



# July 2024 Update to the Texas Water Quality Management Plan

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Prepared by  
Water Quality Division, Office of Water

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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY • PO BOX 13087 • AUSTIN,  
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Developed in accordance with Sections 205(j), 208,  
and 303 of the Clean Water Act  
and applicable regulations thereto.

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## Introduction

The Texas Water Quality Management Plan (WQMP) is the product of a wastewater treatment facility (WWTF) planning process developed and updated in accordance with provisions of Sections 205(j), 208, and 303 of the Clean Water Act (CWA), as amended. The WQMP is an important part of the State’s program for accomplishing its clean water goals.<sup>1</sup>

The Texas Department of Water Resources, a predecessor agency of the Texas Commission on Environmental Quality (TCEQ), prepared the initial WQMP for waste treatment management during the late 1970s. The CWA mandates that the WQMP be updated as needed to fill information gaps and revise earlier certified and approved plans. Any updates to the plan need involve only the elements of the plan that require modification. The original plan and its subsequent updates are collectively referred to as the “State of Texas Water Quality Management Plan.”

The WQMP is tied to the State’s water quality assessments that identify priority water quality problems. WQMPs are used to direct planning for implementation measures that control and/or prevent water quality problems. Several elements may be contained in the WQMP, such as effluent limitations of wastewater facilities, total maximum daily loads (TMDLs), nonpoint source management controls, identification of designated management agencies, and groundwater and source-water protection planning. Some of these elements may be contained in separate documents, which are prepared independently of the current WQMP update process, but may be referenced as needed to address planning for water quality control measures.

This document, as with previous updates<sup>2</sup>, will become part of the WQMP after completion of the public comment period, certification by TCEQ, and approval by the United States Environmental Protection Agency (EPA).

The materials presented in this document revise only the information specifically addressed in the following sections. Previously certified and approved WQMPs remain in effect.

<sup>1</sup> See the formal definition of a water quality management plan in Title 40 Code of Federal Regulations (CFR) 130.2(k).

<sup>2</sup> Fiscal Years 1974, 1975, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984/85, 1986/88, 1989, 1990, 1991, 1992, 1993/94, 1995, 1996, 1997/98, 02/1999, 05/1999, 07/1999, 10/1999, 01/2000, 04/2000, 07/2000, 10/2000, 01/2001, 04/2001, 07/2001, 10/2001, 01/2002, 04/2002, 07/2002, 10/2002, 01/2003, 04/2003, 07/2003, 10/2003, 01/2004, 04/2004, 07/2004, 10/2004, 01/2005, 04/2005, 07/2005, 10/2005, 01/2006, 04/2006, 07/2006, 10/2006, 01/2007, 04/2007, 07/2007, 10/2007, 01/2008, 04/2008, 07/2008, 10/2008, 01/2009, 04/2009, 07/2009, 10/2009, 01/2010, 04/2010, 07/2010, 10/2010, 01/2011, 04/2011, 07/2011, 10/2011, BPUB 2011, 01/2012, 04/2012, 07/2012, 10/2012, 01/2013, 04/2013, 07/2013, 10/2013, 01/2014, 04/2014, 07/2014, 10/2014, 01/2015, 04/2015, 07/2015, 10/2015, 01/2016, 04/2016, 07/2016, 10/2016, 01/2017, 04/2017, 07/2017, 10/2017, 01/2018, 04/2018, 07/2018, 10/2018, 01/2019, Terra Verde 2019, 04/2019, 07/2019, 10/2019, 01/2020, 04/2020, and 07/2020, 10/2020, 01/2021, 04/2021, 07/2021, 10/2021, 01/2022, 04/2022, 07/2022, 10/2022, 01/2023, 04/2023, 7/2023, 10/2023, 01/2024, and 04/2024.

The July 2024 WQMP update addresses the following topics for water quality planning purposes:

1. Projected Effluent Limits Updates
2. Service Area Population for Municipal WWTFs
3. Designation of Management Agencies for Municipal WWTFs
4. TMDL Updates

The public comment period for the draft July WQMP update was from August 2, 2024 through September 3, 2024.

The “Projected Effluent Limit Update” section provides information compiled from May 1, 2024 through July 31, 2024 and is based on Texas water quality standards (WQS). Projected effluent limits may be used for water quality planning purposes in Texas Pollutant Discharge Elimination System (TPDES) permit actions.

The “Service Area Population” and “Designation of Management Agencies” sections for municipal wastewater facilities were developed and evaluated by TCEQ in cooperation with the Texas Water Development Board (TWDB) and regional water quality management planning agencies.

The “Total Maximum Daily Load Update” section provides information on proposed wasteload allocations (WLAs) for new dischargers and revisions to existing TMDLs and was developed by the TCEQ TMDL Program in the Water Quality Planning Division.

## Projected Effluent Limit Updates

Table 1 reflects proposed effluent limits for new dischargers and preliminary revisions to original proposed effluent limits for preexisting dischargers. Abbreviations used in the table heading include:

- BOD<sub>5</sub>–5-Day Biochemical Oxygen Demand
- CBOD<sub>5</sub>–5-Day Carbonaceous Biochemical Oxygen Demand
- DO–Dissolved Oxygen
- lbs/day–Pounds per Day
- MGD–Million Gallons per Day
- mg/L–Milligrams per Liter
- NH<sub>3</sub>-N–Ammonia-Nitrogen

Effluent flows indicated in Table 1 reflect future needs and do not reflect current permits for these facilities. These revisions may be useful for water quality management planning purposes. The effluent flows and constituent limits indicated in the table have been preliminarily determined to be appropriate to satisfy the stream standards for dissolved oxygen in their respective receiving waters. These flow volumes and effluent sets may be modified at the time of permit action. These limits are based on the Texas WQS effective at the time of the production of this update. The WQS are subject to revision on a triennial basis.

**Table 1. Projected Effluent Limit Updates**

State Permit Number	Segment Number	EPA ID Number	Permittee Name and County	Flow (MGD)	CBOD <sub>5</sub> (mg/L)	CBOD <sub>5</sub> (lbs/day)	NH <sub>3</sub> -N (mg/L)	NH <sub>3</sub> -N (lbs/day)	BOD <sub>5</sub> (mg/L)	BOD <sub>5</sub> (lbs/day)	DO (mg/L)	Months/ Comments
10134-002	1102	TX0032735	City of Pearland Brazoria	6.5	5	271.05	2	108.42			5	
10489-003	1248	TX0101281	City of Georgetown Williamson	10	5	417.00	2	166.80			6	
10579-001	0818	TX0052949	City of Mabank Kaufman	0.45	30	112.59	2	7.51			4	April - Oct
				0.45	30	112.59	8	30.02			4	Nov - Mar
10945-001	1402	TX0066648	Ellinger Sewer Water Supply Corporation Fayette	0.092	10	7.67	3	2.30			4	
12104-001	0701	TX0071650	City of China Jefferson	0.5	10	41.70	3	12.51			4	
13623-001	1017	TX0109126	West Harris County MUD No. 21 Harris	0.39	10	32.53	3	9.76			4	Apr-Oct
				0.39	10	32.53	5	16.26			4	Nov-Mar
14055-001	0512	TX0117455	Texas Water Utilities LP Wood	0.26	7	15.18	2	4.34			4	



State Permit Number	Segment Number	EPA ID Number	Permittee Name and County	Flow (MGD)	CBOD <sub>5</sub> (mg/L)	CBOD <sub>5</sub> (lbs/day)	NH <sub>3</sub> -N (mg/L)	NH <sub>3</sub> -N (lbs/day)	BOD <sub>5</sub> (mg/L)	BOD <sub>5</sub> (lbs/day)	DO (mg/L)	Months/Comments
14215-001	0507	TX0123528	Mallard Point WWTP LLC Hunt	0.315	5	13.14	2	5.25			5	
14416-001	0823	TX0125628	City of Denton Denton	10	5	417.00	1	83.40			5	
15663-001	1228	TX0138398	Joshua Farms Municipal Management District No. 1 Johnson	0.75	10	62.55	2	12.51			4	
16437-001	1202	TX0145301	Signorelli Development Company Inc. Fort Bend	0.25	10	20.85	2	4.17			5	
16456-001	0821	TX0145424	South Central Water Company Collin	0.6	5	25.02	2	10.01			4	
16459-001	0202	TX0145432	Belle Vie Utilities LLC Fannin	0.15	5	6.26	1.5	1.88			6	
16460-001	0818	TX0145459	Robert K. Stahlman II Kaufman	0.25	10	20.85	3	6.26			4	
16467-001	1248	TX0145505	S7 Partnership GP, Inc. Williamson	0.95	5	39.62	1.2	9.51			6	
16474-001	1248	TX0145572	OP III ATX Georgetown 220, LP Williamson	0.99	10	82.57	3	24.77			4	
16477-001	1203	TX0145599	Hilco United Services Inc. Hill	0.0065					10	0.54	4	

State Permit Number	Segment Number	EPA ID Number	Permittee Name and County	Flow (MGD)	CBOD <sub>5</sub> (mg/L)	CBOD <sub>5</sub> (lbs/day)	NH <sub>3</sub> -N (mg/L)	NH <sub>3</sub> -N (lbs/day)	BOD <sub>5</sub> (mg/L)	BOD <sub>5</sub> (lbs/day)	DO (mg/L)	Months/Comments
16481-001	1302	TX0145611	Utilities Investment Co., Inc. Fort Bend	0.65	10	54.21	3	16.26			4	
16484-001	1434	TX0145629	Clay Partners – Mustang Ridge Land #1, L.P. Travis	0.02	5	0.83	2	0.33			4	
16485-001	1804	TX0145637	Flying Bar D Ranch, LTD Guadalupe	0.35	5	14.60	2	5.84			5	
16487-001	0801	TX0145645	River Ranch MUD No. 1 Liberty	1.3	5	54.21	2	21.68			6	
16489-001	1006	TX0145653	Carpenters Logistic Center I LLC Harris	0.015	10	1.25	3	0.38			4	
16490-001	2432	TX0145670	R. West Development Co., Inc. Brazoria	0.6	10	50.04	2	10.01			5	
16491-001	1001	TX0145688	DR Horton-Texas Ltd Harris	0.25	10	20.85	3	6.26			4	
16503-001	1244	TX0145751	South Central Water Company Williamson	0.6	10	50.04	2	10.01			6	
16512-001	1015	TX0145840	Shea Homes Houston, LLC Montgomery	0.3	10	25.02	3	7.51			4	

State Permit Number	Segment Number	EPA ID Number	Permittee Name and County	Flow (MGD)	CBOD <sub>5</sub> (mg/L)	CBOD <sub>5</sub> (lbs/day)	NH <sub>3</sub> -N (mg/L)	NH <sub>3</sub> -N (lbs/day)	BOD <sub>5</sub> (mg/L)	BOD <sub>5</sub> (lbs/day)	DO (mg/L)	Months/Comments
16513-001	0802	TX0145858	Rainbow's End Park, Inc. Polk	0.06	10	5.00	3	1.50			4	
16514-001	1902	TX0145866	East Central Independent School District Bexar	0.0096					20	1.60	6	
16524-001	1243	TX0145904	Mustang Springs Utility, LLC and Jaffe Interests, LP Bell	0.99	5	41.28	2	16.51			4	
16530-001	1014	TX0145955	Harris-Waller County Municipal Utility District No. 8 Waller	0.4	10	33.36	2	6.67			6	
16533-001	1010	TX0145980	South Central Water Supply Walker	0.7	10	58.38	2	11.68			6	
16534-001	1004	TX0145998	TML-GP Townsen Rd LLC Montgomery	0.35	10	29.19	3	8.76			6	
16538-001	0507	TX0146013	Gnanam LLC Hunt	0.03	10	2.50	3	0.75			4	
16539-001	0507	TX0146021	380 Ranch LLC Hunt	0.03	10	2.50	3	0.75			4	

<b>State Permit Number</b>	<b>Segment Number</b>	<b>EPA ID Number</b>	<b>Permittee Name and County</b>	<b>Flow (MGD)</b>	<b>CBOD<sub>5</sub> (mg/L)</b>	<b>CBOD<sub>5</sub> (lbs/day)</b>	<b>NH<sub>3</sub>-N (mg/L)</b>	<b>NH<sub>3</sub>-N (lbs/day)</b>	<b>BOD<sub>5</sub> (mg/L)</b>	<b>BOD<sub>5</sub> (lbs/day)</b>	<b>DO (mg/L)</b>	<b>Months/ Comments</b>
16540-001	0507	TX0146030	GRBK Edgewood LLC Collin	0.4	10	33.36	3	10.01			4	Flow is the total combined discharge of Outfall 001 and Outfall 002.
16541-001	1010	TX0146048	South Central Water Supply Walker	0.8	10	66.72	2	13.34			6	

## Planning Information Summary

The Water Quality Planning Division of TCEQ coordinated with TWDB and regional planning agencies to compile the wastewater facility information in this section. Domestic facility financing decisions under the State Revolving Fund (SRF) loan program must be consistent with the certified and approved WQMP.

The purpose of this section is to present data reflecting facility-planning needs, including previous water quality management plan needs requiring revision. Data are also presented to update other plan information for TWDB's SRF projects. Table 2 contains the updated service area population information. The table is organized in alphabetical order and includes the following 10 categories of information:

1. Planning Area – Area for which facility needs are proposed. The facility planning areas are subject to change during the facility planning process and any such changes will be documented in a later water quality management plan update. All planning areas listed are also designated management agencies (DMAs) unless otherwise noted in the “Comments” column.
2. Service Area – Area that receives the provided wastewater service.
3. Needs – A “T” indicates a need for either initial construction of a WWTF, additional treatment capacity, or the upgrading of a WWTF to meet existing or more stringent effluent requirements. A “C” indicates a need for improvements to, expansion of, rehabilitation of, or the initial construction of a wastewater collection system in the facility planning area. “T/C” indicates a need for both treatment and collection system facilities. More detailed facility planning conducted during a construction project may define additional needs and those needs will be reflected in a future update to the WQMP. A “F” indicates a need for flood mitigation.
4. Needs Year – The year in which the needs were identified for the planning area.
5. Basin Name – The river basin or designated planning entity for a designated planning area. The seven water quality management planning areas designated by the Governor are each administered by a Council of Governments (COG), a Development Council (DC), or a Planning Council (PC). Basin names are shown for areas outside one of these planning areas. The designated planning areas and their associated administering entities are:
  - a. Corpus Christi – Coastal Bend COG (CBCOG)
  - b. Killeen-Temple – Central Texas COG (CTCOG)
  - c. Texarkana – Ark-Tex COG (ATCOG)
  - d. Southeast Texas – South East Texas Regional Planning Council (SETRPC)
  - e. Lower Rio Grande Valley – Lower Rio Grande Valley Development Council (LRGVDC)
  - f. Dallas-Fort Worth – North Central Texas COG (NCTCOG)

g. Houston – Houston-Galveston Area Council (H-GAC)

6. Segment – The classified stream segment or tributary into which any recommended facility may discharge existing or projected wastewater. In the case of no-discharge facilities, this is the classified stream segment drainage area in which the facilities are located.
7. County – The county in which the facility planning area is located.
8. Date – The date the planning information was reviewed by TCEQ.
9. Comments – Additional explanation or other information concerning the facility planning area.
10. Population – The base year and projected populations for each facility planning area. Population projections presented are consistent with the latest available statewide population projections or represent the most current information obtained from facility planning analyses.

The facility information in this section is intended to be used in the preparation of facility plans and the subsequent design and construction of wastewater facilities. Design capacities of the treatment and collection systems will be based upon the population projections contained in this document, plus any additional needed capacity established for commercial/industrial flows and documented infiltration/inflow volumes (treatment or rehabilitation).

The probable needs shown under the “Needs” heading are preliminary findings; specific needs for an area must be as established in the completed and certified, detailed engineering studies conducted during facility planning under the SRF and other state loan programs.

Specific recommended effluent quality for any wastewater discharges resulting from any of the facilities in this document will be in accordance with the rule in the Texas WQS in effect at the time the permit is issued for a specific facility.

**Table 2. Service Area Population Updates**

Planning Agency	Service Area	Needs	Needs Year	Basin Name / COG	Segment	County	WQMP Date	Comments	Year	Population
City of Hitchcock	City Boundary	C	2050	Bays and Estuaries HGAC	2424G	Galveston	5/16/2024		2023	7341
									2030	7652
									2040	8252
									2050	8862
City of Gladewater	City Boundary	T/C	2050	Sabine	0505	Gregg & Upshur	5/17/2024		2023	7217
									2030	7664
									2040	8324
									2050	9051
City of Millsap	City Boundary	T/C	2064	Brazos NCTCOG	NA	Parker	5/16/2024		2021	386
									2030	435
									2040	457
									2050	503
City of Crockett	Utility Boundary	T/C	2050	Trinity	0804	Houston	5/16/2024		2020	6275
									2030	6099
									2040	5743
									2050	5184

<b>Planning Agency</b>	<b>Service Area</b>	<b>Needs</b>	<b>Needs Year</b>	<b>Basin Name / COG</b>	<b>Segment</b>	<b>County</b>	<b>WQMP Date</b>	<b>Comments</b>	<b>Year</b>	<b>Population</b>
New Ulm WSC	Project service area	T/C	2070	Brazos-Colorado HGAC	1302	Austin	5/30/2024		2023	300
									2030	325
									2040	360
									2050	400
City of Jacksonville	City Boundary	T/C	2040	Neches	0611	Cherokee	7/29/2024		2022	14104
									2030	13352
									2040	13218
									2050	12975
City of Arp	City Boundary	T/C	2050	Neches	0611	Smith	7/29/2024		2023	970
									2030	1041
									2040	1104
									2050	1148
City of Crystal City	Utility Boundary	T/C	2050	Nueces	2105	Zavala	7/29/2024		2023	6089
									2030	6148
									2040	6233
									2050	6318



## Designated Management Agencies

To be designated as a management agency for wastewater collection or treatment, an entity must demonstrate the legal, institutional, managerial and financial capability necessary to carry out the entity’s responsibilities in accordance with Section 208(c) of the CWA (see below list of requirements). Before an entity can apply for an SRF loan, it must be recommended for designation as the management agency in the approved WQMP.

Designation as a management agency does not require the designated entity to provide wastewater services, but enables it to apply for grants and loans to provide those services. The facilities listed in Table 3 have submitted DMA resolutions to TCEQ. TCEQ submits this DMA information to EPA for approval as an update to the WQMP.

### Section 208 (c) (2) Requirements for Management Agency

- 208(c)(2)(A): to carry out portions of an area-wide waste treatment plan.
- 208(c)(2)(B): to manage waste treatment works.
- 208(c)(2)(C): directly or by contract to design and construct new works.
- 208(c)(2)(D): to accept and utilize grants.
- 208(c)(2)(E): to raise revenues, including assessment of waste treatment charges.
- 208(c)(2)(F): to incur short and long term indebtedness.
- 208(c)(2)(G): to assure community pays proportionate cost.
- 208(c)(2)(H): to refuse to receive waste from non-compliant dischargers.
- 208(c)(2)(I): to accept for treatment industrial wastes.

**Table 3. Designated Management Agencies**

Planning Agency	Service Area	DMA Needs	DMA Date
City of Hitchcock	City boundary	C	5/16/2024
City of Gladewater	City Boundary	T/C	5/17/2024
City of Millsap	City Boundary	T/C	5/16/2024
City of Crockett	Utility Boundary	T/C	5/16/2024
New Ulm WSC	Project service area	T/C	5/30/2024
City of Jacksonville	City Boundary	T/C	7/29/2024
City of Arp	City Boundary	T/C	7/29/2024
City of Crystal City	Utility Boundary	T/C	7/29/2024

## Total Maximum Daily Load Revisions

The TMDL Program works to improve water quality in impaired or threatened waters bodies in Texas. The program is authorized by and created to fulfill the requirements of Section 303(d) of the CWA.

The goal of a TMDL is to restore the full use of a water body that has limited quality in relation to one or more of its uses. The TMDL defines an environmental target, and based on that target, TCEQ and stakeholders develop an implementation plan with WLAs for point source dischargers to mitigate human-caused sources of pollution within the watershed and restore full use of the water body.

TMDLs are developed based on intensive data collection and scientific analysis. After adoption by TCEQ, TMDLs are submitted to EPA for review and approval.

The attached appendixes may reflect proposed WLAs for new dischargers and/or additions or revisions to TMDLs. Updates and addendums will be provided in the same units of measure used in the original TMDL document and will include the segment and assessment unit (AU) numbers of the affected segments. Also, note that for bacteria TMDLs, loads will typically be expressed as colony-forming units per day (cfu/day). On occasion, other expressions may be used due to different laboratory methods, such as counts or most probable number per day. For the purposes of the TMDL program, these terms are considered to be synonymous.

# Appendix I. Updates to Eighteen Total Maximum Daily Loads for Bacteria in Buffalo and Whiteoak Bayous and Tributaries

**Segments 1013, 1013A, 1013C, 1014, 1014A, 1014B, 1014E, 1014H, 1014K, 1014L, 1014M, 1014N, 1014O, 1017, 1017A, 1017B, 1017D, and 1017E**

This appendix provides updates to TMDLs previously submitted through the state’s WQMP for: Buffalo and Whiteoak Bayous and Tributaries.

The report, *Eighteen Total Maximum Daily Loads for Bacteria in Buffalo and Whiteoak Bayous and Tributaries for Segment Numbers 1013, 1013A, 1013C, 1014, 1014A, 1014B, 1014E, 1014H, 1014K, 1014L, 1014M, 1014N, 1014O, 1017, 1017A, 1017B, 1017D, and 1017E*, was adopted by TCEQ on April 8, 2009 and approved by EPA on June 11, 2009. Upon EPA approval, the TMDLs became part of the state’s WQMP.

The Texas WQMP has since been updated 38 times prior to this update for this TMDL. The previous updates have revised the list of individual WLAs in the original TMDL document. Additionally, TCEQ submitted addenda to the original TMDL in the April 2013, April 2015, and January 2021 WQMP updates. These addenda added three new AUs to the original TMDL project.

The purpose of this update is to make the following change to the TMDL (presented in Table I-1):

- Increase the discharge for an existing permit.

The changes reflected in this update resulted in the shifting of allocations between the sum of the individual WLAs and the allowance for future growth (FG) in one AU. This was originally presented in Table 53 in the original TMDL document. The affected AU in this update is included here as Table I-2.

**Table I-1 - Change to individual WLAs for the TMDL watershed**

Updates Table 45, p. 99-103 in the original TMDL document.

The WLA is expressed in billion most probable number (MPN)/day *Escherichia coli* (*E. coli*).

State Permit Number	Outfall	EPA Permit Number	AU	Permittee Name	Flow (MGD)	WLA	TMDL Comments
13623-001	001	TX0109126	1017_01	WEST HARRIS COUNTY MUD 21	0.39	0.930	Increased discharge

**Table I-2 - TMDL summary calculations for one AU in the TMDL watershed**

Updates Table 53, p. 116-117 in the original TMDL document.

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

AU	TMDL	WLA WWTF	WLA sw	LA	MOS	Upstream Load	FG
1017_01	173.57	73.32	58.94	6.55	0	0	34.76

In addition, Table I-3 below provides an update to Table 12 found in the April 2015 addendum to this TMDL project (*Addendum Two to Eighteen Total Maximum Daily Loads for Indicator Bacteria in Buffalo and Whiteoak Bayous and Tributaries: One Total Maximum Daily Load for Bacteria in Rolling Fork Creek for Segment 1017F*). The permit discussed earlier in this update also affects one AU in this addendum.

Table I-4 below provides updates to Table 13 found in the April 2015 addendum to this TMDL project. The addendum added one AU that was not included in the original TMDL. The AU affected here (1017F\_01) was included as an upstream loading to 1017\_01 in the original TMDL. The permit (13623-001/TX0109126) affects the loading of 1017F\_01, as well as the original TMDL AU 1017\_01.

**Table I-3 - Changes to individual WLAs in the Rolling Fork Creek watershed**

Updates Table 12, p. 18 in the TMDL addendum document.

The WLA is expressed in billion MPN/day *E. coli*.

State Permit Number	Outfall	EPA Permit Number	AU	Permittee Name	Flow (MGD)	WLA	TMDL Comments
13623-001	001	TX0109126	1017F_01	WEST HARRIS COUNTY MUD 21	0.39	0.930	Increased discharge

**Table I-4 - TMDL summary calculations for one AU in the Rolling Fork Creek watershed**

Updates Table 13, p. 20 in the TMDL addendum document.

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

AU	TMDL	WLA WWTF	WLA sw	LA	MOS	FG
1017F_01	17.4	3.398	12.4	0	0.87	0.732

## **Appendix II. Updates to Nine Total Maximum Daily Loads for Bacteria in Clear Creek and Tributaries**

### **Segments 1101, 1101B, 1101D, 1102, 1102A, 1102B, 1102C, 1102D, and 1102E**

This appendix provides updates to TMDLs previously submitted through the state's WQMP for: Clear Creek and Tributaries.

The report, *Nine Total Maximum Daily Loads for Bacteria in Clear Creek and Tributaries: Segments 1101, 1101B, 1101D, 1102, 1102A, 1102B, 1102C, 1102D, and 1102E*, was adopted by TCEQ on September 10, 2008 and approved by EPA on March 6, 2009. Upon EPA approval, the TMDLs became part of the state's WQMP.

The Texas WQMP has since been updated 12 times prior to this update for this TMDL. The previous updates have revised the list of individual WLAs in the original TMDL document. Additionally, TCEQ submitted two addenda to the original TMDL in the October 2012 and October 2018 WQMP updates. These addenda added five new AUs to the original TMDL project.

The purpose of this update is to make the following change to the TMDL (presented in Table II-1):

- Increase the discharge for an existing permit.

The change reflected in this update resulted in the shifting of allocations between the sum of the individual WLAs and the allowance for FG in one AU. This was originally presented in Tables 18 and 21 in the original TMDL document. The affected AU in this update is included here as Tables II-2 and II-3.

**Table II-1 - Changes to individual WLAs within the TMDL watershed**

Updates Table 16, p. 47 in the original TMDL document.

All loads expressed as MPN/day.

State Permit Number / EPA Permit Number	Outfall	AU	Permittee Name	Flow (MGD)	WLA – Fecal Coliform MPN/day	WLA – <i>E. coli</i> MPN/day	WLA – Enterococci MPN/day	TMDL Comments
10134-002/TX0032735	001	1102_03	CITY OF PEARLAND	6.5	4.92E+10	3.10E+10	NA	Increased discharge

Abbreviations: NA, Not Applicable

**Table II-2 - *E. coli* and Fecal Coliform TMDL Calculations for Freshwater Segments**

Updates Table 18, p. 50 in the original TMDL document.

All loads expressed as MPN/day *E. coli*.

Segment	Sampling Location	Stream Name	Indicator Bacteria	TMDL	WLA WWTF	WLA SW	LA	MOS	FG
1102	14229	Clear Creek Above Tidal	<i>E. coli</i>	1.32E+11	6.87E+10	5.65E+09	2.20E+09	6.58E+09	4.89E+10

**Table II-3 - TMDL Allocation Table**

Updates Table 21, p. 53 in the original TMDL document.

All loads expressed as MPN/day *E. coli*.

Segment	Stream Name	AU	Indicator Bacteria	TMDL	WLA WWTF	WLA SW	LA	MOS	FG
1102	Clear Creek Above Tidal	1102_03	<i>E. coli</i>	1.01E+11	4.75E+10	2.02E+09	7.84E+08	5.07E+09	4.57E+10

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## Appendix III. Updates to One Total Maximum Daily Load for Bacteria in Gilleland Creek

### Segment 1428C

This appendix provides updates to a TMDL previously submitted through the state's WQMP for: Gilleland Creek.

The report, *One Total Maximum Daily Load for Bacteria in Gilleland Creek: Segment 1428C*, was adopted by TCEQ on August 8, 2007 and approved by EPA on April 21, 2009. Upon EPA approval, the TMDL became part of the state's WQMP.

The Texas WQMP has since been updated six times prior to this update. The previous updates have revised the list of individual WLAs in the original TMDL document. Notably, the April 2009 WQMP update provided separate terms for the total WLA for WWTFs and regulated stormwater which was not included in the original TMDL.

The purpose of this update is to make the following change to the TMDL (presented in Table III-1):

- Decrease the discharge for an existing permit.

The changes reflected in this update resulted in a change to the overall WLA for WWTFs for the TMDL as is reflected on page 16 of the TMDL document. The new WLA is  $7.15E+10$  cfu *E. coli* per day.

The changes reflected in this update also resulted in a reduction of the sum of the individual WLAs ( $WLA_{wwtf}$ ) on pages 16 and 17 of the TMDL. These equations are included here as Table III-2.

Finally, the change in the  $WLA_{wwtf}$  term resulted in minor reductions to the original TMDL allocations for both flow regimes. These reductions in the overall TMDL allocations are minute enough to be unobservable as written on pages 16 and 17 of the original TMDL document, however the reduced TMDL allocations are as follows:  $2.6116E+13$  for high flows and  $1.3716E+13$  for moderate flows. Rounded to the same significant figure that is used in the TMDL document, these TMDL values effectively remain the same (Table III-2).

**Table III-1 - Changes to individual WLAs for the Gilleland Creek watershed**

Updates Table 6, p. 16 in the original TMDL document.

The WLA is expressed in *E. coli* colony forming units (cfu)/day.

State Permit Number	Outfall	EPA Permit Number	Segment	Permittee Name	Flow (MGD)	WLA	TMDL/ Comments
10543-014	001	TX0129950	1428C	CITY OF AUSTIN	0.5	2.27E+09	Decreased discharge

**Table III-2 - TMDL Summary Calculations for Gilleland Creek**

Updates p. 16-17 in the original TMDL document.

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

Flow Range	TMDL	WLA <sub>wwtf</sub>	WLA <sub>sw</sub>	LA
High Flow (0-10% Regime)	2.61E+13	7.15E+10	1.52E+13	1.09E+13
Moderate Flow (11-50% Regime)	1.37E+13	7.15E+10	7.95E+12	5.69E+12