



Improving Water Quality in Mustang Bayou, Persimmon Bayou, and New Bayou A TMDL Project to Protect Recreational Uses

Since 2010, high levels of bacteria have been found in the Mustang Bayou watershed, which includes three segments—Mustang Bayou (2432A), Persimmon Bayou (2432D) and New Bayou (2432E). High concentrations of bacteria, which are found in both human and animal waste, may indicate a health risk to people who swim or wade in the water body—activities called “contact recreation” in the state’s standards for water quality.

To address these concerns, people who have a stake in the watershed are working with TCEQ to develop total maximum daily loads (TMDLs) and a plan to implement it (I-Plan). A TMDL is like a budget—it determines the amount (or load) of bacteria that the bayou can receive and still support recreational safety. The allowable load is then allocated among categories of sources within the watershed. The I-Plan outlines the measures that will be used to reduce pollution.

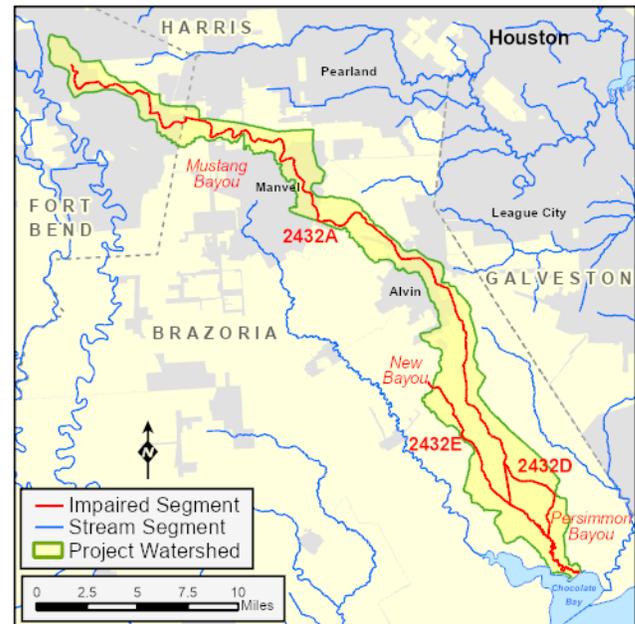
Learn more about water quality standards, monitoring, and TMDLs by reading [Preserving and Improving Water Quality](#)¹, available on our website and in print.

The Project Watershed

The Mustang Bayou watershed is home to agricultural, residential, and commercial uses. Most of the residential development is in the upper half of the watershed. Agricultural production is an important economic base for most of the watershed, primarily rice and hay cultivation and cattle grazing. Chemical production facilities are clustered in the lowest area of the watershed, mostly between New Bayou and Chocolate Bayou, near Chocolate Bay.

Mustang Bayou, Segment 2432A, is approximately 42.7 miles long and flows southeast, beginning in Fort Bend County and continuing through Brazoria County. Its watershed includes portions of Missouri City, Fresno, Pearland, Manvel, Alvin, and Hillcrest Village. The headwaters are within the city limits of Missouri City in southeast Fort Bend County, although most of the stream is within the boundaries of Brazoria County. Mustang Bayou has been heavily modified and channelized along most of its length. The bayou ends at its confluence with New Bayou, approximately 0.5 miles upstream of FM 2004.

Persimmon Bayou, Segment 2432D, branches off from Mustang Bayou near the intersection of FM 2004 and



CR 2917. The bayou flows southeastward for approximately 5.5 miles until it joins New Bayou near its confluence with Chocolate Bay.

New Bayou, Segment 2432E, begins at Ditch C-1, a tributary to Chocolate Bayou, near CR 169 and flows southeastward 15.8 miles to its confluence with Chocolate Bay.

Mustang Bayou includes three assessment units (AUs)—2432A_01, 2432A_02, and 2432A_03. Only AUs 01 and 02 have an impaired contact recreation use. There is concern, however, due to elevated bacteria levels in AU 03 that do not currently exceed the criteria used to evaluate the safety of contact recreation. Persimmon Bayou and New Bayou each have just one assessment unit—2432D_01 and 2432E_01; both are impaired.

Project Development

TCEQ began this project in 2019. The Houston-Galveston Area Council (H-GAC) is providing support for the technical work, as well as engaging stakeholders in advising TCEQ on the TMDLs and developing the I-Plan to reduce bacteria in area waterways.

H-GAC personnel have compiled and analyzed all available bacteria data and considered the bacteria sources and their relative contributions. They

¹ <https://www.tceq.texas.gov/publications/gi/gi-351>

completed a technical support document based on their investigations, which found both regulated and unregulated sources of bacteria pollution.

Public Participation

In all its projects, TCEQ gathers opinion and information from people who represent government, permitted facilities, agriculture, business, environmental, and community and private interests in the watershed. TCEQ solicits advice from the public at meetings and through print and electronic media notices.

H-GAC is coordinating public participation in development of the TMDLs and I-Plan for the Mustang Bayou watershed. The TMDLs for Mustang Bayou will be implemented as part of a larger I-Plan that encompasses neighboring watersheds that also drain into Chocolate Bay.

TMDL Development Status

Start Date: September 2019

TCEQ Adoption:

EPA Region 6 Approval:

I-Plan Development Status

Projected End Date:

TCEQ Approval:

For More Information

Contact one of the people listed below, or visit the project webpage at:

www.tceq.texas.gov/waterquality/tmdl/nav/114-mustangbayou

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Project Highlights

- Public meetings about this project began in January 2020.
- H-GAC completed a draft technical support document based on their investigations in March 2021. TCEQ is currently reviewing the report.

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