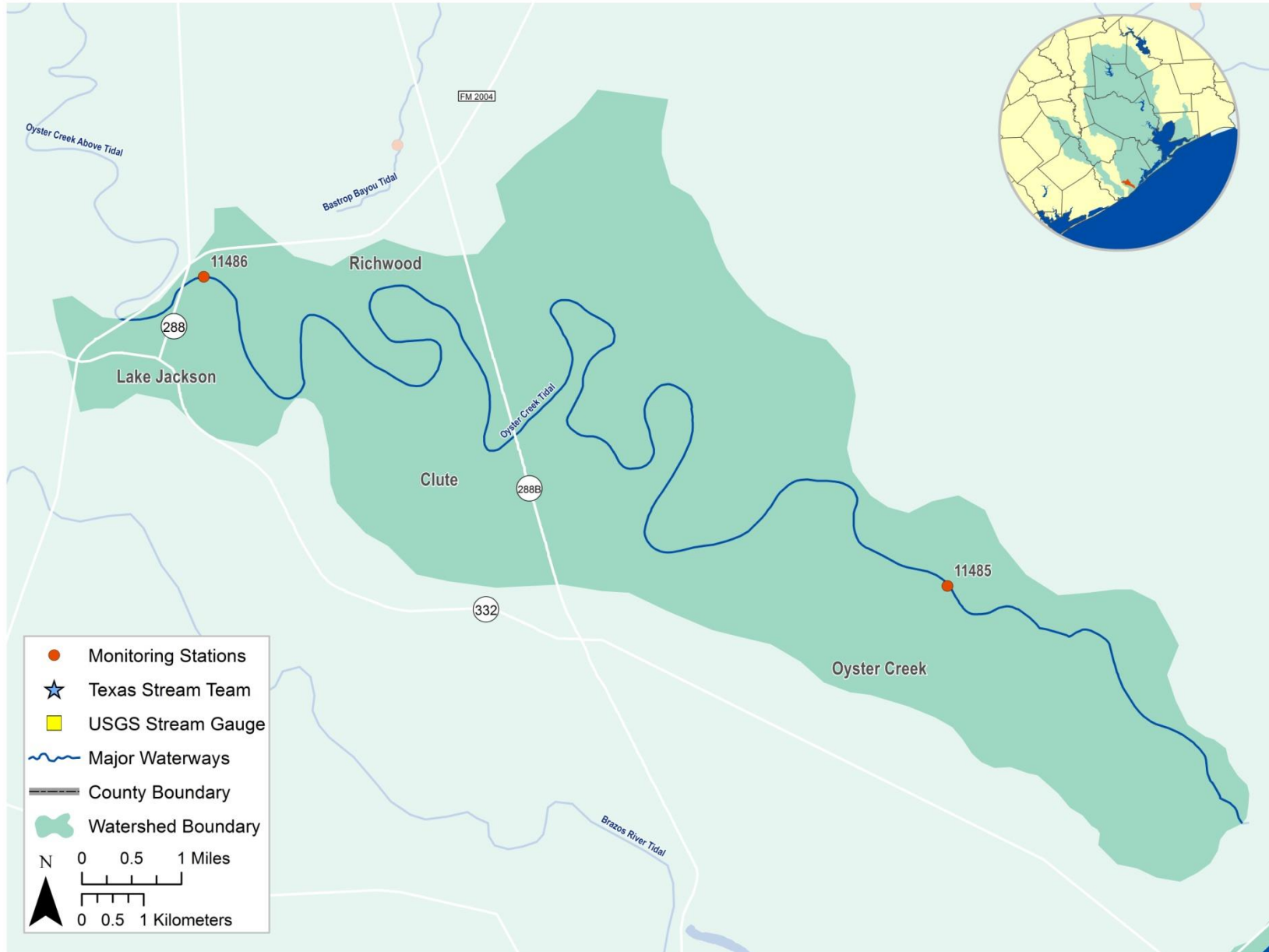
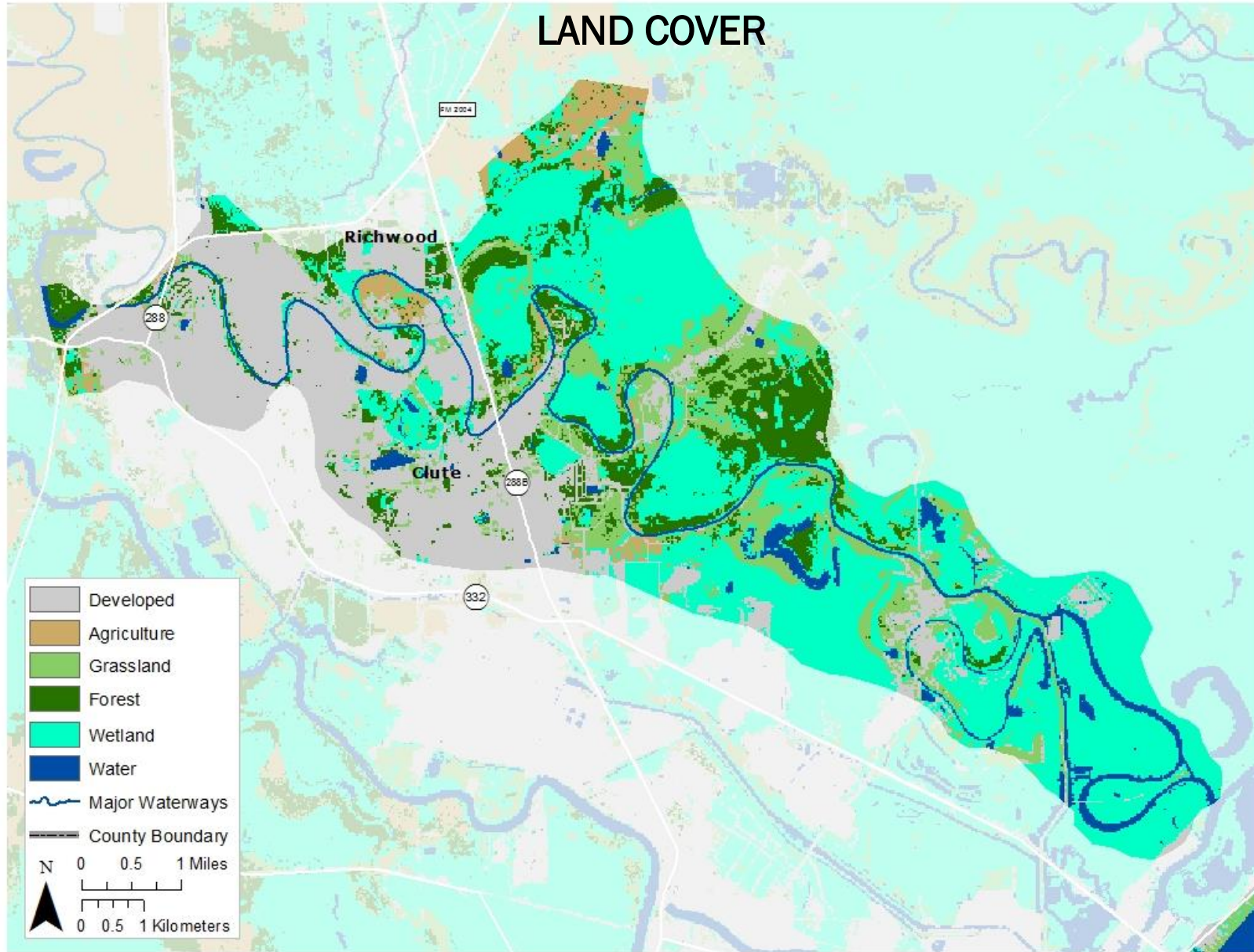


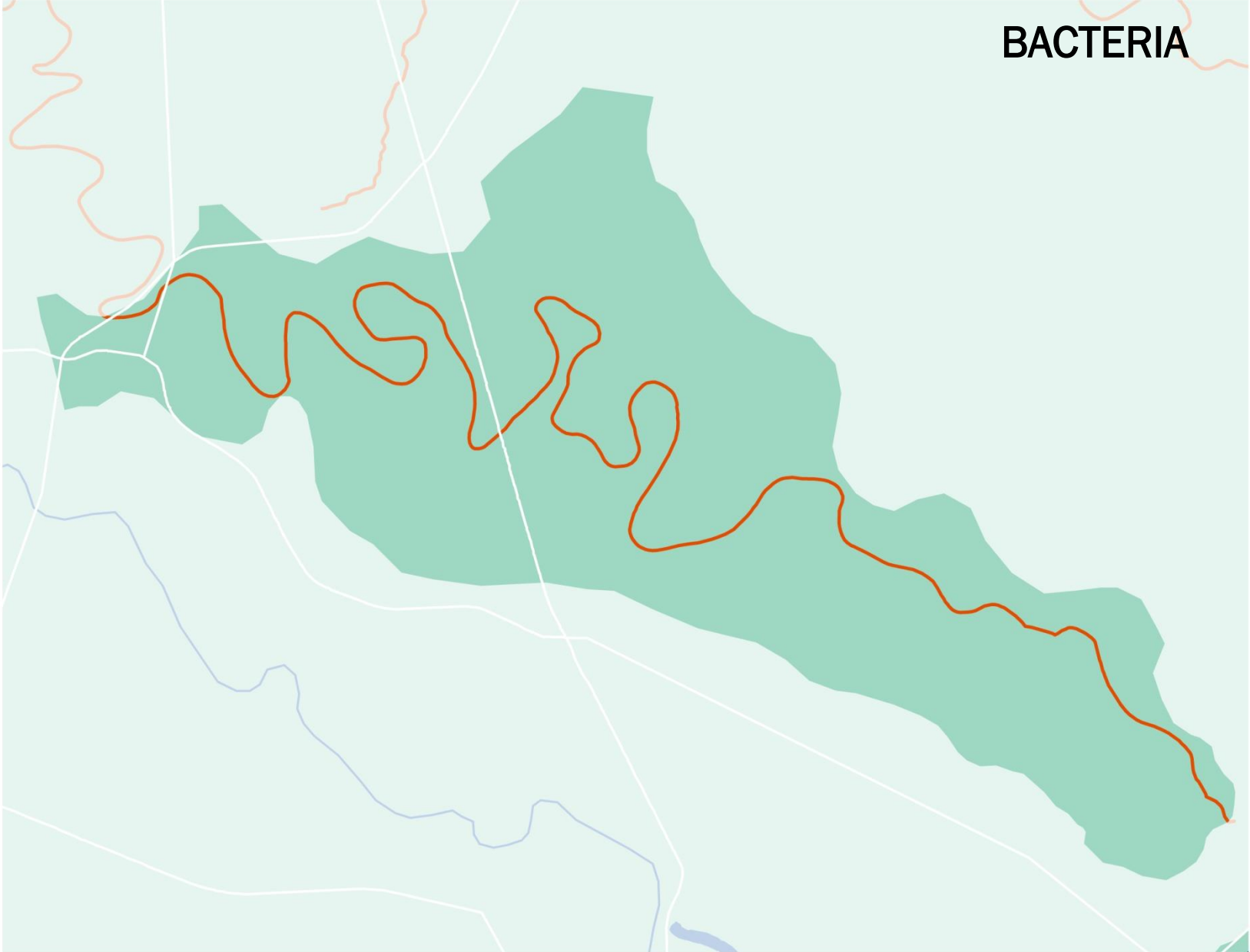
OYSTER CREEK TIDAL - SEGMENT 1109



OYSTER CREEK TIDAL - SEGMENT 1109

LAND COVER





BACTERIA



Impairment



Concern



No Impairments or Concerns

Segment Number: 1109		Name: Oyster Creek Tidal			
Length:	25 miles	Watershed Area:	32 square miles	Designated Uses:	Primary Contact Recreation 1; Aquatic Life Use
Number of Active Monitoring Stations:	2	Texas Stream Team Monitors:	0	Permitted Outfalls:	3
Description:	From the Intracoastal Waterway confluence in Brazoria County to a point 100 meters (110 yards) upstream of FM 2004 in Brazoria County.				

Percent of Stream Impaired or of Concern						
Segment ID	PCBs/Dioxin	Bacteria	Dissolved Oxygen	Nutrients	Chlorophyll a	Other
1109	-	100	-	-	-	-

Segment 1109

Standards	Tidal Stream	Screening Levels	Tidal Stream
Temperature (°C/°F):	35 / 95	Ammonia-N (mg/L):	0.46
Dissolved Oxygen (24-Hr Average) (mg/L):	4.0	Nitrate-N (mg/L):	1.10
Dissolved Oxygen (Absolute Minima) (mg/L):	3.0	Orthophosphate Phosphorus (mg/L):	0.46
pH (standard units):	6.5-9.0	Total Phosphorus-P (mg/L):	0.66
Enterococci (MPN/100mL) (grab):	104	Chlorophyll a (µg/L):	21
Enterococci (MPN/100mL) (geometric mean):	35		

FY 2016 Active Monitoring Stations				
Site ID	Site Description	Frequency	Monitoring Entity	Parameter Groups
11485	Oyster Creek at FM 523	Quarterly	TCEQ	Field, Conventional, Bacteria, Chlorophyll a
11486	Oyster Creek at That-Way Drive	Quarterly	UI	Field, Conventional, Bacteria

Water Quality Issues Summary

Issue	2014 Assessment <i>I - Impaired</i> <i>C - Of Concern</i>	Possible Causes / Influences / Concerns Voiced by Stakeholders	Possible Solutions / Actions To Be Taken
Elevated Levels of Indicator Bacteria	1109 I	<ul style="list-style-type: none"> ▪ Rapid urbanization and increased impervious cover ▪ Animal waste from agricultural production, hobby farms, and riding stables ▪ Constructed stormwater controls failing ▪ Improper or no pet waste disposal ▪ Developments with malfunctioning OSSFs ▪ Direct and dry weather discharges ▪ Poorly operated or undersized WWTFs ▪ Waste haulers illegal discharges/improper disposal ▪ WWTF non-compliance, overflows, and collection system by-passes 	<ul style="list-style-type: none"> ▪ Improve compliance and enforcement of existing stormwater quality permits ▪ Add water quality features to stormwater systems ▪ Implement stream fencing or alternative water supplies to keep livestock out of or away from waterways ▪ Create and implement Water Quality Management Plans for individual agricultural properties ▪ Install and/or conserve vegetative buffer areas along all waterways ▪ More public education on pet waste disposal ▪ Ensure proper citing of new or replacement OSSFs ▪ More public education regarding OSSF operation and maintenance ▪ Require all systems to develop and implement a utility asset management program and protect against power outages at lift stations ▪ Impose new or stricter bacteria limits than currently designated by TCEQ ▪ Increase monitoring requirements for self-reporting

Segment Discussion:

Watershed Characteristics: The Oyster Creek Tidal Watershed is primarily characterized by natural, undeveloped land uses including forests and grasslands. There are many oxbow lakes and extensive coastal wetlands in the southern and northeastern portions of the watershed. Urban centers in this watershed include Richwood, Clute, and Lake Jackson in the northwestern portions of the watershed. There are also a few pockets of development at Oyster Creek and along CR226 to the east of Clute. Small plots of agricultural lands are also present in the northern reaches of the watershed.

Water Quality Issues: The 2014 Texas Integrated Report (IR) lists the assessment unit 1109_01 as impaired for contact recreation due to elevated levels of enterococci bacteria. According to the TCEQ assessment, the geomean for this assessment unit is 73 MPN/100ml, which is more than twice the geomean standard of 35 MPN/100ml for enterococci. Due to the bacteria impairment, this segment does not fully meet the primary contact recreation designation; however, it does fully support high aquatic life use.

Special Studies/Projects: H-GAC has been tasked by the TCEQ to implement a basin-wide approach for addressing bacterial impairments for the San Jacinto-Brazos Coastal Basin which includes Oyster Creek. Development for the basin-wide TMDL began in September of 2015 and will result in a final Basin 11 Summary Report in September of 2016 that will summarize basin characteristics, water quality impairments, potential bacteria sources, and recommendations for bacterial reduction.

Trends: Regression analysis of water quality data for the Oyster Creek Tidal watershed revealed six significant parameter trends including increasing chloride and sulfate and decreasing alkalinity, chlorophyll *a*, Secchi transparency, and total Kjeldahl nitrogen (TKN). The 2014 Texas Integrated Report lists this segment as impaired for bacteria. [Moving geometric means for enterococci](#) show significant increases in bacteria with geomeans consistently exceeding the 35 MPN/100 mL standard since 2010. Regression analysis of enterococci data show approximately half of the samples collected since 2000 not in compliance with state standards and half of the samples in compliance. This relatively equal distribution of bacteria levels has resulted in an overall [stable trend in enterococci over time](#); however, exceedances have sporadically reached such high levels that the overall geometric means for enterococci remain significantly higher than the state water quality standard.

Recommendations

Continue collecting water quality data to support actions associated with any future watershed protection plan development and possible modeling.

Facilitate discussions with local stakeholders to avoid impairment and concerns in future Integrated Reports.

Pursue a new local partner to Clean Rivers Program to collect additional data that would help better isolate problem areas.