Lower West Fork Trinity River Watershed:
A Community Project to Protect Recreational Uses

Thirteen Total Maximum Daily Loads for Indicator Bacteria in the Lower West Fork Trinity River Watershed[1]

Adopted Sep. 24, 2013.

Approved by EPA Nov. 7, 2013.

One TMDL for Indicator Bacteria in Dry Branch Creek

Via the October 2023 Update to the Texas Water Quality Management Plan (SFR-121/2024-01).

Approved by EPA Jan. 22, 2024 (scroll to view or print this addendum).

[1] https://www.tceq.texas.gov/downloads/water-quality/tmdl/greater-trinity-recreational-66/66d-lower-west-fork-trinity-river-tmdl-adopted.pdf.

Appendix II. Addendum One to Thirteen TMDLs for Indicator Bacteria in the Lower West Fork Trinity River Watershed

Adding one TMDL for 0841I_01

One TMDL for Indicator Bacteria in Dry Branch Creek

Introduction

TCEQ adopted *Thirteen TMDLs for Indicator Bacteria in the Lower West Fork Trinity River Watershed* (TCEQ, 2013) on September 24, 2013. EPA approved the TMDLs on November 7, 2013. This document is the first addendum to the original TMDL report.

This first addendum includes information specific to one additional AU for Dry Branch Creek (AU 0841I_01; also referred to in this addendum as the TMDL watershed). This AU is located within the watershed of the approved original TMDLs for the Lower West Fork Trinity River. The concentration of indicator bacteria in this additional AU exceeds the criterion used to evaluate support of the primary contact recreation 1 use.

This addendum details the development of the added TMDL allocation for this additional AU, which was not specifically addressed in the original TMDL report. For background or other explanatory information, please refer to the *Technical Support Document for One TMDL for Indicator Bacteria in Dry Branch Creek*[2] (Millican and Adams, 2022). Refer to the original, approved TMDL document for details about the overall project watershed as well as methods and assumptions used in developing the original TMDLs.

Problem Definition

TCEQ first identified the bacteria impairment for Dry Branch Creek in the *2020 Texas Integrated Report of Surface Water Quality for Clean Water Act Sections 305(b) and 303(d)* (Texas Integrated Report; TCEQ, 2020). The impairment was identified again in the subsequent 2022 Texas Integrated Report (TCEQ, 2022a), the latest EPA-approved edition. The impaired AU is 0841I_01. The water body includes only one AU. Figure II-1

[2] www.tceq.texas.gov/downloads/water-quality/tmdl/greater-trinity-recreational-66/66j-as-475-dry-branch-bacteria-tsd-2022-oct.pdf

shows the watershed added in this addendum in relation to the entire watershed of the original TMDLs, which is located within the Trinity River Basin.

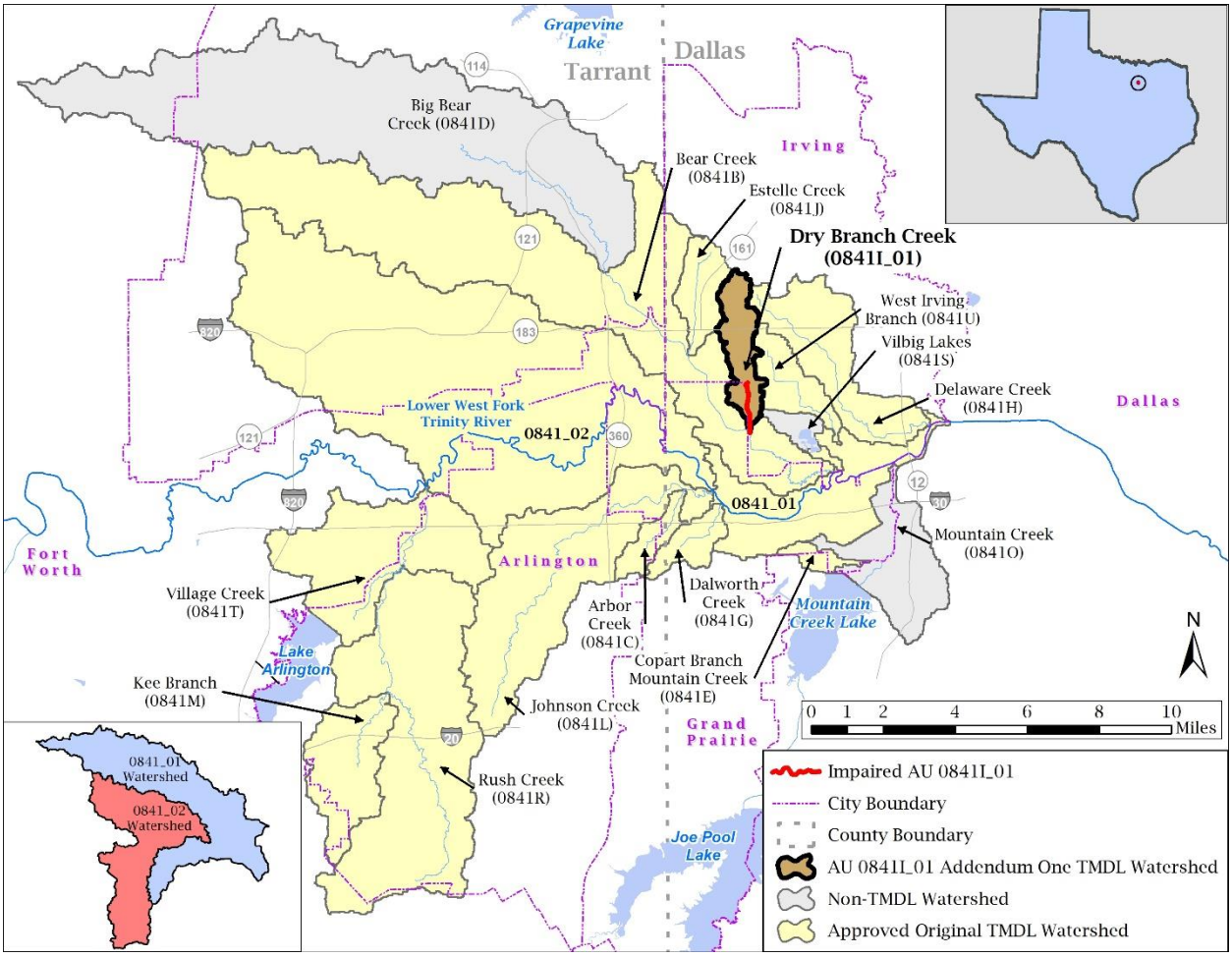

Figure II-1. Map showing the previously approved TMDL watersheds and the Dry Branch Creek 0841I_01 watershed added by this addendum

The Texas Surface Water Quality Standards (TCEQ, 2018) identify uses for surface waters and numeric and narrative criteria to evaluate attainment of those uses. The basis for the water quality target for the TMDL developed in this addendum is the numeric criterion for indicator bacteria from the 2018 Texas Surface Water Quality Standards. *Escherichia coli (E. coli)* is the indicator bacteria for assessing primary contact recreation 1 use in freshwater.

Table II-1 summarizes the ambient water quality data for the TCEQ surface water quality monitoring (SWQM) station on the water body, as reported in the 2022 Texas Integrated Report (TCEQ, 2022a). The data from the assessment indicate nonsupport of the primary contact recreation 1 use for the AU, because the geometric mean concentration for *E. coli* exceeds the freshwater geometric mean criterion of 126 colony

forming units per 100 milliliters (cfu/100 mL) of water. Figure II-2 shows the location of the TCEQ SWQM station that was used in evaluating water quality in the 2022 Texas Integrated Report for the water body added by this addendum.

Table II-1. 2022 Texas Integrated Report summary

AU	TCEQ SWQM Station	Parameter	Number of Samples	Date Range	*E. coli* Geometric Mean (cfu/100 mL)
0841I_01	17173	*E. coli*	37	12/01/2013 – 11/30/2020	416.1

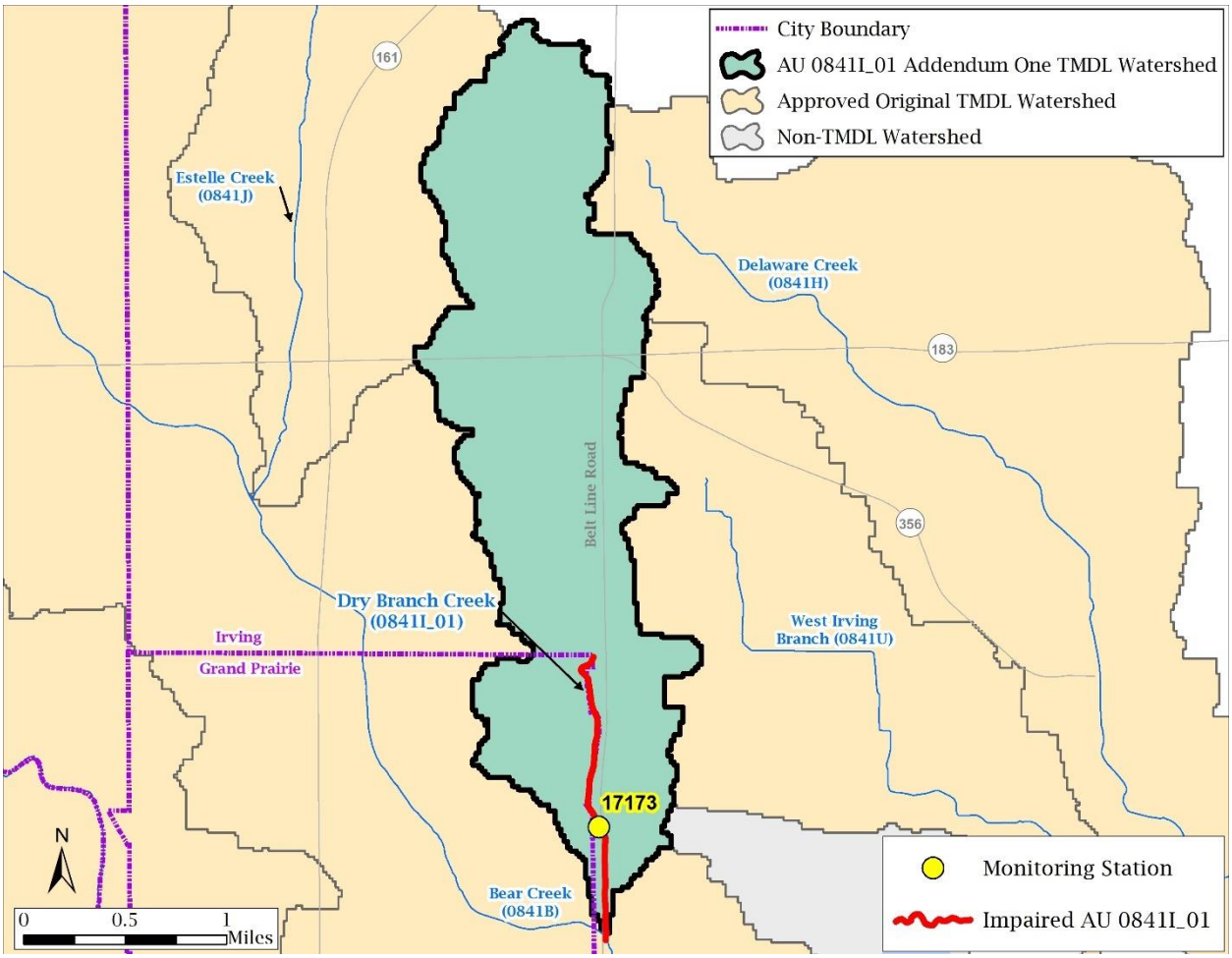

Figure II-2. Active TCEQ SWQM station

Watershed Overview

Dry Branch Creek AU 0841I_01 is a tributary to Bear Creek (0841B), which is a tributary to the Lower West Fork Trinity River (0841). The water body is approximately

1.5 miles long, drains 3.4 square miles (2,171 acres), and is located entirely within Dallas County.

The 2022 Texas Integrated Report (TCEQ, 2022a) provides the following water body and AU description:

- Dry Branch Creek AU 0841I_01 – A 1.5 mile stretch of Dry Branch Creek running upstream from confluence with Lower West Fork Trinity to Rock Island Road in Irving, Dallas County.

The AU description for 0841I_01 that is contained in the 2022 Texas Integrated Report (and in previous integrated reports) is not accurate. Dry Branch Creek (0841I_01) is actually a tributary of Bear Creek (0841B), not Lower West Fork Trinity River. TCEQ will revise the AU description for 0841I_01 in future editions of the Texas Integrated Report to describe the terminus of AU 0841I_01 at the confluence with Bear Creek (TCEQ, 2022b).

Climate

Weather data were obtained for the 20-year period from January 2002 through December 2021 from the the National Climatic Data Center for the Dallas Fort Worth International Airport (NOAA, 2022). Data from this 20-year period indicate that the average monthly high temperature typically reaches a maximum of 96.8 °F in August, and the average monthly low temperature reaches a minimum of 36.6 °F in January (Figure II-3). Annual rainfall averages 36.2 inches. The wettest month is May (4.9 inches) while July (1.9 inches) is the driest month, with rainfall occurring throughout the year.

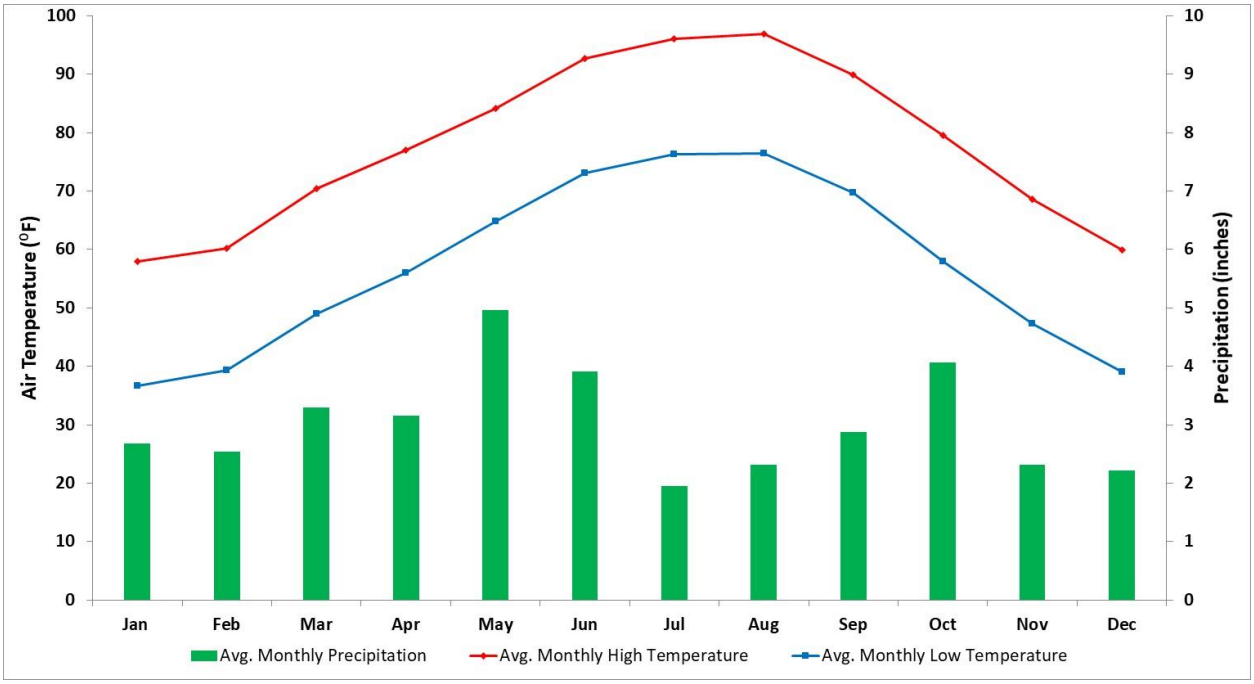

Figure II-3. Average monthly temperature and precipitation (2002-2021) at the Dallas Fort Worth International Airport

Population and Population Projections

The TMDL watershed is located within the municipal boundaries of Irving and Grand Prairie in Dallas County. According to the 2020 United States Census Bureau (USCB) data (USCB, 2021), the TMDL watershed had an estimated population of 20,410 in 2020.

A population projection through 2045 was developed using data from NCTCOG traffic survey zone allocations. Traffic survey zones are planning areas used by NCTCOG to provide for more analysis at a local scale. (NCTCOG, 2017a). Table II-2 provides a summary of the population projection for the TMDL watershed.

Table II-2. 2020 – 2045 population projection

Area	2020 Estimated Population	2045 Projected Population	Projected Population Increase	Percent Change
Dry Branch Creek Watershed	20,410	22,150	1,740	8.5%

The following steps detail the method used to estimate the 2020 and projected 2045 populations in the TMDL watershed.

1. Obtained 2020 USCB data at the block level.

2. Developed the 2020 watershed population using the USCB block level data for the portion of census blocks located within the watershed.
3. For the census blocks that were partially located in the watershed, estimated population by multiplying the block population to the proportion of its area in the watershed.
4. Obtained population projections for the year 2045 from NCTCOG traffic survey zone allocations (NCTCOG, 2017a).
5. Developed population projections using traffic survey zone data for the portion of the traffic survey zones located within the watershed.
6. Subtracted the 2020 watershed population from the 2045 population projection to determine the projected population increase, then divided the projected population increase by the 2020 watershed population to determine the percentage population increase for the TMDL watershed.

Land Cover

The land cover data for the TMDL watershed were obtained from NCTCOG and represent land cover estimates for 2015 (NCTCOG, 2017b). The land cover for the TMDL watershed is shown in Figure II-4. A summary of the land cover data is provided in Table II-3 and indicates that Residential (42.37%) is the dominant land cover in the TMDL watershed.

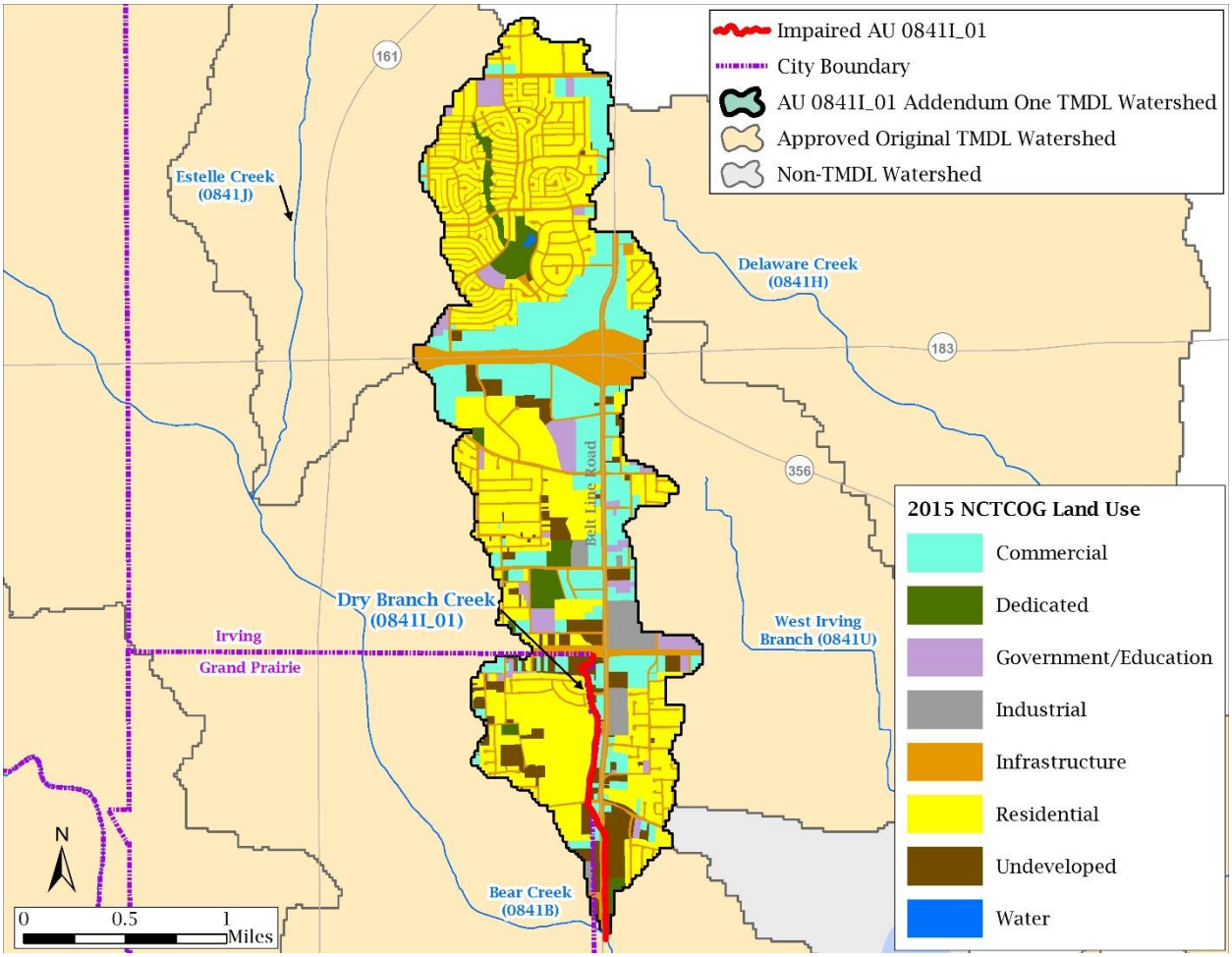

Figure II-4. Land cover map showing classifications

Table II-3. Land cover classification by area and percentage

2015 Land Cover Class Type	Area (Acres)	% of Total
Residential	919.6	42.37%
Commercial/Industrial	493.6	22.74%
Transit	433.5	19.97%
Group Quarters	5.8	0.27%
Institution	82.6	3.81%
Dedicated	77.4	3.57%
Vacant	156.7	7.21%
Water	1.4	0.06%
Total	**2,170.6**	**100%**

Endpoint Identification

The endpoint for the TMDL is to maintain the concentration of *E. coli* below the geometric mean criterion of 126 cfu/100 mL, which is protective of the primary contact recreation 1 use in freshwater.

Source Analysis

Pollutants may come from several sources, both regulated and unregulated. Pollutants in regulated discharges, referred to as "point sources," come from a single definable point, such as a pipe, and are regulated by permit under the TPDES program. WWTFs and stormwater discharges from industries, construction activities, and the separate storm sewer systems of cities are considered point sources of pollution.

Unregulated sources are typically nonpoint source in origin, meaning the pollutants originate from multiple locations and rainfall runoff washes them into surface waters. Nonpoint sources are not regulated by permit.

Except for WWTFs, which receive individual wasteload allocations (WLAs; see the Wasteload Allocation section), the regulated and unregulated sources in this section are presented to give a general account of the different sources of bacteria expected in the watershed. These are not meant to be used for allocating bacteria loads or interpreted as precise inventories and loadings.

Regulated Sources

Regulated sources are controlled by permit under the TPDES program. The regulated sources in the TMDL watershed include stormwater discharges from municipal separate storm sewer systems (MS4s) and regulated construction activities.

Domestic and Industrial WWTFs

No permitted WWTFs exist in the TMDL watershed. Domestic wastewater is collected by and transported to the Trinity River Authority (TRA) Central Regional Wastewater System, which is outside the TMDL watershed (Figure II-5).

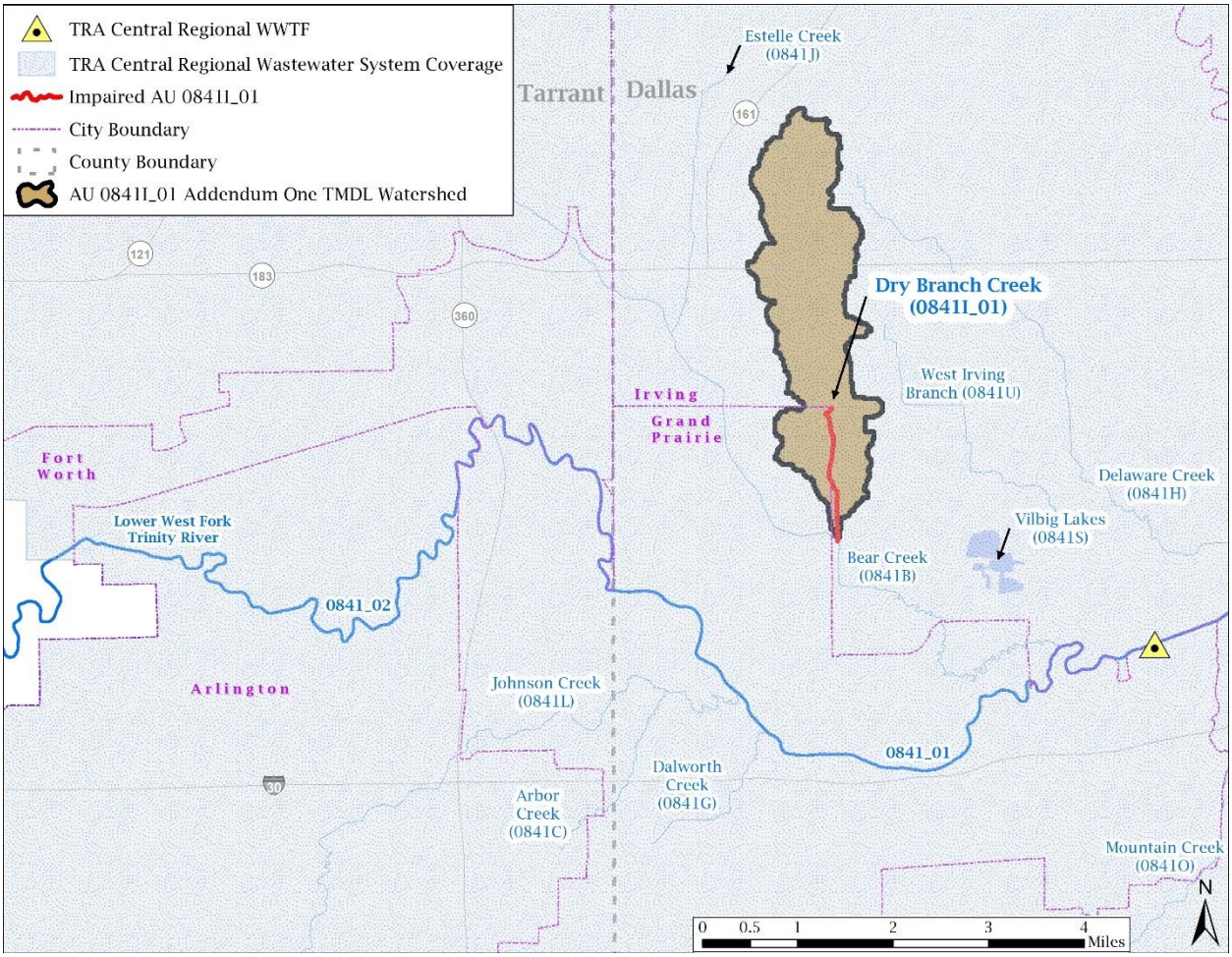

Figure II-5. Coverage area of the TRA Central Regional Wastewater System in the TMDL watershed and surrounding area

TCEQ/TPDES Water Quality General Permits

Certain types of activities are required to be covered by one of several TCEQ/TPDES wastewater general permits:

- TXG110000 – concrete production facilities
- TXG130000 – aquaculture production
- TXG340000 – petroleum bulk stations and terminals
- TXG640000 – conventional water treatment plants
- TXG670000 – hydrostatic test water discharges
- TXG830000 – water contaminated by petroleum fuel or petroleum substances
- TXG870000 – pesticides (application only)
- TXG920000 – concentrated animal feeding operations
- WQG100000 – wastewater evaporation
- WQG200000 – livestock manure compost operations (irrigation only)

A review of active general permit coverage (TCEQ, 2022c) in the TMDL watershed as of June 7, 2022, found no active general wastewater permit authorizations of the types described above.

Sanitary Sewer Overflows

A summary of sanitary sewer overflow (SSO) incidents that occurred during a six-year period from 2016 through 2021 in the TMDL watershed was obtained from NCTCOG. The summary data indicated 19 SSO incidents had been reported within the TMDL watershed. The SSOs had a total discharge of 101,187 gallons with a minimum of one gallon and a maximum of 100,000 gallons.

TPDES-Regulated Stormwater

When evaluating stormwater for a TMDL allocation, a distinction must be made between stormwater originating from an area under a TPDES-regulated discharge permit and stormwater originating from areas not under a TPDES-regulated discharge permit. Stormwater discharges fall into two categories:

Stormwater subject to regulation, which is any stormwater originating from TPDES-regulated MS4 entities, stormwater discharges associated with regulated industrial facilities, and construction activities.
7. Stormwater runoff not subject to regulation.

Discharges of stormwater from a Phase II MS4 area, regulated industrial facility, construction area, or other facility involved in certain activities must be covered under the following TCEQ/TPDES general permits:

- TXR040000 – Phase II MS4 General Permit for MS4s located in urbanized areas
- TXR050000 – Multi-sector General Permit (MSGP) for industrial facilities
- TXR150000 – Construction General Permit (CGP) for construction activities disturbing more than one acre or are part of a common plan of development disturbing more than one acre

A review of active stormwater general permit coverage as of June 7, 2022 (TCEQ, 2022c) found no MSGP authorizations and two CGP authorizations within the TMDL watershed. There are currently one Phase I permit, one combined Phase I/II permit, and one Phase II MS4 authorization found within the urbanized area of the TMDL watershed (Table II-4). The areas covered by CGP authorizations are not discussed further, since MS4 permits cover 100% of the watershed area. Figure II-6 shows the urbanized area defined by USCB that accounts for MS4 coverage within the TMDL watershed.

Table II-4. TPDES MS4 permits associated with the TMDL watershed

Entity	TPDES Permit	EPA ID	Authorization Type
City of Irving	WQ0004691000	TXS001301	Phase I MS4
Texas Department of Transportation	WQ0005011000	TXS002101	Combined Phase I and II MS4
City of Grand Prairie	General Permit (TXR040000)	TXR040065	Phase II MS4

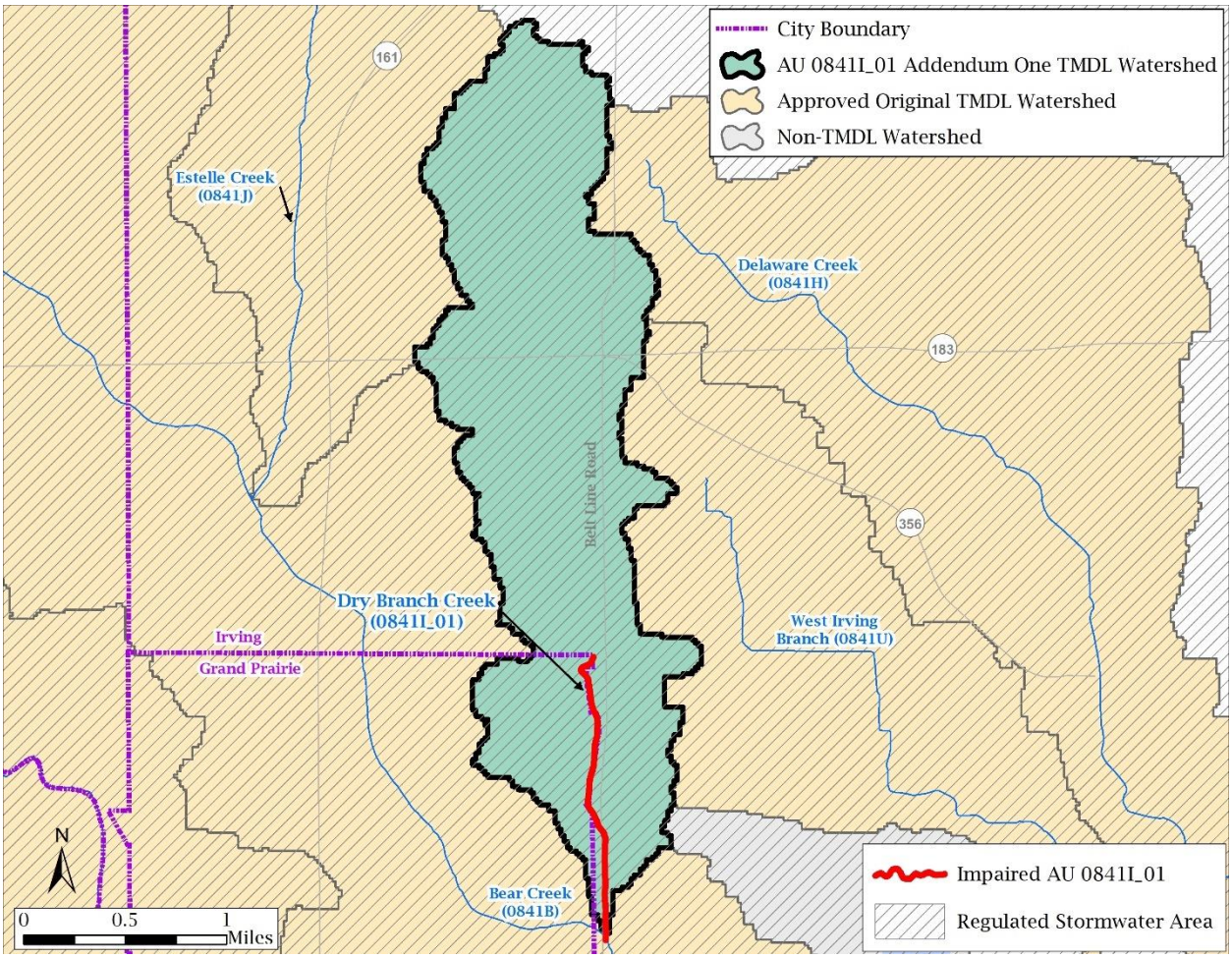

Figure II-6. Regulated stormwater area based on Phase I and Phase II MS4 permits as defined by the urbanized area

Illicit Discharges

Pollutant loads can enter water bodies from MS4 outfalls that carry authorized sources as well as illicit discharges under both dry- and wet-weather conditions. The term "illicit discharge" is defined in TPDES General Permit TXR040000 for Phase II MS4s as "Any discharge to a municipal separate storm sewer system that is not entirely composed of stormwater, except discharges pursuant to this general permit or a separate

authorization and discharges resulting from emergency firefighting activities." Illicit discharges can be categorized as either direct or indirect contributions.

Unregulated Sources

Unregulated sources of bacteria are nonpoint and can originate from wildlife and feral hogs, various agricultural activities, agricultural animals, land application fields, urban runoff not covered by a permit, failing on-site sewage facilities (OSSFs), and domestic pets.

Unregulated Agricultural Activities and Domesticated Animals

A number of agricultural activities that do not require permits can be potential sources of fecal bacteria loading. Agricultural activities are not a source in this highly urbanized watershed.

Fecal bacteria from dogs and cats is transported to water bodies by runoff in both urban and rural areas and can be a potential source of bacteria loading. Table II-5 summarizes the estimated number of dogs and cats within the TMDL watershed. Pet population estimates were calculated as the estimated number of dogs (0.614) and cats (0.457) per household (AVMA, 2018). The number of households in the TMDL watershed was estimated using 2010 Census household and population data (USCB, 2010) to obtain the ratio of people to households. This ratio was applied to the 2020 Dry Branch Creek population data (USCB, 2021) to estimate the number of households in the TMDL watershed. The actual contribution and significance of bacteria loads from pets reaching Dry Branch Creek is unknown.

Table II-5. Estimated households and pet population

AU	Estimated Households	Estimated Dog Population	Estimated Cat Population
0841I_01	6,722	4,127	3,072

Wildlife and Unmanaged Animals

Fecal bacteria are common inhabitants of the intestines of all warm-blooded animals, including wildlife such as mammals and birds. In developing bacteria TMDLs, it is important to identify by watershed the potential for bacteria contributions from wildlife. Wildlife are naturally attracted to riparian corridors of water bodies. With direct access to the stream channel, the direct deposition of wildlife waste can be a concentrated source of bacteria loading to a water body. Fecal bacteria from wildlife are also deposited onto land surfaces, where they may be washed into nearby water bodies by rainfall runoff.

The *E. coli* contribution from feral hogs and wildlife in the TMDL watershed cannot be determined based on existing information. However, due to the urbanized nature of the watershed it is assumed that the contribution is minimal.

Onsite Sewage Facilities

Failing OSSFs were not considered a major source of bacteria loading in the TMDL watershed, because the entire watershed area is served by the TRA wastewater collection and treatment system. A review of OSSF information received from NCTCOG indicates that there are no known OSSFs in the TMDL watershed.

Linkage Analysis

The load duration curve (LDC) method was used to examine the relationship between instream water quality and the source of indicator bacteria loads. Inherent to the use of LDCs as the mechanism of linkage analysis is the assumption of a one-to-one relationship between instream loadings and loadings originating from point sources as regulated and from the landscape as unregulated sources. Further, this one-to-one relationship was also inherently assumed when using the LDC to define the TMDL pollutant load allocation. The LDC method allows for estimation of TMDL loads by utilizing the cumulative frequency distribution of streamflow and measured pollutant concentration data (Cleland, 2003). In addition to estimating stream loads, this method allows for the determination of the hydrologic conditions under which impairments are typically occurring, can give indications of the broad origins of the bacteria (i.e., point or nonpoint source), and provides a means to allocate allowable loadings. The technical support document for this addendum (Millican and Adams, 2022) provides details about the linkage analysis along with the LDC method and its application.

The *E. coli* event data plotted on the LDC for TCEQ SWQM Station 17173 in Figure II-7 show exceedances of the geometric mean criterion have commonly occurred in the “Very High Flow” and “High Flow” regimes. The allowable load at the single sample criterion (399 cfu/100 mL) is included on the LDC for comparison with individual *E. coli* samples, although it is not used for assessment or allocation purposes.

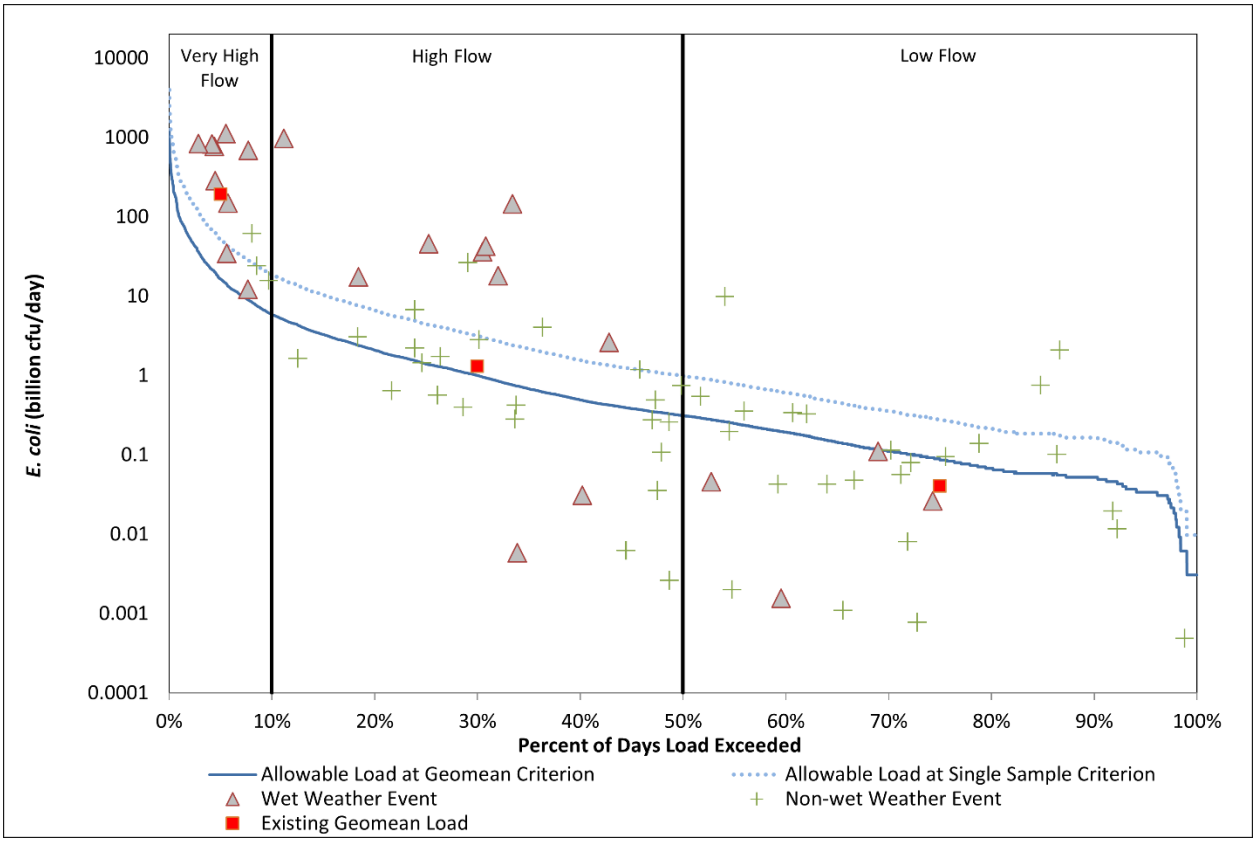

Figure II-7. LDC for TCEQ SWQM Station 17173

Margin of Safety

The margin of safety (MOS) is designed to account for any uncertainty that may arise in specifying water quality control strategies for the complex environmental processes that affect water quality. Quantification of this uncertainty, to the extent possible, is the basis for assigning an MOS. The TMDL in this report incorporates an explicit MOS of 5% of the total TMDL allocation.

Pollutant Load Allocation

The TMDL represents the maximum amount of a pollutant that the stream can receive in a single day without exceeding water quality standards. The pollutant load allocations for the selected scenarios were calculated using the following equation:

TMDL = WLA + LA + FG + MOS

Where:

WLA = wasteload allocations, the amount of pollutant allowed by regulated dischargers

LA = load allocations, the amount of pollutant allowed by unregulated sources

FG = loadings associated with future growth from potential regulated facilities

MOS = margin of safety load

For the remainder of this report some calculations have been rounded and may not lead to the exact final amounts listed in the text, tables, or figures

AU-Level TMDL Calculation

To be consistent with previously completed TMDLs in the original watershed, the TMDL for Dry Branch Creek was derived using the median flow within the "Very High Flow" regime (or 5% load duration exceedance) of the LDC developed for TCEQ SWQM Station 17173. This station represents the location within Dry Branch Creek where an adequate number of *E. coli* samples was collected.

Margin of Safety Calculation

The TMDL in this report incorporates an explicit MOS of 5%.

Wasteload Allocation

The WLA is the sum of loads from regulated sources, which are WWTFs and regulated stormwater.

Wastewater Treatment Facilities

TPDES-permitted WWTFs are allocated a daily wasteload (WLA_{WWTF}) calculated as their full permitted discharge flow rate multiplied by one-half the instream geometric mean criterion. One-half of the water quality criterion (63 cfu/100 mL *E. coli*) is used as the WWTF target to provide instream and downstream load capacity and to be consistent with the original TMDL report. Due to the absence of any permitted dischargers in the TMDL watershed, the WLA_{WWTF} component is zero.

Regulated Stormwater

Stormwater discharges from MS4, industrial, and construction areas are also considered regulated point sources. Therefore, the WLA calculations must also include an allocation for regulated stormwater discharges (WLA_{SW}). The percentage of the land area included in the project watershed that is under the jurisdiction of stormwater permits is used to estimate the amount of the overall runoff load that should be allocated as the permitted stormwater contribution in the WLA_{SW} component.

The Dry Branch Creek watershed is covered 100% by MS4 permits. However, even in highly urbanized areas such as the TMDL watershed, there remain some areas of potential direct deposition of bacteria loadings from unregulated sources such as wildlife. To account for these unregulated areas, the stream length of Dry Branch Creek (from the confluence with Bear Creek upstream to Rock Island Road in Irving, Dallas County) and average channel width as calculated based on aerial imagery was used to compute an area of unregulated stormwater contribution. The percentage of land under the jurisdiction of stormwater permits in the TMDL watershed is 99.8%.

Load Allocation

The load allocation (LA) component of the TMDL corresponds to direct nonpoint runoff and is the difference between the total load from stormwater runoff and the portion allocated to WLA_{SW}.

Allowance for Future Growth

The future growth (FG) component of the TMDL equation addresses the requirement of TMDLs to account for future loadings that might occur as a result of population growth, changes in community infrastructure, and development. Specifically, this TMDL component takes into account the probability that new flows from WWTF discharges may occur in the future.

The assimilative capacity of water bodies increases as the amount of flow increases. The allowance for FG in TMDL watersheds results in the protection of existing uses and conforms to Texas' antidegradation policy. However, due to the absence of any existing WWTFs and the fact that it is highly unlikely that any new WWTFs will be established within the Dry Branch Creek watershed (TRA, 2022), the FG component is zero for this TMDL. In the event of a new point source being added to the watershed, then it will continue to conform to Texas' antidegradation policy. The three-tiered antidegradation policy in the Texas Surface Water Quality Standards prohibits an increase in loading that would cause or contribute to degradation of an existing use. The antidegradation policy applies to point source pollutant discharges. In general, antidegradation procedures establish a process for reviewing individual proposed actions to determine if the activity will degrade water quality.

FG of existing or new point sources is not limited by this TMDL as long as the sources do not cause bacteria to exceed the limits. The assimilative capacity of water bodies increases as the amount of flow increases. Consequently, increases in flow allow for increased loadings. The LDC and tables in this TMDL report will guide determination of the assimilative capacity of the water body under changing conditions, including FG.

Summary of TMDL Calculations

Table II-6 summarizes the TMDL calculations for the TMDL watershed. The TMDL was calculated based on the median flow in the 0-10 percentile range (5% exceedance, "Very High Flow" regime) from the LDC developed for the TCEQ SWQM Station 17173. Allocations are based on the current geometric mean criterion for *E. coli* of 126 cfu/100 mL for each component of the TMDL (with the exception of the WLA_{WWTF} and FG terms, which would be based on one-half the criterion if they applied).

Table II-6. TMDL allocation summary

All loads expressed as billion cfu/day *E. coli*

Water Body	AU	TMDL	MOS	WLA_{WWTF}	WLA_{SW}	LA	FG
Dry Branch Creek	0841I_01	16.545	0.827	0	15.694	0.024	0

The final TMDL allocations (Table II-7) needed to comply with federal requirements include the FG component within the WLA_{WWTF} (40 CFR Section 103.7).

Table II-7. Final TMDL allocation

All loads expressed as billion cfu/day *E. coli*

Water Body	AU	TMDL	MOS	WLA_{WWTF}	WLA_{SW}	LA
Dry Branch Creek	0841I _01	16.545	0.827	0	15.694	0.024

Seasonal Variation

Federal regulations require that TMDLs account for seasonal variation in watershed conditions and pollutant loading [40 CFR Section 130.7(c)(1)]. Analysis of the seasonal differences in indicator bacteria concentrations were assessed by comparing *E. coli* concentrations obtained from 21 years (2001 through 2021) of routine monitoring data collected in the warmer months (May through September) against those collected during the cooler months (November through March). The months of April and October were considered transitional between warm and cool seasons and were excluded from the seasonal analysis. Differences in *E. coli* concentrations obtained in warmer versus cooler months were then evaluated by performing a Wilcoxon Rank Sum test (also known as the "Mann-Whitney" test). This analysis of *E. coli* data indicated that there was a significant difference (α=0.05) in indicator bacteria between cool and warm weather seasons for Dry Branch Creek (p=0.04), with the warm season having higher *E. coli* concentrations. Seasonal variation was also addressed by using all available flow and *E. coli* records (covering all seasons) from the period of record used in LDC development for this project.

Public Participation

TCEQ maintains an inclusive public participation process. From the inception of TMDL development, the project team sought to ensure that stakeholders were informed and involved. Communication and comments from the stakeholders in the watershed strengthen TMDL projects and their implementation.

The technical support document for this TMDL addendum (Millican and Adams, 2022) was published on the TCEQ website on January 5, 2023. Project staff presented information about this addendum at the annual meeting of the Greater Trinity River Bacteria TMDL Implementation Plan Coordination Committee hosted by NCTCOG (held online) on June 15, 2022. The public had an opportunity to comment on this addendum during the public comment period (Nov. 10 through Dec. 14, 2023) for the WQMP update in which this addendum is included. Notice of the public comment period for this addendum was emailed to stakeholders and posted on the TCEQ's TMDL Program News webpage.[3] Notice of the comment period, along with the document, was also posted on the WQMP Updates webpage.[4] TCEQ accepted public comments on the original TMDL report from May 24 through June 24, 2013. One comment was submitted, and it did not refer directly to the AU in this TMDL addendum.

Implementation and Reasonable Assurance

The water body covered by this addendum is within the existing bacteria TMDL watershed for the Lower West Fork Trinity River. That TMDL watershed, including Dry Branch Creek, is within the area covered by the implementation plan (I-Plan) developed by stakeholders, which was approved by the commission on December 11, 2013. The I-Plan outlines an adaptive management approach in which measures are assessed annually by the stakeholders for efficiency and effectiveness. The iterative process of evaluation and adjustment ensures continuing progress toward achieving water quality goals and expresses stakeholder commitment to the process. Please refer to the original TMDL document for additional information regarding implementation and reasonable assurance.

[3] www.tceq.texas.gov/waterquality/tmdl/tmdlnews.html
[4] www.tceq.texas.gov/permitting/wqmp/WQmanagement_updates.html

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