Cotton Bayou Watershed
Public Meeting (Zoom)

Tuesday, July 13th, 2021
2:00 p.m. – 4:00 p.m.

In Attendance:

Organizers:

Houston-Galveston Area Council (H-GAC)

Andrea Tantillo, Meeting Facilitator

Rachel Windham, Presenter, H-GAC Project Manager

Steven Johnston, Meeting Moderator

Texas Commission on Environmental Quality (TCEQ)

Jason Leifester, TCEQ Project Manager

Attendees:

Councilwoman Laurie Guidry, City of Mont Belvieu

Christian Rines, Galveston Bay Estuary Program (GBEP)

Cullen Francis, City of Mont Belvieu

Elizabeth Kompanik, TCEQ

Liz Stone, Jones|Carter

Mac Martin, Texas A&M Forest Service

Ricardo Villagrand, City of Mont Belvieu

Meeting Notes:

Welcome and Introductions

- Rachel Windham (H-GAC) commenced the meeting at 2:00 p.m. by welcoming the attendees and reviewing Zoom functions for asking questions and making comments throughout the presentation. She then explained a brief meeting agenda. Finally, Ms. Windham introduced the meeting organizers and invited attendees to introduce themselves.

Project Overview and Updates

- Ms. Windham provided an overview of the Cotton Bayou project funded by TCEQ and facilitated by H-GAC:
    - Levels of the fecal indicator bacteria Enterococcus are in exceedance of the state water quality standard observed in Cotton Bayou and currently do not support recreation use as described in the 2020 Integrated Report of Surface Water Quality produced by TCEQ. This impairment led to the formation of this project which aims to identify sources of bacteria pollution in the watershed and improve water quality by implementing bacteria source reduction strategies.
    - Potential sources of bacteria contamination include wastewater discharge, failing onsite sewage facilities, wildlife and domestic animal waste, and waste from invasive species such as feral hogs.
- Ms. Windham also reviewed major updates since the last project meeting:
    - Discussions with the City of Mont Belvieu and a more thorough review of ambient water quality data have led to the reclassification of the upstream portion of Cotton Bayou as an above-tidal (freshwater) segment. The lower portion of the bayou will remain classified as a tidal (saltwater influenced) segment. These changes will be made official upon approval of the 2022 draft of the Integrated Report of Surface Water Quality. Meanwhile, bacteria sampling taking place on the upstream portion of Cotton Bayou will now target *Escherichia coli* (*E. coli*), the freshwater fecal indicator bacteria, rather than Enterococcus.
    - Further, the City of Mont Belvieu has agreed to partner with the Clean Rivers Program to establish a water quality monitoring station (22232) within the city limits of Mont Belvieu. Data from this new site will improve our understanding of water quality impacts from Mont Belvieu and how they compare to water quality observed downstream. Preliminary data

collected from 22232 between September 2020 and April/May 2021 show:

- Bacteria (*E. coli*):
  - Bacteria levels appear to increase with increased flows and decrease during low flow events; this could indicate nonpoint sources are a strong contributor to pollution at this site
  - Most bacteria samples collected throughout the study period exceed the state water quality standard
- Dissolved Oxygen (DO):
  - DO does not appear to follow a clear pattern in relation to streamflow
  - DO measurements have been well above the criterion (in compliance) for all samples collected within the study period; this may indicate that the DO impairment and concern listed in the most recent integrated report may not affect the entire water body
- Nutrients (Total Phosphorous (TP) and Nitrate):
  - Both TP and Nitrate appear to have an inverse relationship with streamflow
  - Both TP and Nitrate exceeded their respective screening levels in the majority of samples collected throughout the study period

Technical Support Document

- Ms. Windham explained that in 2020, the focus of the project was to characterize the watershed to better understand the area and its outlook for growth as well as potential sources of bacteria pollution. In the next phase of the project, a Technical Support Document is being developed to provide an in-depth analysis of bacteria pollution and ultimately calculate a Total Maximum Daily Load (TMDL) or "budget" for bacteria pollution in Segment 0801C of Cotton Bayou.
- One step in the process toward developing a TMDL is producing load duration curves which show the relationship between ranked streamflows and observed levels of pollutants (in this case, bacteria) compared to the maximum allowable load. Load duration curve results indicate bacteria levels exceed state water quality standards at all levels of flow (high, moist, mid-range, dry, and low) at monitoring station 18696 Cotton Bayou. Exceedances were observed in all flow conditions except low flows at station 18697. This indicates a combination of point and nonpoint source pressures are leading to high levels of bacteria upstream but

nonpoint sources may be the dominant driver of impairment in the downstream (tidal) segment.

- Ms. Windham closed by explaining the concept behind TMDL calculations. For Cotton Bayou, the TMDL will be calculated as the load at the criterion level at the 95th percentile of flows. Components of the TMDL include:
    - Margin of Safety (MOS): 5% of the criterion load at the 95th percentile of flows to account for variance
    - Wasteload Allocation for Wastewater Treatment Facilities (WLA_{wwtf}): an allocation for the regulated load expected from wastewater; this component includes an allocation for future growth anticipated between the present day and 2045
    - Wasteload Allocation for Stormwater (WLA_{sw}): an allocation for the regulated load expected from stormwater
    - Load Allocation (LA): an allocation for all other unregulated sources of bacteria pollution

Next Steps

- Thinking of the project in the long-term, Ms. Windham points out that reaching the Technical Support Document/TMDL development phase progresses the group closer to the ultimate goal of improving water quality through implementation.
- Short term goals for the project include:
    - Completing the Technical Support Document
    - Completing the TMDL calculations
    - Setting up another meeting with stakeholders to begin discussing water quality improvement strategies
- Ms. Windham also encouraged attendees to reach out with any feedback about the project, as well as any information about environmental quality efforts already underway in the watershed interested in collaborating with the Cotton Bayou effort.

Discussion

- No further discussion was requested. Ms. Windham provided her contact information as well as the project website URL (https://h-gac.com/watershed-based-plans/cotton-bayou-tmdl) for any attendees interested in following up individually.

Meeting Adjourned at 3:00 p.m.

For more information about the meeting or the project, please contact Rachel Windham with the information below:

Phone: 713-993-2497
Email: rachel.windham@h-gac.com

This project is funded by the Texas Commission on Environmental Quality and is facilitated locally by the Houston-Galveston Area Council