

June 13, 2017  
FINAL

# **April 2017 Update to the Texas Water Quality Management Plan**





# **April 2017 Update to the Texas Water Quality Management Plan**

Prepared by the  
Office of Water  
Water Quality Division

Compiled and distributed by the  
Water Quality Assessment Section  
Water Quality Division  
Texas Commission on Environmental Quality  
P.O. Box 13087, MC-150  
Austin, Texas 78711-3087

June 2017

WQMP updates are also available on the TCEQ web site at:

< [http://www.tceq.texas.gov/permitting/wqmp/WQmanagement\\_updates.html](http://www.tceq.texas.gov/permitting/wqmp/WQmanagement_updates.html) >

Developed in accordance with Sections 205(j), 208,  
and 303 of the Federal Clean Water Act  
and applicable regulations thereto.



**Bryan W. Shaw, Ph.D., P.E.,** *Chairman*  
**Toby Baker,** *Commissioner*  
**Jon Niermann,** *Commissioner*  
**Richard A. Hyde, P.E.,** *Executive Director*

Authorization for use or reproduction of any original material contained in this publication—that is, not obtained from other sources—is freely granted. The commission would appreciate acknowledgement.

**Table of Contents**

Introduction .....1  
Projected Effluent Limit Updates .....3  
Planning Information Summary .....6  
Designated Management Agencies .....9  
Total Maximum Daily Load Updates .....10

**Tables**

Table 1. Projected Effluent Limit Updates ..... 4  
Table 2. Service Area Population Updates ..... 8  
Table 3. Designated Management Agencies ..... 9

**Appendices**

Appendix I. 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..... 11  
Appendix II. Eight Total Maximum Daily Loads for Indicator Bacteria in Greens Bayou Above  
Tidal and Tributaries For Segment Numbers 1016, 1016A, 1016B, 1016C, and 1016D. 13  
Appendix III. Fifteen Total Maximum Daily Loads for Indicator Bacteria in Watersheds  
Upstream of Lake Houston For Segment Numbers 1004E,1008, 1008H, 1009, 1009C,  
1009D, 1009E, 1010 and 1011 ..... 15



# Introduction

The Texas Water Quality Management Plan (WQMP) is the product of a wastewater treatment facility planning process developed and updated in accordance with provisions of Sections 205(j), 208, and 303 of the federal 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 Clean Water Act 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. The 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 ground water 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 its public participation process, certification by the 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 water quality management plans remain in effect.

The April 2017 WQMP update addresses the following topics:

1. Projected Effluent Limits Updates for water quality planning purposes
2. Service Area Population for Municipal Wastewater Facilities
3. Designation of Management Agencies for Municipal Wastewater Facilities
4. Total Maximum Daily Load Updates

---

<sup>1</sup> A formal definition for a water quality management plan is found in 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, and 01/2017.

The public comment period for the April WQMP update was from May 12, 2017 through June 12, 2017.

The Projected Effluent Limit Update section provides information compiled from February 1, 2017 through April 30, 2017, and is based on water quality standards, and 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 Agency sections for municipal wastewater facilities has been developed and evaluated by the TCEQ in cooperation with the Texas Water Development Board (TWDB) and regional water quality management planning agencies.

The Total Maximum Daily Load (TMDL) Update section provides information on proposed wasteload allocations for new dischargers and revisions to existing TMDLs and has been developed by the Water Quality Planning Division, TMDL Program.



## Projected Effluent Limit Updates

Table 1 reflects proposed effluent limits for new dischargers and preliminary revisions to original proposed effluent limits for preexisting dischargers (MGD-Million Gallons per Day, CBOD<sub>5</sub> – 5 Day Carbonaceous Biochemical Oxygen Demand, NH<sub>3</sub>-N – Ammonia-Nitrogen, BOD<sub>5</sub> – 5 Day Biochemical Oxygen Demand and DO – Dissolved Oxygen).

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 water quality standards (WQS) effective at the time of the TCEQ production of this update. 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 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
10549-002	1813	TX0054623	City of Blanco Blanco	1.6	5	66.72	1.9	25.35			6	Outfall 003
10706-001	1014	TX0025747	City of Katy Fort Bend	3.90	10	325.26	2	65.05			6	
11644-001	0803	TX0059579	Young Men's Christian Association of the Greater Houston Area Trinity	0.06					10	5.00	4	
13834-001	0831	TX0099732	City of Willow Park Parker	0.500	5	20.85	1.8	7.51			5	
14046-002	0807	TX0137685	JOMOVSM, L.L.C. Tarrant	0.016					10	1.33	4	
14400-001	0803	TX0092363	Iola ISD Grimes	0.007	20	1.17	4	0.23			2	
14740-001	1014	TX0129071	Harris County MUD No. 500 Harris	0.84	10	70.06	2	14.01			6	
14812-001	1016	TX0129666	Harris County MUD No. 400 Harris	1.55	10	129.27	3	38.78			4	
15537-001	1009	TX0137472	Grand Northwest MUD Harris	0.50	10	41.70	3	12.51			5	
15539-001	1014	TX0137499	Masonsutton Investment, L.P. Harris	0.45	7	26.27	2	7.51			6	

State Permit Number	Segment Number	EPA ID Number	Permittee Name 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
15545-001	1016	TX0137529	GSL Welcome BP 32, L.L.C. Harris	0.018	10	1.50	3	0.45			4	
15563-001	1302	TX0137634	United Front, L.L.C. Colorado	0.025	10	2.09	3	0.63			4	
15551-001	0826	TX0137553	HP Gibbs, L.P. Denton	0.88	10	73.39	3	22.02			5	
15568-001	1202	TX0137669	Simonton Management District No. 1 Fort Bend	0.93	10	77.56	2	15.51			4	

## Planning Information Summary

The Water Quality Planning Division of the TCEQ coordinated with the TWDB and regional planning agencies to compile the wastewater facility information in this section. Domestic facility financing decisions under the State Revolving Loan Fund (SRF) 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 the 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 wastewater treatment plant, additional treatment capacity, or the upgrading of a wastewater treatment plant 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.
4. Needs Year – The year in which the needs were identified for the planning area.
5. Basin Name – The river basin or designated planning area where the entity is located. The seven water quality management planning areas designated by the Governor are Corpus Christi [Coastal Bend Council of Governments (CBCOG)], Killeen-Temple [Central Texas Council of Governments (CTCOG)], Texarkana [Ark-Tex Council of Governments (ATCOG)], Southeast Texas [South East Texas Regional Planning Council (SETRPC)], Lower Rio Grande Valley [Lower Rio Grande Valley Development Council (LRGVDC)], Dallas-Fort Worth [North Central Texas Council of Governments (NCTCOG)] and Houston [Houston-Galveston Area Council (H-GAC)]. Basin names are shown for agencies outside one of these areas.
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 the 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 utilized 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 shall be as established in the completed and certified detailed engineering studies conducted during facility planning under the SRF and other state loan programs.

Specific effluent quality for any wastewater discharges resulting from any of the facilities recommended in this document will be in accordance with the rule on the Texas Surface Water Quality Standards in effect at the time of permit issuance for the 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 Arlington	City Limits	C	2017	Trinity River Basin/ NCTCOG	0841	Tarrant	3/7/2017	Collection system improvements	2016	364,817
									2020	387,725
									2030	412,746
									2040	421,748
City of Eastland	Eastland County Water Supply District	T/C	2017	Brazos River Basin	1224	Eastland	3/2/2017	Upgrade of existing WWTP and Oak Hollow Lift Station	2020	4,111
									2025	4,156
									2030	4,201
									2040	4,205
City of Grand Prairie	City Limits	C	2017	Trinity River Basin/ NCTCOG	0841	Dallas	3/14/2017	Collection system improvements	2015	25,803
									2020	25,848
									2030	26,036
									2040	26,323
City of Montgomery	City Limits	C	2017	Trinity River Basin / H-GAC	1012	Montgomery	3/6/2017	Collection system improvements	2020	2,676
									2025	3,831
									2030	4,985
									2040	5,585
City of San Juan	City Limits	C	2017	Rio Grande Basin/ LRGVDC	2202	Hidalgo	3/28/2017	Collection system improvements	2014	477
									2024	582
									2029	633
									2034	686

## Designated Management Agencies

In order 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 Clean Water Act (see below list of requirements). Before an entity can apply for a state revolving fund 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 the services. The facilities listed in Table 3 have submitted Designated Management Agencies (DMA) resolutions to the TCEQ. The TCEQ submits this DMA information to the 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 Arlington	City Limits	C	9/6/2016
City of Eastland	Eastland County Water Supply District	T/C	9/19/2016
City of Grand Prairie	City Limits	C	9/18/2012
City of Montgomery	City Limits	C	1/24/2017
City of San Juan	City Limits	C	8/28/2012

## Total Maximum Daily Load Updates

The Total Maximum Daily Load (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 federal Clean Water Act.

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, the State develops an implementation plan with wasteload allocations for point source dischargers to mitigate anthropogenic (human-caused) sources of pollution within the watershed and restore full use of the water body.

The development of TMDLs is a process of intensive data collection and analysis. After adoption by the TCEQ, TMDLs are submitted to the EPA for review and approval.

The attached appendices may reflect proposed wasteload allocations for new dischargers and revisions to TMDLs. To be consistent, updates will be provided in the same units of measure used in the original TMDL document. Also note that for bacteria TMDLs, loads may be expressed in counts per day, organisms per day, colony forming units per day, or similar expressions. These typically reflect different lab methods, but for the purposes of the TMDL program, these terms are considered synonymous.



## **Appendix I. 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**

---

TMDL Updates to the Water Quality Management Plan (WQMP): 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)

The document *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 the TCEQ on 04/08/09 and approved by EPA on 06/11/09, and became an update to the state's WQMP. Nineteen subsequent WQMP updates prior to this one have updated the list of individual wasteload allocations (WLAs) found in the original TMDL document. Additionally, two addenda to the original TMDL were submitted through the April 2013 and April 2015 WQMP updates. These addenda added two new assessment units (AUs) to the original TMDL project.

The purpose of this update is to make the following changes to the TMDL, presented in Table 1:

- update the WLAs for two facilities that have increased their permitted discharges and five facilities that have decreased their permitted discharges, and
- add one new permit

The change reflected in this update resulted in the shifting of allocations between the sum of the individual WLAs and the allowance for future growth (AFG) in six AUs. This was originally presented in Table 53 in the TMDL document, and the affected AUs are included here as Table 2.

For AU 1014H\_02, the existing future growth allocation was insufficient to cover the increased flow to the AU for this update. However, ample loading is available in the WLA<sub>StormWater</sub> and load allocation (LA) terms. A small amount was taken proportionally from each of those terms and allotted to future growth. This results in no change to the overall TMDL allocation.

In Table 54 of the TMDL, the WLAs for permitted facilities are the sum of the individual WLAs and the allowance for future growth within each AU. Because a small amount of loading was moved from the WLA<sub>StormWater</sub> and LA terms to be used for future growth for AU 1014H\_02, that AU is updated in Table 3. Again, this results in no change to the overall TMDL allocation. These overall numbers for the other AUs did not change.

Table 1 – Change to Individual Waste Load Allocation (Updates Table 45, pp. 99-103 in the TMDL document.)

State Permit Number	Outfall	EPA Permit Number	Segment Number	Permittee Name	Flow (MGD)	Waste Load Allocation (WLA) – <i>E. coli</i> in Billion MPN/day	TMDL Comments
10706-001	001	TX0025747	1014B_01	CITY OF KATY	3.9	9.301	Increased discharge
14134-001	001	TX0119873	1014B_01	FORT BEND COUNTY MUD 124	0.3	0.715	Decreased discharge
14740-001	001	TX0129071	1014E_01	HARRIS COUNTY MUD 500	0.84	2.003	Increased discharge
15539-001	001	TX0137499	1014H_02	MASONSUTTON INVESTMENT LP	0.45	1.073	New permit
11883-001	001	TX0071625	1014L_01	CASTLEWOOD MUD	1.2	2.862	Decreased discharge
12479-001	001	TX0089346	1014L_01	NOTTINGHAM COUNTRY MUD	0.85	2.027	Decreased discharge
11670-001	001	TX0063479	1017_01	SUNBELT FWSD	0.6	1.431	Decreased discharge
10495-076	001	TX0063011	1017B_02	CITY OF HOUSTON	18	42.927	Decreased discharge

Table 2 - *E. coli* TMDL Summary Calculations (Updates Table 53, pp. 116-117 in the TMDL document.)

Assessment Unit	TMDL (Billion MPN/day)	WLA <sub>WWTF</sub> (Billion MPN/day)	WLA <sub>StormWater</sub> (Billion MPN/day)	LA (Billion MPN/day)	MOS (Billion MPN/day)	Upstream Load (Billion MPN/day)	Future Growth (Billion MPN/day)
1014B_01	626.91	97.66	482.44	38.6	0	0	8.21
1014E_01	236.83	71.27	145	7.78	0	0	12.78
1014H_02	175.43	35.71	125.03	13.89	0	0	0.80
1014L_01	69.66	34.87	23.11	2.57	0	0	9.11
1017_01	173.57	73.17	58.94	6.55	0	0	34.91
1017B_02	137.95	45.93	52.68	5.85	0	0	33.49

Table 3 – Final *E. coli* TMDL Calculations (Updates Table 54, pp. 118-119 in the TMDL document.)

Assessment Unit	TMDL (Billion MPN/day)	WLA <sub>WWTF</sub> (Billion MPN/day)	WLA <sub>Storm Water</sub> (Billion MPN/day)	LA (Billion MPN/day)	MOS (Billion MPN/day)
1014H_02	175.43	36.51	125.03	13.89	0

## **Appendix II. Eight Total Maximum Daily Loads for Indicator Bacteria in Greens Bayou Above Tidal and Tributaries For Segment Numbers 1016, 1016A, 1016B, 1016C, and 1016D**

---

TMDL Updates to the WQMP: Eight Total Maximum Daily Loads for Indicator Bacteria in Greens Bayou Above Tidal and Tributaries (Segments 1016, 1016A, 1016B, 1016C, and 1016D)

The document *Eight Total Maximum Daily Loads for Indicator Bacteria in Greens Bayou Above Tidal and Tributaries: Segments 1016, 1016A, 1016B, 1016C, and 1016D* was adopted by the TCEQ on 06/02/10 and approved by EPA on 08/12/10, and became an update to the state's Water Quality Management Plan (WQMP). It has had nine subsequent WQMP updates prior to this one that provided individual Waste Load Allocations (WLAs) for permitted facilities.

The purpose of this update is to make the following changes to the TMDL, presented in Table 1:

- update the WLAs for two facilities that have increased their permitted discharges, and
- add two new permits.

The change reflected in this update resulted in the shifting of allocations between the sum of the individual WLAs and the allowance for future growth (AFG) in four assessment units (AUs). This was originally presented in Table 17 in the TMDL document, and the four affected AUs are included here as Table 2.

In Table 18 of the TMDL, the WLAs for permitted facilities are the sum of the individual WLAs and the allowance for future growth within each assessment unit. Therefore, these overall numbers did not change, and Table 18 of the TMDL remains the same.

Table 1 – Changes to Individual Waste Load Allocations (Updates Table 15, pp. 39-42 in the TMDL document.)

<b>State Permit Number</b>	<b>Outfall</b>	<b>EPA Permit Number</b>	<b>Segment Number</b>	<b>Permittee Name</b>	<b>Flow (MGD)</b>	<b>Waste Load Allocation (WLA) - <i>E. coli</i> in Billion MPN/day</b>	<b>TMDL Comments</b>
15545-001	001	TX0137529	1016_01	GSL WELCOME BP 32, LLC	0.018	0.043	New permit
11061-001	001	TX0020800	1016_03	GREENWOOD UTILITY DISTRICT	2.25	5.366	Increased flow
15489-001	001	TX0137201	1016_03	GARDNER, DAVID ALLEN	0.011	0.026	New permit
14812-001	001	TX0129666	1016A_03	HARRIS COUNTY MUNICIPAL UTILITY DISTRICT 400	1.55	3.696	Increased flow and updated name

Table 2 - *E. coli* TMDL Summary Calculations for Greens Bayou Assessment Units (Updates Table 17, p. 46 in the TMDL document.)

Assessment Unit	Sampling Location	Stream Name	TMDL (Billion MPN/day)	WLA <sub>WWTF</sub> (Billion MPN/day)	WLA <sub>StormWater</sub> (Billion MPN/day)	LA (Billion MPN/day)	MOS (Billion MPN/day)	Future Growth (Billion MPN/day)
1016_01	11371	Greens Bayou Above Tidal	403	61.5	293	0	20.2	28.3
1016_02	11371	Greens Bayou Above Tidal	1,020	106.7	789	0	51.2	73.1
1016_03	11369	Greens Bayou Above Tidal	1,780	205	1,114	167	89.0	205
1016A_03	11125	Garners Bayou	419	59.7	230.3	14.7	21.0	93.3

## **Appendix III. Fifteen Total Maximum Daily Loads for Indicator Bacteria in Watersheds Upstream of Lake Houston For Segment Numbers 1004E, 1008, 1008H, 1009, 1009C, 1009D, 1009E, 1010 and 1011**

---

TMDL Updates to the Water Quality Management Plan (WQMP): Watersheds Upstream of Lake Houston (1004E, 1008, 1008H, 1009, 1009C, 1009D, 1009E, 1010, and 1011)

The document *Fifteen Total Maximum Daily Loads for Indicator Bacteria in Watersheds Upstream of Lake Houston For Segment Numbers 1004E, 1008, 1008H, 1009, 1009C, 1009D, 1009E, 1010, and 1011* was adopted by the TCEQ on 04/06/11 and approved by EPA on 06/29/11, and became an update to the state's WQMP. Twenty subsequent WQMP updates prior to this one have updated the list of individual wasteload allocations (WLAs) found in the original TMDL document. Additionally, an addendum to the original TMDL was submitted through the October 2013 WQMP update. This addendum added six new assessment units (AUs) to the original TMDL project.

The purpose of this update is to make the following change to the TMDL, presented in Table 1:

- add one new 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 in four AUs. This was originally presented in Table 18 in the original TMDL document, and the four affected AUs are included here as Table 2.

In Table 19 of the original TMDL, the WLAs for permitted facilities are the sum of the individual WLAs and the allowance for future growth within each AU. Therefore, these overall numbers did not change, and Table 19 of the TMDL remains the same.

Table 1 – Changes to Individual Wasteload Allocations (Updates Table 16, pp. 49-56 in the TMDL document.)

<b>State Permit Number</b>	<b>Outfall</b>	<b>EPA Permit Number</b>	<b>Segment Number</b>	<b>Permittee Name</b>	<b>Flow (MGD)</b>	<b>Waste Load Allocation (WLA) – <i>E. coli</i> in Billion MPN/day</b>	<b>TMDL Comments</b>
15537-001	001	TX0137472	1009_01	GRAND NORTHWEST MUNICIPAL UTILITY DISTRICT	0.5	1.192	New permit

Table 2 - *E. coli* TMDL Summary Calculations for Lake Houston Assessment Units (Updates Table 18, pp. 61 in the TMDL document.)

Assessment Unit	Sampling Location	Stream Name	TMDL (Billion MPN/day)	WLA <sub>WWTF</sub> (Billion MPN/day)	WLA <sub>StormWater</sub> (Billion MPN/day)	LA (Billion MPN/day)	MOS (Billion MPN/day)	Future Growth (Billion MPN/day)
1009_01	11333	Cypress Creek	227	17.51	83.1	114.8	11.4	0.19
1009_02	11331	Cypress Creek	615	85.45	196	270	30.8	32.75
1009_03	11328	Cypress Creek	1340	170.90	415	574	67.0	113.10
1009_04	11324	Cypress Creek	1550	209.43	469	648	77.4	146.17