

# Upper Trinity River Basin Coordinating Committee Meeting

Tuesday, August 20, 2024

Casey Cannon, E&D Planner



# Welcome and Introductions

## UTRB-CC Overview

# Special Presentation

Christian Rines, Galveston Bay Estuary Program

# Green Infrastructure for Texas: A Nature-Based Approach to Improving Stormwater Runoff in the Galveston Bay Watershed

Christian Rines

Water & Sediment Quality Coordinator

Galveston Bay Estuary Program



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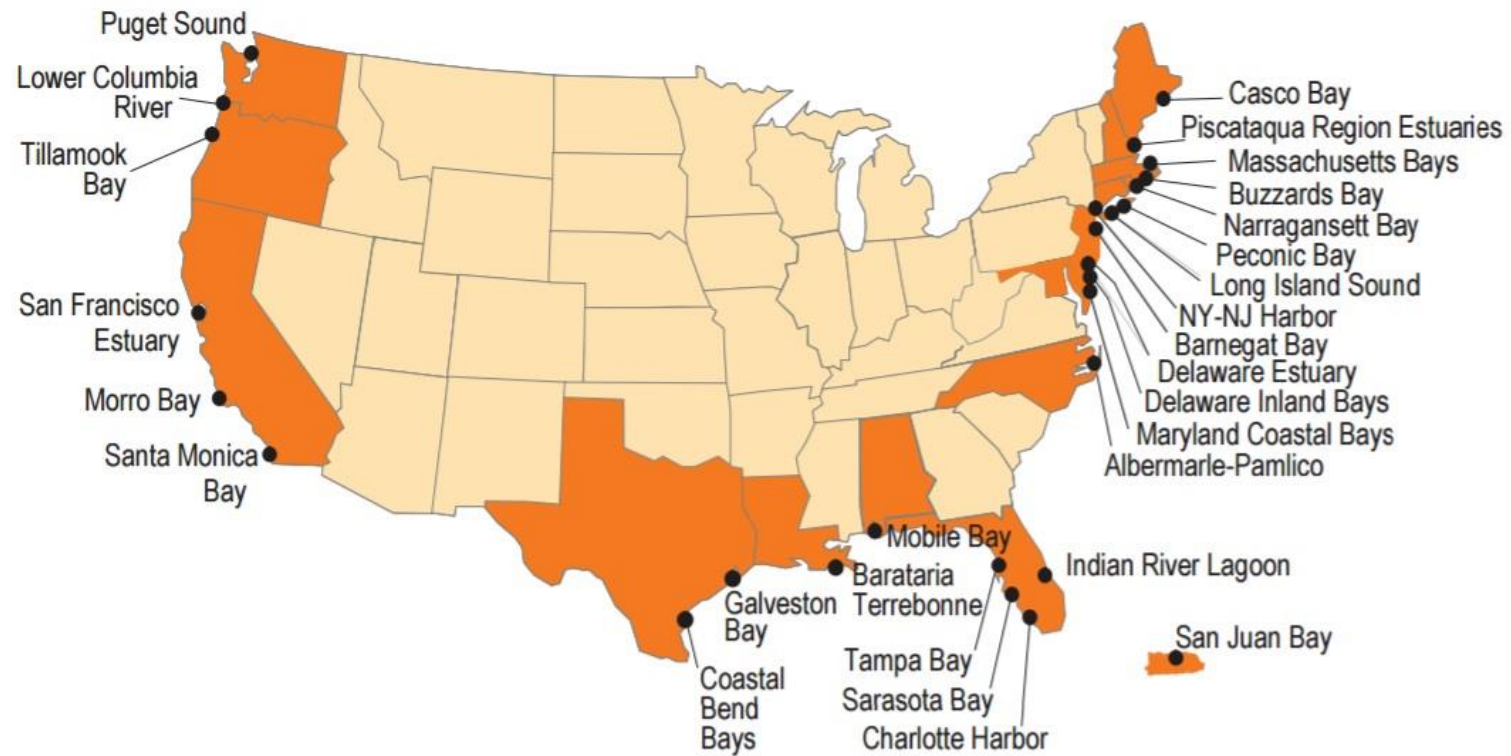


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# Galveston Bay Estuary Program (GBEP)

## Who we are:

- ▶ One of two National Estuary Programs in Texas, one of 28 nationally created by the U.S. Environmental Protection Agency,
- ▶ GBEP was established in 1989.
- ▶ A non-regulatory program administered by the Texas Commission on Environmental Quality since 1995.





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## **Our Mission**

To preserve Galveston Bay for generations to come.

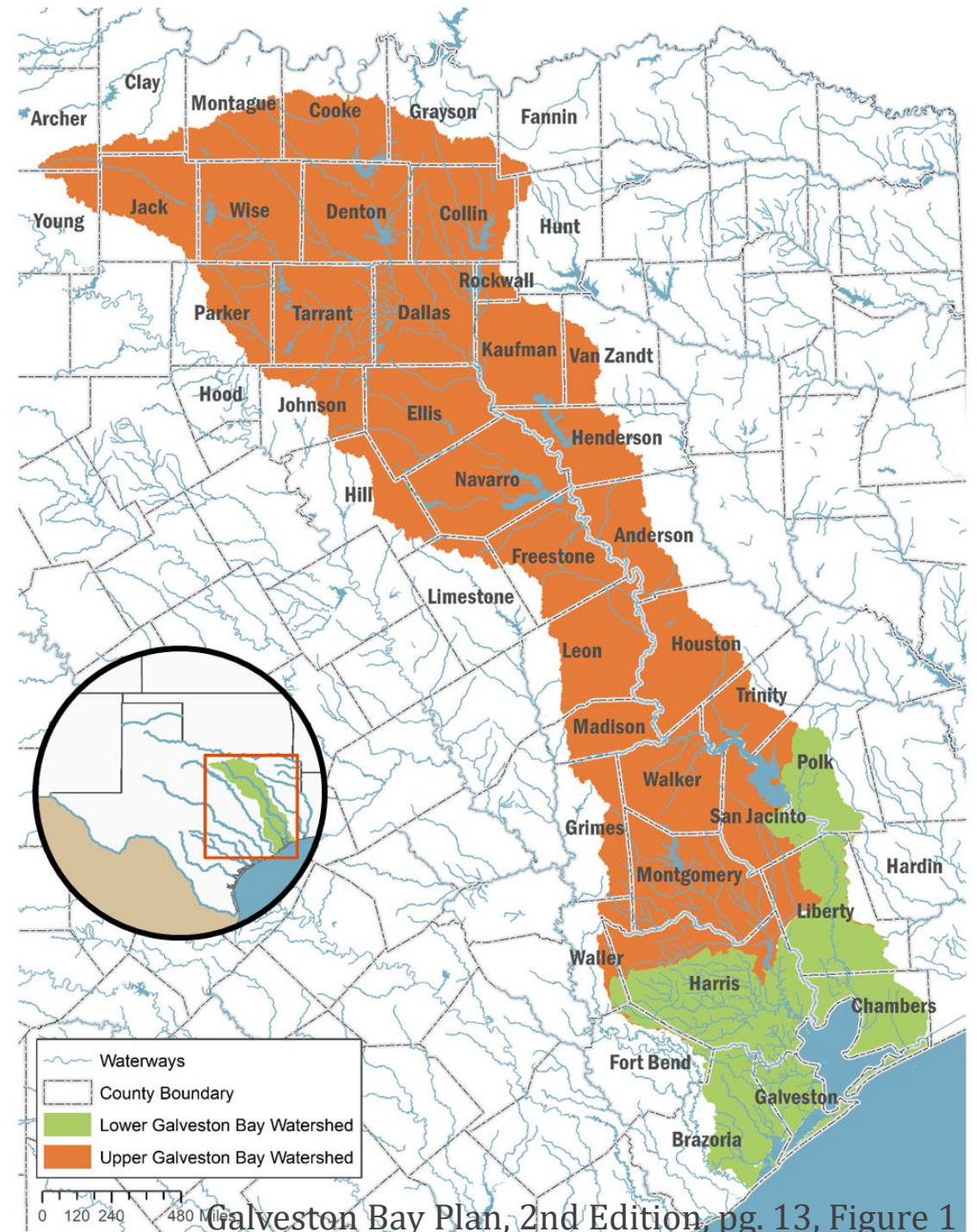
## **Our Purpose**

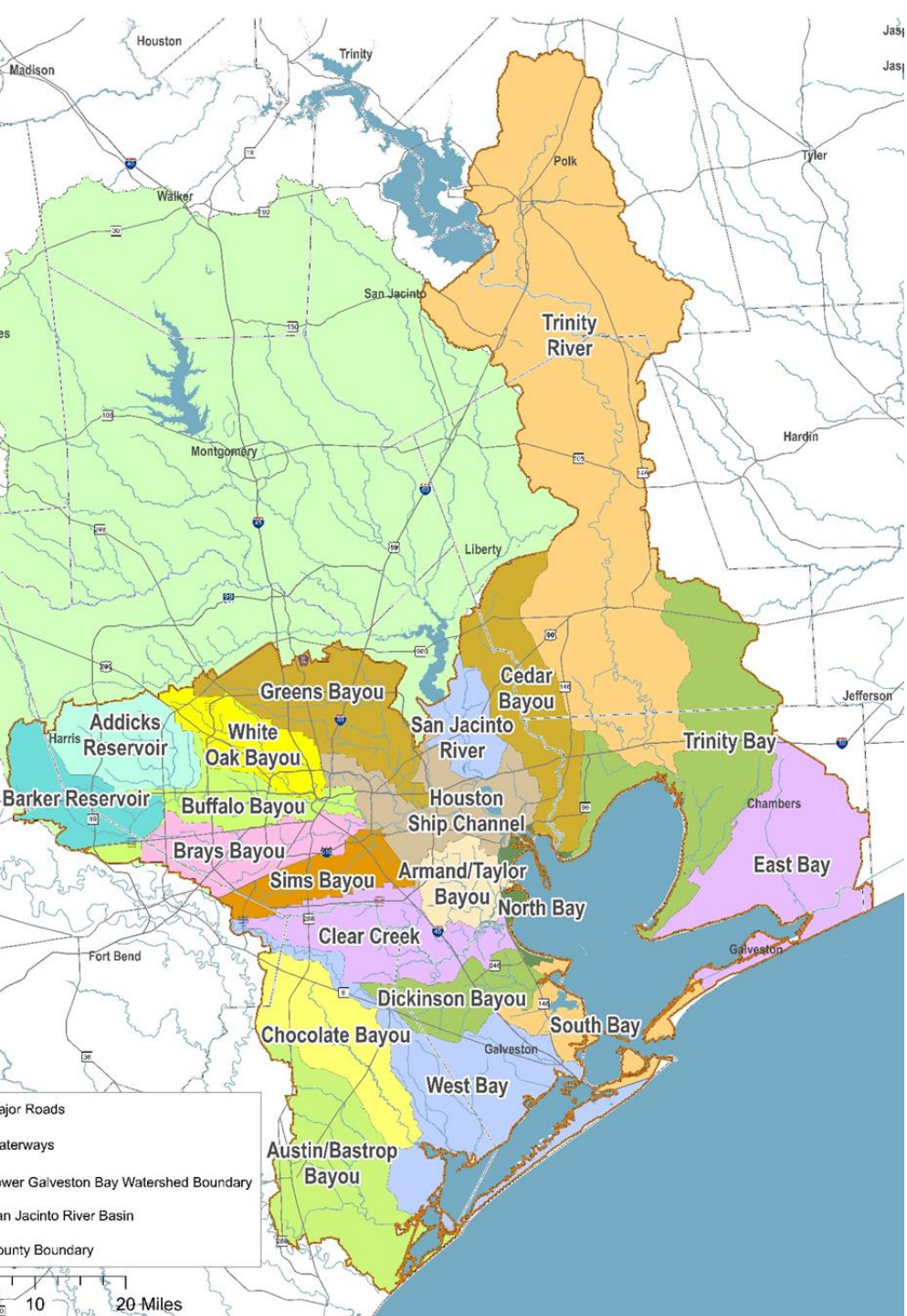
To provide comprehensive ecosystem management through collaborative partnerships and to ensure preservation of the bay's multiple uses.

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# It's a big deal!

- ▶ Almost half of Texas lives in the Galveston Bay watershed.
- ▶ The watershed covers approximately 24,000 square miles, accounting for 9% of the State of Texas' total square mileage.
- ▶ It drains to the Trinity River, which ultimately flows into Galveston Bay.
- ▶ The watershed encompasses parts of 44 Texas counties and is divided into two portions: the upper watershed and the lower watershed.
- ▶ Dallas/Fort Worth has a bay. What happens in Dallas impacts Galveston Bay.





# GBEP's Focus Area: Lower Galveston Bay Watershed

- The lower watershed downstream of Lake Livingston and Lake Houston covers approximately 4,000 square miles in Brazoria, Chambers, Fort Bend, Galveston, Hardin, Harris, Jefferson, Liberty, Polk, San Jacinto, and Waller counties.
- The lower watershed influences the estuary through 1,295 miles of rivers, streams, and bayous.



# Management of Nonpoint Source (NPS) Pollution

- ▶ Population growth
- ▶ Development pressures
- ▶ Land disturbance and increase in impervious surface
- ▶ Reduction in permeable surfaces and natural areas
- ▶ Reduction in runoff filtration
- ▶ Need to implement methods to reduce or eliminate runoff
- ▶ Best management practices (BMPs) and watershed-based planning



# Green Infrastructure for Texas (GIFT) Program

- ▶ Reduce stormwater runoff
- ▶ Protect and improve water quality
- ▶ Provide community green space
- ▶ Support local priorities and emerging needs



# GIFT Program Design

- ▶ Unified holistic approach consisting of three programs:
  - Freshwater Wetland Restoration
  - Stormwater Treatment Wetlands
  - Green Stormwater Infrastructure
- ▶ Three components of programs:
  - On-the-ground BMP installation
  - Green Infrastructure Research
  - Outreach & Education





- ▶ Threatened by development
- ▶ Property purchased by CLCWA
- ▶ 20+ partner organizations
- ▶ 200-acre suburban detention facility and multi-use greenspace
- ▶ Completed in five phases
- ▶ Conservation Easement ensures protection from development

Welcome to EXPLORATION Green!  
Phase 1

**Project Foundations**  
MITIGATION of storm water flooding  
CREATE an open green space which enhances local quality of life  
IMPROVE stormwater runoff quality through natural functioning wetlands  
PROVIDE a lakeside natural setting with trails and recreation areas  
BECOME a local focal point for positive community spirit and involvement  
INCORPORATE native grasses, wild flowers, and native trees as a natural habitat for wildlife.

**Legend**  
You Are Here  
Paved Trail  
Practice Fields  
Stay Connected With What Is Happening!  
Website: [www.explorationgreen.org](http://www.explorationgreen.org)  
Email: [explorationgreen@gmail.com](mailto:explorationgreen@gmail.com)

**Be Mindful!**  
Exploration Green is designed as a NATURE AREA. Like most nature areas, you will find the same things you see in the wild. Be on the lookout for alligators, venomous snakes, and any other critter which might pose a threat to humans or domestic animals.

**Special Event Permits**  
Permit requirements and application forms can be found on [www.Explorationgreen.org](http://www.Explorationgreen.org)

**Special Thanks to Our Volunteers:**  
Local community volunteers have been an integral part of Exploration Green planning, implementation and ongoing operations. The Clear Lake City Water Authority appreciates the thousands of hours from the Exploration Green Conservancy, community groups, and individuals.

**Partners:**  
TEXAS PARKS & WILDLIFE  
TEXAS FOR HOUSTON  
GALVESTON BAY FOUNDATION  
TEXAS A&M AGRILIFE EXTENSION  
Sea Grant  
HARRIS COUNTY TEXAS  
DORA  
Master of Naturalists

**Emergencies: Dial 911**  
Constable Pct. # at: 281-488-4040  
Houston Police Dept. at: 281-218-3800

# Exploration Green Recreation Area

- ▶ Provides 40 acres of wetland habitat, 40 acres of permanent lakes, 5 habitat islands, 100 acres of upland area, and 6 miles of walking trails
- ▶ 150,000 wetland plants, 5,000 trees, and is home to over 1,000 native species
- ▶ Natural solution to catastrophic seasonal flooding, holding 500-million-gallons of stormwater
- ▶ Recipient of numerous awards







# Sheldon Lake State Park Restoration & Monitoring

- ▶ Restored approximately 57 acres of freshwater wetlands and coastal prairie habitat
- ▶ Excavation to historic prairie-pothole wetland levels
- ▶ Removal of invasive species
- ▶ Seeding of wetland and adjacent prairies
- ▶ Monitored continuously over five phases to determine the success of restoration efforts

GBEP audit of the Sheldon Lake State Park project





## MD Anderson Cancer Center -Texas Medical Center

- ▶ 8,500 sq. ft. stormwater detention basin
- ▶ Provides essential drainage infrastructure
- ▶ Wildlife habitat
- ▶ Water quality improvements
- ▶ Therapeutic benefits

# Ghirardi Family WaterSmart Park



Collaboration between local partners



Public park and green space



5 BMPs showcased



Water quality improvements



Long-term dataset for BMP  
effectiveness and the use of green  
infrastructure

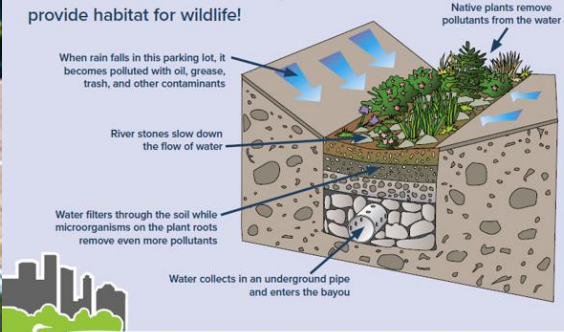






# Using Nature to Clean Water

Bioswales are special features that capture and transport rainwater. As water passes through a bioswale, it is filtered and cleaned before entering our bayous. Bioswales also cool surrounding areas and provide habitat for wildlife!



The plants in this bioswale are native to the Houston area! This means that these plants have special relationships with our local wildlife and provide critical habitat in this urban setting.



### Did You Know?

Green Stormwater Infrastructure uses natural systems to manage stormwater, and includes bioswales, rain gardens, and constructed wetlands.

Houston Parks and Recreation Department  
Natural Resources Division



# Townwood Park Green Stormwater Infrastructure



# Other GBEP Projects Worth Mentioning

- ▶ Supporting the Use of Green Infrastructure (GI) in the Lower Galveston Bay Watershed
- ▶ Green Stormwater Infrastructure (GSI) Demonstration Site Development for Greenspace Education in the Galveston Bay Watershed
- ▶ Supporting Permeable Alternatives to Conventional Pavement in the Lower Galveston Bay Watershed



Thoughts?  
Questions?

# Contact Info:

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Christian Rines  
Water & Sediment Quality Coordinator

Galveston Bay Estuary Program

A program of the Texas Commission on Environmental Quality and the  
U.S. Environmental Protection Agency

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# Project Updates

# Project Updates

- City of Arlington
- City of Dallas
- City of Fort Worth
- City of Grand Prairie
- City of Irving
- City of Plano
- North Texas Municipal Water District
- Tarrant Regional Water District
- Texas A&M AgriLife
- Trinity River Authority
- Upper Trinity Regional Water District

# NCTCOG Updates

- **New TMDL Resources:**
  - [Wastewater Educational One-Page Flyers](#)
  - [Avian Management Webinar Recording](#)
- **TMDL Resources Under Development:**
  - [TMDL Wastewater Educational Flyers](#)
  - [TMDL SSO Stakeholder Slides](#)
  - Green Asset Management Webinar (TBD)
- **Other Updates:**
  - TMDL I-Plan Revisions
  - TMDL Roster Update Survey

# NCTCOG Updates

- **Upcoming Meetings:**
  - **Regional Stormwater Management Coordinating Council:** August 21, 2024 at 9:30 AM, location NCTCOG Offices
  - **25<sup>th</sup> Annual Public Works Roundup:** August 22, 2024 at Hurst Conference Center
  - **Water Resources Council:** October 9, 2024 at 10:30 AM, NCTCOG Offices
  - **Stormwater Public Education Task Force:** October 16, 2024 at 9:30 AM, MS Teams
  - **Wastewater and Treatment Education Roundtable:** October 17, 2024 at 10:00 AM, NCTCOG Offices

# Roundtable

## Schedule for Next Meeting:

February 2025

9:30 AM

Location TBD

Ideas for next meeting's presentations?

## Contact

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## Connect



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nctcogenv



youtube.com/user/nctcoged



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nctcog.org/TMDL