



Summary of Progress in the Implementation Plan for the Gilleland Creek Fecal Bacteria Total Maximum Daily Load, 2011-2016

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Introduction

Gilleland Creek in eastern Travis County was identified as being impaired for contact recreation due to elevated levels of fecal indicator bacteria by the Texas Commission on Environmental Quality (TCEQ) in 2004. A Total Maximum Daily Load (TMDL) was adopted by the TCEQ in August 2007. An Implementation Plan for the TMDL was developed by stakeholders and approved by the TCEQ in 2011. The planning window for the first Implementation Plan was 2011-2016. Detailed information about the Gilleland Creek TMDL and Implementation Plan is available:

<https://www.tceq.texas.gov/waterquality/tmdl/nav/69-gillelandcreekbacteria/69-gillelandcreekbacteria.html>

A stakeholder process to revise and update the Gilleland Creek Implementation Plan was initiated in 2016. This report presents a summary of actions taken by the City of Austin during the 2011-2016 period under the original Implementation Plan, organized by management measures and control actions as they appeared in the original Implementation Plan:

<https://www.tceq.texas.gov/assets/public/waterquality/tmdl/69gilleland/69-gillelandiplan.pdf>

Management Measure 1.0: *Identify, prioritize, inspect, and bring into compliance malfunctioning OSSFs in the Gilleland Creek watershed.*

The purpose of this management measure was to identify the location of the on-site sewage facilities (OSSF) in the watershed, prioritize those systems that would have the most impact on water quality and inspect those systems given the highest priority.

The City of Austin performed a study of OSSF within the Gilleland Creek watershed and within the City of Austin jurisdiction for OSSF permitting. Forty-two active OSSF were identified. Twenty priority OSSF were inspected, and 18 found to be in good working order. One OSSF was properly abandoned as a result of the inspection, and an enforcement action was initiated for

one failing OSSF. EPA SepticSmart Program door hangers were distributed to OSSF owners, and the City of Austin conducted a free homeowner training on OSSF maintenance. Additionally, the City of Austin improved its local OSSF ordinance, and the revisions were approved by TCEQ in October 2013. More information about City of Austin OSSF programs are available at <http://www.austintexas.gov/ossf>.

Management Measure 2.0: *Restore and preserve riparian zones to protect water quality.*

Riparian zones are the interface between creeks and upland areas. Diverse and abundant vegetated buffers within riparian zones are critical components to effective watershed management due to the efficiency of these areas in filtering non-point source pollutants during runoff, stabilizing creek banks to reduce erosion, improving hydrology by helping to maintain baseflow, and providing a variety of other ecosystem services. To implement this measure, the stakeholders explored a range of existing nonprofit and governmental (local, regional, state, and federal) programs to work with landowners to accomplish the overall goal of restoring and protecting creek-side riparian zones within the watershed.

Though not a specific measure of the Implementation Plan, the City of Austin adopted new regulations to protect riparian zones. On October 17, 2013, Austin City Council passed a new Watershed Protection Ordinance. The new ordinance improves creek and floodplain protection, prevents unsustainable public expense on drainage systems, and simplifies some land development regulations within the City of Austin jurisdiction. The importance of protecting riparian areas and floodplains is a key theme of the new regulations, as is a recognition that prevention of impacts from land development is affordable but after-the-fact repairs of damage from unsustainable development practices is not affordable. Headwater stream buffers were expanded and now begin at 64 acres of cumulative drainage area, adding protection for more than 400 miles of streams in Austin that were not previously protected. New requirements limiting modification of floodplains were added, new provisions were added to facilitate trails within stream buffers, and erosion hazard zones were created to prevent new development from being impacted by future erosion. The ordinance was the product of more than 2 years of efforts and included a robust stakeholder process. More information about the ordinance is available online at <http://austintexas.gov/departments/watershed-protection-ordinance>.

The City of Austin also published 30 scientific publications relating to riparian zone management during the 2011-2016 plan timeframe. Subject matter of the publications range from the creation of a new index for measuring riparian integrity, guidance for functional approaches to riparian zone restoration, invasive species management, instream leaf litter studies, and riparian restoration case studies. These and other reports are available online at http://www.austintexas.gov/watershed_protection/publications/default.cfm, and via the City of Austin riparian blog at <http://www.austintexas.gov/creekside>.

Management Measure 3.0: *Determine the effectiveness of retrofitting existing storm-water detention basins to perform as water quality facilities to reduce bacteria concentrations.*

The purpose of this management measure is to reduce bacteria concentrations from urban nonpoint source runoff by retrofitting existing storm-water detention basins to water quality facilities without compromising the detention function of the facilities.

The City of Austin had minimal involvement in this management measure, which was executed by the City of Pflugerville and the University of Texas Center for Research in Water Resources.

Management Measure 4.0: *Partners coordinate to develop a general campaign to raise public awareness of unregulated contributions of bacteria pollution, specifically pet waste.*

Watershed-wide public education campaigns were identified to inform citizens about the significance of dog excrement as a source of bacteria source and ways to manage it.

The City of Austin continues the Scoop the Poop education campaign, a robust regional pet waste management public outreach effort. The campaign includes a wide variety of outreach materials distributed via traditional media, social media, community events, and the web in both English and Spanish. Signage and pet waste collection bag dispensers are widely distributed within the City of Austin park system. In 2016, the City of Austin estimates that more than 3,126,000 pounds annually of pet waste have potentially been diverted from streams and lakes in Austin as a result as a result of the Scoop the Poop program. More information and educational materials are available from the program webpage at <http://www.austintexas.gov/department/scoop-the-poop>.

Management Measure 5.0: *Develop and adopt equivalent water-quality ordinances between government jurisdictions.*

Effective February 4, 2014, Travis County Commissioners approved amendments to the Title 30 of the City of Austin Land Development Code relating to Joint Travis County/City of Austin Subdivision Regulations to implement the City of Austin Watershed Protection Ordinance (see Management Measure 2.0). One of the principal effects of these amendments was to expand setbacks for new development around waterways to protect riparian areas including those within Gilleland Creek watershed. Prior to the action by the Travis County Court, expanded waterway setbacks for the watershed within City of Austin's extraterritorial jurisdiction had only applied to non-subdivision development.

Management Measure 6.0

Conduct annual visual inspection of wastewater collection systems within 100 ft from the centerline of Gilleland Creek and its tributaries.

Leaking wastewater collection system infrastructure was identified as a potential source of fecal contamination within the Gilleland Creek watershed in the TMDL.

The City of Austin identified wastewater collection system components within 100 feet of Gilleland Creek and its tributaries. Approximately 6.64 miles of identified system components were inspected and no failures were identified.

Control Action 1.0: *Monitor and report E. coli concentrations from WWTF effluent.*

In November 2009, TCEQ's Commission approved Rule Project No. 2009-005-309-PR. The rulemaking adds bacteria limits for *Escherichia coli* for discharges to fresh water systems to Texas Pollutant Discharge Elimination System (TPDES) domestic permits in Title 30 Administrative Code Chapter 309 and sets the frequency of testing for bacteria in Chapter 319. In 2009, TCEQ renewed and amended the discharge permits for the facilities identified in the Gilleland Creek watershed to include *E. coli* monitoring and effluent limits. The goal of the monitoring is to ensure that the facilities' effluent has concentrations less than the limits stated in each facility's permit. If monitoring results indicate concentrations approaching or exceeding the limit set in the facility's permit, then the facilities will make necessary operational changes to reduce the bacteria concentrations as required by the facility's permit.

Relative to the one Control Action in the 2009 Gilleland Creek Implementation Plan, the City of Austin continues to monitor and report fecal bacteria in WWTF effluent according to TCEQ Texas Pollutant Discharge Elimination System discharge permit requirements. As of 2017, the City of Austin operates four WWTF discharging within the Gilleland Creek watershed. Operational improvements were made during the 2011-2016 Implementation Plan period as a result of fecal bacteria effluent monitoring results.

The Dessau WWTF (WQ0012971-001) remains in operation. The facility discharges up to 0.5 MGD to a tributary of Harris Branch. The facility utilizes chlorine disinfection and monitors *E. coli* bacteria in effluent once per week.

The Harris Branch WWTF (WQ0013318-001) flows were diverted to the Wild Horse Ranch WWTF (WQ0010543-013) on June 26, 2017, and the City of Austin will request cancellation of the permit by TCEQ. The facility was authorized to discharge up to 2 MGD to the Harris Branch tributary of Gilleland Creek. The facility utilized chlorine disinfection and monitored *E. coli* bacteria in effluent once per month in the Interim I and Interim II phases, twice per month in the Interim III phase, and once per week in the final phase.

The Wild Horse Ranch WWTF (WQ0010543-013) remains in operation. The facility is authorized to discharge up to 0.99 MGD in the final phase to a tributary of Gilleland Creek. The facility utilizes ultraviolet light disinfection and monitors *E. coli* bacteria in effluent daily.

The Whisper Valley WWTF, also known as the Taylor Lane WWTF (WQ0010543-014), is under construction and construction is anticipated to be completed in Fall 2017. The facility is authorized to discharge up to 3 MGD in the final phase to Gilleland Creek. The facility utilizes chlorine disinfection and monitors *E. coli* bacteria in effluent once per month in the Interim I and Interim II phases and once per year in the final phase.