



Improving Water Quality in the Mission and Aransas Rivers A TMDL Project for Bacteria

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, the 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 the TCEQ’s strategy for managing the quality of Texas surface waterways by reading *Preserving and Improving Water Quality*, available on our website at www.tceq.texas.gov/goto/tmdl/.

Project Watershed

The Mission River Tidal (Segment 2001) and the Aransas River Tidal (Segment 2003) lie within the San Antonio–Nueces Coastal Basin in the lower Texas coast. The basin drains about 2,600 square miles of coastal plains 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 along the lower Texas coast. Water quality plays a vital role in the health, economy, and productivity of this area.



Project Development

This project was initiated by the TCEQ 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, 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 the TCEQ and the Nueces River Authority and data analysis and water quality modeling efforts by CRWR, TIAER, and Texas A&M University, the state recommended development of TMDLs for indicator bacteria in the tidal segments of the Mission and Aransas rivers.

In 2012, with the support of the Texas Water Resources Institute (TWRI), the TCEQ, and the Texas State Soil and Water Conservation Board, local stakeholders began work on developing TMDLs and an I-Plan for the tidal watersheds. On May 25, 2016, the TCEQ adopted the TMDLs and approved the I-Plan.

TMDL Additions

This project takes a watershed approach, so upstream water bodies, which subsequently showed elevated levels of indicator bacteria, are also subject to the TMDLs. These streams include the Aransas River Above Tidal and Poesta Creek, for which TMDL allocations were developed. The additional TMDLs were submitted to EPA for approval in October 2017, as updates to the state's Water Quality Management Plan. The EPA approved them on February 8, 2018.

Public Participation

In all its projects, the 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. The TCEQ solicits advice and comment from the public about this project at meetings and through print and other media notices.

TWRI coordinated public participation in this project and maintains a website about the project <copanobay-wq.tamu.edu/>. The TWRI's web page is named Copano Bay Watershed because both the Mission and Aransas rivers flow into Copano Bay.

TMDL Dates

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 Date

TCEQ Approval: May 25, 2016

For More Information

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

<www.tceq.texas.gov/waterquality/tmdl/42-copano.html>

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Project Highlights

- Data were collected from the rivers, above the bay, and at wastewater treatment facilities.
- CRWR completed a water quality model to simulate loadings to the rivers and bay. The updated 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 TCEQ worked with stakeholders in the watershed to develop draft TMDLs and an Implementation Plan.
- The TCEQ released drafts of the TMDLs and I-Plan for public comment in 2016.
- On May 25, 2016, the commission adopted the TMDLs and approved the I-Plan.
- On August 9, 2016, the EPA approved the TMDLs.
- On February 8, 2018, the EPA approved additional TMDLs for Aransas River Above Tidal and Poesta Creek.

Visit our website at: <www.tceq.texas.gov/goto/tmdl/>