

# The meeting will begin shortly



Please mute your microphone until called for questions.



Please disable your video unless you are speaking.



Please enter your name and title in the chat.



Please insert questions in chat or raise hand to speak.



This meeting is being recorded.

Welcome to the second public meeting of the

# BRAYS & SIMS BAYOU

## WATERSHED PARTNERSHIP

April 15, 2026



# MEETING OUTLINE



- Introduction
- Steering Committee Nominations
- Project Background
- Bacteria Source Models
- Next Steps
- Discussion

# INTRODUCTION

# WHO WE ARE



## **Texas Commission on Environmental Quality (TCEQ)**

lead state environmental management agency



## **Houston-Galveston Area Council (H-GAC)**

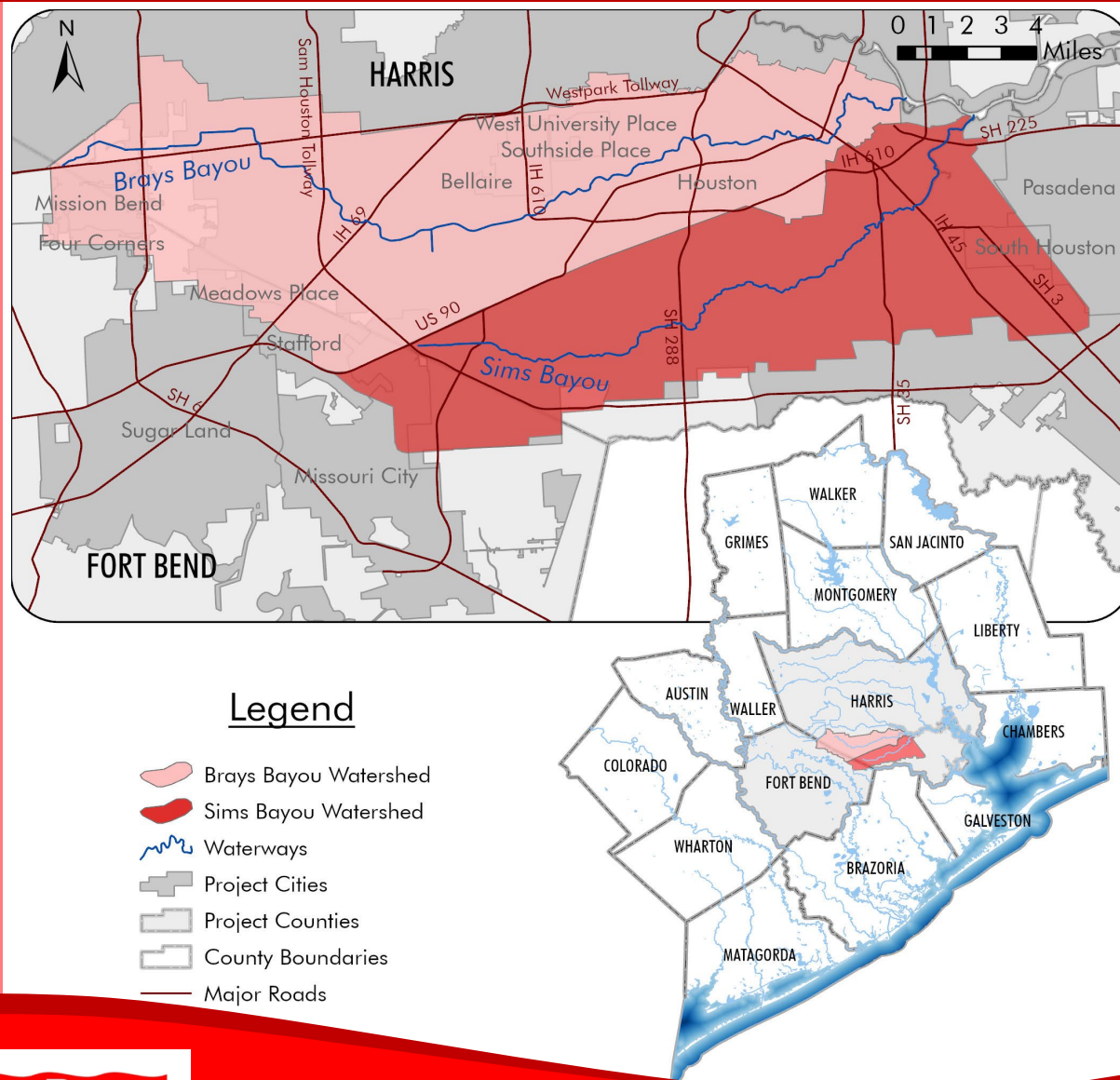
regional council of governments



## **Watershed Partnership**

local stakeholders working to develop and implement a watershed protection plan for the Brays & Sims Bayou watershed

# WHERE WE WORK

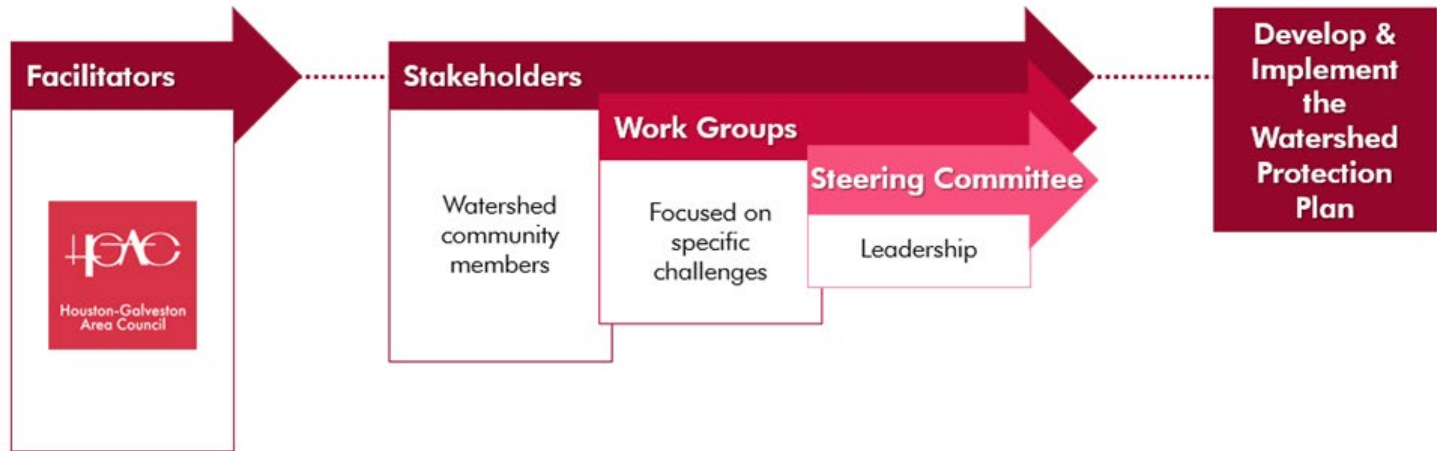


# WHY WE'RE HERE

*Surface water quality in Brays & Sims Bayou is impaired due to high levels of fecal indicator bacteria. There are also concerns for aquatic life and general use due to high nutrient levels and depressed oxygen.*

# STEERING COMMITTEE NOMINATIONS

# PARTNERSHIP STRUCTURE



# STEERING COMMITTEE NOMINEES

Name	Organization	Representing
Hanadi Rifai	University of Houston	Academia
Joe Garcia	Water Engineering Technologies	Agriculture
William Merrell	HDR, Inc.	Business/Industry
Brittani Flowers	Bayou Preservation Association	Community/Environmental Organizations
Kelly Norrid	Texas Parks and Wildlife Department	Community/Environmental Organizations
Sam Hill	Texas A&M Forest Service	Forestry
Robert Snoza	Harris County Flood Control District	Local Government
Arlene Dooley	Texas Masters Naturalist	Local Government
Fatima Wajahat	Harris County Precinct 4	Local Government
John Berlinghoff	Sims Bayou Coalition (Former)	Residents

# PROJECT BACKGROUND

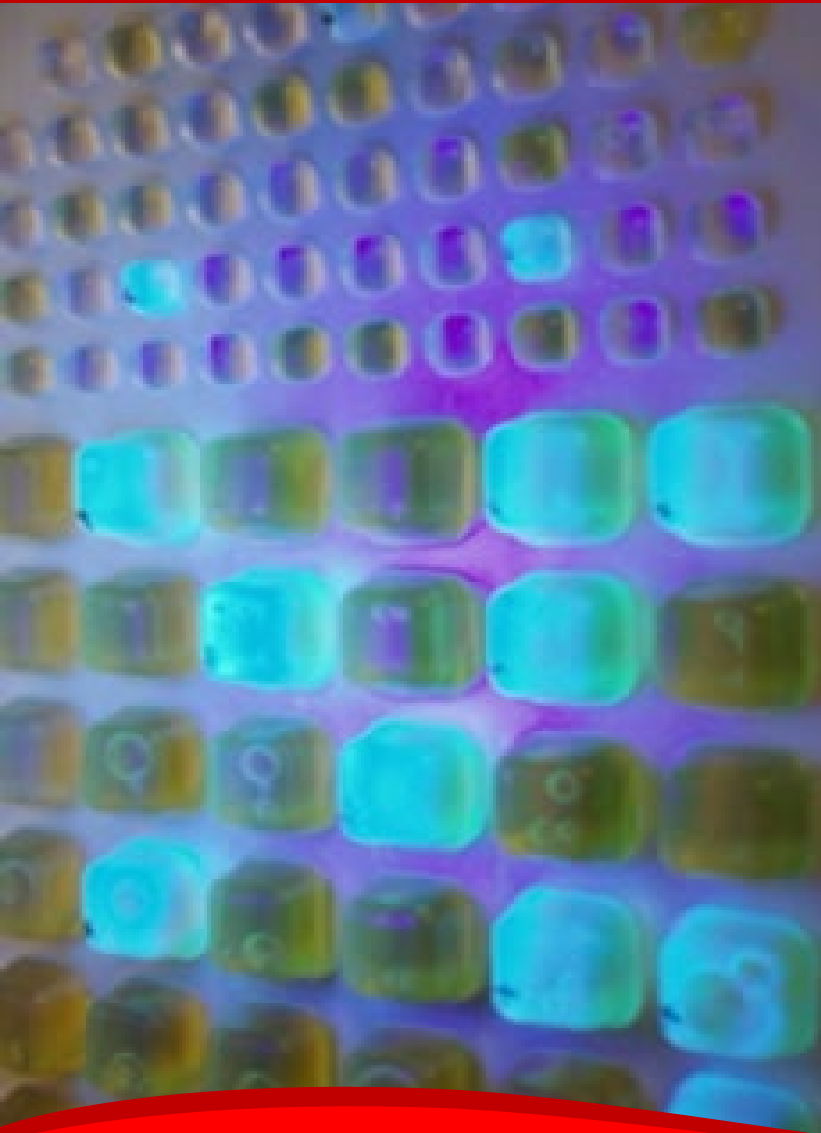
# ASSESSING WATER QUALITY



- Statewide monitoring
- TCEQ produces integrated report of results every two years
- Waterways exceeding standards are **impaired**



# STATUS OF BRAYS & SIMS BAYOU



- **Impaired** for contact recreation
- High levels of bacteria *Escherichia coli* (*E. coli*) indicate pollution from fecal waste
- Concerns for aquatic life and general use indicated by depressed oxygen and high levels of nutrients

# BACTERIA SOURCES



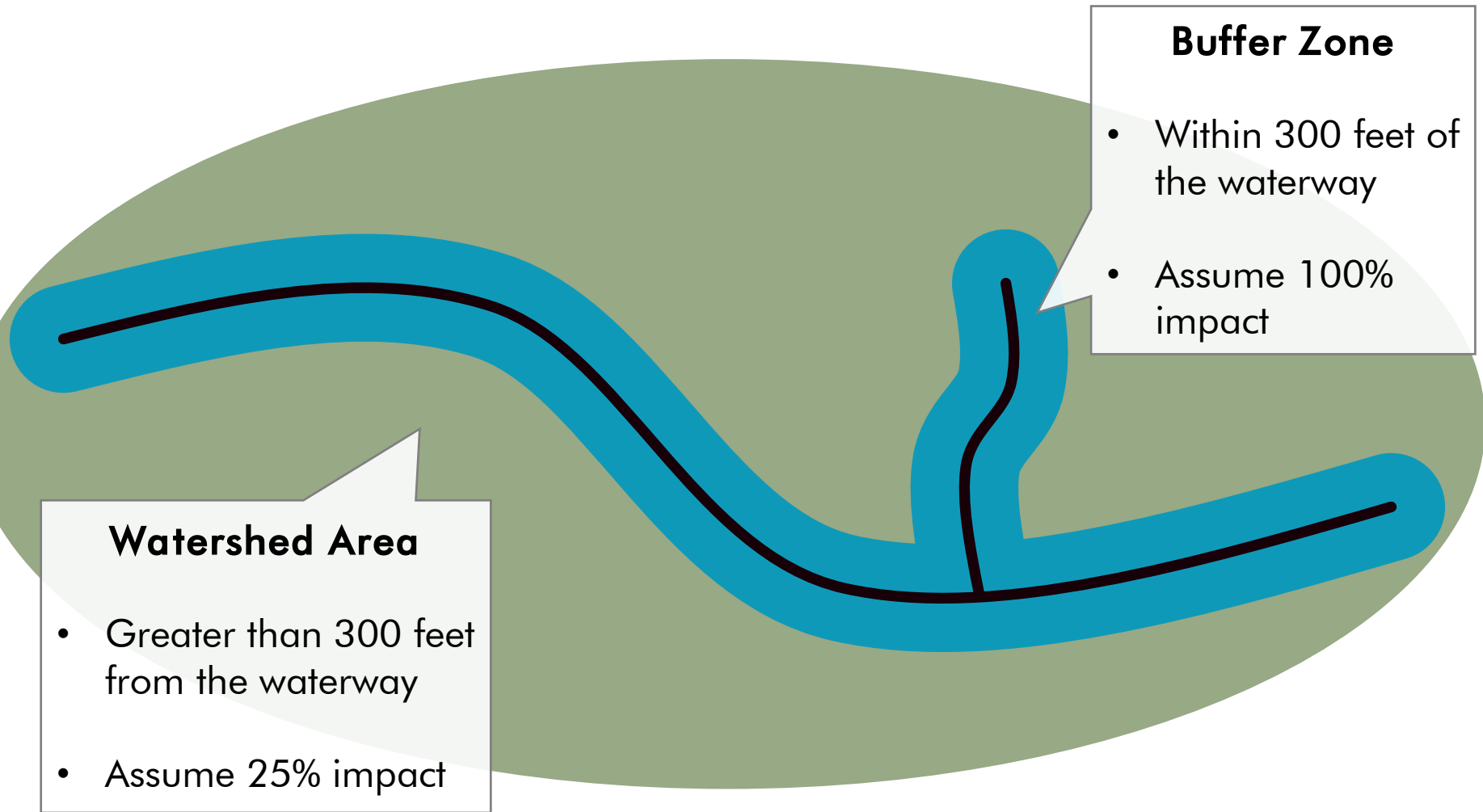
- **Human Waste**
- Wastewater
- Septic/Aerobic Systems
- Illicit Sewage
  
- **Domestic Animal Waste**
- Pets
- Livestock
  
- **Wildlife and Invasive Species Waste**
- Deer and Other Wildlife
- Feral Hogs

# BACTERIA SOURCE MODELS

# SELECT MODELS

- Spatial estimate of total potential daily load from all fecal waste sources
- Based on known data and assumptions from literature values
- Modified to estimate loading changes over time in 5-year increments
- Modified to weight source load estimates based on distance from waterways

# BUFFER APPROACH



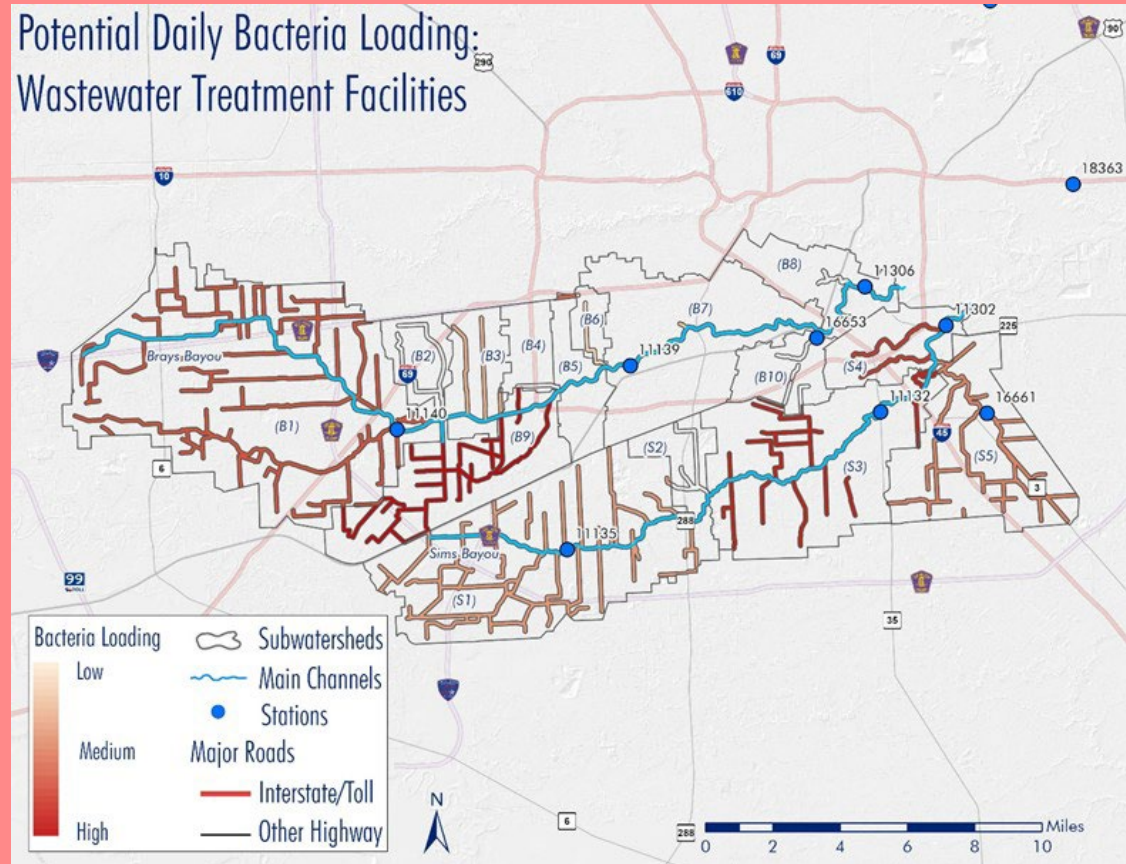
# WASTEWATER TREATMENT FACILITIES

## Methods:

- Based on outfall data (within buffer zone) from 42 facilities
- Load estimated by size (<0.1 to 10 MGD)

## Findings:

- Highest relative loads occur in the Middle Brays Above Tidal and Middle Sims Above Tidal subwatersheds
- Expected to increase over time
- Significant human health risk but minor contribution to total load



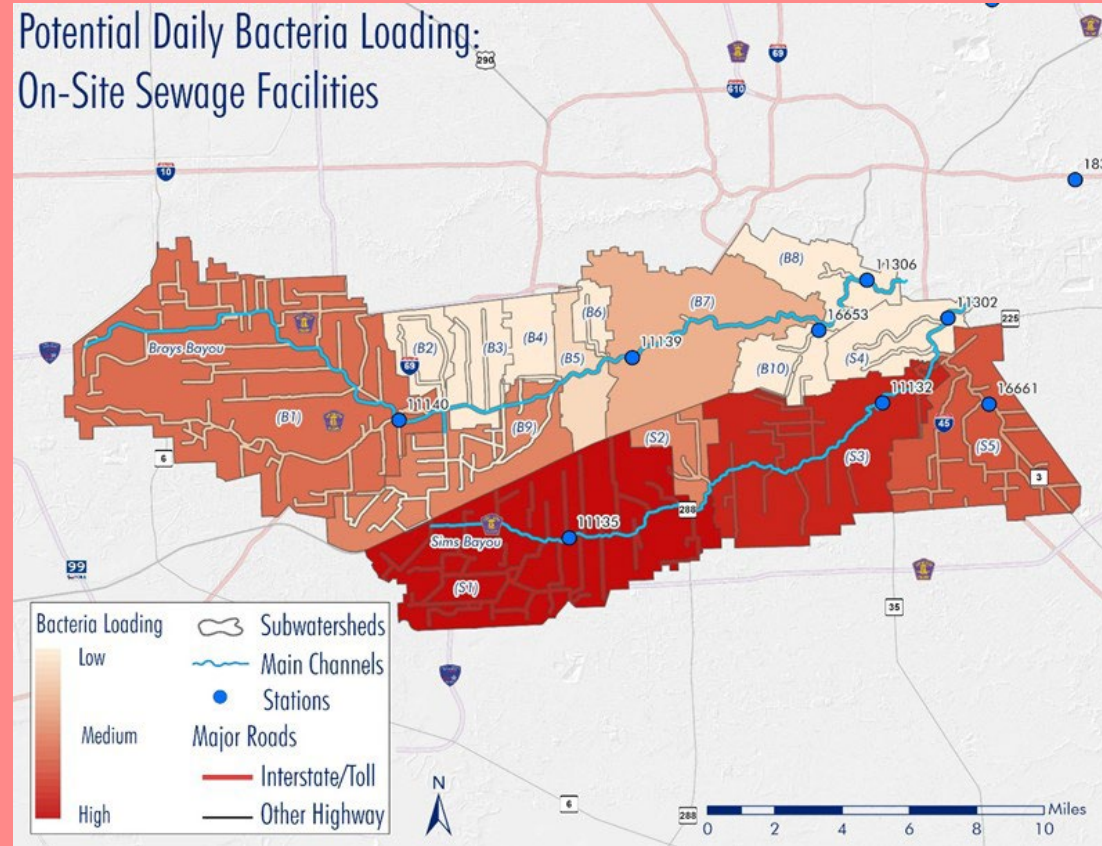
# ON-SITE SEWAGE FACILITIES

## Methods:

- Used permit data and assumption of unpermitted units based on occupied parcels outside service areas
- Estimated 10% failing

## Findings:

- Highest relative loads occur in the Headwaters of Brays Bayou Above Tidal and Sims Bayou Above Tidal
- Expected to increase over time
- Significant human health risk but minor contribution to total load



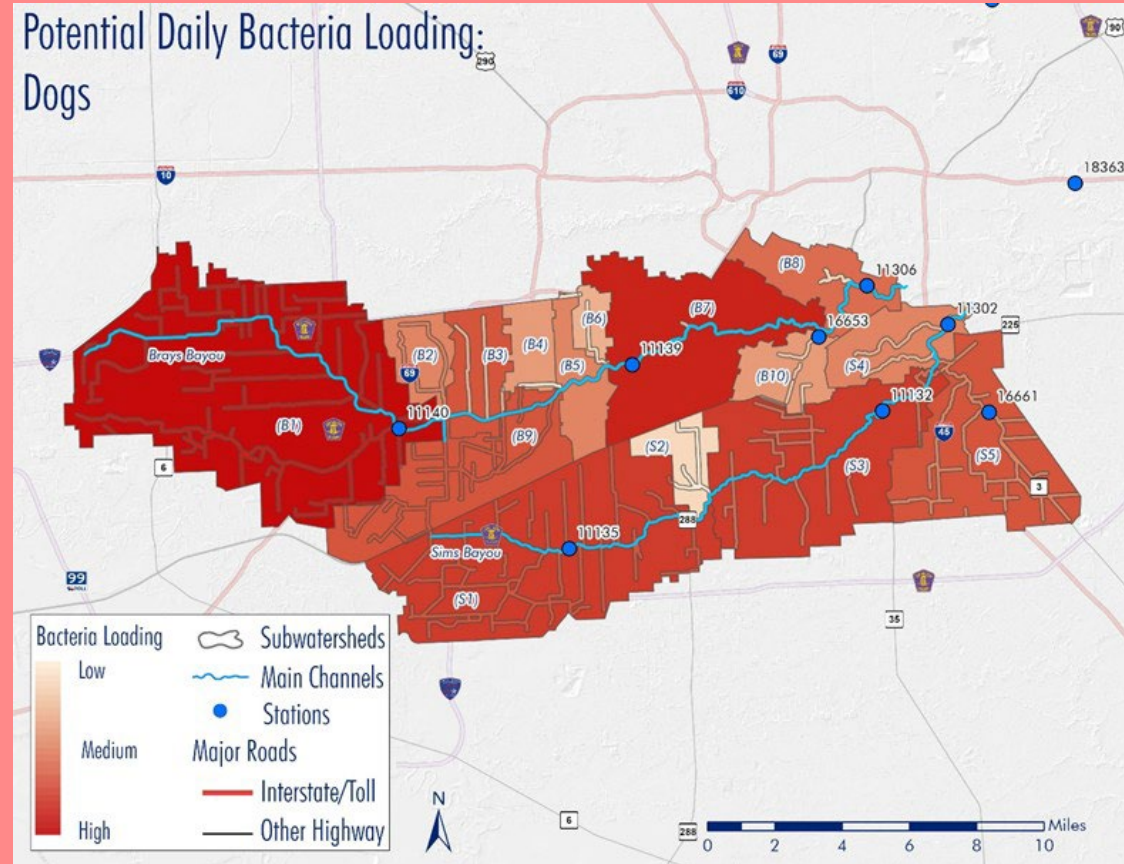
# DOG WASTE

## Methods:

- Literature value applied to household data
- Includes 20% reduction of estimated load based on pet waste management

## Findings:

- Highest relative loads occur in the Headwaters and Middle Brays Bayou Above Tidal subwatersheds
- Expected to increase over time
- Major contribution to total load



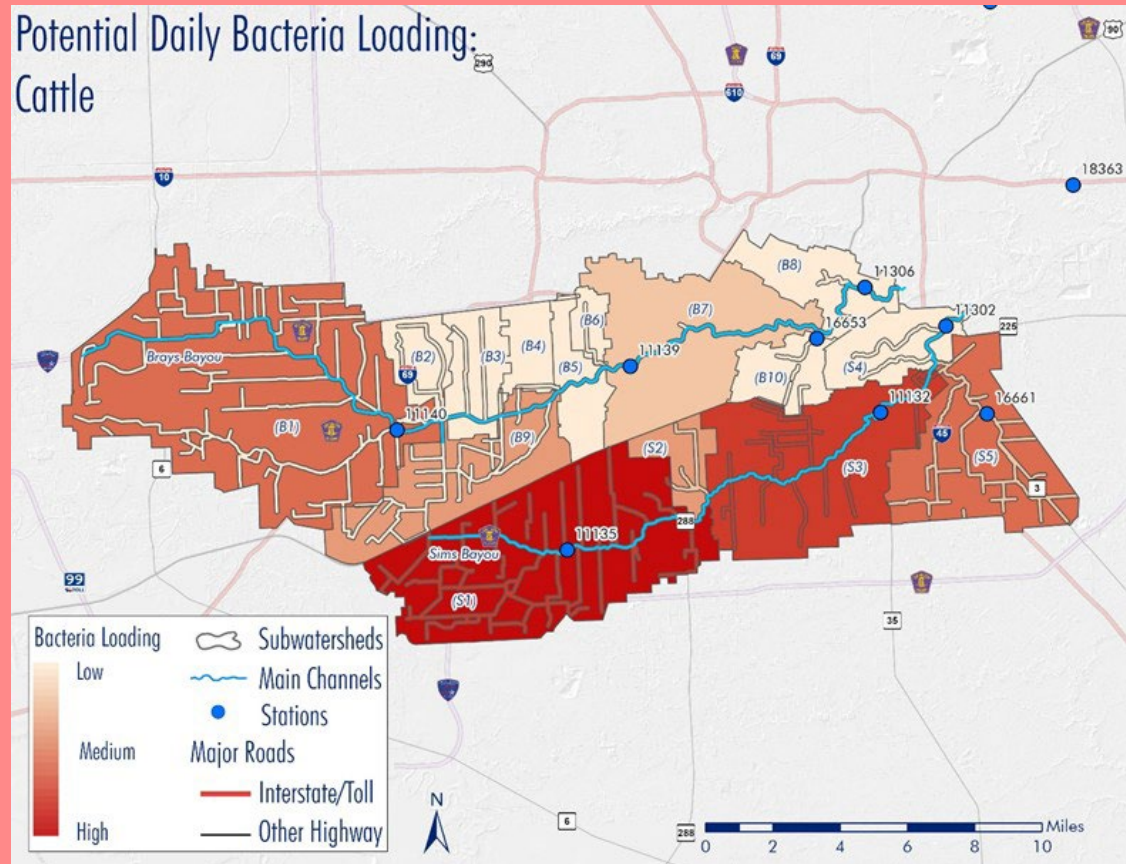
# LIVESTOCK WASTE

## Methods:

- County agricultural census data and suitable land cover adjusted by watershed area ratio
- Includes cattle, horses, sheep and goats

## Findings:

- Highest relative loads occur in the Headwaters and Middle Sims Bayou Above Tidal subwatersheds
- Expected to decrease over time
- Minor contribution to total load



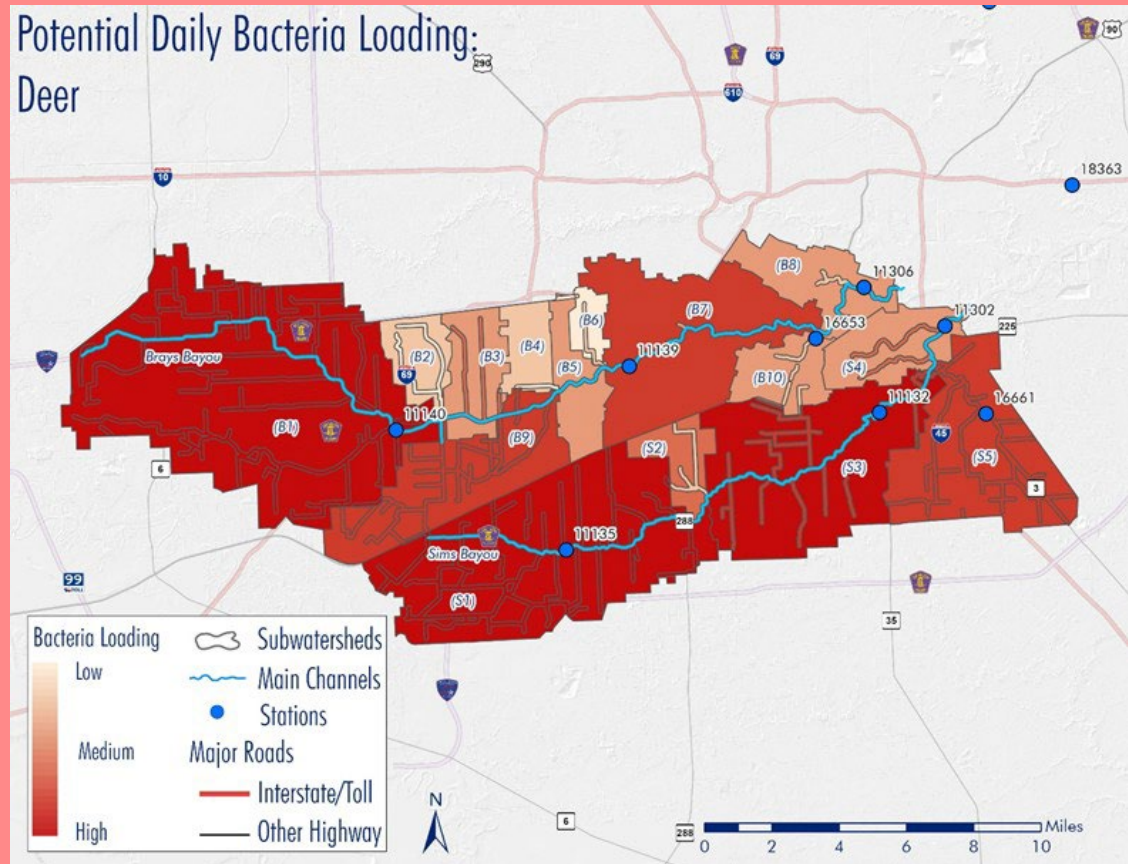
# DEER WASTE

## Methods:

- Used Texas Parks and Wildlife population density data based on ecoregion
- Density assumptions adjusted for land cover type

## Findings:

- Highest relative loads occur in the Headwaters of Brays and Sims Bayou Above Tidal subwatersheds
- Expected to decrease over time
- Minor contribution to total load



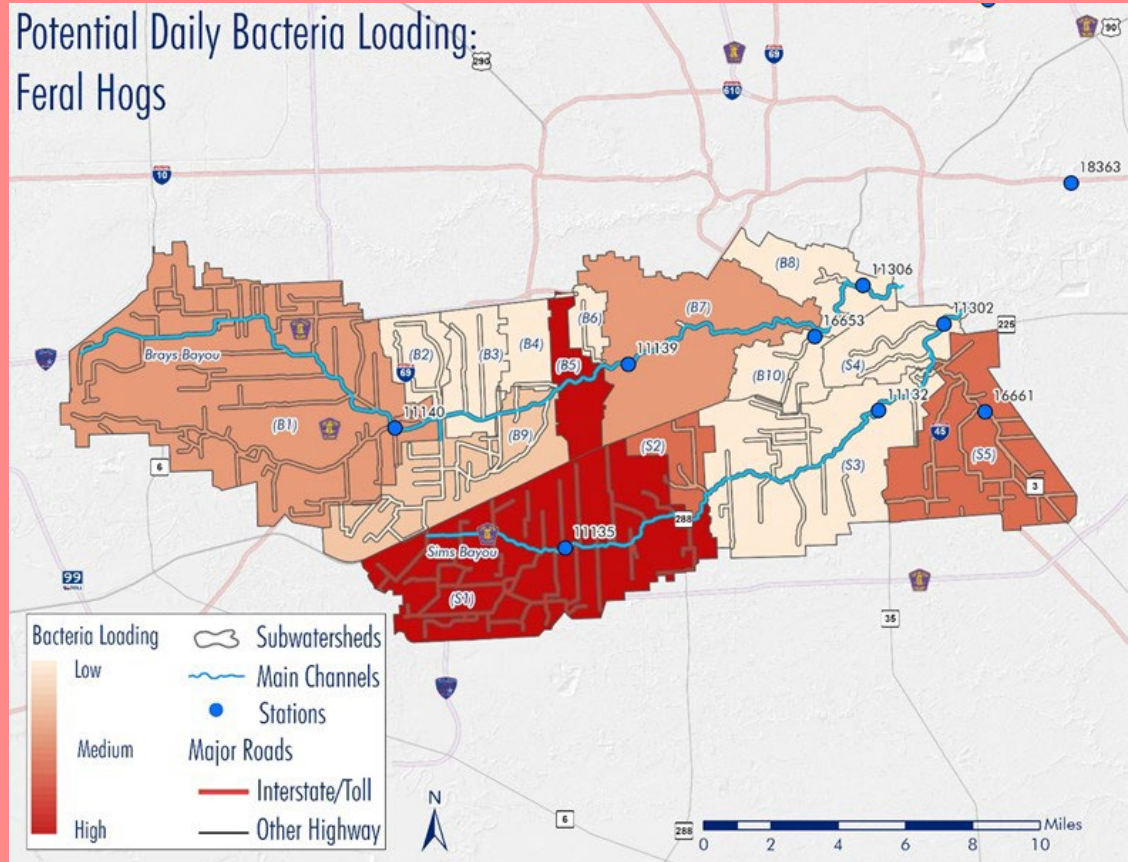
# FERAL HOGS

## Methods:

- Used AgriLife population density literature values
- Density assumptions adjusted for land cover type

## Findings:

- Highest relative loads occur in the Middle Brays Bayou Above Tidal and Headwaters of Sims Bayou Above Tidal subwatersheds
- Expected to decrease over time
- Minor contribution to total load



# OTHER SOURCES



## Other Wildlife

- Initial estimate of additional 20% of total calculated load
- Increases overall load estimation
- Stakeholder observations?



## Birds

- Short-term migratory birds vs. colonial birds
- Relatively small human health risk
- Stakeholder observations?

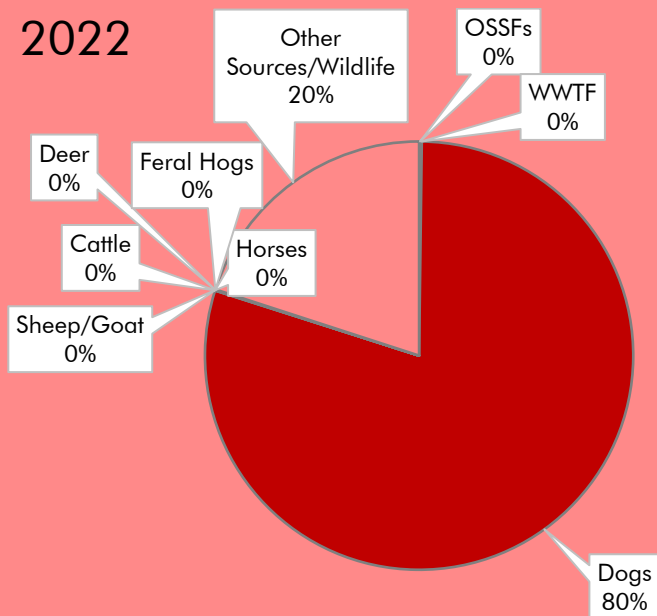


## Sanitary Sewer Overflows

- Episodic, localized events. Self-reported
- Weather events cause highest volumes and frequencies
- Significant risk to human health, address directly in management strategies

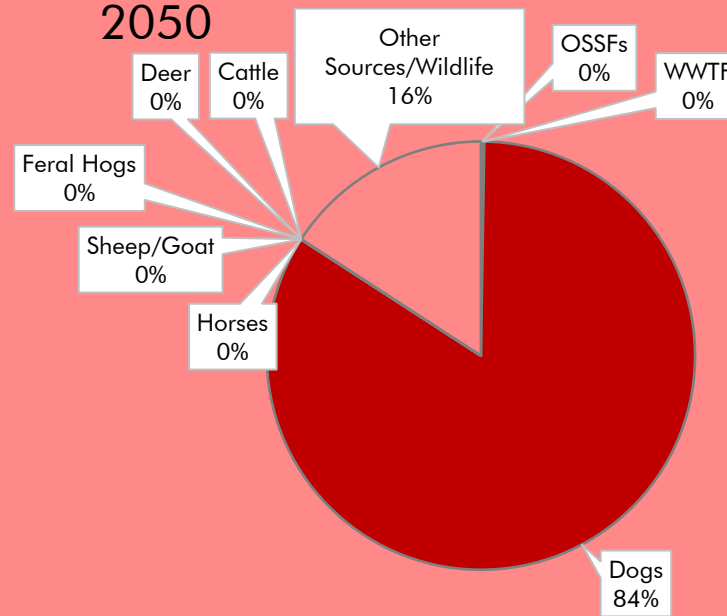
# BACTERIA SOURCE MODEL SUMMARY

Sources  
2022



518,567 billion cfu/day

Sources  
2050



654,692 billion cfu/day

<sup>1</sup>OSSFs – On-Site Sewage Facilities

<sup>2</sup>WWTFs – Wastewater Treatment Facilities

# NEXT STEPS

# TIMELINE

You Are Here



Identify Water Quality Issues



Form Partnership



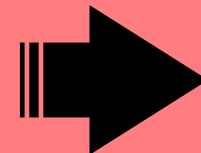
Discuss and Model



Identify Solutions



Submit WPP



Implement!

2025



2027

# SHORT TERM GOALS



- Meet with workgroups to refine modeling results in *May*
- Next Partnership meeting in June to share revisions and begin discussing implementation strategies
- One-on-one meetings with stakeholders

# POLL QUESTION:

Which of the following workgroups would you like to participate in?

- Agriculture, Wildlife, and Invasive Species
- Human Sources and Pet Waste

# HOW CAN WE HELP?



- Tell us about your projects and organizations!
- Tell us how we can:
  - Amplify
  - Collaborate
  - Coordinate

Brays & Sims WPP Website



FWC26 Houston Sustainability  
Committee Volunteer  
Opportunities



A light blue map of the Houston-Galveston Area Council region, showing county boundaries. The map is centered on the text.

# **H-GAC Implementation & Outreach Resources**

# Coastal Communities Outreach Roadmap

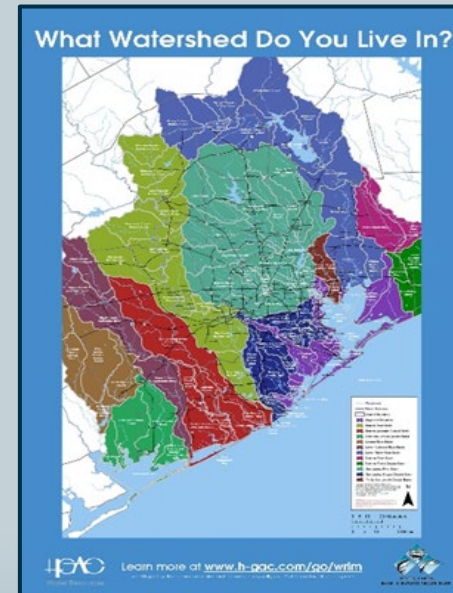
## Four Focus Behaviors:

- Pet Waste Disposal
- Disposal of Fats, Oils, and Grease (FOG)
- Litter & Illegal Dumping
- Maintenance of On-Site Sewage Facilities (OSSFs)

\*H-GAC & partner resources, model ordinances, and more also available at [coastalcommunitiestx.com](http://coastalcommunitiestx.com)



# Educational Display Loan Outs



Set of 3 Water Quality Outreach Posters: Available in English, Spanish, and Vietnamese  
<https://www.coastalcommunitiestx.com/h-gacs-featured-materials.html>

# Educational Display Loan Outs



**I Pledge...**

To Throw Pup's Poop Away,  
Not Leave It For Another Day.

I Will Not Leave It in the Rain,  
And Will Not Flush It Down the Drain.

Each and Every Time My Pup Poops,  
I Hereby Pledge to Scoop and Scoop.

Then Straight to the Can I Will Dash,  
And Put My Pup's Poop in the Trash.

[www.petwastepollutes.org](http://www.petwastepollutes.org)



**THE TROUBLE WITH DOG POOP**  
and how we can protect our waterways, one bag at a time.

We love our pups, but not the penny little "gifts" they leave behind. Turns out our rivers, streams, and lakes don't like them much, either.


There are: **900,000** Dogs in the Houston-Galveston Region

Collectively depositing **312 Tons** of poop per day.

Which is the equivalent of 52 dump truck loads per day!

**RAIN WATER** washes poop left on the ground into our storm drains which connect to creeks and baysou where it decomposes. During decomposition, the poop uses up precious oxygen needed by fish and other creatures to stay alive and healthy.

Not to mention the risk of illness for swimmers and fisherman using the waterway...yuck!



**THIS MEANS THAT...**

You could be exposed to bacteria, viruses, and parasites that live in dog poop.

This can be quite dangerous to the old, young, and folks with compromised immune systems.

Pathogens are dangerous to kids playing in the yard, and they can contaminate anything edible growing in your garden.



**WHAT CAN YOU DO?**

Always pick up after your pet, no matter where it is.

Carry spare bags on your daily dog walk, and use them to encourage others to pick up after their pooch!

If bags aren't your thing, bury waste at a minimum of 5 inches in the ground and far away from your garden or well.

**LEARN MORE** about the effects of pet waste and what you can do to make a difference by visiting our website, [www.petwastepollutes.org](http://www.petwastepollutes.org).

 Funded in part by the Texas Commission on Environmental Quality and Galveston Bay Estuary Program. 

Pitch the Poop Poster: Available in English, Spanish, and Vietnamese  
<https://www.coastalcommunitiestx.com/h-gacs-featured-materials.html>

# Educational Display Loan Outs



## I PLEDGE...

To fight the GREASE MONSTER in all his forms,  
And never let pouring grease down the drain beco

Whether salad dressing or bacon grease,  
I hereby pledge to scrape and squeeze.

After each meal, quick as a flash,  
I will put the remnants in the trash.

To always make sure my drain stays clear  
With each and every meal I cook this year.

DON'T FEED  
THE Grease Monster



Throw fats and grease in the trash, and recycle cooking oil. Keep our rivers clean.  
For more information on fighting the Grease Monster, visit [www.coastalcommunitiestx.com](http://www.coastalcommunitiestx.com)

**Bacteria is a common source of pollution in Texas waters.  
Improper disposal of fats, oils and grease (FOG) contributes to the problem.**

**Where does FOG come from?**

- Meat
- Cooking oils, lard, shortening
- Butter & margarine
- Dairy products
- Mayo, salad dressings, sour cream




**Why does FOG matter?**

- Sticks to pipes from the sink to the sewer
- Causes sewage backups into homes, streets, and storm drains
- Pollutes local waters with raw sewage
- Costly repairs for homeowners and taxpayers

**What can YOU do?**

- No FOG or food scraps down the sink or garbage disposal
- Wipe grease off dishes before rinsing
- Flushing FOG with hot or cold water will NOT prevent grease build-up in pipes
- Call a professional rather than use chemicals to clear a grease clog



GREASE: A MONSTER OF A PROBLEM



H-GAC  
Water Resources

Funded in part by the Texas Commission on Environmental Quality and Galveston Bay Estuary Program



Grease Monster Poster: Available in English, Spanish, and Vietnamese

<https://www.coastalcommunitiestx.com/h-gacs-featured-materials.html>



# Educational Display Loan Outs



**I PLEDGE...**

To not be rash,  
And not just throw something in the trash.

I will look before I throw,  
To find the place where it should go.

Recycle, Reduce, and Reuse,  
These are the options I will choose.

I will limit waste in all these ways,  
So it doesn't pollute our waterways.

This Project is funded in part with a grant from the United States Environmental Protection Agency through the Texas Commission on Environmental Quality's Galveston Bay Estuary Program.

**Fish Me From The Watershed**  
and sort me where I go

@ home	@ retailers
@ the recycle center	household hazardous waste

# shows the type of plastic - to find where items can be recycled near you, visit [Earth911.com](http://Earth911.com)

**35%** of trash in the U.S. is recycled annually

**80%** of marine debris comes from inland sources

This project is funded in part with a grant from the United States Environmental Protection Agency through the Texas Commission on Environmental Quality's Galveston Bay Estuary Program.

Litter Poster: Available in English, Spanish, and Vietnamese  
<https://www.coastalcommunitiestx.com/h-gacs-featured-materials.html>

# Texas Stream Team

## Community Scientist Water Quality Monitoring

- State-wide program
- H-GAC coordinates a local network in 4 river basins
- Monthly monitoring of a local waterway



**TCEQ-Approved  
Quality  
Assurance  
Project Plan**

**3 Phases  
Of monitoring  
training**

**2 Year  
Commitment to  
monitor monthly**

# Texas Stream Team

## Core Water Quality Parameters

- Field Observations
- Temperature (air & water)
- Water transparency/water clarity
- Depth
- Conductivity or Salinity
- Dissolved Oxygen
- pH



# H-GAC's Water Resources Information Map (WRIM)

## Water Resources Information Map (WRIM)

Monitoring Stations & Data | Impairments & Concerns | Information

### H-GAC's Water Resources Information Dashboard

Monitoring Program  
 Clean Rivers Program  
 Texas Stream Team

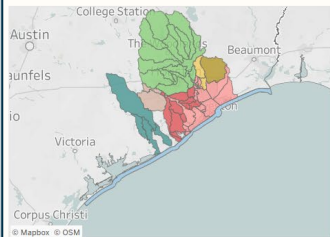
Select by Station ID  
 (All)

Station Status  
 Active  
 Inactive

#### Counties



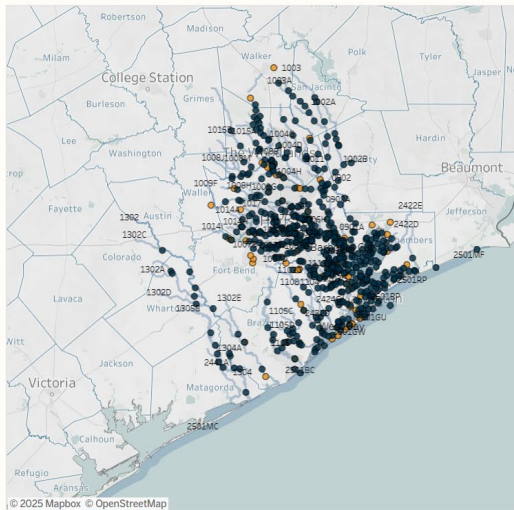
#### Watersheds



Basin  
 Bays and Estuaries  
 Brazos River Basin  
 Brazos-Colorado Coastal...  
 Gulf of Mexico  
 San Jacinto River Basin  
 San Jacinto-Brazos Coast...  
 Trinity River Basin  
 Trinity-San Jacinto Coast...

Clean Rivers Program  
 Texas Stream Team

#### Monitoring Stations



Counties: 14 | Watersheds: 62 | Stations: 653

Click the Reset View button in the toolbar below to reset

#### Station Information

Click Station Location on the map

#### Water Resources Information Map (WRIM)

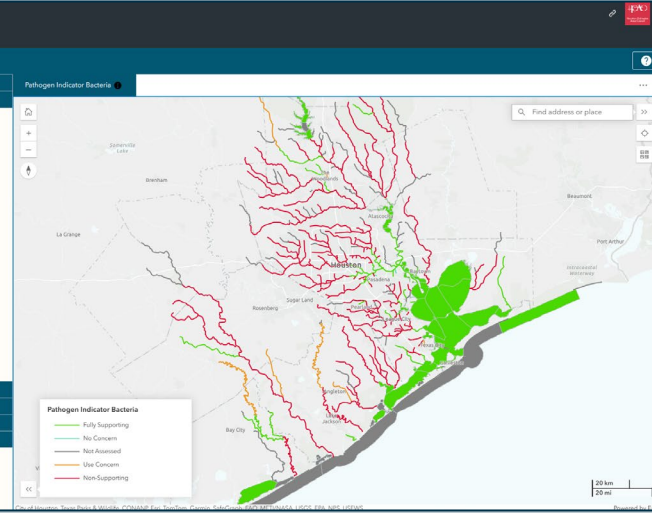
Monitoring Stations & Data | Impairments & Concerns | Information

#### Impairments & Concerns

- Water Quality: Main
- Recreational Use
  - What is it?** Recreational use is an assessment of the potential health risk related to activities where people come into contact with waterways, such as swimming, boating, or fishing. Elevated concentrations of pathogen indicator bacteria such as *Escherichia coli* (E. coli) and *Enterococcus* spp. in water indicates likely fecal contamination and are used to assess the potential presence of disease-causing pathogens in water.
  - Why do we care?** High bacterial concentrations increase the risk of contracting gastrointestinal illnesses or skin infections for swimmers or others who come into direct contact with the water.
  - How can you help?** Bacterial contamination can come from many sources. Some sources of bacteria are natural and cannot be prevented, such as fecal matter from native wildlife. Other sources of bacteria result from human activities in the watershed, and we can all play a part in preventing these sources of bacteria.
  - Wastewater treatment facility (WWTF) releases** - While unauthorized releases are rare, they can result in very high levels of bacteria entering a waterway. If you suspect that an unauthorized release is occurring, you can report it by contacting the Texas Soil Reporting Hotline at 800-832-8224 or submitting an electronic Complaint.
  - Sanitary sewer overflows (SSOs)** - Occasionally a sanitary sewer system releases untreated sewage directly into a waterway or its watershed, typically due to heavy rains or a blockage in the sanitary sewer lines. Prevention is the best way to help. To avoid clogs, never pour fats, oils, or grease, or flush wipes, down the drain. Learn more about how to [protect our pipes and septic systems](#).
  - On-Site Sewage Facilities (OSSFs) or "septic systems"** - Failing OSSFs can directly add raw sewage to a waterway or its watershed. If your home has an OSSF, you can help by staying current on routine maintenance and having your system inspected at regular intervals. Learn more about your OSSF through H-GAC's [homeowner wastewater assistance program](#).
  - Scoop the Poop** - Fecal waste from pets and other animals, like livestock, pets, feral hogs, and other wildlife, can be deposited directly into waterways if animals have access to the water, or it can be washed into waterways with stormwater runoff when it rains. You can help by always picking up your pet's waste and disposing of it in a trash can.

#### Aquatic Life Use

- General Use (Nutrients)
- General Use (Chlorophyll-a)
- Consumption Advisories for PCBs & Dioxin



# DISCUSSION & QUESTIONS

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Houston, TX 77027

This project is funded by Clean Water Act 319(h) and 320 grants from the US Environmental Protection Agency, administered by the Texas Commission on Environmental Quality, and is facilitated locally by the Houston-Galveston Area Council.



<https://www.h-gac.com/watershed-based-plans/brays-sims-bayou>



**Brays & Sims Bayou**  
Watershed Partnership