

CHOCOLATE BAYOUTMDL SAN JACINTO – BRAZOS COASTAL BASIN

November 14, 2017

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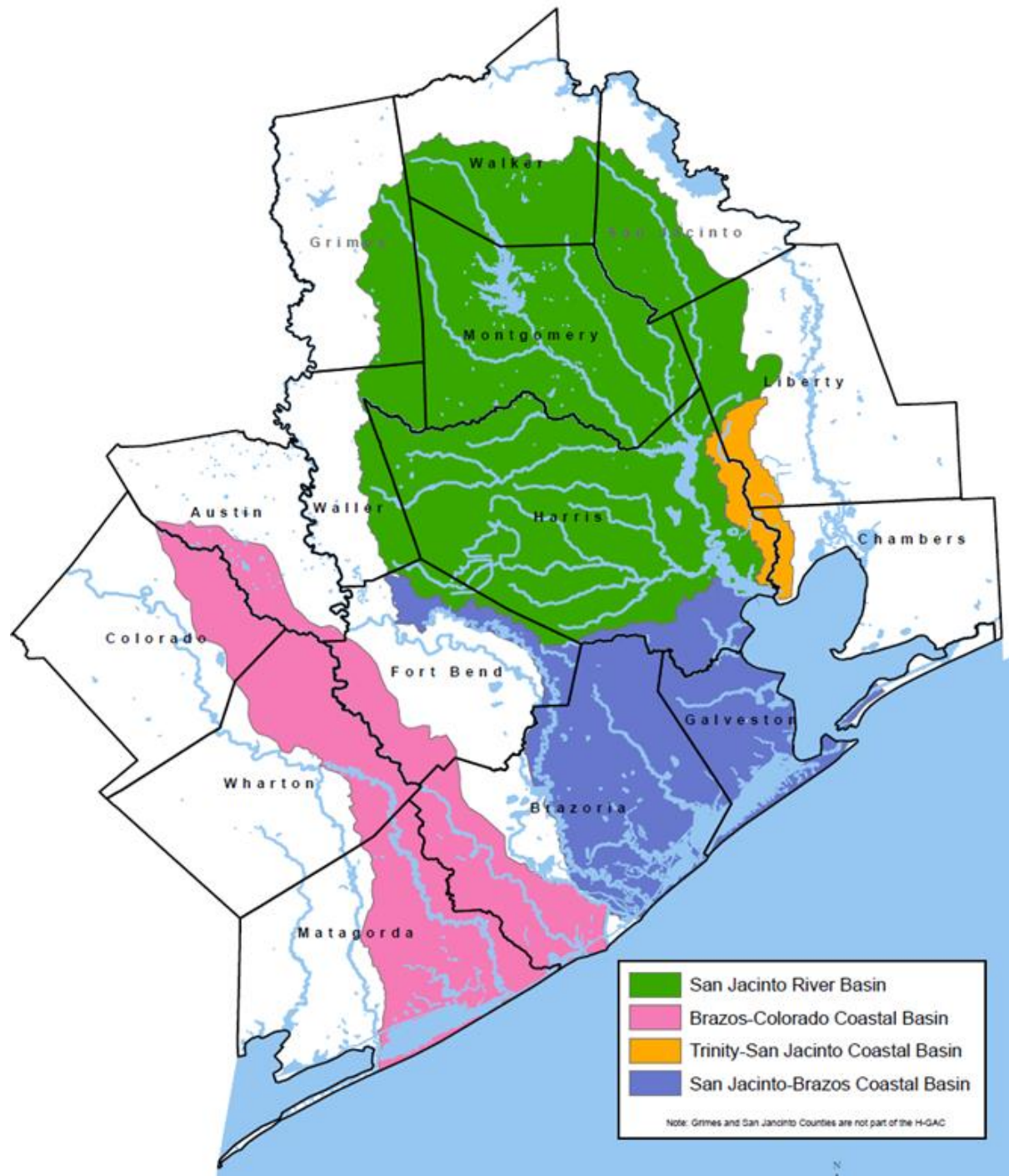
Meeting Agenda

- 4:00 – 4:05 Welcome - Open Meeting
- 4:05 – 4:15 Basin Approach Review
- 4:15 – 4:45 Chocolate Bayou Special Study
- 4:45 – 5:30 Coordination Committee Discussion
- 5:30 – 6:00 Q&A / Meet and Greet

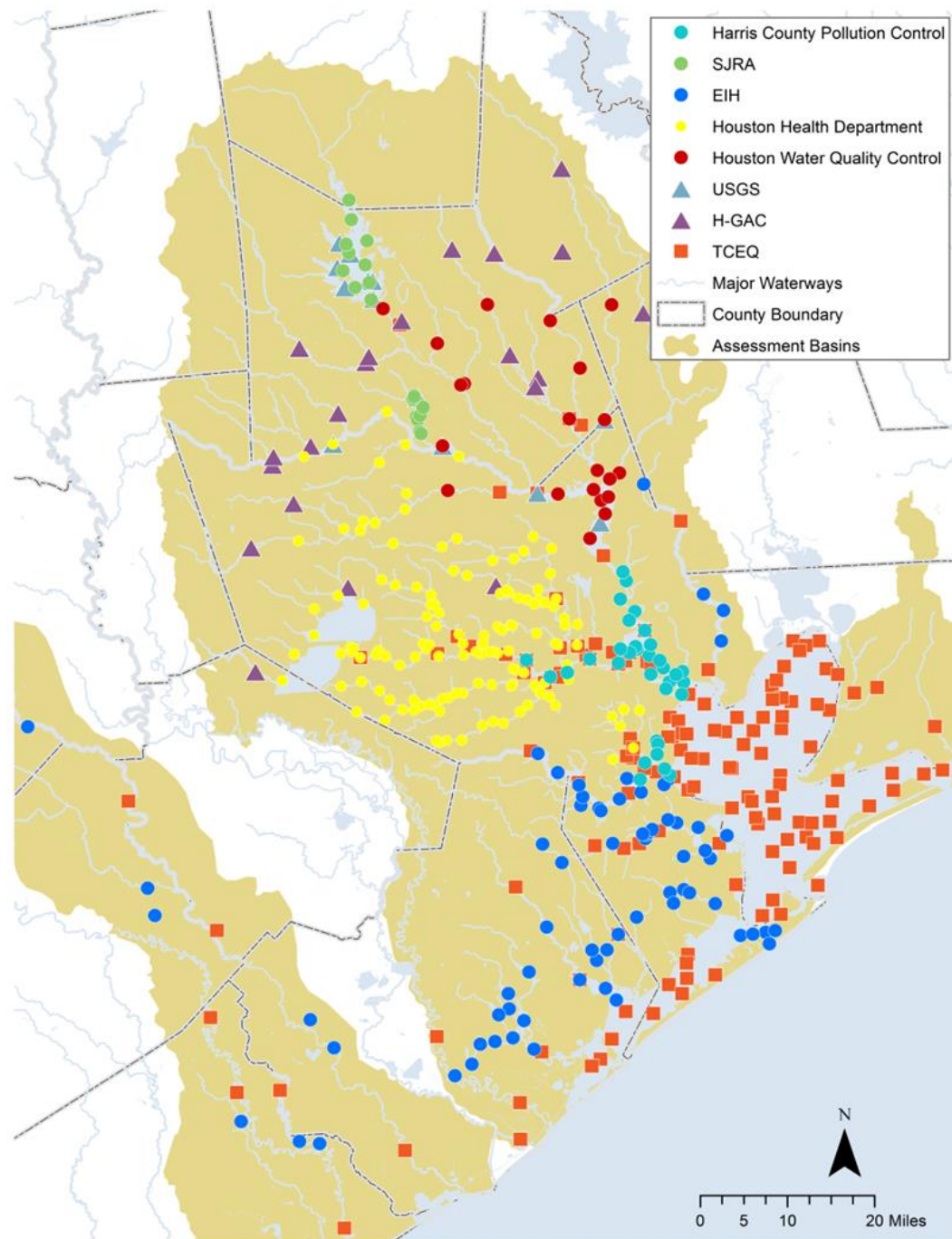
Meeting Goals

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

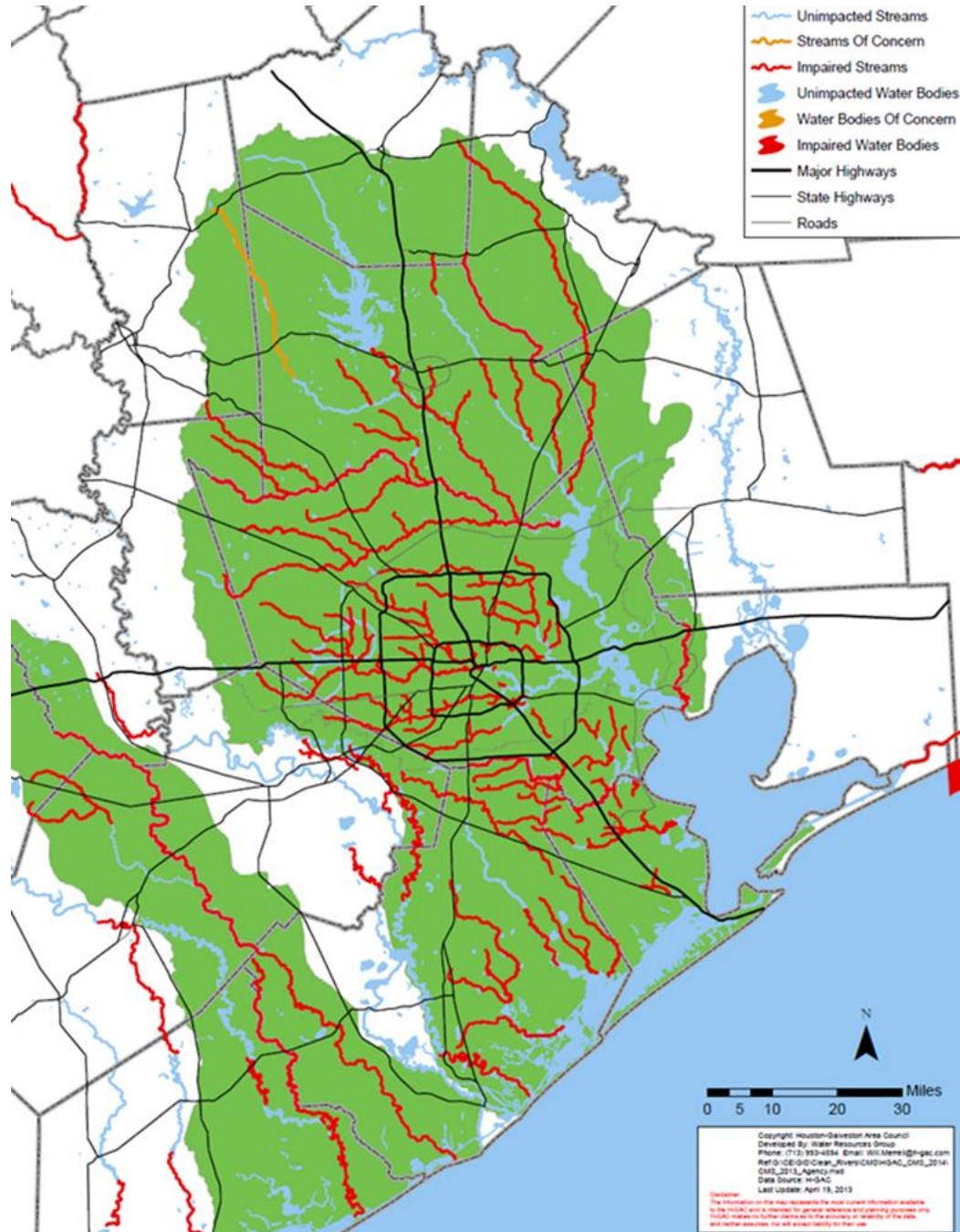
Clean Rivers Program - Region



Regional Coordinated Monitoring



Why Are We Here?



Basin 11

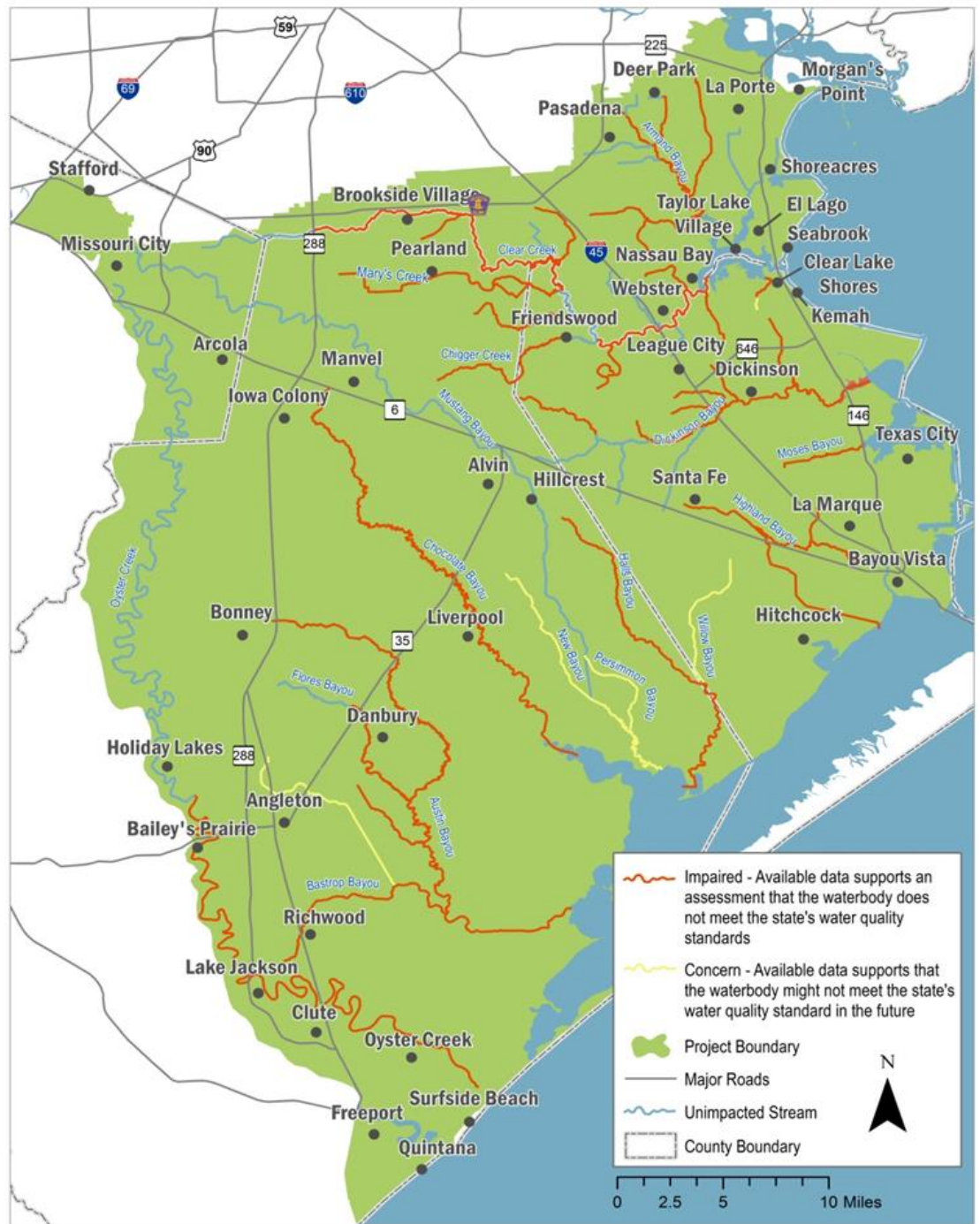
BASIN CHARACTERIZATION REPORT FOR THE SAN JACINTO – BRAZOS COASTAL BASIN FOR INDICATOR BACTERIA

Segments: 1101, 1102, 1103, 1104, 1105, 1107, 1108, 1109, 1110, 1111, 1113,
2424, 2425, 2427, 2431, 2432, 2433, 2434, 2436, 2437, 2438, 2439

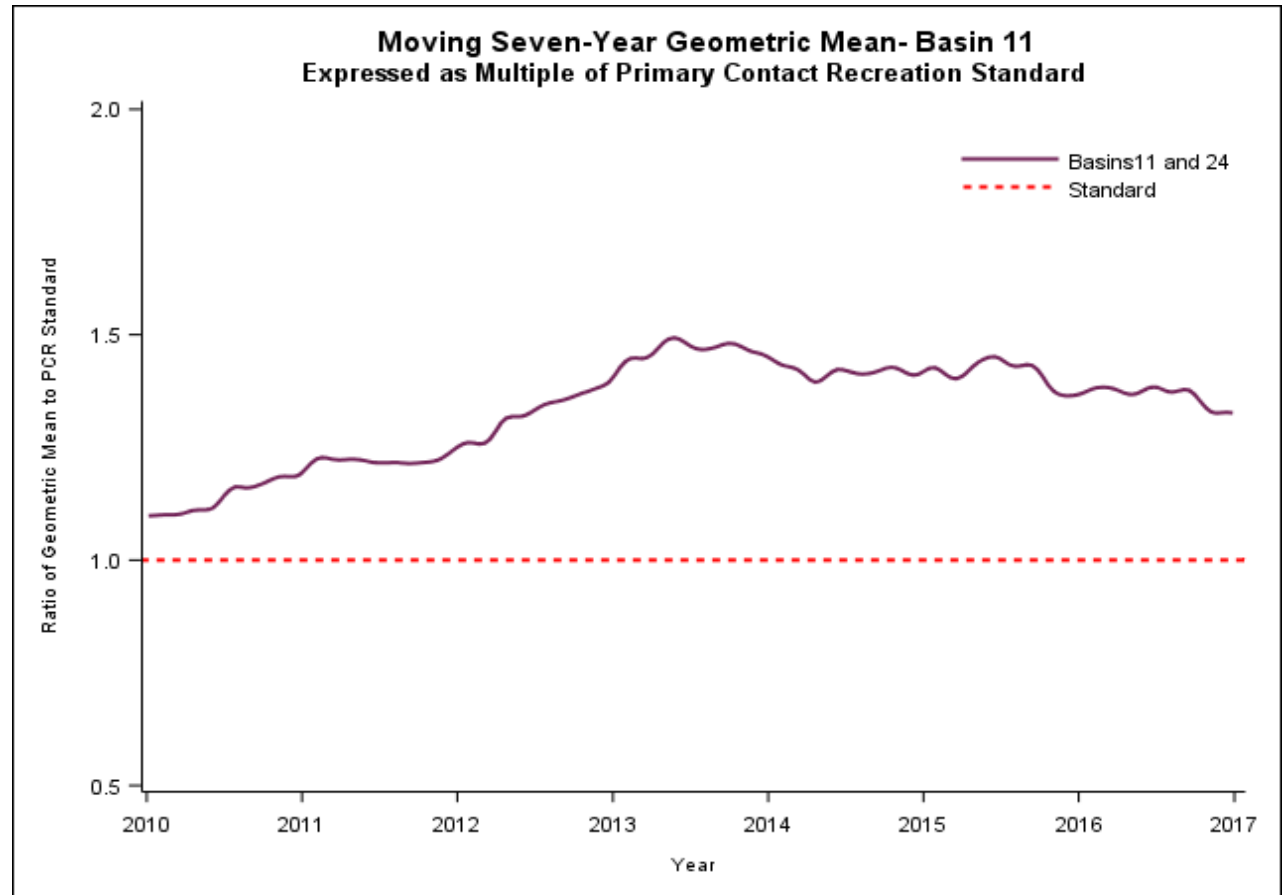


June 30, 2016

Bacteria



Bacteria Trends



Addressing Impaired Waterways

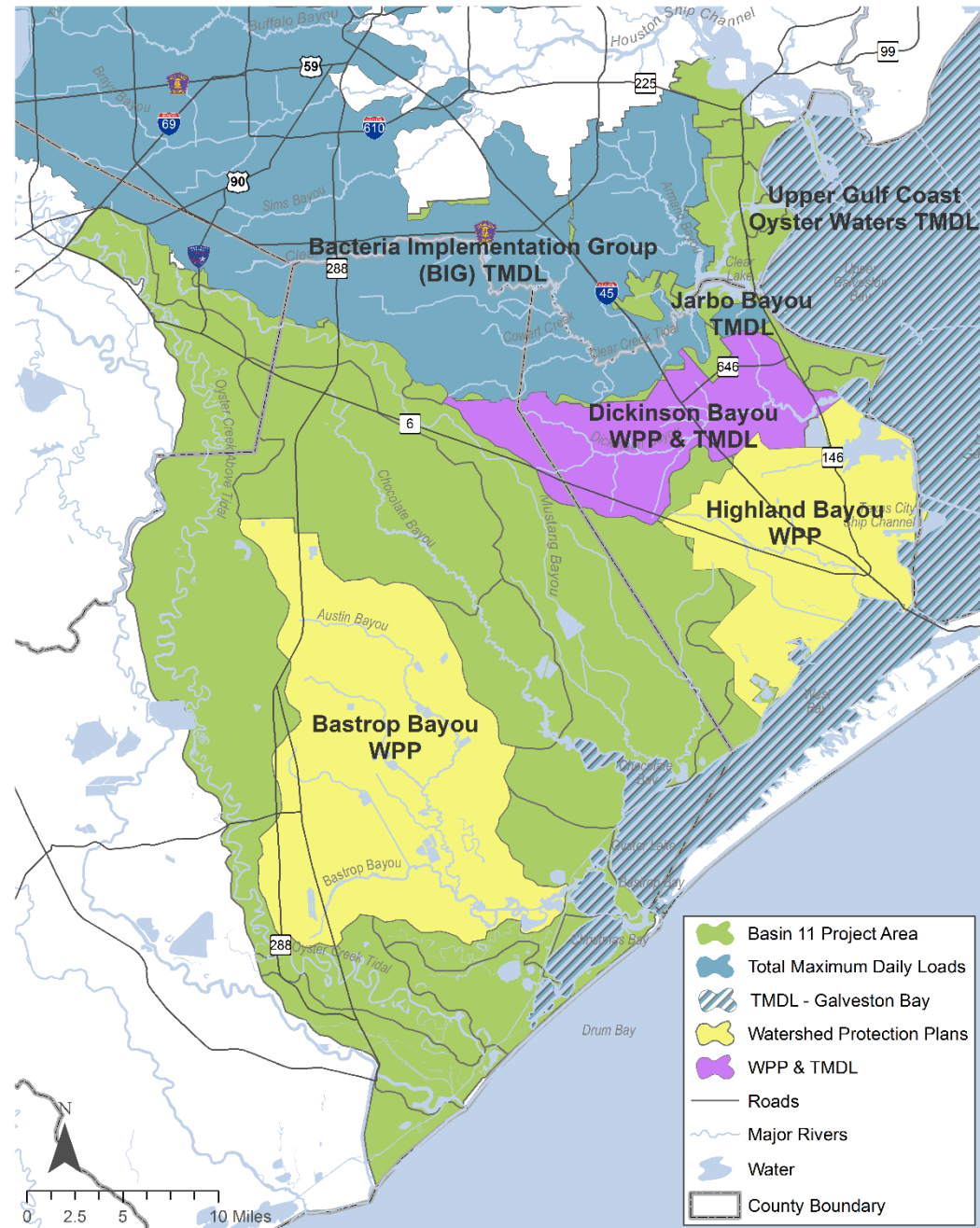
Watershed Planning Tools include:

- Increase or Expand Monitoring
- Recreation Use Attainability Analysis (RUAA)
- Watershed Based Plans
 - Total Maximum Daily Load (TMDL) and Implementation Plan (I-Plan)
 - Watershed Protection Plan (WPP)
 - Galveston Bay Coalition of Watersheds



Basin 11 Watershed Planning

Basin 11 Water Quality Projects



Watershed-based Plans

TMDL Study

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

Implementation Plan

- Determines HOW reductions will be made
- Based on stakeholder recommendations



Watershed-based Plans (cont.)

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

Chocolate Bayou TMDL

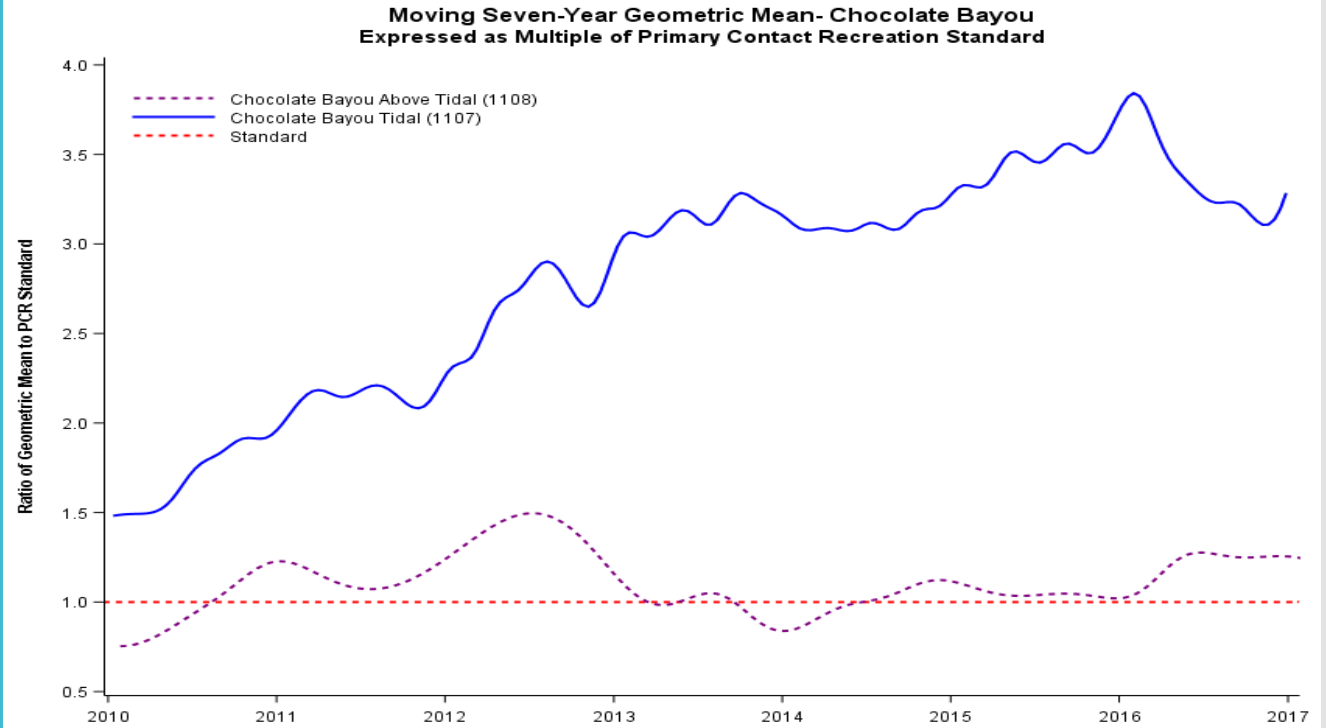
Technical Support Document for Total Maximum Daily Loads for Indicator Bacteria in the Chocolate Bayou Watershed

Segments: 1107 and 1108



July 2017

Chocolate Bayou: Bacteria Trends



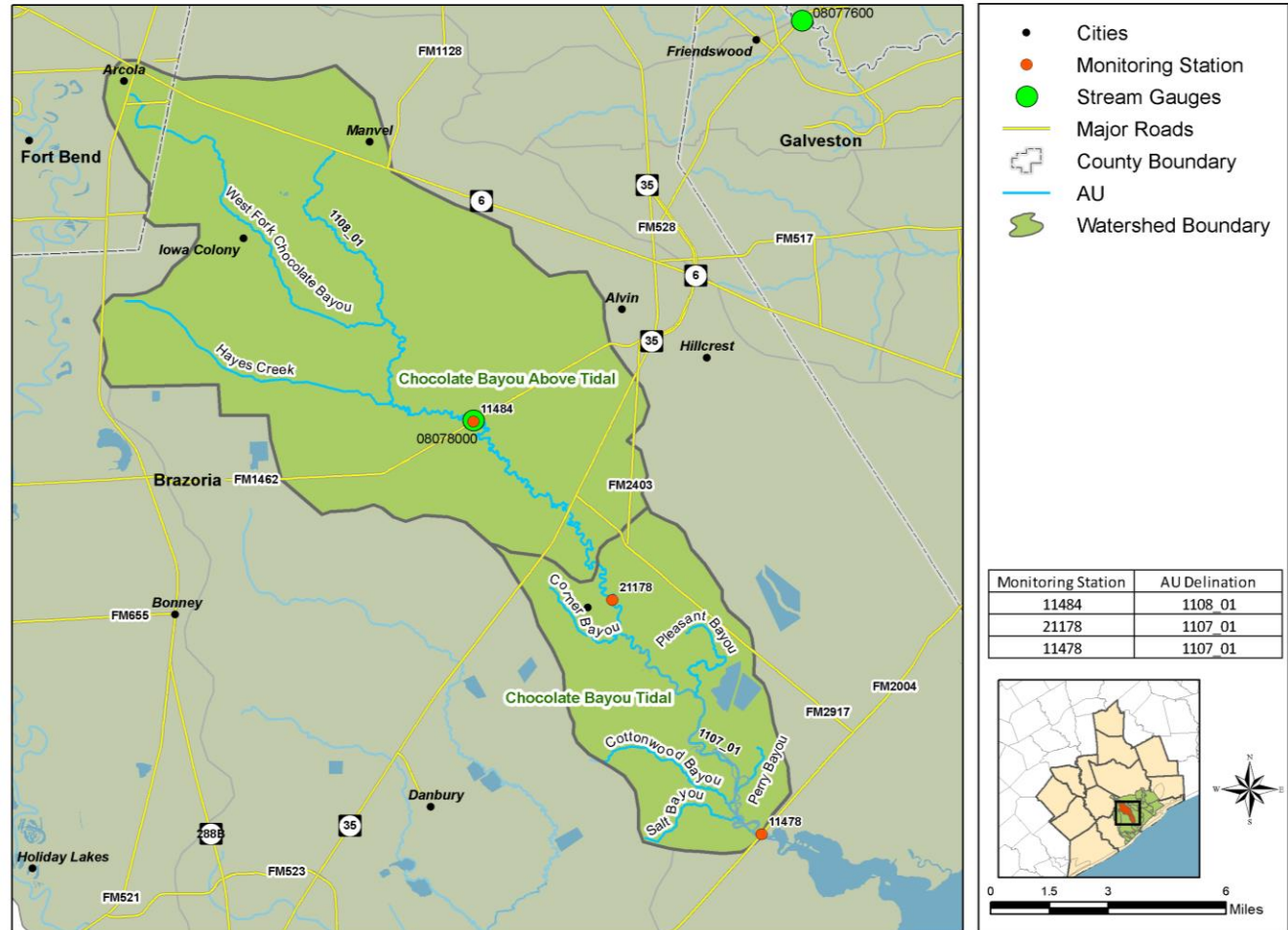
Assessment Unit	Parameter	Station	No. of Samples	Data Date Range	Geometric Mean (MPN/100 mL)
1107_01	Enterococcus	21178/11478	79	2010-2016	115.0
1108_01	<i>E. coli</i>	11484	24	2010-2017	154.6

Basin Data



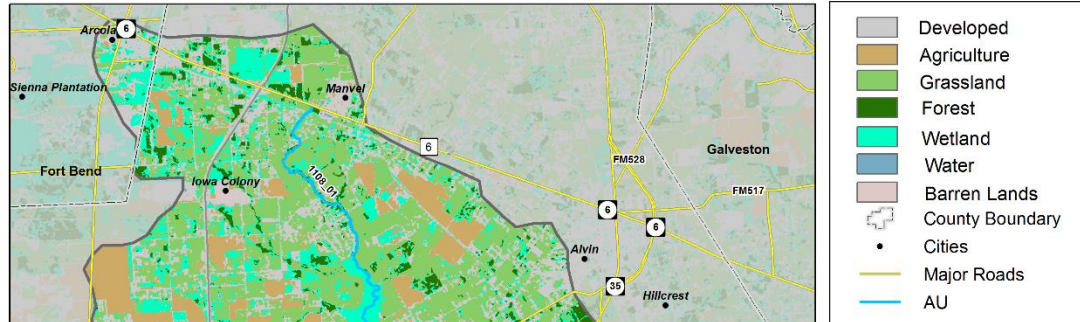
Chocolate Bayou Study 1107, 1108

Chocolate Bayou - Monitoring Site Locations

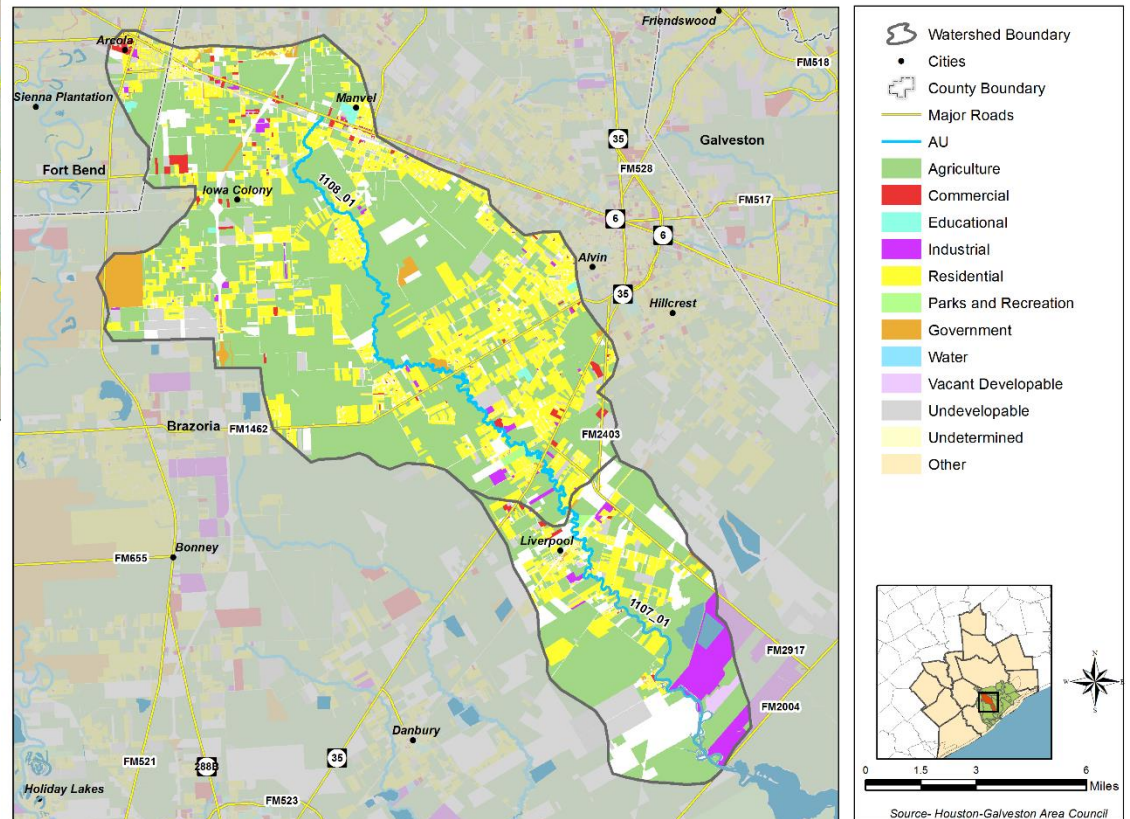


Chocolate Bayou: Land Cover/Land Use

Chocolate Bayou - Land Cover

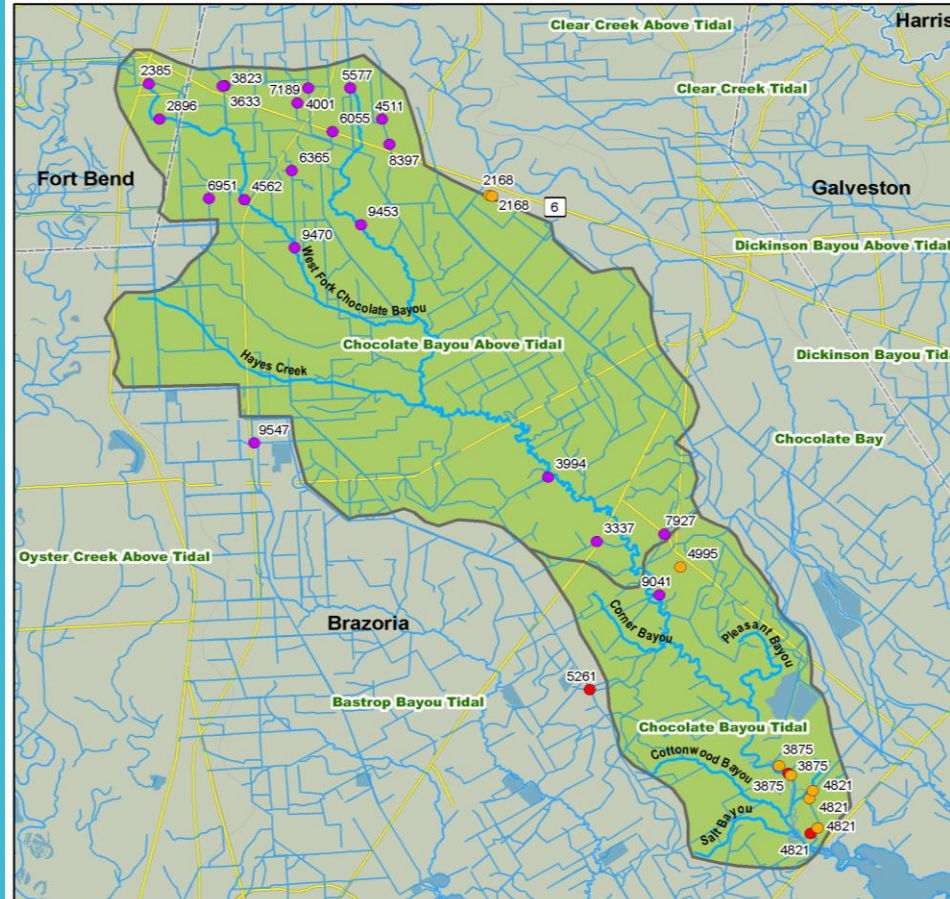


Chocolate Bayou - Land Use



Chocolate Bayou: WWTF Outfalls

Chocolate Bayou - WWTF Permitted Outfalls



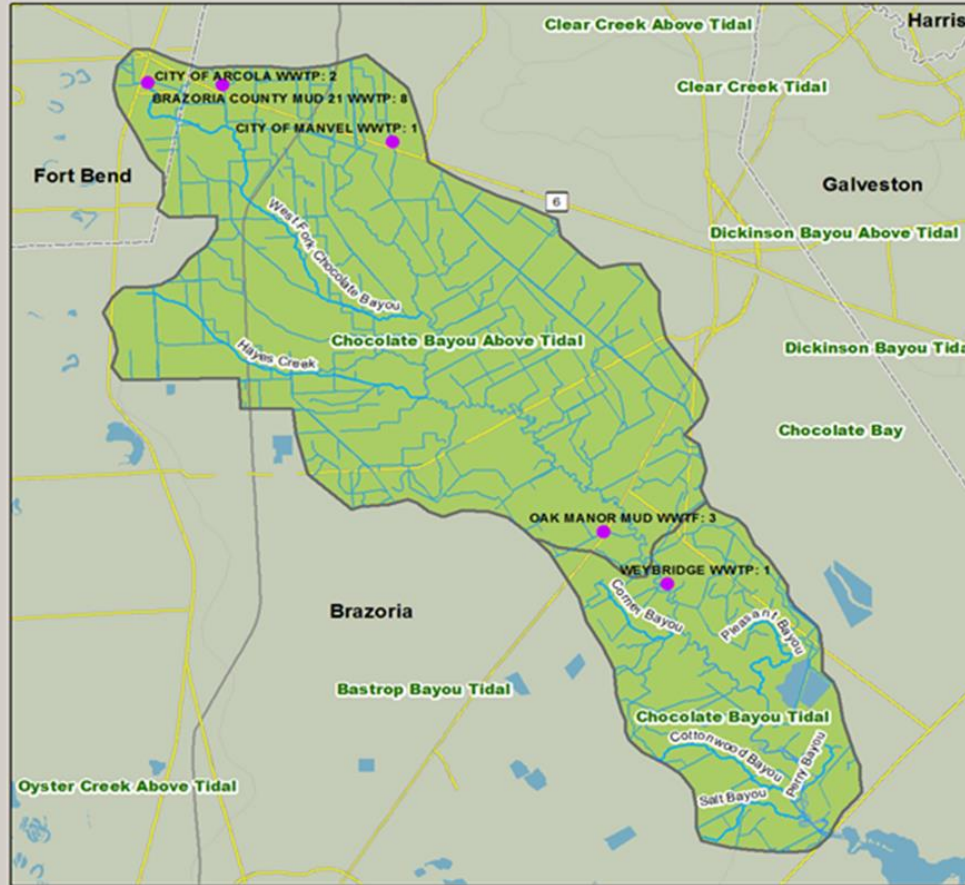
WWTF Outfalls

- Type, Bacteria Permit
- Industrial, Yes
 - Industrial, No
 - Domestic, Yes
 - + County Boundary
 - Major Roads



Sanitary Sewer Overflows

Chocolate Bayou - Sanitary Sewer Overflow (SSO)



Reported SSO

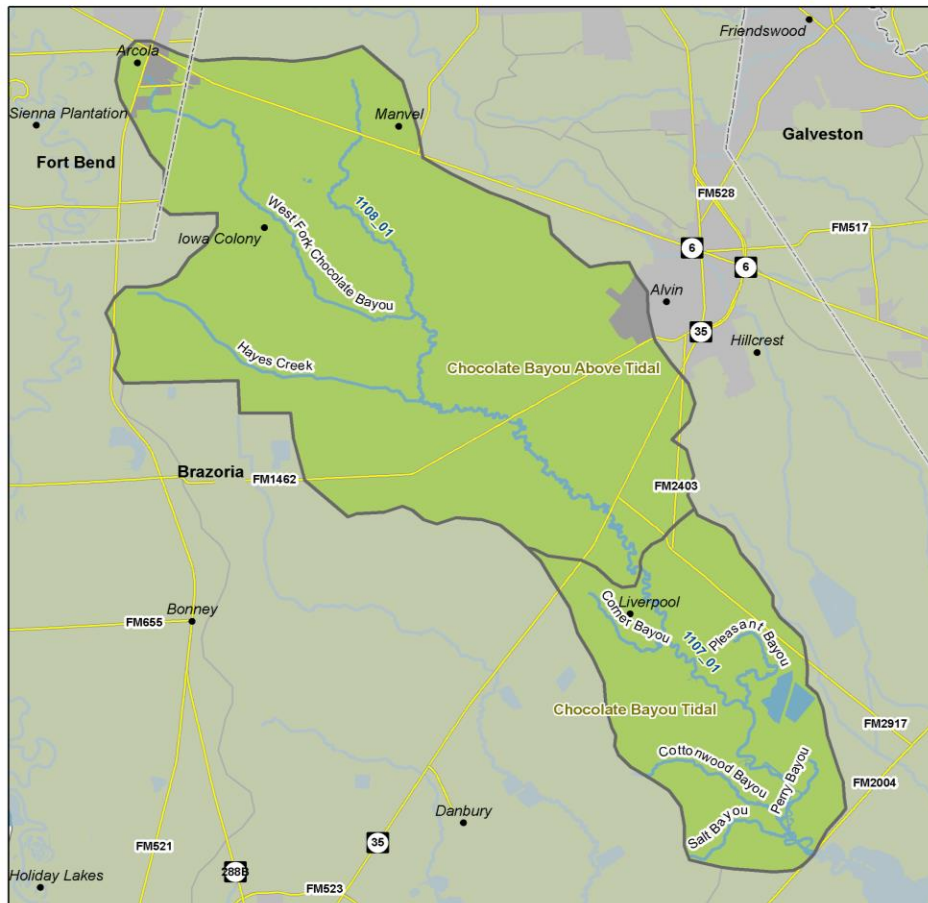
- Reported SSO
- County Boundary
- Major Roads
- Major Roads

AU ID	Watershed	SSO
1108	Chocolate Bayou Above Tidal	14
1107	Chocolate Bayou Tidal	1



Chocolate Bayou: MS4

Chocolate Bayou - MS4

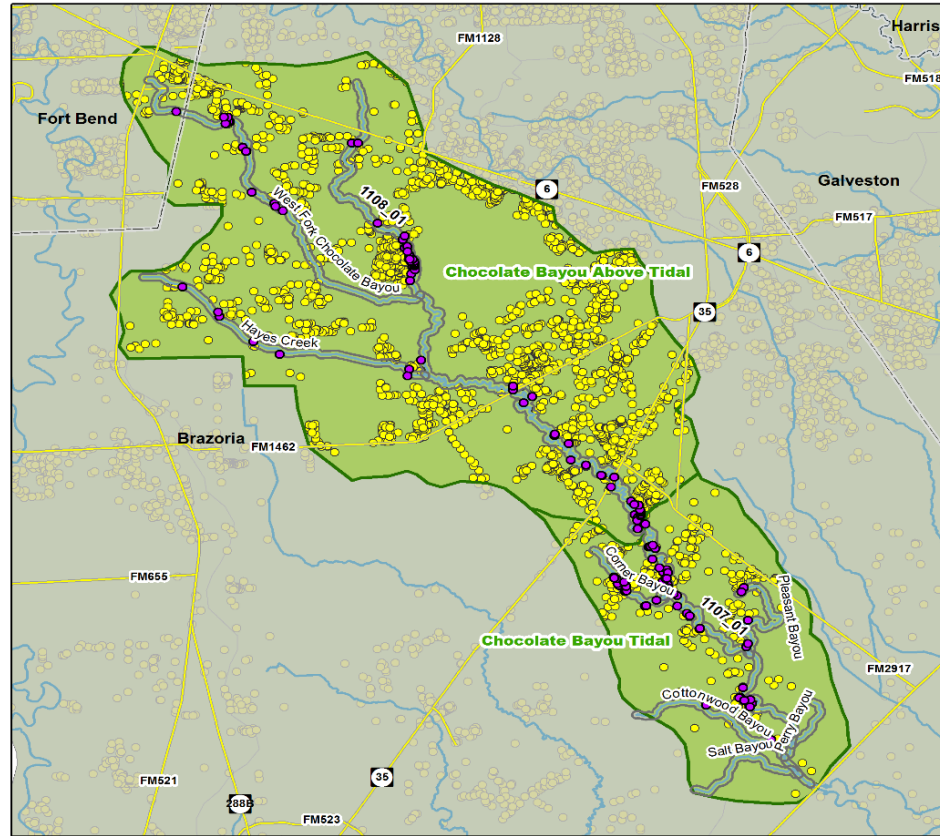


- County Boundary
- Cities
- Major Roads
- AU
- MS4 Permitted Areas
- Watershed Boundary

AU	MS4 Areas (Acres)	MS4 Areas %
1108	2171.6	3%
1107	0	0%

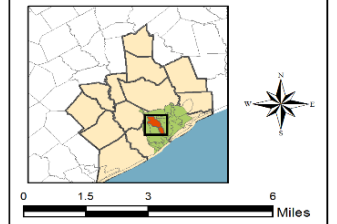
Chocolate Bayou: OSSFs

Chocolate Bayou - OSSF Permits



- OSSF Permits Within 500ft Buffer
- County Boundary
- Major Roads
- 500 ft Buffer
- Major Rivers
- OSSF Permits
- Watershed Boundary

AU ID	Buffer	Within buffer	Total Permits
1108	500 ft	49	2422
1107	500 ft	44	399



Other Sources

Brazoria County Livestock Figures, USDA 2012

Watershed	Area (Acres)	Cattle and Calves	Hogs and Pigs	Sheep and Lambs	Equine	Poultry
Brazoria County	869120	78907	4218	1435	4572	6033
1107	23464.17	2130	134	39	123	163
1108	70852.40	6433	344	117	373	492

Cat and Dog Population Estimate, 2012

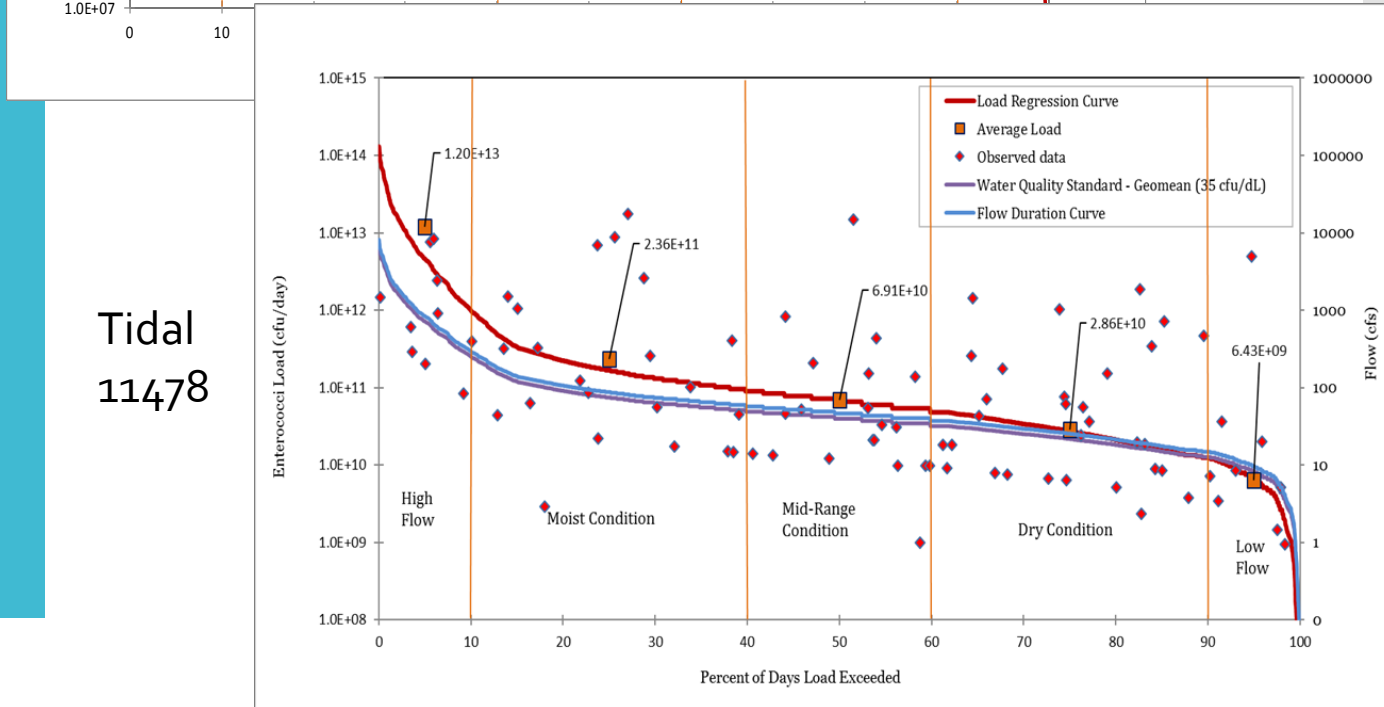
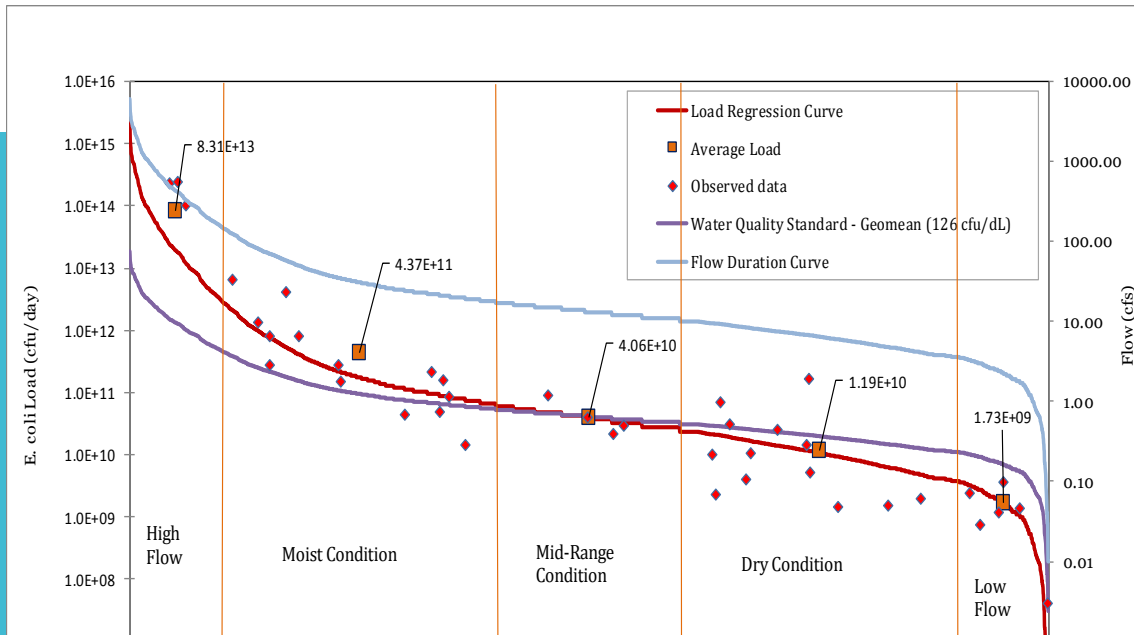
Segment	Estimated Households	Dogs	Cats
1107	519	303	331
1108	9,334	5,451	5,955
Total	9,853	5,754	6,286

Feral Hog Population Estimate, 2012

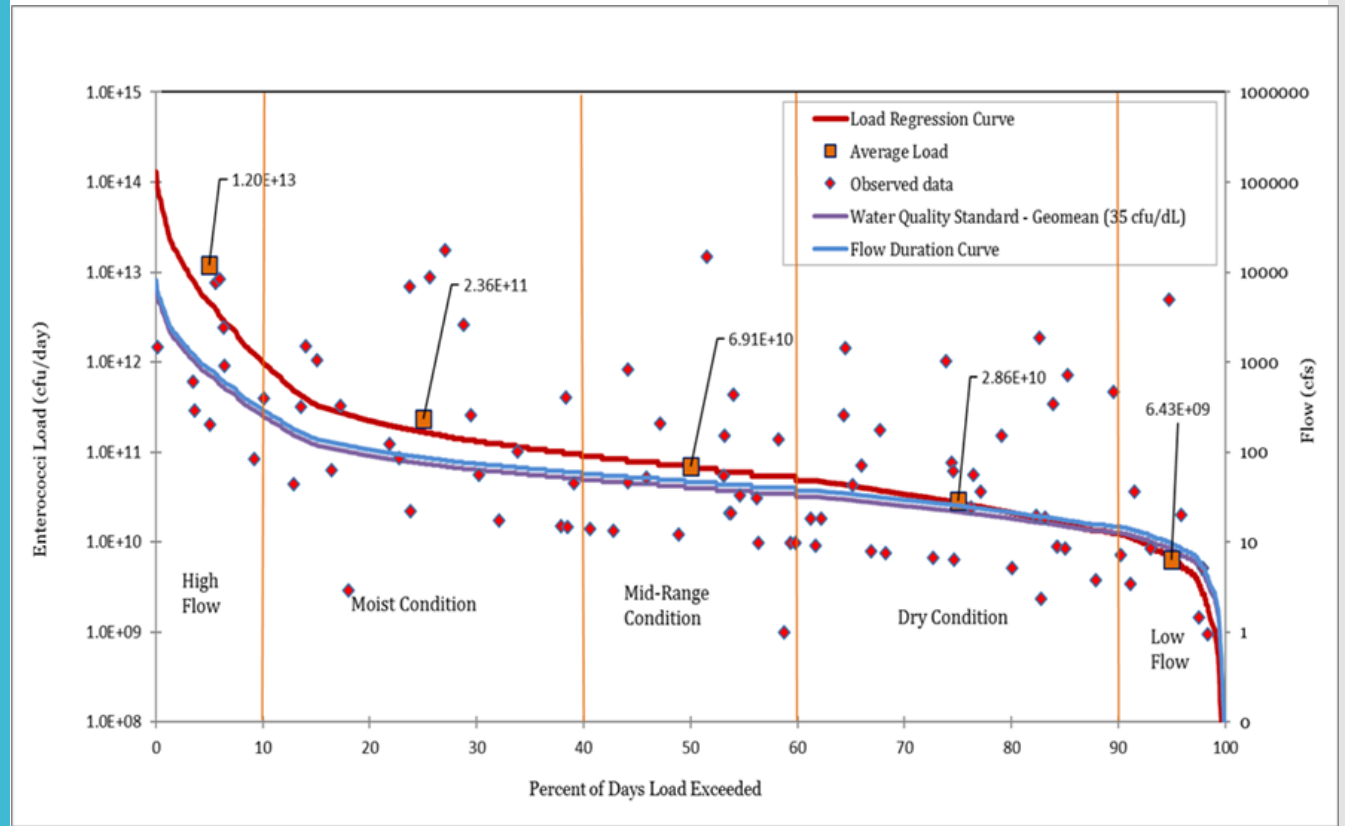
Segment	Suitable Area (Acres)	Suitable Area (Sq. Mile)	Feral Hog Population
1107	22,950.81	35.86	47-90
1108	69,784.50	109.04	142-273



Chocolate Bayou: LDCs



Load Reductions



Segment	High Flow Condition		Moist Condition		Mid-Range Condition		Dry Condition		Low Flow Condition	
	(0-10%)		(10-40%)		(40-60%)		(60-90%)		(90-100%)	
	Geometric Mean (MPN/100mL)	Required Percent Reduction	Geometric Mean (MPN/100mL)	Required Percent Reduction	Geometric Mean (MPN/100mL)	Required Percent Reduction	Geometric Mean (MPN/100mL)	Required Percent Reduction	Geometric Mean (MPN/100mL)	Required Percent Reduction
1107	305.50	84.31%	87.09	56.63%	57.44	40.45%	44.46	18.82%	27.08	0.00%
1108	3488.08	92.53%	343.38	47.28%	118.47	0.00%	71.34	0.00%	30.66	0.00%

TMDL (Preliminary)

$$\text{TMDL} = \text{WLA} + \text{LA} + \text{FG} + \text{MOS}$$

Watershed	Segment	TMDL (Billion MPN/day)	MOS (Billion MPN/day)	WLA _{wwtf} (Billion MPN/day)	WLA _{sw} (Billion MPN/day)	LA (Billion MPN/day)
Chocolate Bayou Tidal	1107	718.01	21.08	44.72	18.46	633.75
Chocolate Bayou Above Tidal	1108	1,334.80	66.74	142.63	57.96	1,067.47

What's a Coordination Committee?

A proactive group of local and regional stakeholders helping to create and drive content for the TMDL / I-Plan documents.

Role of the Coordination Committee

- Attend Public Meetings
- Participate in Work Groups
- Act as Community Ambassadors
- Provide Input of Priorities for the Watershed
- Identify Appropriate Management Measures
- Provide Input on Documents & Reports

What are Management Measures?

Management measures are a menu of voluntary strategies stakeholders can use to reduce bacteria levels in Chocolate Bayou.

Small Group Discussion

(1) POTENTIAL INTERESTS

- Citizens
- Education
- Environmental Groups
- Government Interest
- Industry and Business
- Parks / Recreation
- Resource Agency
- Watersheds
- Wildcard
- Others?

(2) NUMBER OF REPRESENTATIVES

- Ideal size of the committee?
- Other committees range from 31 members to 18.
- Number should be fairly distributed by interest.

(3) PROCESS TYPES

FORMAL

- Formal nominations
- Recorded votes
- Written rules of order

INFORMAL

- Informal nominations
- Consensus-based
- Ground rules

(4) MISSING PIECES

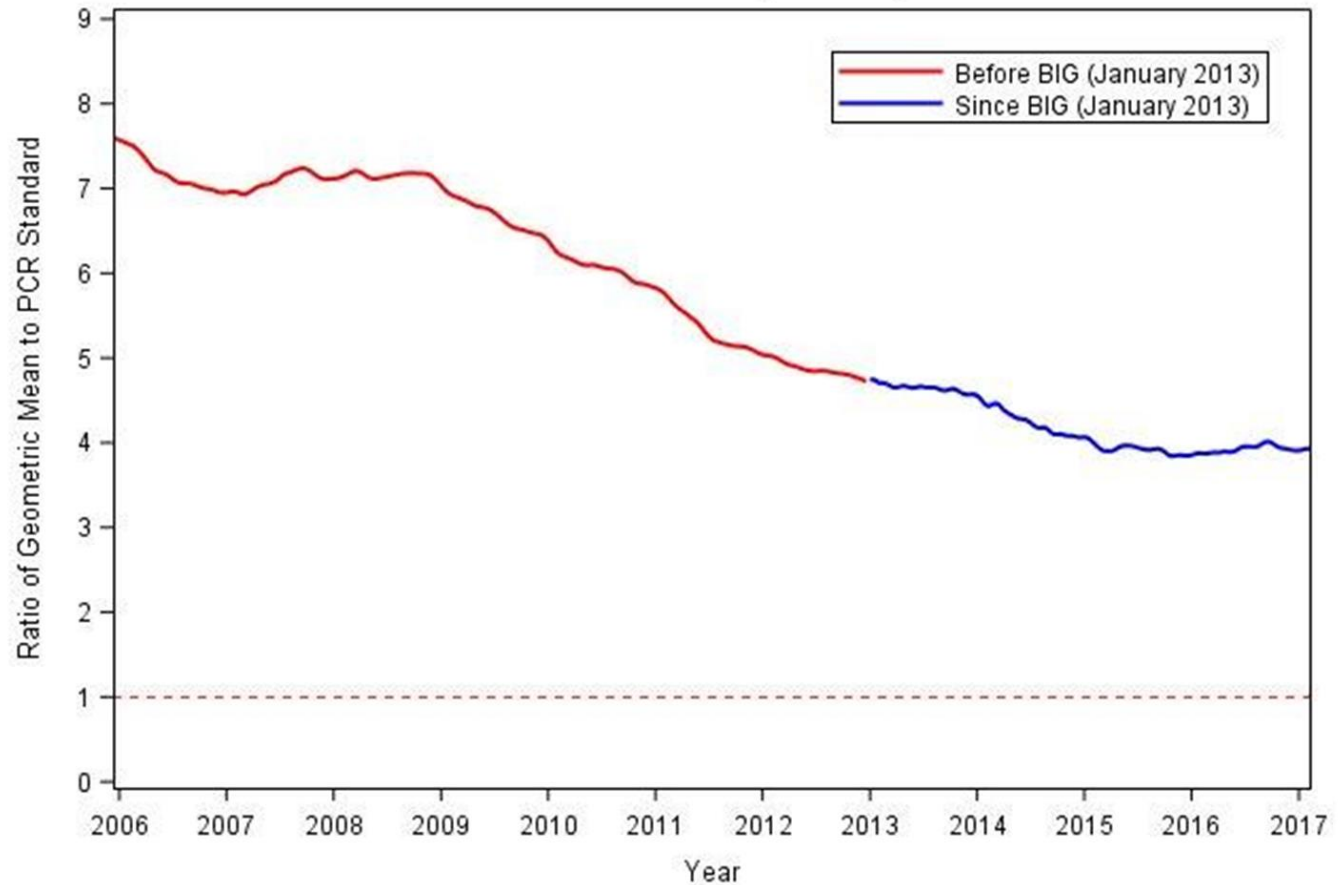
- Who should be here that isn't?
- Are we missing major industry or stakeholder groups?

Small Group Discussion - Results

1. Return to Larger Group
2. Review Results of break-out session
 - i. Interests to be represented
 - ii. Appropriate committee size
 - iii. Preferred process type
 - iv. Missing people & pieces?
3. Group Discussion of Results
4. Next Steps

Do Watershed Plans Work?

Bacteria Trend in BIG Project Area, 2006-2016



Dotted Red Line represents the Primary Contact Recreation Standard

Implementation:
Workshops,
Training and
Initiatives



Texas Stream Team
Training – Spring 2017

Texas Watershed
Stewards Training/July
11, 2017



Questions?

