



Improving Water Quality in Gilleland Creek Improving the Safety of Water Recreation

In Gilleland Creek (Segment 1428C), bacteria concentrations have been elevated, indicating a possible health risk for people who swim or wade in the creek—activities called “contact recreation” in the state’s standards for water quality.

Bacteria are commonly found in the intestines of warm-blooded organisms such as humans, livestock, poultry, cats, and dogs. High concentrations of fecal bacteria may indicate the presence of disease-causing microorganisms that can pose a health risk to people.

In response, TCEQ developed a total maximum daily load (TMDL) 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 was then allocated among categories of sources within the watershed.

In 2011, stakeholders developed a five-year Implementation Plan (I-Plan) with measures that will reduce pollutant loads. In 2016, stakeholders revised the I-Plan with adjustments needed to continue water quality improvements in the watershed.

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

Gilleland Creek Watershed

Gilleland Creek is located in central Texas; its watershed covers about 76 square miles, flowing through Travis County. Land use in the watershed is transitioning from agricultural to urban. The results of urbanization are most evident during dry weather, when the water in Gilleland Creek is dominated by wastewater effluent from the municipal wastewater treatment facilities (WWTFs) in the watershed. The watershed includes the City of Pflugerville, a small portion of the City of Round Rock, and portions of the cities of Manor and Austin. Gilleland Creek has four assessment units (AUs), numbered from one through four, from the most upstream to the most downstream portions.

TMDL Development

TCEQ began the project in August 2004 through a contract with the Lower Colorado River Authority. LCRA staff reviewed existing water quality data for the segment and developed a monitoring plan to collect



additional data needed to complete the TMDL. Scientists collected data between August 2005 and spring 2006. The sampling results were modeled using a load duration curve analysis.

The creek was found to be out of compliance during medium- to high-flow events. Bacteria concentrations were elevated during rainfall events, and for up to three to four days following. These observations strongly suggest that the sources of bacteria are mainly from stormwater.

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 solicits advice from the public at meetings and through print and electronic media notices.

The Gilleland Creek TMDL Stakeholder Group provided advice and comment on the original TMDL and I-Plan for this project. The LCRA coordinated participation in developing the TMDL and the original I-Plan.

In 2016 and 2017, the Gilleland Creek Coordination Committee revised the I-Plan. The University of Texas

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

Center for Public Policy Dispute Resolution (UTCPPDR) facilitated the stakeholders' review.

Implementation Plan Development

The I-Plan describes the strategies and activities the stakeholders will carry out to improve water quality in their creek. The original I-Plan documents six management measures and one control action.

Stakeholders completed five years of activities under their original I-Plan. After meeting in October 2016 to review their progress, the stakeholders decided to revise the plan, in accordance with the adaptive management process. The revised I-Plan includes four management measures comprising 12 activities, and two control actions. They submitted their revised I-Plan to TCEQ on November 16, 2017.

For More Information

Contact the project manager, or visit our project webpage at:

www.tceq.texas.gov/waterquality/tmdl/nav/69-gillelandcreekbacteria.

TCEQ Project Manager

Louanne Jones, 512-239-2310

Louanne.Jones@tceq.texas.gov

TMDL Development Status

TCEQ Adoption: August 8, 2007

EPA Region 6 Approval: April 21, 2009

I-Plan Development Status

TCEQ Approval: February 9, 2011

Revised: November 16, 2017

Highlights

- TCEQ adopted the TMDL in August 2007. EPA approved it in April 2009. TCEQ approved the stakeholders' I-Plan in February 2011.
- In 2011, LCRA prioritized on-site sewage facilities (OSSFs) according to the need for repair or improvement and completed an OSSF workshop for owners in 2012.
- The Center for Research in Water Resources modified a stormwater retention basin with the goal of reducing targeted pollutants. The basin proved effective in reducing several stormwater pollutants, though not bacteria.
- LCRA's Colorado River Watch Network volunteers monitor several sites along the creek in Pflugerville.
- The City of Pflugerville and Travis County installed additional pet waste stations, while the City of Round Rock surveyed park users about their pet waste disposal habits.
- Travis County and the City of Austin approved new ordinances requiring a setback from Gilleland Creek in future development. These setbacks create natural buffers between the streams and urban runoff.
- In 2016, stakeholders evaluated the five-year progress of their I-Plan and decided to revise it.
- In 2017, stakeholders completed a revision to the I-Plan to cover a five-year period through 2022.
- Stakeholders met in 2019 to review the status of water quality and their progress implementing the I-Plan. They prepared a status report, which is available on the project webpage. Bacteria concentrations have been rising in AU_01 and AU_04 recently; stakeholders discussed possible reasons for this change and identified some follow-up actions. The information provided at this meeting is available on the project webpage.

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