



## Improving Water Quality in Gilleland Creek

# Improving the Safety of Water Recreation

In Gilleland Creek (Segment 1428C), bacteria concentrations have sometimes been elevated, indicating a possible health risk for people who swim or wade in them—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, the 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) to implement the TMDL with measures that will reduce pollutant loads. In 2016, stakeholders revised the plan with adjustments needed to continue water quality improvements in the watershed.

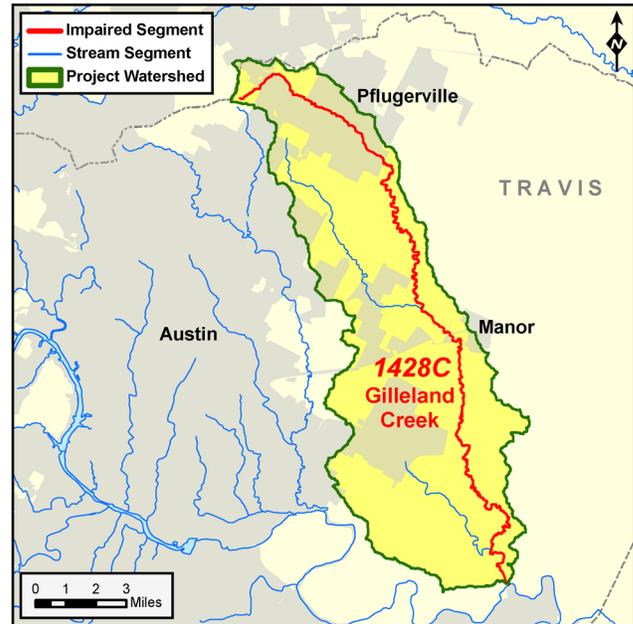
Learn more about water quality standards and monitoring, and TMDLs by reading *Preserving and Improving Water Quality*, available on our website at [www.tceq.texas.gov/goto/tmdl/](http://www.tceq.texas.gov/goto/tmdl/).

### Gilleland Creek Watershed

Gilleland Creek is located in central Texas; its watershed covers about 76 square miles, running through Travis County. Land use in the watershed is transitioning from agricultural to heavily urban. The results of urbanization are most evident during dry weather, when the water in Gilleland Creek is mostly 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 portion of the cities of Manor and Austin.

### TMDL Development

The 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 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

Stakeholder participation is crucial to developing workable TMDLs and I-Plans. It is also critical to implementing plans over several years.

The Gilleland Creek TMDL Stakeholder Group provided advice and comment on the original TMDL and I-Plan for this project. Participants represented government, permitted facilities, agriculture, business, environmental, and community interests in the Gilleland Creek watershed. 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. Participants represented government, permitted facilities, and a community interest. The University of Texas Center for Public Policy Dispute Resolution (CPPDR) 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 the 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](http://www.tceq.texas.gov/waterquality/tmdl/nav/69-gillelandcreekbacteria)>.

### TCEQ Project Manager

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## 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

- The TCEQ adopted the TMDL in August 2007. The Environmental Protection Agency approved it in April 2009. The TCEQ approved the stakeholders' I-Plan in February 2011.
- OSSF prioritization was completed and LCRA conducted an OSSF owner workshop 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.
- LCRA Colorado River Watch Network volunteers monitor several sites along the creek in the Pflugerville area.
- 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 another five-year period.
- In 2019, stakeholders prepared a status report on their TMDL implementation. The report is available on the project website.

Visit our website at: <[www.tceq.texas.gov/goto/tmdl/](http://www.tceq.texas.gov/goto/tmdl/)>