



Improving Water Quality in the Mission and Aransas Rivers

A Project to Protect Recreational Uses

High concentrations of fecal indicator bacteria in the lower portions of the Mission River and the Aransas River (Segments 2001 and 2003) may pose a risk for people who swim or wade in them—activities referred to as “contact recreation” in the state’s standards for the quality of streams, lakes, and bays.

Bacteria are commonly found in the intestines of warm-blooded organisms such as humans, livestock, cats, and dogs. These bacteria in water may indicate the presence of disease-causing microorganisms.

In response to these conditions, TCEQ adopted total maximum daily loads (TMDLs) for indicator bacteria in these tidal rivers and funded the development of an implementation plan (I-Plan) to improve water quality in them. The goal of these efforts is to reduce bacteria concentrations to within acceptable risk levels for contact recreation.

A TMDL determines the amount (or load) of a pollutant that a body of water can receive and still support its designated uses. The allowable load is allocated among source categories within the watershed, and stakeholders work with the state to develop an I-Plan with measures that reduce pollutant loads.

Learn more about TCEQ’s strategy for managing the quality of Texas surface waterways by reading [Preserving and Improving Water Quality](#)¹, available on our website and in print.

Project Watershed

The Mission River Tidal (Segment 2001) and the Aransas River Tidal (Segment 2003) lie within the San Antonio–Nueces Coastal Basin on the lower Texas coast. The combined watersheds drain about 2,600 square miles of coastal plain between the San Antonio and Nueces Rivers. The project watershed includes portions of Aransas, Refugio, San Patricio, Bee, Goliad, Live Oak, and Karnes counties. Cities in the watershed include Refugio, Sinton, Taft, Beeville, and Bayside.

The lower Texas coast is home to diverse flora and fauna. Fish, shrimp, crab, and oysters are sought after by both commercial fisherman and recreational anglers. Water quality plays a vital role in the health, economy, and productivity of this area.



Project Development

TCEQ initiated this project in 2004 in cooperation with several other organizations, including the Texas State Soil and Water Conservation Board (TSSWCB), Coastal Bend Bays and Estuaries Program, Texas General Land Office, Texas Department of State Health Services, the Nueces River Authority (NRA), Texas Water Resources Institute (TWRI), University of Texas Center for Research in Water Resources (CRWR), Texas Institute for Applied Environmental Research (TIAER), and Texas A&M University.

In 2011, after extensive data collection efforts by TCEQ and NRA, followed by data analysis and water quality modeling efforts by CRWR, TIAER, and Texas A&M University, the state and stakeholders recommended development of TMDLs for indicator bacteria in the tidal segments of the Mission and Aransas rivers.

In 2012, with the support of TWRI, TCEQ, and TSSWCB, stakeholders began work on developing TMDLs and an I-Plan for the tidal watersheds. On May 25, 2016, TCEQ adopted the TMDLs and approved the I-Plan. TWRI coordinates the preparation of annual status reports about I-Plan progress, which are available on the project webpage.

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

Stakeholders are also working with TWRI to develop a watershed protection plan (WPP) to address other concerns in the watershed in the Mission and Aransas Rivers.

TMDL Additions

This project takes a watershed approach, so upstream segments that subsequently show elevated levels of indicator bacteria are also subject to these TMDLs. Consequently, TCEQ developed additional TMDL allocations for Aransas River Above Tidal and Poesta Creek (Segments 2004 and 2004B) and submitted them to EPA for approval in October 2017 as updates to the state's Water Quality Management Plan. The EPA approved the additional TMDLs on February 8, 2018.

Public Participation

In all its projects, TCEQ seeks to gather opinions and information from people who represent agricultural producers, permitted facilities, businesses, local governments, environmental organizations and community and private interests in watersheds where TMDLs are developed. TWRI coordinated public participation in development of the TMDLs and I-Plan for these watersheds and continues to provide support for stakeholder participation in TMDL implementation and progress tracking.

TMDL Status

Start Date: September 2003
TCEQ Adoption: May 25, 2016
EPA Region 6 Approval: August 9, 2016
TMDL Addendum Submitted: October 2017
EPA Region 6 Approval: February 8, 2018

I-Plan Status

TCEQ Approval: May 25, 2016

For More Information

Contact one of the people listed below, or visit TCEQ's or TWRI's project webpages at:

www.tceq.texas.gov/waterquality/tmdl/42-co-pano.html

Or

twri.tamu.edu/our-work/restoring-protecting/co-pano-bay-watershed/

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Project Highlights

- TCEQ and NRA collected extensive water quality data from the rivers above the bay and at wastewater treatment facilities between 2006 and 2010.
- CRWR completed a water quality model to simulate loadings to the rivers and bay. The model used the data collected between 2006 and 2010.
- Early implementation activities by TWRI include educational programs and demonstrations for land and livestock owners.
- The public had the opportunity to comment on the final draft TMDLs and I-Plan in 2016.
- In October 2020, the watershed coordinator and stakeholders completed their annual status report on TMDL implementation, which is available on the TCEQ TMDL Program's project webpage.

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