

BRAZOS – COLORADO COASTAL BASIN BASIN 13

Public Meeting 1
November 28, 2016

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Meeting Agenda

- 4:00 – 4:05 Welcome - Open Meeting
- 4:05 – 4:35 Basin Water Quality
Steven Johnston, H-GAC
- 4:35 – 4:45 State Perspective in Water Quality
Planning – Brian Koch, TSSWCB
- 4:45 – 5:00 Wrap Up and Next Steps
- 5:00 – 6:00 Open House / Meet and Greet

Meeting Goals

To Build Greater Understanding

- ✓ Share Basin Water Quality – Bacteria
 - ❖ Review Water Quality Data
- ✓ What Are Potential Sources
- ✓ Watershed Planning Tools
- ✓ Local Stakeholder Involvement in Decisions

A Little Water History

- Clean Water Act 1972
- The CWA established the NPDES along with two major goals:
 1. Water quality that is both “fishable” and “swimmable” by 1983
 2. Zero discharge of pollutants by 1985
- Regulated combined sewer systems, industrial waste water, and animal feed lots.
- The EPA originally exempted storm water from regulation by defining it as non-point source pollution.



A Little Water History (continued)

- By 1987, the CWA was amended to define storm water as a point source pollution.
- Urban runoff is considered the largest source of storm water pollution.
- The current EPA permitting programs do not distinguish untreated sewage from urban storm water runoff.



Waters of Texas

- Texas assigns Uses to water bodies
 - Contact Recreation, Public Water Supply, Aquatic Life, etc.
- State Water Quality Standards set based on maintaining Uses
 - E.g., Contact recreation use is based on chance of getting sick due to fecal pathogens



Waters of Texas (continued)

- Water Bodies assessed every 2 years
 - “Texas Integrated Report of Surface Water Quality”
- When 1 or more Water Quality Standards are not met, the Water body is listed as “Impaired”

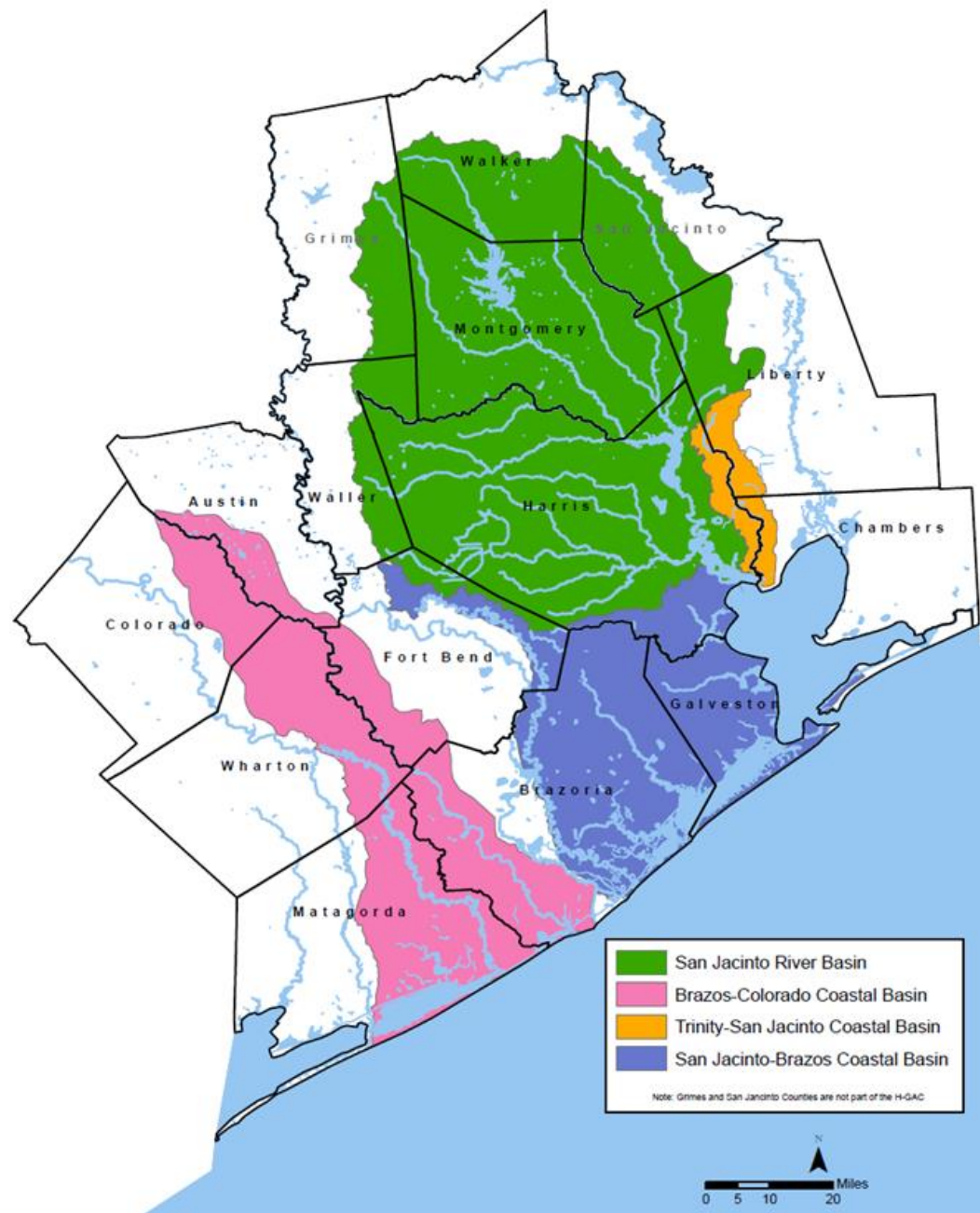


H-GAC's Role

Clean Rivers Program Assessment Area

- 15 counties
- 16,000 miles of streams and shoreline
- Population 5+ million

CRP Region



Regional Coordinated Monitoring

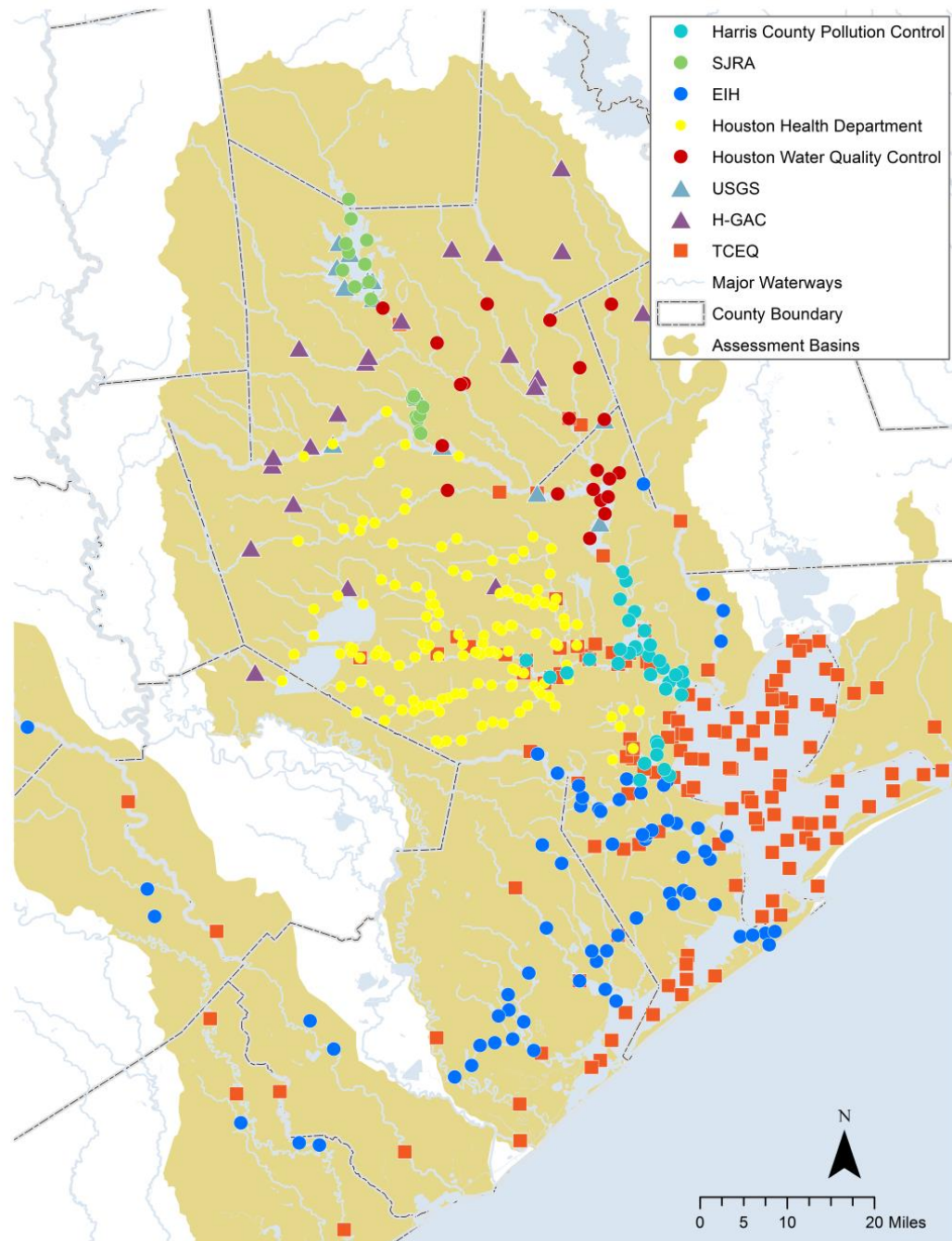
Professional Monitoring

- 8 local partners
 - + TCEQ
 - + USGS
- Over 370 sites
- Monitored at least quarterly
- Data quality-assured

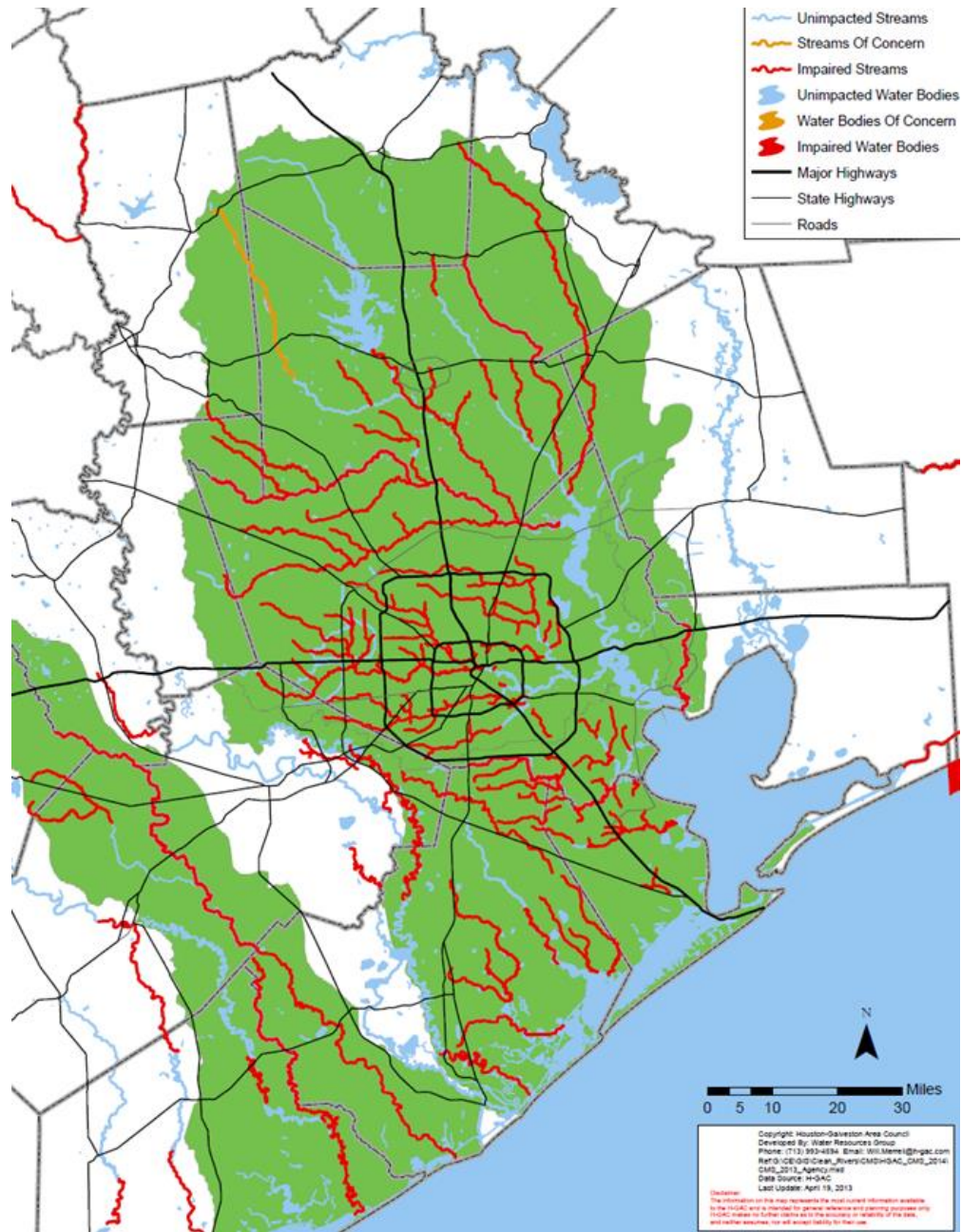
Stream Team Monitoring

- 106 Volunteers
- 92 Sites

Regional Coordinated Monitoring



Contact Recreation Impairments



Basin 13

BASIN CHARACTERIZATION REPORT FOR THE BRAZOS – COLORADO COASTAL BASIN FOR INDICATOR BACTERIA

Segments: 1301, 1302, 1304, 1305



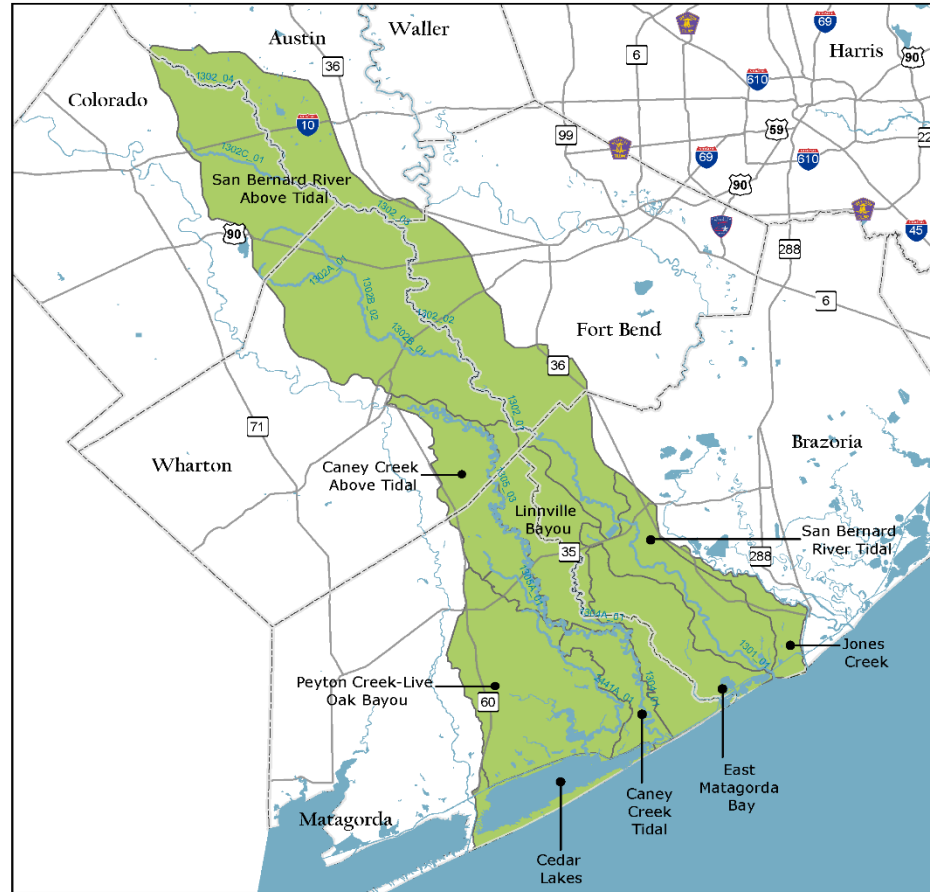
June 30, 2016

Basin Data



Watersheds

Basin 13 - Watershed



County Boundary
 Major Rivers
 Major Roads
 Watershed Boundary

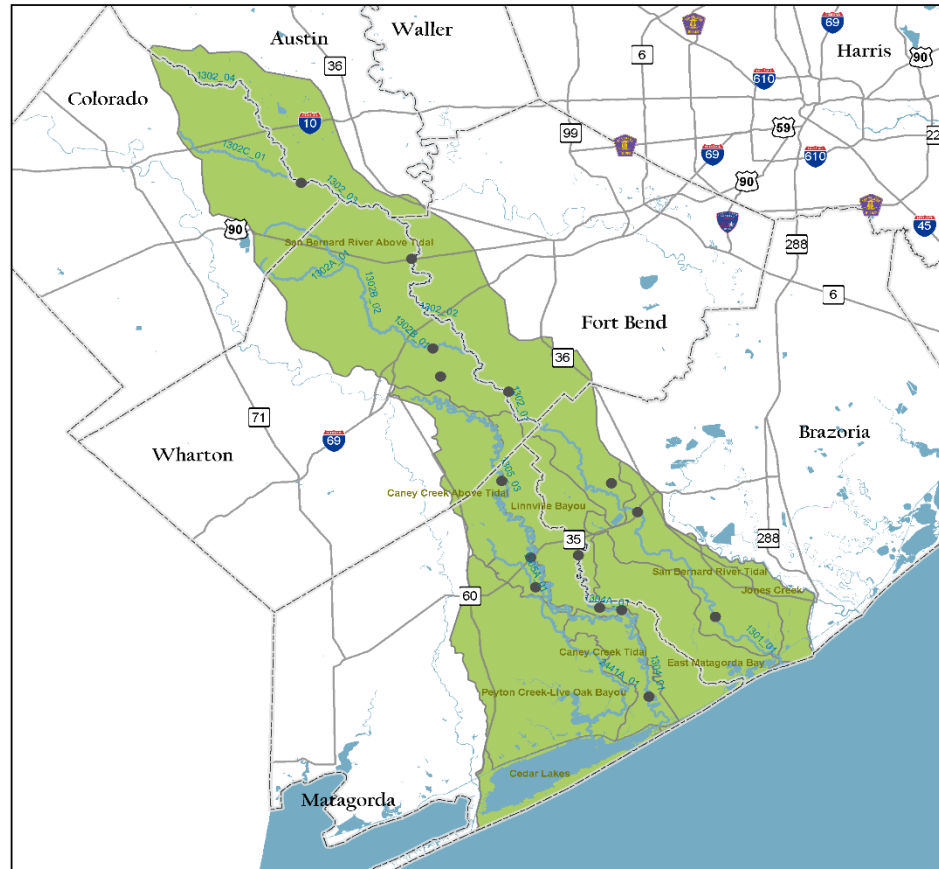
Watershed	% in Basin 13
Linnville Bayou	7.0
Caney Creek Above Tidal	7.0
Peyton Creek-Live Oak Bayou	13.5
East Matagorda Bay	8.0
Jones Creek	2.0
San Bernard River Above Tidal	46.5
San Bernard River Tidal	7.0
Caney Creek Tidal	3.0
Cedar Lakes	5.0

0 5 10 20 Miles

Source- Harris County Flood Control District (HCFCD), United States Geological Survey (USGS), 10-HUC watershed boundary dataset and the H-GAC Clean Rivers Program (CRP) watersheds

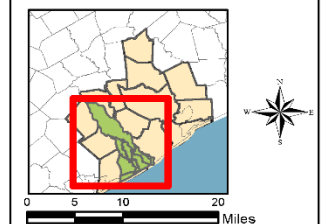
Monitoring Sites

Basin 13 - Monitoring Site Locations



- Monitoring Station
- ⊕ County Boundary
- Major Rivers
- Major Roads
- Watershed Boundary

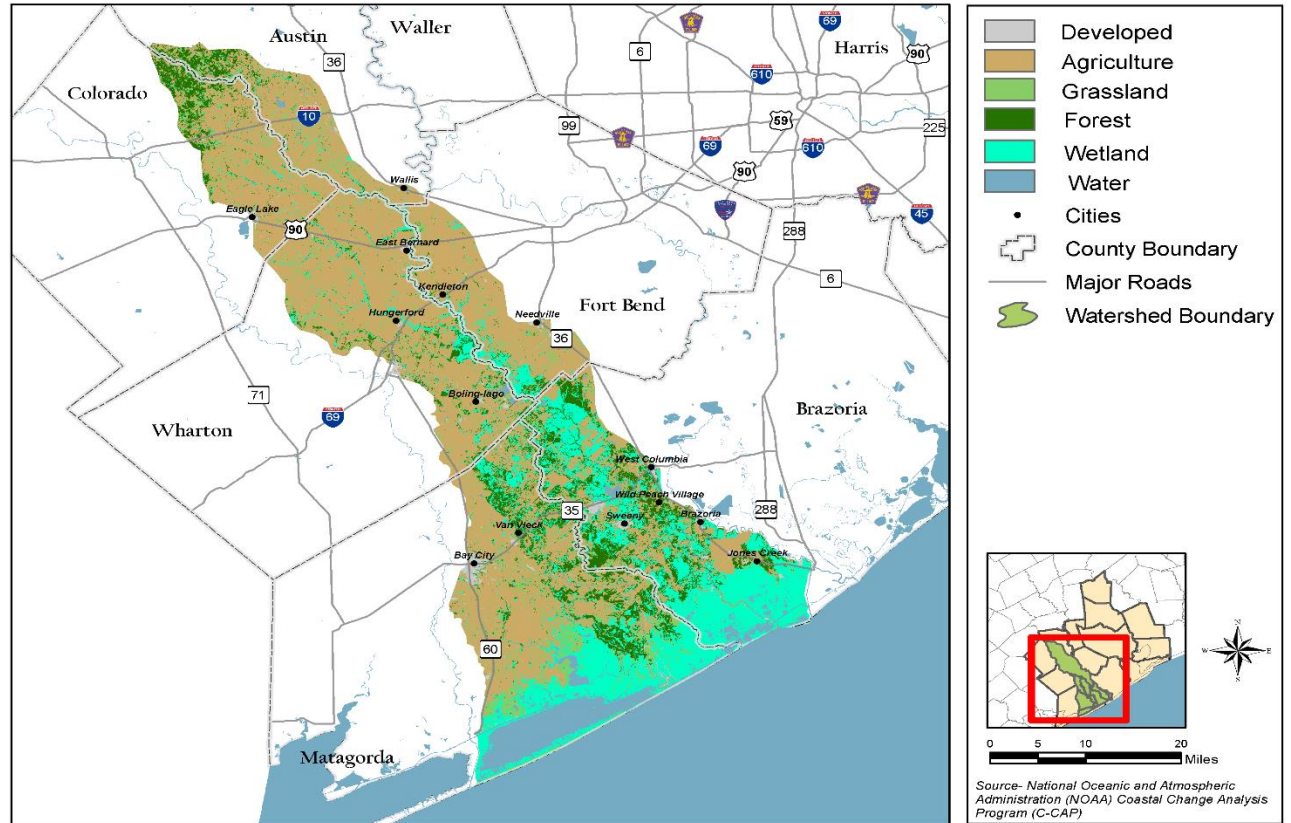
	No. Of Monitoring Sites
Basin 13- Total	15
Linnville Bayou	2
Caney Creek Above Tidal	3
San Bernard River Above Tidal	6
San Bernard River Tidal	2
Caney Creek Tidal	2
Cedar Lakes	0



Source- Houston Galveston Area Council

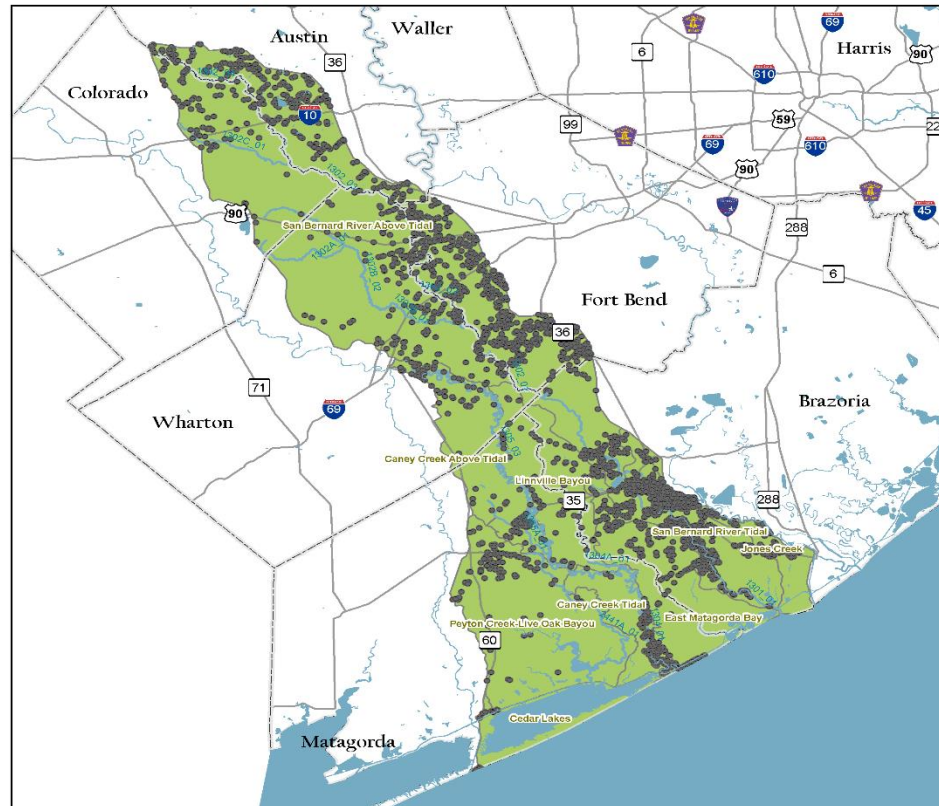
Land Cover

Basin 13 - Land Cover



OSSFs

Basin 13 - OSSF Permits

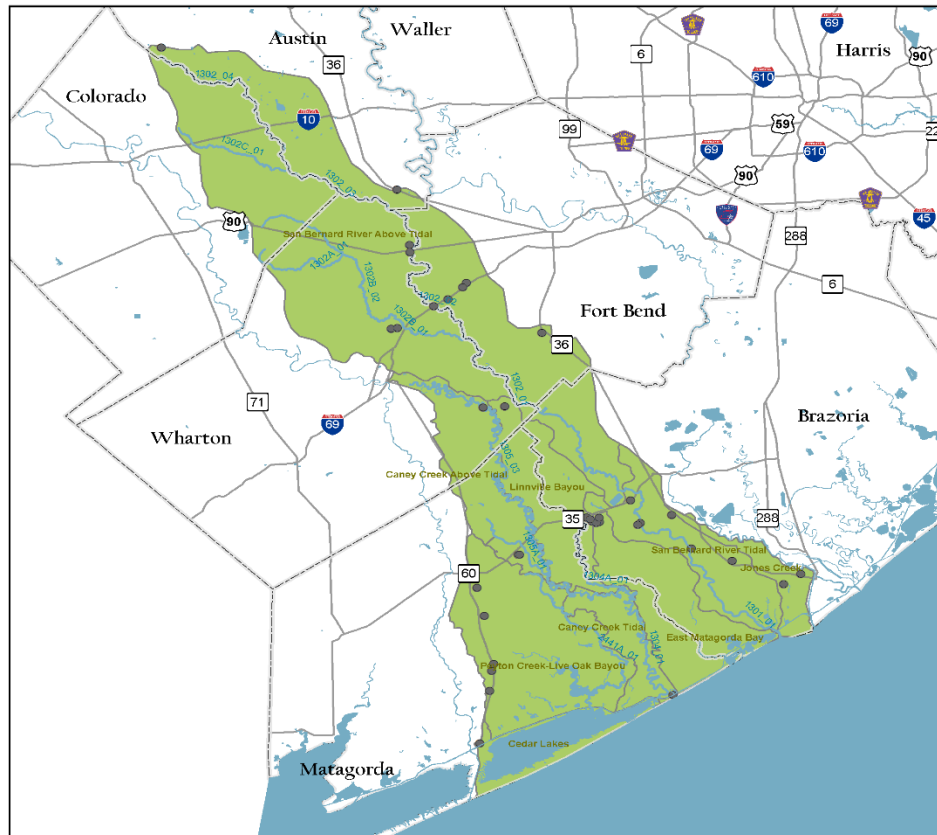


- OSSF Permits
- ⊕ County Boundary
- Major Rivers
- Major Roads
- Watershed Boundary

	OSSF Permits
Basin 13-Total	4538
Linnville Bayou	103
Caney Creek Above Tidal	303
Peyton Creek-Live Oak Bayou	127
East Matagorda Bay	267
Jones Creek	244
San Bernard River Above Tidal	2144
San Bernard River Tidal	1053
Caney Creek Tidal	279
Cedar Lakes	18

Wastewater Outfalls

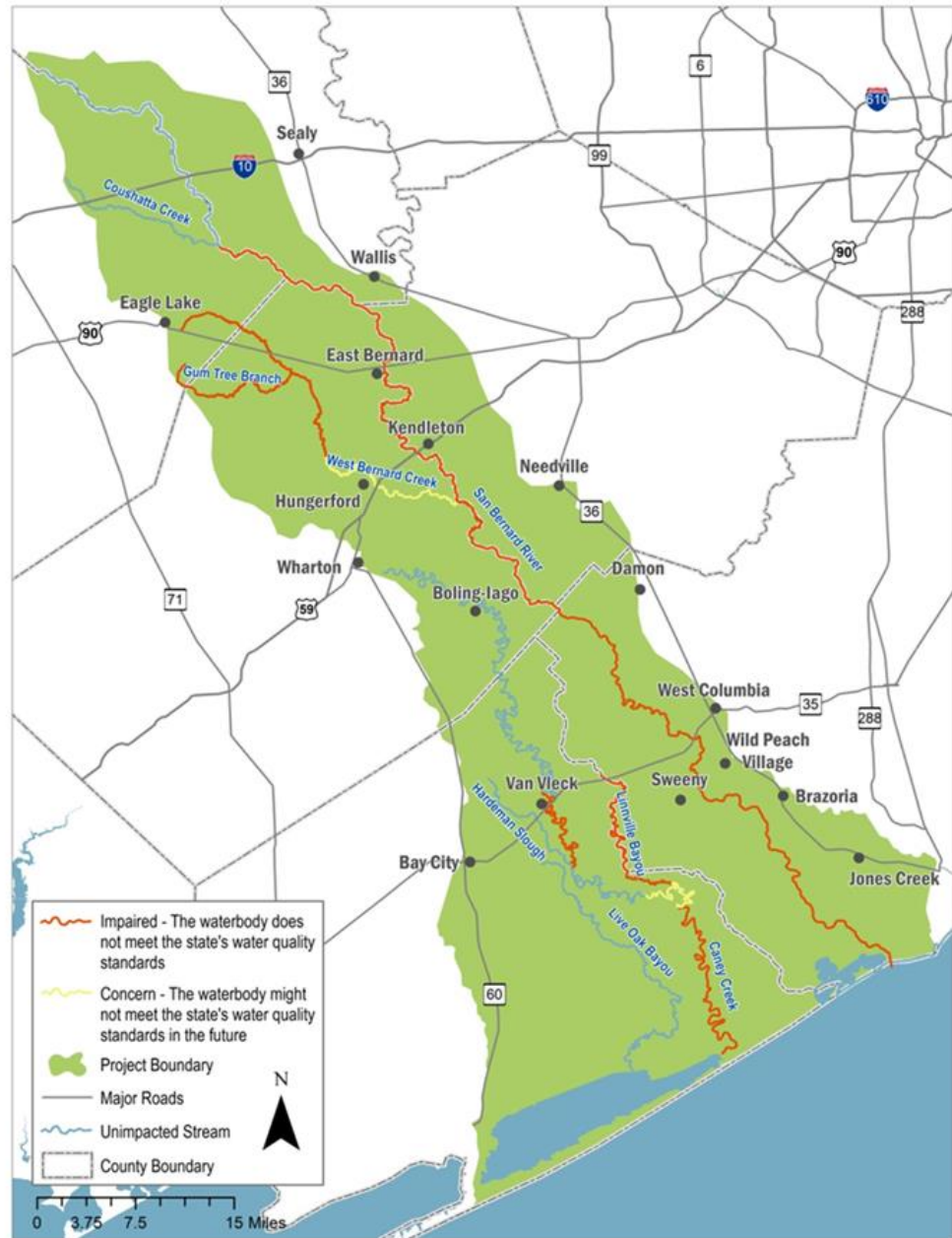
Basin 13 - Waste Water Outfalls



- Waste Water Outfalls
- ⊕ County Boundary
- Major Rivers
- Major Roads
- ▭ Watershed Boundary

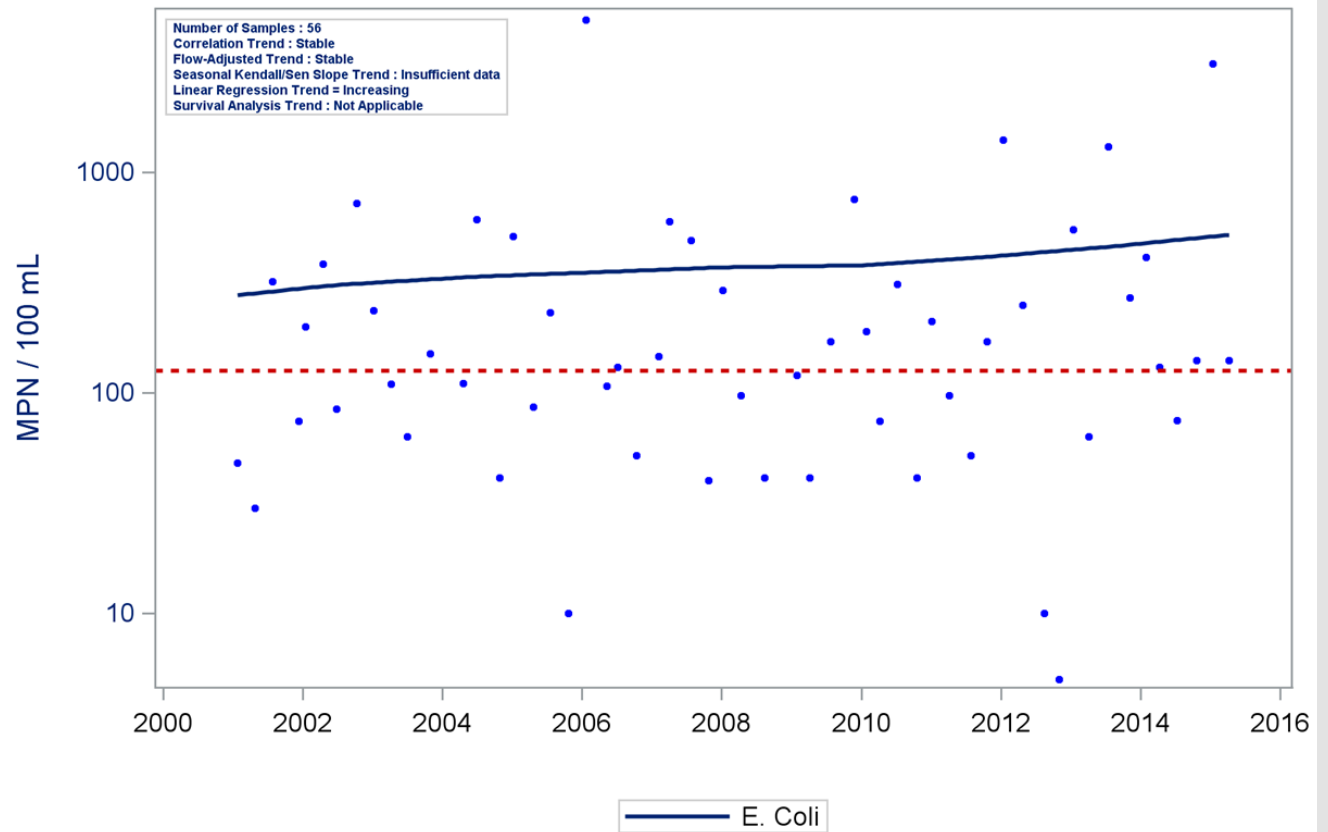
	Waste Water Outfalls
Basin 13- Total	38
Linnville Bayou	3
Caney Creek Above Tidal	3
Peyton Creek-Live Oak Bayou	5
East Matagorda Bay	4
Jones Creek	2
San Bernard River Above Tidal	13
San Bernard River Tidal	6
Caney Creek Tidal	1
Cedar Lakes	1

Bacteria



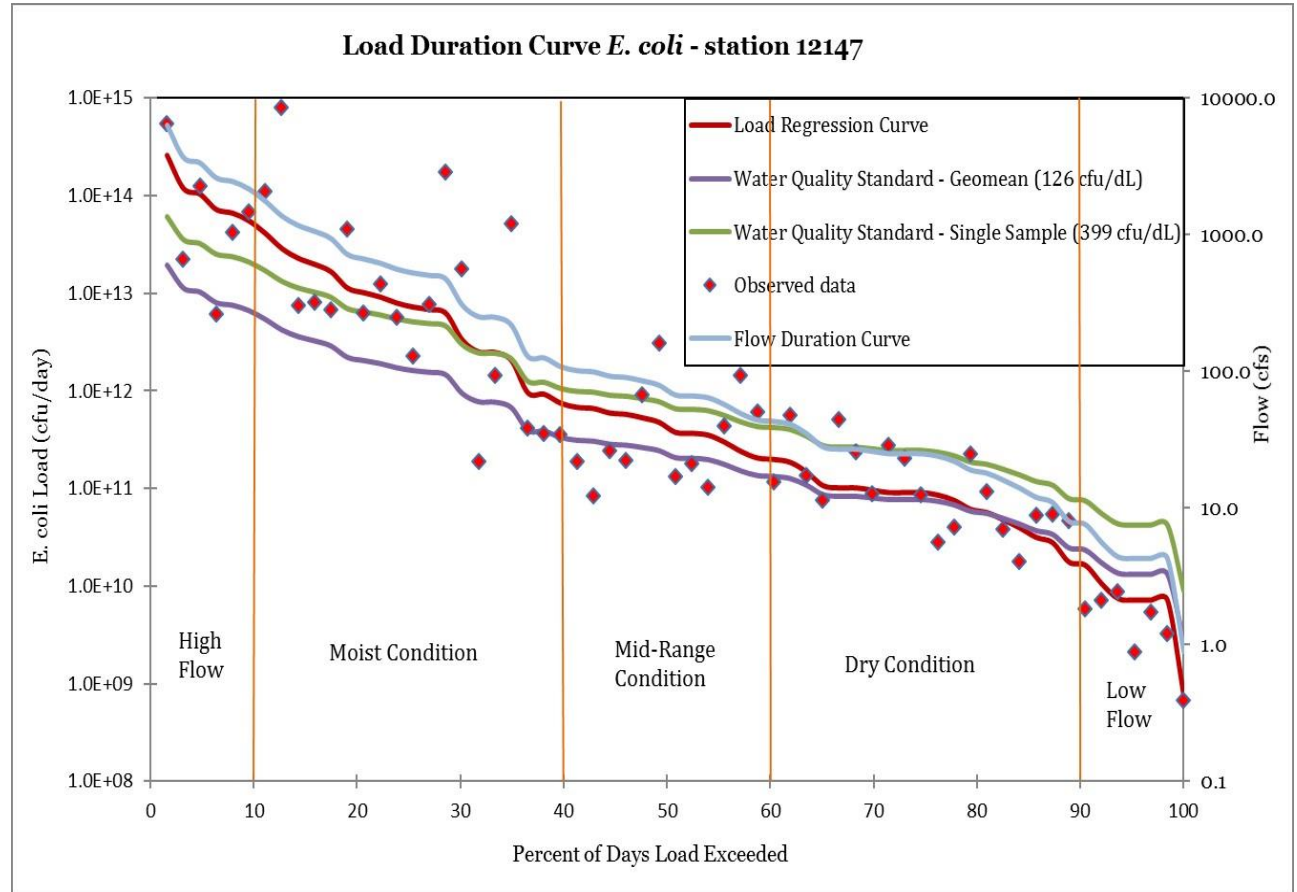
Bacteria Trends

Segment: 1305 Caney Creek Above Tidal Parameter: E. Coli Water Body Type: Perennial

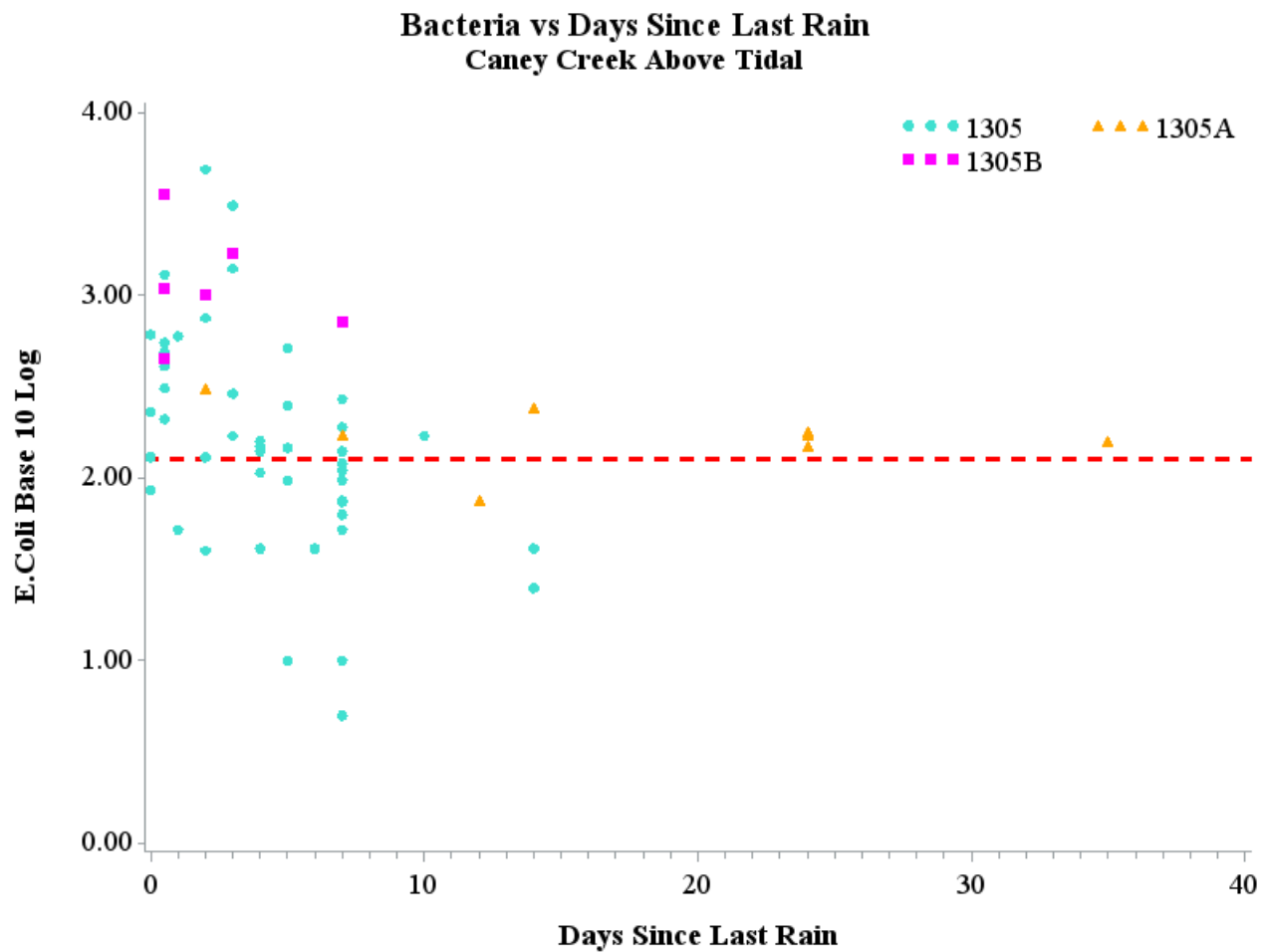


Locally-Weighted Least Squares (LOESS) Plot

LDCs



Since Last Rainfall



Addressing Impaired Waterways

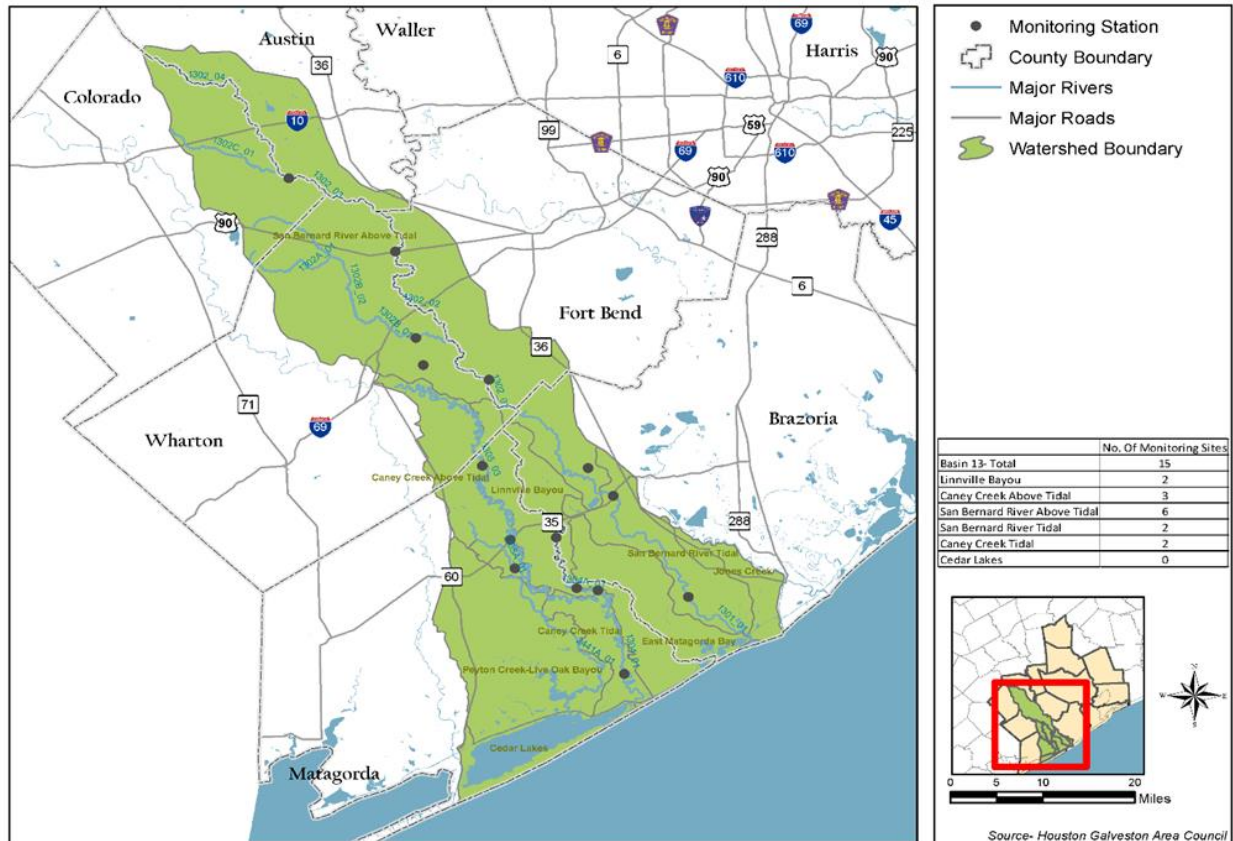
Watershed Planning Tools include:

- Increase or Expand Monitoring
- Recreation Use Attainability Analysis (RUAA)
- Total Maximum Daily Load (TMDL)
- Watershed Protection Plan (WPP)



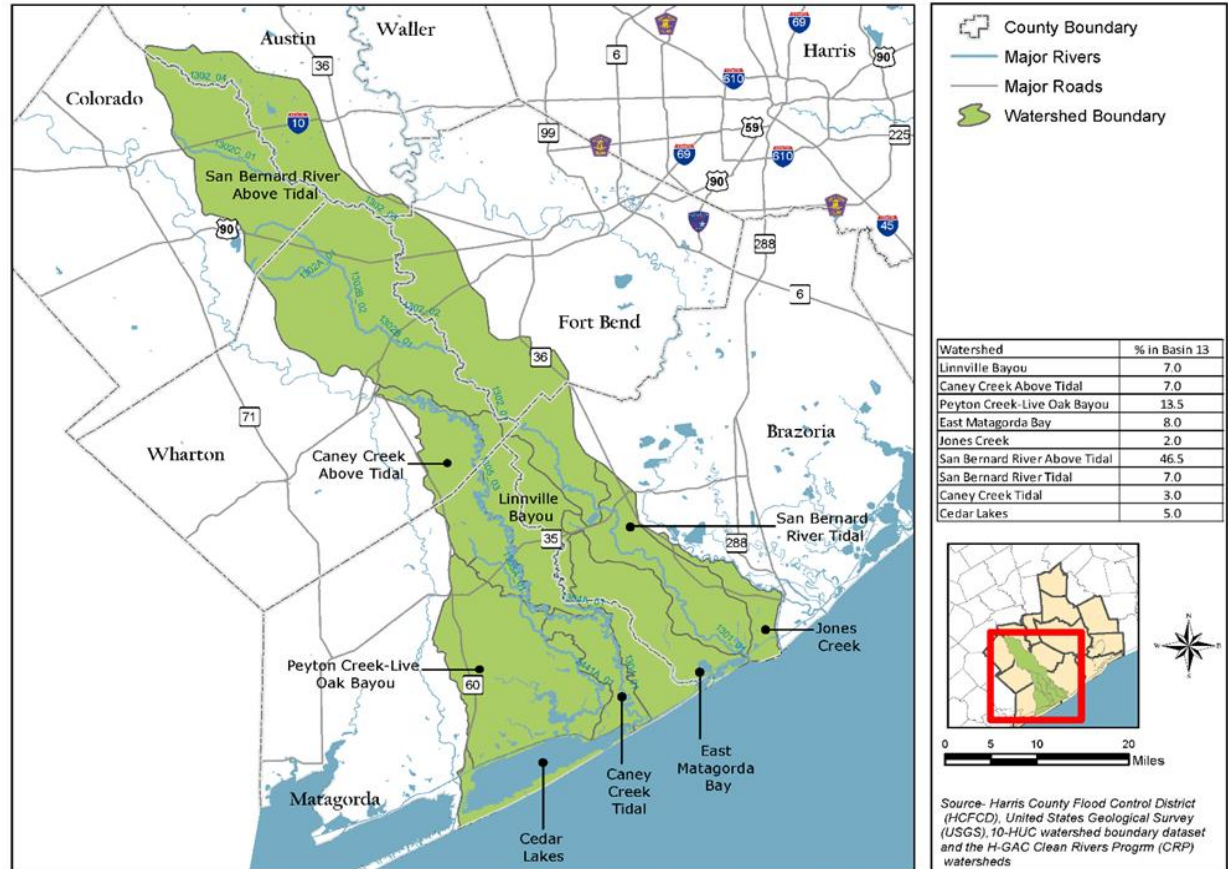
Increase or Expand Monitoring

Basin 13 - Monitoring Site Locations



RUAAs

Basin 13 - Watershed



Addressing Impaired Waterways

TMDLs

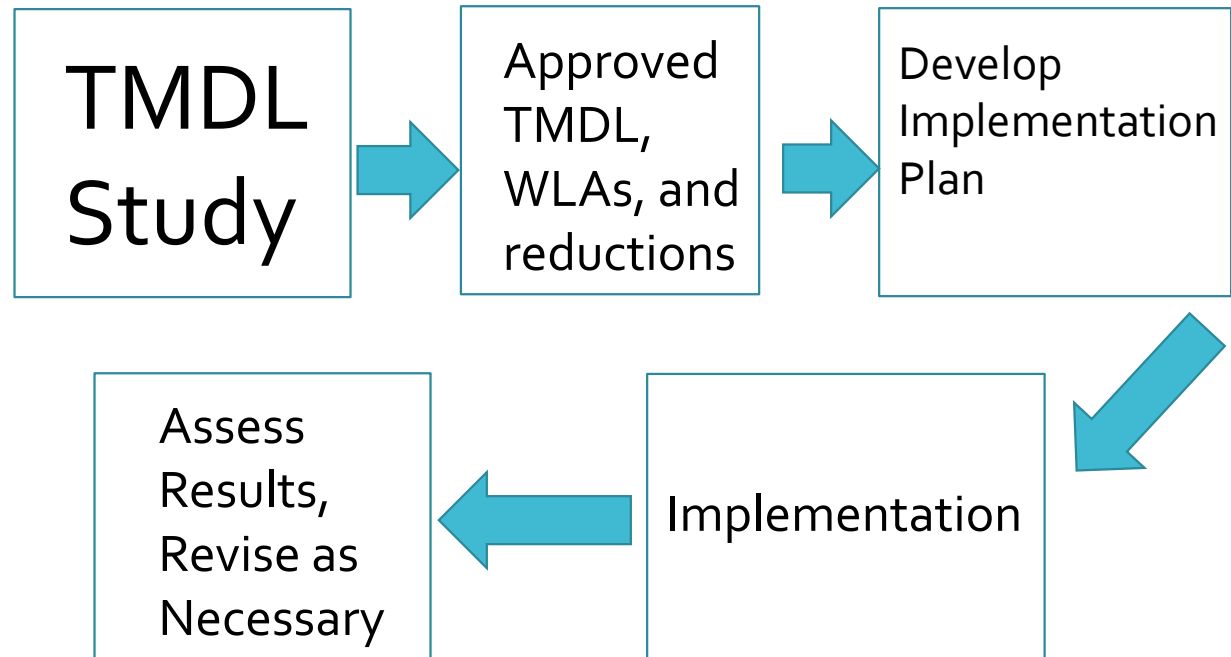
- “Budget” for pollutant
- Focus only on constituent of concern
- Can lead to mandatory and voluntary changes



The TMDL Process

TMDL determines:

- How much of the pollutant stream can take
- How much pollutant actually discharged, all sources
- Reduction needed (difference between the two + MOS)
- Who's allowed to discharge how much (WLA's)



The I-Plan

Implementation Plan

- “Second Phase” of TMDL
- Determines HOW reductions will be made
- Based on stakeholder recommendations
- Identifies
 - Solutions
 - Responsible parties
 - Timelines
 - Means of gauging improvement

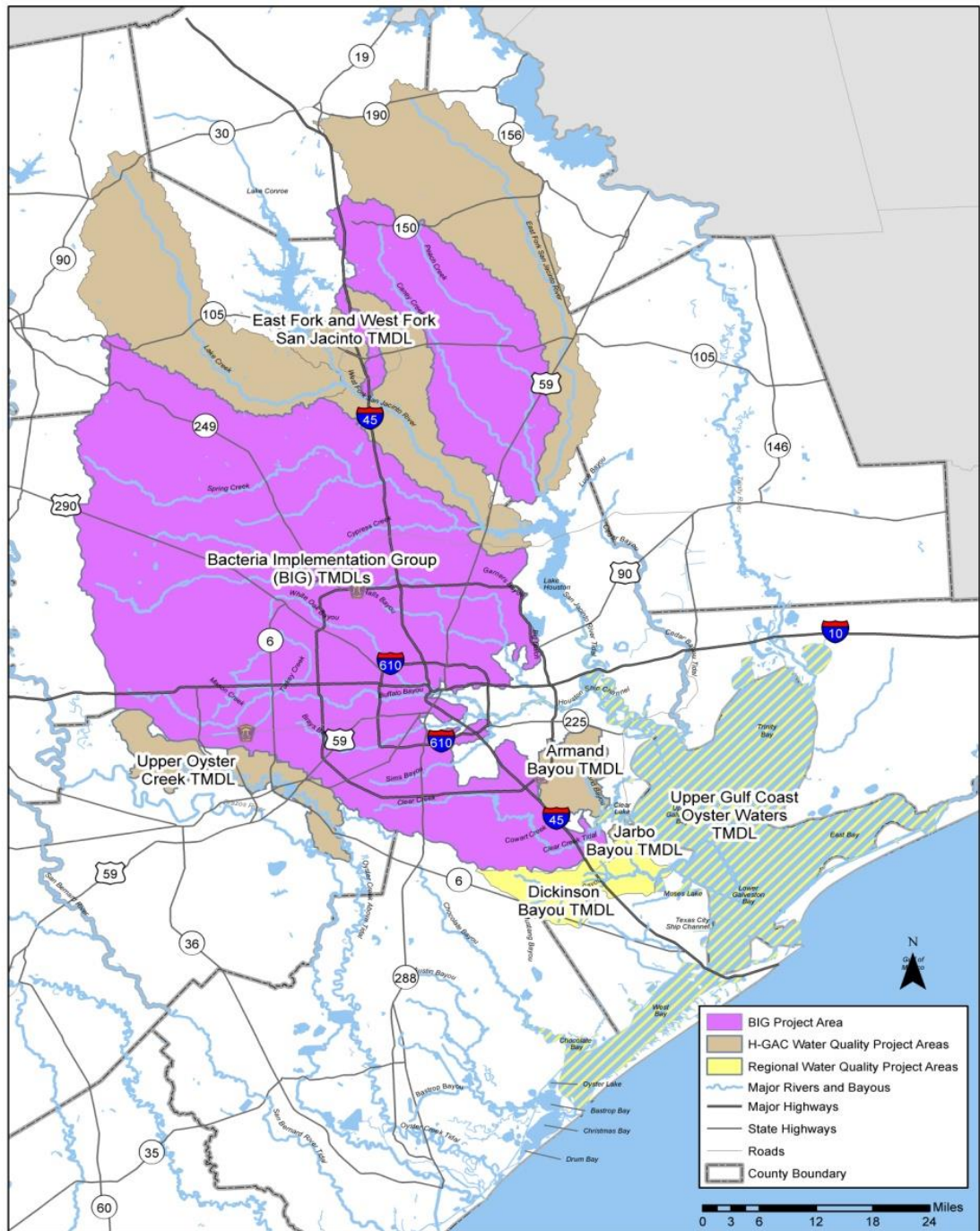


The Bigger Picture

- TMDLs/I-Plans only a piece of efforts to improve waterways
 - Optional Watershed protection plans
 - Local utility improvements
 - Community group efforts
 - State and national legislation
- Coordination is key to success, eliminating redundancy



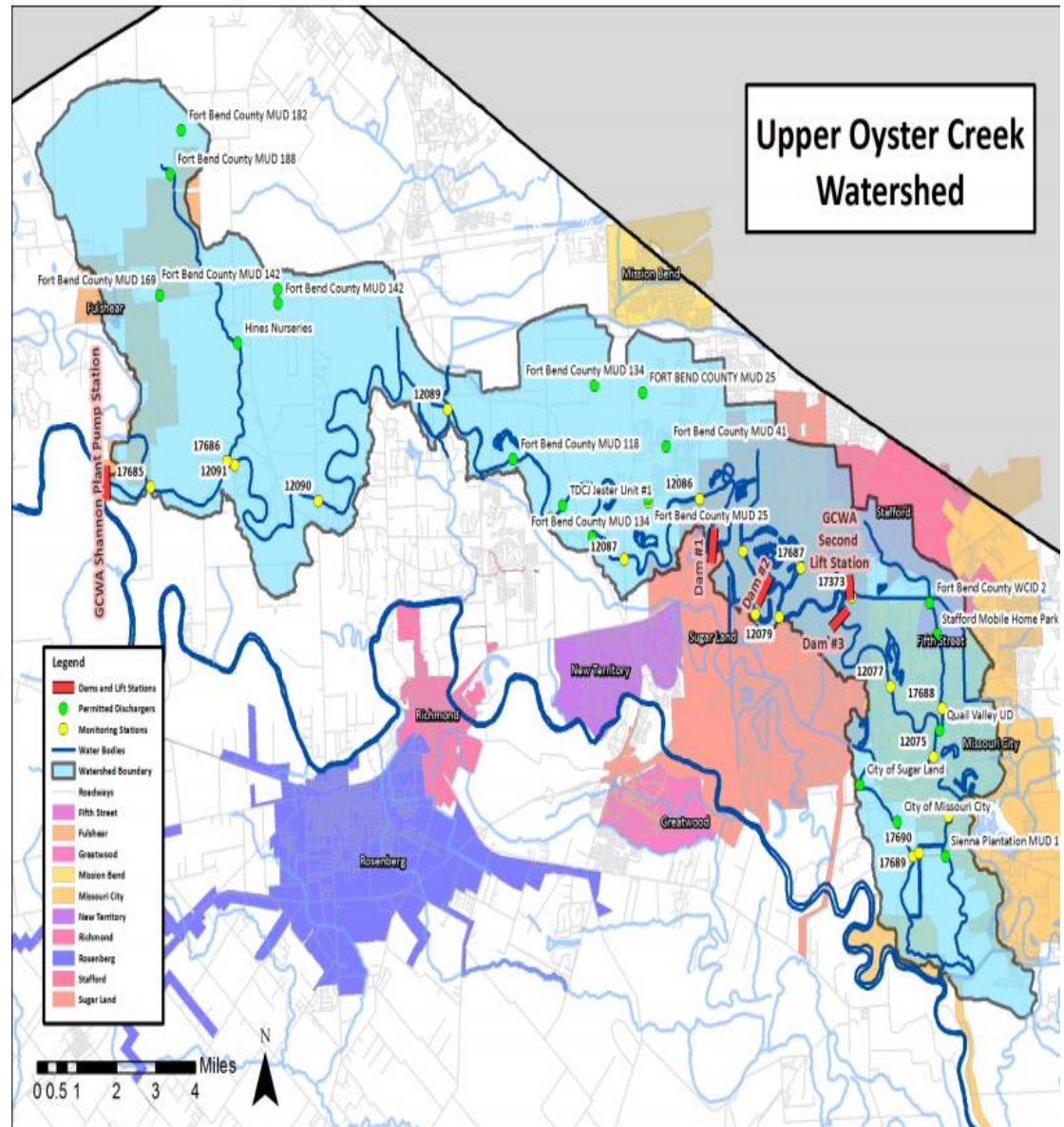
TMDL Projects



Upper Oyster Creek - Case Study

- Smaller TMDL, covering area in northern Fort Bend County
 - Bacteria and DO
- Small but diverse stakeholder group
 - Districts well represented
- Solutions tailored to specific local knowledge and needs
 - Voluntary measures only

Upper Oyster Creek - Case Study (continued)



Upper Oyster Creek - Case Study (continued)

- Relationship to Districts

- Direct and substantive
- Focus small, area specific



- Pros for individual districts

- Greater access, input during process
- Solutions focused on specific local needs and knowledge, easy to coordinate
- No mandatory controls recommended

- Challenges for individual districts

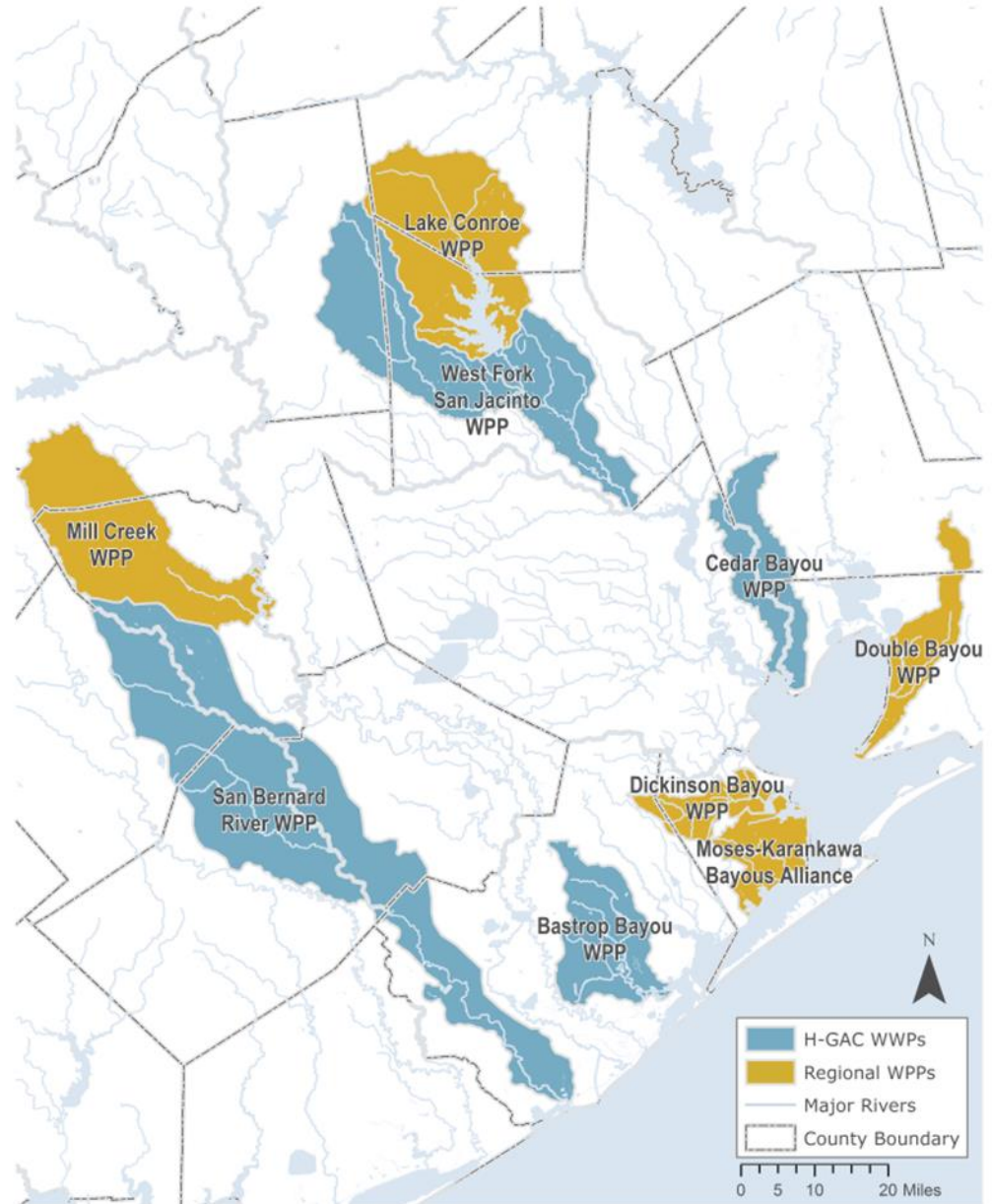
- Fewer partners, more specific responsibility
- Uncertain future due to changes in watershed

Watershed Protection Plans

- Voluntary approach to reducing impairments in local waterways
- Most funded under EPA CWA 319(h) grants from TCEQ, TSSWCB
- Engage local stakeholders to use good science to generate solutions
- Target one or more issues, not only water quality

WPP Projects

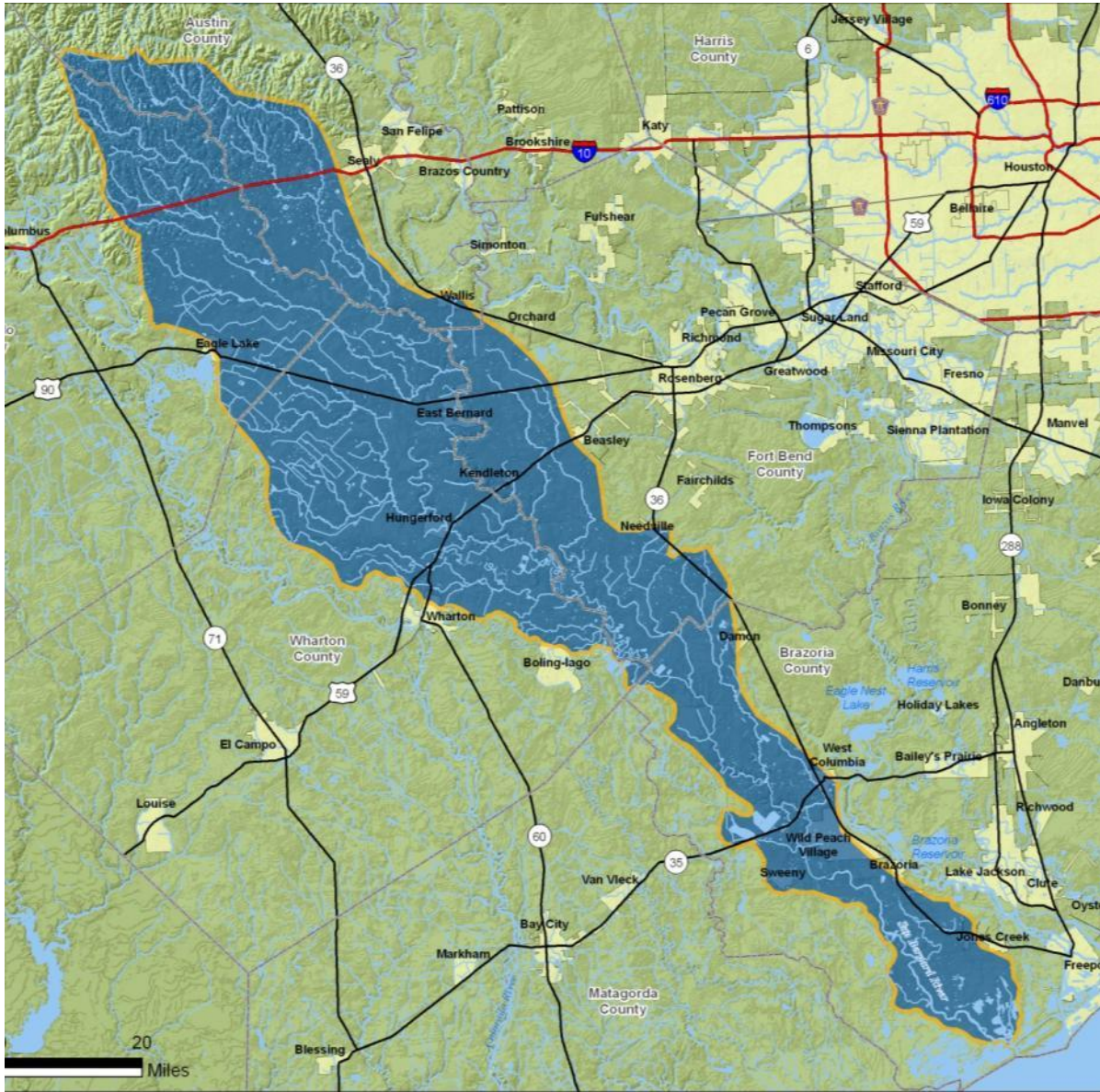
Watershed Protection Plans in the H-GAC Region



San Bernard River WPP - Case Study

- Started in FY 10 through ARRA Grant
- Primary target is elevated indicator bacteria
- Focus of WPP is reducing bacteria from OSSFs and cattle
- WPP currently under review by TCEQ/EPA





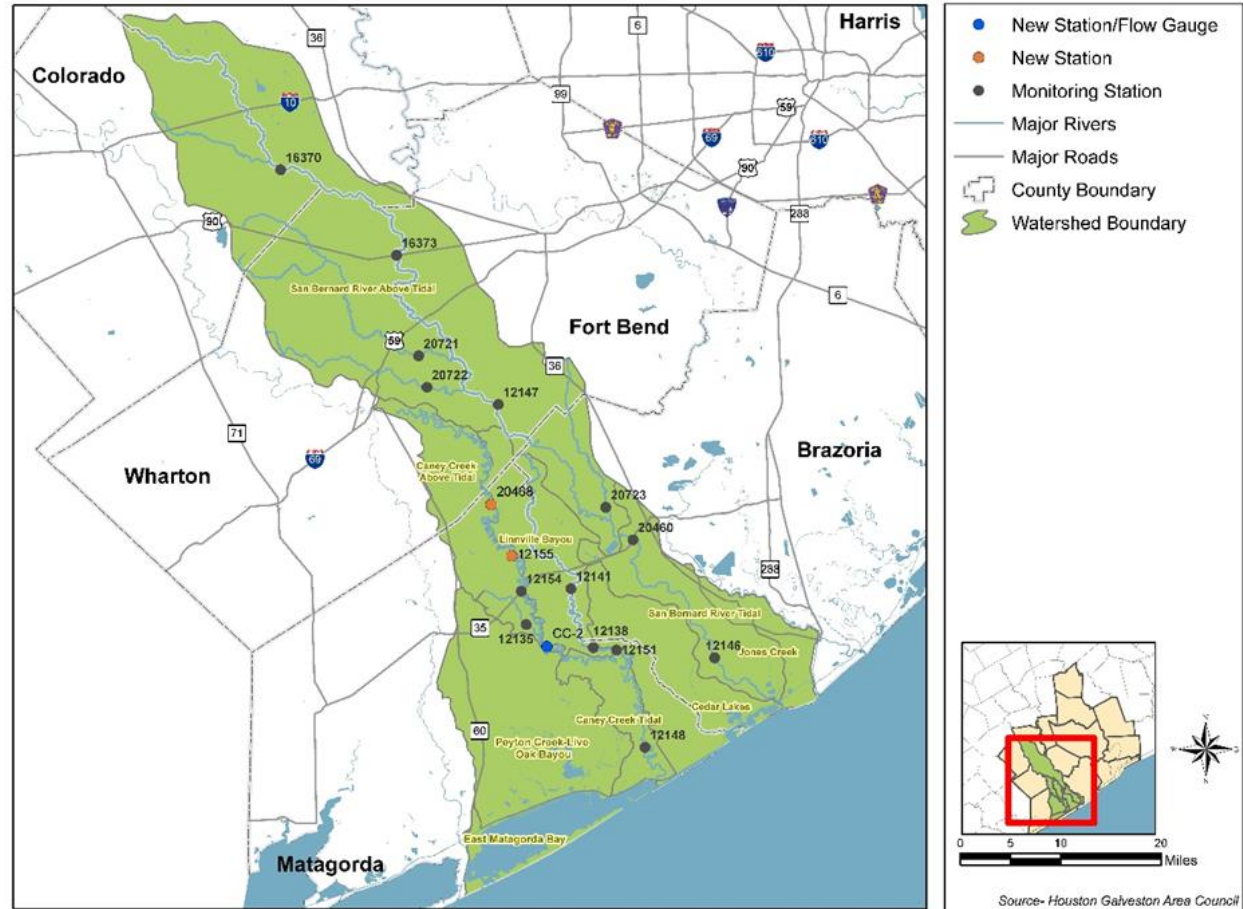
www.h-gac.com/community/water/watershed_protection/san-bernard-river.aspx

State Programs



Next Steps

Basin 13 - Monitoring Site Locations



Texas Stream Team Training – Spring 2017

Workshops and Training



Questions?

