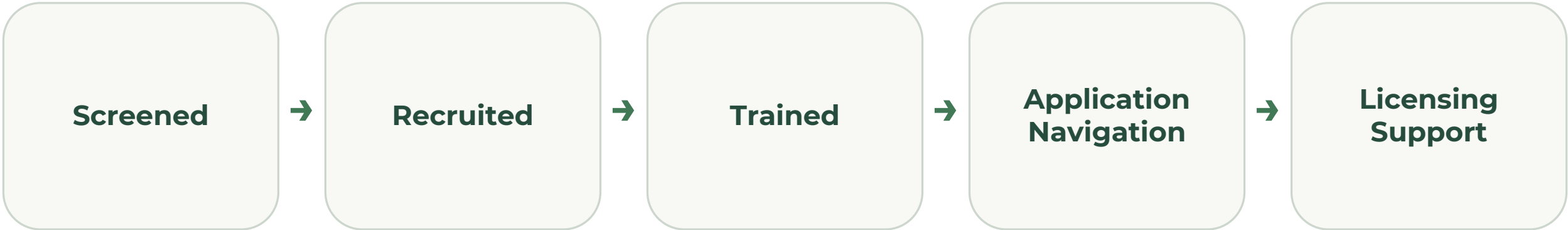
BPA'S RESPONSE

Create an accessible regional pathway from interest to Class D training, licensing and employment.

BPA Has Already Built the Pathway

FY2028 funding scales a demonstrated Houston–Galveston program.

43
licensed in 2025



340+

PARTICIPANTS REACHED IN 2025

Demand extends beyond the 2025 participants and provides a ready pipeline for future cohorts.

The grant is not funding a pilot. It expands a model BPA has already delivered.

From Proven Program to Regional Workforce Pipeline

The next phase adds sustained cohorts and stronger connections between participants and employers.



CLASS D IS THE ENTRY POINT
Entry-level licensing can lead to higher operator licenses, supervisory roles and utility leadership.

10 REGIONAL WORKFORCE ROUNDTABLES
Connect utilities, employers, training providers and workforce partners around hiring needs and future demand.

Three Years of Regional Workforce Capacity

A measurable expansion of an existing program—built to respond to regional need and future demand.

96

participants

8

training cohorts

10

Regional Water Workforce
Roundtables

20+

regional partners

≥70%

training completion
target

\$510

average investment per
enrolled participant

GBEP investment scales a demonstrated program into a repeatable regional pathway for bringing new licensed operators into a workforce facing significant retirement and replacement needs.

\$180,849 requested | September 2027–May 2030 | Scalable



HARC

Galveston Bay Monitoring and Research Project Database: Spatial and Metric Visualization for WSQ

black cat
GIS & Biological



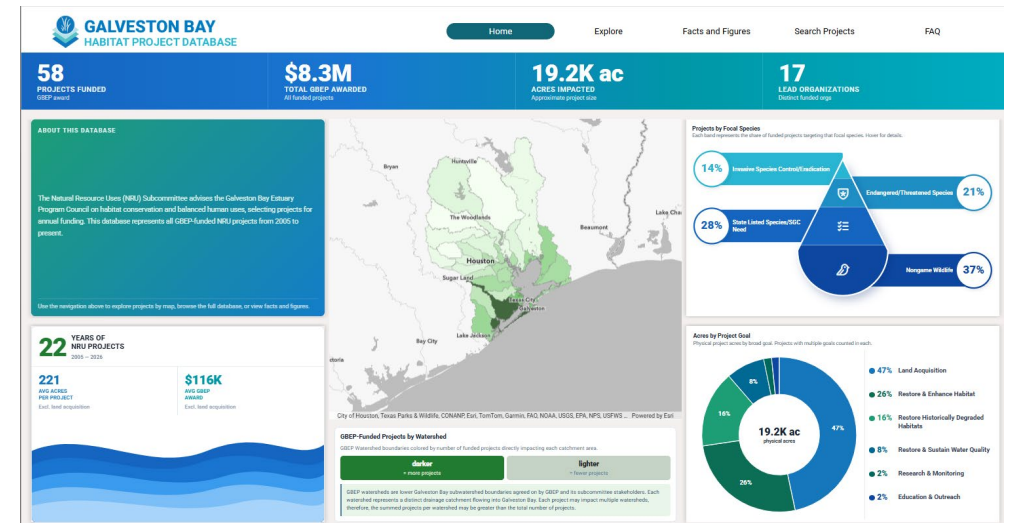
Erin Kinney
Houston Advanced Research Center

Amanda Hackney
Black Cat GIS

Project Timeline

Data Collection

- Obtain, process, and enter WSQ Project Data from GBEP through 2005
- Filling-in Data Gaps from PIs
- QA/QC of Project Data
- Obtaining supplemental information
- Building a Survey 123 form that will standardize project details to support the maps and visualizations that address the questions from WSQ
- Identify and obtain supporting datasets



Fall 2027

2028

Build Database

- Create optimal interface for WSQ
- Troubleshoot Database
- Create Virtual Tours

Planning + QAPP Phase

- QAPP Development
- GBEP WSQ Workshop to identify priority metrics

2028

Visualization Development

- Identify which graphs to standardize
- Identify which metrics to track and which to pair
- Research and create new visuals
- Integrate into NRU Habitat Database Format
- Periodically test drafts with WSQ for feedback

2029

Explore

Click and drag to pan across the bay, scroll to zoom in and out, and use the layer controls to filter by watershed, project type, or funding status.

Quick Start Guide

Use navigation elements to zoom, change to satellite views (basemaps), and more.

Click on any map polygon for more information. Pop-ups may take a moment to load. To clear a feature, close the popup.



Clicking on this icon opens a menu to turn layers on/off.

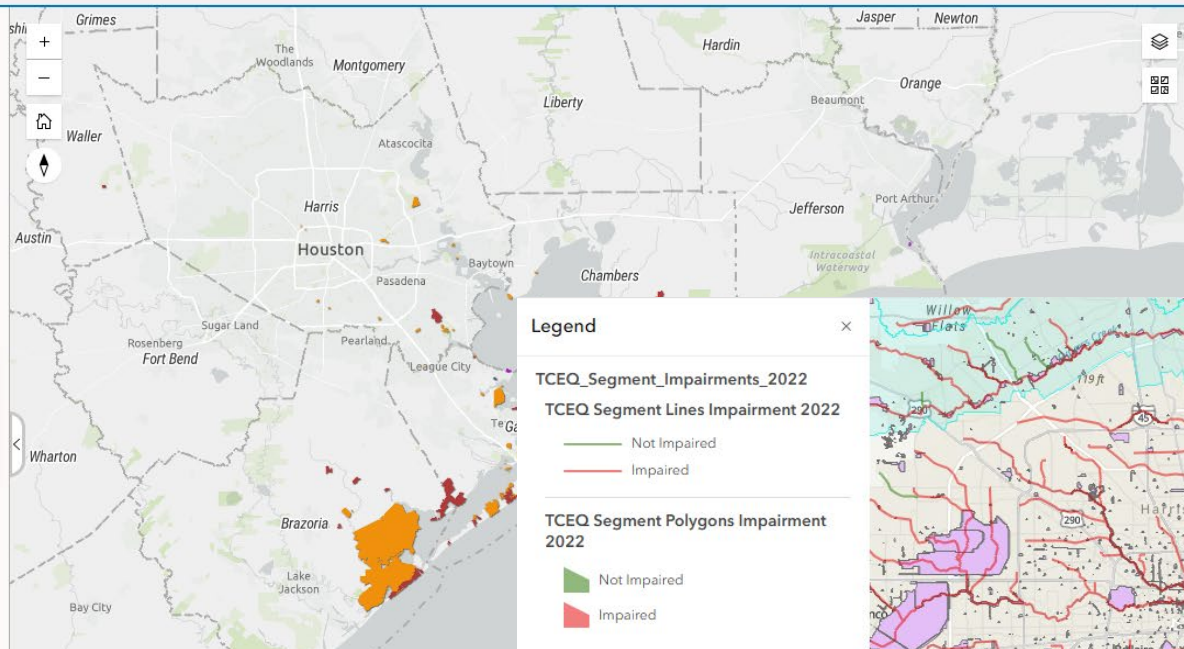


Clicking on this icon allows you to switch the base maps. For example, select 'satellite' to see an aerial view.

MAP LEGEND

NRU PROJECTS

- Restoration, Stewardship & Research
- Land Acquisition and Other Project Goals



Legend

TCEQ_Segment_Impairments_2022

TCEQ Segment Lines Impairment 2022

- Not Impaired
- Impaired

TCEQ Segment Polygons Impairment 2022

- Not Impaired
- Impaired

USGS_Texas_Protected_Areas_Database



TCEQ_WPPs

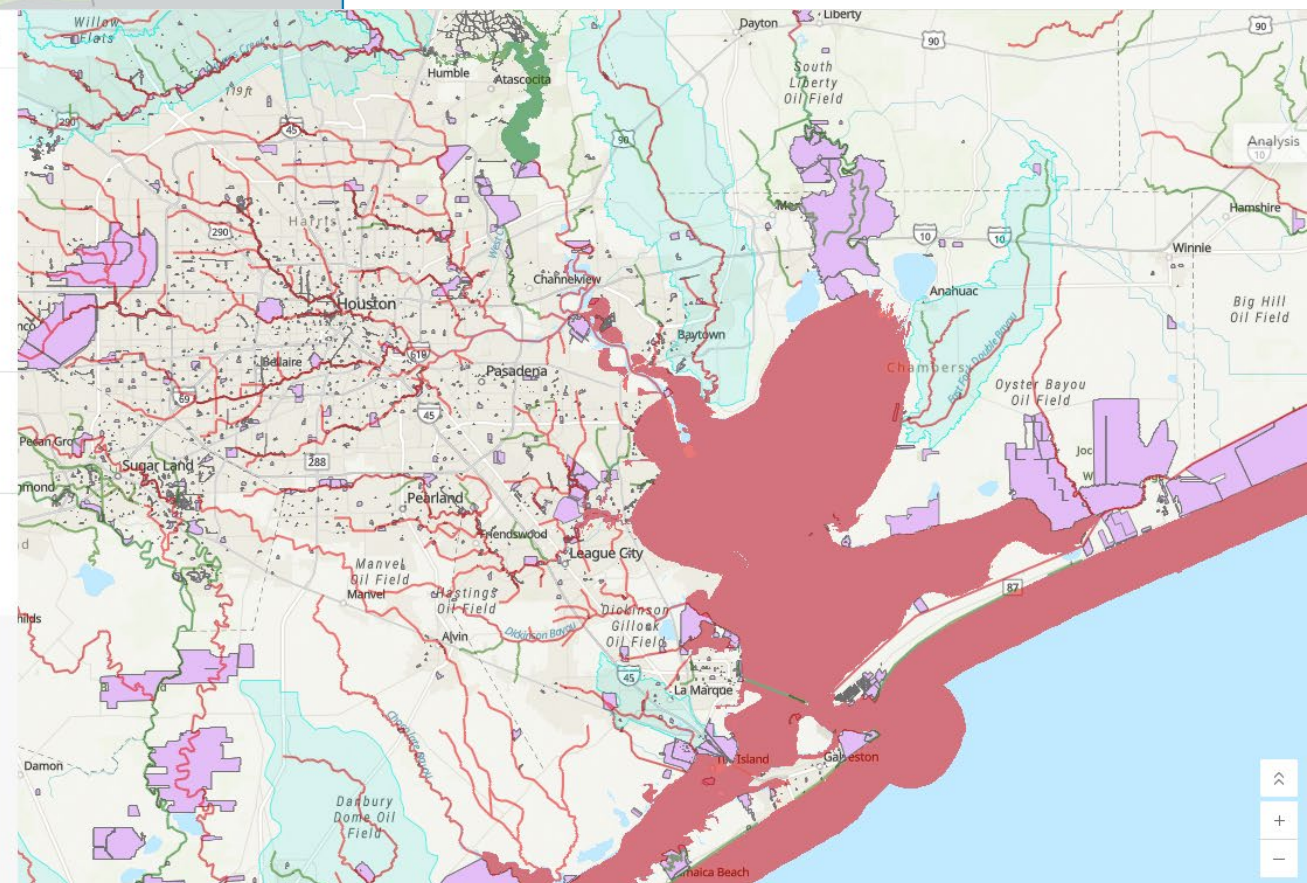


Explore Map:

- Project Locations
- Type of Project
- Planning vs. Implementation
- Project Details
 - Habitat Type
 - Water vs. Sediment

Possible Supporting Datasets:

- TCEQ WPPs
- TCEQ Impacted Waterways
- Texas Protected Areas
- Streamgages



Project Details

\$195,871
2 Years

Both WSQ and M&R Databases together:
\$320,475 (saving \$71,267) 3 years

Planning + QAPP

- QAPP Development
- GBEP WSQ Workshop to identify priority metrics



Data Collection



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- Filling-in Data Gaps from PIs
- QA/QC of Project Data
- Obtaining supplemental information
- Building a Survey 123 form that will standardize project details to support the maps and visualizations that address the questions from WSQ
- Identify and obtain supporting datasets

Visualization Development

- Standard Graphs
- Metric Visuals
- Integrate into Standard Format

Build Database

- Create optimal interface for WSQ
- Troubleshoot
- Create Virtual Tours

WSQ Goals

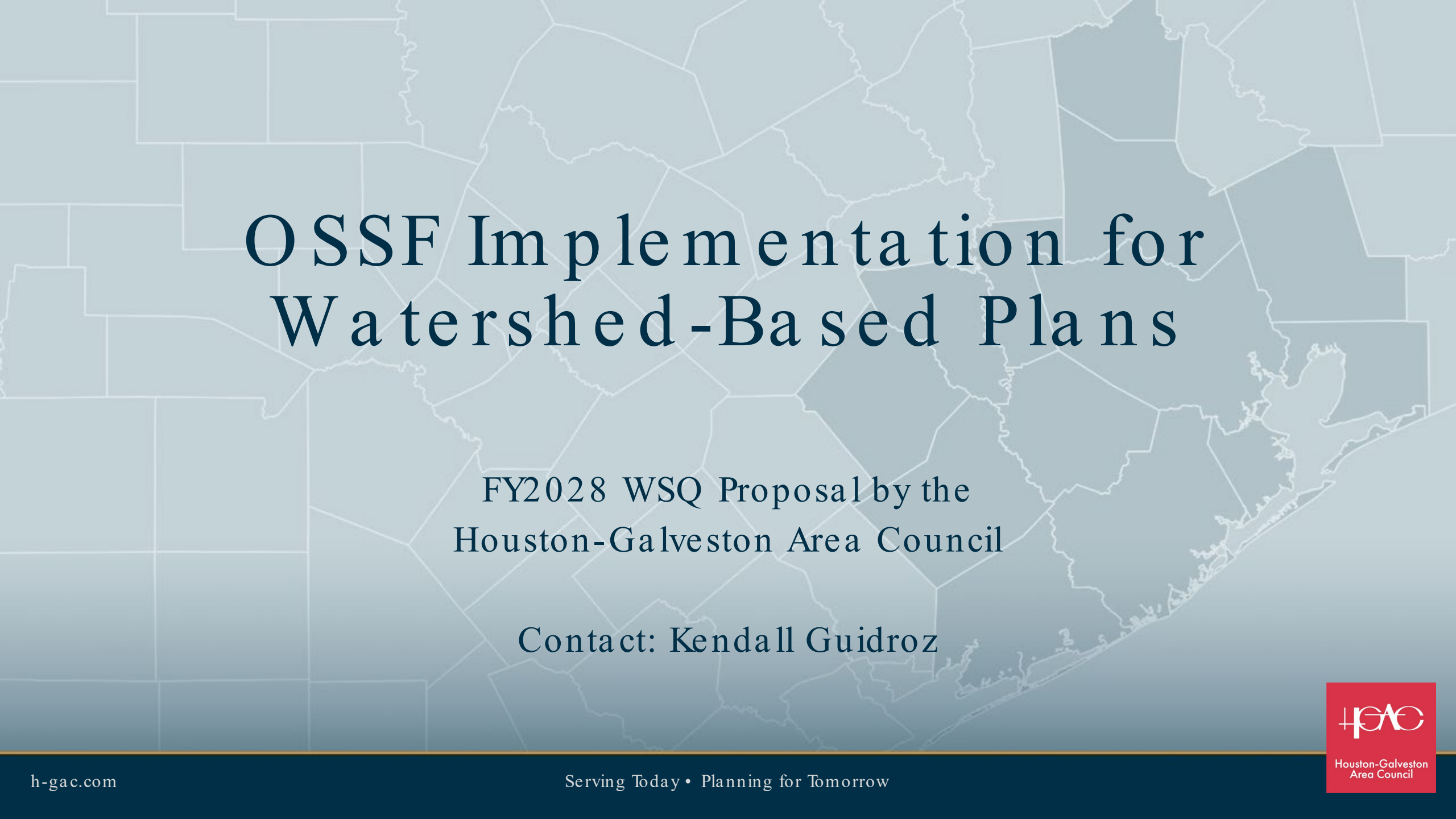
Supporting management measures and watershed-based plans through adaptive management, workforce development, and technical assistance.

- Featured map of WBPs
 - Management measures included
 - Links to supporting resources
 - Other projects in the watershed



Implementation and/or evaluation of best management practices that address point and nonpoint source pollution.

- BMP Feature layer
 - Point vs. Nonpoint projects
 - Developed BMPs
 - BMP Implementation
 - BMP evaluation

A light blue map of the Houston-Galveston Area Council watershed, showing various counties and the Gulf of Mexico coastline. The map is used as a background for the title text.

OSSF Implementation for Watershed-Based Plans

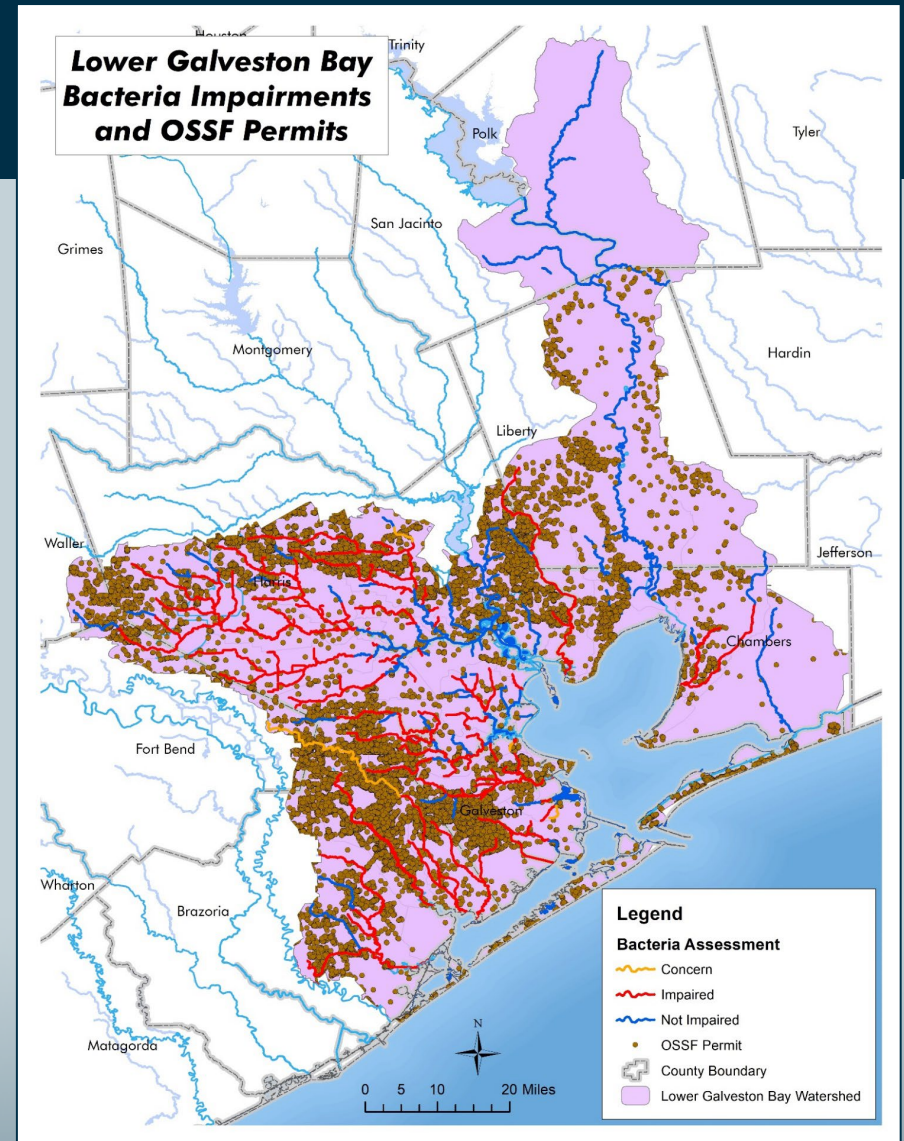
FY2028 WSQ Proposal by the
Houston-Galveston Area Council

Contact: Kendall Guidroz

Project Objectives

OSSF Implementation in Watershed-based Plan Communities

- Objective 1: Coordinate with local partners to distribute educational/outreach materials
- Objective 2: Host Homeowner OSSF Education Workshop(s)
 - Provide at least 1 workshop in each project community.
- Objective 3: No-cost OSSF pumpouts
 - Community-based and tied to the workshops.
 - Available for qualifying workshop attendees (up to 50).
- Objective 4: OSSF course specifically for realtors
 - Receive Texas Real Estate Commission (TREC) approval for an OSSF course for realtors.
- Objective 5: New Homeowner OSSF packet
 - Include information on OSSF maintenance, costs, etc.
 - Could be distributed by realtors, development companies, HOAs, cities or counties.



Brazoria County Pilot Project

- FY23 funding to engage communities and assist with OSSF education
 - Worked with communities to adapt outreach materials
 - Held OSSF Workshops
- Leveraged Wells Fargo Community Grant to provide no-cost OSSF pumpouts and engage two additional communities

Community Served	Workshop Date	Wells Fargo Funds Used For	Number of Workshop Attendees	Completed OSSF Pumpouts
Liverpool	March 8, 2024	Pumpouts	13	4
Liverpool	March 8, 2024	Pumpouts	3	2
Holiday Lakes and Jones Creek	June 19, 2024	Workshop and Pumpouts	6	6
Holiday Lakes and Jones Creek	June 19, 2024	Workshop and Pumpouts	3	1
Holiday Lakes	July 20, 2024	Workshop and Pumpouts	19	11
Total			44	24

Project Budget

Budget Category	Cost
Salary/ Wages	\$32,165.90
Fringe Benefits	\$15,098.67
Travel	\$500.00
Supplies	\$100.00
Equipment	\$0.00
Contractual	\$35,000.00
Construction	\$0.00
Other	\$1,695.87
Total Direct Costs	\$84,560.44
Indirect Costs	\$14,529.13
Total Request	\$99,089.57

- Salary
 - Program Administration
 - Coordination with Watershed-based plans
 - Homeowner OSSF Education Workshops
 - Coordination of OSSF pumpouts
 - Development of the TREC-approved realtor course and homeowner packet
- Travel
 - For workshops, OSSF inspections and site visits
- Supplies
 - Workshop supplies, program signage, etc.
- Contractual
 - Direct cost for up to 50 OSSF pumpouts
- Other
 - H-GAC internal network and GIS services, technology and support.
- IDC
 - 30.74%

Streamlining Pollution Reports from Observation to Response

Jenny Oakley^{1*}, Steven Johnston¹, Jessie Casillas¹,
Megha Shrestha², Durga Joshi², and Natasha Zarnstorff³

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¹ Houston-Galveston Area Council, Water Resources

² Houston-Galveston Area Council, Data Analytics and Research

³ Galveston Bay Foundation

GBEP FY28 Section 320-State WSQ Subcommittee Proposal Review Meeting: September 9, 2026

Project Urgency and Need

- The Galveston Bay watershed is a complex pollution reporting and response landscape
- Challenges for pollution reporters and responding agencies

TCEQ Region 12 Pollution Reports

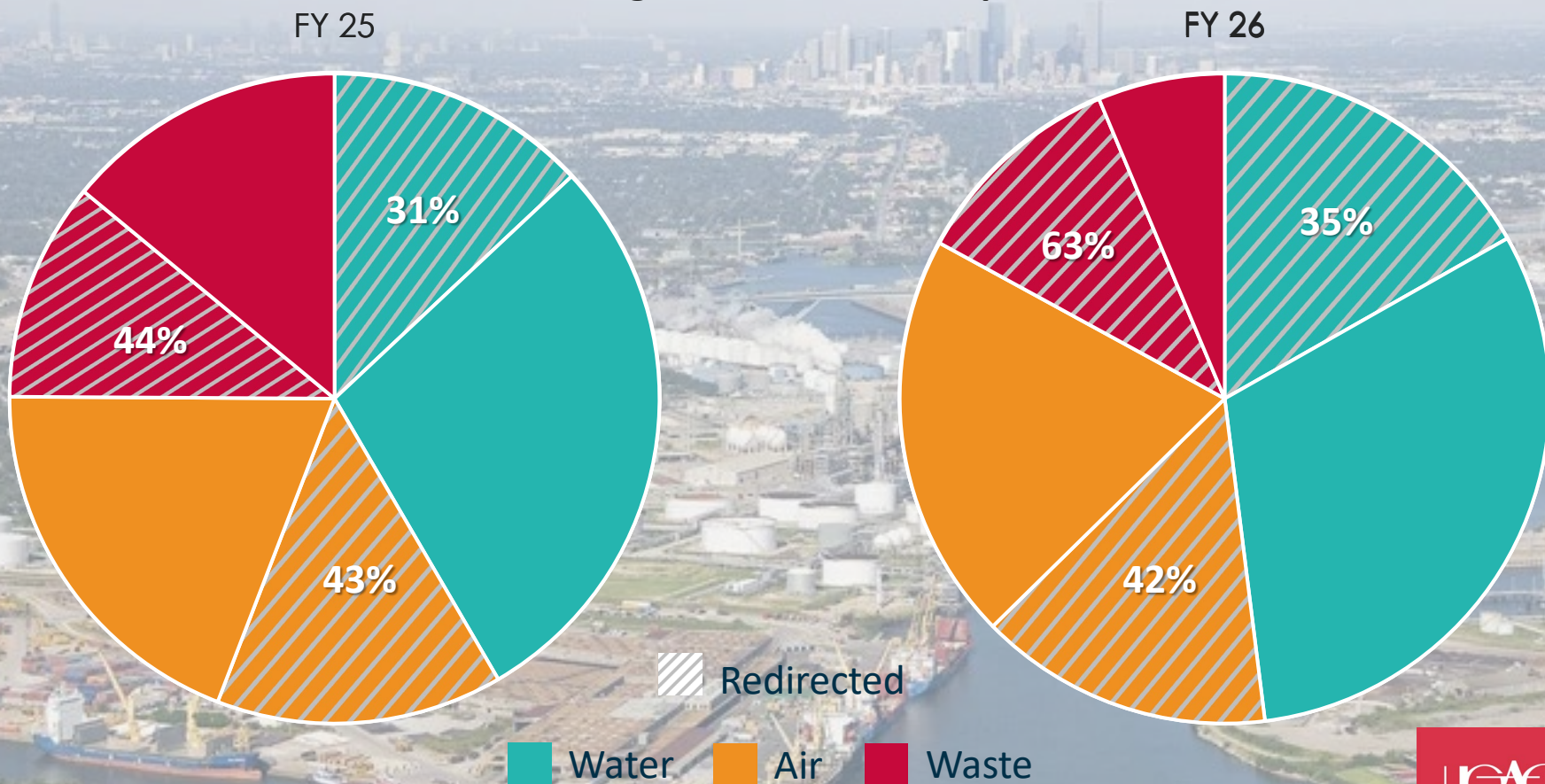
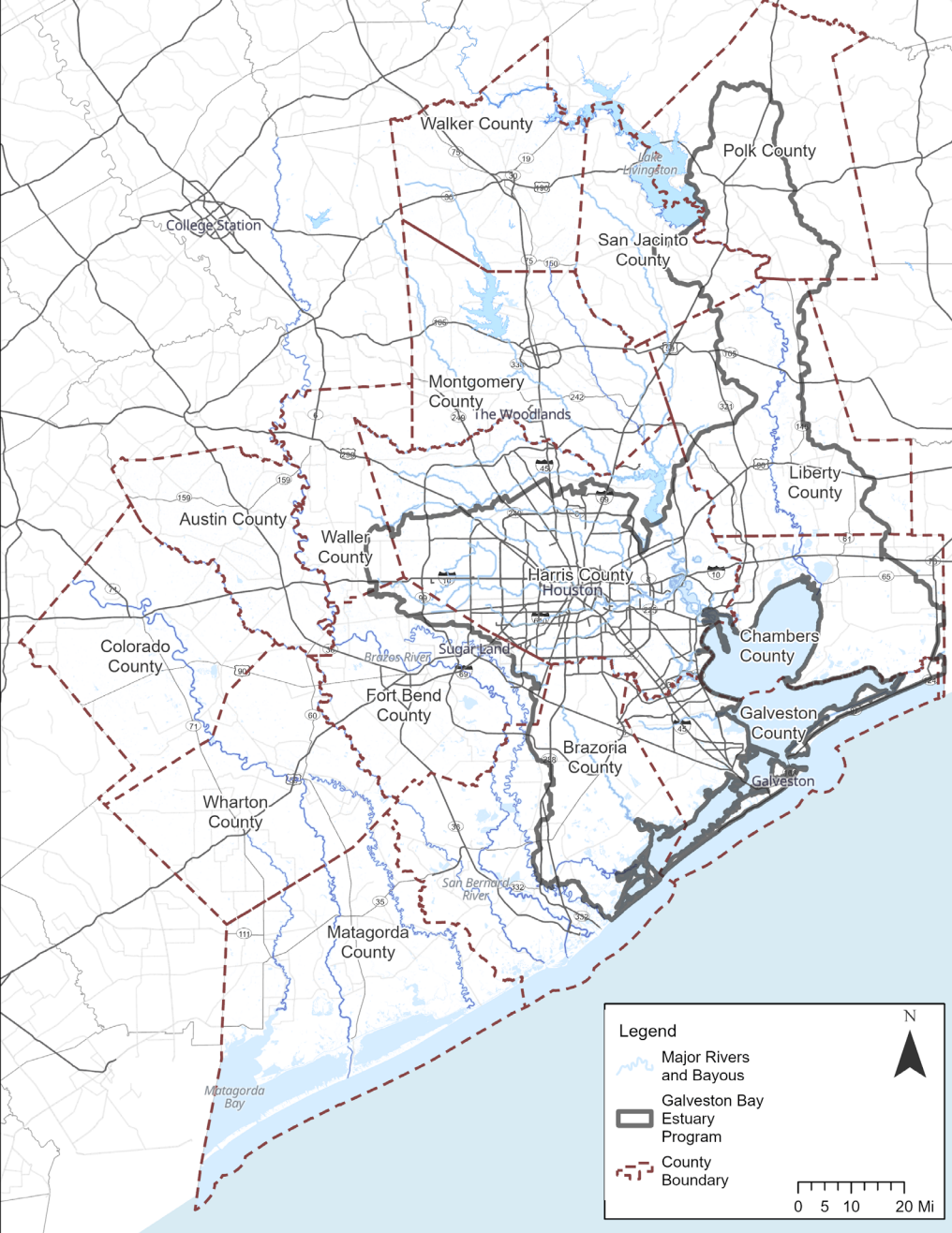


Photo credit: <https://www.tshaonline.org/handbook/entries/water-in-the-channel>



Project Objectives

- 1. Collaborative Planning and Scope** - identify needs, roles, responsibilities, and develop practical plan for a *sustainable* reporting tool.
- 2. Technical Development** - Develop and publish an intuitive and accessible reporting tool that improves response coordination and increases public confidence.
- 3. Outreach** - Tool advertisement and workshop

Proposed Budget

Year 1	Year 2	Total
\$56,958.52	\$67,219.00	\$124,177.52
Leveraged (in-kind)		\$52,224.73
Total Project:		\$176,402.25

Project Period: FY28-29



Houston-Galveston
Area Council

Project Workflow

Year 1: Collaborative Planning & Scope

Year 2: Technical Development & Outreach

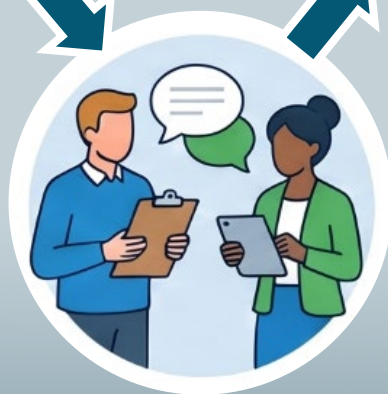
Form Multi-Sector
Stakeholder Committee



Review/ Finalize Scope
& Sustainability



Publish
Reporting Tool



Conduct Agency
One-on-ones



Develop Digital
Infrastructure & LLM-
Assisted Classification



Launch Community
Outreach