Galveston Bay Estuary Program
Fiscal 2026 WSQ Project Proposal

Please complete this proposal form and submit to the appropriate Subcommittee Coordinator (end of form) by August 5, 2024. No late submittals will be considered for funding.

This Call for Project Proposals complies with 30 Texas Administrative Code (TAC) § 14.7, which lays out requirements for a competitive solicitation by TCEQ for grant awards. For convenience, specific citations to 30 TAC § 14.7 are identified in the text.

SECTION ONE: INTRODUCTION

Purpose [required by 30 TAC § 14.7(1)]: The purpose of the proposed grant from the Galveston Bay Estuary Program (GBEP), a program of the Texas Commission on Environmental Quality (TCEQ), is to implement *The Galveston Bay Plan, 2nd Edition* (the Plan), a comprehensive conservation and management plan falling under Section 320, of the Federal Water Pollution Control Act (33 U.S.C. Section 1330), for a designated national estuary in the State of Texas.

Objective and Allowable Activities [see 30 TAC § 14.7(4)]: The objective of this grant is to implement the GBEP stakeholder developed priorities for FY2026 (FY2026 Priority Area Actions) that were developed by GBEP subcommittees for fiscal 2026 at the June 2024 meetings. Any proposal implementing the Plan may be submitted, but proposals implementing the FY2026 Priority Area Actions will be considered above others.

Authority [see 30 TAC § 14.7(2)]: Grants issued by GBEP under this solicitation are authorized by: the Federal Water Pollution Control Act (Clean Water Act) § 320 (33 UNITED STATES CODE § 1330), commonly referred to as the National Estuary Program; TEX. WATER CODE § 5.124; and 30 TAC ch. 14.

Match Requirement [see 30 TAC § 14.7(10) and 30 TAC § 14.7(11)]: No matching funds are required. Therefore, there is no need to adjust or waive any matching funds requirement.

Multiple Awards [see 30 TAC § 14.7(7)]: GBEP anticipates awarding funds for multiple proposals. GBEP intends to award grants to that combination of proposals which best implements the Plan, factoring in all criteria identified in this Call for Project Proposals, the availability of funds, and the most effective division of funds between awards.

SECTION TWO: SUBMITTAL – GENERAL INFORMATION

Subcommittee:

WSQ

Project Name:

Assessing demonstration rain garden and stormwater wetland health through soil and vegetation monitoring.

Project Previously Funded by GBEP? Yes ☐ No ☐

Lead Implementer / Categories of Eligible Recipients [see 30 TAC § 14.7(3)]:
The lead implementer must be in one of the following categories of eligible recipients. Please indicate which category applies to your entity. If the proposing party is not already paired with a lead implementer in one of the categories listed below, the proposing party will need to partner with an eligible recipient in one of these categories to be selected for funding. Please reach out to GBEP staff with any questions.

☐ Federal, State, or Local Government ☐ Council of Government ☒ Public ISDs or Universities
☐ Nonprofit ☐ Other*

Texas A&M AgriLife Extension Service, Texas Community Watershed Partners

Unique Entity ID (UEI) Number:	AND:	VIN or Tax ID:
DM2CDWR8LAG3		35555555552049

Contact Information:

Project Representative Name	Celina Gauthier Lowry
Project Representative Phone	(281) 560-3970
Project Representative Email	celina.lowry@ag.tamu.edu

Amount Requested from GBEP:

$235,176

Federal ☐ State ☐ No Preference ☒
Is the project scalable? ☒

Amount Requested per year (if applicable):

FY 2026 (09/01/2025-08/31/2026)	$118,611
FY 2027 (09/01/2026-05/31/2027)	$116,565
FY 2028 (09/01/2027-05/31/2028)	$0.00
Total	$0.00

Project Dates / Duration (beginning no earlier than September 1, 2025 – ending no later than May 31, 2028) [see 30 TAC § 14.7(5)]:

September 1, 2025 – August 31, 2027; 24 months

Project Urgency:

Monitoring and research that evaluates green infrastructure effectiveness is one of three WSQ subcommittee priorities for this cycle of funding. This project will allow for monitoring of green infrastructure practices installed at various times, from 2025 and 2024 all the way back to 2012 (ranging in age from 1 to 13 years old).

Total Project Cost (including Leveraging Amounts, if any; provide leveraging information where indicated below):

$235,176

Is this an estimate? ☐

Leveraging (in-kind and/or cash):

N/A

Partners* and Their Roles:

The following partners have confirmed they will participate by providing site access, allowing the installation of stationary monitoring equipment, and participating in an interview about maintenance or management practices and any changes since installation:
Armand Bayou Nature Center, City of Hitchcock, City of League City, Clear Lake City Water Authority, Environmental Institute of Houston, Exploration Green Conservancy, Houston Community College – Katy Campus, South Park Baptist Church- Alvin.

***If partners are subgrantees completing work reimbursable under GBEP funding, a letter of commitment from the partner must be submitted under the application.**

SECTION THREE: *GALVESTON BAY PLAN, 2ND EDITION* IMPLEMENTATION

Grant recipient activities to be funded must implement the Plan, but proposals implementing the FY2026 Priority Area Actions will be considered above others.

The FY2026 Priority Area Actions are found at:
https://gbep.texas.gov/ensure-safe-human-and-aquatic-life-use/
https://gbep.texas.gov/protect-and-sustain-living-resources/
https://gbep.texas.gov/engage-communities/
https://gbep.texas.gov/inform-science-based-decision-making/

The project implements multiple nonpoint source pollution abatement (NPS) actions to address water quality challenges affecting safe human and aquatic life use of Galveston Bay. Given the widespread nature of NPS pollution, there is an ongoing need for education and on-the-ground actions through sustained participation and involvement of stakeholders, to maintain and improve surface water quality. Green stormwater infrastructure practices help reduce NPS pollution and hold stormwater on-site to improve water quality and enhance local habitats.

This project will deliver soil health and vegetation monitoring of multiple rain gardens and constructed stormwater wetland areas (stormwater best management practices (BMPs)) in the Lower Galveston Bay Watershed. The monitoring coordination, interviews, and white paper produced through this project will engage municipalities and other property owners that are new to these practices or are concerned about organizational capacity including the budget to maintain them and add construct additional projects. This assessment will assist in the continued implementation and maintenance to ensure long-term success of these structural NPS BMPs and future installations. Project activities support watershed-based plan (WBP) implementation by engaging stakeholders from several Galveston Bay area WBPs including, the Highland Bayou Coastal Basin WPP, the Armand Bayou WPP, the Dickinson Bayou I-Plan, and the Bacteria Implementation Group I-Plan. One of the ten green stormwater infrastructure installations to be monitored is located at Ghirardi Family WaterSmart Park. The park, having several green infrastructure practices, is a featured structural stormwater BMPs in the Galveston Bay Plan, 2nd Edition (Plan Priority One: Ensure Safe Human and Aquatic Life Use).

Galveston Bay Plan Priority Area Actions Addressed:

Plan Priority 1: Ensure Safe Human and Aquatic Life Use

NPS-1 ☒	NPS-2 ☒	NPS-3 ☒	NPS-4 ☐	
PS-1 ☒	PS-2 ☐	PS-3 ☐		
PHA-1 ☐	PHA-2 ☐	PHA-3 ☐	PHA-4 ☐	PHA-5 ☐

Plan Priority Area Actions Detail:

NPS-1 Support Watershed-Based Plan Development and Implementation
NPS-2 Support Nonpoint Source Education and Outreach Campaigns
NPS-3 Implement Nonpoint Source Best Management Practices
PS-1 Support Stormwater Education Programs

With GBEP funding, TCWP staff will perform soil health and vegetation monitoring for multiple rain gardens and stormwater wetlands in the Lower Galveston Bay Watershed, including urban and suburban watersheds with approved watershed-based plans (NPS-1). Green stormwater infrastructure practices help reduce nonpoint source pollution and hold stormwater on-site to improve water quality and enhance local habitats The monitoring coordination, interviews, and white paper produced through this project will engage municipalities and other property owners that are new to these practices or are concerned about organizational capacity including the budget to maintain them and add construct additional projects. This assessment will assist in the continued implementation and maintenance to ensure long-term success of these structural NPS BMPs and future installations (NPS-2 and NPS-3). Furthermore, this project will promote the use of green infrastructure to mitigate stormwater impacts in multiple watersheds, including several owners and operators of MS4 permits (PS-1).

Does the project implement any other *Galveston Bay Plan 2nd Edition* Priority Area Actions, or the other Subcommittee priorities?

☐ NRU (Protect and Sustain Living Resources)
☒ PPE (Engage Communities)
☒ M&R (Inform Science-Based Decision Making)

Other Subcommittee Detail:

PPE SPO-3 Support Regional Initiatives – Monitoring that evaluates green infrastructure effectiveness aligns with H-GAC's Low Impact Development and GLO's Clean Coast Texas initiatives by building capacity to support local decision makers in furthering the adoption of these best management practices.

PPE SPO-4 Local Government Outreach – Several of the green infrastructure locations are owned by local governments. One way these local governments will participate in the project is through the interviews to inform the white paper. The white paper will be accompanied by outreach messaging to aid in distributing the resource to additional local governments in the region.

PPE PEA-2 Adult Education – Monitoring on-the-ground installations and sharing findings through the white paper will provide an enhanced understanding of local green infrastructure that is adult-focused.

M&R RES-6 Evaluate Best Management Practice (BMP) Projects. Through the project we will monitor both newly installed and older green infrastructure installations in watersheds with impaired waters to increase knowledge about BMP effectiveness for improved water quality in the region. Performance measure: project evaluation white paper. Successful implementation of RES-6 requires coordination with the WSQ Subcommittee of the Council on Action NPS-3.

M&R ACS-2 Access to Monitoring and Research Data. Monitoring data will be available online and shared with GBEP partners and decision makers. The white paper will be accompanied by outreach messaging tailored for multiple audiences to aid in distributing the resource to additional local governments in the region.

Other Plans Implemented:

Monitoring by TCWP and participation in maintenance and management interviews from on-site representatives will occur in multiple watersheds. EPA-accepted Watershed Protection Plan: Highland Bayou Coastal Basin; Watershed Based-Plans: Armand Bayou Watershed Protection Plan, Dickinson Bayou I-Plan and Bacteria Implementation Group I-Plan. Materials and outcomes will be shared with Clean Coast Texas collaborative partners. Clean Coast Texas is included in the Texas Coastal Resiliency Master Plan.

SECTION FOUR: SUBCOMMITTEE PRIORITIES / FACTORS TO BE USED TO SELECT AWARDS [see 30 TAC § 14.7(6)]

Grant recipient activities must implement the Plan. Additional recipient selection criteria includes whether a project addresses a subcommittee priority. This selection criteria provides for the selection of multiple recipients as needed.

WSQ Subcommittee Identified Priorities

Grant recipient activities must implement the Plan. Additional recipient selection criteria includes whether a project addresses a subcommittee priority.

☒ Supporting management measures and watershed-based plans.
☒ Monitoring and research that evaluates green infrastructure effectiveness.
☐ Evaluation and development of indicators and metrics of water (surface and ground) and sediment quality.

Subcommittee Priority Detail:

Management measures in watershed-based plans addressing nature-based green infrastructure approaches often include mention of practices with some description but seldom offer the level of detail necessary to facilitate implementation or measure effectiveness. This project is focused on assessing the health and function of multiple on-the-ground green stormwater infrastructure projects with differing maintenance approaches and at various stages of development. One existing gap in communicating the benefits of nature-based solutions is the value of soil, its function and ability to support a healthy watershed. Applying soil health principals in suburban and urban landscapes leads to greater infiltration, less stormwater runoff, and reduced NPS loadings, which in turn improve the water quality in local waterways.

Does the Project work with new, smaller communities/partnerships?

☒ Yes

☐ No

The project engages several smaller communities in Brazoria and Galveston counties during monitoring activities, interviews on maintenance and management practices, and to share the white paper. The white paper will inform future implementation actions and contribute information for future WBPs in the region. The project includes coordination with local decision makers to bridge the gap from awareness of these best management practices and improved implementation.

SECTION FIVE: PROPOSAL DETAILS

Grant recipient activities must implement the Plan. Additional recipient selection criteria includes whether a project addresses a subcommittee priority.

Project Summary:

Green stormwater infrastructure practices offer an alternative to business-as-usual development that often leads to compacted soil and impervious surfaces that prevent water from soaking into the ground. To assess the overall health of multiple on-the-ground green stormwater infrastructure projects with differing maintenance approaches and at various stages of development, the Texas Community Watershed Partners (TCWP) Green Infrastructure for Texas (GIFT) team proposes to monitor soil and vegetation for multiple rain gardens and constructed stormwater wetland areas in the Lower Galveston Bay Watershed. Data collection will occur over nine months in 2026 and include both field-based metrics and laboratory analysis.

Through our work with local municipalities, the desire for local BMP examples for local decision making to incorporate the use of these practices into their codes, ordinances, and infrastructure projects is often communicated. This project will provide an assessment of these practices, that accounts for local conditions. A white paper will be developed following sample collection and engagement with site operators, to capture project outcomes including, a comparison of multiple green infrastructure installations with varying levels of maintenance and performance.

Full Project Description (1,000 words or less):

Increasing pressure from development converts native landscapes to other uses, adding impervious cover and degrading the water quality of our bayous and Galveston Bay. The use of nature-based green stormwater infrastructure solutions is increasing along the Texas Coast. As more entities are exploring these ideas, available resources must continue to expand and fill knowledge gaps.

One existing gap in communicating the benefits of nature-based solutions is the value of soil, its function and ability to support a healthy watershed. Healthy soil in suburban and urban landscapes leads to greater infiltration, less stormwater runoff, and reduced NPS loadings, which in turn improve the water quality in local waterways.

To assess the overall health of multiple on-the-ground green stormwater infrastructure projects with differing maintenance approaches and at various stages of development, the TCWP GIFT team proposes to monitor soil and vegetation for multiple rain gardens and constructed stormwater wetland areas in the Lower Galveston Bay Watershed. Data collection will occur over nine months in 2026 and include both field-based metrics and laboratory analysis:

- Vegetation coverage and species richness
- Soil temperature and moisture (volumetric water content, VWC) - to determine soil saturation conditions associated with rainfall events) and porosity
- Infiltration rate
- Soil health (Haney) - water extractable organic carbon, water extractable total and organic nitrogen; soil respiration (ppm CO2), organic matter (LOI%), and more.
- Water holding capacity (WHC)

Permission for monitoring received through ongoing partnerships for the following locations: Rain gardens - Armand Bayou Nature Center (Pasadena), Environmental Institute of Houston (Houston), Houston Community College-Katy Campus, Ghirardi WaterSmart Park (League City), Heritage Park (League City), Joe Moore Park (Hitchcock), South Park Baptist Church (Alvin). Stormwater wetlands – Exploration Green (Clear Lake), multiple phases.

Locations were selected based on their age, availability of design, installation, and maintenance information, and permission from the owner or operator. As a project partner during installation of each practice, TCWP staff have access to design and construction details for each installation. The practices we propose to monitor were installed at various times (from 1-13 years old), allowing for comparison at various stages.

GBEP funds will allow TCWP staff to:

- Perform soil health and vegetation monitoring at 10 locations (rain garden and stormwater wetland installations and one control/conventional management) over one growing season (February – October 2026).
- Hold one-on-one interviews with representatives from each location on maintenance or management practices and changes to the gardens since installation.
- Develop a white paper to capture project outcomes including monitoring results, varying levels of maintenance and performance.
- Provide outreach messaging for whitepaper and broadly distribute through established communications channels: the Galveston Bay Coalition of Watersheds, GIFT partner events and listserv, the Clean Coast Texas collaborative, the Exploration Green Conservancy, and GBEP partners.
- Make monitoring data available for download online.

With limited resources to address the challenge of NPS pollution, assessing the effectiveness of individual practices are essential in supporting NPS program evaluation and improvements. Data from effectiveness monitoring can assist in strategic decisions for community leaders and document the tangible results of investments in community infrastructure. Delivering this information to local governments will help with some challenges they face when considering alternatives: limited resources, fragmented responsibilities, and low risk tolerance.

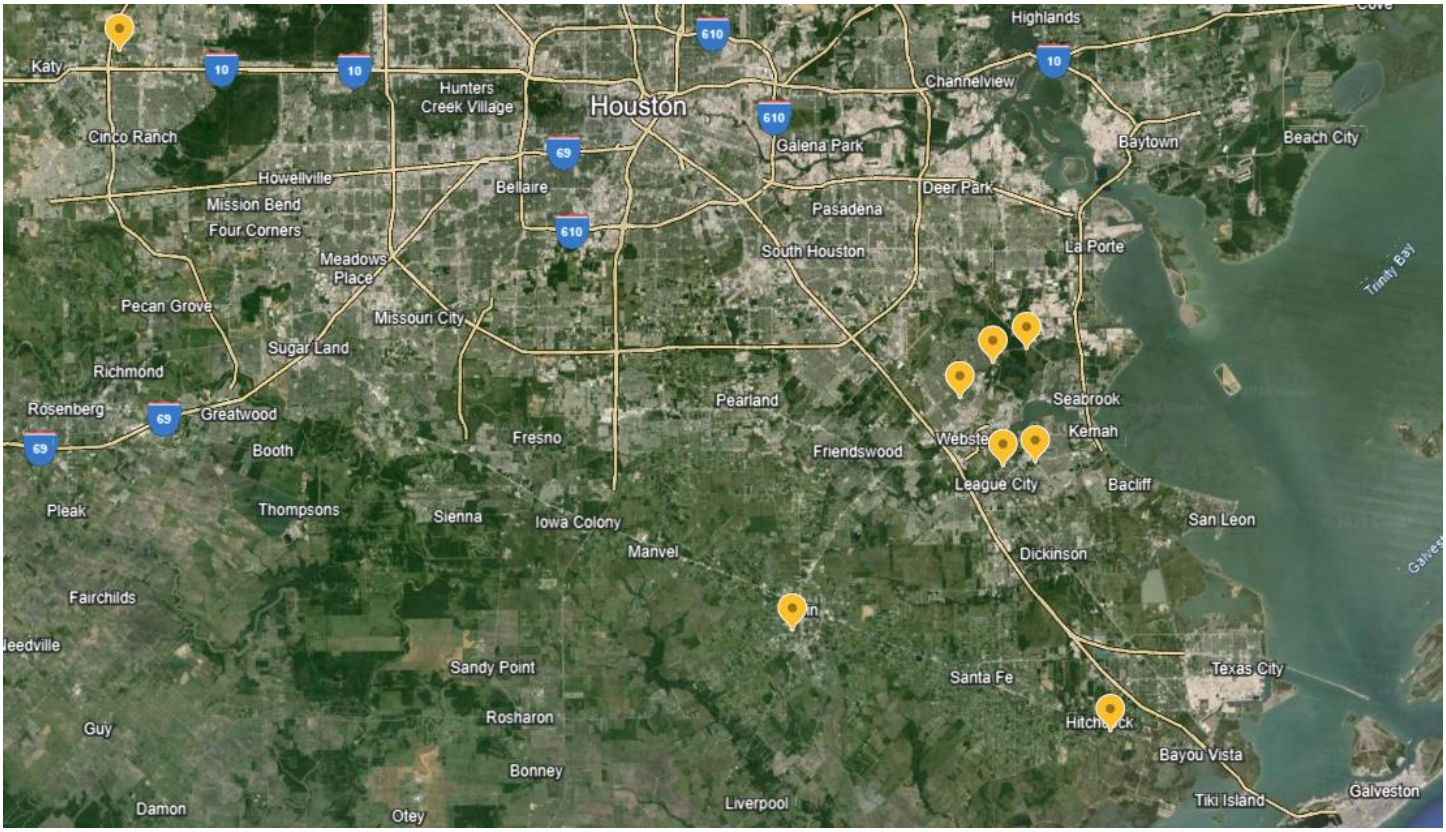
Latitude/Longitude (Optional):

N/A

Location:

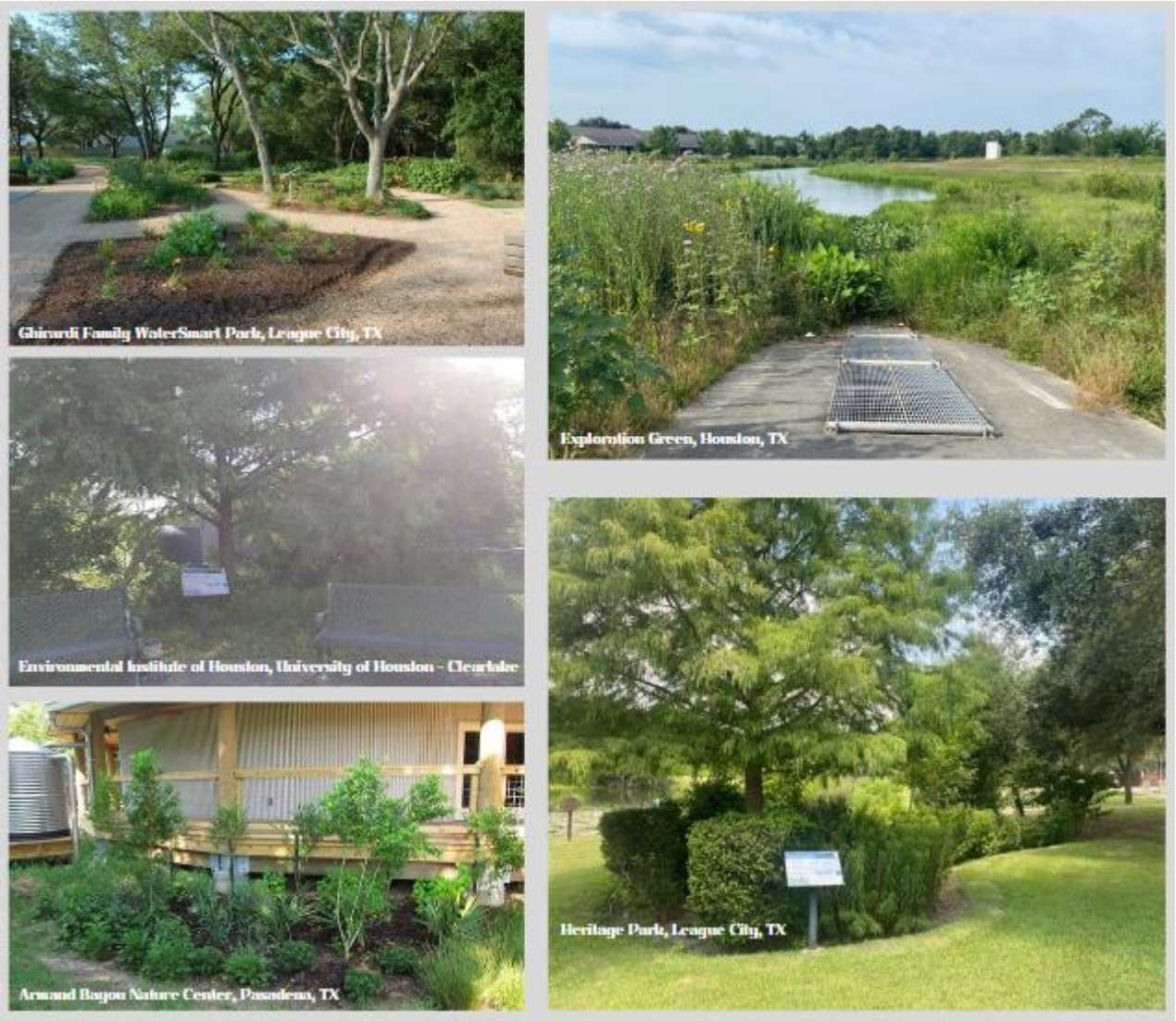
Site locations in Brazoria, Galveston, and Harris counties (yellow):
Armand Bayou Nature Center-Pasadena, Joe Moore Park-Hitchcock, Ghirardi WaterSmart and Heritage Park-League City, Environmental Institute of Houston, Exploration Green-Houston, Houston Community College – Katy Campus, South Park Baptist Church- Alvin.

Projects Map



Site locations in Brazoria, Galveston, and Harris counties (yellow).

Supplemental Photos/Graphics (Optional):



Four of the green infrastructure site locations included in the project.

SECTION SIX: BUDGET DETAILS

Grant Payments [see 30 TAC § 14.7(12)]: All grant payments will be made on the basis of reimbursement for allowable costs (as defined in 2 CFR Part 200, Subpart E). All payments for awarded proposals will be reimbursements of allowable costs incurred after both parties have entered (signed) a grant agreement for the project.

Budget. Authorized budgeted expenditures for work performed are as follows:

Budget Category	Cost for Work to be Performed
Salary / Wages	$132,492
Fringe Benefits **(18.9% + $950)**[1]	$47,043
Travel	$1,283
Supplies	$4,670
Equipment	$0.00
Contractual	$0.00
Construction	$0.00
Other	$1,160
Total Direct Cost	**$186,648**
Indirect Costs	$48,528
Total	**$235,176**

Indirect Cost Agreement

Please note: If using a rate different from your entity Indirect Cost Agreement; a letter of exemption from the appropriate authority must be provided with the application, or a statement must be included certifying that the recipient has elected to be reimbursed for an amount less than its total indirect costs, that unreimbursed indirect costs are part of the recipient's contribution to the success of the project, and that the recipient will pay for all unreimbursed indirect costs using funds available to it for that purpose.

[Insert Indirect Cost Agreement or Attach as an Appendix if Applicable]

Indirect Cost Reimbursable Rate. The reimbursable rate for this Contract is 26% of (check one):

☐ Salary and fringe benefits

☒ Modified total direct costs

☐ Other direct costs base

If other direct cost base, identify:

This rate is less than or equal to (check one):

☒ **Predetermined Rate**— an indirect rate that is negotiated between the Performing Party and its federal cognizant agency and supported by a current Negotiated Indirect Cost Rate Agreement (NICRA) letter. A Predetermined Rate is not subject to adjustment except as provided by 2 Code of Federal Regulations (CFR) § 200.411.

☐ **De Minimis Rate**— if Performing Party does not have a current negotiated indirect rate, Performing Party may use a standard rate of ten percent of Modified Total Direct Costs (MTDC) in lieu of determining

[1] If fringe is not a single rate, please attach calculation or explanation as an appendix.

the actual indirect costs of the service. Costs must be consistently charged as either indirect or direct costs.

☐ **Provisional Rate**— an experienced-based rate agreed to by Performing Party and TCEQ in the absence of a NICRA rate negotiated with the applicable federal cognizant agency.

☐ **Partial Reimbursement Rate**— a reimbursement rate agreed to between TCEQ and Performing Party that is less than the rate authorized under TxGMS or, where applicable, 2 CFR Part 200. Performing Party contributes all of its unreimbursed indirect costs to the successful performance of the project or projects funded under this Contract, in accordance with Article 9 of this section.

☐ **Other:**

Other. If Budget Category "Other" is greater than $25,000 or more than 10% of total Contract budget, identify the main constituents:

N/A

SECTION SEVEN: CONTRACT REQUIREMENT [see 30 TAC § 14.7(15)]:

- By submitting this Project Proposal, you acknowledge that, if you become a successful grant recipient selected for a grant award, you must enter into a signed grant agreement or contract with TCEQ following the announcement of that award.

SECTION EIGHT: ACKNOWLEDGMENTS

Please read and understand the following:

- By submitting this Project Proposal, you acknowledge that information on how grant payments will be made is contained in the Budget Details section describing direct and possibly indirect costs. You further acknowledge that grant payments will be reimbursements on the basis of allowable costs incurred and that selected recipients will receive contract documents addressing allowable costs, unallowable costs, and reimbursement.
- By submitting this Project Proposal, you acknowledge your understanding that Project Proposals do not require matching funds and that a TCEQ director does not need to adjust or waive any matching funds requirement.
- By submitting this Project Proposal, you acknowledge that, if GBEP elects to hold a pre-submittal meeting relating to this Project Proposal, GBEP will notify you of the meeting's time and location indicating whether attendance is mandatory.

SECTION NINE: QUESTIONS AND PRE-SUBMITTAL MEETINGS [see 30 TAC § 14.7(13) and 30 TAC § 14.7(14)]:

- There are no pre-submittal meetings scheduled.
- For requests for additional, pre-submittal information **[see 30 TAC § 14.7(13)]**, please contact the corresponding Subcommittee Coordinator listed on this page.
-

SECTION TEN: ADDITIONAL INSTRUCTIONS

In submitting your Project Proposal, please refer and adhere to the following instructions and guidelines concerning materials and information required to be submitted by potential grant recipients:

- GBEP intends to accept only complete Projected Proposals in a layout and format constituting a filled version of this proposal document with all applicable sections therein addressed; however, GBEP may, in its sole discretion, consider and accept nonconforming Project Proposals in the best interest of the state.
- Unless otherwise specified by GBEP, formal signatures are not required on Project Proposals.
- Unless otherwise communicated or implied, GBEP requires 1 (one) completed copy of your Project Proposal per corresponding Subcommittee Coordinator.

- Project Proposals must be received electronically, through the email address of the relevant Subcommittee Coordinator listed on this page, by the deadline listed on both this page and the first page of this Project Proposal document.

Submittal Process and Deadline [see 30 TAC § 14.7(8) and 30 TAC § 14.7(9)]:
Please Submit Project Proposals (Microsoft Word Only – No PDFs) by August 5, 2024 to the relevant Subcommittee Coordinators below:

WSQ Subcommittee
Christian.Rines@tceq.texas.gov

NRU Subcommittee
Lindsey.Lippert@tceq.texas.gov

PPE Subcommittee
Lisa.Marshall@tceq.texas.gov and Matthew.Abernathy@tceq.texas.gov

M&R Subcommittee
Jenelle.Estrada@tceq.texas.gov

Galveston Bay Estuary Program
Fiscal 2026 WSQ Project Proposal

Please complete this proposal form and submit to the appropriate Subcommittee Coordinator (end of form) by August 5, 2024. No late submittals will be considered for funding.

This Call for Project Proposals complies with 30 Texas Administrative Code (TAC) § 14.7, which lays out requirements for a competitive solicitation by TCEQ for grant awards. For convenience, specific citations to 30 TAC § 14.7 are identified in the text.

SECTION ONE: INTRODUCTION

Purpose [required by 30 TAC § 14.7(1)]: The purpose of the proposed grant from the Galveston Bay Estuary Program (GBEP), a program of the Texas Commission on Environmental Quality (TCEQ), is to implement *The Galveston Bay Plan, 2nd Edition* (the Plan), a comprehensive conservation and management plan falling under Section 320, of the Federal Water Pollution Control Act (33 U.S.C. Section 1330), for a designated national estuary in the State of Texas.

Objective and Allowable Activities [see 30 TAC § 14.7(4)]: The objective of this grant is to implement the GBEP stakeholder developed priorities for FY2026 (FY2026 Priority Area Actions) that were developed by GBEP subcommittees for fiscal 2026 at the June 2024 meetings. Any proposal implementing the Plan may be submitted, but proposals implementing the FY2026 Priority Area Actions will be considered above others.

Authority [see 30 TAC § 14.7(2)]: Grants issued by GBEP under this solicitation are authorized by: the Federal Water Pollution Control Act (Clean Water Act) § 320 (33 UNITED STATES CODE § 1330), commonly referred to as the National Estuary Program; TEX. WATER CODE § 5.124; and 30 TAC ch. 14.

Match Requirement [see 30 TAC § 14.7(10) and 30 TAC § 14.7(11)]: No matching funds are required. Therefore, there is no need to adjust or waive any matching funds requirement.

Multiple Awards [see 30 TAC § 14.7(7)]: GBEP anticipates awarding funds for multiple proposals. GBEP intends to award grants to that combination of proposals which best implements the Plan, factoring in all criteria identified in this Call for Project Proposals, the availability of funds, and the most effective division of funds between awards.

SECTION TWO: SUBMITTAL – GENERAL INFORMATION

Subcommittee:

WSQ

Project Name:

Targeted Bacteria Monitoring – Watershed Focus

Project Previously Funded by GBEP? Yes ☒ No ☐

Lead Implementer / Categories of Eligible Recipients [see 30 TAC § 14.7(3)]:
The lead implementer must be in one of the following categories of eligible recipients. Please indicate which category applies to your entity. If the proposing party is not already paired with a lead implementer in one of the categories listed below, the proposing party will need to partner with an eligible recipient in one of these categories to be selected for funding. Please reach out to GBEP staff with any questions.

☐ Federal, State, or Local Government ☒ Council of Government ☐ Public ISDs or Universities
☒ Nonprofit ☐ Other*

Houston-Galveston Area Council (council of governments) and Bayou Preservation Association (nonprofit)

Unique Entity ID (UEI) Number:	AND:	VIN or Tax ID:
VZFJDZCKG8C7		1-74-155-7575

Contact Information:

Project Representative Name	Kendall Guidroz / Grant Moss
Project Representative Phone	713-993-2469 / 713-824-9863
Project Representative Email	Kendall.guidroz@h-gac.com / gmoss@bayoupreservation.org

Amount Requested from GBEP:

$60,000

Federal ☐ State ☐ No Preference ☒

Is the project scalable? ☒

Amount Requested per year (if applicable):

FY 2026 (09/01/2025-08/31/2026)	$60,000.00
FY 2027 (09/01/2026-05/31/2027)	$0.00
FY 2028 (09/01/2027-05/31/2028)	$0.00
Total	$60,000.00

Project Dates / Duration (beginning no earlier than September 1, 2025 – ending no later than May 31, 2028) [see 30 TAC § 14.7(5)]:

September 1, 2025 – May 31, 2027

Project Urgency:

While the timing of this project may not be urgent, the timing is beneficial as it will coincide with the planned Watershed Protection Planning efforts planned in the Brays Bayou Watershed

Total Project Cost (including Leveraging Amounts, if any; provide leveraging information where indicated below):

$60,000.00

Is this an estimate? ☐

Leveraging (in-kind and/or cash):

The TCEQ TMDL program has provided some funding for additional targeted monitoring efforts this past year, and there is the potential to coordinate future TMDL funding to monitor a greater portion of the focus watershed at the same time to have an increased impact.

Bayou Preservation Association seeks to concentrate multiple program areas within the same project geographies, so it is likely that if funded, BPA will coordinate additional project activities in the project area.

Partners* and Their Roles:

As in the previous Targeted Bacteria Monitoring efforts, Bayou Preservation Association will partner with H-GAC as a subgrantee on the project. Bayou Preservation Association will coordinate supplies, training, and field investigation efforts, and take the lead on developing the education materials. H-GAC will hold the project management role, will conduct the desk review portion of the project, and will assist with training and education efforts.

The City of Houston will continue to be the primary jurisdiction to receive targeted monitoring results for potential corrective action. Close communication will continue between H-GAC and Bayou Preservation Association, and the City of Houston Public Works Department. Other jurisdictions that have been included in past targeted monitoring communications include Harris County Pollution Control and Harris County Flood Control District.

***If partners are subgrantees completing work reimbursable under GBEP funding, a letter of commitment from the partner must be submitted under the application.**

SECTION THREE: *GALVESTON BAY PLAN, 2ND EDITION* IMPLEMENTATION

Grant recipient activities to be funded must implement the Plan, but proposals implementing the FY2026 Priority Area Actions will be considered above others.

The FY2026 Priority Area Actions are found at:
https://gbep.texas.gov/ensure-safe-human-and-aquatic-life-use/
https://gbep.texas.gov/protect-and-sustain-living-resources/
https://gbep.texas.gov/engage-communities/
https://gbep.texas.gov/inform-science-based-decision-making/

Targeted monitoring of assessment units (AUs) identified can help pinpoint potential sources of elevated bacteria (*E. coli*), such as failing WWTF (PS-3) and SSOs (PS-2). This project proposes to conduct targeted monitoring efforts with a specific watershed focus. The Brays Bayou watershed is part of the Bacteria Implementation Group (BIG) and will be part of an upcoming 319 Watershed Protection Plan (WPP) project focusing on Brays and Sims Bayous. Many AUs in the Brays Bayou watershed are impaired for elevated *E. coli* levels, and a targeted monitoring project focused on the watershed would work toward implementing the BIG Implementation Plan and support the efforts of the WPP project (NPS-1), specifically by helping to decrease impairments from bacteria (PHA-3).

Targeted community outreach will also address the link between certain types of nonpoint source pollution, like FOG, and the occurrence of SSOs and infrastructure damage, and would make use of or promote local outreach campaigns and materials (NPS-2, NPS-4). The goal would be to educate residents to recognize potential SSOs, illicit connections, etc. and know how, and why, to report them. Outreach efforts would again have a watershed focus and would be coordinated with the WPP efforts.

Galveston Bay Plan Priority Area Actions Addressed:

Plan Priority 1: Ensure Safe Human and Aquatic Life Use

NPS-1 ☒	NPS-2 ☒	NPS-3 ☐	NPS-4 ☒	
PS-1 ☐	PS-2 ☒	PS-3 ☒		
PHA-1 ☐	PHA-2 ☐	PHA-3 ☒	PHA-4 ☐	PHA-5 ☐

Plan Priority Area Actions Detail:

NPS-1 and PHA-3: targeted bacteria monitoring supports the implementation of the BIG I-Plan and the upcoming Brays and Sims Bayous WPP;
PS-2: through targeted monitoring identify communities with high occurrences of failing sanitary sewer systems and share that information with partners for repairs or compliance enforcement;
NPS-4 and PS-2: host community workshops or trainings on NPS BMPs and identification of illicit discharges, dry weather flows, and SSOs;

Does the project implement any other *Galveston Bay Plan 2nd Edition* Priority Area Actions, or the other Subcommittee priorities?

☐ NRU (Protect and Sustain Living Resources)
☒ PPE (Engage Communities)
☐ M&R (Inform Science-Based Decision Making)

Other Subcommittee Detail:

This project will engage in outreach and education efforts to communicate project importance, project results, and best management practices to reduce bacteria loads to the surrounding communities. These efforts Fall under SPO-2 by utilizing events and workshops to disseminate information, as well as SPO-3 by supporting the BIG-I Plan. These efforts also support action PEA-1 by addressing the Key Issue of Bacteria impairments, a long-time concern in our region. These efforts also support PEA-2 through educating adults on best management practices and behavioral changes aimed at producing positive impacts on bacterial loads in Galveston Bay.

Other Plans Implemented:

Bacteria Implementation Group (BIG) TMDL/I-Plan Illicit Discharge Detection and Elimination (IDDE) Program. Will also support the Brays Bayou and Sims Bayou WPPs that will be under development at the time of this project.

SECTION FOUR: SUBCOMMITTEE PRIORITIES / FACTORS TO BE USED TO SELECT AWARDS [see 30 TAC § 14.7(6)]

Grant recipient activities must implement the Plan. Additional recipient selection criteria includes whether a project addresses a subcommittee priority. This selection criteria provides for the selection of multiple recipients as needed.

WSQ Subcommittee Identified Priorities

Grant recipient activities must implement the Plan. Additional recipient selection criteria includes whether a project addresses a subcommittee priority.

- ☒ Supporting management measures and watershed-based plans.
- ☐ Monitoring and research that evaluates green infrastructure effectiveness.
- ☐ Evaluation and development of indicators and metrics of water (surface and ground) and sediment quality.

Subcommittee Priority Detail:

This project addresses the subcommittee priority of supporting management measures and watershed-based plans. The proposed project works to support the BIG I-Plan created to address the high levels of bacteria in many Houston waterways. This project would also take place concurrently with the development of a WPP in the Brays Bayou Watershed, allowing an opportunity to support that work with additional in-field monitoring while being able to make use of an active, watershed-focused stakeholder group to help inform, target, and connect outreach efforts to the various communities around the watershed.

Does the Project work with new, smaller communities/partnerships?

☐ Yes

☒ No

Due to the specific watershed focus, greater collaboration with localized stakeholders will be targeted for education and outreach efforts. Local neighborhood, community, and watershed groups will be contacted to connect outreach materials to local residents. Since previous phases of this project did not focus on the Brays Bayou Watershed, these will be new groups with which to engage on this issue. However, contact with groups will take place during the project outreach portion and there will not be a larger partnership role.

SECTION FIVE: PROPOSAL DETAILS

Grant recipient activities must implement the Plan. Additional recipient selection criteria includes whether a project addresses a subcommittee priority.

Project Summary:

This project will continue targeted bacteria monitoring efforts in the BIG I-Plan area while adapting the project structure to address lessons learned in the previous project phases and coordinating with an upcoming 319 Watershed Protection Plan project to leverage community engagement and increase project impact. The key aspects of the project will be 1) a watershed approach rather than scattered AUs with high bacteria levels, allowing a concentration of effort and resources, 2) AU field investigations for bacteria sources paired with close communication with local jurisdictions to track the progress of investigation and remediation and to plan prompt follow up sampling when possible, and 3) engaging the surrounding communities with nonpoint source outreach, best management practice information, and training on source identification.

Full Project Description (1,000 words or less):

The Houston-Galveston Area Council (H-GAC), in partnership with Bayou Preservation Association and using information from the Bacteria Implementation Group (BIG), aims to reduce bacteria concentrations in the Brays Bayou Watershed through: (1) conducting targeted bacteria monitoring; (2) reporting of identified potential sources to local jurisdictions for corrective action; and (3) engaging the surrounding communities with nonpoint source outreach, best management practice information, and training on source identification. We believe that the watershed-focused approach will produce a concentrated impact with a potential to produce a greater reduction in bacteria than dispersing efforts across the region.

The Bray's Bayou Watershed was chosen for this project due to its inclusion in the BIG I-Plan, with six Assessment Units in the watershed having bacteria geomeans high enough to rank them within the top 25 of the BIG project area. A Watershed Protection Plan (WPP) development process will also be underway for the Bray's Bayou watershed at the time of the project which offers the potential to provide support to WPP efforts, as well as to make use of the active stakeholder group to inform project activities and better engage communities in education efforts. Through targeted bacteria monitoring, the goal is to identify and remove sources of bacteria from these waterways to help move these streams off the Texas Commission on Environmental Quality's (TCEQ) Integrated Report – the Texas 303(d) List of impaired water bodies.

Previous collaborative efforts between H-GAC and Bayou Preservation Association have produced a cost effective and efficient way to address ongoing bacteria issues in specific AUs by focusing on intensive monitoring of targeted AUs and utilizing Texas Stream Team monitoring protocols and Student Conservation Association (SCA) interns. This Project will build on the work of the previously funded Targeted Bacteria Monitoring Project phases, with a 2-year timeline, project activities would consist of intensive bacteria monitoring in the watershed, reporting results to relevant jurisdictions, education and outreach in communities around the watershed. Year 2 will consist of follow-up monitoring to determine if any remediation efforts had measurable impact on water quality.

Despite unforeseen weather and supply setbacks, the previous iterations of this project have made an impact through the identification of problem sites, reporting findings to the City of Houston, and resulted in the remediation of damaged infrastructure. While follow-up sampling was intended in previous monitoring efforts, the geographic spread, weather, and temporary nature of the intern positions did not allow these follow-ups to take place. This project seeks to remedy this through the concentration on a single watershed, as well as the use of dedicated staff at Bayou Preservation Association in the form of an entry-level position partially funded by the project. The change from interns to an entry-level position will allow increased flexibility to account for weather or other setbacks and maintain the cost-effective model of the project while still ensuring that the project serves as a means to provide hands-on career experience.

Follow-up monitoring would help determine not only if corrective action had reduced or eliminated the bacteria sources, but also if any new sources or un-investigated tributaries need to be sampled to continue the bacteria load reduction work. This proposed targeted bacteria monitoring project will help pinpoint sources that could be addressed in a much shorter timeframe than if the issues were waiting for the chance of public reporting or city investigation. If any infrastructure improvements or repairs are completed before or during the proposed project period, follow-up monitoring will still be conducted to determine if previously identified sources were eliminated.

This project will directly engage residents of the communities surrounding the Brays Bayou Watershed through outreach workshops or trainings designed to inform the community on bacteria concerns and steps they can take to help reduce bacteria loads to their local waterways. Through community workshops, residents can be trained to be the volunteer "eyes on the bayou," to identify and report potential instances of dry weather flows on these local bacteria-impaired waterways, which could indicate sources of bacteria pollution such as sanitary sewer overflows (SSOs), illicit connections, failing WWTFs, and infrastructure damage. These workshops will be tailored to each community and will instruct participants on: (1) the importance of identifying these dry weather flows in terms of local bacteria levels and public health; (2) how to identify potential dry weather flows based on the types of outfalls or pipes, days since significant rainfall, and unusual sights or smells; (3) how to report these instances, as well as other pollution events, such as SSOs; and (4) how certain nonpoint source pollution best management practices, such as proper disposal of fats, oils, and grease (FOG) and wipes, can help reduce instances of SSOs and sanitary sewer infrastructure failures. Workshops and outreach planning will be in collaboration with City of Houston Public Works staff to leverage and promote their relevant programs and resources. In addition to outreach workshops, the

project will work with the Brays Bayou WPP project manager to present monitoring results, project updates, and education at stakeholder meetings. Bayou Preservation Association will also communicate project activities, successes, and educational materials through various communication channels.

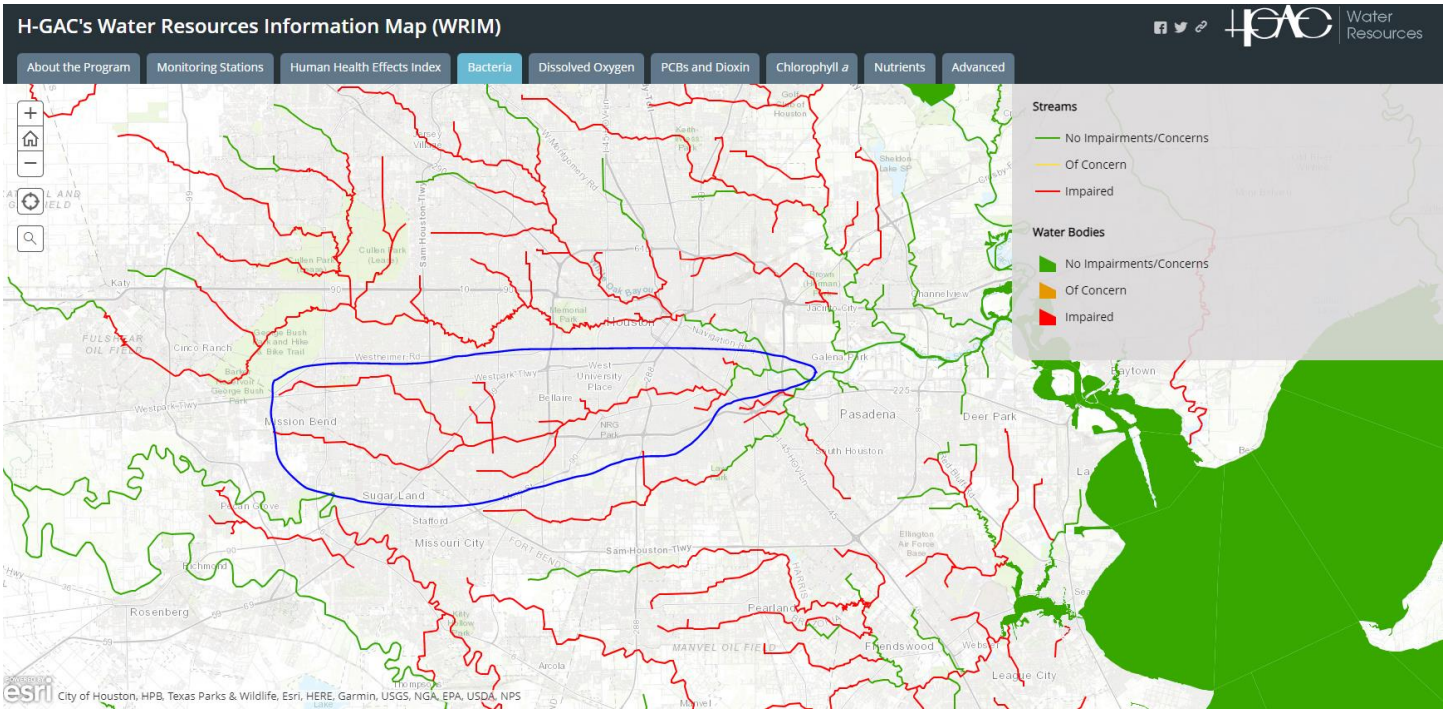
Latitude/Longitude (Optional):

[degrees, minutes, and seconds format]

Location:

This targeted bacteria monitoring effort would take a watershed approach and focus on AUs in the Brays Bayou watershed.

Projects Map



Supplemental Photos/Graphics (Optional):

[Insert Here or Attach as an Appendix]

SECTION SIX: BUDGET DETAILS

Grant Payments [see 30 TAC § 14.7(12)]: All grant payments will be made on the basis of reimbursement for allowable costs (as defined in 2 CFR Part 200, Subpart E). All payments for awarded proposals will be reimbursements of allowable costs incurred after both parties have entered (signed) a grant agreement for the project.

Budget. Authorized budgeted expenditures for work performed are as follows:

Budget Category	Cost for Work to be Performed
Salary / Wages	$10,080.00
Fringe Benefits **(46.27%)**[1]	$4,664.00
Travel	$300.00
Supplies	$100.00
Equipment	$0.00
Contractual	$30,000.00
Construction	$0.00
Other	$8,892.00
Total Direct Cost	**$54,036.00**
Indirect Costs	$1,964.00
Total	**$56,000.00**

Indirect Cost Agreement

Please note: If using a rate different from your entity Indirect Cost Agreement; a letter of exemption from the appropriate authority must be provided with the application, or a statement must be included certifying that the recipient has elected to be reimbursed for an amount less than its total indirect costs, that unreimbursed indirect costs are part of the recipient's contribution to the success of the project, and that the recipient will pay for all unreimbursed indirect costs using funds available to it for that purpose.

[Insert Indirect Cost Agreement or Attach as an Appendix if Applicable]

Indirect Cost Reimbursable Rate. The reimbursable rate for this Contract is 13.32% of (check one):

☒ Salary and fringe benefits

☐ Modified total direct costs

☐ Other direct costs base

If other direct cost base, identify:

This rate is less than or equal to (check one):

☐ **Predetermined Rate**— an indirect rate that is negotiated between the Performing Party and its federal cognizant agency and supported by a current Negotiated Indirect Cost Rate Agreement (NICRA) letter. A Predetermined Rate is not subject to adjustment except as provided by 2 Code of Federal Regulations (CFR) § 200.411.

☐ **De Minimis Rate**— if Performing Party does not have a current negotiated indirect rate, Performing Party may use a standard rate of ten percent of Modified Total Direct Costs (MTDC) in lieu of determining

[1] If fringe is not a single rate, please attach calculation or explanation as an appendix.

the actual indirect costs of the service. Costs must be consistently charged as either indirect or direct costs.

☐ **Provisional Rate**— an experienced-based rate agreed to by Performing Party and TCEQ in the absence of a NICRA rate negotiated with the applicable federal cognizant agency.

☐ **Partial Reimbursement Rate**— a reimbursement rate agreed to between TCEQ and Performing Party that is less than the rate authorized under TxGMS or, where applicable, 2 CFR Part 200. Performing Party contributes all of its unreimbursed indirect costs to the successful performance of the project or projects funded under this Contract, in accordance with Article 9 of this section.

☐ **Other:**

Other. If Budget Category "Other" is greater than $25,000 or more than 10% of total Contract budget, identify the main constituents:

[Description of costs associated with "Other" budget category.]

SECTION SEVEN: CONTRACT REQUIREMENT [see 30 TAC § 14.7(15)]:

- By submitting this Project Proposal, you acknowledge that, if you become a successful grant recipient selected for a grant award, you must enter into a signed grant agreement or contract with TCEQ following the announcement of that award.

SECTION EIGHT: ACKNOWLEDGMENTS

Please read and understand the following:

- By submitting this Project Proposal, you acknowledge that information on how grant payments will be made is contained in the Budget Details section describing direct and possibly indirect costs. You further acknowledge that grant payments will be reimbursements on the basis of allowable costs incurred and that selected recipients will receive contract documents addressing allowable costs, unallowable costs, and reimbursement.
- By submitting this Project Proposal, you acknowledge your understanding that Project Proposals do not require matching funds and that a TCEQ director does not need to adjust or waive any matching funds requirement.
- By submitting this Project Proposal, you acknowledge that, if GBEP elects to hold a pre-submittal meeting relating to this Project Proposal, GBEP will notify you of the meeting's time and location indicating whether attendance is mandatory.

SECTION NINE: QUESTIONS AND PRE-SUBMITTAL MEETINGS [see 30 TAC § 14.7(13) and 30 TAC § 14.7(14)]:

- There are no pre-submittal meetings scheduled.
- For requests for additional, pre-submittal information **[see 30 TAC § 14.7(13)]**, please contact the corresponding Subcommittee Coordinator listed on this page.
-

SECTION TEN: ADDITIONAL INSTRUCTIONS

In submitting your Project Proposal, please refer and adhere to the following instructions and guidelines concerning materials and information required to be submitted by potential grant recipients:

- GBEP intends to accept only complete Projected Proposals in a layout and format constituting a filled version of this proposal document with all applicable sections therein addressed; however, GBEP may, in its sole discretion, consider and accept nonconforming Project Proposals in the best interest of the state.
- Unless otherwise specified by GBEP, formal signatures are not required on Project Proposals.
- Unless otherwise communicated or implied, GBEP requires 1 (one) completed copy of your Project Proposal per corresponding Subcommittee Coordinator.

- Project Proposals must be received electronically, through the email address of the relevant Subcommittee Coordinator listed on this page, by the deadline listed on both this page and the first page of this Project Proposal document.

Submittal Process and Deadline [see 30 TAC § 14.7(8) and 30 TAC § 14.7(9)]:
Please Submit Project Proposals (Microsoft Word Only – No PDFs) by August 5, 2024 to the relevant Subcommittee Coordinators below:

WSQ Subcommittee
Christian.Rines@tceq.texas.gov

NRU Subcommittee
Lindsey.Lippert@tceq.texas.gov

PPE Subcommittee
Lisa.Marshall@tceq.texas.gov and Matthew.Abernathy@tceq.texas.gov

M&R Subcommittee
Jenelle.Estrada@tceq.texas.gov

Galveston Bay Estuary Program
Fiscal 2026 WSQ Project Proposal

Please complete this proposal form and submit to the appropriate Subcommittee Coordinator (end of form) by August 5, 2024. No late submittals will be considered for funding.

This Call for Project Proposals complies with 30 Texas Administrative Code (TAC) § 14.7, which lays out requirements for a competitive solicitation by TCEQ for grant awards. For convenience, specific citations to 30 TAC § 14.7 are identified in the text.

SECTION ONE: INTRODUCTION

Purpose [required by 30 TAC § 14.7(1)]: The purpose of the proposed grant from the Galveston Bay Estuary Program (GBEP), a program of the Texas Commission on Environmental Quality (TCEQ), is to implement *The Galveston Bay Plan, 2nd Edition* (the Plan), a comprehensive conservation and management plan falling under Section 320, of the Federal Water Pollution Control Act (33 U.S.C. Section 1330), for a designated national estuary in the State of Texas.

Objective and Allowable Activities [see 30 TAC § 14.7(4)]: The objective of this grant is to implement the GBEP stakeholder developed priorities for FY2026 (FY2026 Priority Area Actions) that were developed by GBEP subcommittees for fiscal 2026 at the June 2024 meetings. Any proposal implementing the Plan may be submitted, but proposals implementing the FY2026 Priority Area Actions will be considered above others.

Authority [see 30 TAC § 14.7(2)]: Grants issued by GBEP under this solicitation are authorized by: the Federal Water Pollution Control Act (Clean Water Act) § 320 (33 UNITED STATES CODE § 1330), commonly referred to as the National Estuary Program; TEX. WATER CODE § 5.124; and 30 TAC ch. 14.

Match Requirement [see 30 TAC § 14.7(10) and 30 TAC § 14.7(11)]: No matching funds are required. Therefore, there is no need to adjust or waive any matching funds requirement.

Multiple Awards [see 30 TAC § 14.7(7)]: GBEP anticipates awarding funds for multiple proposals. GBEP intends to award grants to that combination of proposals which best implements the Plan, factoring in all criteria identified in this Call for Project Proposals, the availability of funds, and the most effective division of funds between awards.

SECTION TWO: SUBMITTAL – GENERAL INFORMATION

Subcommittee:

Water and Sediment Quality (WSQ)

Project Name:

Assessment of coastal groundwater quality and dynamics in San Jacinto River Waste Pit Superfund Site

Project Previously Funded by GBEP? Yes ☐ No ☒

Lead Implementer / Categories of Eligible Recipients [see 30 TAC § 14.7(3)]:
The lead implementer must be in one of the following categories of eligible recipients. Please indicate which category applies to your entity. If the proposing party is not already paired with a lead implementer in one of the categories listed below, the proposing party will need to partner with an eligible recipient in one of these categories to be selected for funding. Please reach out to GBEP staff with any questions.

☐ Federal, State, or Local Government ☐ Council of Government ☒ Public ISDs or Universities
☐ Nonprofit ☐ Other*

Texas A&M University at Galveston

Unique Entity ID (UEI) Number: G8Y3L8JV2588

AND:

VIN or Tax ID: EIN 742125225

Contact Information:

Project Representative Name	Dini Adyasari
Project Representative Phone	409 741 7115
Project Representative Email	dini.adyasari@tamug.edu

Amount Requested from GBEP:

$99,976

Federal ☐ State ☐ No Preference ☒

Is the project scalable? ☒

Amount Requested per year (if applicable):

FY 2026 (09/01/2025-08/31/2026)	$57,021
FY 2027 (09/01/2026-08/31/2027)	$42,955
FY 2028 (09/01/2027-05/31/2028)	$0.00
Total	$99,976

Project Dates / Duration (beginning no earlier than September 1, 2025 – ending no later than May 31, 2028) [see 30 TAC § 14.7(5)]:

September 1, 2025 – August 31, 2027

Project Urgency:

It is crucial for the project to commence in Fall 2025 to generate supplemental data for identifying priority areas in environmental planning, especially given the ongoing remediation at the San Jacinto Superfund site. Additionally, the project's results can be integrated into the ongoing NSF-RCN work program (2024-2029) evaluating Water Security and Health of Private Well Users in the Gulf Coast.

Total Project Cost (including Leveraging Amounts, if any; provide leveraging information where indicated below):

$99,976

Is this an estimate? ☐

Leveraging (in-kind and/or cash):

N/A

Partners* and Their Roles:

1. Jackie Medcalf, Texas Health and Environmental Alliance (THEA)

THEA will be responsible for coordinating communication and disseminating the project's results with private well owners and stakeholders associated with SJRWP. As a part of San Jacinto River Coalition, THEA has worked with the government agencies and researchers to assess health and environmental impacts around SJRWP and to advocate effectively for the cleanup of historical contamination.

2. Dr. David Hala, Texas A&M University at Galveston

Dr. Hala has developed high sensitivity analytical techniques to quantify persistent and emerging contaminants in water and biota samples at TAMUG. Graduate student partially funded by this project will be trained to conduct analytical procedures established by Dr. Hala.

***If partners are subgrantees completing work reimbursable under GBEP funding, a letter of commitment from the partner must be submitted under the application.** *(see Appendix 1)*

SECTION THREE: *GALVESTON BAY PLAN, 2ND EDITION* IMPLEMENTATION

Grant recipient activities to be funded must implement the Plan, but proposals implementing the FY2026 Priority Area Actions will be considered above others.

The FY2026 Priority Area Actions are found at:
https://gbep.texas.gov/ensure-safe-human-and-aquatic-life-use/
https://gbep.texas.gov/protect-and-sustain-living-resources/
https://gbep.texas.gov/engage-communities/
https://gbep.texas.gov/inform-science-based-decision-making/

By conducting research on groundwater contaminants and groundwater-surface water interactions at a Superfund site, this project aims to address the **Nonpoint Source Action Plan (NPS) and the Public Health and Awareness Action Plan (PHA)** listed in Galveston Bay Plan, Ensure Safe Human and Aquatic Life Use. The San Jacinto River (section 1001 and 1005) has not met any environmental standard set by the Texas Commission on Environmental Quality (TCEQ) since 2002, and the Waste Pit Superfund Site (SJRWP) has been identified as one of the sources of contaminants affecting water and sediment quality in and around the impoundment site. While contaminants of concern (COCs), including PCBs and heavy metals, are generally considered immobile in groundwater or surface water, the hydrological dynamics of Galveston Bay—such as flooding and saltwater intrusion—can mobilize and disperse these contaminants, contributing to NPS pollution. This project will inform and address the NPS plan by providing data on the extent of hydrologic connectivity between river-aquifer and contaminant transport from the Superfund site and other industrial sources in the area.

Surface water and groundwater contamination directly correlates with public health. A significant portion of local communities relies on private wells for domestic use, including drinking and bathing. According to the Texas Water Development Board (TWDB) database, over 100 private wells are located within a three-mile radius of the SJRWP, a number significantly higher than other Superfund sites in the Houston-Galveston area (see Project Map). A 2016 report found various COCs, nutrients, and coliform bacteria in these wells, indicating their susceptibility to pollution. This project will promote public health and awareness by analyzing the groundwater quality in private wells and communicating the results and prevention strategies to well owners. The project will leverage relationships established by the Texas Health and Environment Alliance (THEA) with local communities and stakeholders in the SJRWP area, potentially leading to a reduction in public health risks.

Galveston Bay Plan Priority Area Actions Addressed:

Plan Priority 1: Ensure Safe Human and Aquatic Life Use

NPS-1 ☒	NPS-2 ☒	NPS-3 ☐	NPS-4 ☐	
PS-1 ☐	PS-2 ☐	PS-3 ☐		
PHA-1 ☐	PHA-2 ☒	PHA-3 ☐	PHA-4 ☐	PHA-5 ☐

Plan Priority Area Actions Detail:

NPS-1: Support Watershed-Based Plan Development and Implementation
The project will provide data and information regarding groundwater and surface water quality, dynamics, and mixing within a 3-mile radius of Superfund site. The information can be utilized to inform watershed protection plan, including NPS management or the nearby East and West Forks of the San Jacinto River TMDL and Implementation Plan. While the TMDL does not necessarily include COCs associated with the Superfund site, knowledge regarding groundwater temporal and spatial variability can also be applied to subsurface transport analyses of other contaminants, including fecal bacteria and nutrients.

NPS-2: Support Nonpoint Source Education and Outreach Campaigns
This project aims to enhance education and outreach by conducting research on groundwater pollutants in the SJRWP area and disseminating findings to private well owners. The analytical methods used in this study will identify the sources of pollutants, such as industrial or residential/sewage origins. By fostering public awareness and encouraging proactive measures, we aim to protect wells from contamination and thereby improve the quality of groundwater-borne NPS entering coastal waters.

PHA-2: Improve Regional Contact Recreation Risk Awareness
The project will provide information on groundwater discharge hotspots in downstream part of San Jacinto River, which are often used by local communities for fishing and boating. By revealing areas where contaminants may enter surface waters, communities can better understand and mitigate potential hazards, leading to safer recreational environments. This data-driven approach supports informed decision-making for public health and environmental management.

Does the project implement any other *Galveston Bay Plan 2nd Edition* Priority Area Actions, or the other Subcommittee priorities?

☐ NRU (Protect and Sustain Living Resources)
☒ PPE (Engage Communities)
☒ M&R (Inform Science-Based Decision Making)

Other Subcommittee Detail:

This project directly implements other priority areas, including PPE and M&R.

PPE: This project involves education and outreach to private well owners, communities, and stakeholders in areas affected by the SJRWP. While THEA has been involved in educating communities and stakeholders about public health issues related to the SJRWP, this initiative will be the first to actively involve the public in understanding the potential impacts of the SJRWP on their well water quality (SPO-2 [workshops and events]).

M&R: This project involves collaboration between research institutions and a community-focused nonprofit to increase understanding of coastal groundwater quality and contaminant transport in the Galveston Bay ecosystem. Quantifying persistent (legacy) and emerging contaminants is identified as a priority for this year's M&R funding call. By analyzing persistent and emerging contaminants in groundwater, this project will contribute to the understanding of the sources and fates of geochemical stressors (RES-2) in the environment. Some of the parameters under investigation, such as PCBs, are classified as legacy pollutants (RES-5), which can adversely affect seafood habitats and consumption. Investigating groundwater-surface water interactions will provide valuable data on freshwater inflow dynamics (FWI-2), a component of physical stressors (RES-3). The project aligns with ACS-2 by ensuring that all data and findings are publicly accessible and disseminated directly to stakeholders residing or working in the vicinity of the SJRWP.

Other Plans Implemented:

Texas Coastal Management Plan: This project aims to enhance the understanding of hydrological connectivity at one of Texas' most polluted sites, characterized by a high frequency of coastal hazards. The insights gained will inform the implementation of coastal nonpoint source management strategies and contribute to the development of more effective local policies and water quality planning elements.

Texas Coastal Resiliency Master Plan: This project focuses on groundwater quality and its potential contribution to the degradation of coastal water resources. Given the changing climate patterns and land use, it is crucial to understand the quality, quantity, and dynamics of coastal aquifers and subsurface contaminant transport. By gaining a deeper understanding of these factors, researchers and stakeholders can effectively conserve this vital water resource for coastal populations and their activities.

Texas Groundwater Protection Strategy: The parameters measured in this project, such as persistent pollutants (PCBs and PAHs), and contaminant of emerging concerns or CECs (such as NSAIDs and PFAS), are not typically included in the Texas Groundwater Quality Monitoring Survey's regular monitoring list. Therefore, the data generated by this project will be submitted to the Texas Groundwater Protection Committee database and complement the existing database.

SECTION FOUR: SUBCOMMITTEE PRIORITIES / FACTORS TO BE USED TO SELECT AWARDS [see 30 TAC § 14.7(6)]

Grant recipient activities must implement the Plan. Additional recipient selection criteria include whether a project addresses a subcommittee priority. This selection criteria provides for the selection of multiple recipients as needed.

WSQ Subcommittee Identified Priorities

Grant recipient activities must implement the Plan. Additional recipient selection criteria includes whether a project addresses a subcommittee priority.

☒ Supporting management measures and watershed-based plans.
☐ Monitoring and research that evaluates green infrastructure effectiveness.
☒ Evaluation and development of indicators and metrics of water (surface and ground) and sediment quality.

Subcommittee Priority Detail:

Supporting Management Measures and Watershed-Based Plans: Results from this project regarding groundwater quality and its contribution to nonpoint source (NPS) pollution can inform current NPS pollution management efforts, including those for the nearby East and West Forks of the San Jacinto River Total Maximum Daily Load (TMDL) and Implementation Plan. While the TMDL does not specifically address contaminants associated with the Superfund site, knowledge of groundwater temporal and spatial variability can also be applied to subsurface transport analyses of other contaminants, such as fecal bacteria and nutrients. The collected environmental data can serve as a basis for Superfund management or petitions from coalitions addressing environmental and health risks at the Superfund site.

Evaluation and Development of Indicators and Metrics of Water (Surface and Ground) and Sediment Quality: This project will evaluate metrics of water (surface and ground) and sediment quality within a three-mile radius of the Superfund site. While research on surface water contamination in regards of persistent and emerging contaminants are abundant, **this project will be the first to investigate these contaminants in coastal groundwater of Galveston Bay areas**. The evaluation of emerging contaminants, including pharmaceutical, can also point towards the aquifer pollution from residential activities. Results will be shared directly with local communities and stakeholders involved in remediation and contaminant prevention at the Superfund site. In addition to informing watershed and statewide initiatives regarding the dispersion of Superfund contaminants, the project results will provide a basis for regional assessments of the relationship between water security and the health of private well users in the Gulf Coast region (NSF-RCN).

Does the Project work with new, smaller communities/partnerships?
☒ Yes
☐ No

THEA works directly with the local communities and stakeholders associated with SJRWP. The communities within a 3-mile radius of SJRWP (e.g., Lynchburg, Highland, Baytown, and Channelview) will be asked to participate in groundwater sampling collection.

SECTION FIVE: PROPOSAL DETAILS

Grant recipient activities must implement the Plan. Additional recipient selection criteria include whether a project addresses a subcommittee priority.

Project Summary:

The project aims to (1) assess the extent of hydrologic connectivity between aquifers and surface water in San Jacinto River Waste Pit Superfund Site (SJRWP), (2) quantify the concentration of persistent and emerging contaminants in pore water, surface water, and private well water in areas surrounding SJRWP, and (3) educate well owners and stakeholders regarding groundwater pollutants associated with SJRWP and their wells' susceptibility to contamination.

Full Project Description (1,000 words or less):

San Jacinto River Waste Pits Superfund Site (SJRWP) was established in 1965 as a series of unlined waste lagoons containing highly toxic and persistent contaminants from paper mill waste materials. Sediment and water samples from the 1990s revealed high levels of contaminants of concern (COCs), including dioxins, PCBs, and heavy metals, in the shallow groundwater and sediments surrounding the pits. This led to the listing of the pits and surrounding contaminated sediments on the National Priorities List. To date, site activities have included a Time Critical Removal Action (TCRA) involving the installation of an armored cap to address immediate threats to human health and the environment. Additionally, the Beaumont Formation clay beneath the shallow aquifers is initially expected to prevent vertical contaminant migration and protect the quality of the deeper Chicot Aquifer, from which most potable groundwater (both public and private) is sourced. However, a 2016 assessment of residential well water conducted by Harris County Pollution Services within a two-mile radius of the SJRWP identified some COCs in wells presumed to be protected by the Beaumont aquitard layer (Grawey and Marcon, 2016). Although the concentrations at that time were below standard limits and not considered a health concern, **the presence of COCs in residential well water suggests the possibility of contaminant migration from the SJRWP or other industrial sources to the surrounding aquifers**. Additionally, private wells were found to be polluted by nutrients and coliform bacteria (Grawey and Marcon, 2016), indicating their susceptibility to sewage contamination.

Preliminary fieldwork using radon-222 (^{222}Rn) as a groundwater discharge tracer indicates significant groundwater-surface water interaction downstream of the SJRWP (Fig. 1). This finding suggests hydraulic connectivity between the river and groundwater, where contaminants from river water could be transported to aquifers, and terrestrial groundwater can deliver contaminants to surface water, contributing to coastal nonpoint source pollution. Assessing the degree of groundwater-surface water interaction is crucial given the geology and climatic conditions of the site. The sandy alluvium directly below the site is highly permeable and easily eroded due to hydrodynamic of Galveston Bay, creating an ideal environment of lateral or vertical contaminant migration. It is suggested that COCs tend to sorb into sediments, reducing their solubility and mobility in aquifers. However, research indicates that changes in salinity, organic matter, or redox conditions can significantly lower the affinity of organic contaminants to sorb (Eggleton and Thomas, 2004). The dynamic conditions of Galveston Bay estuary, including land subsidence, saltwater intrusion, and frequent storms and flooding, increase the likelihood of saline or oxygenated surface water intruding into aquifers and mobilizing contaminants.

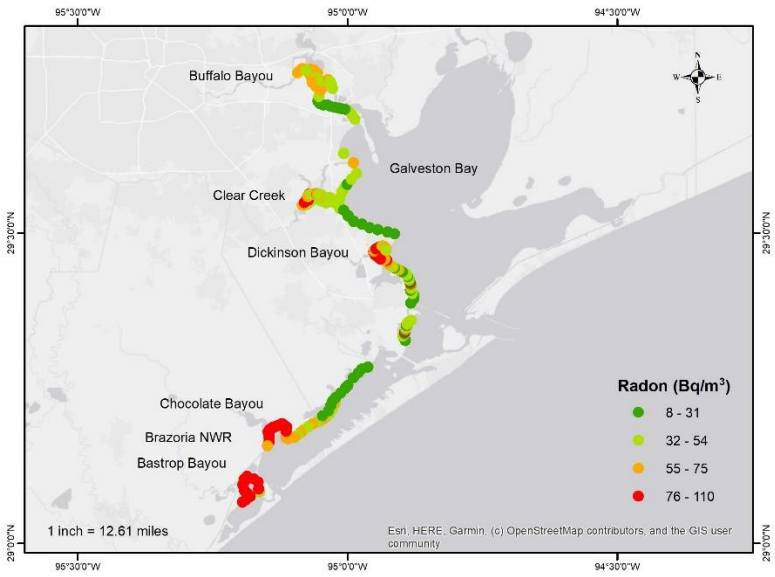


Fig 1. Preliminary investigation of ^{222}Rn distribution in Galveston Bay. High ^{222}Rn levels suggest elevated groundwater discharge.

Building upon these findings, the overarching goal of this project is to assess hydrogeological connectivity in a tidal estuary associated with a Superfund site and its effects on contaminant transport and public health. To achieve this goal, the project will conduct field studies in three steps:

Objective 1: Assess the extent of hydrologic connectivity between aquifers and surface water in the SJRWP.
Objective 2: Quantify the concentration of persistent and emerging contaminants in surface and groundwater in areas surrounding the SJRWP.
Objective 3: educate well owners and stakeholders regarding groundwater pollutants associated with SJRWP and their wells' susceptibility to contamination.

Assessment of groundwater-surface water interaction: Radionuclide tracers such as ^{222}Rn and radium isotopes (^{223}Ra, ^{224}Ra, and ^{226}Ra) will be used to characterize groundwater-surface water dynamics. To follow up the previous ^{222}Rn survey (Fig. 1), we will conduct high-resolution ^{222}Rn spatial and temporal measurements to identify groundwater discharge hotspots and quantify groundwater exchange with aquifers with protocols described in Adyasari et al. (2023) (see Project Map). Radium isotopes will be used to analyze recirculation in pore water and groundwater. These assessments will be conducted in Fall 2025, Summer 2026, and incrementally after flooding or storm events to account for different hydrological regimes. Hydraulic conductivity and sediment size distribution analysis will be conducted at the groundwater discharge hotspots identified from ^{222}Rn analysis.

Quantification of persistent and emerging contaminants. This project will quantify the concentrations of organic contaminants and heavy metals in groundwater (pore, shallow, and deep) in areas surrounding SJRWP. Porewater and shallow groundwater are collected using piezometer, while groundwater from deeper aquifer is sampled via private wells owned by local communities, particularly the ones within 3-mile radius from SJRWP (Project Map). Persistent and emerging contaminants evaluated in this project include: (a) 16 PAHs, (b) PCB congeners, where between 29 PCB congeners, 12 are dioxin-like: PCBs 77, 81, 105, 114, 118, 123, 126, 156, 157, 167, 169, and 189), (c) CECs (NSAIDs and PFAS), and (d) water quality parameters, including nutrients (e.g., nitrogen, phosphorus) and heavy metals (e.g., lead, aluminum, iron, and manganese). Between these parameters, PCBs and heavy metals are considered COCs associated with SJRWP. Select CECs (NSAIDs, PFAS) will be measured using liquid-chromatography and tandem mass spectrometry (LC-MS/MS) using methods published in Steichen et al. (2020) and Nolen et al. (2022). While PAHs and PCBs will be measured using gas chromatography and mass spectrometry (GCMS) as per methods published in Lawson et al. (2021). Water quality parameters will be quantified with Skalar San++ flow autoanalyzer and Hach spectrophotometer following methods listed on Baird and Bridgewater (2017). By combining hydrogeological assessment and groundwater contaminant concentration, we will be able to model and predict subsurface contaminant transport in the area.

Outreach to well owners and stakeholders regarding coastal groundwater contamination. Building on the success of their well testing program at the SJRWP following Hurricane Harvey, THEA will leverage its network of community readers and residents to participate in this initiative. The project aims to identify at least 30 well owners in the vicinity of SJRWP through email, THEA meetings, and door-to-door canvassing. Following sample collection and analysis, THEA will hold meetings at the San Jacinto Community Center to update participants and the community. Additionally, the findings will be disseminated to the media, area elected officials, and relevant city and state agencies, including Harris County Pollution Control.

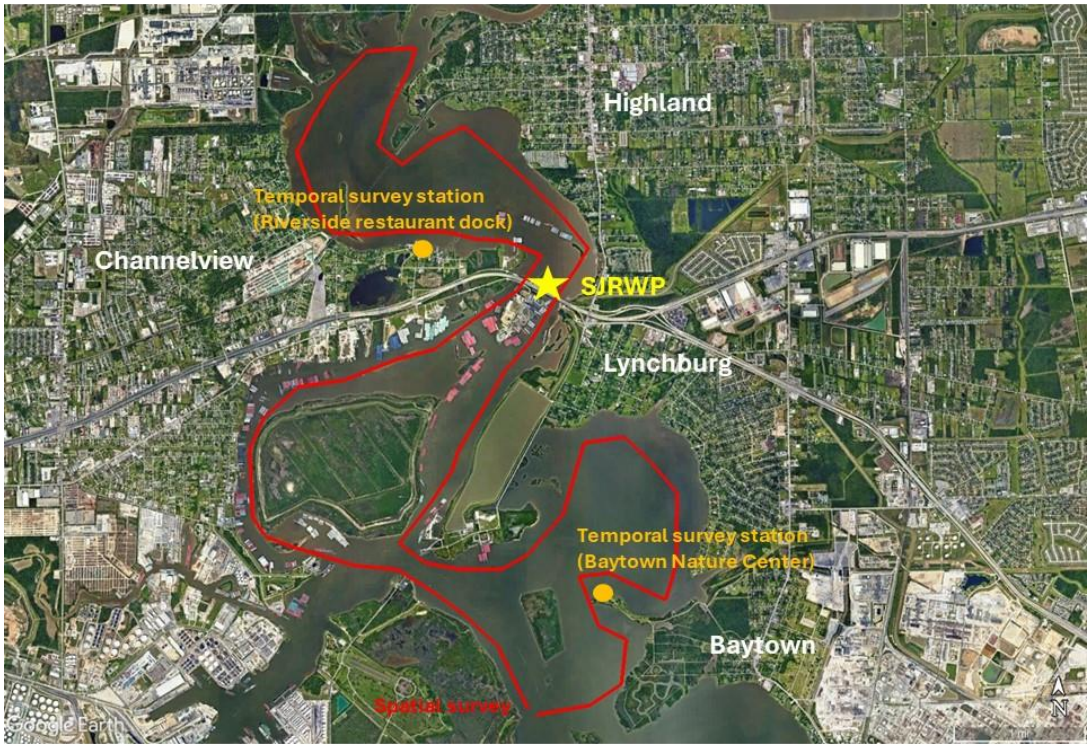
Latitude/Longitude (Optional):

[degrees, minutes, and seconds format]

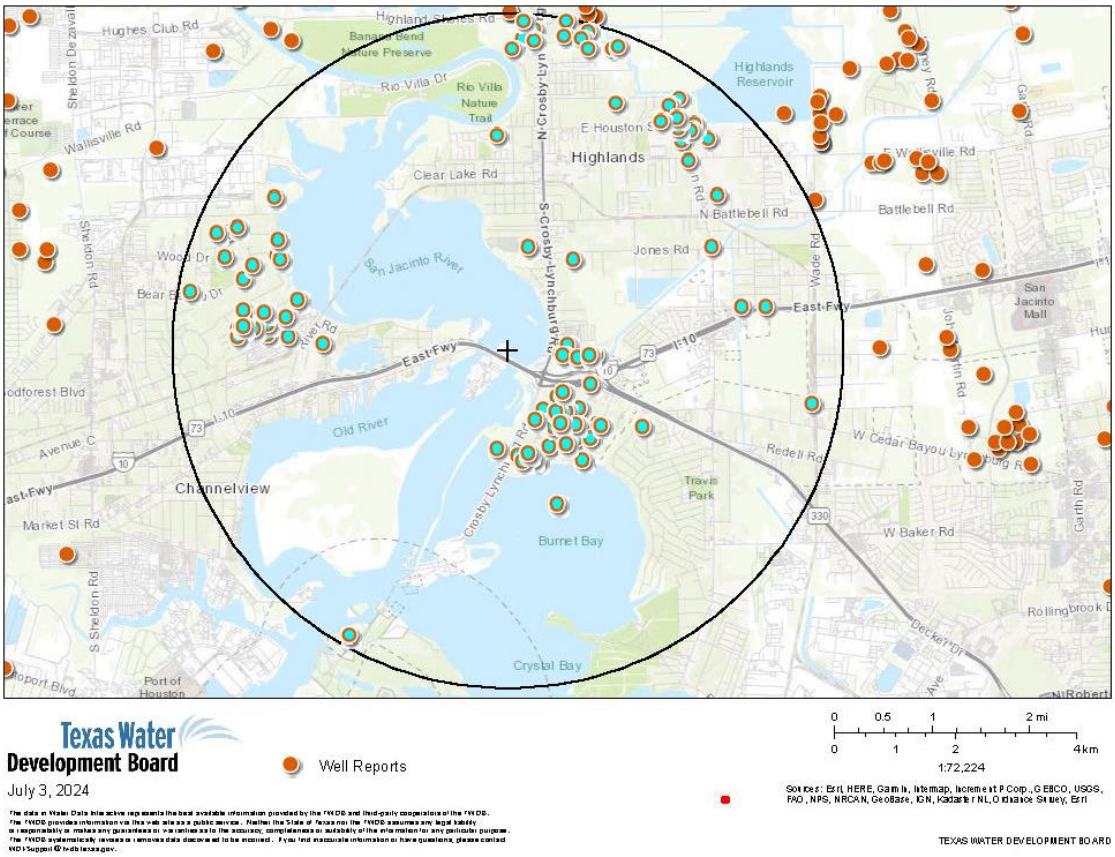
Location:

Lower Galveston Bay watershed: San Jacinto River (segment 1001 and 1005). Groundwater sampling is conducted in wells in Lynchburg, Highland, Baytown, and Channelview.

Projects Map



Hydrological connectivity assessment, including spatial and temporal variability of groundwater-surface water interaction



TWDB map showing more than 100 private wells registered within 3-mile radius of SJRWP

Supplemental Photos/Graphics (Optional):

[Insert Here or Attach as an Appendix]

References:

Adyasari, D. et al., 2023. Radon-222 as a groundwater discharge tracer to surface waters. Earth-Science Reviews, 238: 104321.

Baird, R., Bridgewater, L., 2017. Standard methods for the examination of water and wastewater. 23rd edition. American Public Health Association, Washington D.C.

Eggleton, J., Thomas, K.V., 2004. A review of factors affecting the release and bioavailability of contaminants during sediment disturbance events. Environment International, 30(7): 973-980.

Lawson, M.C., Cullen, J.A., Nunnally, C.C., Rowe, G.T., Hala, D.N., 2021. PAH and PCB body-burdens in epibenthic deep-sea invertebrates from the northern Gulf of Mexico. Marine Pollution Bulletin, 162: 111825.

Nolen, R.M. et al., 2022. PFASs pollution in Galveston Bay surface waters and biota (shellfish and fish) following AFFFs use during the ITC fire at Deer Park (March 17th–20th 2019), Houston, TX. Science of The Total Environment, 805: 150361.

Steichen, J.L. et al., 2020. Microbial, Physical, and Chemical Changes in Galveston Bay Following an Extreme Flooding Event, Hurricane Harvey. Frontiers in Marine Science, 7.

SECTION SIX: BUDGET DETAILS

Grant Payments [see 30 TAC § 14.7(12)]: All grant payments will be made on the basis of reimbursement for allowable costs (as defined in 2 CFR Part 200, Subpart E). All payments for awarded proposals will be reimbursements of allowable costs incurred after both parties have entered (signed) a grant agreement for the project.

Budget. Authorized budgeted expenditures for work performed are as follows:

Budget Category	**Cost for Work to be Performed**
Salary / Wages	$20,073
Fringe Benefits **(Please see appendix II)**	$3,395
Travel	$0.00
Supplies	$6,000
Equipment	$7,000
Contractual	$0.00
Construction	$0.00
Other	$33,015
Total Direct Cost	**$69,483**
Indirect Costs	$3**0,493**
Total	**$99,976**

Indirect Cost Agreement

Please note: If using a rate different from your entity Indirect Cost Agreement; a letter of exemption from the appropriate authority must be provided with the application, or a statement must be included certifying that the recipient has elected to be reimbursed for an amount less than its total indirect costs, that unreimbursed indirect costs are part of the recipient's contribution to the success of the project, and that the recipient will pay for all unreimbursed indirect costs using funds available to it for that purpose.

Please see appendix for a copy of Texas A&M University at Galveston's IDC rate agreement.
54% IDC rate x $56,468 MTDC = $30,493 Indirect Costs

Indirect Cost Reimbursable Rate. The reimbursable rate for this Contract is 54% of (check one):

☐ Salary and fringe benefits

☒ Modified total direct costs

☐ Other direct costs base

If other direct cost base, identify:

This rate is less than or equal to (check one):

☒ **Predetermined Rate**— an indirect rate that is negotiated between the Performing Party and its federal cognizant agency and supported by a current Negotiated Indirect Cost Rate Agreement (NICRA) letter. A Predetermined Rate is not subject to adjustment except as provided by 2 Code of Federal Regulations (CFR) § 200.411.

☐ **De Minimis Rate**— if Performing Party does not have a current negotiated indirect rate, Performing Party may use a standard rate of ten percent of Modified Total Direct Costs (MTDC) in lieu of determining the actual indirect costs of the service. Costs must be consistently charged as either indirect or direct costs.

☐ **Provisional Rate**— an experienced-based rate agreed to by Performing Party and TCEQ in the absence of a NICRA rate negotiated with the applicable federal cognizant agency.

☐ **Partial Reimbursement Rate**— a reimbursement rate agreed to between TCEQ and Performing Party that is less than the rate authorized under TxGMS or, where applicable, 2 CFR Part 200. Performing Party contributes all of its unreimbursed indirect costs to the successful performance of the project or projects funded under this Contract, in accordance with Article 9 of this section.

☐ **Other:**

Other. If Budget Category "Other" is greater than $25,000 or more than 10% of total Contract budget, identify the main constituents:

The amount for the "Other" category is 33.26% of the total budget:
Subaward to partner Texas Health and Environmental Alliance - $25,000
Boat rental costs - $2,000
Student tuition and fees - $6,015
Total Other: $33,015

SECTION SEVEN: CONTRACT REQUIREMENT [see 30 TAC § 14.7(15)]:

- By submitting this Project Proposal, you acknowledge that, if you become a successful grant recipient selected for a grant award, you must enter into a signed grant agreement or contract with TCEQ following the announcement of that award.

SECTION EIGHT: ACKNOWLEDGMENTS

Please read and understand the following:

- By submitting this Project Proposal, you acknowledge that information on how grant payments will be made is contained in the Budget Details section describing direct and possibly indirect costs. You further acknowledge that grant payments will be reimbursements on the basis of allowable costs incurred and that selected recipients will receive contract documents addressing allowable costs, unallowable costs, and reimbursement.
- By submitting this Project Proposal, you acknowledge your understanding that Project Proposals do not require matching funds and that a TCEQ director does not need to adjust or waive any matching funds requirement.
- By submitting this Project Proposal, you acknowledge that, if GBEP elects to hold a pre-submittal meeting relating to this Project Proposal, GBEP will notify you of the meeting's time and location indicating whether attendance is mandatory.

SECTION NINE: QUESTIONS AND PRE-SUBMITTAL MEETINGS [see 30 TAC § 14.7(13) and 30 TAC § 14.7(14)]:

- There are no pre-submittal meetings scheduled.
- For requests for additional, pre-submittal information **[see 30 TAC § 14.7(13)]**, please contact the corresponding Subcommittee Coordinator listed on this page.
-

SECTION TEN: ADDITIONAL INSTRUCTIONS

In submitting your Project Proposal, please refer and adhere to the following instructions and guidelines concerning materials and information required to be submitted by potential grant recipients:

- GBEP intends to accept only complete Projected Proposals in a layout and format constituting a filled version of this proposal document with all applicable sections therein addressed; however, GBEP may, in its sole discretion, consider and accept nonconforming Project Proposals in the best interest of the state.
- Unless otherwise specified by GBEP, formal signatures are not required on Project Proposals.
- Unless otherwise communicated or implied, GBEP requires 1 (one) completed copy of your Project Proposal per corresponding Subcommittee Coordinator.
- Project Proposals must be received electronically, through the email address of the relevant Subcommittee Coordinator listed on this page, by the deadline listed on both this page and the first page of this Project Proposal document.

Submittal Process and Deadline [see 30 TAC § 14.7(8) and 30 TAC § 14.7(9)]:
Please Submit Project Proposals (Microsoft Word Only – No PDFs) by August 5, 2024 to the relevant Subcommittee Coordinators below:

WSQ Subcommittee
Christian.Rines@tceq.texas.gov

NRU Subcommittee
Lindsey.Lippert@tceq.texas.gov

PPE Subcommittee
Lisa.Marshall@tceq.texas.gov and Matthew.Abernathy@tceq.texas.gov

M&R Subcommittee
Jenelle.Estrada@tceq.texas.gov

Appendix I: Letter of Commitment from Texas Health and Environment Alliance
Appendix II: Indirect Cost Agreement

Appendix I

July 25, 2024

Dr. Dini Adyasari
Department of Marine and Coastal Environmental Science
Texas A&M University at Galveston

Re: Letter of commitment for the *Assessment of groundwater quality and dynamics in San Jacinto River Waste Pits Superfund Site*

Dr. Adyasari,

The Texas Health and Environment Alliance (THEA) is a regional nonprofit whose mission is to protect public health and the environment by engaging, educating, and empowering impacted communities to advocate effectively for the clean-up of historical contamination. THEA was born as the result of my own family's experience living through the environmental crisis that is the San Jacinto River Waste Pits Superfund Site. A greater understanding of the contaminants in local groundwater wells, and the interaction between the Superfund Site and the aquifer, would be paramount for protection of public health and restoration of precious resources.

We at THEA believe that together our skills, expertise, experience, and previous history with our communities will be very beneficial in achieving the goals of the proposed project. We have a long history of working with residents around the San Jacinto River Waste Pits' Superfund process and have developed relationships with our communities based upon trust.

Over the past 13 years, THEA has served local communities through its core activities. These programs involve expert personnel providing public education, advocacy, outreach, media exposure, technical assistance, grassroots organizing and leadership development to achieve designated goals. We provide support to communities struggling with the health effects of toxic exposures, cumulative risk burdens, and health, economic, and social disparities. Through these experiences we've gained the understanding and sensitivity needed to communicate with private well owners, facilitate sampling events, host community-wide events, and disseminate technical information that's easily understood.

The Texas Health and Environment Alliance is pleased to submit a letter of commitment to partner with Texas A&M University at Galveston on the cardinal project, Assessment of groundwater quality and dynamics in San Jacinto River Waste Pits Superfund Site.

Sincerely,

Jackie Medcalf

Jackie Medcalf
Founder and Executive Director
Texas Health & Environment Alliance, Inc

Appendix II

DEPARTMENT OF HEALTH & HUMAN SERVICES

Program Support Center
Financial Management Portfolio
Cost Allocation Services

1301 Young Street, Suite 1140
Dallas, TX 75202
PHONE: (214) 767-3261
FAX: (214) 767-3264
EMAIL: CAS-Dallas@psc.hhs.gov

September 2, 2022

Joseph Duron
Chief Administrative Officer
Texas A&M University – College Station
301 Tarrow, Suite 369
College Station, TX 77840-7896

Dear Mr. Duron:

A copy of an indirect cost rate agreement is being sent to you for signature. This provisional agreement reflects an understanding reached between your organization and a member of my staff concerning the rate(s) that may be used to support your claim for indirect costs on grants and contracts with the Federal Government.

Please have the agreement signed by an authorized representative of your organization and return to me by email, retaining the copy for your files. Our email address is CAS-Dallas@psc.hhs.gov. We will reproduce and distribute the agreement to the appropriate awarding organizations of the Federal Government for their use.

The Office of Management and Budget (OMB) has requested that we reach an agreement with each institution on components for the published F&A cost rates. The attached form(s) are provided for that purpose. Please sign the form(s) and return them with an agreement.

An indirect cost proposal, together with the supporting information, is required to substantiate your claim for indirect cost under grants and contracts awarded by the Federal Government. Thus, your next proposal based on actual costs for the fiscal year ending 08/31/2025 is due in our office by 02/28/2026. Please submit your next proposal electronically via email to CAS-Dallas@psc.hhs.gov.

Sincerely,

Arif M. Karim -S Digitally signed by Arif M. Karim -S Date: 2022.09.13 13:48:50 -05'00'

Arif Karim
Director
Division of Cost Allocation

Enclosures

PLEASE SIGN AND RETURN A COPY via email to CAS-Dallas@psc.hhs.gov

COLLEGES AND UNIVERSITIES RATE AGREEMENT

EIN: 1746000531A1

ORGANIZATION:
Texas A & M University - College Station
200 Technology Way
A & M System Bldg, Suite 1281
College Station, TX 77845-3424

DATE:09/02/2022

FILING REF.: The preceding agreement was dated 08/07/2019

The rates approved in this agreement are for use on grants, contracts and other agreements with the Federal Government, subject to the conditions in Section III.

SECTION I: Facilities And Administrative Cost Rates

RATE TYPES: FIXED FINAL PROV. (PROVISIONAL) PRED. (PREDETERMINED)

	EFFECTIVE PERIOD				
TYPE	**FROM**	**TO**	**RATE(%)**	**LOCATION**	**APPLICABLE TO**
PRED.	09/01/2022	08/31/2023	51.50	On Campus	Organized Research & Instruction
PRED.	09/01/2023	08/31/2025	52.50	On Campus	Organized Research & Instruction
PRED.	09/01/2025	08/31/2026	54.00	On Campus	Organized Research & Instruction
PRED.	09/01/2022	08/31/2026	32.00	On Campus	Other Sponsored Activities
PRED.	09/01/2022	08/31/2026	10.50	Off Campus	IPA Programs
PRED.	09/01/2022	08/31/2026	26.00	Off Campus	All Programs

TYPE	FROM	TO	RATE(%)	LOCATION	APPLICABLE TO
PROV.	09/01/2026	Until Amended			Use same rates and conditions as those cited for fiscal year ending August 31, 2026.

*BASE

Modified total direct costs, consisting of all direct salaries and wages, applicable fringe benefits, materials and supplies, services, travel and up to the first $25,000 of each subaward (regardless of the period of performance of the subawards under the award). Modified total direct costs shall exclude equipment, capital expenditures, charges for patient care, rental costs of off site facilities, tuition remission, scholarships and fellowships, participant support costs and the portion of each subaward in excess of $25,000. Other items may only be excluded when necessary to avoid a serious inequity in the distribution of indirect costs, and with the approval of the cognizant agency for indirect costs.

SECTION II: SPECIAL REMARKS

TREATMENT OF FRINGE BENEFITS:

The fringe benefits are specifically identified to each employee and are charged individually as direct costs. The directly claimed fringe benefits are listed below.

TREATMENT OF PAID ABSENCES

Vacation, holiday, sick leave pay and other paid absences are included in salaries and wages and are claimed on grants, contracts and other agreements as part of the normal cost for salaries and wages. Separate claims are not made for the cost of these paid absences.

OFF-CAMPUS DEFINITION: OFF-CAMPUS DEFINITION: For all activities performed in facilities not owned by the institution and to which rent is directly allocated to the project(s) the off-campus rate will apply. Grants or contracts will not be subject to more than one F&A cost rate. If more than 50% of a project is performed off-campus, the off-campus rate will apply to the entire project.

FRINGE BENEFITS:
FICA, Retirement, Worker's Compensation, Life Insurance, Unemployment Insurance, Health Insurance, Accrued Compensated Absences

APPLICABILITY OF RATES: Texas A&M Research Foundation (EIN: 74-1238434), Texas Engineering Experiment Station (EIN: 74-1974733), Texas Engineering Extension Service (EIN: 74-2270626), Texas Agri-Life Research (FKA as Texas Agricultural Experiment Station) (EIN: 74-6000541), Texas Agri-Life Extension (FKA Texas cooperative Extension) (EIN: 74-6000537), Texas Transportation Institute, (EIN: 74-2270624), Texas A&M University at Galveston (EIN: 74-2125225), Texas A&M Health Science Center (EIN: 74-2907553), Texas Forest Service (EIN: 74-6014065),Texas A&M University System (EIN: 74-2648747), Texas Veterinary Medical Diagnostic Laboratory (EIN: 26-3850570), Shared Services Center Commercialization (EIN: 74-2648747), Texas Division of Emergency Management(TDEM), (EIN: 84-1876045).

Your next F&A proposal based on actual costs for the fiscal year ending 08/31/2025, is due in our office by 02/28/2026.

Equipment means tangible personal property (including information technology systems) having a useful life of more than one year and a per-unit acquisition cost which equals or exceeds $5,000.

SECTION III: GENERAL

A. LIMITATIONS:

The rates in this Agreement are subject to any statutory or administrative limitations and apply to a given grant, contract or other agreement only to the extent that funds are available. Acceptance of the rates is subject to the following conditions: (1) Only costs incurred by the organization were included in its facilities and administrative cost pools as finally accepted: such costs are legal obligations of the organization and are allowable under the governing cost principles; (2) The same costs that have been treated as facilities and administrative costs are not claimed as direct costs; (3) Similar types of costs have been accorded consistent accounting treatment; and (4) The information provided by the organization which was used to establish the rates is not later found to be materially incomplete or inaccurate by the Federal Government. In such situations the rate(s) would be subject to renegotiation at the discretion of the Federal Government.

B. ACCOUNTING CHANGES:

This Agreement is based on the accounting system purported by the organization to be in effect during the Agreement period. Changes to the method of accounting for costs which affect the amount of reimbursement resulting from the use of this Agreement require prior approval of the authorized representative of the cognizant agency. Such changes include, but are not limited to, changes in the charging of a particular type of cost from facilities and administrative to direct. Failure to obtain approval may result in cost disallowances.

C. FIXED RATES:

If a fixed rate is in this Agreement, it is based on an estimate of the costs for the period covered by the rate. When the actual costs for this period are determined, an adjustment will be made to a rate of a future year(s) to compensate for the difference between the costs used to establish the fixed rate and actual costs.

D. USE BY OTHER FEDERAL AGENCIES:

The rates in this Agreement were approved in accordance with the authority in Title 2 of the Code of Federal Regulations, Part 200 (2 CFR 200), and should be applied to grants, contracts and other agreements covered by 2 CFR 200, subject to any limitations in A above. The organization may provide copies of the Agreement to other Federal Agencies to give them early notification of the Agreement.

E. OTHER:

If any Federal contract, grant or other agreement is reimbursing facilities and administrative costs by a means other than the approved rate(s) in this Agreement, the organization should (1) credit such costs to the affected programs, and (2) apply the approved rate(s) to the appropriate base to identify the proper amount of facilities and administrative costs allocable to these programs.

BY THE INSTITUTION:

Texas A & M University - College Station

(INSTITUTION)

(SIGNATURE)

Joseph Duron

(NAME)

Chief Administrative Officer

(TITLE)

9-14-2022

(DATE)

ON BEHALF OF THE FEDERAL GOVERNMENT:

DEPARTMENT OF HEALTH AND HUMAN SERVICES

(AGENCY)

Arif M. Karim -S Digitally signed by Arif M. Karim -S Date: 2022.09.13 13:48:14 -05'00'

(SIGNATURE)

Arif Karim

(NAME)

Director, Cost Allocation Services

(TITLE)

9/02/2022

(DATE) 6554

HHS REPRESENTATIVE: Denise Shirlee

Telephone: (214) 767-3261

COMPONENTS OF PUBLISHED F&A COST RATE

INSTITUTION: **Texas A&M University - College Station**

FY COVERED BY RATE: **September 1, 2022 - August 31, 2026**

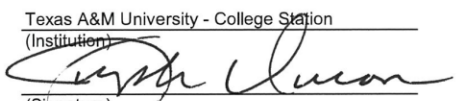
APPLICABLE TO: **ORGANIZED RESEARCH**

RATE COMPONENT:	ORGANIZED RESEARCH & INSTRUCTION FY 23 ON CAMPUS	ORGANIZED RESEARCH & INSTRUCTION FY 24-25 ON CAMPUS	ORGANIZED RESEARCH & INSTRUCTION FY 26 ON CAMPUS	OTHER SPONSORED ACTIVITIES FY 23-26 ON CAMPUS	ALL PROGRAMS FY 23-26 OFF CAMPUS
Building Depreciation	6.6	6.9	7.3	1.0	
Equipment Depreciation	4.4	4.6	4.9	4.0	
Interest	2.7	2.8	3.0	0.1	
Operation & Maintenance	10.3	10.7	11.3	0.9	
Library	1.5	1.5	1.5		
Administration*	26.0	26.0	26.0	26.0	26.0
TOTAL	51.5	52.5	54.0	32.0	26.0

* Reflects provisions of Appendix III to Part 200 of Uniform Guidance—Indirect (F&A) Costs Identification and Assignment, and Rate Determination for Institutions of Higher Education (IHEs), C.8. dated December 26, 2013.

CONCURRENCE:

Texas A&M University - College Station
(Institution)


(Signature)

Joseph Duron
(Name)

Chief Administrative Officer
(Title)

9-14-2022
(Date)

Appendix: Fringe Benefits

Calculations::
PI and Co-I: ($4,239 x 18.9%) + ($950 x 0.44 mos.) = $1,222
Grad ($15,834 x 3%) + ($283/mo x 6 mos.) = $2,173
Total = $3,395

System Office of Budgets and Accounting
THE TEXAS A&M UNIVERSITY SYSTEM

June 25, 2024

MEMORANDUM

TO: Chief Financial Officers
Academic Institutions and Service Agencies

FROM: Verna Fritsche, Director, Accounting

SUBJECT: FY2025 Budgeting for Fringe Benefits on Sponsored Agreements

For fiscal year 2025, please use the fringe benefit rates listed below when calculating fringe benefits for sponsored agreement budgeting purposes. This will not impact reimbursements from sponsored agreements, as fringe benefits will continue to be reimbursed at the actual dollar amount expensed, rather than the budgeted amount.

Beginning July 2000, the State is not required to pay Social Security and Medicare for students who meet certain criteria. For the purposes of fringe benefit budgeting, students that meet the criteria will be called FICA Exempt Students. For students who do not meet the criteria, choose the employee category that applies to them.

Fiscal Year 2025 Fringe Benefits for Budget Purposes

Employees Eligible for all Fringe Benefits	18.9% of direct salaries & wages PLUS A fixed monthly dollar amount for group insurance
Employees Not Eligible for Group Insurance & Retirement	10.7% of direct salaries & wages
FICA Exempt Students Eligible for Group Insurance But Not Eligible for Retirement	3.0% of direct salaries & wages PLUS A fixed monthly dollar amount for group insurance
FICA Exempt Students Not Eligible for Group Insurance & Retirement	3.0% of direct salaries & wages

Fiscal Year 20243 Fixed Monthly Dollar Amount for Group (Medical & Basic Life) Insurance

Classification of Employee	Fixed Monthly Insurance Amount
Faculty and Staff – Full Time (100%)	$1,104
Faculty and Staff – Part Time (50% - 99.99%)	$545
Insurance Eligible Student [b]	$283
Combined (all employees) [a]	$950

301 Tarrow Street, 3rd Floor • College Station, Texas 77840-7896
(979) 458-6100 • Fax (979) 458-6101 • www.tamus.edu

[a] If the classification of the employee who will be working on the sponsored agreement is known, use the above figure that applies to them. Otherwise, use the combined amount ($950).

[b] The fixed monthly insurance amount ($283) is based on half of the GIP state contributions. However, several System Members have chosen to supplement the remaining half of the contribution or the remaining health premium amounts, whichever is less, if one of the following requirements is met. (The supplement is optional for System Members.)

1. The graduate assistant hired by June 1, 2004.
   or
2. The graduate assistant received a supplement in FY2004.

Below are two tables, *for informational purposes only*. The first table is a breakdown of the fringe benefit percentages. The second table details State monthly contribution towards group (medical and basic life) insurance premiums for insurance eligible employees.

Breakdown of The Fringe Benefit Percentages

	TRS Eligible Employees[c]	ORP Eligible Employees [d]	Employees Not Eligible for a Retirement Plan	FICA Exempt Students
Social Security on first $174,900 (employer portion) [e]	6.20%	6.20%	6.20%	NONE
Medicare	1.45%	1.45%	1.45%	NONE
Workman's Comp. Ins. [g]	.51%	.51%	.51%	.51%
Unemployment Comp. Ins. [h]	.30%	.30%	.30%	.30%
Retirement Plan	8.25% [c]	8.50% [f]	NONE	NONE
Leave Termination [i]	2.15%	2.15%	2.15%	2.15%
TOTAL	18.86%	19.11%	10.61%	2.96%
Fringe Benefit Rate for Budgeting Purposes	**18.9%**	**19.1%**	**10.7%**	**3.0%**

[c] Teacher Retirement System. The retirement contribution for employees participating in TRS will remain at 8.25% in FY2025.

[d] Optional Retirement Program.

[e] $168,800 was effective 1/1/2024. Social Security is subject to change as determined by federal law. For calendar year 2025, employee wages subject to social security increased to an estimated $174,900.

[f] Employees with an ORP start date on or before 8/31/95 are provided the same contribution during FY2025 as they received during FY1995 (8.5%). The state contribution will remain at 6.60% in FY2025. Each member will supplement 1.9% to maintain the 8.5% contribution.

[g] WCI Member assessments range from .10% to .51% based on previous claim experience. See the assessment for each Member in the FY2025 budget instructions.

[h] UCI Member rates range from .01% to .30% based on previous claim experience. See the rate for each Member in the FY2025 budget instructions.

[i] Leave Termination Member assessments range from .13% to 2.15% based on previous years' experience. Each Member determines the rate to use for their institution/agency/health science center.

Texas AgriLife Extension Service Exception

If the employee has a civil service appointment and is in TRS, the rate is 18.48%
If the employee has a civil service appointment and is in ORP on or after 9-1-95, the rate is 16.83%.
If the employee has a civil service appointment and was enrolled in ORP before 9-1-95,
the rate is 18.73%.

Monthly State Contributions to Group (Medical and Basic Life) Insurance Premiums

Coverage	Full Time (100%)	Part Time (75%-99.99%)	Part Time (50%-74.99%)
Employee Only	$965.90	$965.90	$480.60
Employee and Spouse	$1,246.94	$1,246.94	$621.12
Employee and Children	$1,161.16	$1,161.16	$578.24
Employee and Family	$1,361.40	$1,361.40	$678.36

These fringe benefit percentages and amounts listed in this letter are estimates derived from the average population of all Texas A&M members, if a member's values differ, the member could use the different amounts based upon their employee population. If different numbers are used, the methodology must be documented by the member.

Please call Verna Fritsche at (979) 458-6090 if you have any questions.

Galveston Bay Estuary Program
Fiscal 2026 WSQ Project Proposal

Please complete this proposal form and submit to the appropriate Subcommittee Coordinator (end of form) by August 5, 2024. No late submittals will be considered for funding.

This Call for Project Proposals complies with 30 Texas Administrative Code (TAC) § 14.7, which lays out requirements for a competitive solicitation by TCEQ for grant awards. For convenience, specific citations to 30 TAC § 14.7 are identified in the text.

SECTION ONE: INTRODUCTION

Purpose [required by 30 TAC § 14.7(1)]: The purpose of the proposed grant from the Galveston Bay Estuary Program (GBEP), a program of the Texas Commission on Environmental Quality (TCEQ), is to implement *The Galveston Bay Plan, 2nd Edition* (the Plan), a comprehensive conservation and management plan falling under Section 320, of the Federal Water Pollution Control Act (33 U.S.C. Section 1330), for a designated national estuary in the State of Texas.

Objective and Allowable Activities [see 30 TAC § 14.7(4)]: The objective of this grant is to implement the GBEP stakeholder developed priorities for FY2026 (FY2026 Priority Area Actions) that were developed by GBEP subcommittees for fiscal 2026 at the June 2024 meetings. Any proposal implementing the Plan may be submitted, but proposals implementing the FY2026 Priority Area Actions will be considered above others.

Authority [see 30 TAC § 14.7(2)]: Grants issued by GBEP under this solicitation are authorized by: the Federal Water Pollution Control Act (Clean Water Act) § 320 (33 UNITED STATES CODE § 1330), commonly referred to as the National Estuary Program; TEX. WATER CODE § 5.124; and 30 TAC ch. 14.

Match Requirement [see 30 TAC § 14.7(10) and 30 TAC § 14.7(11)]: No matching funds are required. Therefore, there is no need to adjust or waive any matching funds requirement.

Multiple Awards [see 30 TAC § 14.7(7)]: GBEP anticipates awarding funds for multiple proposals. GBEP intends to award grants to that combination of proposals which best implements the Plan, factoring in all criteria identified in this Call for Project Proposals, the availability of funds, and the most effective division of funds between awards.

SECTION TWO: SUBMITTAL – GENERAL INFORMATION

Subcommittee:

Water and Sediment Quality

Project Name:

Evaluation of Green Infrastructure to Reduce Microplastic Pollution in Galveston Bay

Project Previously Funded by GBEP? Yes ☐ No ☒

Lead Implementer / Categories of Eligible Recipients [see 30 TAC § 14.7(3)]:
The lead implementer must be in one of the following categories of eligible recipients. Please indicate which category applies to your entity. If the proposing party is not already paired with a lead implementer in one of the categories listed below, the proposing party will need to partner with an eligible recipient in one of these categories to be selected for funding. Please reach out to GBEP staff with any questions.

☐ Federal, State, or Local Government ☐ Council of Government ☒ Public ISDs or Universities
☐ Nonprofit ☐ Other*

Public University: University of Houston-Clear Lake

Unique Entity ID (UEI) Number:	AND:	VIN or Tax ID:
RD74AUNCTZJ1		74-6001399

Contact Information:

Project Representative Name	Jenny Oakley
Project Representative Phone	281-283-3947
Project Representative Email	Oakley@uhcl.edu

Amount Requested from GBEP:

$221,928.00

Federal ☐ State ☐ No Preference ☒
Is the project scalable? ☒

Amount Requested per year (if applicable):

FY 2026 (09/01/2025-08/31/2026)	$131,901.02
FY 2027 (09/01/2026-05/31/2027)	$90,026.98
FY 2028 (09/01/2027-05/31/2028)	$0.00
Total	$221,928.00

Project Dates / Duration (beginning no earlier than September 1, 2025 – ending no later than May 31, 2028) [see 30 TAC § 14.7(5)]:

September 1, 2025 – August 31, 2027

Project Urgency:

Building on previously GBEP funded microplastic studies by the United States Geological Survey and the University of Houston-Clear Lake, this proposal takes the next step to identify the treatment potential of microplastic pollution in stormwater by green infrastructure projects in the Galveston Bay watershed to inform future green infrastructure projects.

Microplastics (plastics less than 5mm in diameter) are easily consumed by, and have been found in, all trophic levels of marine organisms. Plastics can absorb hydrophobic toxins in the environment such as polycyclic aromatic hydrocarbons (PAHs) and pharmaceuticals and when ingested both plastics and their associated toxins can be amplified as they accumulate up the food chain. This has repercussions for human health, considering toxins from microplastics are found in the types of seafood harvested from Galveston Bay, such as oysters, blue crab, shrimp, and fin fish and may pose a risk to human consumers.

Large urban areas near the coast, such as the Houston-Galveston urban complex within the Galveston Bay watershed, are perhaps the most critical for research and development aimed at curbing chronic plastic pollution. Wetlands have been shown to contribute to removal of microplastics from surface waters. Green infrastructure includes a wide variety of plant and soil systems, and permeable surfaces designed to reduce flows to surface waters, while providing improvements to the quality of the water. Within the Galveston Bay watershed there are numerous green infrastructure projects that have been completed or are underway but have not been evaluated for treatment potential of microplastics.

Understanding the quantity and characteristics of microplastic pollution in an area is the first step in developing methods to combat the problem. The proposed study will provide additional critical data on baseline microplastic loading in Galveston Bay watersheds, and quantify the treatment potential of different green infrastructure projects to reduce microplastic loading.

Total Project Cost (including Leveraging Amounts, if any; provide leveraging information where indicated below):

$326,123.00

Is this an estimate? ☒

Leveraging (in-kind and/or cash):

Laboratory equipment used to analyze the samples including a microscope valued at $36,000 is provided by the lead implementer institution (UHCL) at no charge.

The Project Partner, Harris County Flood Control District (HCFCD), is participating in the project in an in-kind capacity and will not be charging any time or resources to the project. The amount of in-kind contribution from HCFCD staff participation (estimated at $258.10/month for 24 months = $6,195), the use of HCFCD automated sampling devices ($10,000 per automated sampler, * 6 samplers + $2,000 software = $62,000), and access to HCFCD properties for the study.

The total value of the leveraged funds directly applicable to the proposed study is estimated at $104,195.

Partners* and Their Roles:

Key Personnel: Name, Email, Affiliation, Professional Title
Robert Snoza – Robert.Snoza@hcfcd.hctx.net; Harris County Flood Control District, Project Manager, Environmental Quality

Please see attached "Appendix 3 – HCFCD Letter of Commitment – Oakley.pdf" which summarizes the support and coordination with the Harris County Flood Control District team and their commitment to the proposed project.

***If partners are subgrantees completing work reimbursable under GBEP funding, a letter of commitment from the partner must be submitted under the application.**

SECTION THREE: *GALVESTON BAY PLAN, 2ND EDITION* IMPLEMENTATION

Grant recipient activities to be funded must implement the Plan, but proposals implementing the FY2026 Priority Area Actions will be considered above others.

The FY2026 Priority Area Actions are found at:
https://gbep.texas.gov/ensure-safe-human-and-aquatic-life-use/
https://gbep.texas.gov/protect-and-sustain-living-resources/
https://gbep.texas.gov/engage-communities/
https://gbep.texas.gov/inform-science-based-decision-making/

The proposed project will ensure safe human and aquatic life use under the Galveston Bay Plan addressing all three action plans: improve water quality through non-point source pollution abatement (NPS), improve water quality through point source pollution abatement (PS), and promote public health and awareness (PHA) in the following ways:

The proposed project will evaluate the effectiveness of best management practices and make, and disseminate recommendations for future best management practices related to green infrastructure's role in reducing microplastic pollution to Galveston Bay (NPS-3). The proposed project will provide critical baseline data necessary to support the inclusion of microplastic concentration as a pollutant of consideration for future watershed-based plans (NPS-1). It will quantify nonpoint source microplastic pollution by estimating loadings which may be used to inform future work on the ecotoxicology of microplastics in Galveston Bay (PHA 4 & 5). Finally, the results of the proposed study can be used to inform public outreach and education campaigns to raise awareness and empower community members to act to reduce microplastic pollution to Galveston Bay (NPS-2, PS-1).

Galveston Bay Plan Priority Area Actions Addressed:

Plan Priority 1: Ensure Safe Human and Aquatic Life Use

NPS-1 ☒	NPS-2 ☒	NPS-3 ☒	NPS-4 ☐	
PS-1 ☒	PS-2 ☐	PS-3 ☐		
PHA-1 ☐	PHA-2 ☐	PHA-3 ☐	PHA-4 ☒	PHA-5 ☒

Plan Priority Area Actions Detail:

The proposed project will implement the following other Galveston Bay Plan Priority Area Actions.

Improve Water Quality Through Nonpoint Source Pollution (NPS)

NPS-1 Support watershed-based plan development and implementation: Understanding baseline microplastic concentrations is the first step to evaluating potential impacts to human and aquatic life. Results from this study could be presented in existing and upcoming total maximum daily load I-plans and watershed protection plans in the Galveston Bay area. The output of the number of watershed-based plans would not be impacted by the proposed project, but the resulting knowledge could be used in future watershed-based plans to include baseline microplastic concentration data providing a more holistic review of pollutants discussed within the watershed.

NPS-2 Support nonpoint source education and outreach campaigns: The results of the proposed study will be used to inform public education and outreach materials for inclusion in social media campaigns and integration in existing nonpoint source education and outreach campaigns such as Bay to Schools, SPLASH, and Trash Bash.

NPS-3 Implement nonpoint source best management practices: The results of the proposed study will inform where future green infrastructure projects may provide the most impact in terms of microplastic treatment of stormwater entering Galveston Bay and provide another metric for stormwater retention and treatment best management practices to consider. The output of the number of best management practice projects will not be impacted by the proposed project, but the design and potential for treatment for another pollutant, microplastics, can be considered for future green infrastructure projects.

Improve Water Quality Through Point Source Pollution Abatement (PS)

PS-1 Support stormwater education programs: The anticipated results from the proposed study will provide data to illustrate that stormwater events result in increased loading of microplastics to Galveston Bay. The results can be integrated into stormwater education programs as one more pollutant of concern in stormwater and provide the community with recommendations of how they can help to reduce microplastic pollution into our waterways.

Promote Public Health and Awareness (PHA)

PHA-4 & 5 Improve the safety of human shellfish and finfish consumption from bay waters: The proposed study will bring awareness to the concentration of microplastic pollution in the waters that flow into Galveston Bay. Plastics have been found in all trophic levels of marine organisms, ranging from filter-feeding invertebrates like oysters to finfish and the humans that consume them. Quantifying the ability of green infrastructure projects to reduce microplastic loading in Galveston Bay will inform future best management practices that can improve water quality and therefore improve the safety to human shellfish and finfish consumption from bay waters. While microplastics are not currently a water quality standard that is regulated by resource management agencies, the results from this study may provide baseline data that are useful in future oyster waters TMDL and I-plans related to consumption safety of aquatic organisms.

Does the project implement any other *Galveston Bay Plan 2nd Edition* Priority Area Actions, or the other Subcommittee priorities?

☒ NRU (Protect and Sustain Living Resources)
☒ PPE (Engage Communities)
☒ M&R (Inform Science-Based Decision Making)

Other Subcommittee Detail:

The proposed project will implement the following other Galveston Bay Plan Priority Area Actions.

Protect and Sustain Living Resources – Demonstrate the treatment potential of green infrastructure projects to reduce microplastic pollution and recommend best management strategies that include wetland construction for stormwater management designs.

HC-3: The results of the proposed research will identify watersheds with the highest contribution of microplastic pollution to Galveston Bay and recommend deployment of green infrastructure projects which include habitat enhancement in stormwater conveyance and detention with treatment potential for removing microplastics from stormwater.

Engage Communities – Support existing and new stewardship programs, volunteer opportunities, and public outreach to engage the public in a dialogue about the concentration of microplastics in surface waters flowing into Galveston Bay and ways that they can help reduce microplastic pollution.

SPO-1: The results of the proposed project can be used to support stewardship programs and volunteer opportunities by informing participants of the microplastic pollution in Galveston Bay and providing ways that they can reduce plastic pollution empowering them to become ambassadors of Galveston Bay.

SPO-2: The results of the proposed project will be presented at the State of the Bay Symposia and can be used to support workshops and events providing opportunities for the public to receive education on the microplastic pollution in Galveston Bay and ways that they can help reduce plastic pollution.

SPO-3: The results of the proposed project can be used to support existing or develop new regional initiatives and campaigns aimed at reducing plastic pollution in Galveston Bay.

Inform Science-Based Decision Making – The proposed project will support water quality monitoring focused on microplastic pollution, and evaluate applied research to inform the watersheds for future investment of green infrastructure projects designed to reduce microplastic pollution.

RES-1: Conduct Biological Stressor Monitoring and Research – The proposed applied research will provide baseline data needed for future understanding of the emerging contaminant: microplastics and associated hydrophobic toxins on the aquatic life of Galveston Bay.

RES-6: Evaluate Best Management Practice (BMP) Projects – The proposed project will evaluate the treatment potential of green infrastructure projects for stormwater treatment to remove microplastics from surface waters of the Galveston Bay area. It will identify watersheds with the highest microplastic pollution and recommended them for future best management practices to reduce microplastic pollution.

ACS-2: Access to Monitoring and Research Data – The project team will disseminate the monitoring and research results realized for the proposed project through a variety of outreach activities for different audiences, including GBEP partners, decision makers, bay user groups, and the public as opportunities present.

ACS-3: Track Galveston Bay Plan Implementation – The project team will work with the GBEP and its partners to integrate the proposed project results into the Comprehensive Conservation and Management Plan for the Galveston Bay estuary and share it with the council and stakeholders.

Other Plans Implemented:

The proposed project aligns with the following plans and strategies.

The Gulf of Mexico Alliance's Governor's Action Plan: Aligns with the priority issue item: Threats to Human Health and Aquatic Life. *"Gulf-wide efforts to collect data, monitor water resource conditions and trends, and identify linkages between water quality and threats to human health or aquatic life (such as harmful algal blooms, bacteria, microplastics, etc.) provide critical information to support improvements within Gulf of Mexico waters."*

The Save Our Seas Act of 2018: Also known as the *"Marine Debris Act"*, aligns with the priority goal of: "*Conduct and support research to address the most critical research needs related to microfiber pollution"*, as defined in the Marine Debris Report to Congress by NOAA's Marine Debris Program and the EPA's Trash Free Waters Program.

The Galveston Bay Report Card: Litter and trash are scored as "I" for insufficient data because *"there is no systematic bay-wide monitoring"* to evaluate this kind of pollution.

SECTION FOUR: SUBCOMMITTEE PRIORITIES / FACTORS TO BE USED TO SELECT AWARDS [see 30 TAC § 14.7(6)]

Grant recipient activities must implement the Plan. Additional recipient selection criteria includes whether a project addresses a subcommittee priority. This selection criteria provides for the selection of multiple recipients as needed.

WSQ Subcommittee Identified Priorities

Grant recipient activities must implement the Plan. Additional recipient selection criteria includes whether a project addresses a subcommittee priority.

☐ Supporting management measures and watershed-based plans.
☒ Monitoring and research that evaluates green infrastructure effectiveness.
☒ Evaluation and development of indicators and metrics of water (surface and ground) and sediment quality.

Subcommittee Priority Detail:

Monitoring and research that evaluates green infrastructure effectiveness: The proposed project will evaluate the effectiveness of green infrastructure stormwater management systems to remove microplastics from surface waters entering Galveston Bay watersheds.

Evaluation and development of indicators and metrics of water (surface and ground) and sediment quality: The proposed project will monitor microplastic concentrations and loading in major watershed that flow into Galveston Bay. There are currently no agency-mandated water quality standards for microplastics in surface waters. This critical research will add to the knowledge base needed to understand baseline microplastic concentrations and standardize microplastic enumeration methodology to one day inform the development of water quality standards for microplastics in surface waters.

Does the Project work with new, smaller communities/partnerships?

☒ Yes
☐ No

This project will work with the Harris County Flood Control District, a new grantee project partner for GBEP. It will also support a graduate student and an undergraduate student at the Hispanic serving institution, UHCL.

SECTION FIVE: PROPOSAL DETAILS

Grant recipient activities must implement the Plan. Additional recipient selection criteria includes whether a project addresses a subcommittee priority.

Project Summary:

The proposed study will provide critical data on baseline microplastics loading in Galveston Bay watersheds and quantify the treatment potential of green infrastructure projects to reduce microplastic loading in surface waters from stormwater runoff. The results of the study will recommend priority watersheds for future green infrastructure projects to reduce microplastic concentrations and improve stormwater quality flowing into Galveston Bay.

Full Project Description (1,000 words or less):

Anthropogenic debris, primarily compiled of plastics, are a pervasive and global environmental issue (Rochman, 2020; González-Pleiter et al., 2020). Plastics are non-biodegradable by design; the very attributes that make plastics such a useful and transformative technology also make them particularly challenging pollutants. While plastics do not biodegrade, they break apart and weather into smaller and smaller pieces through time (Martin et al., 2017). Microplastics are pieces of plastic that are less than 5 millimeters in diameter. Microplastics include not only degraded particles of once larger plastics but also manufactured plastic particles such nurdles and microbeads (Tunnel et al. 2020).

Urban centers are the source for the majority of plastic pollution in marine ecosystems (Lebreton and Andrady, 2019; Scircle et al., 2020). Large urban areas near the coast (such as the Houston-Galveston urban complex) are perhaps the most critical for research and development aimed at curbing chronic plastic pollution. Galveston Bay is home to the majority of the country's plastic manufacturers (Tunnell et al., 2020; Shruti et al., 2021) and is the most economically important fishery in Texas.

Microplastics have been documented at an average concentration of 44.5 pieces per L of surface water in Galveston Bay (Table 1), and they have been found in tissues of all trophic levels of marine organisms, ranging from filter-feeding invertebrates to large pelagic fishes and mammals (Vegter et al. 2014; Avio et al., 2017). Since plastics are petroleum-derived, they can absorb hydrophobic toxins in the environment such as polycyclic aromatic hydrocarbons (PAHs) and pharmaceuticals (Bakir et al., 2014). Plastics and their associated toxins can be amplified as they accumulate up the food chain through the process of biomagnification (Miller et al., 2020). Microplastics have been recovered from within local commercial estuarine fish (Rowe et al., 2020; Bessa et al., 2018). This has repercussions for human health, considering toxins from microplastics bioaccumulate in the types of seafood harvested from Galveston Bay, such as oysters, blue crab, shrimp, and fin fish and may pose a risk to human consumers (Rowe et al., 2020; Peters, 2018).

The fate of microplastics in estuarine systems is not well known (Nel and Froneman, 2015), although Weinstein et al. (2016) found that primary plastics degrade or precipitate relatively quickly in marsh environments (similar to those found in Galveston Bay) and other studies show that wetlands are capable of removing a significant amount of surface water microplastics (Wang et al. 2020; Sarkar et al., 2021; Xu et al., 2022). Historically, stormwater has been managed through grey infrastructure systems (gutters, pipes, cement-lined ditches), designed to move water quickly. The integration of green infrastructure to stormwater management has increased resilience and achieved environmental, social, and economic benefits (U.S. Congress, 2019). Green infrastructure includes a wide variety of plant and soil systems, and permeable surfaces designed to slow and reduce flows to surface waters, while providing improvements to the quality of the water (US EPA, 2022). Within the Galveston Bay watershed there are numerous green infrastructure projects that have been completed or are underway which include the installations of traditional and floating wetlands to treat stormwater runoff (HCFCD, 2011 and 2014; Texas Sea Grant, 2012; Guillen et al., 2014; Chau, 2024; FEMA, 2018).

Understanding the quantity and characteristics of microplastic pollution in an area is the first step in developing methods to combat the problem. With some green infrastructure projects already in place, there is opportunity to measure the treatment efficiency of created wetlands in stormwater detention basins to remove microplastics from surface waters flowing into Galveston Bay. The proposed study will provide critical data on baseline microplastic loading in Galveston Bay watersheds, and quantify the treatment potential of different green infrastructure projects to reduce microplastic loading by addressing the following objectives:

1) Monitor background levels of microplastic pollution in major contributing waterways to Galveston Bay:
    a. Compare microplastic concentration between dry-weather (base flow) and wet-weather events
    b. Identify contributing sub-watersheds to Galveston Bay with the highest microplastic concentrations for consideration of future green infrastructure projects.
2) Determine treatment potential of various green infrastructure installments for removing microplastic pollution from stormwater.

At up to six baseline monitoring sites, three replicate, one-liter, surface water grab samples will be collected during a target of four dry weather and four wet weather events over the course of one year. Preliminary data suggest that microplastic concentrations in surface waters of Galveston Bay are significantly higher after periods of wet weather (Kruskal-Wallis chi-squared = 7.0053, p-value = 0.0081, Figure 1). Discharge and days since last significant rainfall will be recorded for each sample event. Additionally, at up to three green infrastructure sites, during wet weather events, water samples from the inflow and outflow will be collected (sample volume and collection timing will depend on available automated monitoring equipment and monitoring plans for these basins). Up to four wet weather events at each site over a one-year period will be targeted. All water samples will be vacuum filtered through a gridded 0.45 um filter and examined under a compound microscope to qualify and quantify all microplastics (Sartain et al., 2018; MERI, 2015, Maes et al. 2017).

Surface microplastic loading will be calculated using measured concentrations and discharge measurements for each baseline monitoring location. Estimated loadings can be used to inform future work on the ecotoxicology of microplastics in Galveston Bay. Surface microplastic loading will be compared for each drainage between the dry and wet weather events to characterize a range of microplastic pollution loading throughout the region. Pollutant removal efficiency will be calculated for each sampling event by averaging the inflow microplastic concentrations and subtracting the average outflow microplastic concentrations. Size of stormwater event, and green infrastructure site will be evaluated to characterize the treatment potential of stormwater treatment wetlands for microplastic pollution mitigation. Comparative statistics of microplastic concentrations among the contributing drainages will be investigated to identify the sub-watersheds with the largest microplastic pollution, and greatest treatment potential for consideration for installment of additional green infrastructure projects.

Literature Cited provided in “Appendix 2 – Literature Cited – Oakley WSQ Proposal.pdf”

Latitude/Longitude (Optional):

N/A

Location:

Up to six baseline monitoring sites will be selected for quarterly microplastic concentration sampling events and monitored for one year. Sites will be selected based on availability of concurrent HCFCD discharge data and spatial distribution throughout Harris County’s primary contributing drainages. Initial baseline microplastic monitoring sites may include but are not limited to the following sub-watersheds: Clear Creek, Sims Bayou, Brays Bayou, Buffalo Bayou, San Jacinto River, Greens Bayou, and Cedar Bayou. Final site selection will be made with input from all project partners.

Additionally, up to three green infrastructure stormwater monitoring sites will be selected for microplastic treatment efficiency. Green infrastructure sites will be chosen based on availability of remote stormwater monitoring technology, accessibility, and with input from the HCFCD.

Projects Map: N/A

Supplemental Photos/Graphics (Optional):

Table 1. Summary table of microplastics observed in water grab samples reported in the number of microplastics per Liter (L) by event, site type, and site. Aggregated total microplastics are calculated by site type and event as the number of microplastics per L.

Event	Site Type	Site	Date	Fragments #/L	Fibers #/L	Microbeads #/L	Nurdles #/L	Film#/L	Total Microplastics #/L	Aggregated Total Microplastics #/L		
March	Open Bay	B1 Trinity	3/10/2022	3.7	1.0	0.0	0.0	0.3	5.0			
		B2 Channel	3/10/2022	14.3	2.0	0.0	0.0	0.0	16.3			
		B3 Center	3/16/2022	19.7	6.3	0.7	0.0	0.0	26.7			
		B4 TXC Dike	3/16/2022	7.7	10.0	2.3	0.0	0.0	20.0			
		B5 Bolivar	3/16/2022	20.0	16.0	0.0	0.0	0.7	36.7	20.9		
	Shoreline	S1 Trinity	3/3/2022	3.3	5.0	0.0	0.0	0.3	8.7			
		S2 Sylvan	3/3/2022	14.7	2.3	0.0	0.0	0.3	17.3			
		S3 El Jardin	3/4/2022	3.0	1.0	0.0	0.0	0.0	4.0			
		S4 Moses	3/4/2022	11.0	2.7	0.0	0.0	0.0	13.7			
		S5 TXC Dike	3/4/2022	9.7	9.7	0.3	0.0	0.3	20.0	12.7	16.8	
September	Open Bay	B1 Trinity	9/2/2022	5.3	8.7	0.3	0.0	0.3	14.7			
		B2 Channel	9/2/2022	27.7	41.3	0.0	0.0	0.7	69.7			
		B3 Center	9/12/2022	42.0	19.7	0.3	0.0	0.3	62.3			
		B4 TXC Dike	9/12/2022	2.3	10.7	0.0	0.0	0.0	13.0			
		B5 Bolivar	9/12/2022	102.3	17.0	1.0	0.0	0.3	120.7	56.1		
	Shoreline	S1 Trinity	9/6/2022	56.0	37.7	7.7	0.0	1.3	102.7			
		S2 Sylvan	9/6/2022	76.7	14.0	0.0	0.0	0.0	90.7			
		S3 El Jardin	9/6/2022	13.3	11.7	0.3	0.0	0.0	25.3			
		S4 Moses	9/10/2022	107.3	19.0	8.0	0.0	0.0	134.3			
		S5 TXC Dike	9/10/2022	49.3	34.3	4.7	0.0	0.3	88.7	88.3	72.2	44.5

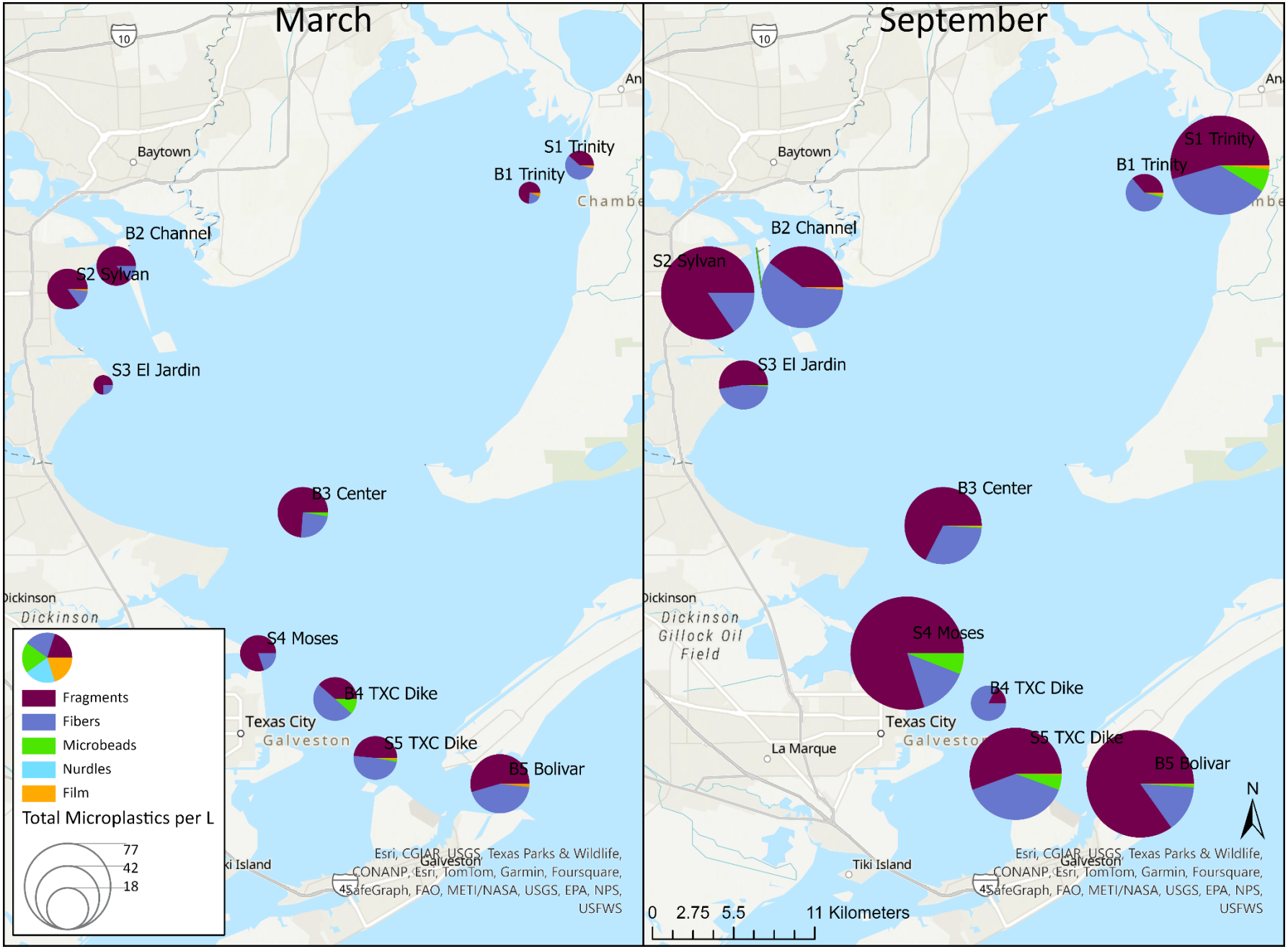


Figure 1. Map of average number and type of microplastics per L in water grab samples collected by site and season. The slices of the pie represent the proportion of the microplastics per L collected that were characterized into each microplastic type and the size of the pie chart represents the average number of all microplastics per L collected. The average number of days since last significant rainfall at the time of sampling for the March event was 34 days, while the average number of days since last significant rainfall at the September event was 5 days.

SECTION SIX: BUDGET DETAILS

Grant Payments [see 30 TAC § 14.7(12)]: All grant payments will be made on the basis of reimbursement for allowable costs (as defined in 2 CFR Part 200, Subpart E). All payments for awarded proposals will be reimbursements of allowable costs incurred after both parties have entered (signed) a grant agreement for the project.

Budget. Authorized budgeted expenditures for work performed are as follows:

Budget Category	**Cost for Work to be Performed**
Salary / Wages	$129,139.75
Fringe Benefits **(15% and 36%)**[1]	$27,472.94
Travel	$1,560.00
Supplies	$24,160.00
Equipment	$0.00
Contractual	$0.00
Construction	$0.00
Other	$10,088.00
Total Direct Cost	**$192,420.69**
Indirect Costs **(16%)**	$29**,507.31**
Total	**$221,928.00**

Indirect Cost Agreement

Please note: If using a rate different from your entity Indirect Cost Agreement; a letter of exemption from the appropriate authority must be provided with the application, or a statement must be included certifying that the recipient has elected to be reimbursed for an amount less than its total indirect costs, that unreimbursed indirect costs are part of the recipient's contribution to the success of the project, and that the recipient will pay for all unreimbursed indirect costs using funds available to it for that purpose.

*Please see attached "**Appendix 1- 2025 UHCL IDC Agreement**" for the federally negotiated indirect cost agreement for the University of Houston-Clear Lake which is 16% of the modified total direct costs (which excludes equipment over $5,000 in value) for all "off campus" grants or contracts.*

Indirect Cost Reimbursable Rate. The reimbursable rate for this Contract is 16% of (check one):

☐ Salary and fringe benefits

☒ Modified total direct costs

☐ Other direct costs base

If other direct cost base, identify:

This rate is less than or equal to (check one):

☒ **Predetermined Rate**— an indirect rate that is negotiated between the Performing Party and its federal cognizant agency and supported by a current Negotiated Indirect Cost Rate Agreement (NICRA) letter. A Predetermined Rate is not subject to adjustment except as provided by 2 Code of Federal Regulations (CFR) § 200.411.

☐ **De Minimis Rate**— if Performing Party does not have a current negotiated indirect rate, Performing Party may use a standard rate of ten percent of Modified Total Direct Costs (MTDC) in lieu of determining

[1] Fringe rates: 15% for students and 36% for staff.

the actual indirect costs of the service. Costs must be consistently charged as either indirect or direct costs.

☐ **Provisional Rate**— an experienced-based rate agreed to by Performing Party and TCEQ in the absence of a NICRA rate negotiated with the applicable federal cognizant agency.

☐ **Partial Reimbursement Rate**— a reimbursement rate agreed to between TCEQ and Performing Party that is less than the rate authorized under TxGMS or, where applicable, 2 CFR Part 200. Performing Party contributes all of its unreimbursed indirect costs to the successful performance of the project or projects funded under this Contract, in accordance with Article 9 of this section.

☐ **Other:**

Other. If Budget Category "Other" is greater than $25,000 or more than 10% of total Contract budget, identify the main constituents:

N/A

SECTION SEVEN: CONTRACT REQUIREMENT [see 30 TAC § 14.7(15)]:

- By submitting this Project Proposal, you acknowledge that, if you become a successful grant recipient selected for a grant award, you must enter into a signed grant agreement or contract with TCEQ following the announcement of that award.

SECTION EIGHT: ACKNOWLEDGMENTS

Please read and understand the following:

- By submitting this Project Proposal, you acknowledge that information on how grant payments will be made is contained in the Budget Details section describing direct and possibly indirect costs. You further acknowledge that grant payments will be reimbursements on the basis of allowable costs incurred and that selected recipients will receive contract documents addressing allowable costs, unallowable costs, and reimbursement.
- By submitting this Project Proposal, you acknowledge your understanding that Project Proposals do not require matching funds and that a TCEQ director does not need to adjust or waive any matching funds requirement.
- By submitting this Project Proposal, you acknowledge that, if GBEP elects to hold a pre-submittal meeting relating to this Project Proposal, GBEP will notify you of the meeting's time and location indicating whether attendance is mandatory.

SECTION NINE: QUESTIONS AND PRE-SUBMITTAL MEETINGS [see 30 TAC § 14.7(13) and 30 TAC § 14.7(14)]:

- There are no pre-submittal meetings scheduled.
- For requests for additional, pre-submittal information **[see 30 TAC § 14.7(13)]**, please contact the corresponding Subcommittee Coordinator listed on this page.
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SECTION TEN: ADDITIONAL INSTRUCTIONS

In submitting your Project Proposal, please refer and adhere to the following instructions and guidelines concerning materials and information required to be submitted by potential grant recipients:

- GBEP intends to accept only complete Projected Proposals in a layout and format constituting a filled version of this proposal document with all applicable sections therein addressed; however, GBEP may, in its sole discretion, consider and accept nonconforming Project Proposals in the best interest of the state.
- Unless otherwise specified by GBEP, formal signatures are not required on Project Proposals.
- Unless otherwise communicated or implied, GBEP requires 1 (one) completed copy of your Project Proposal per corresponding Subcommittee Coordinator.
- Project Proposals must be received electronically, through the email address of the relevant Subcommittee Coordinator listed on this page, by the deadline listed on both this page and the first page of this Project Proposal document.

Submittal Process and Deadline [see 30 TAC § 14.7(8) and 30 TAC § 14.7(9)]:
Please Submit Project Proposals (Microsoft Word Only – No PDFs) by August 5, 2024 to the relevant Subcommittee Coordinators below:

WSQ Subcommittee
Christian.Rines@tceq.texas.gov

NRU Subcommittee
Lindsey.Lippert@tceq.texas.gov

PPE Subcommittee
Lisa.Marshall@tceq.texas.gov and Matthew.Abernathy@tceq.texas.gov

M&R Subcommittee
Jenelle.Estrada@tceq.texas.gov