



Improving Water Quality in the Lower Sabinal River Protecting a Drinking Water Source

In 2000, the Texas list of impaired waters indicated that concentrations of nitrate-nitrogen were higher than recommended for use of the Lower Sabinal River as a source for drinking water.

TCEQ completed a total maximum daily load project to determine the measures necessary to restore water quality. The goal of a TMDL is to determine the amount (or load) of a pollutant that a body of water can receive and still support its designated uses. The allowable load is then allocated among the categories of sources within the watershed, and stakeholders work with the state to develop measures that reduce pollutant loads.

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 Lower Sabinal River Watershed

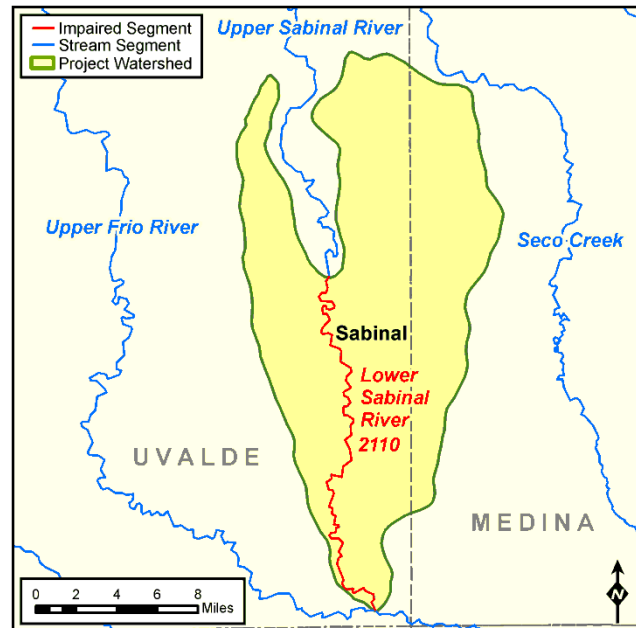
The watershed is located in southwest Texas in Uvalde and Medina counties and covers 222 square miles. The Lower Sabinal River begins from a point 100 meters upstream of State Highway 127, one mile north of the city of Sabinal, and flows to the confluence with the Frio River. The area is dominated by a mixture of live oak, Ashe juniper, and mesquite, with grasslands and limited row crop production.

The City of Sabinal wastewater treatment facility (WWTF) is the only permitted discharger in the watershed. However, during most conditions, there is no surface discharge from the facility. There is one registered concentrated animal feeding operation in the watershed, the Driskill Feedlot, but it does not discharge to the river.

Project Development

TCEQ initiated the project in March 2003, performing a review of existing data. TCEQ questioned the pond liner integrity of the Sabinal WWTF oxidation ponds in the two discharge permits prior to start of the project. TCEQ requested that the pond liners be certified to rule out seepage from the ponds to the river through a groundwater pathway.

The City of Sabinal applied for and received a grant from the United States Department of Agriculture Rural Development to relocate the WWTF out of the 100-year floodplain. The new facility employs a mechanical



screen, looped aeration basin, two clarifiers, and an ultraviolet disinfection system. The new facility came online in July 2017. As expected, nitrate levels declined after the new facility was completed. The status of the water body was changed from impaired to “of concern” for nitrate in the *2014 Texas Integrated Report of Surface Water Quality*. Nitrate concentrations continue to be a concern identified in the 2020 Integrated Report.

Public Participation

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

TCEQ held a public meeting to hear comments on the Lower Sabinal TMDL for nitrate-nitrogen on May 19, 2005. TCEQ received no comments during the 30-day comment period.

On June 27, 2006, TCEQ held a public meeting to hear comments on the Lower Sabinal Implementation Plan (I-Plan). TCEQ received and responded to formal comments made at the public meeting and in writing during the 30-day comment period.

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

For More Information

Visit the project webpage at:

www.tceq.state.tx.us/waterquality/tmdl/45-sabinalnitrate.html

E-mail us at tmdl@tceq.texas.gov or call us at 512-239-6682.

TMDL Dates

Start Date: March 2003

TCEQ Adoption: August 10, 2005

EPA Region 6 Approval: October 13, 2005

I-Plan Dates

Projected End Date: January 2006

TCEQ Approval: August 23, 2006

Highlights

- The commission adopted the TMDL in August 2005 and approved the I-Plan in August 2006.
- The City of Sabinal secured funding for construction of a new WWTF to replace the existing facility, which was within the 100-year floodplain, with one above the floodplain. The new facility was upgraded to use an Imhoff tank system with oxidation ponds, and employs a mechanical screen, looped aeration basin, two clarifiers, and a chlorine disinfection system. The new facility came online July 27, 2011.
- The status of the water body was changed from impaired to “of concern” for nitrate in the *2014 Texas Integrated Report of Surface Water Quality*. As of 2020, nitrate concentrations continue to be a concern.

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