



Improving Water Quality in the North Bosque River A Project to Reduce Algae

The state of Texas requires water quality in the North Bosque River to be suitable for swimming, wading, fishing, drinking (with treatment), and a healthy aquatic ecosystem. However, water quality testing found that in the North Bosque River (Segment 1226) and the Upper North Bosque River (Segment 1255), high levels of nutrients have contributed to excessive growth of algae and other aquatic plants in the river. This condition can impair the river's aesthetic value, may cause taste and odor problems in drinking water, and under certain circumstances result in fish kills.

To address the high level of nutrients, TCEQ established total maximum daily loads (TMDLs) for phosphorus (the limiting nutrient in the watershed) for the Upper North Bosque (Segment 1255) and North Bosque River (Segment 1226). The TMDLs determined the amount (or load) of phosphorus that the streams can receive and still support their designated uses. This allowable load was then allocated among all the potential sources of pollution within the watershed, and an implementation plan establishing measures to reduce pollutant loads was developed.

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

The North Bosque Watershed

The North Bosque River is located in the Brazos River Basin. It originates in central Erath County northwest of Stephenville. From Stephenville, it flows southeast through the towns of Hico, Meridian, Clifton, and Valley Mills before entering Waco Lake in McLennan County. The watershed contains 1,190 square miles and is characterized by Cross Timbers in the western portion, and Grand Prairie and Blackland Prairie in the eastern part.

The North Bosque River is an important resource to the surrounding region. The North Bosque River and Waco Lake are the surface water supplies for the cities of Waco, Clifton, and soon, Meridian. These cities serve more than 200,000 people, for whom the river and lake are the primary drinking water supplies. The river also provides water for a variety of agricultural activities and has been used for recreational fishing and swimming by local residents.



Public Participation

The Texas Institute for Applied Environmental Research (TIAER) performed most of the technical and administrative tasks associated with development of the TMDLs. TIAER worked in coordination with the Brazos River Authority (BRA) and under the guidance of TCEQ. Representatives from those agencies and from the City of Waco, USDA Natural Resources Conservation Service, Texas State Soil and Water Conservation Board (TSSWCB), Texas Agricultural Extension Service (Blackland Research Center), Baylor University, the University of Texas Center for Research in Water Resources, and the Texas A&M University Water Resources Institute served as an ad hoc technical work group assisting TIAER in developing project tasks and reviewing results.

Public participation in developing the TMDLs and I-Plan was coordinated through the Bosque River Advisory Committee (BRAC), which convened in 1995 as a forum for public discussion and coordination of water quality issues. The BRAC had representatives from:

- Texas State Legislature (5)
- County Governments (6)
- City Governments (small and large)
- Concerned Citizens

¹ www.tceq.texas.gov/publications/gi/gi-351

- Dairies (large and small)
- Farmers, Ranchers, and Agriculture Groups
- Industries
- Environmental Groups

Most recently, stakeholders met at a general meeting on September 1, 2021 to review the progress of TMDL implementation in the watershed. At the suggestion of the stakeholders, TCEQ has formed a small work group to recommend next steps for this watershed. Membership of the North Bosque River TMDL Advisory Work Group is made up of volunteers from among the general stakeholder group. Membership in the work group is closed, but its meetings are open to the public.

For More Information

Contact us by e-mail at tmdl@tceq.texas.gov or call us at 512-239-6682. Visit the project webpage at:

www.tceq.texas.gov/waterquality/tmdl/o6-bosque.html

TCEQ Project Manager

Louanne Jones, TMDL Program
512-239-2310
louanne.jones@tceq.texas.gov

Learn more about the TMDL Program at:
www.tceq.texas.gov/goto/tmdl/.

TMDL Dates

Start Date: 1994

TCEQ Adoption: February 9, 2001

EPA Region 6 Approval: December 13, 2001

I-Plan Dates

Start Date: January 2001

TCEQ Approval: December 13, 2003

Project Highlights

- The Bosque River Advisory Committee met on August 25, 2000 to consider draft TMDLs for the river. Speakers recapped more than four years of Committee effort, including two years as advisors to the TMDL process. TCEQ staff presented a brief outline of the TMDL allocation. The goal of the TMDL was to achieve a reduction of annual average soluble phosphorus loading by approximately 50 percent. Both point and non-point sources were expected to make significant reductions to achieve the goal. The Committee decided that its role as an advisory body for the TMDL project had ended.
- The draft TMDLs for the North Bosque River were posted for public review and comment on September 29, 2000. A public hearing to receive verbal comments was held on October 23, 2000 at the Texas Ag Research and Extension Center in Stephenville.
- The final TMDL was adopted by the commission on February 9, 2001.
- EPA approved the TMDLs on December 13, 2001.
- The implementation plan for the TMDLs was approved by the commission on December 13, 2002.
- A summary of the implementation plan and a status report on activities to implement the plan are posted on the project webpage (see address under "For More Information").
- At the request of stakeholders, TCEQ has formed the North Bosque River TMDL Advisory Work Group to evaluate progress on improving water quality and recommend next steps for the watershed.

TCEQ is an equal opportunity employer. The agency does not allow discrimination on the basis of race, color, religion, national origin, sex, disability, age, sexual orientation, or veteran status. In compliance with the Americans with Disabilities Act, this document may be requested in alternate formats by contacting TCEQ at 512-239-0010, or 800-RELAY-TX (TDD), or by writing PO Box 13087, Austin TX 78711-3087. How is our customer service? tceq.texas.gov/customersurvey