



North Bosque: Evaluating Effectiveness of Implementation Plan

Water Body	North Bosque River (Seg 1226), Upper North Bosque (Seg 1255)
Location	Erath, Hamilton, Bosque, Somervell, McLennan, and Coryell Counties
River Basin	Brazos River (12)
Contractor	Texas Institute for Applied Environmental Research (TIAER)
Project Period	September 1, 2011 to August 31, 2016
Project Total	\$903,042 (Federal 60% and Match 40%)

Background

The North Bosque River (Segments 1226 and 1255) originates near the City of Stephenville and flows southeast over a primarily rural landscape, eventually flowing into Lake Waco (Segment 1225). Nutrient and algal concentrations in excess of screening levels established by the Texas Commission on Environmental Quality (TCEQ) have been found since 1996. Excessive algal growth can lead to taste and odor problems for drinking water and potentially low dissolved oxygen levels within a stream, which could result in fish kills.

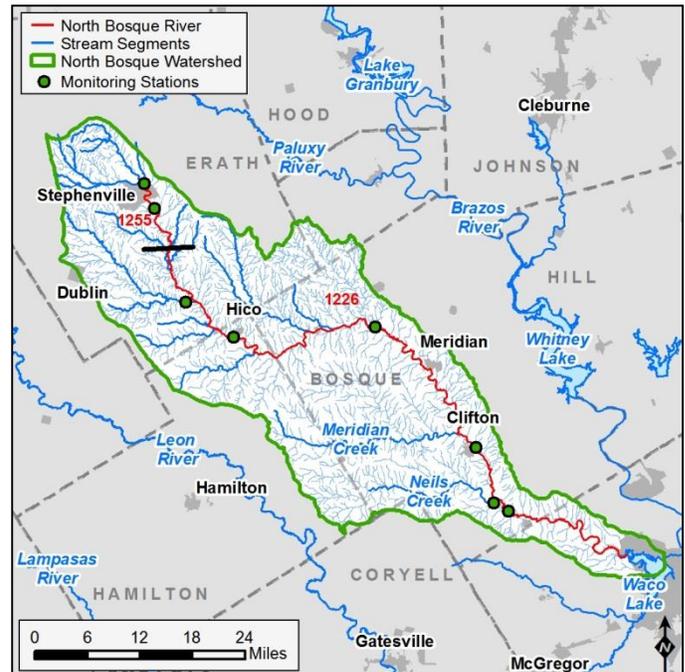
In response to water quality concerns, two **total maximum daily loads** (TMDLs) for phosphorus were completed in 2001. A subsequent TMDL Implementation Plan (I-Plan) was adopted in 2003. Dairy waste application fields and municipal waste water treatment plants were shown to be the major controllable sources of phosphorus in the watershed.

Since approval of the I-Plan, there have been many projects/activities to control and remove sources of nutrient loadings in the watershed. Continued monitoring is important in order to provide quality assured water quality data for assessing the effectiveness of these activities over time.

Project Description

For this project, TIAER will continue operation of eight water quality monitoring stations. Five of these stations were designated by the I-Plan as index sites for assessing the plan's effectiveness. Grab samples are collected at all stations on a biweekly, monthly, and quarterly basis and analyzed for various parameters. Stormwater samplers are also collected at seven stations using automated samplers.

An update of land use activities associated with Concentrated Animal Feeding Operations (CAFOs) and Animal Feeding Operations (AFOs) will be done to refine existing geographic information system (GIS) layers. This will allow an assessment to determine any



correlation between changes in water quality and land management practices. An assessment report will be compiled on an annual basis.

Current Status

Monitoring is ongoing.

For More Information

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Project Highlights

- 09/2011 – Contract executed.
- 09/2011 – Post-award meeting held at TCEQ.
- 02/2012 – Data uploaded to the Surface Water Quality Information System (SWQMIS).
- 04/2012 – Data uploaded to SWQMIS.
- 06/2012 – Data uploaded to SWQMIS.
- 07/2012 – Water Quality Trends report through 2011 completed.
- 12/2012 – Data uploaded to SWQMIS.
- 03/2013 – Data uploaded to SWQMIS.
- 06/2013 – Data uploaded to SWQMIS.
- 09/2013 – Data uploaded to SWQMIS.
- 10/2013 – Water Quality Trends report through 2012 completed.
- 12/2013 – Data uploaded to SWQMIS.
- 03/2014 – Data uploaded to SWQMIS.
- 07/2014 – Data uploaded to SWQMIS.
- 07/2014 – Water Quality Trends report through 2013 completed.
- 12/2014 – Data uploaded to SWQMIS.
- 01/2015 – Data uploaded to SWQMIS.
- 04/2015 – Data uploaded to SWQMIS.
- 08/2015 – Water Quality Trends Report through 2014 completed.
- 06/2016 – Data uploaded to SWQMIS.
- 10/2016 – Data uploaded to SWQMIS.
- 02/2016 – Data uploaded to SWQMIS.