

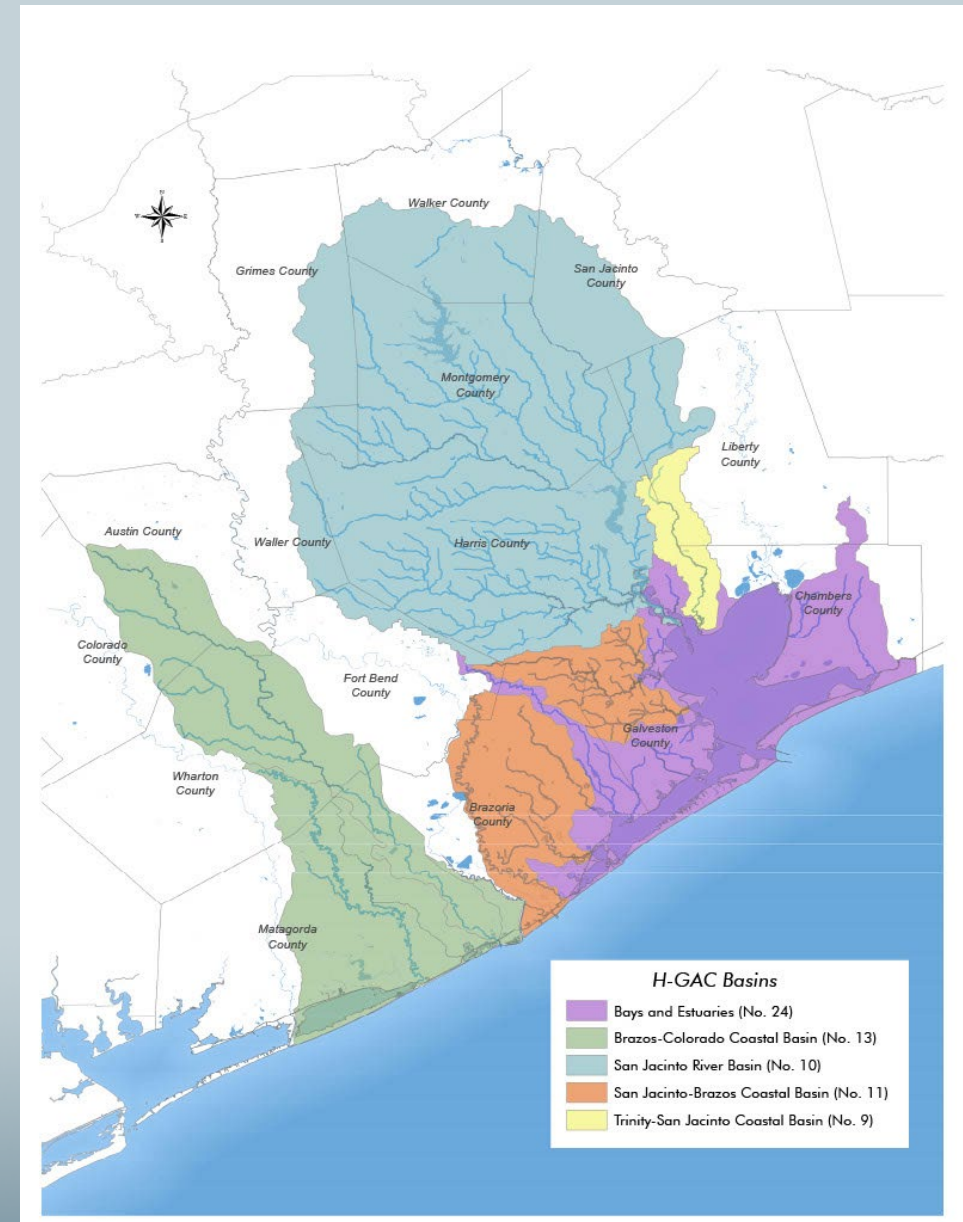
# Contact Recreation Impairments

CWI for Pathogen Indicators

November 20, 2024

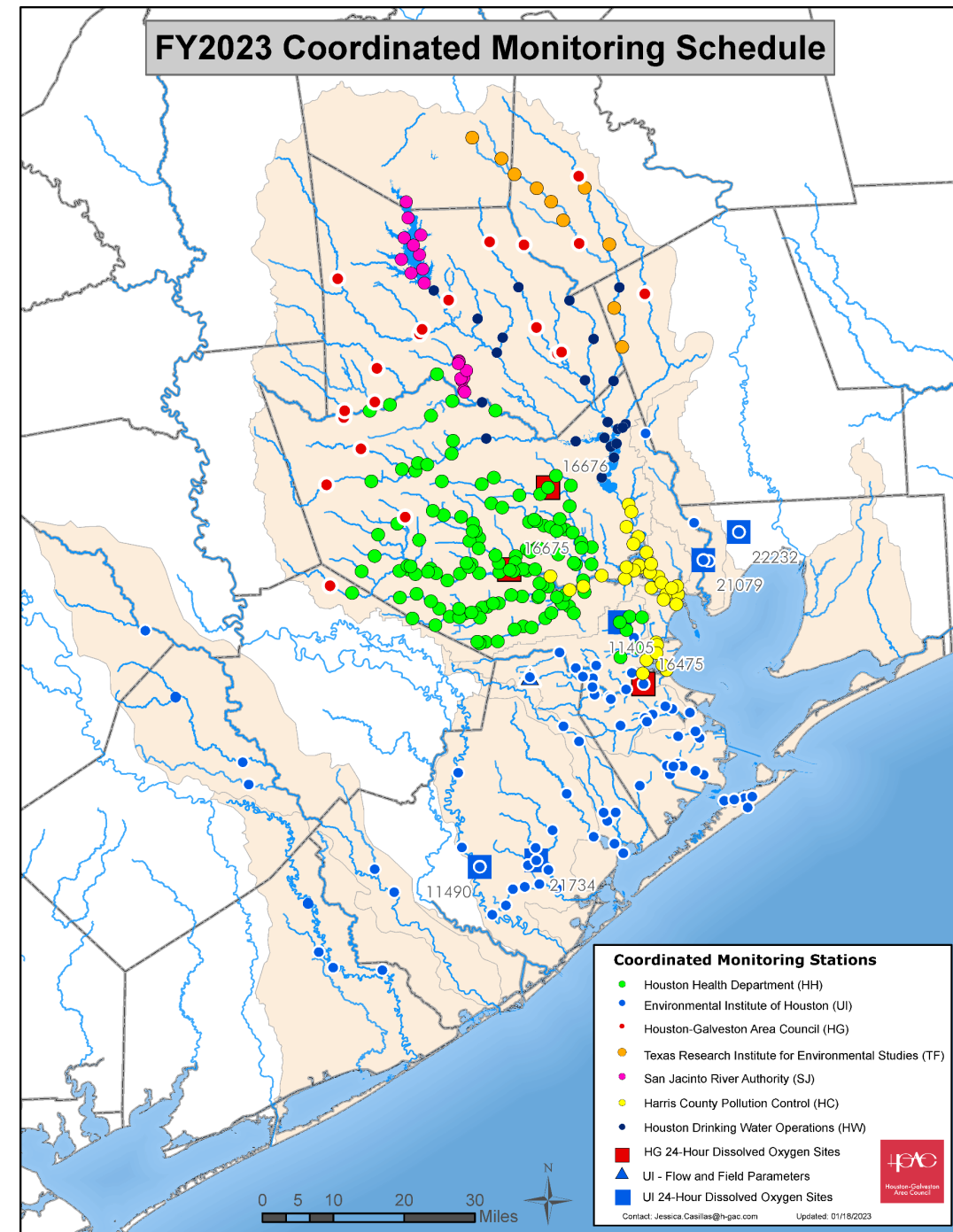
# Clean Rivers Program Basins

- San Jacinto River
- Brazos-Colorado Coastal
- San Jacinto-Brazos Coastal
- Trinity-San Jacinto Coastal
- Bays and Estuaries



# Clean Rivers Monitoring Program

- **Partners**
  - 7 local partners
  - 2 State and Federal Partners
  - Over 400 monitoring locations
- **Numerous Parameters**
  - Bacteria
  - Nutrients
  - Dissolved Oxygen
- **H-GAC's Water Resources Information Map**



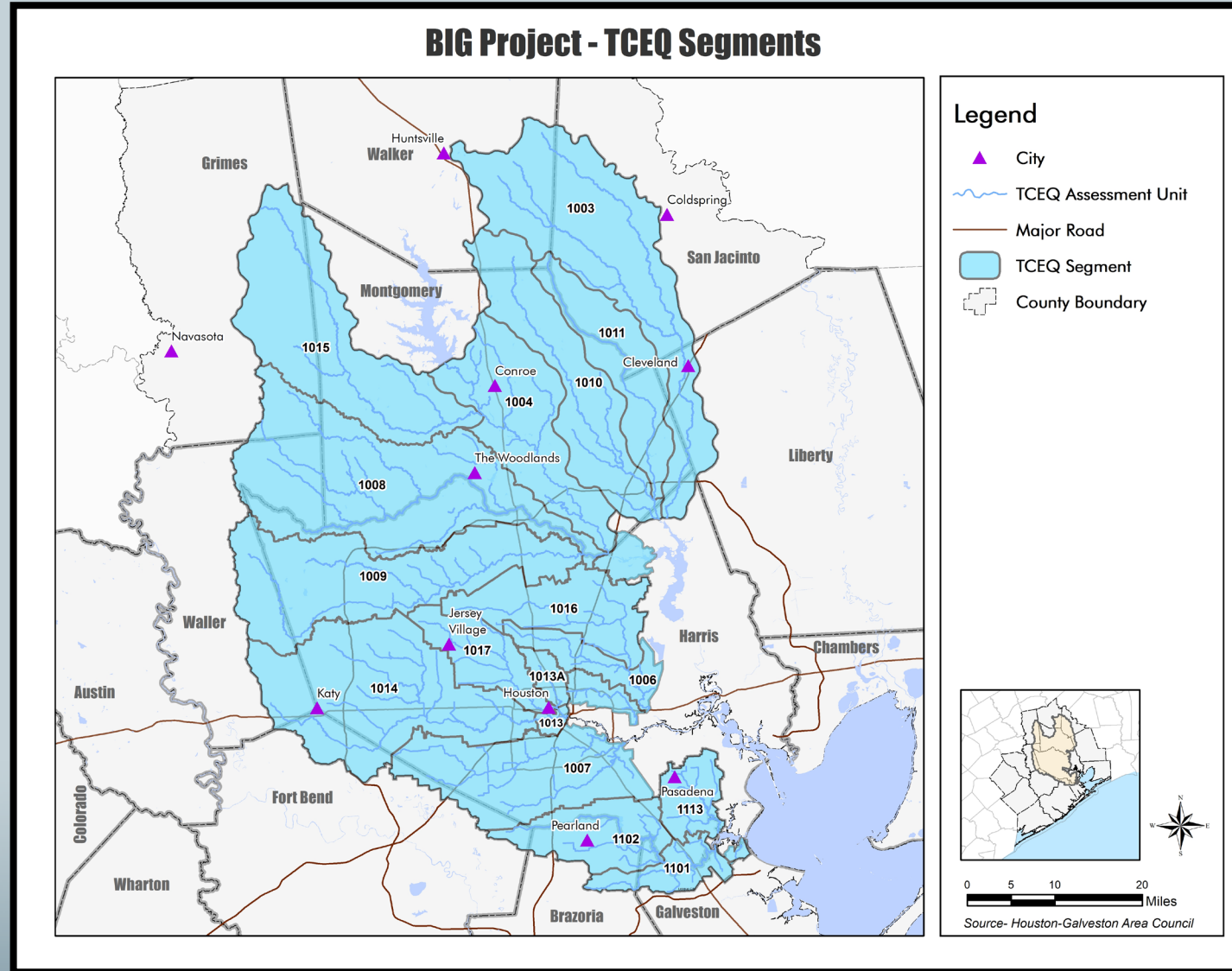
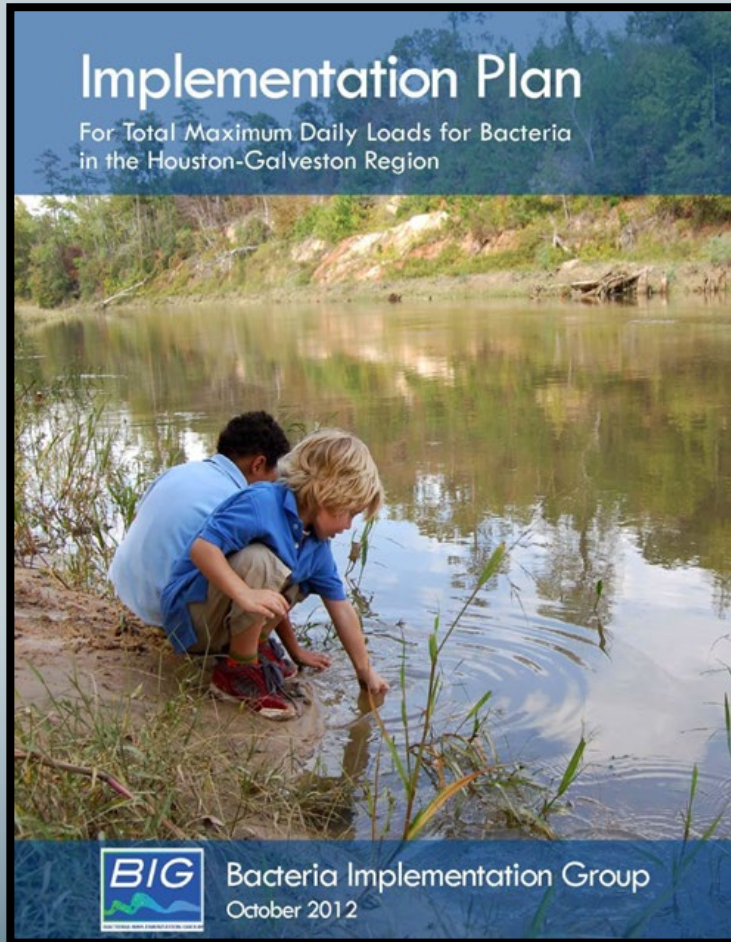
## Bacteria Impairments and Concerns



# Contact Recreation Impairments

- 44% of stream miles are impaired due to elevated levels of bacteria.

# Bacteria Implementation Group



# Bacteria Sources



## ■ Human Waste

- Centralized Wastewater
- Failing Septic/Aerobic Systems
- Illicit Sewage

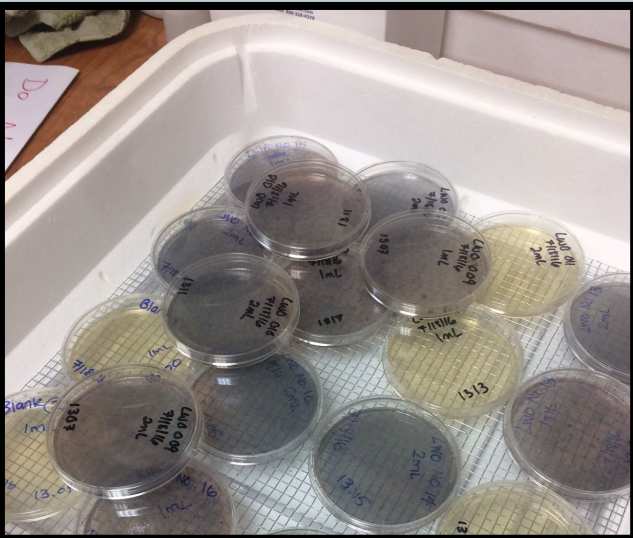
## ■ Domestic Animal Waste

- Pets
- Livestock

## ■ Wildlife/Feral Hog Waste

- Deer and Other Wildlife
- Feral Hogs

# TARGETED BACTERIA REDUCTION



# What are Indicator Bacteria?

Types of bacteria used to detect and estimate the level of fecal contamination of water. Their presence alone may not be dangerous to human health, but are used to indicate the presence of a health risk due to other pathogens, viruses, protozoa or parasites.

For Contact Recreation Standards related monitoring the EPA recommends:

- *E. Coli* for Freshwater
- Enterococcus for Saltwater



# Contact Recreation Standards in Texas

## Freshwater (*E. coli*)

Primary contact recreation 1 -

Geometric Mean = 126 per 100 mL

Single Sample = 399 per 100 mL

Noncontact recreation

Geometric Mean = 2,060 per 100 mL

## Saltwater (Enterococci)

Primary contact recreation 1 -

Geometric Mean = 35 per 100 mL

Single Sample = 130 per 100 mL

Noncontact recreation

Geometric Mean = 350 per 100 mL

# What Brings Us Here Today?

Concerns that *E. Coli* and Enterococcus are always present in the background

- Present in soil and sediment
- Present in biofilms
- Present in the gut of all warm-blooded animals.

All comes down to risk.

Is there another indicator that is a better predictor of the presence of human waste?

- Not too labor intensive
- Relatively inexpensive (budgets are tight)
- Reliable

# Thank You!

- Todd Running, Water Resources Manager  
Houston-Galveston Area Council  
(713) 993-4549  
todd.running@h-gac.com