

CANEY CREEK WATERSHED TMDL PROJECT

July 11, 2019

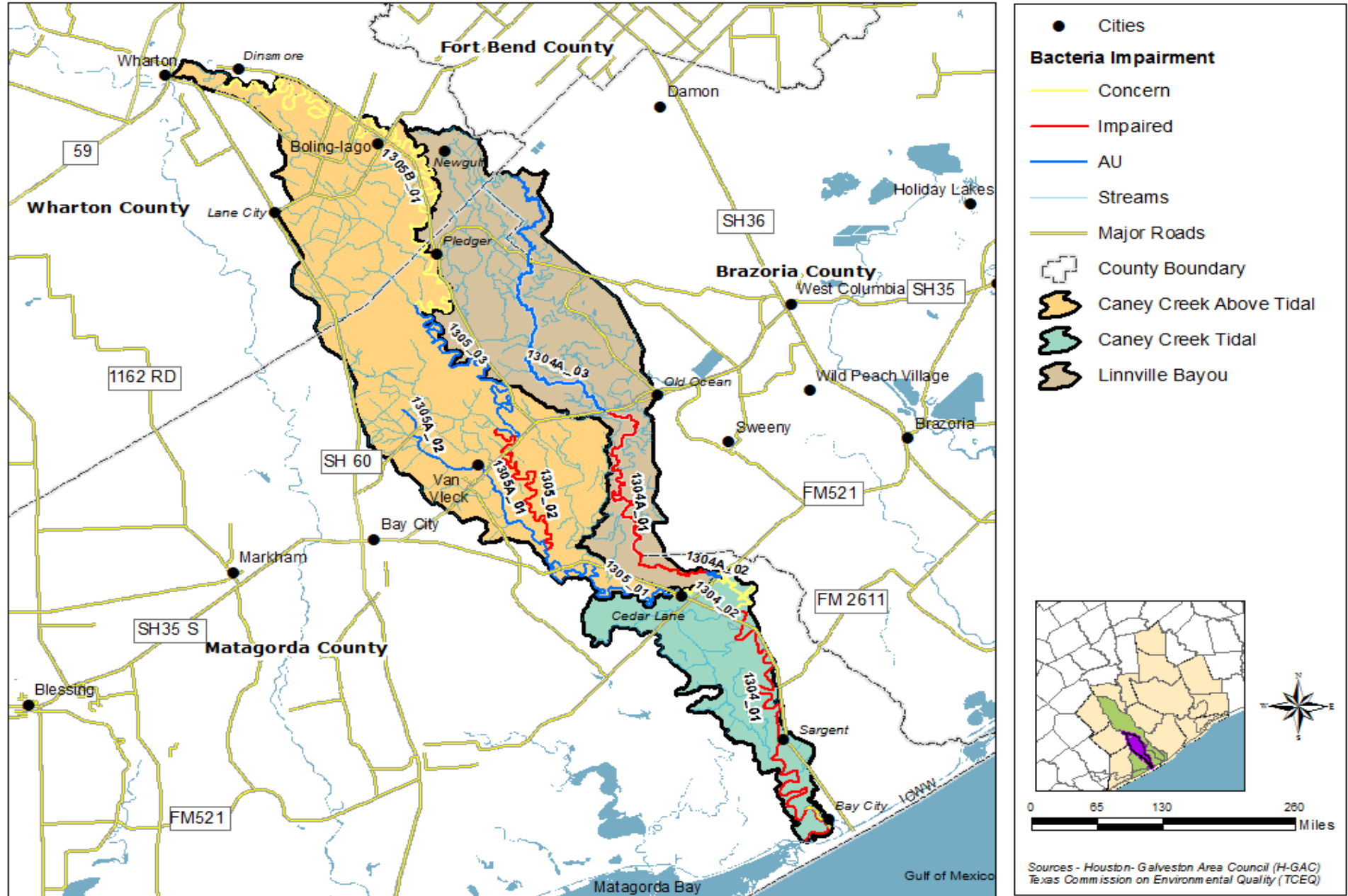
Steven Johnston



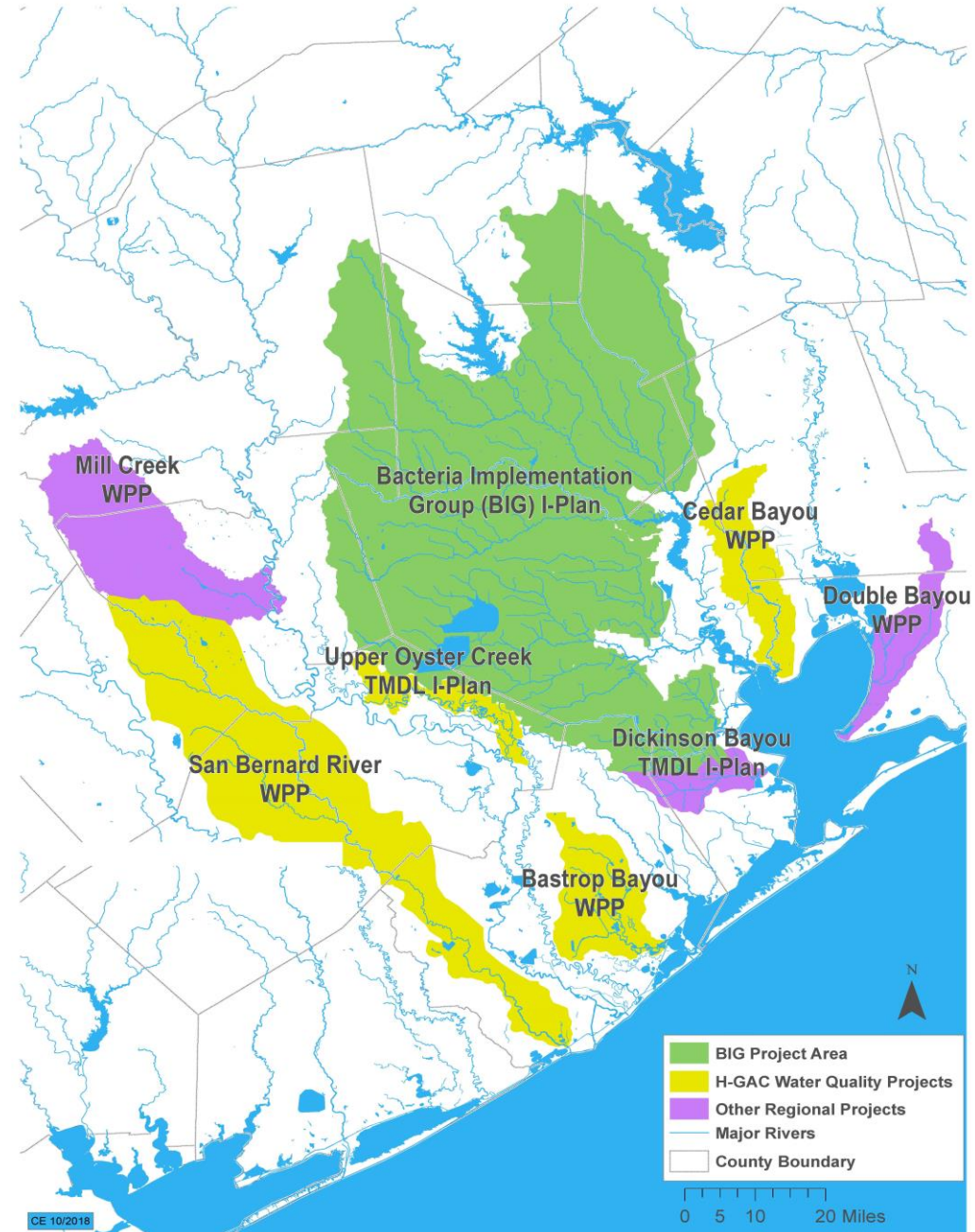
Meeting Agenda

- 5:30 – 5:35 Welcome - Open Meeting
- 5:35 – 5:45 Project Status Update
- 5:45 – 6:00 Caney Creek Data Review
- 6:00 – 7:00 Inform Bacteria Reduction Plan
- 7:00 – 7:15 Wrap Up and Next Steps
- 7:15 – 7:30 Open Q&A / Adjourn

CANEY CREEK WATERSHED

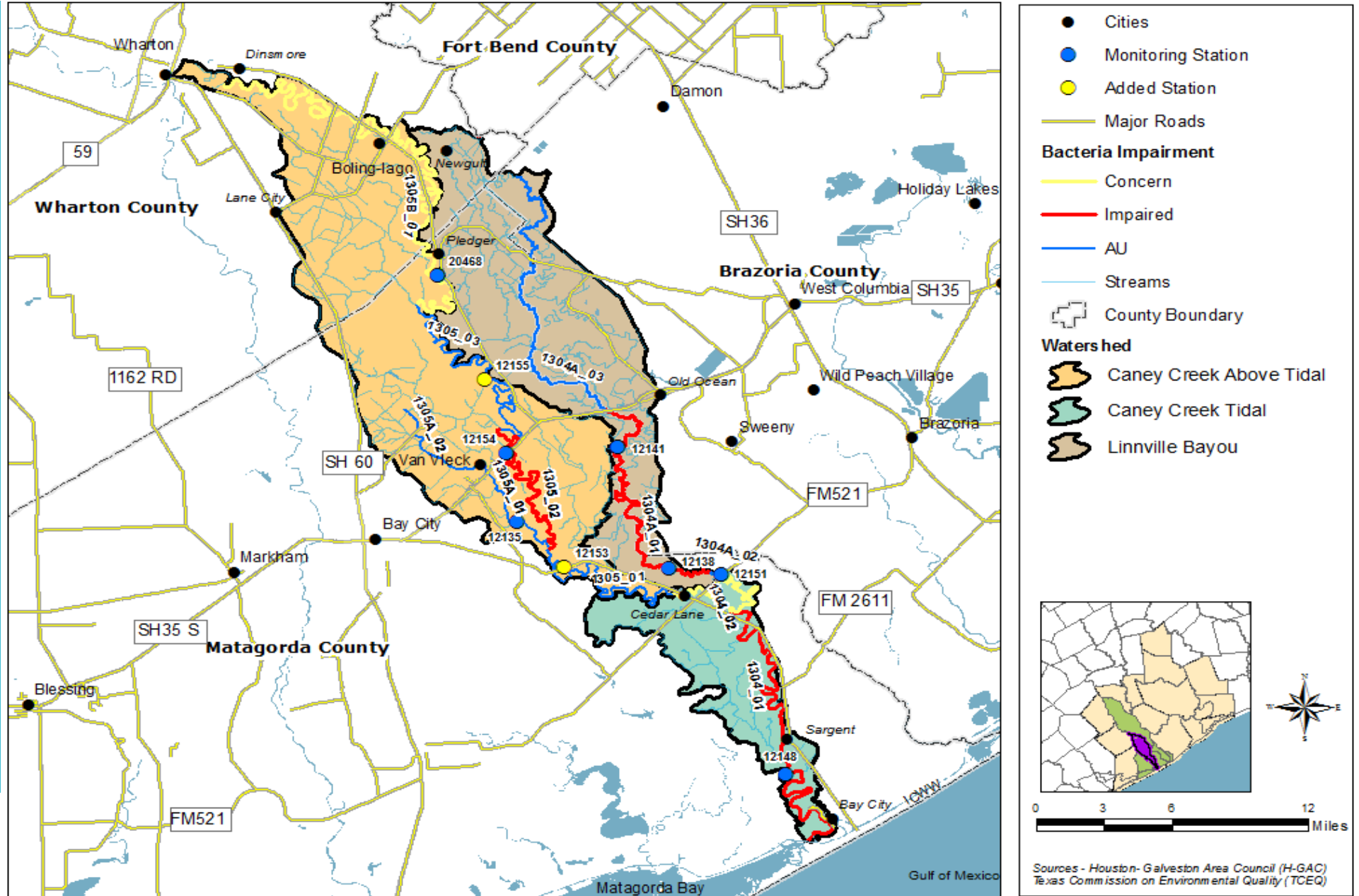


Approved Watershed Protection Plans (WPPs) & Total Maximum Daily Load (TMDL) Implementation Plans (I-Plans)

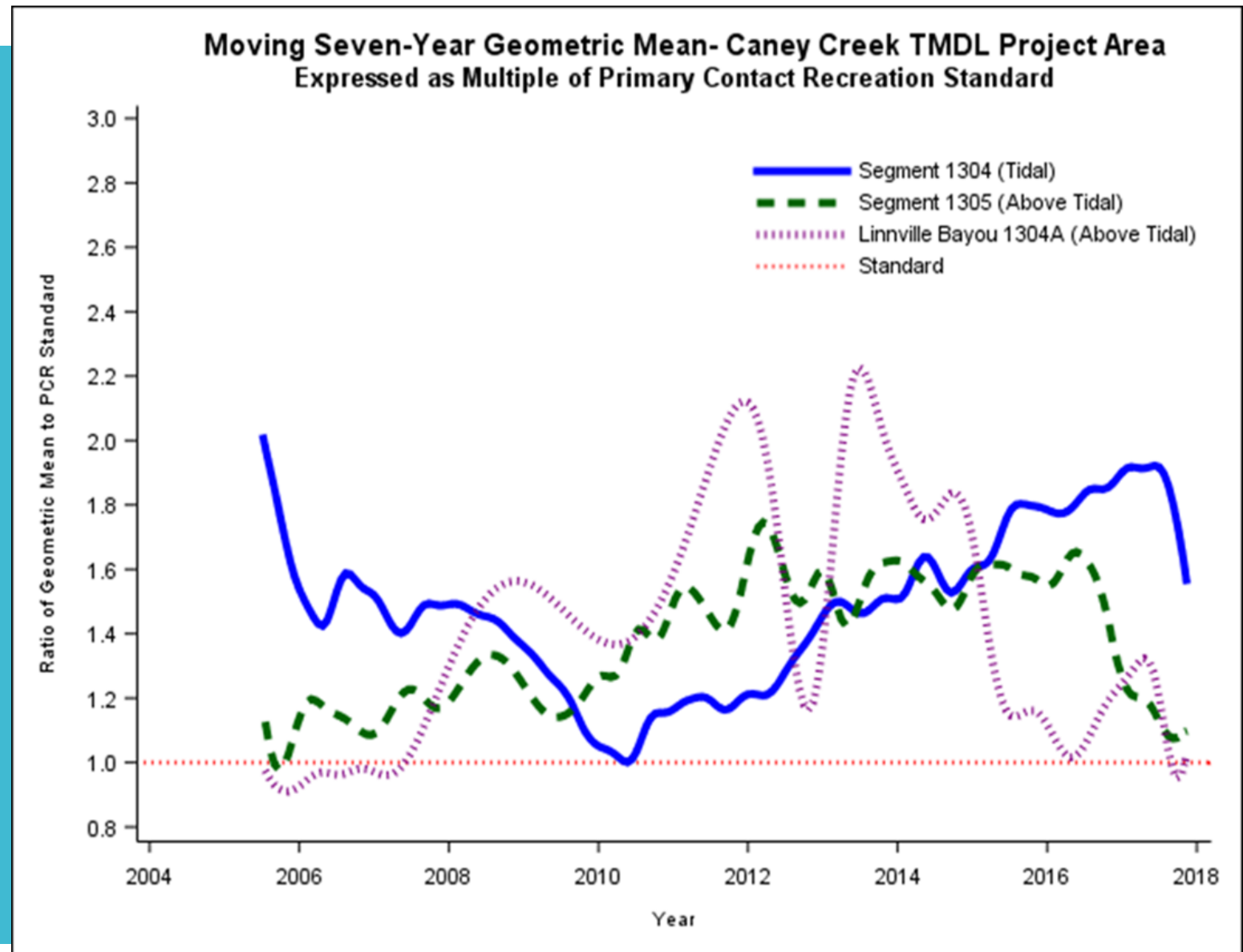


Watershed-Based Plans

MONITORING STATIONS

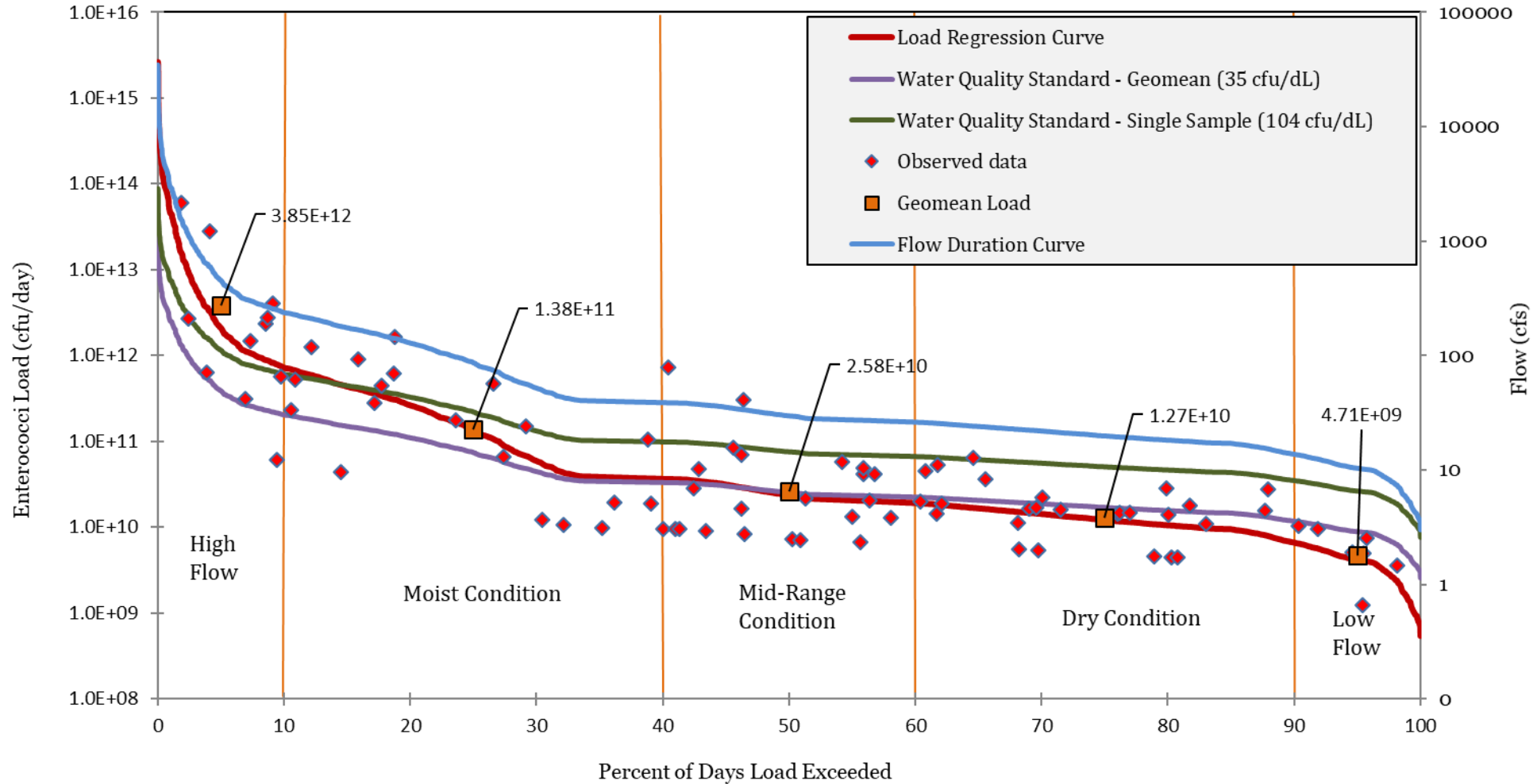


Fecal Bacteria Trends



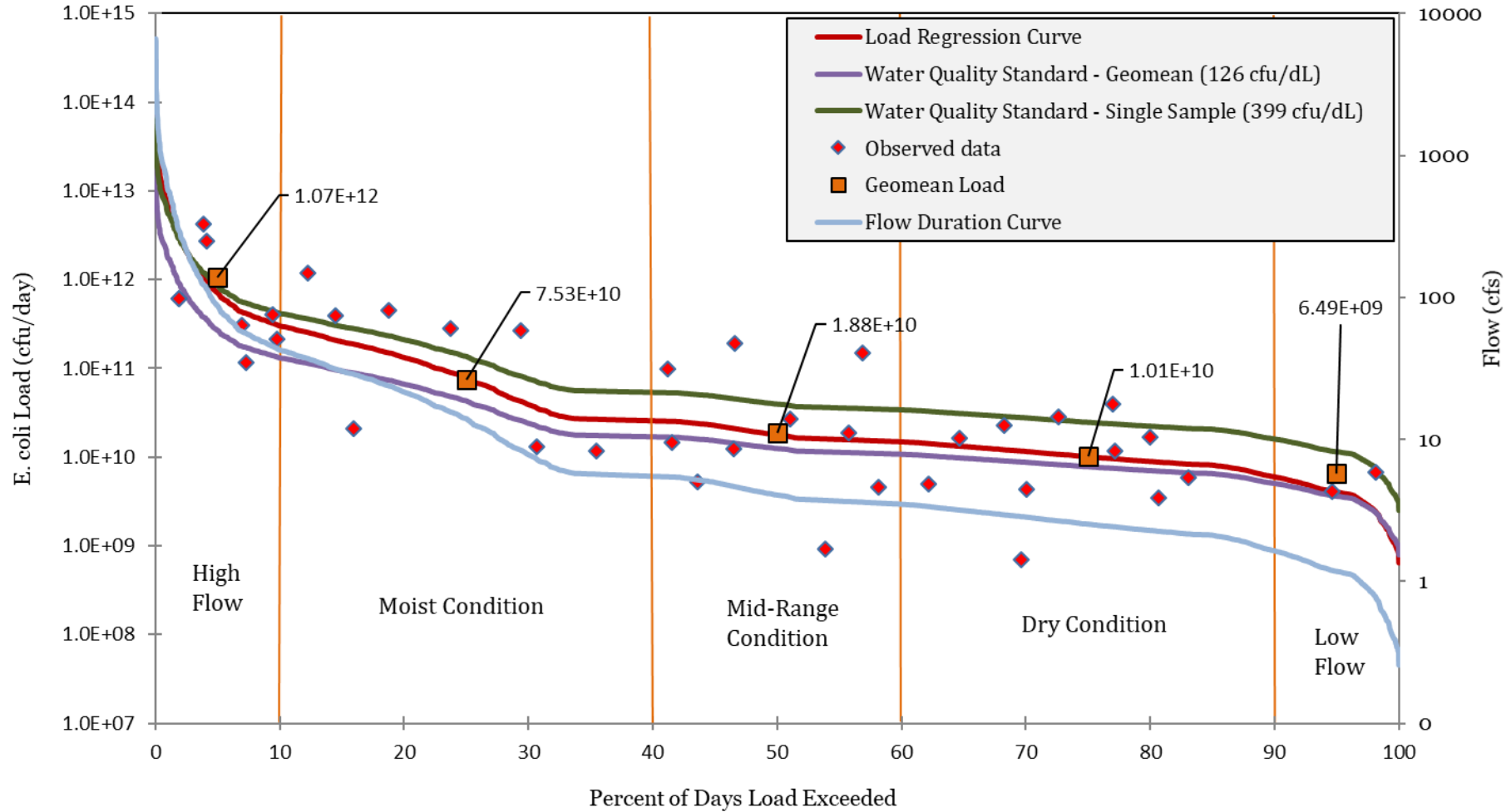
LOAD DURATION CURVES

Caney Creek Tidal 1304_01



LOAD DURATION CURVES

Linnville Bayou 1304A_01



TMDL

$$\text{TMDL} = \text{WLA} (\text{WLA}_{\text{wwtf}} \text{ and } \text{WLA}_{\text{sw}}) + \text{LA} + \text{FG} + \text{MOS}$$

Draft TMDL – (Preliminary)

AU	Indicator Bacteria	TMDL (Billion MPN/day)	MOS (Billion MPN/day)	WLA _{wwtf} (Billion MPN/day)	WLA _{sw} (Billion MPN/day)	LA (Billion MPN/day)
1304_01	Enterococci	387.70	2.32	0.59	0.93	383.86
1304A_01	<i>E. coli</i>	268.66	13.43	0.24	9.08	245.91

BACTERIA REDUCTION

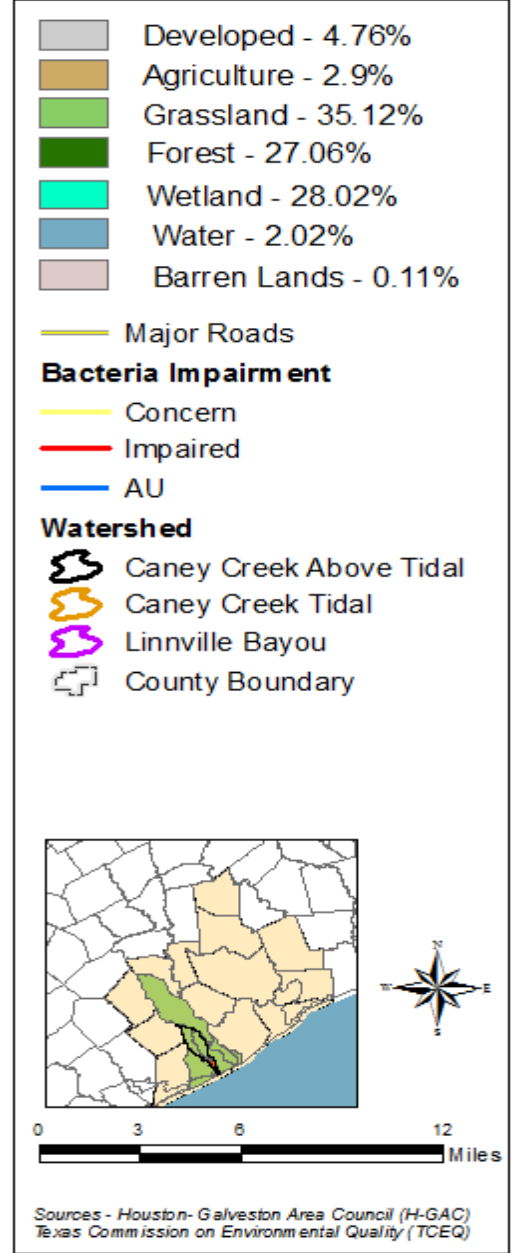
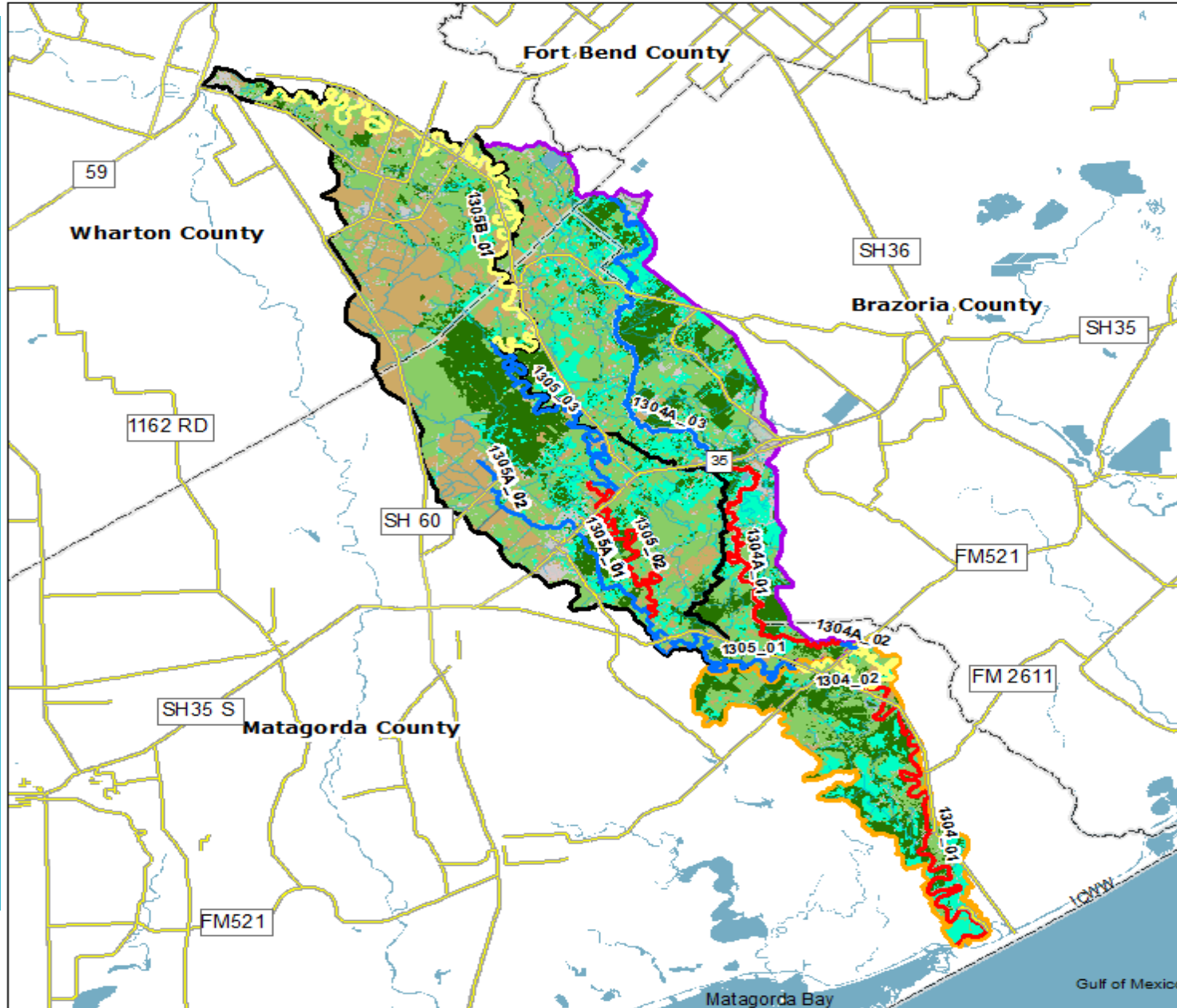
Flow Condition	Exceedance Range	1305_02		1305A_01		1304_02	
		E. coli		E. coli		Enterococci	
		126 MPN/100 mL		126 MPN/100 mL		35 MPN/100mL	
		Geometric Mean (MPN/100mL)	Required Percent Reduction	Geometric Mean (MPN/100mL)	Required Percent Reduction	Geometric Mean (MPN/100mL)	Required Percent Reduction
High Flow	(0-10%)	663.22	81.00%	892.53	85.88%	133.65	73.81%
Moist	(10-40%)	218.79	42.41%	158.85	20.68%	64.09	45.39%
Mid-Range	(40-60%)	122.33	0.00%	63.76	0.00%	43.56	19.64%
Dry	(60-90%)	95.51	0.00%	44.71	0.00%	36.96	5.31%
Low Flow	(90-100%)	78.46	0.00%	24.76	0.00%	27.47	0.00%

Possible Sources of Fecal Bacteria

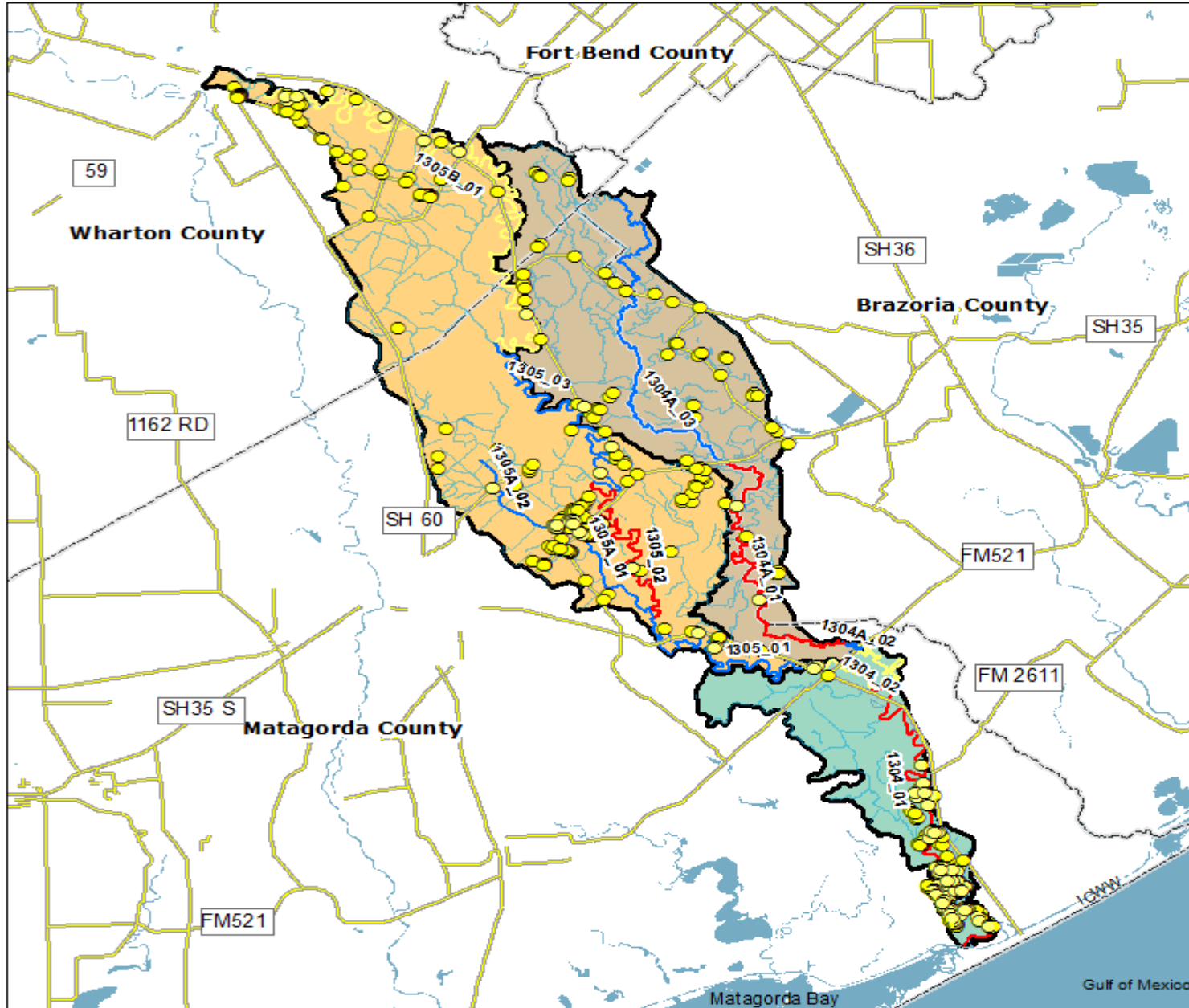
- Domestic pets (dogs, cats)
- Leaking wastewater infrastructure
- Wildlife (deer, bird, raccoon, etc.)
- Feral Hogs
- Onsite Sewage Treatment
- Agriculture/Pasture



LAND COVER



OSSFs MEASURES



- OSSF Permits
- Streams
- ⊕ County Boundary
- Roads

Bacteria Impairment

- Concern
- Impaired

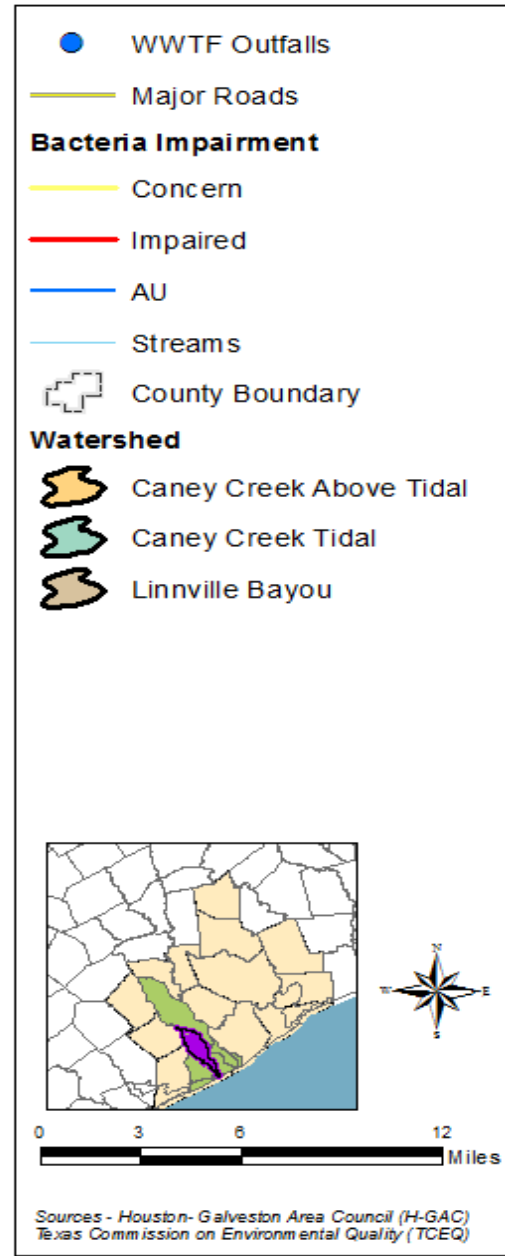
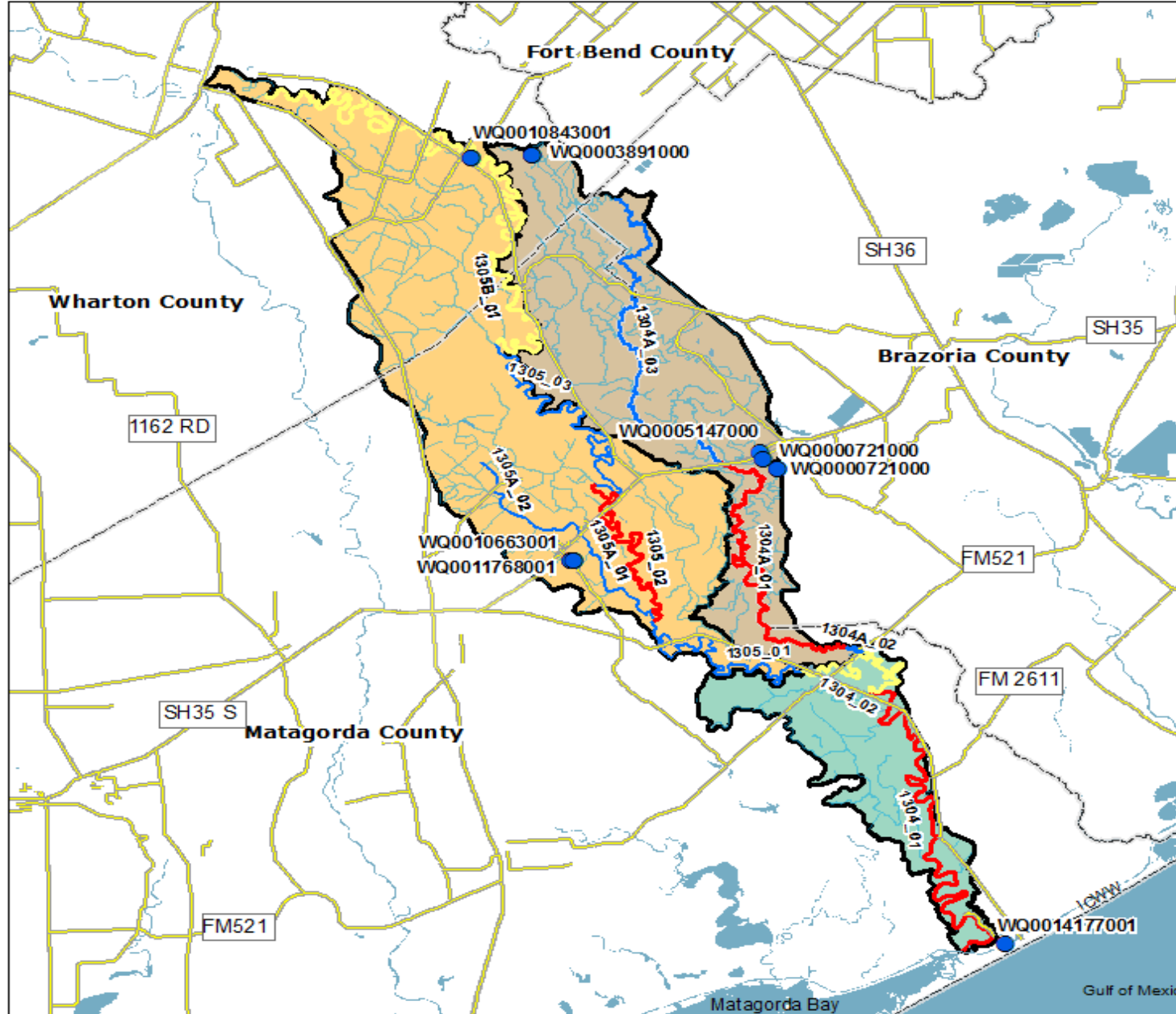
Watershed

- Caney Creek Above Tidal
- Caney Creek Tidal
- Linnville Bayou

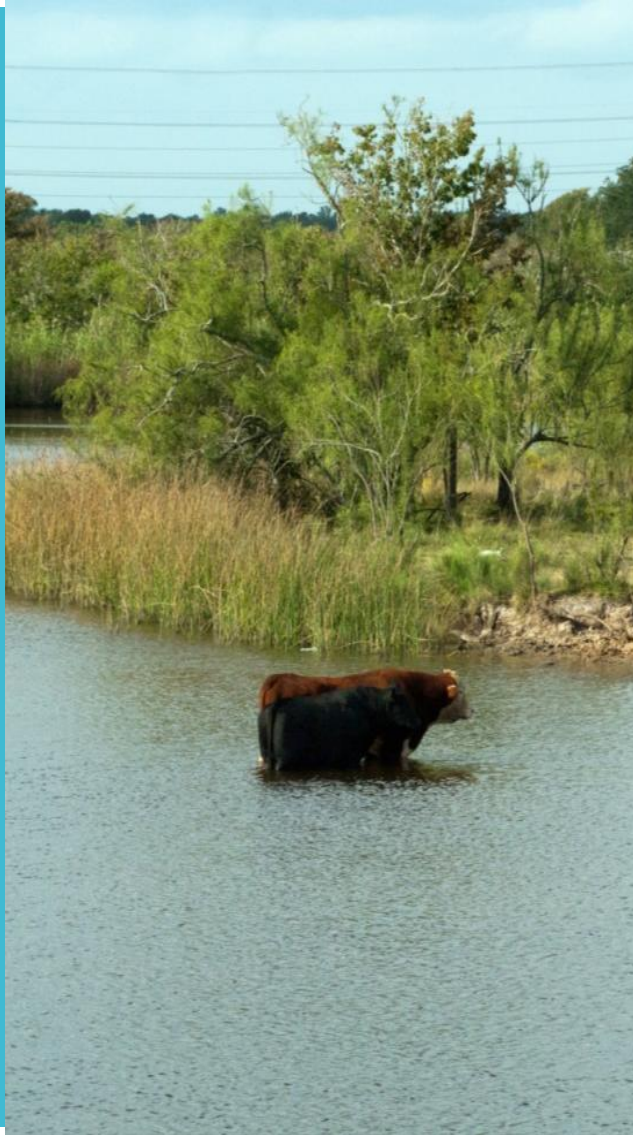
0 3 6 12 Miles

Sources - Houston-Galveston Area Council (H-GAC)
Texas Commission on Environmental Quality (TCEQ)

WWTF MEASURES



POTENTIAL AGRICULTURAL SOURCE MEASURES



Watershed	Pasture/Grassland Area (Acres)	Cattle and Calves	Hogs and Pigs	Sheep and Lambs	Equine	Poultry
Brazoria	262112	78907	4218	1435	4572	6033
Matagorda	240492	53283	47	304	1141	1261
Wharton	256621	57168	131	395	1687	242
Caney Creek Tidal	9904.68	2194	2	13	47	52
Linnville Bayou	23429.63	5804	127	63	215	244
Caney Creek Above Tidal	40842.56	9069	13	56	224	144



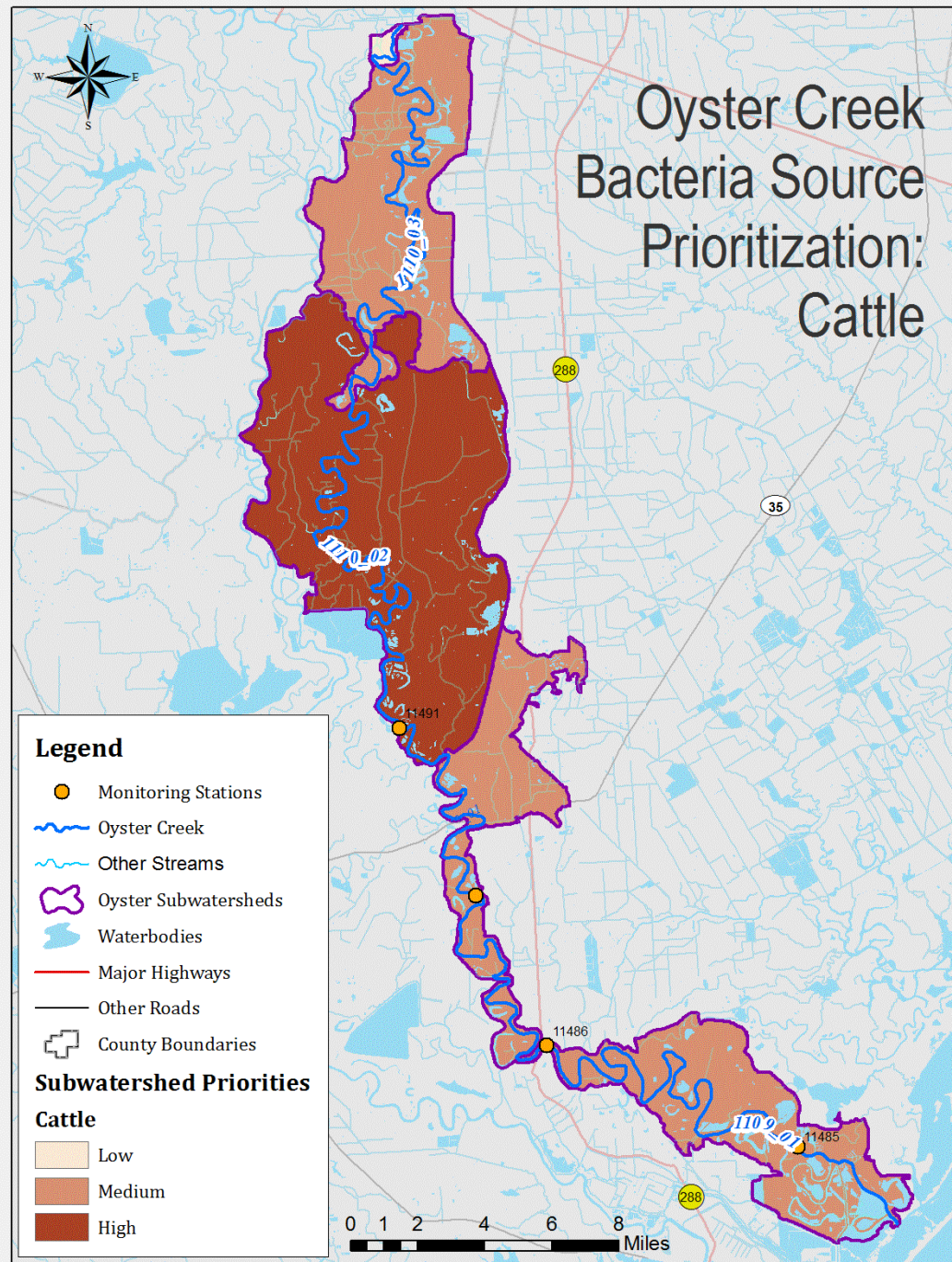
PETs / FERAL HOGS MEASURES



Segment	Estimated Households	Dogs	Cats
Caney Creek Tidal	185	108	118
Linnville Bayou	357	208	228
Caney Creek Above Tidal	3,003	1,754	1,916
Total	3,545	2,070	2,262

Watershed	Suitable Area (Acres)	Suitable Area (Sq. Mile)	Feral Hog Population
Caney Creek Tidal	28,182.51	44.04	88-108
Linnville Bayou	63,782.74	99.66	199-244
Caney Creek Above Tidal	100,742.43	157.41	315-386

AGRICULTURE MEASURES



Questionnaire

- Four Management Areas:
 - Agriculture
 - OSSF (Septic Systems) and Illegal Dumping
 - Feral Populations and Pet Wastes
 - Wastewater Management and Sanitary Collection
- Prioritize Within Each Area:
 - Rank Within Each Source Type
 - Rank Within Each Best Practice
- Comments
 - Identify Implementers
 - Consider an element that is missing – Source Area, Practice

CURRENT IMPLEMENTATION

- Coastal Communities
 - www.CoastalCommunitiesTx.com
- OSSF SEP
 - ossf@h-gac.com
- TrashBash© Lake Jackson
 - www.trashbash.org
- Texas Stream Team
 - Lake Jackson – Sept. 2019
- Imp. Workshops
 - Watershed Stewards (July 2017)
 - OSSF (July 2017)
 - Green Infrastructure (June 12, 2019)
 - Ag/Feral Hog?



NEXT STEPS in the PROCESS



- CC – Management Strategies (July 2019)
- TMDL/WPP Draft Measures Submitted to TCEQ (July 2019)
- Leadership Forum (Nov 2019)
- CC – Review Draft I-Plan/WPP (Nov 2019)

Thank You!

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