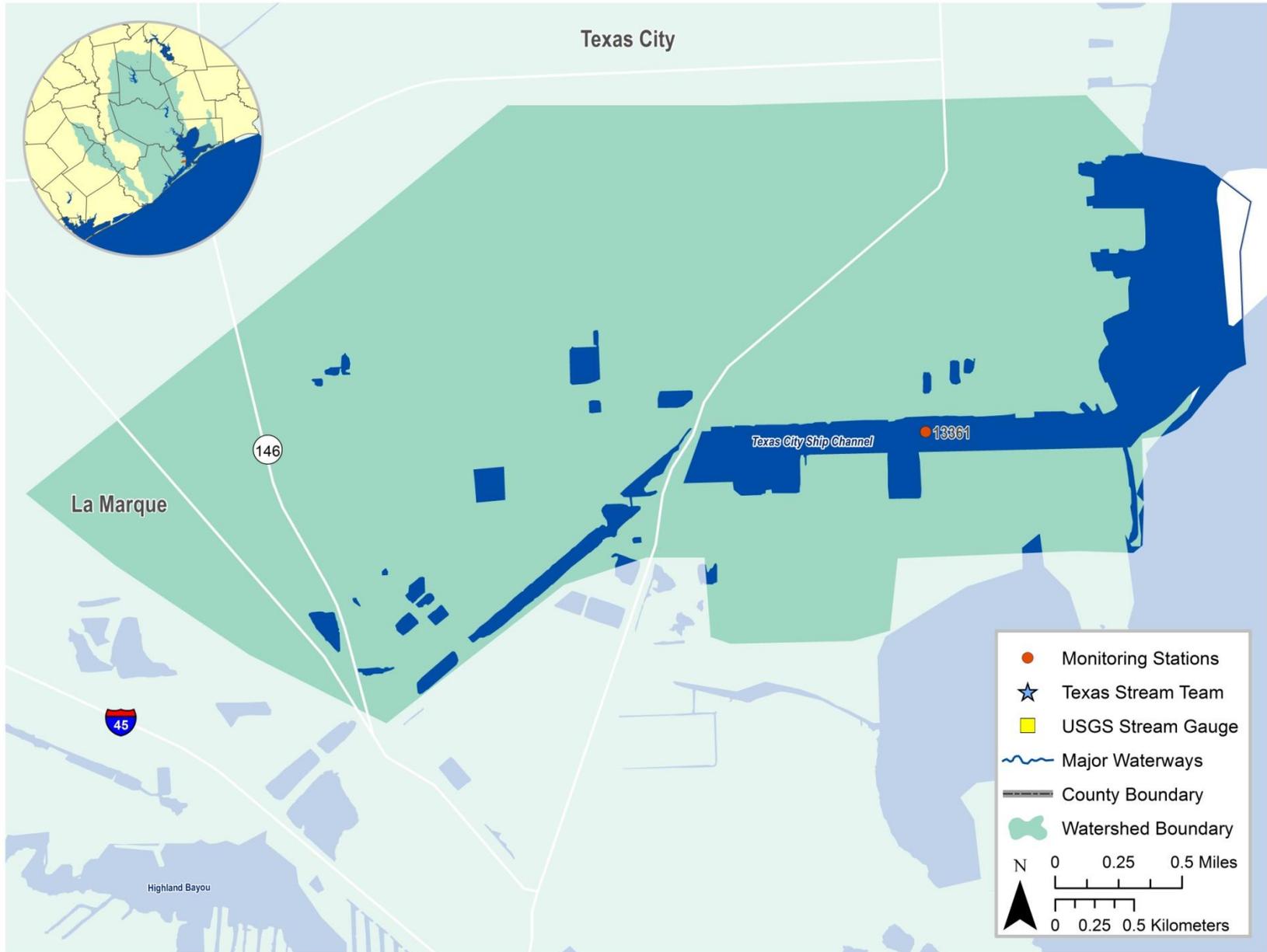
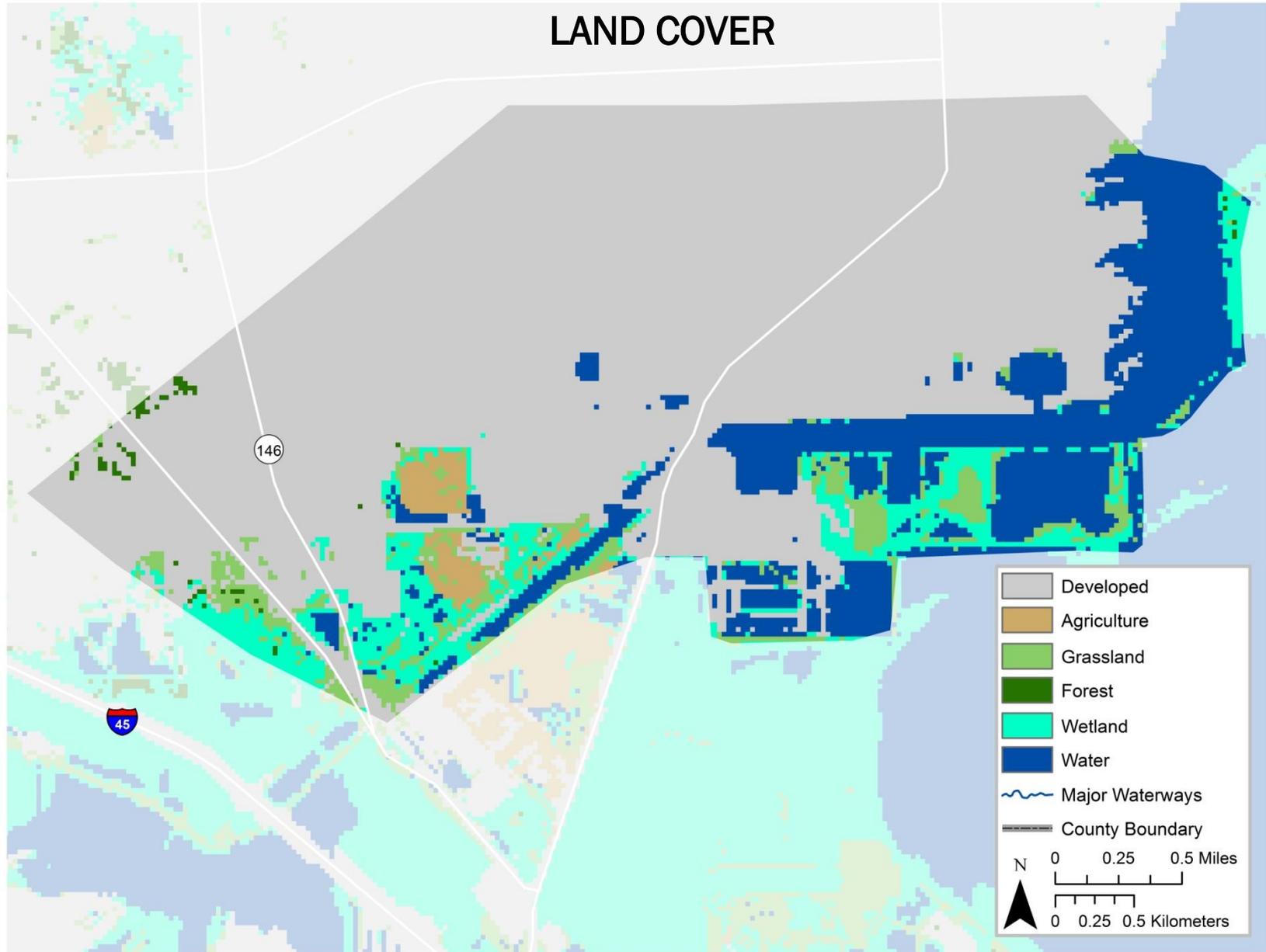


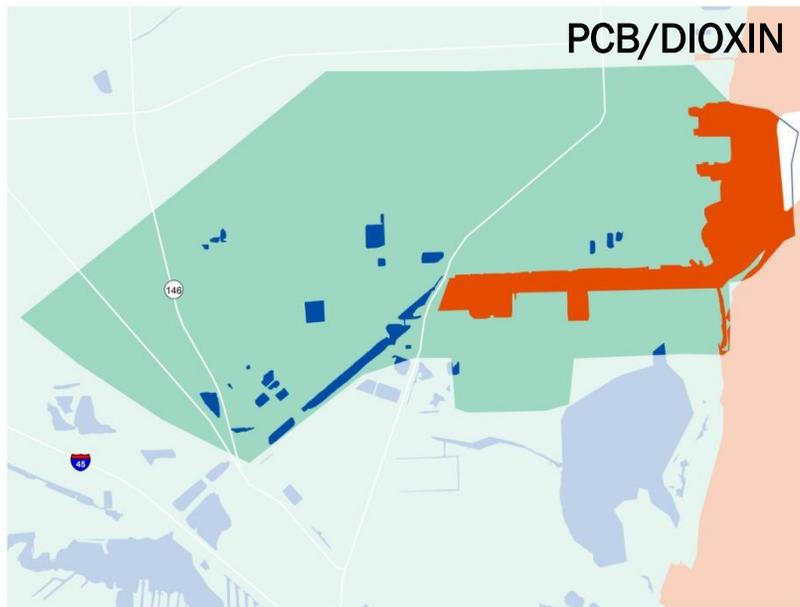
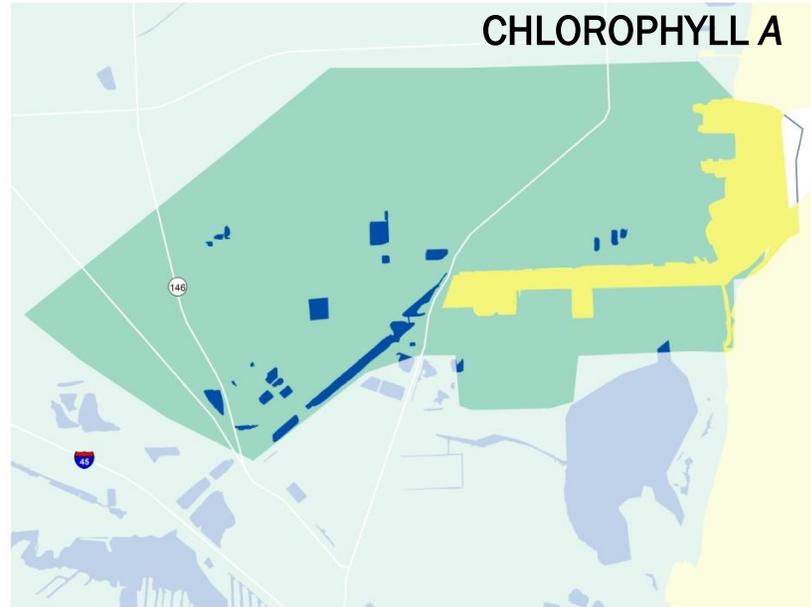
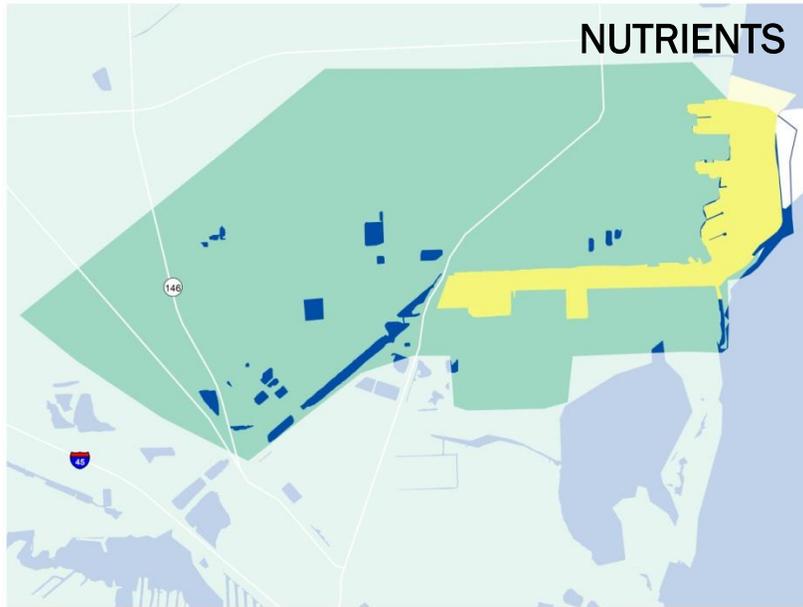
TEXAS CITY SHIP CHANNEL - SEGMENT 2437



TEXAS CITY SHIP CHANNEL – SEGMENT 2437

LAND COVER





 Impairment  Concern  No Impairments or Concerns

Segment Number: 2437		Name: Texas City Ship Channel			
Area: 0.7 square miles	Miles of Shoreline: 9 miles	Designated Uses: Noncontact Recreation; High Aquatic Life			
Number of Active Monitoring Stations: 1	Texas Stream Team Monitors: 0	Permitted Outfalls: 44			
Description:	A 1.6 square kilometer (0.6 square mile) navigation channel immediately south of the Texas City Dike on the western shore of Lower Galveston Bay in Galveston				

Percent of Stream Impaired or of Concern						
Segment ID	PCBs/Dioxin	Bacteria	Dissolved Oxygen	Nutrients	Chlorophyll a	Other
2437	100	-	-	100	100	-

Segment 2437			
Standards	Bays & Estuaries	Screening Levels	Bays & Estuaries
Temperature (°C/°F):	35 / 95	Ammonia-N (mg/L):	0.10
Dissolved Oxygen (24-Hr Average) (mg/L):	4.0	Nitrate-N (mg/L):	0.17
Dissolved Oxygen (Absolute Minima) (mg/L):	3.0	Orthophosphate Phosphorus (mg/L):	0.19
pH (standard units):	6.5-9.0	Total Phosphorus-P (mg/L):	0.21
Enterococci (MPN/100mL) (grab):	104	Chlorophyll a (µg/L):	11.6
Enterococci (MPN/100mL) (geometric mean):	35		

FY 2016 Active Monitoring Stations

Site ID	Site Description	Frequency	Monitoring Entity	Parameter Groups
13361	TSCS Texas City Canal Midpoint	Quarterly	TCEQ	Field, Conventional, Bacteria, Chlorophyll a
13361	TSCS Texas City Canal Midpoint	Once / Year	TCEQ	Metals & Organics in Sediment

Water Quality Issues Summary

Issue	2014 Assessment <i>I - Impaired C - Of Concern</i>	Possible Causes / Influences / Concerns Voiced by Stakeholders	Possible Solutions / Actions To Be Taken
Elevated Nutrients	2437 C	<ul style="list-style-type: none"> ▪ Fertilizer runoff from urbanized properties, such as landscaped areas, residential lawns, and sport fields ▪ Nutrient loading from WWTF effluent, sanitary sewer overflows, and malfunctioning OSSFs 	<ul style="list-style-type: none"> ▪ Implement YardWise and Watersmart landscape practices ▪ Encourage Water Quality Management Plans or similar projects for agricultural properties ▪ Monitor phosphorus levels at WWTFs to determine if controls are needed
Elevated Chlorophyll a Concentrations	2437 C	<ul style="list-style-type: none"> ▪ Excess nutrients from residential lawns ▪ Fertilizer runoff from surrounding watershed promote algal growth in waterways ▪ Nutrient loading from WWTF effluent, sanitary sewer overflows, and malfunctioning OSSFs promotes algal growth 	<ul style="list-style-type: none"> ▪ Improve compliance and enforcement of existing stormwater quality permits ▪ Add water quality features to stormwater systems ▪ Educate residents about excessive fertilizer use ▪ Reduce or manage fertilizer runoff from agricultural areas ▪ More public education regarding nutrients
PCBs/Dioxin in Edible Fish Tissue	2437 I	<ul style="list-style-type: none"> ▪ Concentrated deposits outside boundaries of the waste pits located adjacent to San Jacinto River and I-10 bridge ▪ Unknown industrial or urban sources 	<ul style="list-style-type: none"> ▪ Remove or contain contamination from locations already identified ▪ Encourage additional testing to locate all unknown sources/deposits

Segment Discussion:

Watershed Characteristics: The Texas City petrochemical complex makes up the majority this watershed. Texas City Ship Channel supports heavy barge and ship traffic on a regular basis with docks used to load and unload raw materials and finished products occupying the entire north shoreline and area around the turning basin. An off-plant disposal area (OPDA) is situated on the south shore leaving only portions of Shoal Point/Snake Island, a dredge spoil disposal area, undeveloped. A small residential and commercial area of the City of La Marque located in the western portion of the watershed drains storm water into the channel via the Industrial Canal. The ship channel receives storm water and wastewater discharges from the industrial complex.

Water Quality Issues: Segment 2437 is impaired for fish consumption due to high levels of PCBs and dioxin found in edible fish tissue. The Texas Department of State Health Services has issued a Limited Consumption Fish Advisory for this segment. The 2014 IR lists the Texas City Ship Channel as having concerns for water quality screening levels for ammonia nitrogen, nitrate nitrogen, and chlorophyll a. Over 44 percent of ammonia nitrogen samples exceeded the screening criteria level of 0.10 mg/L, 36 percent of nitrate nitrogen samples exceeded the screening criteria level of 0.17 mg/L, and 36% of chlorophyll a samples exceeded the screening criteria level of 11.6 micrograms/L.

Special Studies/Projects: This segment is included in one TMDL project, the Galveston Bay System Survey for Dioxin and PCBs, which is currently under way. For more information, please refer to the detailed discussions located in the Public Involvement and Outreach section of the 2016 Basin Summary Report regarding dioxin and PCB TMDLs.

Trends: Regression analysis of water quality data for the Texas City Ship Channel watershed revealed six statistically significant parameter trends including increasing sulfate, enterococci, and chloride while total phosphorous (TP), total Kjeldahl nitrogen (TKN), and Secchi transparency are decreasing over time. The 2014 Texas Integrated Report lists this segment as having a concern for elevated nutrient levels. Concentrations of [TP](#) seem to be improving while [nitrate](#) levels have remained relatively stable since 2000. However, nutrient levels exceeding the recommended screening criteria continue to occur on an infrequent basis. [Chlorophyll a](#) levels also revealed a stable trend over time with nearly half of the samples collected since 2000 exceeding the 11.6 µg/L screening criteria.

Recommendations

Address concerns found in this segment summary through stakeholder participation.

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

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