

2016 North Central Texas Water Quality Management Plan



North Central Texas Council of Governments
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www.nctcog.org/WaterResources



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Acronyms

AU	Assessment Unit	SB	Senate Bill
CWA	Clean Water Act	SSOs	Sanitary Sewer Overflows
CWSRF	Clean Water State Revolving Fund	SSOI	Sanitary Sewer Overflow Initiative
DMA	Designated Management Agency	SUD	Special Utility District
DMR	Discharge Monitoring Report	TCEQ	Texas Commission on Environmental Quality
ECHO	Enforcement and Compliance History Online	TMDL	Total Maximum Daily Load
EPA	Environmental Protection Agency	TPDES	Texas Pollutant Discharge Elimination System
FOG	Fats, Oils, and Grease	TRA	Trinity River Authority
HCR	House Concurrent Resolution	TRWD	Tarrant Regional Water District
I-Plan	Implementation Plan	TSSWCB	Texas State and Soil Water Conservation Board
MGD	Millions of Gallons Per Day	TWDB	Texas Water Development Board
MPA	Metropolitan Planning Area	UAA	Use Attainability Analyses
MSA	Metropolitan Statistical Area	USGS	United State Geologic Survey
MUD	Municipal Utility District	UTRWD	Upper Trinity Regional Water District
MWD	Municipal Water District	WCID	Water Control and Improvement District
NCTCOG	North Central Texas Council of Governments	WQMP	Water Quality Management Plan
NTMWD	North Texas Municipal Water District	WPG	Water Planning Group
OSSF	Onsite Sewage Facility	WPP	Watershed Protection Plan
POTWs	Publically Owned Treatment Works	WWTP/F	Wastewater Treatment Plant/Facility
RUAA	Recreation Use Attainability Analyses		

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What is NCTCOG?

The North Central Texas Council of Governments (NCTCOG) was created by state enabling legislation in 1966, comprising a service area that included the local governments in 10 counties. Through action of the Governor's office, the service area has expanded to include the local governments in 16 counties.

NCTCOG is a political subdivision of the state and a voluntary association of local governments with a membership of 238 political jurisdictions. It is not a government as it cannot levy taxes or enact laws.

Its primary purposes are to perform long-range, comprehensive plans for matters that transcend jurisdictional boundaries, promote the sound development of the 16-County region, and facilitate cooperation and coordination among its member governments. These responsibilities will continue to increase in importance as the region's population is projected to grow from 6.9 million to 10.5 million people by 2040.¹

An Executive Board serves as the policy body for NCTCOG and is composed of local elected officials. The Board approves and oversees the plans, projects, and programs that NCTCOG undertakes to serve its member governments.

Each of these programs and projects also has an advisory committee that guides their development and delivery systems. These committees have local government members who are subject matter experts and often have seats for business interests and citizens of the region. This ensures that those who will administer or be affected by one of these programs or projects have a strong voice in how they are crafted. NCTCOG is grateful for their involvement and endorsement of its efforts to recognize, address, and resolve regional issues and opportunities. Their service ensures that NCTCOG actively practices its mission statement, which reads as follows:

"We are an association of, for, and by local governments. We assist our members in planning for common needs, cooperating for mutual benefit, and recognizing regional opportunities for improving the quality of life in North Central Texas."

The Department of Environment and Development provides technical assistance to the local governments of North Central Texas in planning, coordinating, and implementing community development and environmental policies, programs, and projects.

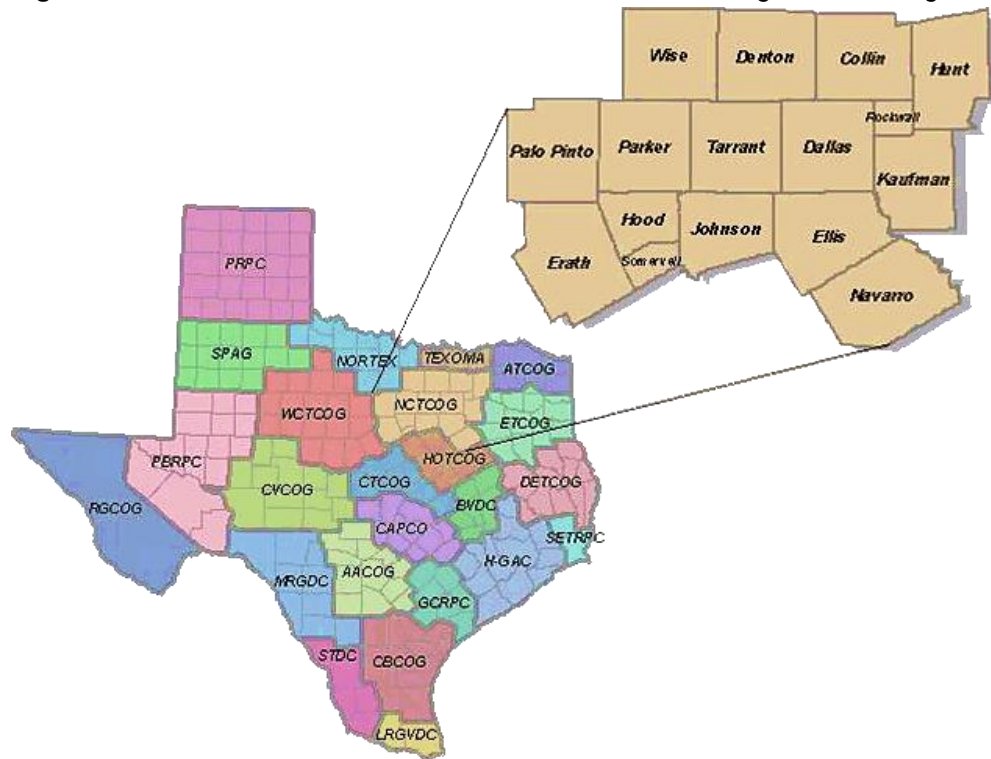
For more information about NCTCOG, please visit www.nctcog.org.

¹ NCTCOG, 2016

Water Quality Management Plan Background

The North Central Texas Council of Governments (NCTCOG), as the designated Water Quality Planning agency for the North Central Texas area, is responsible for developing the regional Water Quality Management Plan (WQMP). As shown in Figure 1, NCTCOG serves Collin, Dallas, Denton, Ellis, Erath, Hood, Hunt, Johnson, Kaufman, Navarro, Palo Pinto, Parker, Rockwall, Somervell, Tarrant, and Wise Counties. The purpose of the WQMP is to support current and future planning decisions concerning water quality efforts, wastewater infrastructure development, watershed management, and related issues on both a regional and state level. The WQMP provides a framework and strategies for water quality, wastewater management, and water supply challenges that contribute to protecting or improving water quality in North Central Texas. The water quality management program also facilitates the review of infrastructure projects to ensure that they are consistent with the regional WQMP.

Figure 1. The North Central Texas Council of Governments Regional Planning Area



The North Central Texas WQMP is developed and updated in accordance with the provisions of the federal Clean Water Act, as amended. Furthermore, it is referenced in the State of Texas Water Quality Management Plan, which is a waste treatment plan required under the Texas Water Code and the federal Clean Water Act. The State's WQMP identifies priority water quality problems and is used to direct planning for implementation measures that control and/or prevent water quality problems. The State WQMP is an important part of the State's program for accomplishing its clean water goals and includes several elements 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.²

Source: NCTCOG

² Texas Water Quality Management Plan, Texas Commission on Environmental Quality (TCEQ); http://www.tceq.state.tx.us/assets/public/permitting/assess/WQMP/jan_16_final.pdf; Accessed by NCTCOG: May 2016

WQMP Planning Process

In 1975, NCTCOG was designated by the Governor of Texas as the water quality management planning agency for the North Central Texas region. Protection of water resources and the provision of wastewater services are overseen on a statewide basis by the TCEQ, who relies on NCTCOG for oversight, conformity review, and evaluation of capacity for wastewater services in the North Central Texas region. The water quality management planning process is mandated by the Section 208(a) of the Clean Water Act (CWA) for the purpose of encouraging and facilitating the development and implementation of area-wide waste treatment management plans. Implementation of the act is the responsibility of state and local planning agencies.

Since developing the WQMP for North Central Texas in 1975, the NCTCOG 16-county regional planning area has grown by 4.5 million people.³ The historical population growth and the projected growth has required and will continue to require water resources planning to address the water quality, wastewater, and water supply needs. The WQMP is a summary of major water quality efforts, wastewater efforts, and water supply efforts to impact future planning. This report is the result from regional and state water quality studies and coordination activities completed by the NCTCOG in conjunction with the TCEQ and provides an overview of potential needs and priorities for improving water quality and continuing the regional efforts at meeting the wastewater needs of an expanding population.

2016 Water Quality Management Plan Goals

The 2016 WQMP goals are provided below as a guide for the development of the WQMP. The WQMP goals should be evaluated on an annual basis by interested parties and TCEQ to ensure they meet the needs of individual stakeholders and the state's nonpoint source program goals.

- » Identify water quality programs or projects of significance that contribute to watershed protection and water quality improvements.
- » Identify emerging water quality issues that will impact water quality, wastewater treatment strategies, and water supply efforts.
- » Review wastewater treatment facility planning to ensure that capacities are sufficient to meet future wastewater needs
- » Track and summarize annual wastewater treatment capacity for regional joint system and community plants

WQMP Adoption Process

Each WQMP is reviewed by the Water Resources Council, a committee that advises NCTCOG's Executive Board on technical and policy issues related to water resources matters. A public comment process and public hearing is provided to allow for stakeholder review of the plan and provide opportunity for comments. After the public hearing, public comments are incorporated to produce a final plan which is presented to NCTCOG's Executive Board for adoption. The adopted plan is subsequently submitted to TCEQ for review and approval.

³ NCTCOG, 2016

North Central Texas Population Estimates and Projections

Regional population and employment projections estimate where residents will live, work, and carry out activities in the future. Evaluating population trends is an important part of water quality management strategies and wastewater planning, as future development and population shifts impact the wastewater service levels and capacity needs in the North Central Texas region. Furthermore, population growth in areas that were once agricultural or rural can lead to water quality challenges that could be countered with proper planning and proactive implementation measures.

NCTCOG Planning Region Existing and Projected Population

The Dallas/ Fort Worth region continues to experience high levels of population growth, and forecasts project this trend will continue through 2040. The continued growth in this region is important to agencies tasked with maintaining or improving water quality, providing adequate capacity for treatment of wastewater, and ensuring sufficient drinking water supplies. Several methods of growth analysis are used to establish existing and projected growth trends in the North Central Texas region. NCTCOG’s Research and Information Services Department produces existing population estimates annually and in 2015 produced population and employment projections for 2040 for the 12-County Metropolitan Planning Area (MPA)⁴. The projection data developed by NCTCOG provides a uniform base for infrastructure planning and resource allocation in the MPA. The Census Bureau, the Texas Water Development Board, and the Texas State Data Center also have estimate and forecast programs which NCTCOG uses to close any data gaps in estimations or projections.

Existing Population for the Dallas-Fort Worth Region

The Dallas-Fort Worth-Arlington Metropolitan Statistical Area (MSA) was one of the fastest growing areas in the United States during the 2000s.⁵ The MSA had the second largest increase in population after the Houston-Sugar Land-Baytown MSA. From 2000 to 2010, the 16-county NCTCOG region’s population increased by 23.5 percent with an addition of 1.2 million residents growing from 5,309,277 in 2000 to 6,539,950 in 2010.⁶ Since the 2010 US Census, the NCTCOG 16-County planning area has added around 518,000 new residents as shown in Table 1. As of January 1, 2016, NCTCOG estimates the regional population to be 7,058,290.

Table 1. Existing Population Estimates by Planning Area for the North Central Texas Region

Population by Planning Area				
	2000 U.S. Census April 1	2010 U.S. Census April 1	2015 NCTCOG Estimate January 1	2016 NCTCOG Estimate January 1
12-County MPA*	5,197,317	6,417,724	6,813,780	6,927,690
16-County NCTCOG Region	5,309,277	6,539,950	6,941,710	7,058,290

*The 12-County Dallas-Fort Worth Metropolitan Planning Area (MPA) consists of: Collin, Dallas, Denton, Ellis, Hood, Hunt, Johnson, Kaufman, Parker, Rockwall, Tarrant, and Wise Counties. Source: U.S. Census Bureau, NCTCOG 2016 Population Estimates

⁴ The Metropolitan Planning Area is used by the NCTCOG Transportation Department for regional transportation planning. It is made up of Collin, Dallas, Denton, Ellis, Hood, Hunt, Johnson, Kaufman, Parker, Rockwall, and Tarrant Counties.

⁵ Defined by the U.S. Census Bureau as Collin, Dallas, Denton, Ellis, Hunt, Johnson, Kaufman, Parker, Rockwall, Tarrant, and Wise counties

⁶ US Census Bureau, <http://www.census.gov/population/www/cen2010/cph-t/cph-t-5.html>; Accessed by NCTCOG: May 2016

The North Central Texas region experiences a lot of annual population change. Further analysis of where existing growth is occurring within the region is important to understand growth patterns and where residents are choosing to live. NCTCOG produces annual population estimates for the 16-County NCTCOG regional planning area. Population estimates are based on current housing inventories for cities in the NCTCOG region with populations of 1,000 or more. Absolute population change represents the actual number of people the population increased or decreased by from 2015 to 2016. Figure 2 shows the top 10 cities with the greatest absolute population change in the North Central Texas region, which contributed to over half of regional population growth in 2015.⁷ High absolute population changes tend to occur in cities that already have large populations. In the NCTCOG Regional Planning Area there is a trend of population growth increase since 2011, as shown in Figure 3. The rapid and continual increase in the population of North Central Texas elicits challenges when planning for future needs such as water and wastewater infrastructure. Continual coordination on these challenges is necessary to implement best management practices to ensure the protection of regional water resources.

Table 2 indicates the top 10 cities in North Central Texas that had the largest percent change from 2015 to 2016, which represents the relative change in size of the population from 2015 to 2016. Percent change growth shows what parts of the NCTCOG regional planning area are growing most rapidly. Stephenville is the only city that is represented on both the highest population growth and largest percent change of growth from 2015 to 2016.

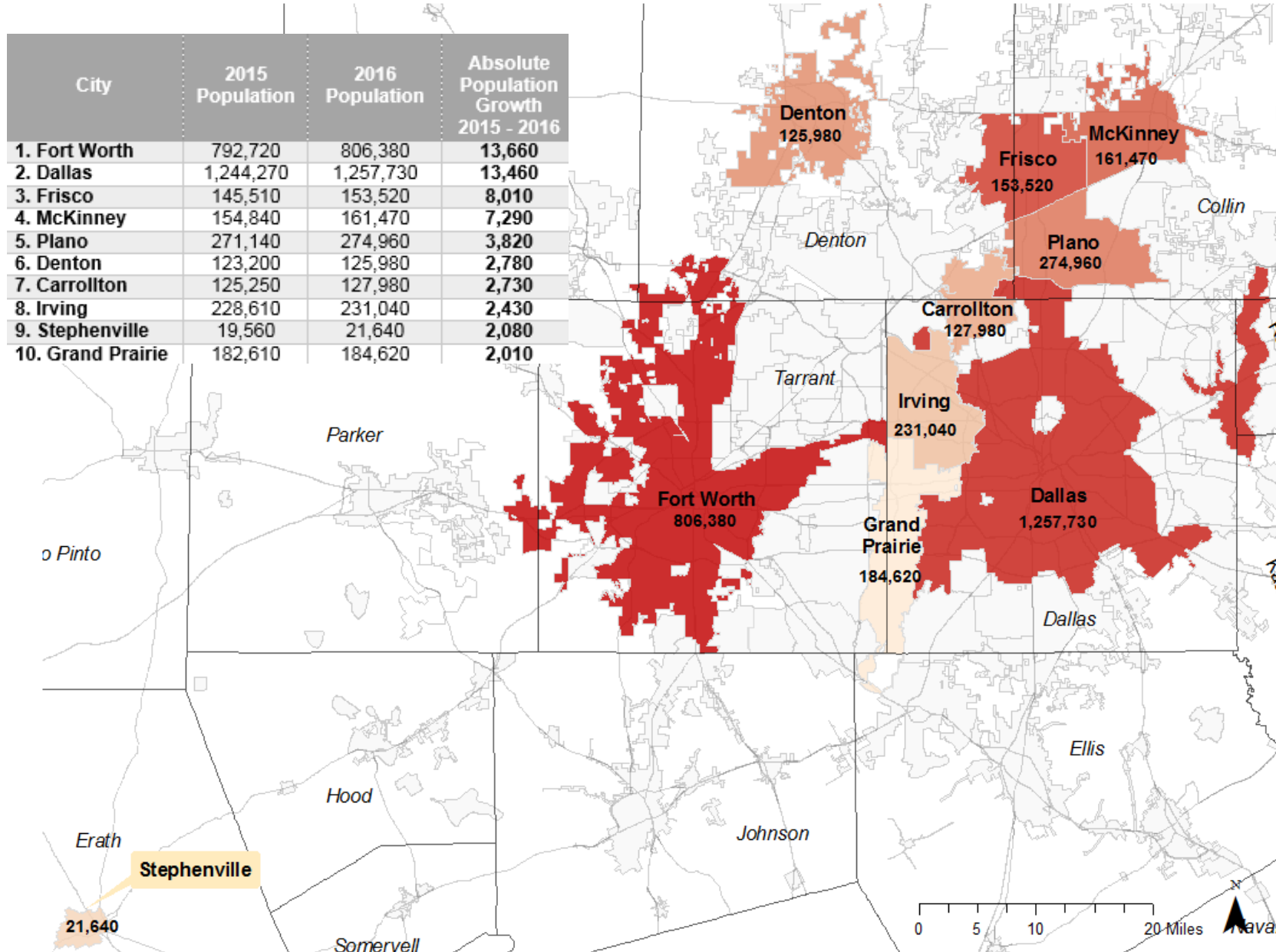
Table 2. Top 10 Cities Experiencing the Largest Percent Population Change in the NCTCOG Regional Planning Area, 2015 – 2016

City	2015 Population	2016 Population	Percent Population Growth 2015 - 2016
1. Lakeside	1,330	1,690	27.1%
2. Northlake	2,160	2,660	23.1%
3. McLendon-Chisholm	2,050	2,450	19.5%
4. Celina	7,320	8,650	18.2%
5. Melissa	6,890	7,920	14.9%
6. Josephine	980	1,100	12.2%
7. Aubrey	2,780	3,100	11.5%
8. Prosper	15,970	17,790	11.4%
9. Stephenville	19,560	21,640	10.6%
10. Aledo	3,210	3,530	10.0%

Source: NCTCOG, 2016

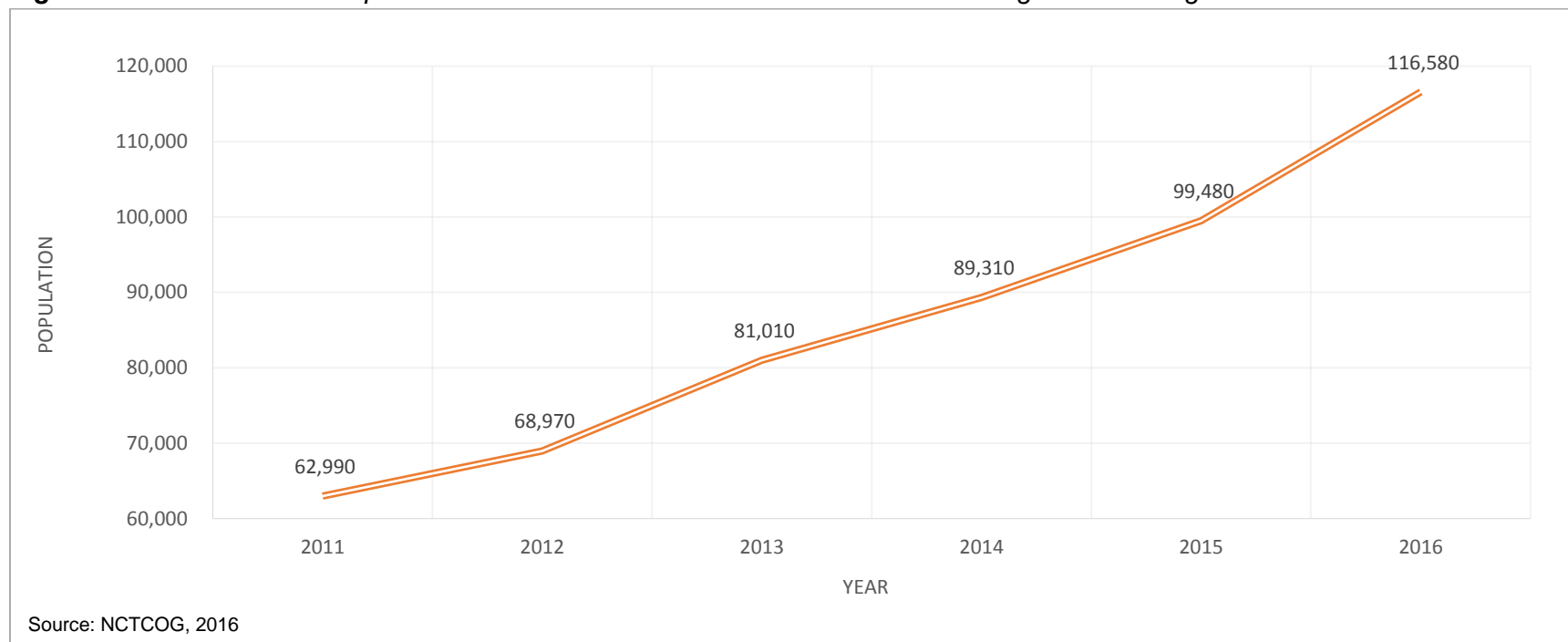
⁷ NCTCOG, 2016

Figure 2. Top 10 Cities Experiencing Fastest Absolute Growth in the NCTCOG Regional Planning Area from 2015 – 2016



Source: NCTCOG, 2016

Figure 3. Annual Absolute Population Growth from 2011 – 2016 for the NCTCOG Regional Planning Area



Projected Populations for the Dallas-Fort Worth Region

NCTCOG utilizes population projection data from agencies such as the Texas Water Development Board (TWDB) and other state and regional agencies in North Central Texas to aid in planning and projection of water demands, and wastewater treatment capacity needs. The NCTCOG 16-County regional planning area falls almost completely within the TWDB Region C Regional Water Planning area.⁸ The TWDB Draft 2017 State Water Plan has population projections for 2020 to 2070 for cities and counties throughout the Region C Water Planning Area.⁹ Table 3 shows the TWDB Draft 2017 Texas State Water Plan Population Projections for Region C. The table includes population projections for the Region C Water Planning Area and the NCTCOG counties that do not fall within Region C. These include: Palo Pinto, Erath, Somervell, Johnson, and Hood Counties that fall within Region G Water Planning Area and Hunt County that falls within Region D Water Planning Area. The counties in Region C that are not a part of the NCTCOG 16-county Region are greyed out.

⁸ Region C Water Planning Group is made up of Collin, Cooke, Dallas, Denton, Ellis, Freestone, Fannin, Grayson, Henderson (partial), Jack, Kaufman, Navarro, Parker, Rockwall, Tarrant, and Wise Counties; <http://www.regioncwater.org/>

⁹ Texas Water Development Board Draft 2017 State Water Plan, TWDB; <https://2017.texasstatewaterplan.org/statewide> Accessed by NCTCOG: May 2016

Table 3. 2016 Region C Water Plan Population Projections for 2020 – 2070 for Region C and NCTCOG Planning Area

County	2020	2030	2040	2050	2060	2070
Collin	956,716	1,116,830	1,363,229	1,646,663	1,853,878	2,053,638
Dallas	2,566,134	2,822,809	3,107,541	3,355,539	3,552,602	3,697,105
Denton	901,645	1,135,397	1,348,271	1,576,424	1,846,314	2,090,485
Ellis	183,814	224,000	276,931	362,668	488,768	683,974
Kaufman	146,623	191,707	239,940	309,619	428,577	571,840
Navarro	52,544	57,032	61,667	71,452	86,952	107,814
Parker	199,955	255,133	291,007	366,596	480,530	629,277
Rockwall	104,887	137,304	160,918	198,279	249,594	301,970
Tarrant	2,006,473	2,281,666	2,579,553	2,797,060	2,991,972	3,184,348
Wise	79,882	94,734	110,668	149,261	188,770	227,527
Palo Pinto*	30,535	32,771	34,280	35,675	36,739	37,579
Erath*	42,135	46,923	50,968	54,827	58,474	61,844
Somervell*	9,482	10,594	11,395	12,013	12,539	12,958
Johnson*	173,835	200,573	228,160	258,414	291,047	325,967
Hood*	61,316	71,099	78,111	84,147	88,785	92,339
Hunt**	104,894	130,351	164,886	212,575	280,518	378,250
Cooke	42,033	45,121	48,079	53,532	64,047	96,463
Fannin	38,346	43,391	52,743	69,221	101,915	138,497
Freestone	20,437	21,077	22,947	31,142	44,475	73,287
Grayson	134,785	148,056	164,524	185,564	250,872	344,127
Henderson (partial)	60,175	64,059	69,737	76,204	101,827	136,269
Jack	9,751	10,409	10,817	11,033	11,190	11,291
Region C Water Planning Area Total	7,504,200	8,648,725	9,908,572	11,260,257	12,742,283	14,347,912
NCTCOG Planning Area Total	7,620,870	8,808,923	10,107,525	11,491,212	12,936,059	14,456,915

* Region G Counties

** Region D County

Source: 2017 Texas State Water Plan, Texas Water Development Board (TWDB); <https://2017.texasstatewaterplan.org/statewide>; Accessed by NCTCOG: May 2016

In addition to the TWDB, NCTCOG conducts a population projection process to provide planning level information for transportation and other infrastructure and program planning needs. NCTCOG's 2040 Population Forecast is the most recent projection data available for the MPA. Table 4 displays 2040 projection totals for each county in the NCTCOG 12-county MPA and the projected absolute change in population from 2010 to 2040.

Table 4. 12-County Metropolitan Planning Area Population Projections for 2040

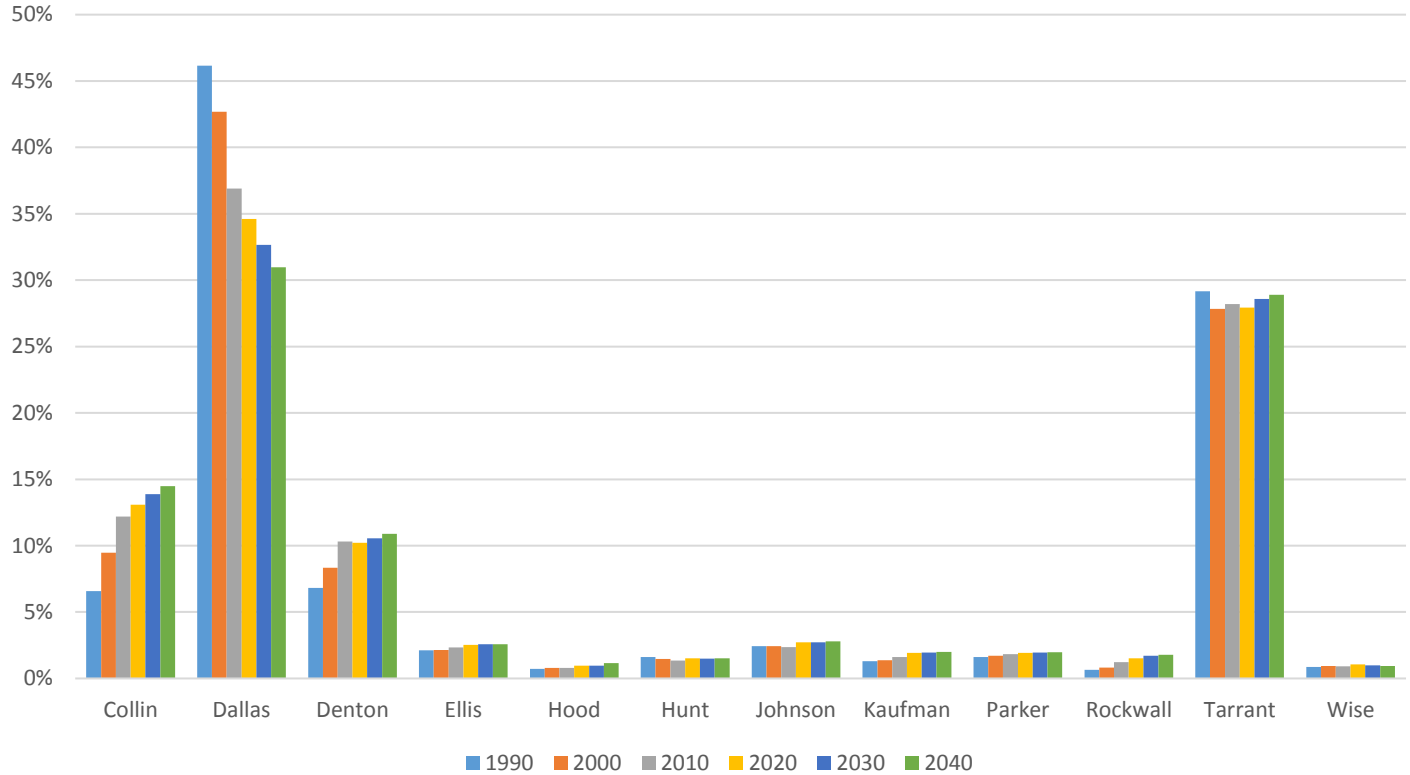
County	2010 Population	2040 Population	2010 –2040 Change
Collin	778,427	1,560,421	781,994
Dallas	2,337,741	3,357,469	1,019,728
Denton	652,270	1,241,681	589,411
Ellis	148,000	283,898	135,898
Hood	50,481	81,578	31,097
Hunt	84,260	131,022	46,762
Johnson	148,290	252,521	104,231
Kaufman	102,014	210,097	108,083
Parker	113,806	195,286	81,480
Rockwall	77,678	166,357	88,679
Tarrant	1,788,400	3,094,649	1,306,249
Wise	58,147	101,865	43,708
MPA Total	6,339,514	10,676,844	4,337,320

Source: U.S. Census Bureau, NCTCOG 2015
 Projections exclude population in group quarters such as dorms, jails, and nursing homes.

A comparison of the TWDB population projections, in Table 3, and the NCTCOG population projections, in Table 4, for 2040 indicate variations in county totals. These differences can be attributed to different forecasting methods employed by the two organizations. NCTCOG only has population projections available for the 12-county MPA, which falls within the 16-county NCTCOG regional planning area.

The four core counties of the North Central Texas region are Collin, Dallas, Denton, and Tarrant. As shown in Figure 4 population projections show that the core counties will continue to constitute the majority of population growth and urbanized area in the year 2040. However, population concentrations are shifting between these counties. For example, in 1990, Dallas County's population was 45% of the overall 12-county population; it is projected to only make up around 30% in 2040. Collin County, however, will make up almost 15% of the 12-county population in 2040 as opposed to 6% of the population in 1990. Additionally, the counties of Collin, Denton, and Rockwall have experienced a greater than 50% growth from 1990 to 2010 and are expected to double again by 2040.

Figure 4. Percent Total of Metropolitan Planning Area Population by County from 1990 – 2010 and Population Projections for 2020 – 2040



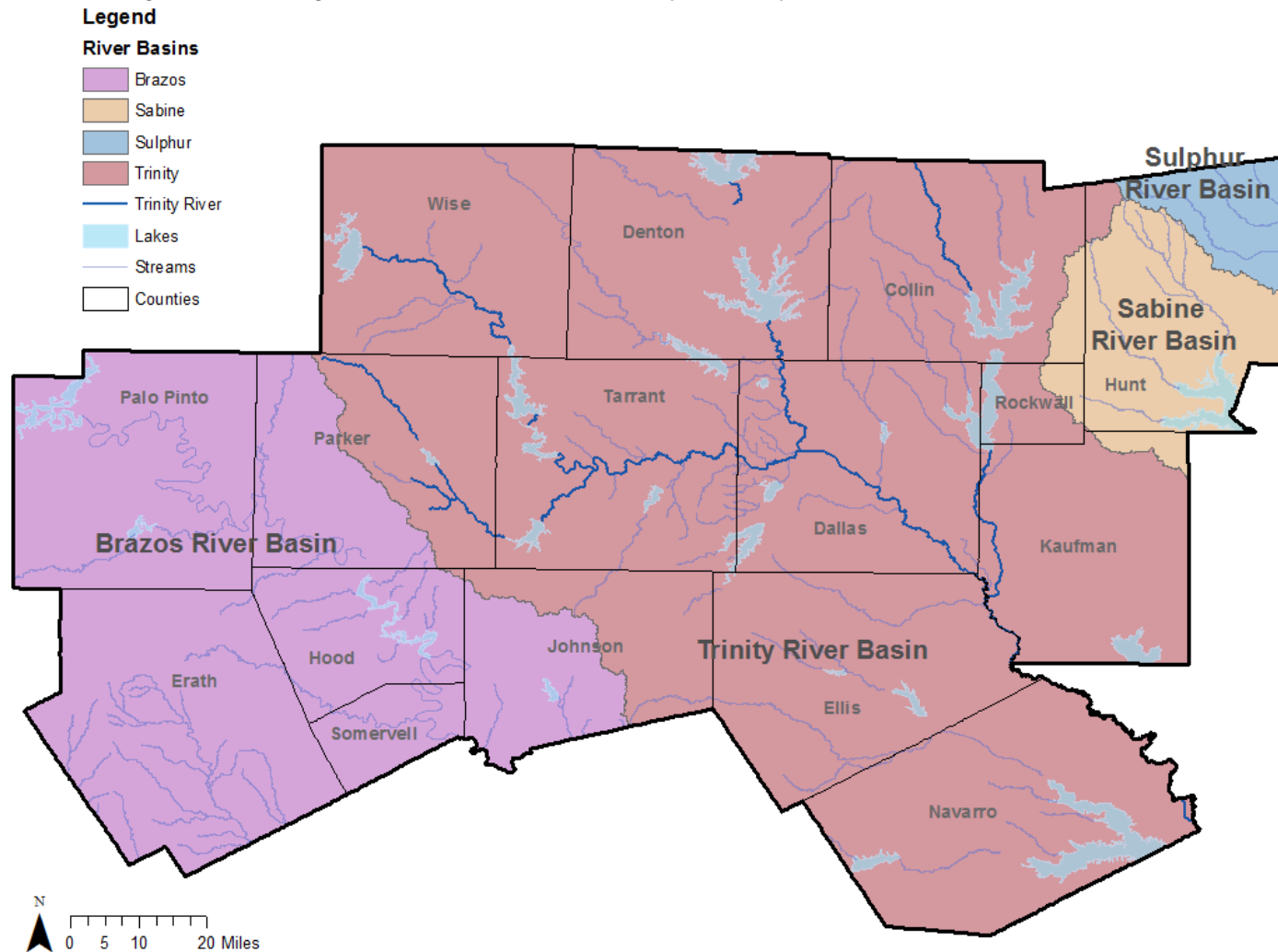
Source: US Census Bureau, NCTCOG 2015

Population projections at a county-level scale are essential to evaluate growth patterns, however, it is important to have an understanding of individual city growth as well. NCTCOG evaluates projected populations for select cities that have a population of at least 30,000 as defined by the 2010 US Census. The city-level aggregates are an informational item that allow a clearer picture of future growth within a county in the North Central Texas region. The large scale data can help target areas with the potential need for future infrastructure projects, water supply, or needed resources to accommodate a growing population. A list of available city population projections produced by NCTCOG for 2011 to 2016 can be found in Appendix A, however projections produced by or specifically for a given city will likely be a more accurate representation.

North Central Texas Water Resources

Most of the NCTCOG regional planning area is located within the Trinity River Basin, however, Figure 5 shows that the region falls within three other River Basins in Texas; Hood, Palo Pinto, Somervell, Erath, and parts of Johnson and Parker counties are in the Brazos River Basin, and small parts of Kaufman and Rockwall counties are in the Sabine River Basin. Hunt County has a portion of the Trinity, Sabine, and Sulphur River Basins.

Figure 5. NCTCOG Regional Planning Area River Basins and Trinity River System



Each river basin differs in land use, population density, infrastructure, water quality and quantity, and future growth but experience common challenges associated with water quality, wastewater management and water supply. To better address the different challenges, NCTCOG is working with partners in each river basin to gain knowledge of the different priorities and goals the basins have for water quality and future development.

The NCTCOG Regional Planning Area is located in the upper part of the Trinity, Sulphur and Sabine River Basins. Water flows from the headwaters located in the NCTCOG region and go directly downstream to become the drinking water for other cities and entities. The coordination among stakeholders in the region will continue to help protect and improve regional water quality and quantity through elements such as wastewater management, water quality monitoring, and a Regional Stormwater Management Program to help create better quality of life for communities in the North Central Texas region and downstream.

Federal and State Agency Involvement

Water resources are regulated and managed by multiple federal, state, and region agencies. Water laws, regulations, and management is usually centered on three major categories including:

- » **Water Quality** – Addressing whether drinking or wastewater meets appropriate federal and state standards for health and safety
- » **Wastewater Treatment** – Treating water that goes down the sink, shower, or toilet into the sewer system
- » **Water Supply** – Meeting current demands and future needs for water supply.

In Texas, there are federal and state regulatory authorities that allow the State of Texas to write water quality standards for Texas waterbodies. The Texas Commission on Environmental Quality (TCEQ) is responsible for establishing and enforcing these standards after they are approved by the U.S. Environmental Protection Agency (EPA). The Texas Surface Water Quality Standards establish explicit goals for the quality of streams, rivers, lakes, and bays throughout the state and are intended to improve and maintain the quality of water.¹⁰

The TCEQ employs a myriad of tools to define appropriate water quality standards for each stream segment across the state. One tool, the Use Attainability Analysis (UAA), reevaluates designated or presumed uses if the standards are for a water body are inappropriate due to local conditions. Assessments of use are based on the physical and flow characteristics of the stream; supporting information from individuals and organizations with first hand knowledge; and historical and existing patterns of use.¹¹ The most common of the UAAs is the Recreational Use-Attainability Analysis (RUAA). RUAA's determine what category of recreational

¹⁰ Texas Surface Water Quality Standards, TCEQ 2016; https://www.tceq.texas.gov/waterquality/standards/WQ_standards_intro.html

¹¹ Recreational Use Attainability Analyses, TCEQ 2016; <https://www.tceq.texas.gov/waterquality/standards/ruaas/index>

use is appropriate for a particular water body. There are four categories of recreational use that can be assigned to individual streams:

1. **Primary Contact Recreation** – Activities that are presumed to involve a significant risk of ingestion of water
2. **Secondary Contact Recreation 1** – Activities that commonly occur but have limited body contact incidental to shoreline activity
3. **Secondary Contact Recreation 2** – Activities with limited body contact incidental to shoreline activity
4. **Noncontact Recreation** – Activities that do not involve a significant risk of water ingestion, such as those with limited body contact incidental to shoreline activity

A RUAA can change the water quality standards for an individual stream and allow the water body to become within attainment of the standards. Performing a RUAA and updating water quality standards based on recreational use allows for stream segments listed as impaired to be removed from a statewide list of streams not meeting water quality standards. Prior to changing the current standards assigned to recreational use of a stream segment in the Texas Surface Water Quality Standards, the TCEQ would provide additional public notice and opportunity for public comment. In addition, the U.S. EPA would review the proposed changes under the provisions of the federal Clean Water Act¹². If a RUAA results in a designated use change, the stream or waterbody may be able to reach water quality standards and be removed from the Texas 303(d) List. There are several stream segments in the Brazos Basin currently undergoing a RUAA public comment period to obtain a designated use change. Table 5 shows the TCEQ recommendations resulting from the RUAAs in the Brazos Basin and the rest of the NCTCOG regional planning area.

¹² Recreational Use Attainability Analyses, TCEQ May 2016; <https://www.tceq.texas.gov/waterquality/standards/ruaas>

Table 5. NCTCOG Regional Planning Area RUAA Summary and Recommendations

Basin	Segment	Segment Description	Original Designated Use	TCEQ's RUAA Summary and Recommendation	Numeric Criteria (Geometric Mean)	When RUAA Was Conducted
Brazos	1226K	Little Daffau Creek	Primary Contact Recreation	Primary Contact Recreation is appropriate	126 colonies of E. coli/100 mL	Summer 2009
Brazos	1226E	Indian Creek	Primary Contact Recreation	Revised to Secondary Contact Recreation 1	630 colonies of E. coli/100 mL	Summer 2009
Brazos	1226F	Sims Creek	Primary Contact Recreation	Revised to Secondary Contact Recreation 1	630 colonies of E. coli/100 mL	Summer 2009
Brazos	1255A	Goose Branch	Primary Contact Recreation	Revised to Secondary Contact Recreation 2	1030 colonies of E. coli/100 mL	Summer 2009
Brazos	1255B	North Fork Upper North Bosque	Primary Contact Recreation	Revised to Secondary Contact Recreation 2	1030 colonies of E. coli/100 mL	Summer 2009
Brazos	1255C	Scarborough Creek	Primary Contact Recreation	Revised to Secondary Contact Recreation 2	1030 colonies of E. coli/100 mL	Summer 2009
Brazos	1255F	Unnamed Tributary of Scarborough Creek	Primary Contact Recreation	Revised to Secondary Contact Recreation 1	630 colonies of E. coli/100 mL	Summer 2009
Brazos	1221F	Walnut Creek	Primary Contact Recreation	Revised to Secondary Contact Recreation 2	1030 colonies of E. coli/100 mL	Summer 2009
Brazos	1221A	Resley Creek	Primary Contact Recreation	Revised to Secondary Contact Recreation 2	1030 colonies of E. coli/100 mL	Summer 2009
Brazos	1255E	Unnamed Tributary of Goose Branch	Primary Contact Recreation	Revised to Secondary Contact Recreation 2	1030 colonies of E. coli/100 mL	Summer 2009
Brazos	1255G	Woodhollow Branch	Primary Contact Recreation	Revised to Secondary Contact Recreation 2	1030 colonies of E. coli/100 mL	Summer 2009
Brazos	1223A	Armstrong Creek	Primary Contact Recreation	Revised to Secondary Contact Recreation 2	1030 colonies of E. coli/100 mL	Summer 2009
Brazos	1255	Upper North Bosque River	Primary Contact Recreation	Primary Contact Recreation is appropriate	126 colonies of E. coli/100 mL	Summer 2009
Brazos	1226H	Alarm Creek	Primary Contact Recreation	Revised to Secondary Contact Recreation 1	630 colonies of E. coli/100 mL	Summer 2012
Brazos	1226M	Little Green Creek	Primary Contact Recreation	Revised to Secondary Contact Recreation 1	630 colonies of E. coli/100 mL	Summer 2012
Brazos	1255I	Dry Branch	Primary Contact Recreation	Revised to Secondary Contact Recreation 1	630 colonies of E. coli/100 mL	Summer 2012
Brazos	1204A	Camp Creek	Primary Contact Recreation	Primary Contact Recreation is appropriate	126 colonies of E. coli/100 mL	Summer 2012
Sabine	0507G	South Fork of Sabine River	Primary Contact Recreation	Revised to Secondary Contact Recreation 1	630 colonies of E. coli/100 mL	Summer 2010 and 2011
Trinity	0810	West Fork Trinity River Below Bridgeport Reservoir	Primary Contact Recreation	Primary Contact Recreation is appropriate	126 colonies of E. coli/100 mL	Summer 2010
Trinity	0810A	Big Sandy Creek	Primary Contact Recreation	Revised to Secondary Contact Recreation 1	630 colonies of E. coli/100 mL	Summer 2009
Trinity	0810C	Martin Branch	Primary Contact Recreation	Primary Contact Recreation is appropriate	126 colonies of E. coli/100 mL	Summer 2010
Trinity	0838C	Walnut Creek	Primary Contact Recreation	Revised to Secondary Contact Recreation 1	630 colonies of E. coli/100 mL	Summer 2010

The Texas Integrated Report is a document produced every other year by the TCEQ which describes the status of Texas' natural waters based on historical data and categorizes water bodies based on whether they attain the Texas Surface Water Quality Standards for designated uses including aquatic life use, contact recreation, general use, fish consumption, and public water supply use.¹³ The Texas 303(d) list is a component of the Texas Integrated Report, which identifies the water bodies in Texas for which effluent limitations are not stringent enough to implement water quality standards, and for which the associated pollutants are suitable for measurement by maximum daily load. Category 5 of the Texas Integrated Report comprises the 303(d) List. Within the NCTCOG Planning Area, each of the major river systems have stream segments that do not meet established water quality standards. All waterways in the state of Texas are categorized from 1 to 5 based on the level of attainment and information available. The categories are as follows:

Category 1. Attaining the water quality standard and no use is threatened

Category 2. Attaining some of the designated uses; no use is threatened; and insufficient or not data and information are available to determine if the remaining uses are attained or threatened

Category 3. Insufficient or no data and information to determine if any designated use is attained. Many of these water bodies are intermittent streams and small reservoirs.

Category 4. Standard is not supported or is threatened for one or more designated uses but impairments are not suitable for a TMDL; or for which a TMDL has already been approved

Category 5. Water body does not meet applicable water quality standards or is threatened for one or more designated uses; TMDLs are underway, scheduled, or will be scheduled; review of standards for one or more parameters will be conducted before management strategy is selected including a possible revision of the water quality standards.

Texas Pollution Discharge Elimination System Program

Local, state, and federal regulations require pretreatment programs as part of the National Pollutant Discharge Elimination System (NPDES), which is administered at the state level by TCEQ's Texas Pollution Discharge Elimination System (TPDES) program. The TPDES program has federal regulatory authority over discharges of pollutants to Texas surface water, with the exception of discharges associated with oil, gas, and geothermal exploration¹⁴. The TPDES program controls water pollution by regulating point sources that discharge pollutants into waterways. Any industrial, municipal, or other facility must obtain a TPDES permit if their discharge goes directly into surface waters. This includes but is not limited to wastewater treatment plants.

¹³ 2014 Texas Integrated Report of Surface Water Quality for the Clean Water Acts Sections 305(b) and 303(d), TCEQ April 2016; <https://www.tceq.texas.gov/waterquality/assessment/14twqi/14txir> Accessed by NCTCOG: April 2016

¹⁴ These activities are regulated by the Railroad Commission of Texas; <http://www.rrc.state.tx.us/>

The Pretreatment Program is a part of the TPDES program and is in most cases a requirement for Publically Owned Treatment Works (POTW). The program aims to control the pollutants discharged into sewer systems and to reduce the amount of pollutants released into the environment.¹⁵ Pretreatment programs are designed to: prevent interference with the operation of the WWTP; prevent introduction of pollutants that could pass through the WWTP untreated and into the receiving body of water; improve opportunities for reuse or recycling of wastewater; and prevent the introduction of pollutants that could cause health or safety problems. Examples of pollutants that are important to remove during pretreatment processes include heavy metals and organic chemicals¹⁶.

NCTCOG aims to compile TPDES wastewater permit renewals and major and minor amendments occurring in the NCTCOG Regional Planning Area to be a resource to the region's decision makers. With this goal, NCTCOG is developing a database of wastewater permits to achieve a comprehensive view of wastewater capacity and where needs are being met. This information, shown in Appendix B, can be used to analyze the need for additional infrastructure.

¹⁵ Wastewater Pretreatment, TCEQ, April 2016; https://www.tceq.texas.gov/permitting/wastewater/pretreatment/pretreatment_definition.html

¹⁶ EPA Pretreatment Categories and Standards, TCEQ April 2016; https://www.tceq.texas.gov/permitting/wastewater/pretreatment/EPA_categories_standards.html

North Central Texas Water Quality Overview

The quality of water in North Central Texas water bodies is important to the health, safety, and welfare of residents, ecosystems, and long-term economic growth. Sources of pollution that impact the health of a water body can be either point or non-point sources. Point sources include specific locations or sources such as pipes, industrial facilities, or wastewater treatment plants (WWTPs). Non-point source pollution comes from many sources such as precipitation, atmospheric deposition, drainage, seepage, hydrologic modification, or stormwater runoff.

As of 2014, the North Central Texas regional planning area has 50 stream segments or water bodies that are not in attainment and listed on the Texas 303(d) List. The Texas 303(d) list is comprised of stream segments and water bodies that are categorized as category 5. These waterways have or will have planned management strategies as an effort to improve the water quality. Figure 6 displays the 2014 Texas 303(d) List of impaired surface water bodies and stream segments by pollutant. Impairments are limited to the geographic area described by the Assessment Unit (AU) and identified with a six or seven-digit AU_ID. A management strategy will be assigned to each impairment. Specific strategies may include TMDL development, water quality standards evaluation, or additional monitoring. Stream segments and waterbodies are removed from the Texas 303(d) List for any one of the following seven reasons:¹⁷

Standards are met. Additional monitoring data demonstrate that water body meets applicable water quality standards

Error in listing. Errors in the data or procedures used to list the water body invalidate the original basis for listing

New procedures used. Procedures used by the state to assess water quality monitoring data are routinely improved and revised.

Data set for a listed water body may be reassessed with more accurate procedures and be found to attain the standard or criteria.

The strength of the data set and quality of the water must also meet the requirement for delisting using revised methods.

New standards. Water quality standards and criteria have been revised, and listed water body attains the new standards or criteria.

TMDL approval. The EPA approves a TMDL designed to attain water quality standards for the water body (Category 4a).

Water body expected to meet. Based on water quality controls in place (other than a TMDL), attainment of the water quality standards is expected in the near future (Category 4b).

Impairments not caused by a pollutant. New information demonstrates that the impairment is not caused by a pollutant, and that water quality conditions cannot be changed by the allocation and control of pollutants through the TMDL process (Category 4c).

Table 6 shows the stream segments that were added and removed from the Texas 303(d) List between the 2012 and 2014 assessment. See Appendix C for a complete table of the 2014 Texas 303(d) listed segments and the associated impairments.

¹⁷ 2014 Guidance for Assessing and Reporting Surface Water Quality in Texas, June 2015, TCEQ; https://www.tceq.texas.gov/assets/public/waterquality/swqm/assess/14txir/2014_guidance.pdf

Figure 6. 2014 Texas Integrated Report – Texas 303(d) List (Category 5) for the NCTCOG Regional Planning Area

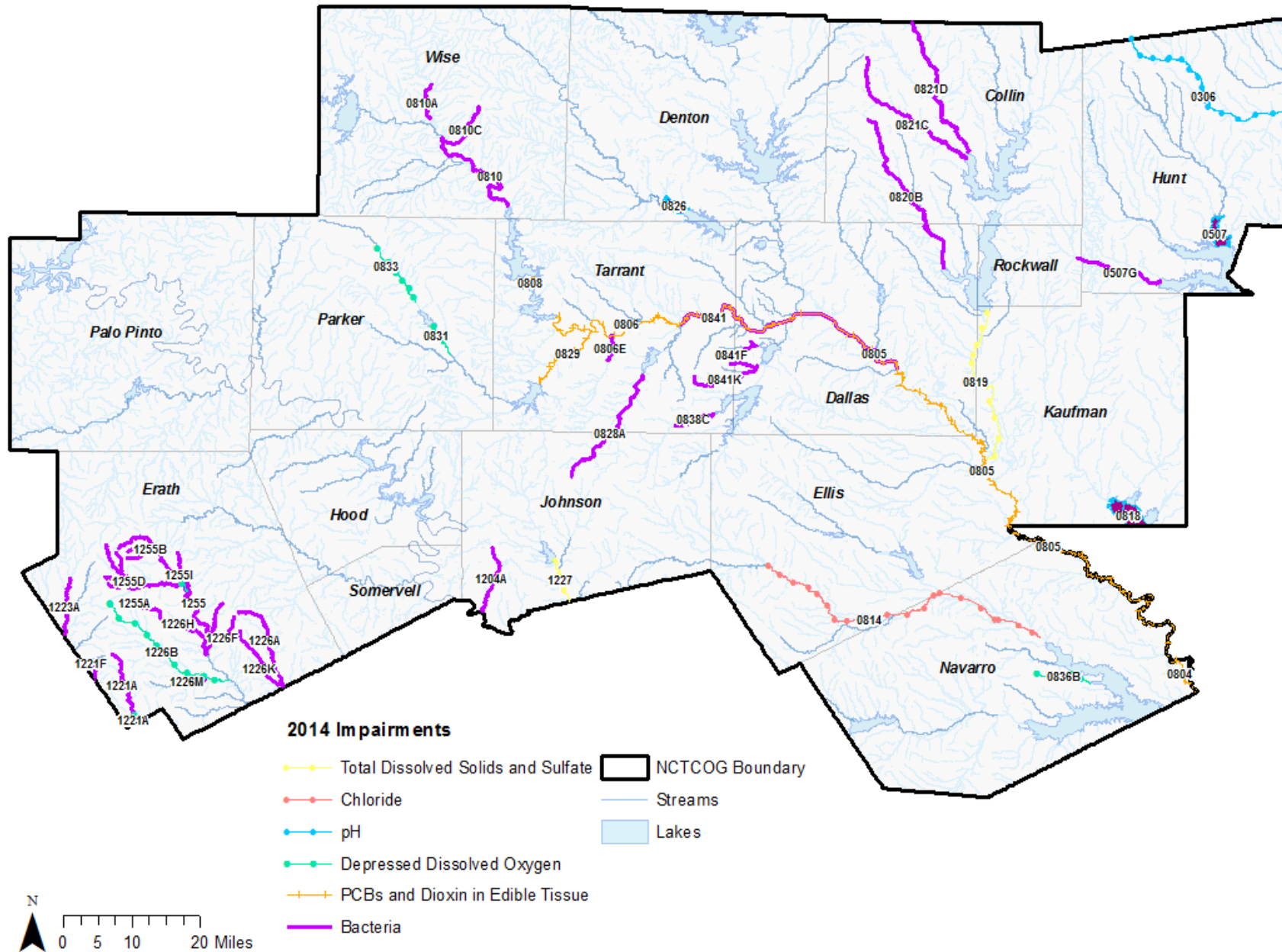


Table 6. 2014 Texas 303(d) List – Newly Added and Removed Assessment Units in the North Central Texas Regional Planning Area

Segment	Segment Description	Category as of 2014	Newly Added Assessment Units
0306	Upper South Sulphur River	5c	0306_01, 0306_02
0809B	Ash Creek	5c	0809B_01
0814	Chambers Creek Above Richland Chambers Reservoir	5c	0814_01, 0814_02, 0814_03, 0814_04
0820B	Rowlett Creek	5c	00820B_01
0833	Clear Fork Trinity River Above Lake Weatherford	5c	0833_05
1226A	Duffau Creek	5c	1226A_01

Segment	Segment Description	Category as of 2014	Removed* Assessment Units
0810B	Garrett Creek	No longer impaired	0810B_01
0833	Clear Fork Trinity River Above Lake Weatherford	Segment 0833 changed from 5c to 5b	0833_02
0841G	Dalworth Creek	4a	0841G_01
0841H	Delaware Creek	4a	0841H_01
0841J	Estelle Creek	4a	0841J_01
0841L	Johnson Creek	4a	0841L_01
0841M	Kee Branch	4a	0841M_01
0841R	Rush Creek	4a	0841R_01
0841S	Vilbig Lakes (unclassified water body)	No longer impaired	0841S_01
0841T	Village Creek	4a	0841T_01
0841U	West Irving Creek	4a	0841U_01

*Removal from the Texas 303(d) list does not necessarily indicate that the water body has reached attainment

Historical Water Quality in North Central Texas

Every 2 years, the TCEQ conducts a water quality assessment on all classified water bodies for which sufficient data is available and for unclassified water bodies, where a pending regulatory need exists, or where new information may change the standards attainment status.¹⁸ A list of the added and removed assessment units in the NCTCOG regional planning area since the 2006 Texas 303(d) List can be found in Table 7. In Figure 7, segments identified on the map that are not purple are representative of the segments removed from the Texas 303(d) list since 2006. The 2014 segments are split up into Category 4 and Category 5. During the 2012 – 2014 water quality assessment, segments 0841G, 0841H, 0841J, 0841L, 0841M, 0841R, 0841T, and 0841U were categorized from category 5a to category 4a. This shift occurred due to the development of the Greater Trinity River Bacteria TMDL Implementation Plan Project.¹⁹ The data from 2006-2014 indicates that in the last 8 years, the NCTCOG regional planning area has made strides to bring waterways into attainment through the removal of stream segments from the list, but has continued to add segments, likely as a result of continued population growth and community development within the region.

Many initiatives are underway in the North Central Texas region to improve water quality in areas that do not meet state water quality standards, particularly the areas that remain persistently on the Texas 303(d) List. Currently in North Central Texas there are seven Watershed Protection Plans (WPPs), one TMDL program, three dedicated NCTCOG water-related committees, over 750 regional water quality monitoring sites, and countless regional efforts including, but not limited to: education programs, stormwater pollution management, implementation of construction standards, updating aging water and wastewater infrastructure, watershed protection programs, report illegal dumping programs, watershed planning, and groundwater protection programs. Local governments, water districts, and many partners and stakeholders are working to improve or maintain water quality. NCTCOG continues to facilitate stakeholder-driven efforts to address regional water quality concerns in areas that have waterways included on the Texas Integrated Report.

¹⁸ 2014 Water Body Assessment by Basin, TCEQ 2015; <https://www.tceq.texas.gov/waterquality/assessment/14twqi>

¹⁹ Greater Trinity River Bacteria TMDL Program, NCTCOG 2013; <http://www.nctcog.org/aa/jobs/envir/SEEClean/wq/tmdl/index.asp>

Figure 7. NCTCOG 16-County Region: Texas 303(d) List, 2006 – 2014

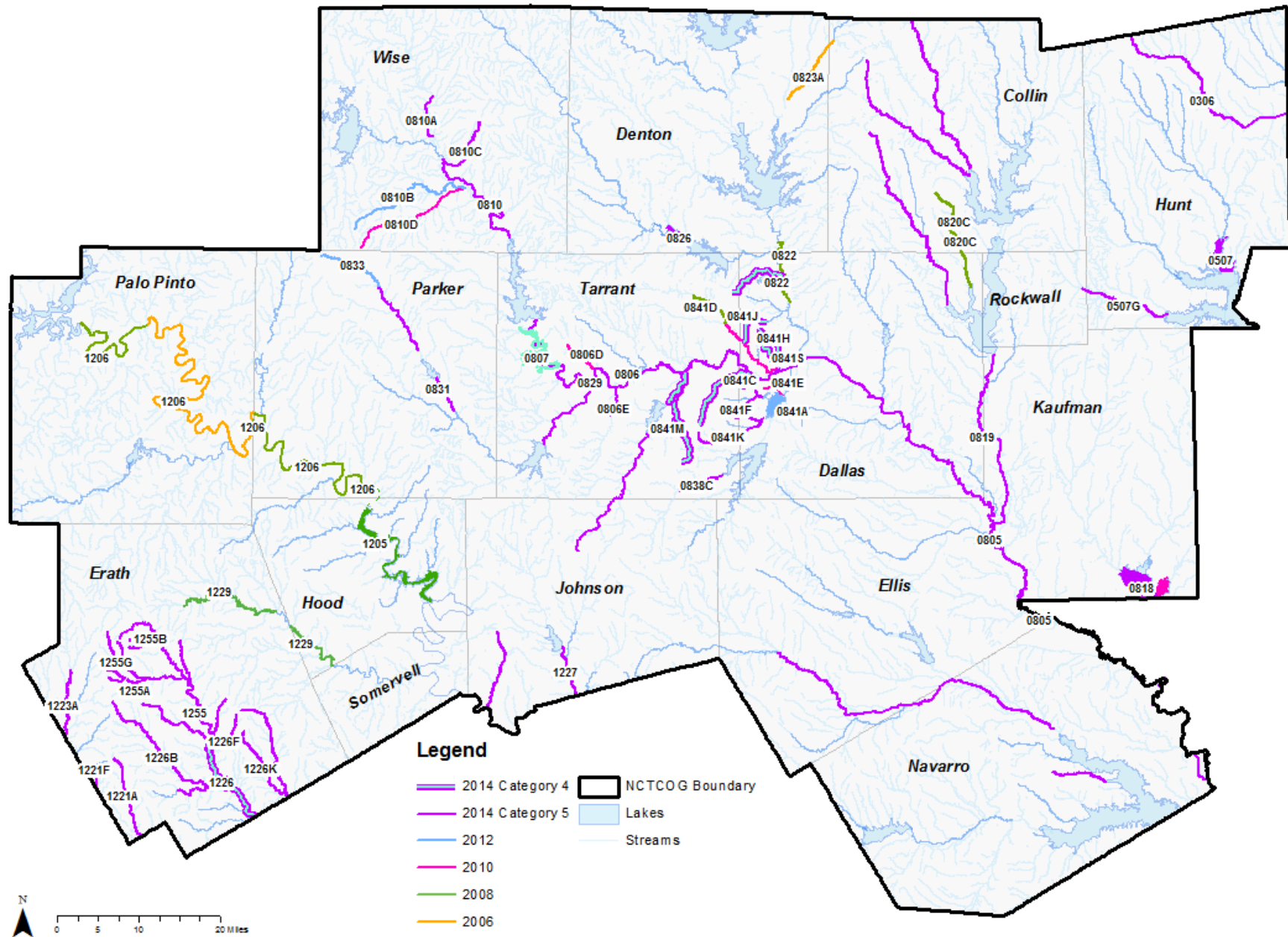


Table 7. Texas 303(d) Added and Removed Assessment Units since 2006 in the NCTCOG Regional Planning Area

Segment	Segment Description	Assessment Units Added to the Texas 303(d) List Since 2006
0306	Upper South Sulphur River	0306_01, 0306_02, 0306_03
0507	Lake Tawakoni	0507_04
0804	Trinity River Above Lake Livingston	0804_07
0806	West Fork Trinity River below Lake Worth	0806_02
0808	West Fork Trinity River Below Eagle Mountain Reservoir	0808_01
0814	Chambers Creek Above Richland-Chambers Reservoir	0814_02, 0814_03, 0814_04
0819	East Fork Trinity River	0819_01
0820B	Rowlett Creek	0820B_01
0821C	Wilson Creek	0821C_01
0821D	East Fork Trinity River above Lake Lavon	0821D_01
0826	Grapevine Lake	0826_07
0828A	Village Creek	0828A_01
0829	Clear Fork Trinity River Below Benbrook Lake	0829_02, 0829_03
0833	Clear Fork Trinity River Above Lake Weatherford	0833_05
0836B	Cedar Creek	0836B_01
0841V	Crockett Branch	0841V_01
1204	Camp Creek	1204A_01
1226A	Duffau Creek	1226A_01
1226H	Alarm Creek	1226H_01
1226M	Little Green Creek	1226M_01
1255	Upper North Bosque River	1255_01, 1255_02
1255D	South Fork North Bosque River	1255D_01
1255I	Dry Branch	1255I_01
Segment	Segment Description	Assessment Units Removed from the Texas 303(d) List Since 2006
0806D	Marine Creek (unclassified water body)	0806D_01
0810B	Garrett Creek (unclassified water body)	0810B_01
0810D	Salt Creek (unclassified water body)	0810D_01
0820C	Muddy Creek (unclassified water body)	0820C_01
0822	Elm Fork Trinity River Below Lewisville Lake	0822_02
0822A	Cottonwood Branch (unclassified water body)	0822A_02
0822B	Grapevine Creek (unclassified water body)	0822B_01
0823A	Little Elm Creek (unclassified water body)	0823A_01
0833	Clear Fork Trinity River Above Lake Weatherford	0833_02
0841B	Bear Creek (unclassified water body)	0841B_01

0841C	Arbor Creek (unclassified water body)	0841C_01
0841D	Big Bear Creek (unclassified water body)	0841D_01
0841E	Copart Branch Mountain Creek (unclassified water body)	0841E_01
0841G	Dalworth Creek (unclassified water body)	0841G_01
0841H	Deleware Creek (unclassified water body)	0841H_01
0841J	Estelle Creek (unclassified water body)	0841J_01
0841M	Kee Branch (unclassified water body)	0841M_01
0841S	Vilbig Lakes (unclassified water body)	0841S_01
0841U	West Irving Creek (unclassified water body)	0841U_01
1206	Brazos River Below Possum Kingdom Lake	1206_01, 1206_02, 1206_03

North Central Texas Watershed Protection Plans

A Watershed Protection Plan (WPP) is a coordinated framework for implementing water quality protection and restoration strategies within a watershed. WPPs holistically address all the sources and causes of impairment to both surface and groundwater resources. Developed and implemented through diverse, well integrated partnership of stakeholders, a WPP assures the long-term health of the watershed.²⁰ As seen in Figure 8, there are currently five watershed protection plans in place and two being developed in North Central Texas. Table 8 describes the location, participation, and status of each WPP.

²⁰ Texas Commission on Environmental Quality, December 2015;
<https://www.tceq.texas.gov/waterquality/nonpoint-source/mgmt-plan/watershed-pp.html>

Figure 8. Watershed Protection Plans in the North Central Texas Regional Planning Area

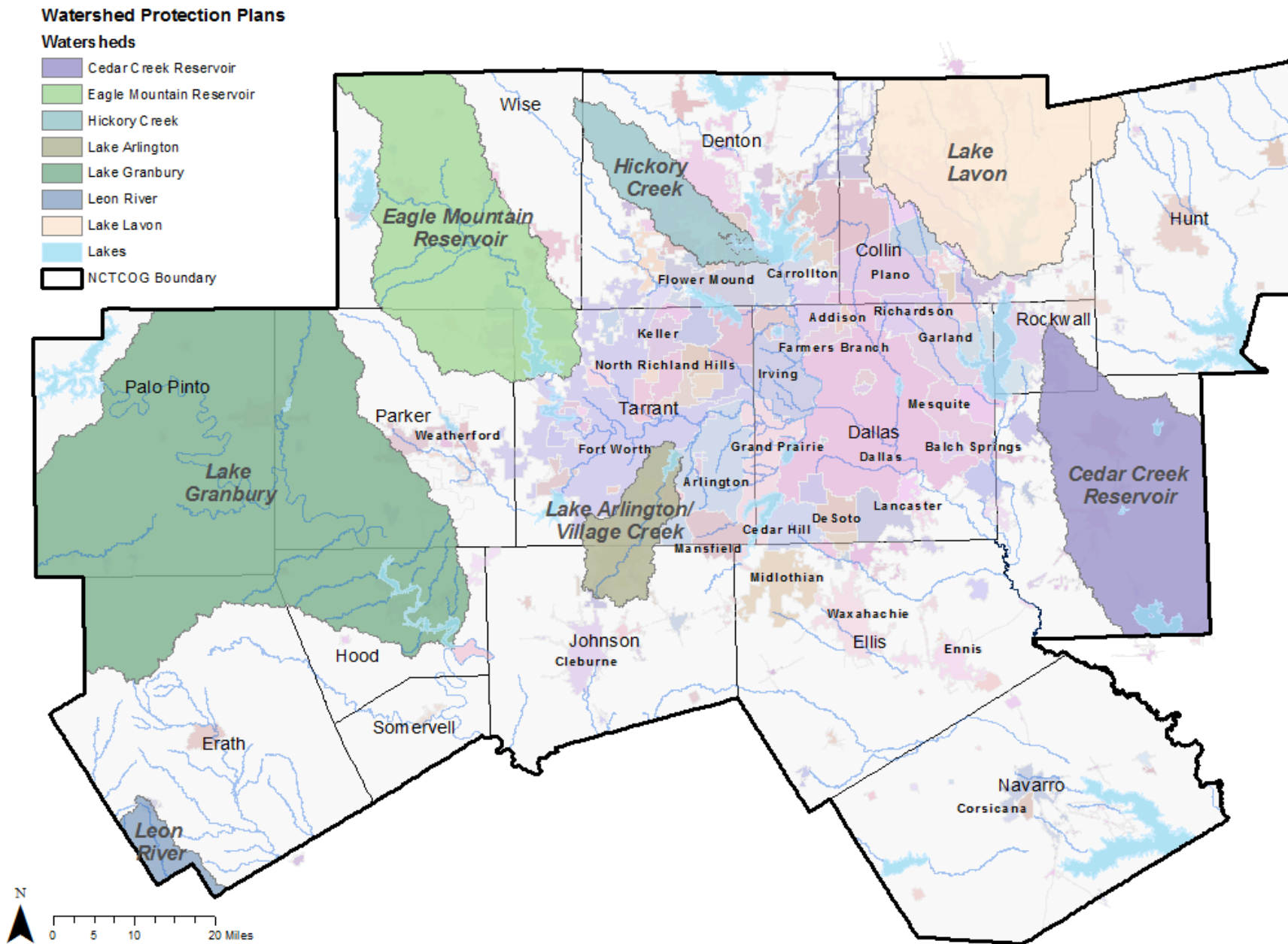


Table 8. North Central Texas Regional Planning Area - Watershed Protection Plans Status

Watershed Protection Plan	Location	Participants	Status (As of October 2015)
Lake Granbury ²¹	Lake Granbury Watershed on the Brazos River draining into Lake Granbury in Parker, Palo Pinto, Hood, and Erath Counties	TCEQ, Brazos River Authority, Texas A&M AgriLife	Currently conducting implementation under 319 grant, continuing education outreach, and working to replace 8 – 10 problem septic systems around lake Granbury
Eagle Mountain Reservoir	9,200 acres on the West Fork of the Trinity River just north of Lake Worth in the northwestern Tarrant and southwestern Wise Counties	Tarrant Regional Water District, Texas Water Resources Institute	Plan has been reviewed by TCEQ and TSSWCB
Hickory Creek ²²	Extends west from I-35 through the City of Denton, and drains to Lake Lewisville in Denton County	TCEQ, City of Denton	Currently updating parts of the plan to receive full approval from the EPA; increased monitoring and modeling of the land use around the creek
Cedar Creek ²³	3 miles northwest of Trinidad on Cedar Creek in the Trinity River Basin in Rockwall, Kaufman, and Henderson Counties	Tarrant Regional Water District, Texas Water Resources Institute	Currently being revised by the Tarrant Regional Water District and will be submitted to TCEQ and TSSWCB by the end of the year**
Leon River ²⁴	Leon River Watershed below Proctor Lake and above Belton Lake in Comanche, Hamilton, Erath, Coryell, Millis, and Bell Counties	Texas State Soil & Water Conservation Board (TSSWCB), Texas A&M Institute of Renewable Resources (IRNR)	Currently in the project period and conducting implementation under the 319(h) grant
Lake Arlington/Village Creek ²⁵	From Village Creek headwaters in northern Johnson County, extending 35 miles to Lake Arlington in southeastern Tarrant County	Trinity River Authority, City of Arlington, TCEQ	In development under the Trinity River Authority*
Lake Lavon ²⁶	Lake Lavon Watershed above Lake Lavon in Grayson, Fannin, and Collin County	North Texas Municipal Water District, Texas A&M AgriLife, TSSWCB	In development under the North Texas Municipal Water District*

*Indicates Status as of January 2016

** Indicates Status as of June 2016

²¹ Lake Granbury Watershed Protection Plan Implementation Update, August 2014; <http://www.lakegranburywatershed.org/media/107410/Final-Report.pdf>

²² Report for Task 2, Watershed Protection Plan, of the Grant Entitled Control of Nonpoint Source Loads in Hickory Creek, August 2008; <http://www.cityofdenton.com/home/showdocument?id=5929>

²³ Cedar Creek Watershed Protection Plan, December 2008; <http://nctx-water.tamu.edu/media/1475/ccwpp.pdf>

²⁴ Leon River Watershed Protection Plan; <http://www.brazos.org/About-Us/Water-Quality/Watershed-Protection-Plans/Leon-River-WPP>

²⁵ Lake Arlington/Village Creek Watershed Protection Plan; <http://www.trinityra.org/lakearlingtonvillagecreek>

²⁶ Watershed Planning and Protection for Lake Lavon, January 2016;

http://www.nctcog.org/envir/SEEclean/wq/documents/LakeLavonWPP_TrinityCoordinatingCommittee_Jan19_2016_GCredits.pdf

Total Maximum Daily Load and Implementation Plan for the Greater Trinity River Region

In North Central Texas, NCTCOG was tasked by the TCEQ to support the development of a Total Maximum Daily Load (TDML) Implementation Plan (I-Plan) to address bacteria levels in several segments of the Trinity River.²⁷ A TMDL program measures the amount of pollutant that a stream segment can have and still meet the water quality standards for its designated use.

The *Implementation Plan (I-Plan) for 17 Total Maximum Daily Loads for Bacteria in the Greater Trinity River Region* was approved by the TCEQ Commissioners in 2013. The I-Plan describes strategies that can be taken to reduce the levels of bacteria in the portions of the Trinity River and its tributaries that are listed as impaired for bacteria levels. Figure 9 shows the boundary of the I-Plan along with the proposed subwatershed and segments of Mountain Creek. Currently, the watersheds for the Greater Trinity River I-Plan encompass an area of 406 square miles. The human population is 1.33 million as of 2013, with a population density of approximately 3,232 people per square mile.²⁸ The Implementation Plan is implementing TMDLs for:

- » Upper Trinity River (Segment 0805, upper end)
- » Elm Fork Trinity River tributaries of Grapevine Creek and Cottonwood Branch (Segments 0822A and 0822B)
- » Lower West Fork Trinity River (Segment 0841) and 11 of its tributaries
- » Tributaries of Mountain Creek Lake (Segments 0841F, 0841K, 0841N, and 0841V), proposed in 2015

A group of diverse stakeholders make up the TMDL Coordination Committee, which meets yearly to monitor the status of recommended strategies and actions and to recommend priority implementation actions to focus on in order to improve water quality. NCTCOG continues to support regional efforts to implement strategies identified in the I-Plan and work with stakeholders to make progress in meeting TCEQ's and the region's goal of reducing bacteria concentrations to within acceptable risk levels for contact recreation. A list of cities within the boundary of the TMDL project can be found in Table 9.

²⁷ Total Maximum Daily Load Program, NCTCOG; <http://www.nctcog.org/envir/SEEclean/wq/tmdl/index.asp>

²⁸ Greater Trinity Region: Implementing a Plan to Protect Recreational Uses, TCEQ May 2016; <https://www.tceq.texas.gov/waterquality/tmdl/nav/66-greatertrinitybacteria/66-trinityimplementation>

Figure 9. Greater Trinity River Bacteria TMDL Implementation Plan Study Area in North Central Texas

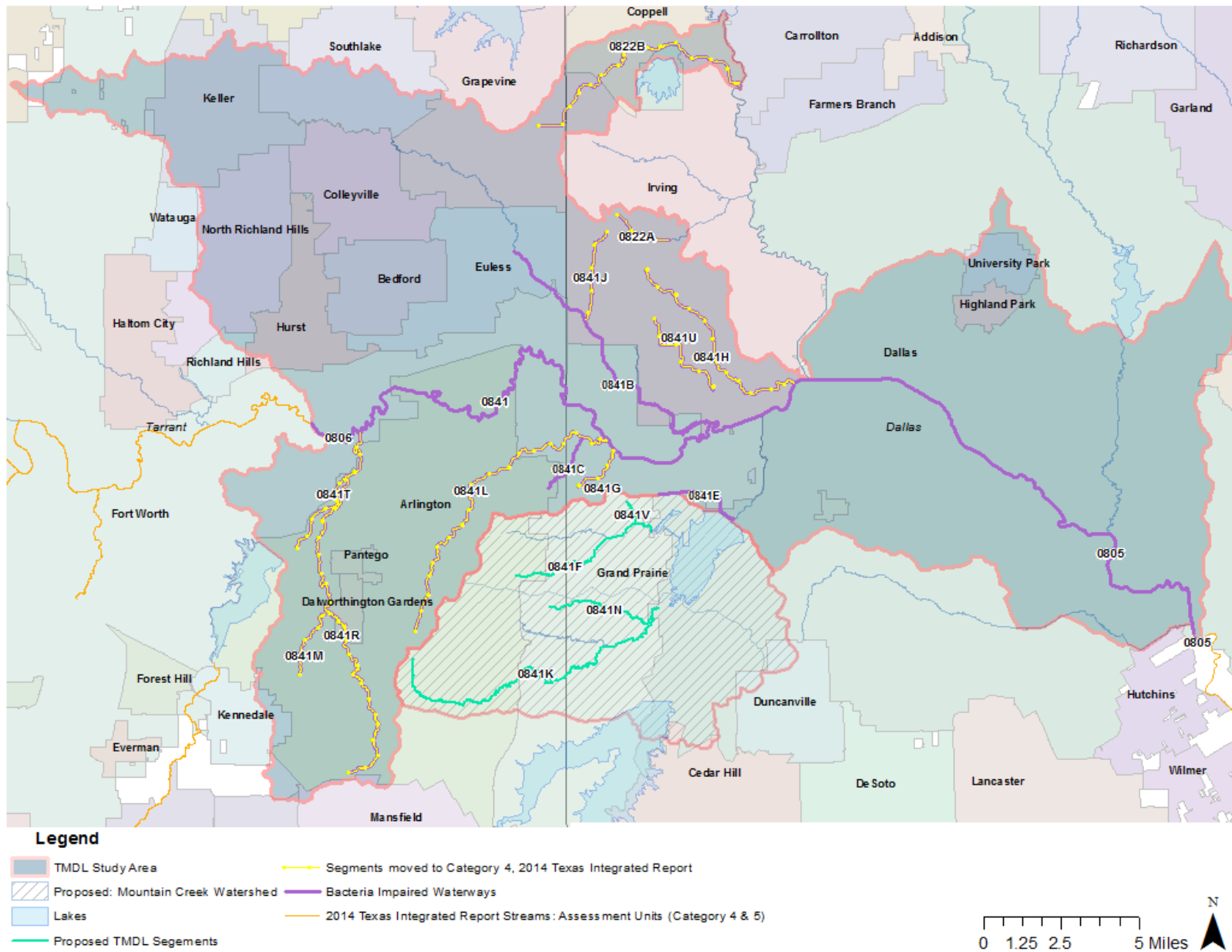


Table 9. North Central Texas Cities within the Greater Trinity River Bacterial TMDL Study Area

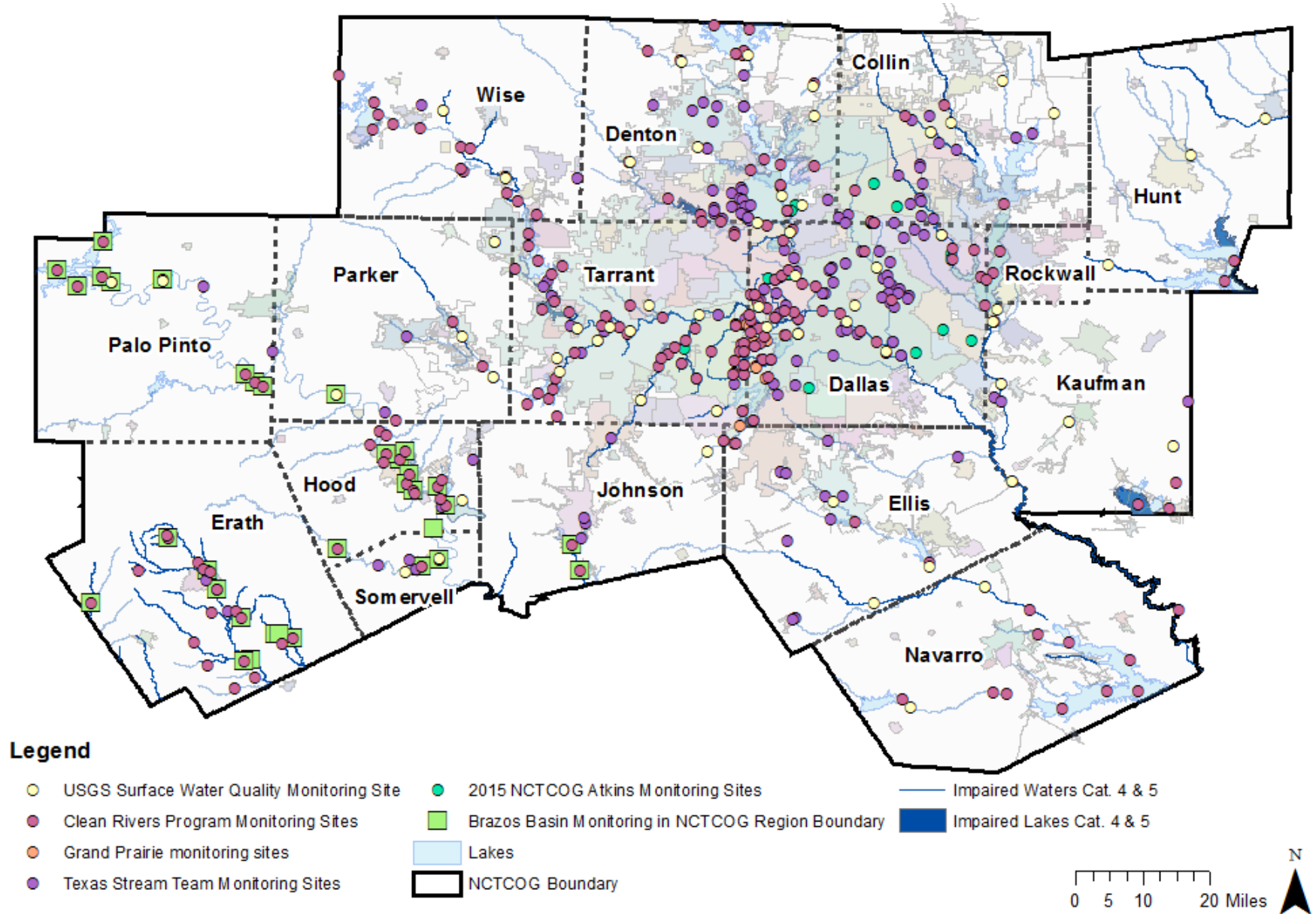
TMDL Study Area	
Arlington	Pantego
Bedford	Rendon*
Cockrell Hill	Richland Hills*
Colleyville	Southlake
Coppell	University Park
Dallas	Rendon*
Dalworthington Gardens	
Euless	
Fort Worth	
Grand Prairie	
Grapevine	
Haslet*	
Highland Park	
Hurst	
Irving	
Keller	
Kennedale*	
Mansfield*	
Mesquite*	
North Richland Hills	

* Indicates only small portions of the city limits are within the TMDL Study Area
 Source: NCTCOG, 2016

Water Quality Monitoring in North Central Texas

The North Central Texas region has an extensive water quality monitoring network, which is supported by state and local governments as well as citizen scientists through a variety of monitoring programs. NCTCOG is working to gather data on all the water quality monitoring occurring in the region to provide a more complete view of efforts being implemented to improve or maintain water quality. As a part of that effort, NCTCOG is reaching out to stakeholders and entities in the region to provide data on monitoring sites to create an all-inclusive water quality monitoring network to identify location gaps in water quality monitoring. Figure 10 shows the data collected as of May 2016.

Figure 10. NCTCOG Regional Planning Area Water Quality Monitoring Network



Source: US Geological Survey (USGS), NCTCOG, Texas Stream Team, TCEQ: Clean Rivers Program (TRA), Brazos River Basin; 2015

TCEQ Clean Rivers Program

The Clean Rivers Program is a partnership between the TCEQ and regional water authorities to coordinate and conduct water quality monitoring, assessment, and stakeholder participation to improve the quality of surface water within each river basin in Texas.²⁹ The Clean Rivers Program conducts special studies as well as ongoing monitoring efforts within each river basin at the request and guidance of a Clean Rivers Program Steering Committee. In the NCTCOG regional planning area, each river basin's river authority hosts the Clean Rivers Program. The Brazos River Authority, Trinity River Authority, Sulphur River Basin Authority, and the Sabine River Basin Authority all produce an annual document that characterizes the watershed and provides an overview of the water quality monitoring activities occurring throughout the river basin. Features such as land use, soil and vegetation types, and watershed activities are reviewed, potential sources of impairments and concerns based on the latest TCEQ Integrated Report are identified, and recommendations to improve water quality are suggested.

The Trinity River Authority's 2016 Trinity River Basin Highlight Report can be viewed at <http://serv.trinityra.org/reports/BasinSummaryReports/2016TRABHR.pdf>

The Brazos River Basin's 2015 Brazos River Basin Summary Report can be viewed at <http://www.brazos.org/Portals/0/crpPDF/2015-BHR-Brazos-River.pdf>

The Sabine River Authority's 2015 Sabine River Basin Big Sandy Creek Watershed Characterization Report can be viewed at http://www.sratx.org/srwmp/tcrp/state_of_the_basin/basin_highlights/2015/SBUpdate2015.pdf

The Sulphur River Basin Authority's 2016 Basin Highlights Report for the Sulphur River Basin can be viewed <http://www.sulphurr.org/Reports/DataFY2016/SRBA2016BHR.pdf>

²⁹ Texas Clean Rivers Program, TCEQ May 2016; <https://www.tceq.texas.gov/waterquality/clean-rivers>

The Trinity River Authority partners with volunteer entities to monitor the water quality throughout the basin and develop a comprehensive overview of water quality within the Trinity River Basin. Table 10 displays the 2016 Trinity River Basin Volunteer Monitoring Network and the pollutants they test for, adding two new partners this fiscal year, North Texas Municipal Water District and the DFW International Airport Environmental Affairs Department.

Table 10. 2016 Trinity River Basin Volunteer Monitoring Network

ENTITY	# OF SITES	FIELD	DIURNAL	FLOW	BACTERIA	CONVENTIONALS	METALS	ORGANICS	BIOLOGICAL
CITY OF ARLINGTON	8	X		X	X	X	X		
CITY OF DALLAS	30	X		X			X		
DFW INTERNATIONAL AIRPORT	6	X		X	X	X	X	X	
CITY OF DALLAS TRINITY WATERSHED GROUP	3	X		X	X				
CITY OF FORT WORTH	7	X		X	X				
CITY OF GRAND PRAIRIE	7	X		X	X	X	X		
CITY OF IRVING	9	X		X	X	X	X		
NORTH TEXAS MUNICIPAL WATER DISTRICT	16	X		X	X	X	X		
TARRANT REGIONAL WATER DISTRICT	67	X	X	X	X	X	X		
TRINITY RIVER AUTHORITY	22	X	X	X	X	X	X		X

Source: Trinity River Authority, Clean Rivers Program - 2016 Basin Highlights Report; Accessed by NCTCOG: May 2016

North Central Texas Wastewater System Overview

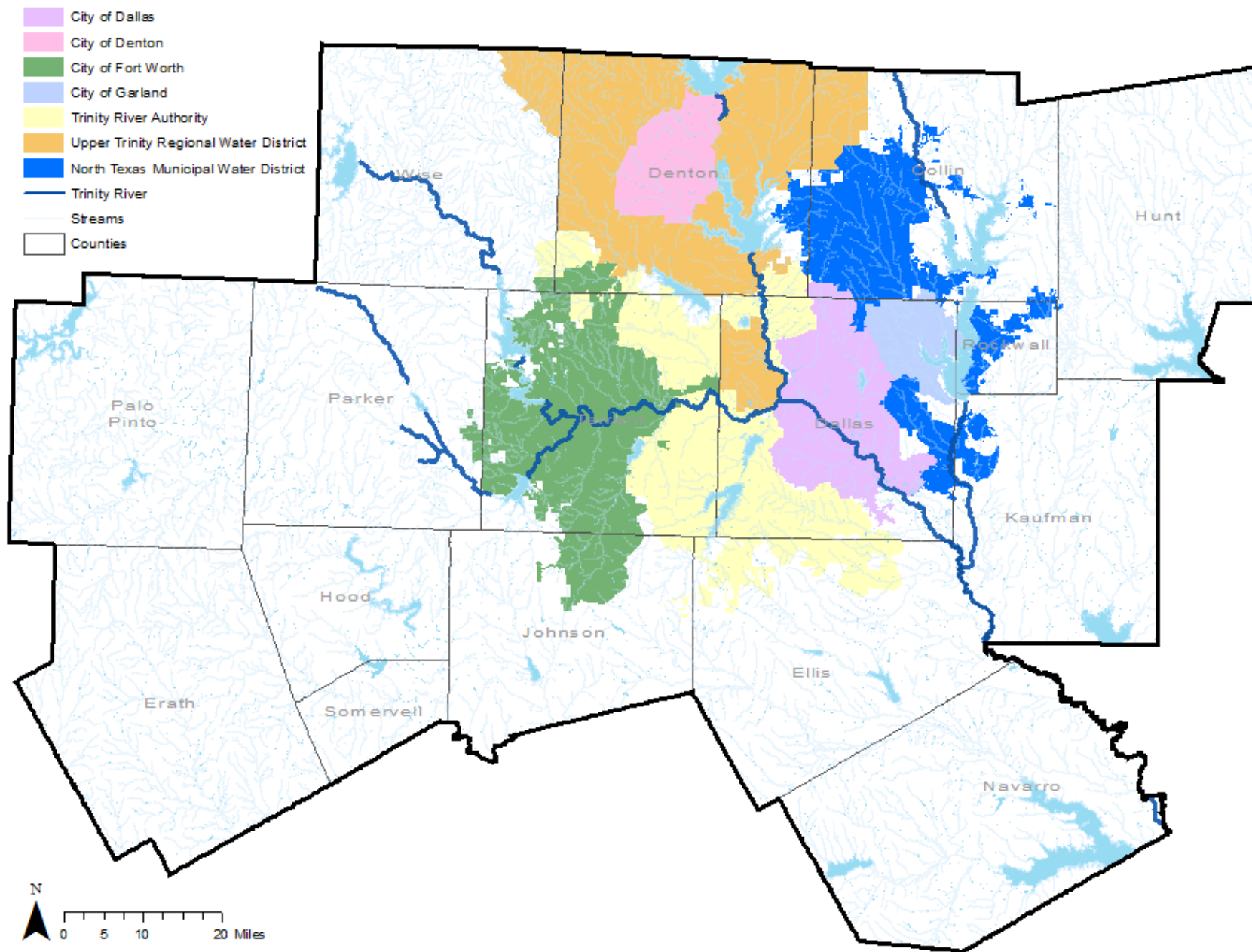
Wastewater service is a critical infrastructure component in North Central Texas as the region continues to grow. Communities now on the perimeter of the urbanized area and beyond may become more dependent on each other to partner and provide cost efficient wastewater services. For such a densely populated and growing area, the provision of adequate treatment services is important as well as protecting water quality. Wastewater treatment plants (WWTPs) are regulated by TCEQ and are required to acquire permits for their discharges to receiving waterbodies. The permit limits are set by the state to avoid pollutant overloads to surface waters.

The 2016 WQMP accounts for treatment capacity and service area changes since the prior year's report. In addition, this report details upgrades in wastewater infrastructure funded either through grants and loans from the Clean Water State Revolving Fund (CWSRF) established for that purpose, or financed by individual municipalities, utility districts, or other entities.

North Central Texas Wastewater Service Areas

In the North Central Texas region, there are seven joint system wastewater treatment providers that serve many local governments as members or customers, as seen in Figure 11. These joint systems provide many efficiencies in wastewater treatment from sharing costs among multiple communities associated with infrastructure operations and maintenance and administration. Several individual community wastewater treatment systems operated by cities also serve a large population in the North Central Texas region. These treatment systems are made up of at least one, but sometimes several WWTPs, and many miles of sewer pipes that carry wastewater from homes and businesses to the treatment facility. The location of the WWTPs in North Central Texas can be seen in Figure 12. The Cities of Dallas, Denton, Fort Worth, Garland, and the North Texas Municipal Water District (NTMWD), Trinity River Authority (TRA), and the Upper Trinity Regional Water District (UTRWD) provide wastewater services to approximately 4.5 million people. Table 11 summarizes the communities each joint system wastewater treatment provider serves.

Figure 11. Wastewater Joint System Providers in the NCTCOG Regional Planning Area



Source: NCTCOG, City of Fort Worth, City of Garland, City of Dallas, City of Denton, North Texas Municipal Water District, Trinity River Authority, Upper Trinity Regional Water District; 2016

Figure 12. Wastewater Treatment Plants within the NCTCOG Regional Planning Area

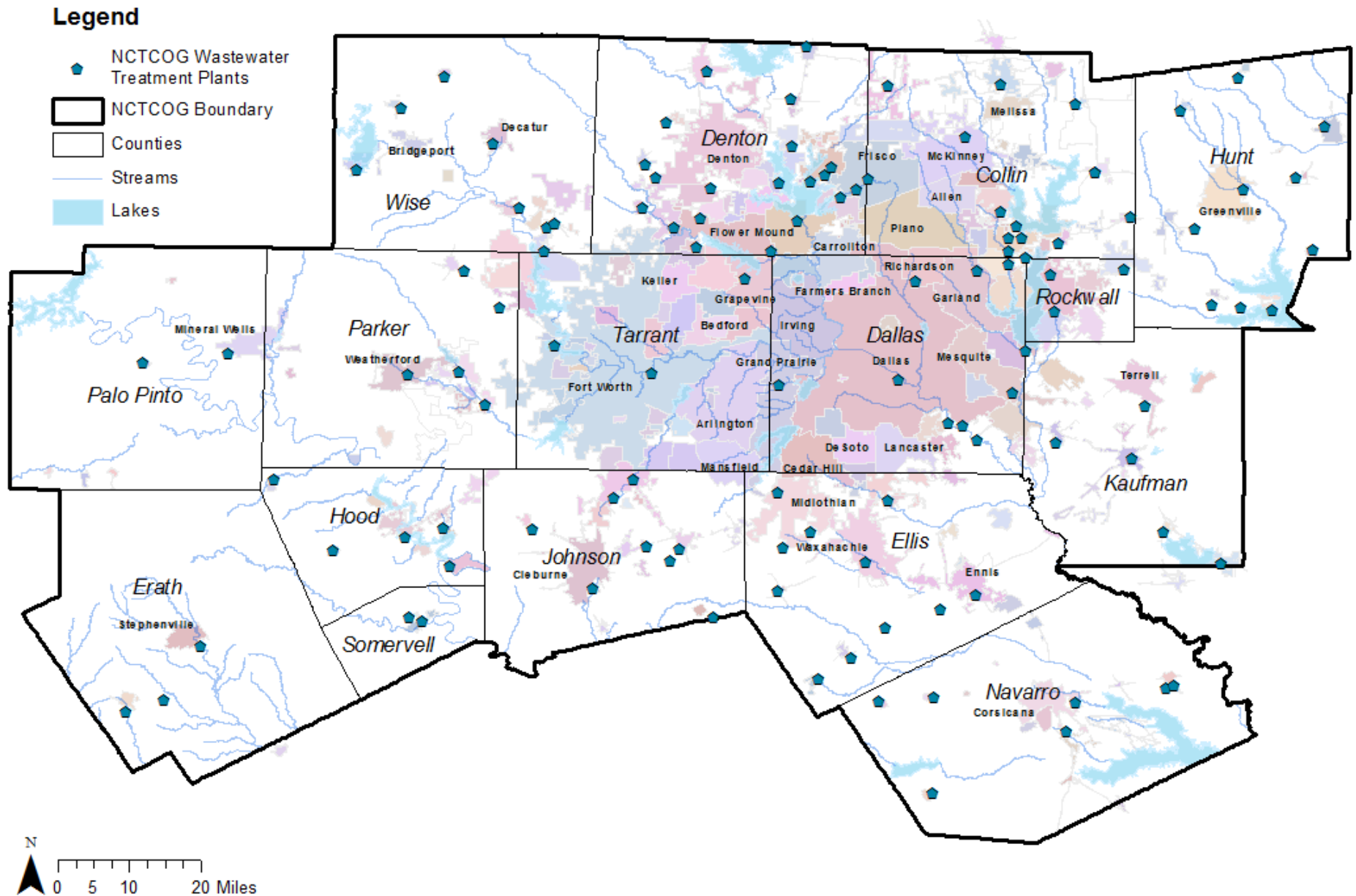


Table 11. Joint System Wastewater Treatment Providers in the NCTCOG Regional Planning Area and Communities Served

City of Dallas Water Utilities ³⁰	City of Denton ³¹	City of Fort Worth ³²	City of Garland ³³	North Texas Municipal Water District ³⁴	Trinity River Authority ³⁵	Upper Trinity Regional Water District ³⁶
2.4 million people in Dallas and 27 nearby communities	City of Denton and receives flows from the cities of Argyle, Corinth, and Krum	Tarrant County and parts of Johnson County, including the City of Fort Worth and 22 other communities	The Cities of Garland, Rowlett, Sachse, Sunnyvale, and portions of Dallas and Richardson	1.6 million members in 55 cities, towns, and special utility districts	1.2 million people within the urbanized area between Dallas and Fort Worth wastewater systems	Denton County and limited portions of Collin and Dallas Counties

Local water districts often provide wastewater management to communities who do not receive wastewater treatment services by one of the seven major joint wastewater service providers. Smaller and rural communities have different challenges and needs related to effective wastewater treatment services. These communities often face significant barriers to building and maintaining effective wastewater management, including: limited financial resources; geographically dispersed populations; and difficulty attracting, training, or retaining system operators.³⁷

Onsite Wastewater Treatment Systems in North Central Texas

Onsite wastewater treatment systems collect, treat, and apply wastewater to the received environment. In 2015, there were over 320,000 permitted Onsite Sewage Facilities (OSSFs) accounted for in North Central Texas³⁸. There has been a 55% increase in OSSFs in North Central Texas since 1990. Figure 13 shows the absolute change in the number permitted of OSSFs between 1990 and 2015.

³⁰ City of Dallas Water Utilities Fact Sheet; <http://dallascityhall.com/departments/waterutilities/DCH%20Documents/pdf/DWU-FactSheet.pdf>

³¹ City of Denton, Wastewater Collection; <http://www.cityofdenton.com/departments-services/departments-q-z/water-utilities/wastewater/wastewater-collection>

³² City of Fort Worth, Wastewater; <http://fortworthtexas.gov/water/wastewater/>

³³ City of Garland Wastewater Treatment Utilities; <https://www.garlandpolice.com/gov/rz/utilities/wastewater/default.asp>

³⁴ North Texas Municipal Water District, Wastewater System; <https://ntmwd.com/wastewatersystem.html>

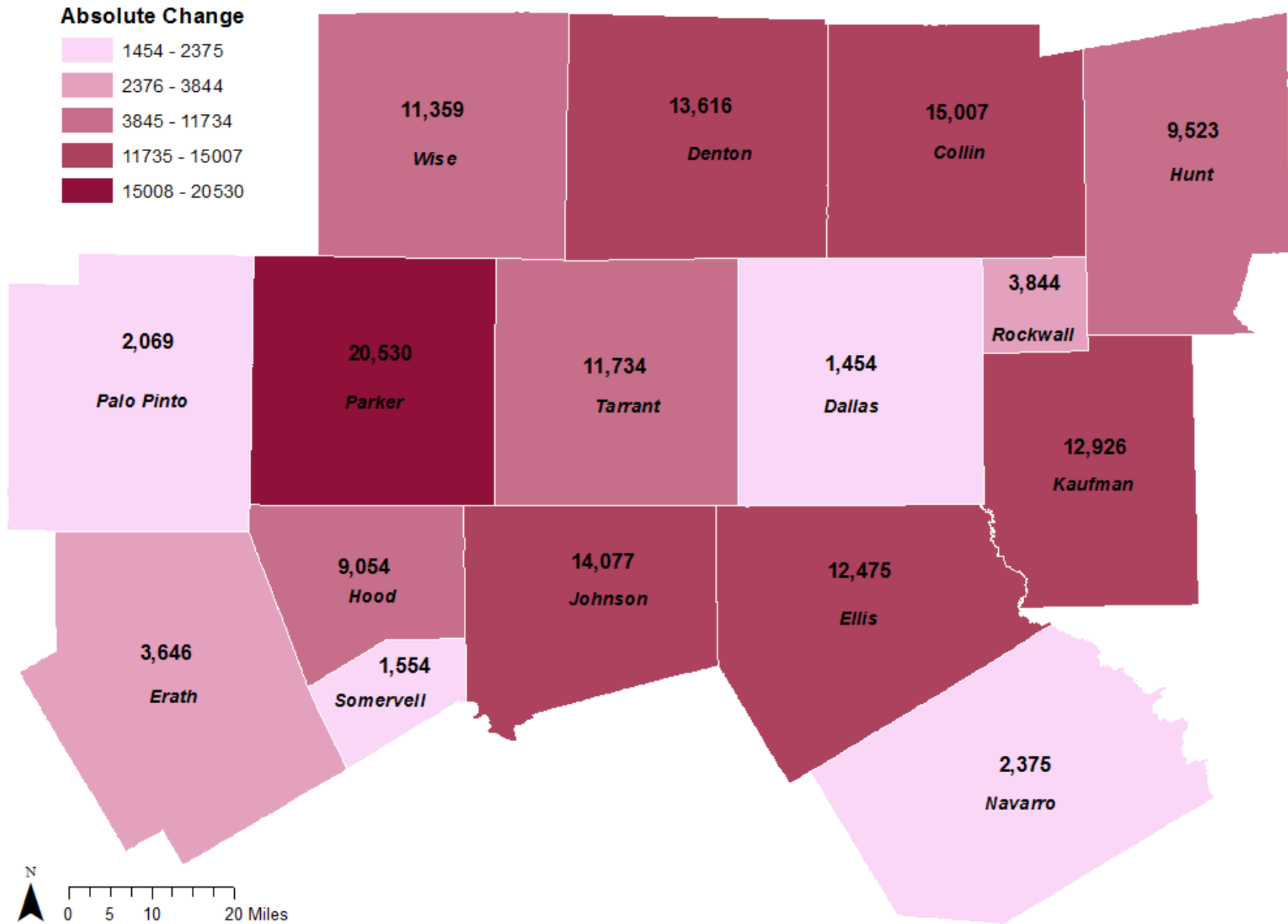
³⁵ Trinity River Authority, Wastewater Treatment Facilities; <http://www.trinityra.org/facilities-wastewater>

³⁶ Upper Trinity Regional Water Reclamation Systems; http://www.utrwd.com/Water_Reclamation.html

³⁷ U.S. Environmental Protection Agency, September 4, 2015; <https://www.epa.gov/small-and-rural-wastewater-systems/learn-about-small-wastewater-systems>

³⁸ Onsite Sewage Facilities (OSSF) 1990 and 2015 Test Map, Texas A&M AgriLife Extension Center; <http://ossf.tamu.edu/test-map/>

Figure 13. Absolute Change in Permitted Onsite Sewage Facilities in the NCTCOG Regional Planning Area between 1990 and 2015



Source: United States Census Bureau, 1990; TCEQ, 2015; Texas A&M AgriLife Extension Test Map, 2015; <http://ossf.tamu.edu/test-map/>
 Accessed by NCTCOG: May 2016

North Central Texas Wastewater Capacity

Supporting sufficient wastewater capacity is important to the long-term growth of the North Central Texas region. Ensuring adequate capacity to treat wastewater from new residential and commercial development in addition to the existing residents and businesses is a long-term planning need. Wastewater service providers monitor growth trends to ensure their systems address issues such as plant expansions or new infrastructure that might be needed to meet future wastewater demands. Furthermore, several communities in the region have invested in wastewater infrastructure over the past year to upgrade or build new wastewater treatment facilities to treat increasing amounts of wastewater.

The TPDES program helps to control discharges of pollutants into surface waters.³⁹ Every TPDES permittee must submit monthly Discharge Monitoring Reports (DMR) to TCEQ which can be used to assess the monthly and yearly wastewater effluent and discharges of individual wastewater treatment plants (WWTPs). There are 74 minor and 44 major WWTPs in the North Central Texas region.⁴⁰ WWTPs are designated as minor when the design flow is less than or equal to 1 million gallons per day (MGD).⁴¹ Figure 14 shows the WWTPs in the NCTCOG regional planning area by the permitted design flow. The largest design flow values are found within the urbanized Dallas and Tarrant County. NCTCOG projects that Collin, Denton, Ellis, Johnson and Kaufman Counties will double in population by 2040 and will therefore need increased capacity for wastewater management.⁴² Appendix D defines details regarding discharge rates and permit compliance data for the 118 major and minor wastewater facilities in the 16-county region. The DMR data obtained from the TCEQ and used by NCTCOG reflects measurements from 2015 (January 2015 – December 2015). Appendix E describes the table attributes and the methods for data manipulation for the given WWTPs.

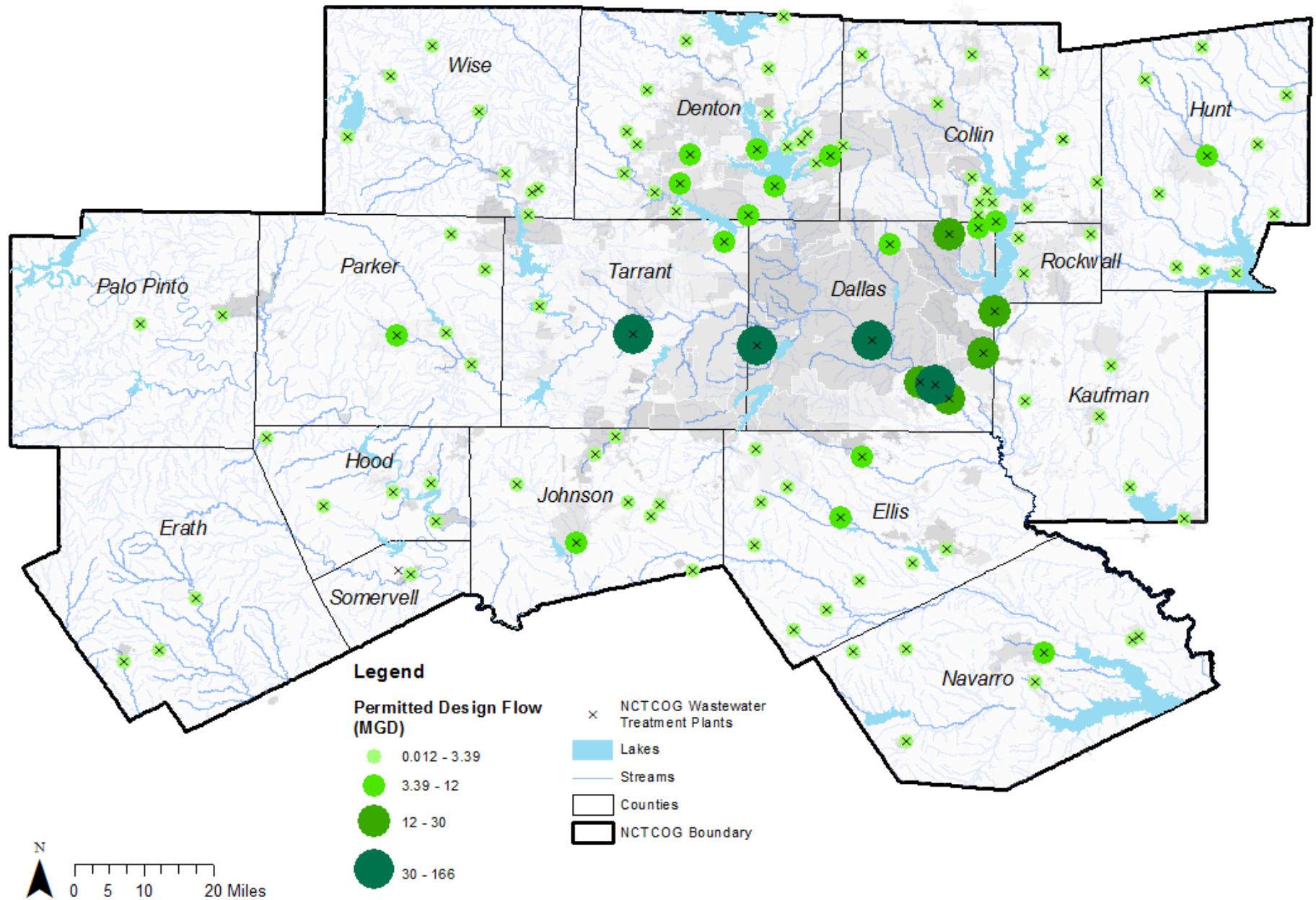
³⁹ TPDES Program, TCEQ, October 2015; http://www.tceq.state.tx.us/permitting/wastewater/pretreatment/tpdes_definition.html

⁴⁰ EPA Enforcement and Compliance History Online (ECHO) Facilities Search, 2015; <https://echo.epa.gov/facilities/facility-search>

⁴¹ Design flow is the flow that a permitted facility is designed to accommodate (MGD); EPA ECHO Facilities Search, 2015

⁴² NCTCOG, 2015

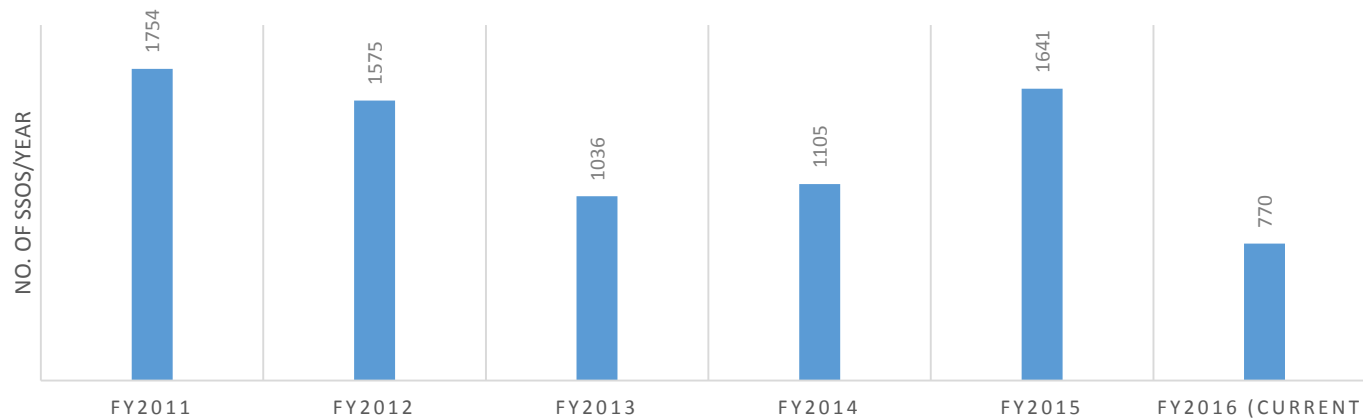
Figure 14. Wastewater Treatment Plants by Permitted Design Flow (MGD) in the NCTCOG Regional Planning Area



Sanitary Sewer Overflows in North Central Texas

Sanitary sewer overflows (SSOs) are a type of unauthorized discharge of untreated or partially treated wastewater from a collection system or its components.⁴³ SSOs can occur if there is significant inflow/infiltration, if the collection system is poorly operated or maintained, or the collection system lacks adequate capacity to collect or store flows for treatment. Figure 15 shows the number of reported SSOs from 2011 to 2016 in the NCTCOG regional planning area. A downward trend had been occurring in the NCTCOG region since 2011, however due to a long and heavy rain season in 2015 and the impacts of flooding and inflow/infiltration, the number spiked to 1,641 reported SSOs in 2015.⁴⁴

Figure 15. Number of Sanitary Sewer Overflows in the NCTCOG Regional Planning Area, FY2011 – FY2016



Source: TCEQ, 2016

Sanitary sewer overflows occur due to a variety of causes, such as old infrastructure, line breaks, improper capacity, and sewer line blockages. Solutions for these problems can be both time consuming and costly to address. To that end, the NCTCOG region has recognized that a significant way to minimize the number of SSOs is with the proper disposal of fats, oils, and grease (FOG) which cause blockages in the sewer mains. There is a region wide effort to educate the public on proper disposal of FOG and to educate regional entities with trainings and workshops.⁴⁵ Additionally, as seen in Table 12, 50 communities in North Central Texas have engaged in the Sanitary Sewer Overflow Initiative (SSOI) through the TCEQ with the goal to reduce the number of SSOs that occur each year in Texas and to address SSOs before they harm human health, safety, or the environment, and before they become enforcement issues.⁴⁶

⁴³ Sanitary Sewer Overflows, TCEQ, February 2016; <https://www.tceq.texas.gov/field/ssoinitiative>

⁴⁴ TCEQ, May 2016

⁴⁵ www.defendyourdrainsnorthtexas.org or www.ceasethegrease.org

⁴⁶ Sanitary Sewer Overflows Initiative, TCEQ, July 2013; <https://www.tceq.texas.gov/publications/gi/gi-389.html>

Table 12. *Entities in NCTCOG Region Participating in the Sanitary Sewer Overflow Initiative (SSOI)*

City of River Oaks	City of Kemp
City of Grand Prairie	City of Fort Worth
Dallas County WCID 6	City of Haltom City
City of Lake Worth	Town of Flower Mound
Acton MUD	City of Grapevine
City of Arlington	City of Hurst
City of Carrollton	City of Waxahachie
City of Bedford	City of Krum
City of Bridgeport	City of Sanger
Town of Highland Park	City of Stephenville
City of Cedar Hill	City of Granbury
City of Denison	City of North Richland Hills
City of Farmers Branch	City of Quinlan
City of Desoto	City of Frisco
City of Irving	City of Kaufman
City of Dallas	City of Bonham
City of Garland	City of Sherman
City of Ennis	Kaufman County FWSD 1A
City of Euless	City of Sanger
City of Forney	City of Cleburne
City of Aledo	City of University Park
City of Princeton	North Texas Municipal Water District, Wilson Creek
City of Duncanville	Trinity River Authority of Texas, Ten Mile Creek
City of Allen	Trinity River Authority of Texas, Central
City of Weatherford	Trinity River Authority of Texas, Red Oak

Source: TCEQ, 2016

Clean Water State Revolving Fund Reviews for the NCTCOG Regional Planning Area

Since 1987, the TWDB has administered the Clean Water State Revolving Fund (CWSRF). The CWSRF provides low-cost financial assistance for planning, design, and construction of wastewater infrastructure including wastewater treatment facilities, collection systems, wastewater recycling and reuse improvements, stormwater pollution control, non-point source pollution control, estuary management projects, and eligible green project reserve components.⁴⁷

As the designated water quality management planning agency, NCTCOG is required to undertake 208/201 coordination with the TCEQ. NCTCOG evaluates the development and implementation of wastewater treatment management plans and practices to meet the goals of the Clean Water Act, and to coordinate with the state agency to ensure that plans developed under Section 208 are consistent with companion requirements under Section 201, which relates to facility planning and funding of treatment facilities or infrastructure. The 208/201 coordination activities typically involve examination of facility plans submitted as part of funding applications. NCTCOG compares the facility planning information with regional goals and plans included as part of the current amended area-wide Water Quality Management Plan.

Additionally, NCTCOG fulfills the Section 208/201 coordination role by reviewing and recommending entities for designation as management agencies, for either wastewater collection, treatment, or both. For entities to become designated management agencies (DMAs) for wastewater collection or treatment, they must demonstrate the legal, institutional, managerial, and financial capability necessary to carry out the responsibilities in accordance with Section 208(c) of the Clean Water Act. An entity must be recommended for the appropriate designation before it can apply for state revolving loan funds. Designation does not require the entity to provide wastewater services, but it does enable the designated management agency to apply for grant and loan funds to provide those services. Formal designation requires that the entity be recommended by the water quality management planning agency, and that it submit DMA resolutions to TCEQ. Whether recommended by TCEQ or a designated management planning agency such as NCTCOG, the DMA information is transmitted as part of the appropriate planning document to the EPA for approval as an update to the water quality management plan.

As part of this ongoing process, NCTCOG prepares a response to TCEQ regarding facility planning proposals, and conformance with elements of the Water Quality Management Plan for North Central Texas. The NCTCOG may make specific recommendations regarding proposals on an as-needed basis, and in some circumstances the planning information for specific facilities may be revised in the subsequent amendment of the regional WQMP.

⁴⁷ Texas Water Development Board; <http://www.twdb.texas.gov/financial/programs/CWSRF/>

Clean Water State Revolving Fund Items Reviewed in Fiscal Year 2016

The NCTCOG regional planning area received three CWSRF projects to review during Fiscal Year 2016. Table 13 summarizes the proposed CWSRF projects. NCTCOG submitted responses to TCEQ for each project, acknowledging they were consistent with the current Water Quality Management Plan.

Table 13. Review of 2016 Clean Water State Revolving Fund Items in the NCTCOG Regional Planning Area

	Date Reviewed	Project Summary	Consistent with NCTCOG's current WQMP?
City of Weatherford	1/26/2016	Wastewater treatment plant improvements, a reuse water pump station, approximately 35,505 LF of 16- and 18-inch reuse PVC water line and outfall structure	Yes
City of Arlington	12/18/2015	Collection system improvements totaling 16,525 LF of 6-, 8-, and 10-inch pipe	Yes
City of Glen Rose	10/22/2015	The proposed improvements include an expansion of the City's existing WWTP	Yes

Source: TCEQ Notices; NCTCOG

North Central Texas Water Supply Overview

North Central Texas faces challenges meeting water demand as the population continues to grow and the region continues to develop. Local and regional stakeholders are collaborating on best management practices to fulfill water supply shortages for future needs.

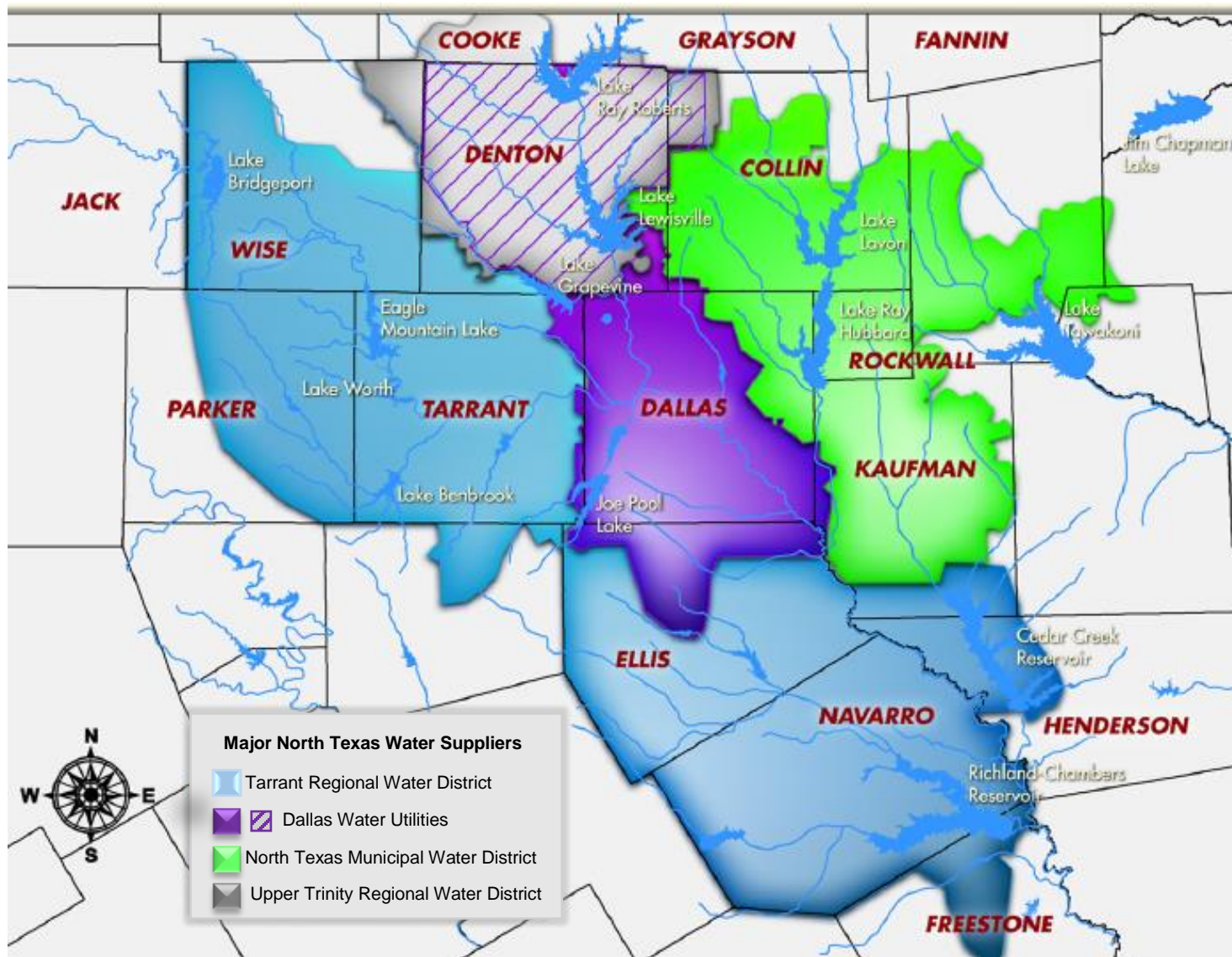
Water Districts

A water district is a local, governmental entity that provides limited services to its customers and residents. Examples of water districts include municipal utility districts (MUD), water control and improvement districts (WCID), special utility districts (SUD), and river authorities.⁴⁸ The TCEQ is responsible for general supervision and oversight of water districts, including: monitoring water district activities and their compliance with state laws; providing information to district customers, consultants, board members, and employees; and reviewing the issuance of bonds that finance certain district infrastructure.

Water districts are created when a group of cities and utilities come together for the purpose of planning water use on a multi-community basis. Water districts help to plan for current and future water use by collecting funds and allocating capital for water related infrastructure projects within the region. Figure 16 provides a map of the major water providers in North Central Texas. Water districts in the North Central Texas region serve multiple capacities and represent a diverse set of water needs and services. The cooperation of multiple cities and utilities on the water districts board help to facilitate compliance with water, wastewater, and reclaimed water. Many in the region have expanded specific waste components to reduce household pollutants into regional waterways. The expanded roles of water districts have helped to reduce pollutant loading in North Central Texas waterways. See Appendix F for a complete list of all water districts in the North Central Texas Regional Planning Area.

⁴⁸ Texas Water Districts: A General Guide, TCEQ, 2004; <http://www.tceq.state.tx.us/publications/gi/gi-043.html>

Figure 16. Major Water Districts in the NCTCOG Regional Planning Area



Source: TRWD, NTMWD, UTRWD, City of Dallas

Texas Water Development Board Water Planning Groups

In 1997 during the 75th Texas Legislative Session, Senate Bill (SB) 1 developed comprehensive water legislation that led to the current process of regional water planning.⁴⁹ TWBD Water Planning Groups (WPG) are tasked with developing a regional water plan and implementing the plan in accordance with the State law. Regional water planning groups are responsible for deciding how future water needs in the region may be met within a 50-year planning horizon.

The Region C WPG serves Collin, Cooke, Dallas, Denton, Ellis, Freestone, Fannin, Grayson, Henderson (partial), Jack, Kaufman, Navarro, Parker, Rockwall, Tarrant, and Wise Counties. Figure 17 shows that the NCTCOG regional planning area falls into Region C, G, and the North East Texas Region (Region D). The WPG for Region C, G, and D have completed four cycles of Regional Water Planning since 2001. The water plan develops population and water demand projections, provides analysis of available water supply to the region, establishes recommendations for water management strategies for water user groups and wholesale water providers and for water conservation and reuse, defines the impacts of the regional water plan, and provides infrastructure funding recommendations.

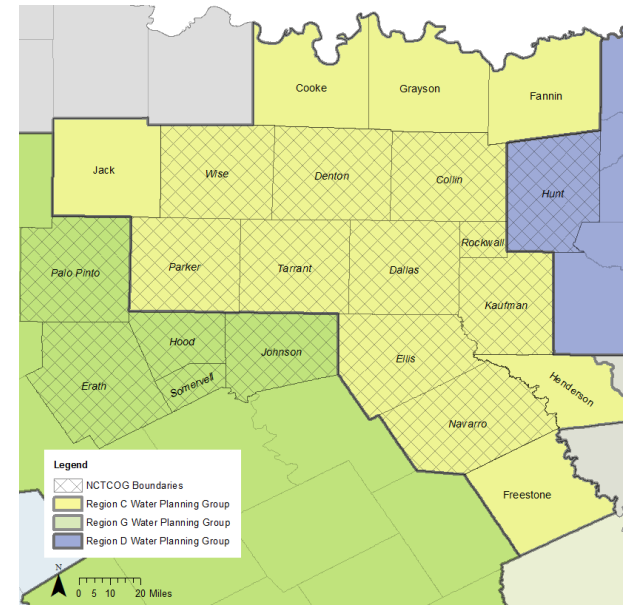
The 2016 Region C Water Plan was approved by the Texas Water Development Board in December 2015.⁵⁰ Figure 18 displays future water supply, demand, and shortage projections as defined by the Region C WPG. The Water Plan projects that 90% of the water shortages in 2070 will be for municipal users and predicts Collin, Dallas, Denton, and Tarrant Counties will have the largest water needs in 2070. These forecasted needs encourage regional stakeholders to continue collaborating on best management for meeting future water supply demands. NCTCOG supports the Region C management strategies for achieving water supply goals as laid out in the 2016 Region C Water Plan.

To view the 2016 Region C Water Plan, visit <http://www.regioncwater.org/>.

To view the Region G Initially Prepared Plan for 2016, visit <http://www.brazosgwater.org/>.

To view the 2016 North East Texas Regional Water Plan, visit <http://www.twdb.texas.gov/waterplanning/rwp/regions/d/>

Figure 17. NCTCOG and Regional Water Planning Groups

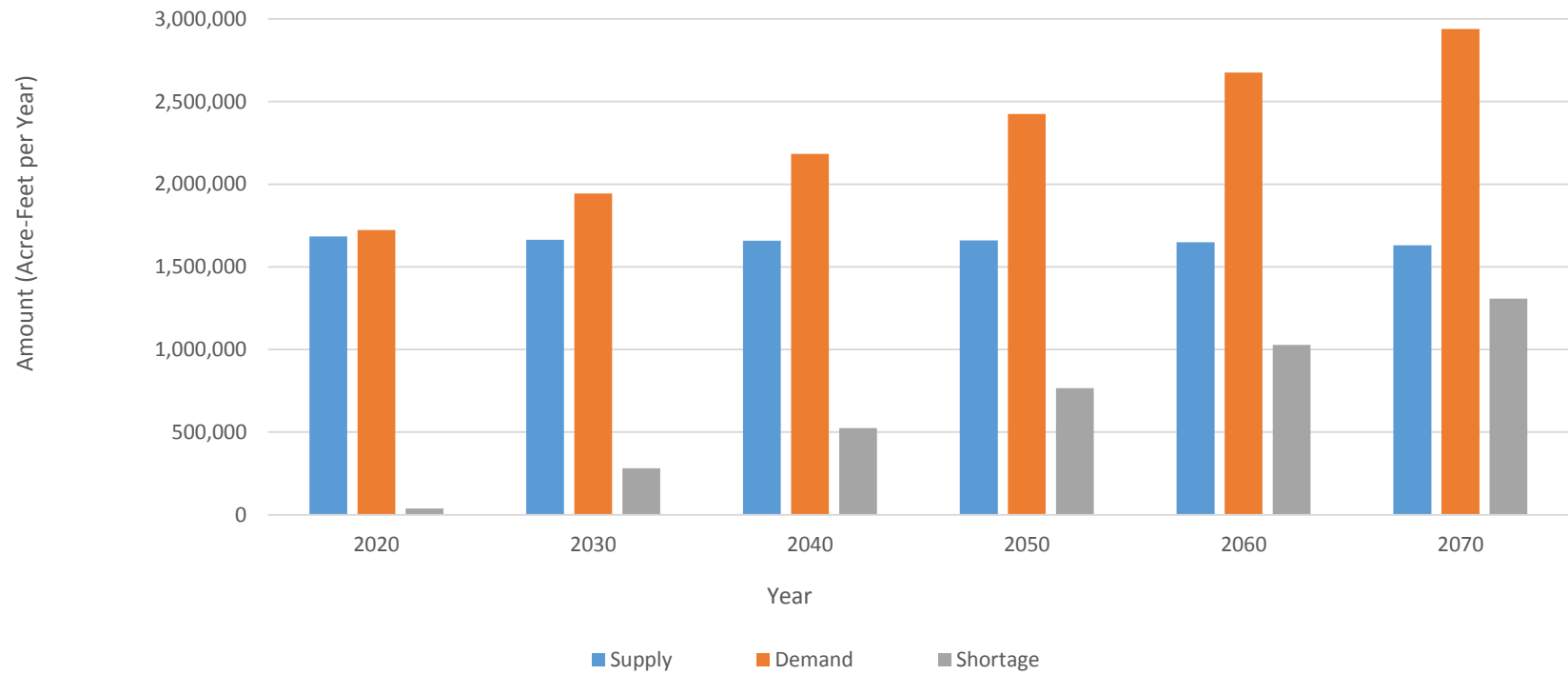


Source: Texas Water Development Board, NCTCOG

⁴⁹ Regional Water Plans/Planning Group Grants, TWDB; <http://www.twdb.texas.gov/financial/programs/RWPG/>

⁵⁰ Final 2016 Region C Water Plan, TWDB, December 2015; <http://www.regioncwater.org/Documents/index.cfm?Category=Final+2016+Region+C+Water+Plan>

Figure 18. Connected Supply, Future Demand, and Future Shortage Projections by Decade



Source: Final Region C 2016 Water Plan, TWDB; <http://www.regioncwater.org/Documents/Final%202016%20Region%20C%20Water%20Plan/Chapter%204.pdf>

Water Reuse

According to the Region C Water Planning Group, reuse of treated wastewater effluent is becoming an increasingly important source of water in Region C.⁵¹ As seen in Figure 19, reuse is projected to make up 20% of the water supply for the NCTCOG regional planning area in 2040. The two types of reuse are:

Indirect Reuse

the placement of water, typically treated effluent, back into a water supply source, such as a lake, river, or aquifer, and then retrieved to be used again.

Direct Reuse

treated wastewater is delivered from a wastewater treatment plant to a water user, with no intervening discharge to waters of the state

Each category can be further defined by the end use, either potable (drinking purposes) or non-potable (non-drinking purposes). In North Central Texas, reuse typically occurs as direct non-potable reuse or indirect potable reuse. Direct non-potable reuse programs require notification to the TCEQ, obtainment of a 210 Use of Reclaimed Water permit, and must meet state designated regulations designed to protect public health.⁵² This type of reuse is most commonly used to supply water to landscape irrigation and industrial uses. Indirect potable reuse effect water rights in Texas and requires entities to demonstrate that its reuse scheme will not negatively impact downstream water rights holders and to receive permission from the state.⁵³ Indirect potable reuse programs use reclaimed water to augment drinking water supplies by discharging it to a water body, such as groundwater or surface water, which is subsequently treated for potable consumption. The North Texas Municipal Water District (NTMWD) implemented an indirect potable reuse project in Lavon Lake in 1985, diverting water from a wastewater treatment plant and treating it for municipal use as drinking water.⁵⁴

Recent Legislative Action

During the 84th Texas Legislative Session, action was taken directing the TWDB and TCEQ to support the creation of a direct potable reuse model under H.C.R. No. 74.⁵⁵ The HCR identified the Dallas-Forth Worth Metroplex as the region to develop the model, as it serves 25% of the state's population and has the largest projected demand for new water supplies. The model reuse project, in conjunction with renewable energy technologies, could provide opportunities for public education on water reuse and renewable energy.

⁵¹ Final 2016 Region C Water Plan, Section 5E.4.2, Reuse of Treated Wastewater Effluent;

<http://www.regioncwater.org/Documents/Final%202016%20Region%20C%20Water%20Plan/Chapter%205E.pdf>

⁵² Requirements for Reclaimed Water, TCEQ August 2015; http://www.tceq.state.tx.us/assistance/water/reclaimed_water.html

⁵³ Wastewater Reuse in Texas, John Montgomery, 2014;

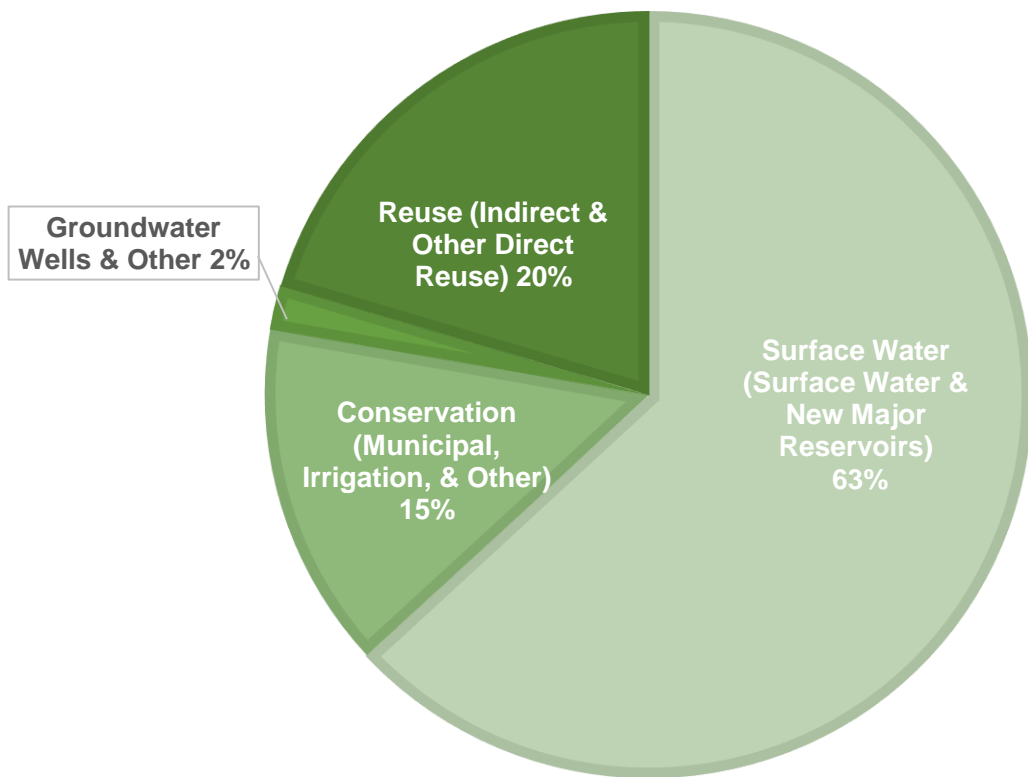
<https://static1.squarespace.com/static/54c15aa8e4b08b9c092063a6/t/54d01d95e4b06b7d5c34e7e0/1422925205087/RP-Montgomery.pdf>

⁵⁴ History of Water Reuse in Texas, TWDB February 2011; http://www.twdb.texas.gov/innovativewater/reuse/projects/reuseadvance/doc/component_a_final.pdf

⁵⁵ HCR No. 74, 84th Texas Legislative Session, 2015; <http://www.legis.state.tx.us/tlodocs/84R/billtext/html/HC00074I.htm>

The Legislative action predicts that creation of a direct potable reuse project in Region C of the TWDB Water Planning Area has the potential to yield sufficient water supply to region residents while alleviating the depletion of already scarce resources.

Figure 19. 2040 Water Supply Strategies for the NCTCOG Regional Planning Area



Source: Draft 2017 Texas State Water Plan, Texas Water Development Board; <https://2017.texasstatewaterplan.org/region/C>

Reservoirs

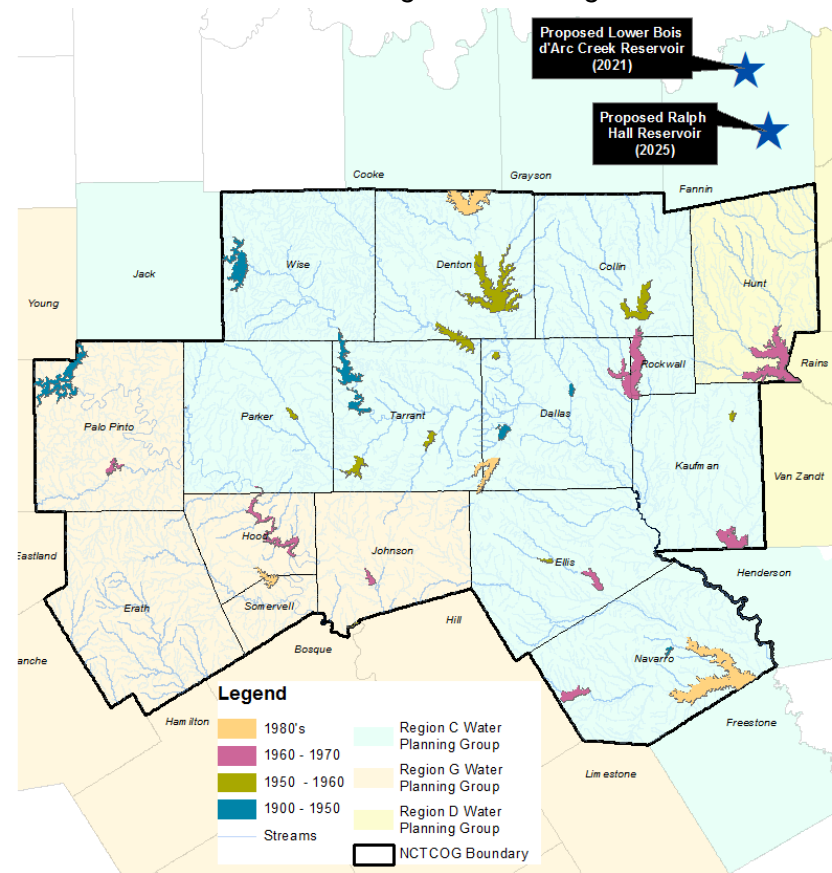
In the 2016 Region C Water Plan, the WPG defines major water management strategies as those that would supply more than 30,000 acre-feet per year and those that involve the construction of a reservoir supplying over 1,000 acre-feet per year for North Central Texas.⁵⁶

The North Texas Municipal Water District is working to incorporate the proposed Lower Bois d’Arc Creek Reservoir as a supplemental water supply for NTMWD member cities and customers through 2040.⁵⁷ The proposed reservoir is located in Fannin County and is housed within a 100 year flood boundary. The reservoir would yield 120,200 acre-feet per year.⁵⁸ NTMWD projects the reservoir will be providing vital water resources to citizens of Fannin County and members of the NTMWD district by 2021. The construction of this reservoir is a recommended strategy from the Region C WPG.

In September 2013, Upper Trinity Regional Water District was granted a water rights permit from the State of Texas to develop proposed Lake Ralph Hall located on the North Sulphur River in Fannin County. The proposed lake would produce 34,050 acre-feet a year, 90% of which would be delivered to Denton County. The construction of this lake is a recommended water supply strategy from the Region C WPG.

The proposed location for the Lower Bois d’Arc Creek Reservoir and proposed Lake Ralph Hall can be seen in Figure 20, along with a timeline of reservoir construction in the North Central Texas region.

Figure 20. Timeline of Construction for Current and Proposed Reservoirs in the NCTCOG Regional Planning Area



Source: TWDB, NTMWD, NCTCOG, TSSWCB; Accessed by NCTCOG: May 2016

⁵⁶ An acre-foot is defined as 325,851 liquid gallons

⁵⁷ Permitting Lower Bois d’Arc Creek Reservoir, NTMWD November 2014; http://www.nctcog.org/aa/jobs/envir/committees/wrc/2014-11-13LowerBoisd_ArcNTMWDpresentation.pdf

⁵⁸ 2016 Region C Water Plan, Chapter 5B – Evaluation of Major Water Management Supplies, TWDB; <http://www.regioncwater.org/>

Water Conservation

Water Conservation is a crucial part of ensuring future water supply and improving water quality for North Central Texas. The Region C WPG has projected that 27% of the water supply in 2070 will come from water conservation and reuse. Based on questionnaire responses on existing water conservation strategies occurring in Region C and historical water use data, the Region C WPG determined that significant efforts have been made by water providers and water users to conserve water in the region. According to the current state water plan, Region C will be responsible for 44% of the recommended municipal water conservation in the state by 2060. To this end, the WPG will continue to place a strong emphasis on water conservation and reuse as a means to reach water supply goals for future needs.

In the NCTCOG regional planning area there are large efforts underway to promote the effectiveness of water conservation. The NCTCOG administered a questionnaire in March 2016 requesting information about water resources in North Central Texas, and 85% of surveyed entities indicated that residential water conservation is a priority in protecting North Central Texas water resources. Regional stakeholders and municipalities conduct public education, develop water conservation plans, implement green infrastructure, utilize water reuse, and implement watershed protection in order to obtain water conservation goals for future demands.

North Central Texas Water Resources Report

The North Central Texas Council of Governments prepared a questionnaire that was distributed to regional entities, including local governments, water districts, groundwater districts, independent school districts, NCTCOG water-related committees and the general public in March of 2016. 56 entities responded to questions to help NCTCOG determine what communities in North Central Texas are, or will be doing, related to regional priorities for water resources. The results of the questionnaire indicated three priority themes for water resources in North Central Texas:

- » Increasing Public Awareness of Water Resources
- » Water Conservation & Ensuring Appropriate Water Supply
- » Funding for Aging Water & Wastewater Infrastructure

These themes were used as guidelines to develop the North Central Texas Water Resources Report. The administered questionnaire and the North Central Texas Water Resources Report can be found in Appendix G and I.

Appendices

Appendix A. NCTCOG Cities Population Estimates for 2011 – 2016

Source: NCTCOG

City Name	2011 Estimated Population January 1	2012 Estimated Population January 1	2013 Estimated Population January 1	2014 Estimated Population January 1	2015 Estimated Population January 1	2016 Estimated Population January 1
Addison	13,060	13,680	13,840	15,180	15,530	15,530
Aledo	3,210	3,240	2,820	2,980	3,210	3,530
Allen	84,820	86,600	87,980	90,030	91,390	91,800
Alvarado	3,810	3,800	3,850	3,910	4,080	4,170
Alvord	1,340	1,340	1,340	1,330	1,340	1,340
Anna	8,320	8,580	9,360	10,250	10,980	11,320
Annetta	1,290	1,290	1,310	2,630	2,670	2,720
Argyle	3,300	3,350	3,420	3,510	3,690	3,820
Arlington	369,820	371,900	374,520	378,070	379,370	380,740
Aubrey	2,600	2,600	2,600	2,670	2,780	3,100
Aurora	1,270	1,270	1,280	1,300	1,340	1,380
Azle	10,950	10,960	10,960	11,040	11,140	11,410
Balch Springs	23,720	23,880	24,270	24,280	24,280	24,310
Bartonville	1,570	1,590	1,630	1,630	1,640	1,650
Bedford	47,470	47,610	47,760	47,960	48,060	48,550
Benbrook	21,270	21,360	21,600	21,850	21,910	22,040
Blue Mound	2,390	2,390	2,390	2,390	2,390	2,390
Boyd	1,210	1,210	1,220	1,260	1,300	1,350
Bridgeport	5,980	5,990	6,000	6,050	6,080	6,100
Burleson	36,990	38,130	39,010	39,920	41,280	42,560
Caddo Mills	1,340	1,350	1,380	1,400	1,430	1,460
Carrollton	119,700	121,810	123,000	124,400	125,250	127,980
Cedar Hill	45,240	45,360	45,570	45,820	46,350	47,090
Celina	6,080	6,260	6,460	6,660	7,320	8,650

City Name	2011 Estimated Population January 1	2012 Estimated Population January 1	2013 Estimated Population January 1	2014 Estimated Population January 1	2015 Estimated Population January 1	2016 Estimated Population January 1
Chico	1,000	1,010	1,010	1,010	1,010	1,010
Cleburne	29,260	29,210	29,180	29,160	29,170	29,140
Cockrell Hill	4,200	4,200	4,180	4,170	4,160	4,160
Colleyville	22,860	23,090	23,270	23,740	23,760	24,230
Combine	1,950	1,950	1,960	1,960	1,960	1,970
Commerce	8,090	8,100	8,110	8,150	8,130	8,090
Coppell	39,010	39,210	39,380	39,550	39,880	40,310
Copper Canyon	1,340	1,330	1,340	1,350	1,370	1,380
Corinth	19,980	20,380	20,420	20,520	20,620	20,740
Corsicana	23,770	23,800	23,820	23,850	23,850	23,840
Crandall	2,900	2,970	2,990	3,030	3,050	3,100
Cross Roads	1,560	1,580	1,620	1,710	1,840	1,910
Crowley	12,950	13,050	13,450	13,900	14,130	14,140
Dallas	1,205,490	1,213,550	1,221,800	1,232,360	1,244,270	1,257,730
Dalworthington Gardens	2,260	2,270	2,290	2,310	2,320	2,320
Decatur	6,120	6,170	6,230	6,330	6,390	6,490
DeCordova	2,680	2,700	2,710	2,720	2,730	2,750
Denton	115,180	116,770	117,920	120,820	123,200	125,980
DeSoto	49,210	49,540	49,930	50,520	50,970	51,770
Double Oak	2,880	2,880	2,890	2,920	2,930	2,950
Dublin	3,650	3,700	3,760	3,760	3,770	3,770
Duncanville	38,600	38,610	38,800	39,170	39,220	39,230
Edgecliff Village	2,860	2,860	2,870	2,870	2,870	3,030
Ennis	18,520	18,530	18,560	18,550	18,600	18,590
Eules	52,030	52,270	52,550	53,780	54,050	54,250
Everman	6,110	6,110	6,110	6,110	6,110	6,110
Fairview	7,270	7,390	8,020	8,310	8,420	8,490
Farmers Branch	28,600	28,620	28,800	29,660	30,350	30,480

City Name	2011 Estimated Population January 1	2012 Estimated Population January 1	2013 Estimated Population January 1	2014 Estimated Population January 1	2015 Estimated Population January 1	2016 Estimated Population January 1
Farmersville	3,300	3,300	3,290	3,290	3,310	3,330
Fate	6,890	7,180	8,070	8,770	9,700	10,470
Ferris	2,430	2,440	2,440	2,440	2,450	2,450
Flower Mound	64,780	65,060	65,710	66,130	66,820	68,050
Forest Hill	12,360	12,360	12,360	12,380	12,380	12,390
Forney	15,040	15,450	16,030	16,800	17,480	17,990
Fort Worth	753,320	764,460	774,510	781,100	792,720	806,380
Frisco	121,670	125,500	129,680	137,310	145,510	153,520
Garland	228,670	229,430	230,560	231,700	232,960	234,300
Glen Rose	2,460	2,460	2,460	2,470	2,480	2,490
Glenn Heights	11,330	11,330	11,410	11,440	11,440	11,680
Godley	1,010	1,010	1,010	1,020	1,030	1,040
Granbury	8,020	8,100	8,320	8,670	8,940	9,140
Grand Prairie	177,330	178,420	179,630	181,230	182,610	184,620
Grandview	1,560	1,560	1,560	1,550	1,580	1,610
Grapevine	46,300	46,420	47,070	48,060	48,520	48,920
Greenville	26,220	26,200	26,140	26,100	26,180	26,300
Haltom City	42,180	42,090	42,350	42,660	42,640	42,730
Haslet	1,490	1,500	1,550	1,630	1,660	1,710
Heath	6,950	7,170	7,260	7,440	7,430	7,690
Hickory Creek	3,250	3,250	3,250	3,320	3,620	3,730
Highland Park	8,520	8,520	8,500	8,480	8,440	8,430
Highland Village	15,140	15,180	15,170	15,260	15,290	15,370
Hudson Oaks	1,680	1,720	1,800	1,860	1,940	2,050
Hurst	37,590	37,740	37,910	38,280	38,340	38,380
Hutchins	5,340	5,340	5,350	5,350	5,350	5,350
Irving	218,080	219,160	223,720	227,030	228,610	231,040
Italy	1,870	1,870	1,870	1,870	1,860	1,850
Josephine	810	850	850	930	980	1,100

City Name	2011 Estimated Population January 1	2012 Estimated Population January 1	2013 Estimated Population January 1	2014 Estimated Population January 1	2015 Estimated Population January 1	2016 Estimated Population January 1
Joshua	5,930	5,950	6,010	6,040	6,090	6,350
Justin	3,250	3,250	3,250	3,250	3,260	3,370
Kaufman	6,660	6,650	6,660	6,640	6,610	6,620
Keene	6,100	6,090	6,120	6,150	6,160	6,230
Keller	39,940	40,440	41,090	42,040	42,890	44,050
Kemp	1,170	1,170	1,170	1,170	1,170	1,170
Kennedale	6,710	6,790	6,820	6,870	7,130	7,290
Kerens	1,620	1,620	1,620	1,630	1,620	1,700
Krugerville	1,660	1,660	1,670	1,670	1,670	1,680
Krum	4,190	4,310	4,440	4,750	4,790	4,880
Lake Dallas	7,120	7,130	7,150	7,220	7,240	7,250
Lake Worth	4,640	4,630	4,630	4,650	4,680	4,710
Lakeside	1,310	1,310	1,320	1,330	1,330	1,690
Lancaster	36,390	36,700	36,980	37,150	37,360	37,550
Lavon	2,350	2,480	2,600	2,740	2,970	3,080
Lewisville	96,210	96,880	97,860	98,330	99,480	100,400
Little Elm	26,820	28,230	29,230	31,220	33,710	34,400
Lowry Crossing	1,710	1,710	1,720	1,710	1,710	1,710
Lucas	5,320	5,450	5,750	5,970	6,400	6,680
Mabank	3,100	3,090	3,080	3,100	3,140	3,180
Mansfield	56,840	57,490	58,490	59,410	60,400	61,460
McKinney	133,010	136,180	140,670	147,910	154,840	161,470
McLendon-Chisholm	1,410	1,470	1,560	1,750	2,050	2,450
Melissa	4,900	5,200	5,710	6,190	6,890	7,920
Mesquite	140,980	141,430	141,900	142,210	142,230	142,950
Midlothian	18,670	19,130	19,710	20,540	21,610	22,620
Mineral Wells	16,800	16,830	16,810	16,770	16,790	16,740
Murphy	17,860	18,020	18,440	18,830	19,170	19,330
New Fairview	1,260	1,260	1,270	1,350	1,410	1,440

City Name	2011 Estimated Population January 1	2012 Estimated Population January 1	2013 Estimated Population January 1	2014 Estimated Population January 1	2015 Estimated Population January 1	2016 Estimated Population January 1
Newark	1,010	1,010	1,010	1,010	1,010	1,020
North Richland Hills	63,490	63,780	64,240	65,690	66,300	66,530
Northlake	2,110	2,110	2,160	2,150	2,160	2,660
Oak Leaf	1,300	1,300	1,300	1,310	1,340	1,350
Oak Point	2,820	2,820	2,930	3,040	3,180	3,180
Ovilla	3,490	3,500	3,510	3,550	3,690	3,820
Palmer	2,000	2,000	2,010	2,010	2,020	2,030
Pantego	2,400	2,410	2,430	2,450	2,460	2,460
Parker	3,830	3,910	4,010	4,110	4,200	4,290
Pelican Bay	1,550	1,560	1,560	1,570	1,580	1,620
Pilot Point	3,850	3,870	3,870	3,880	3,890	4,050
Plano	261,990	263,650	266,950	269,330	271,140	274,960
Ponder	1,400	1,410	1,420	1,460	1,520	1,560
Princeton	6,900	7,010	7,440	7,840	7,910	8,480
Prosper	11,160	12,190	13,380	14,710	15,970	17,790
Providence	4,790	4,980	5,260	5,400	5,750	6,170
Quinlan	1,390	1,390	1,390	1,390	1,400	1,410
Red Oak	10,850	11,090	11,250	11,530	11,980	12,260
Reno	2,500	2,500	2,510	2,520	2,560	2,590
Rhome	1,570	1,570	1,570	1,580	1,590	1,590
Richardson	99,870	100,450	100,850	101,820	102,430	104,300
Richland Hills	7,800	7,800	7,870	7,910	7,920	7,920
River Oaks	7,420	7,310	7,280	7,280	7,270	7,290
Roanoke	6,140	6,320	6,470	6,750	7,200	7,650
Rockwall	37,780	38,290	39,090	40,030	40,620	41,370
Rowlett	56,230	56,310	56,430	56,450	56,910	57,220
Royse City	9,360	9,390	9,690	10,000	10,220	11,010
Runaway Bay	1,280	1,300	1,310	1,310	1,340	1,360
Sachse	20,420	20,800	21,090	21,580	22,460	23,130

City Name	2011 Estimated Population January 1	2012 Estimated Population January 1	2013 Estimated Population January 1	2014 Estimated Population January 1	2015 Estimated Population January 1	2016 Estimated Population January 1
Saginaw	19,870	20,000	20,170	20,370	20,480	20,740
Sanger	6,940	6,970	7,210	7,490	7,590	7,820
Sansom Park	4,690	4,690	4,680	4,680	4,680	4,670
Seagoville	14,850	14,920	15,020	15,130	15,390	15,580
Shady Shores	2,620	2,620	2,620	2,630	2,640	2,660
Southlake	26,600	26,770	27,080	27,330	27,710	28,290
Springtown	2,660	2,660	2,660	2,660	2,660	2,670
St. Paul	1,070	1,070	1,070	1,070	1,080	1,080
Stephenville	17,480	18,290	19,320	19,410	19,560	21,640
Sunnyvale	5,170	5,200	5,270	5,280	5,420	5,410
Talty	1,560	1,770	1,770	1,890	2,010	2,120
Terrell	15,770	15,770	15,850	16,130	16,220	16,320
The Colony	36,230	36,590	37,510	38,730	39,310	39,810
Trophy Club	8,190	8,560	9,420	10,100	10,690	10,860
University Park	23,020	23,040	22,930	22,870	22,840	22,720
Venus	3,000	3,020	3,020	3,040	3,110	3,220
Watauga	23,500	23,490	23,510	23,560	23,590	23,600
Waxahachie	30,400	30,680	31,550	32,070	32,670	33,480
Weatherford	25,310	25,440	25,940	26,200	26,600	27,080
West Tawakoni	1,590	1,590	1,600	1,600	1,600	1,600
Westlake	990	1,010	1,040	1,050	1,120	1,230
Westworth Village	2,470	2,470	2,500	2,550	2,570	2,570
White Settlement	16,240	16,260	16,460	16,680	16,740	16,830
Willow Park	3,980	4,030	4,060	4,490	4,590	4,640
Wilmer	3,830	3,830	4,060	4,120	4,170	4,190
Wolfe City	1,410	1,410	1,410	1,420	1,420	1,420
Wylie	42,040	42,690	43,450	44,280	45,000	46,100

Appendix B. TCEQ Wastewater Notices Database (as of May 2016)

Source: TCEQ, NCTCOG

Date Received	Permit No.	EPA I.D. No.	County	City	Name of Applicant	Permit Action	Permit Modification?	Permitted Flow (GPD)	WWTP Address/Location	Outfall Path
2/2/2015	WQ0010887001	TX0027502	Collin	Josephine	City of Josephine	Renewal	no	70,000	0.2 mile north and 0.7 mile east of FM Rd 6 & FM rd 1777, Collin County, TX 75164	From the plant site to an unnamed tributary; then to Brushy Creek; then to West Caddo Creek; then to Lake Tawakoni
10/16/2015	WQ0014778001	TX0129402	Collin	Farmersville	City of Farmersville	Renewal	no	500,000	TX-78 & Co Rd 550, Farmersville, TX 75442	From the plant site to an unnamed tributary; then to the Elm Creek Arm of Lavon Lake in Segment No. 0821 of the Trinity River Basin
5/27/2015	WQ0010363001	TX0047911	Collin	Plano	North Texas Municipal Water District	Amendment	Increase in 2 hour peak flow from 41,700 gallons per minute (gpm) to 83,333 gpm	24,000,000	1600 Los Rios Boulevard, Plano, TX 75074	Discharged into Rowlett Creek; then to Lake Ray Hubbard in Segment No. 0820 of the Trinity River Basin
2/2/2016	WQ0010887001	TX0027502	Collin	Josephine	City of Josephine	Renewal	no	70,000	601 East Caddo Street, Josephine, TX 75164	Discharged to an unnamed tributary; then to Brushy Creek; then to West Caddo Creek; then to Lake Tawakoni in Segment No. 0507 of the Sabine River Basin
5/3/2016	WQ0010481001	TX0002143	Collin	Wylie	North Texas Municipal Water District	Renewal	no	1,980,000	810 North State Highway 78, Wylie, TX 75098	From outfalls 001 and 002 to Rush Creek; then to Lake Ray Hubbard; Outfalls 005 and 006 in an unnamed tributary; then to Rush Creek; then to Lake Ray Hubbard; from Outfall 003 and 004 to a NTMWD drainage ditch; to an unnamed creek; then to Lavon Lake; Outfall 007 to an unnamed Creek; then to Lavon Lake
5/3/2016	WQ0011451001	TX0024988	Collin	Wylie	Sies Lagos Utility District and North Texas Municipal Water District	Renewal	no	250,000	1007 Riva Ridge, Wylie, TX 75098	From plant site to an unnamed Tributary of Lavon Lake; then to Lavon Lake
5/4/2016	WQ0010172002	TX0027723	Collin	Frisco	City of Frisco	Renewal	no	300,000	9825 First Street, Frisco, TX 75034	From plant site to Cottonwood Branch; then to Lewisville Lake

Date Received	Permit No.	EPA I.D. No.	County	City	Name of Applicant	Permit Action	Permit Modification?	Permitted Flow (GPD)	WWTP Address/Location	Outfall Path
5/4/2016	WQ0012446001	TX0088633	Collin	Allen	North Texas Municipal Water District	Renewal	no	64,000,000	3020 Orr Road, Allen, TX 75002	From plant site to Lavon Lake
2/18/2016	WQ0014246001	TX0023272	Collin	Celina	City of Celina	Renewal	no	950,000	700 North Florida Drive, Celina, TX 75009	From plant site to unnamed tributary; then to Little Elm Creek; then to Lewisville Lake
8/31/2015	WQ0014699001	TX0128686	Dallas	Dallas	Dallas County Park Cities Municipal Utility District	Renewal	no	720,000	1811 Regal Row, Dallas, TX 75235	Discharged into Old Channel of Elm Fork Trinity River; then to the Upper Trinity River in Segment No. 0805 of the Trinity River Basin
8/25/2015	WQ0014216001	TX0123561	Dallas	Wylie	North Texas Municipal Water District	Renewal	no	20,000,000	5401 Pleasant Valley Road, Wylie, TX 75098	Discharged into Muddy Creek; then to Lake Ray Hubbard in Segment No. 0820 of the Trinity River Basin
	WQ0010090002		Dallas	Garland	City of Garland	Amendment	Authorize the removal of the whole effluent toxicity limits	24,000,000	2500 East Centerville Road, Garland, TX 75040	Discharged to Duck Creek; then to East Fork Trinity River in Segment No. 0819 of the Trinity River Basin
4/13/2016	WQ0010257001	TX0023931	Dallas	Richardson	North Texas Municipal Water District	Renewal	no	4,750,000	111 East Buckingham Road, Richardson, TX 75081	From plant site to Floyd Branch; then to Cottonwood Creek; then to White Rock Creek; then to White Rock Lake
5/9/2016	WQ0010221001	TX0047431	Dallas	Mesquite	North Texas Municipal Water District	Renewal	no	41,000,000	3500 Lawson Road, Mesquite, TX 75181	From plant site to South Mesquite Creek; then to the East Fork Trinity River
5/11/2016	WQ0010060003	TX0002364	Dallas	Sunnyvale	City of Dallas	Renewal	no	15,000,000	Long Creek Rd & Larkin Rd, Sunnyvale, TX 75182	From plant site to East Fork Trinity River
12/31/2015	WQ0011287003	TX0123862	Denton	Ponder	Town of Ponder	Amendment	Increase in the discharge of treated domestic wastewater from a daily average flow not to exceed 225,000 gallons per day (GPD) to 360,000 GPD	360,000	290 Robinson Road, Ponder, TX 76259	Discharged into an unnamed tributary; then to Hog Branch; then to Denton Creek; then to Grapevine Lake in Segment No 0826 of the Trinity River Basin

Date Received	Permit No.	EPA I.D. No.	County	City	Name of Applicant	Permit Action	Permit Modification?	Permitted Flow (GPD)	WWTP Address/Location	Outfall Path
7/28/2015	WQ0013732001	TX0123552	Denton	Flower Mound	Rocky Point Estates Land Trust and Steven Lee Case	Renewal	no	60,000	4719 Shiloh Road, Flower Mound, TX 75022	Discharged to East For Sharps Branch; then to Sharps Branch; then to Grapevine Lake in Segment No. 0826 of the Trinity River Basin
	WQ0010698002		Denton	Aubrey	Upper Trinity Regional Water District	Minor amendment	Change the interim I and interim II daily average flow description, to annual average flow, and to correct the expiration date	5,700,000	1780 Navo Road, Aubrey, TX 76227	Discharged via outfall 001 to Lewisville Lake in Segment No. 0823 of the Trinity River Basin; and via outfall 002 to an unnamed tributary; then to Lewisville Lake in Segment No. 0823 of the Trinity River Basin
2/24/2016	WQ0011761001		Denton	Argyle	Morningstar Properties, Ltd	Renewal	no	13,500	921 Copper Canyon Road, Argyle, TX 76266	
3/23/2016	WQ0011593001	TX0055735	Denton	Trophy Club	Trophy Club Municipal Utility District No. 1	Renewal	no	1,750,000	1499 Junction Way, Trophy Club, TX 76262	From plant site to Marshall Branch and/or unnamed tributaries with intermittent ponds; then to Marshall Branch; then to Grapevine Lake
3/31/2016	WQ0014143001	TX0120111	Denton	Justin	Aqua Texas Inc.	Renewal	no	450,000	FM Rd 407, 2 miles west of City of Justin, Denton County, TX 76247	From plant site to Trail Creek; then to Denton Creek; then to Grapevine Lake
4/6/2016	WQ0011600001	TX0043783	Denton	Little Elm	Town of Little Elm	Renewal	no		1600 Mark Tree Lane, Little Elm, TX 75068	From plant site to unnamed tributary; then to Lewisville Lake
4/6/2016	WQ0011312001	TX0022501	Denton		City of Justin	Renewal	no	800,000	east of FM Rd 156 & south of FM Rd 407, Denton County, TX 76247	From plant site to Trail Creek; then to Denton Creek; then to Grapevine Lake
4/20/2016	WQ0014186001	TX0122661	Denton		Aqua Texas Inc.	Renewal	no	330,000	5 miles east of Rhome on the north side of State Highway 114, Denton County, TX 76078	From plant site to unnamed creek; then to Elizabeth Creek; then to Denton Creek; then to Grapevine Lake.

Date Received	Permit No.	EPA I.D. No.	County	City	Name of Applicant	Permit Action	Permit Modification?	Permitted Flow (GPD)	WWTP Address/Location	Outfall Path
4/20/2016	WQ0014263001	TX0124079	Denton		Aqua Texas Inc.	Renewal	no	255,000	Southwest of State Highway 114 & John Day Road, Denton County, TX 76262	From plant site to an unnamed drainage ditch; then to Elizabeth Creek; then to Denton Creek; then to Grapevine Lake
4/19/2016	WQ0013647001	TX0056588	Denton	Aubrey	City of Aubrey	Amendment	increase in the discharge of treated domestic wastewater	550,000	5114 Bluebonnet Street, Aubrey, TX 76227	From plant site to Aubrey Branch; then to Elm Fork Trinity River below Ray Roberts Lake
5/20/2016	WQ0010903001	TX0026565	Denton	Lakewood Village	Town of Lakewood Village	Renewal	no	100,000	407 Parkwood Court, Lakewood Village, Denton County, TX 75068	From plant site directly to Lake Lewisville
5/3/2016	WQ0010698001	TX0020354	Denton		Upper Trinity Regional Water District	Renewal	no	7,500,000	1.5 miles east of I-35 on North Lakeview Drive, Denton County TX 75065	From plant site directly to Lewisville Lake
5/16/2016	WQ0014323001	TX0124745	Denton	Aubrey	Upper Trinity Regional Water District	Renewal	no	2,000,000	1130 Naylor Road, Aubrey, TX 76227	From plant site to Cantrell Slough; then to Lewisville Lake
5/9/2016	WQ0003840000	TX0118532	Denton	Corinth	Acme Brick Company	Renewal	no	intermittent and flow variable rate	north of FM 2181 and 1.7 miles west of FM Rd 2181 & Interstate Highway 35 East, Corinth, TX 76201	From plant site to an unnamed tributary; then to Horseshoe Lake; then to an unnamed tributary; then to an unnamed pond; then to Lake Lewisville
5/9/2016	WQ0003838000	TX0118567	Denton	Denton	Acme Brick Company	Renewal	no	intermittent and flow variable rate	220 Daniels Street, Denton, TX 76205	From plant site via outfall 001 to an unnamed tributary of Hickory Creek; then to Hickory Creek; then to Lewisville Lake; and via outfall 002 to an unnamed tributary of Fletcher Branch; then to Fletcher Branch; then to City Lake; then to Fletcher Branch; then to two unnamed impoundments; then to Fletcher Branch; Then to Hickory Creek; Then to Lewisville Lake

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5/4/2016	WQ0013457001	TX0104957	Denton	Roanoke	Trinity River Authority of Texas	Amendment	Authorize an increase in the 2-hr peak flow for both outfall 001 and outfall 002 and to add additional phase for outfall 002		1687 North US Highway 377, Roanoke, TX 76262	From plant site via outfall 001 to Cade Branch; then to Denton Creek; then to Grapevine Lake and via outfall 002 via a pipe to an unnamed tributary of Whites Branch; then to Grapevine Lake
5/4/2016	WQ0014245001	TX0123901	Denton	Frisco	North Texas Municipal Water District	Renewal	no	10,000,000	1825 Little Ranch Road, Frisco, TX 75034	From plant site to Panther creek; then to Lewisville Lake
5/4/2016	WQ0014372001	TX0022403	Denton	Sanger	City of Sanger	Renewal	no	980,000	300 Jones Street, Sanger, TX 76266	From plant site to an unnamed ditch; then to Ranger Branch; then to Paddock Lake; then to Ranger Branch; then to Clear creek; then to Lewisville Lake
5/4/2016	WQ0014008001	TX0103501	Denton	Frisco	North Texas Municipal Water District	Renewal	no	15,000,000	5100 Fourth Army Memorial Drive, Frisco, TX 75034	From plant site to Stewart Creek; then to Garza-Little Elm Reservoir portion of Lewisville Lake
5/20/2016	WQ0010698002	TX0123781	Denton	Aubrey	Upper Trinity Regional Water District	Renewal	no	5,700,000	1780 Navo Road, Aubrey, TX 76227	From plant site via Outfall 001 to Lewisville Lake and via outfall 002 to an unnamed tributary; then to Lewisville Lake
5/20/2016	WQ0010698003	TX0125172	Denton	Little Elm	Upper Trinity Regional Water District	Renewal	no	5,225,000	27200 East Highway 380, Little Elm, TX 75068	From plant site to an unnamed tributary; then to Doe Branch portion of Lake Lewisville
5/11/2016	WQ0011321001	TX0020711	Denton	Flower Mound	Town of Flower Mound	Renewal	no	10,000,000	201 Spinks Road, Flower Mound, TX 75028	From plant site to Bakers Branch; then to Denton Creek
8/17/2015	WQ0014195001	TX0123056	Ellis	Italy	City of Italy	Amendment	Addition of an equalization basin		1100 FM Rd 667, Italy, TX 76651	From plant site to an unnamed tributary; then to White Rock Branch; then to Chambers Creek above Richland-Chambers Reservoir
4/13/2015	WQ0013415001		Ellis	Red Oak	Trinity River Authority of Texas	Renewal	no	6,000,000	908 Bells Chapel Road, Red Oak, TX 75165	Discharged to Red Oak Creek; then to the Upper Trinity River in Segment No. 0805 of the Trinity River Basin

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3/7/2015	WQ0014195001	TX0123056	Ellis		City of Italy	Amendment	Authorize conversion of a decommissioned pond to an equalization basin	650,000	1100 FM Rd 667, Italy, TX 76651	Discharged into an unnamed tributary; then to White Rock Branch; then to Chambers Creek above Richland Chambers Reservoir in Segment No. 0814 of the Trinity River Basin
3/23/2016	WQ0004379000	TX0064777	Ellis	Midlothian	TXI Operating, LP	Renewal	no		245 Ward Road, Midlothian, TX 76065	From plant site to drainage ditch; then to Cottonwood Creek; then to National Resource Conservation Service Reservoir; then to Cottonwood Creek; then to Newton Branch; then to Soap Creek; then to Joe Pool Lake
4/6/2016	WQ0013847001	TX00118877	Ellis	Waxahachie	North Texas District Council Assemblies of God	Major Amendment	Authorize modifications to the treatment system and an increase in the discharge of treated wastewater from a daily average flow not to exceed 80,000 gpd to 100,000 gpd	100,000	5128 FM Rd 66, Waxahachie, TX 75167	From plant site to an unnamed tributary; then to Oak Branch; then to North Fork Chambers Creek; then to Chambers Creek above Richland Chambers Reservoir in Segment No. 0814 of the Trinity River Basin
5/16/2016	WQ0013981001	TX0020567	Ellis	Avalon	Avalon Water Supply and Sewer Service Corporation	Renewal	no	40,000	west of FM Rd 55 and south of FM Rd 55 & State Highway 34, Avalon, TX 76623	From plant site through a pipe to an unnamed tributary; then to an unnamed reservoir; then to an unnamed tributary; then to Chambers Creek Above Richland Chambers Reservoir
5/4/2016	WQ0010348001	TX0025011	Ellis		Trinity River Authority of Texas	Renewal	no	6,000,000	1.5 miles north of Highway 67 & 287, Ellis County, TX 76065	From plant site to an unnamed tributary then to Newton Branch; then to SCS Reservoir 10; then to Newton Branch; then to Soap Creek; then to Mountain Creek; then to Joe Pool Lake via outfalls 001 and 002
12/7/2015	WQ0015406001		Erath	Glen Rose	Rough Creek Operating, LP	New	no	19,000	5165 County Road 2012, Glen Rose, TX 76043	The wastewater treatment facility and disposal site located 4 miles south-southeast of Us Highway 67 & County Rd 199

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11/2/2015	WQ0010405001	TX0054348	Erath	Dublin	City of Dublin	Amendment	Authorize the land application of sewage sludge for beneficial use on 202 acres of land adjacent to the wastewater treatment facility	450,000	0.75 mile southwest of FM Rd 219 & FM Rd 1702, Erath County, TX 76446	Discharged to Resley Creek; then to Leon River below Proctor Lake in Segment No 1221 of the Brazos River Basin
2/24/2015	WQ0013966001		Erath	Stephenville	Stephenville Mobile Home Park, Ltd.	Amendment	Remove the concentration-based Total Phosphorus limit and retain the mass-based Total Phosphorus limit	24,000	154 Private Road 1329, Stephenville, TX 76401	Discharged to an unnamed tributary; then to Pole Hollow Branch; then to an unnamed impoundment; then to Pole Hollow Branch; then to Upper North Bosque River in Segment No. 1255 of the Brazos River Basin
8/10/2015	WQ0014735001	TX0128996	Erath	Stephenville	Northside Subdivision Water Plant and Distribution Corp.	Amendment	Authorize the utilization of the load-based measurement and elimination of the concentration (mg/L) requirement for Total Phosphorus		0.75 mile east of North State Highway 108 & 0.75 mile south of County Rd 433, Stephenville, TX 76401	From plant site to an unnamed tributary of the North Fork North Bosque River; then to North Fork North Bosque River; then to Upper North Bosque River
	WQ0014735001	TX0128996	Erath	Stephenville	Northside Subdivision Water Plant and Distribution Corp.	Renewal	no	33,000	0.75 mile east of North State Highway 108 & 0.75 mile south of County Rd 433, Stephenville, TX 76401	From plant site to an unnamed tributary of the North Fork North Bosque River; then to North Fork North Bosque River; then to Upper North Bosque River
2/10/2016	WQ0014735001	TX0128996	Erath	Stephenville	Northside Subdivision Water Plant and Distribution Corp.	Major Amendment	Authorize the change in the total phosphorus limit of treated domestic wastewater from concentration-based limit of 1.0 mg/L to loading-based limit of 0.28 lbs/day only	33,000	0.75 mile east of North State Highway 108 & 0.75 mile south of County Rd 433, Stephenville, TX 76401	Discharged to an unnamed tributary of North Fork North Bosque River; then to the North Bosque River; then to the Upper North Bosque River in Segment No. 1255 of the Brazos River Basin
5/19/2016	WQ0013786001	TX0089338	Hood	Walters Bend	Aqua Texas Inc.	Renewal	no	42,000	2 miles north of FM Rd 2425 & FM Rd 3210, Walters Bend, TX 76048	Discharge from plant site to Lake Granbury

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8/19/2015	WQ0004288000	TX0123820	Hood	Granbury	Wolf Hollow Services, LLC	Amendment	Authorize expansion of the treatment facilities; an increase in the discharge of treated wastewater to a volume not to exceed a daily average flow of 2,071,000 gallons per day; and an increase in the allowable temperature of the discharge	2,071,000	9201 Wolf Hollow Court, Granbury, TX 76048	Discharge from plant site directly to the Brazos River below Lake Granbury
2/16/2016	WQ0004288000	TX0123820	Hood	Granbury	Wolf Hollow Services, LLC	Major Amendment	Increase permitted discharge of cooling tower blowdown, boiler blowdown, and previously monitored effluent from a daily average flow not to exceed 1,100,000 GPD to a daily average flow not to exceed 2,071,00 GPD via outfall 001; increase from a daily maximum flow not to exceed 1,650,000 GPD to a daily maximum flow 3,106,000 GPD via outfall 001; and the discharge of low volume waste sources via new internal outfalls 201 and 301 on an intermittent and flow-variable basis	2,071,000	9201 Wolf Hollow Court, Granbury, TX 76048	Discharge from plant site directly to the Brazos River below Lake Granbury in Segment No. 1204 of the Brazos River Basin
12/31/2015	WQ0010383001	TX0023558	Hunt	Wolfe City	City of Wolfe City	Renewal	no	195,000	Next to Oyster Creek, 0.3 mile east of State Highway 34, Wolfe City, TX 75496	Discharged into Oyster Creek; then to Upper South Sulphur River in Segment No. 0306 of the Sulphur River Basin
12/21/2015	WQ0013857001	TX0129780	Hunt		Sabine River Authority of Texas	Renewal	no	30,000	10822 FM Rd 2475, Hunt County, TX 75169	Discharged from plant site directly into Lake Tawakoni in Segment No. 0507 of the Sabine River Basin

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12/8/2015	WQ0010146001	TX0024180	Hunt		City of Celeste	Renewal	no	94,800	1 mile south-southwest of US Highway 69 & the Atchison-Topeka and Santa Fe Railway, Hunt County, TX 75423	Discharged to an unnamed tributary; then to Cowleech Fork of the Sabine River; Then to Lake Tawakoni in Segment No. 0507 of the Sabine River Basin
11/23/2015	WQ0014344001	TX0064513	Hunt	Quinlan	City of West Tawakoni	Renewal	no	300,000	1.5 miles south of FM Rd 35 and 7 miles east of Quinlan, Hunt County, TX 75474	Discharge directly into Lake Tawakoni in Segment No. 0507 of the Sabine River Basin
11/13/2015	WQ0013791001	TX0072508	Hunt	Campbell	City of Campbell	Renewal	no	116,000	0.75 mile southwest of State Highway 24 & FM Rd 499, Campbell, TX 75422	From plant site to Timber Creek; Then to Cowleech Fork Sabine River; Then to Lake Tawakoni
10/29/2015	WQ0004557000	TX0103080	Hunt	Greenville	Greenville Electric Utility System	Renewal	no	111,000,000	4201 Power Lane, Greenville, TX 75401	From plant site to Greenville Reservoir No. 6; then to Greenville Reservoir No. 4 or during periods of heavy rainfall, over Greenville Reservoir No. 6 spillway; then to an unnamed tributary; then to Cowleech Fork; then to Lake Tawakoni
11/2/2015	WQ0014685001	TX0128538	Hunt	Quinlan	Combined Consumers Special Utility District	Renewal	no	25,000	10446 FM Rd 751, Quinlan, TX 75474	Discharged directly into Lake Tawakoni in Segment No. 0507 of the Sabine River Basin
5/3/2016	WQ0004849000	TX0131466	Hunt	Caddo Mills	Pilot Travel Centers, LLC	Renewal	no	15,000	2226 FM Rd 1903, Caddo Mills, TX 75135	From plant site to an unnamed tributary; then to Elm Creek; then to West Caddo Creek; then to Caddo Creek; then the Lake Tawakoni in Segment No. 0507 of the Sabine River Basin
10/2/2015	WQ0014215001	TX0123528	Hunt		Mallard Point WWTP, LLC	Renewal	no	22,500	Northwest of FM Rd 1564 & US Highway 69, Hunt County, TX 75453	From plant site to an unnamed tributary; then to Lake Tawakoni
4/19/2016	WQ0010485002	TX0055611	Hunt	Greenville	City of Greenville	Renewal	no	6,000,000	100 Division Street, Greenville, TX 75401	From plant site to Long Branch; then to Cowleech Fork Sabine River; then to Lake Tawakoni
9/18/2015	WQ0010760001	TX0100021	Hunt		City of Lone Oak	Renewal	no	60,000	0.5 mile south of US Highway 69 & FM Rd 1571, Hunt County, TX 75453	From plant site to Bull Creek; then to Lake Tawakoni

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9/18/2015	WQ0013725001	TX0022331	Hunt	Quinlan	City of Quinlan	Renewal	no	300,000	200 Meyers Street, Quinlan, TX 75474	From plant site to Naufal Branch; then to Jones Creek; then to Lake Tawakoni
2/3/2015	WQ0013220001		Hunt	Quinlan	Boles Children's Home, Inc.	Renewal	no	16,000	7065 Love, Quinlan, TX 75474	Located in the drainage basin of Lake Tawakoni in Segment No. 0507 of the Sabine River Basin
8/31/2015	WQ0015378001	TX0136425	Hunt		Walton Texas, LP	New	no	390,000	Northwest of US Highway 380 & FM Rd 903, Hunt County, TX 75401	Discharged into Elm Creek; then to West Caddo Creek; then to Caddo Creek; then to Lake Tawakoni in Segment No. 0507 of the Sabine River Basin
8/10/2015	WQ0002395000	TX0084328	Hunt	Caddo Mills	Explorer Pipeline Company	Renewal	no		2856 County Rd 2168, Caddo Mills, TX 75135	From plant site to unnamed ditch; then to an unnamed tributary; then to West Caddo Creek; then to Caddo Creek; then to Lake Tawakoni
7/23/2015	WQ0014236001		Hunt	Quinlan	Individual Care of Texas, Inc.	Renewal	no	10,000	1655 Private Road 2530, Quinlan, TX 75474	
7/14/2015	WQ0010555001	TX0020591	Hunt		City of Commerce	Renewal	no	2,000,000	East of FM Rd 3218 and 0.5 mile south of Charity Rd & FM Rd 3218, Hunt County, 75428	From plant site to unnamed tributary; then to Upper South Sulphur River
4/7/2015	WQ0013837001		Hunt	Quinlan	Boles Independent School District	Renewal	no	12,300	9777 FM Rd 2101, Quinlan, TX 75474	Located in the drainage basin of Lake Tawakoni in Segment No. 0507 of the Sabine River Basin
3/16/2016	WQ0013791001	TX0072508	Hunt	Campbell	City of Campbell	Renewal	no	116,000	0.75 mile southwest of State Highway 24 & FM Rd 499, Campbell, TX 75422	Discharged to Timber Creek; then to Cowleech Fork Sabine River; then to Lake Tawakoni in Segment No. 0507 of the Sabine River Basin
2/10/2016	WQ0014236001		Hunt		Individual Care of Texas, Inc.	Renewal	no	10,000	1655 Private Road 2530, Quinlan, TX 75474	Located in the drainage basin of Lake Tawakoni in Segment No. 0507 of the Sabine River Basin

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2/2/2016	WQ0010555001	TX0020591	Hunt		City of Commerce	Renewal	no	2,000,000	East of FM Rd 3218 and 0.5 mile south of Charity Rd & FM Rd 3218, Hunt County, 75428	Discharged to an unnamed tributary; then to Upper South Sulphur River in Segment No. 0306 of the Sulphur River Basin
2/2/2016	WQ0004557000	TX0103080	Hunt	Greenville	Greenville Electric Utility System	Renewal	no	111,000,000	4201 Power Lane, Greenville, TX 75401	Discharged to Greenville Reservoir No. 6; then to Greenville Reservoir No 4 or during periods of heavy rainfall, over Greenville Reservoir No. 6 spillway; then to an unnamed tributary; then to Cowleech Fork Sabine River; then to Lake Tawakoni in Segment No. 0507 of the Sabine River Basin
2/2/2016	WQ0013725001	TX0022331	Hunt	Quinlan	City of Quinlan	Renewal	no	300,000	200 Meyers Street, Quinlan, TX 75474	Discharged to Naufal Branch; then to Jones Creek; then to Lake Tawakoni in Segment No. 0507 of the Sabine River Basin
2/23/2016	WQ0014215001	TX0123528	Hunt		Mallard Point WWTP, LLC	Renewal	no	22,500	Northwest of FM Rd 1564 & US Highway 69, Hunt County, TX 75453	Discharged to an unnamed tributary; then to Lake Tawakoni in Segment No. 0507 of the Sabine River Basin
2/23/2016	WQ0010760001	TX0100021	Hunt		City of Lone Oak	Renewal	no	60,000	0.5 mile south of US Highway 69 & FM Rd 1571, Hunt County, TX 75453	Discharged to Bull Creek; then to Lake Tawakoni in Segment No. 0507 of the Sabine River Basin
2/16/2016	WQ0002395000	TX0084328	Hunt	Caddo Mills	Explorer Pipeline Company	Renewal	no		2856 County Rd 2168, Caddo Mills, TX 75135	From plant site to an unnamed ditch; then to an unnamed tributary; then to West Caddo Creek; then to Caddo Creek; then to Lake Tawakoni in Segment No. 0507 of the Sabine River Basin
3/28/2016	WQ0010425002	TX0128392	Hunt		City of Caddo Mills	Renewal	no	375,000	2,100 ft. west of FM Rd 36 & FM Rd 1903, Hunt County, TX 75135	From plant site via pipe to West Caddo Creek; then to Caddo Creek; then to Lake Tawakoni in Segment No. 0507 of the Sabine River Basin

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5/9/2016	WQ0002837000		Hunt		JP Energy Caddo LLC	Renewal	no	intermittent and flow variable rate	2738 County Rd 2168, Hunt County TX, 75135	Discharged via outfall 001 to Gates Branch; then to Elm Creek; then to Caddo Creek; via outfalls 002 and 003 to a drainage ditch; then to Gates Branch; then to Elm Creek; then to Caddo Creek; Then to Lake Tawakoni in Segment No 0507 of the Sabine River Basin
5/12/2016	WQ0014522001	TX0126691	Hunt	Hawk Cove	City of Hawk Cove	Renewal	no	200,000	9543 Morris Drive, Hawk Cove, TX 75474	From plant site to Lake Tawakoni
10/29/2015	WQ0015411001	TX0136646	Johnson		Johnson County Pipe, Inc.	New	no	20,000	Southwest of US Highway 67 & County Rd 209, Johnson County, 76009	From plant site via pipe; then to Fish Spring Branch; then to Mountain Creek; then to Joe Pool Lake
3/9/2015	WQ001468001		Johnson		South Fort Worth RV Ranch, LLC	Renewal	no	48,000	2301 South Burleson Street, Johnson County, TX 76028	Discharged to Quil Miller Creek; then to Village Creek; then to Lake Arlington in Segment No. 0828 of the Trinity River Basin
2/2/2016	WQ0012343001		Johnson	Alvarado	Halliburton Energy Services, Inc.	Renewal	no	12,000	3101 County Road 401, Alvarado, TX 76009	
4/6/2016	WQ0014373001	TX0125270	Johnson	Cleburne	Double Diamond Utilities Co	Renewal	no	49,500	7237 Retreat Boulevard, Cleburne, TX 76033	From plant site to unnamed tributary of Ham Creek; then to Ham Creek; then to Whitney Lake
3/23/2016	WQ0013769001	TX0113573	Johnson	Burleson	EMCAD Water and Wastewater, LLC	Renewal	no	42,000	329 Meadow Oaks Drive, Burleson, TX 76028	From plant site to unnamed tributary; then to Valley Branch; then to Walnut Creek; then to Joe Pool Lake
4/20/2016	WQ0013846001	TX0115991	Johnson	Joshua	EMCAD Water and Wastewater, LLC	Renewal	no	30,500	South of County Rd 915 and 1.3 miles west of FM Rd 1902, Joshua, TX 76058	From plant site to unnamed tributary No. 1 ; then to unnamed tributary No. 2; then to Rock Creek; then to Benbrook Lake
5/16/2016	WQ0015034001		Johnson		Joco Holding Corporation	Amendment	no	10,000	east of I-35 West, southeast of Bethesda Rd overpass, Johnson County, TX 76097	

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5/4/2016	WQ0014556001	TX0125954	Johnson	Joshua	Shalimar Fort Worth LP	Renewal	no	9,000	6105 County Road 1022, Joshua, TX 76058	From plant site to a ditch; then to West Buffalo Creek; then to a pond; then to West Buffalo Creek; then to Buffalo Creek; then to Nolan River
5/4/2016	WQ0014887001	TX0104558	Johnson	Godley	City of Godley	Renewal	no	360,000	Southwest of South Main St & FM Rd 171, Godley, TX 76044	From plant site to West Nolan Creek; then to Nolan Creek; Then to Lake Pat Cleburne
5/4/2016	WQ0014101001	TX0119229	Johnson	Alvarado	Alvarado Independent School District	Renewal	no	35,000	5001 FM Road 2738 Alvarado, TX 76009	From plant site to unnamed tributary; then to King Branch; then to Walnut Creek; then to Joe Pool Lake
4/26/2016	WQ0015018001	TX0133281	Kaufman	Terrell	North Texas Municipal Water District	Renewal	no	1,850,000	18015 County Rd 329, Terrell, TX 75161	From plant site via outfall 002; via outfall 003; to an unnamed tributary; then to an unnamed tributary of Greasy Creek; then to Greasy Creek; then to Lake Tawakoni
3/3/2016	WQ0010834001	TX0024929	Kaufman		City of Crandall	Renewal	no	900,000	southwest of Buffalo Creek & FM Rd 148, Kaufman County, TX 75114	From plant site to an unnamed tributary; then to Buffalo Creek; then to East Fork Trinity River
4/19/2016	WQ0014803001	TX0129623	Kaufman		Las Lomas Municipal Utility District No. 4 of Kaufman County	Renewal	no	500,000	2.5 miles southwest of State Highway 20 & FM Rd 148, Kaufman County, TX 75160	From plant site to Terry Creek; then to Big Brushy Creek; then to Kings Creek; then to Cedar Creek Reservoir in Segment No. 0818 of the Trinity River Basin
3/31/2016	WQ0014627001	TX0128023	Kaufman	Forney	Helms Trail Properties, Inc.	Renewal	no	20,000	9500 Helms Trail, Forney, TX 75126	From plant site to Buffalo Creek; then to Lateral Site No. 2 (NRCS pond); then to Buffalo Creek; then to East Fork Trinity River
5/4/2016	WQ0004359000	TX0124419	Kaufman	Forney	FPLE Forney LLC	Amendment	removal of internal outfalls 101 and 201 and the reclassification of the reverse osmosis reject water and Heat Recovery Steam Generator blowdown to cooling tower blowdown		13770 West US Highway 80, Forney, TX 75126	From plant site directly to the East Fort Trinity River via outfall 001 and via outfall 002 to Buffalo Creek; Thence to the East Fork Trinity River

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5/3/2016	WQ0010747001	TX0022527	Kaufman	Terrell	City of Terrell	Renewal	no	4,500,000	101 Mount Hebron Road, Terrell, TX 75160	From plant site to Kings Creek; then to Cedar Creek Reservoir
12/8/2015	WQ0013908001		Navarro		Rice Independent School District	Renewal	no	15,000	0.9 mile northwest of State Highway 1126 and 500 feet east of the Southern Pacific Railroad, Navarro County, TX 75155	Located in the drainage basin of Chambers Creek above Richland Chambers Reservoir in Segment No. 0814 of the Trinity River Basin
4/19/2016	WQ0011864001	TX0073032	Navarro		City of Angus	Renewal	no	12,000	north of Interstate Highway 45 South & FM Rd 739, Navarro County, TX 75110	From plant site to unnamed tributary of Grape Creek; then to Grape Creek' then to Richland Chambers Reservoir
5/16/2016	WQ0013528001	TX0106101	Navarro		Bosque Utilities Corporation	Renewal	no	60,000	1.3 miles southwest of County Road 3300 & US Highway 287, Navarro County, TX 75144	From plant site directly into Richland Chambers Reservoir in Segment No. 0836 of the Trinity River Basin
3/23/2016	WQ0010026001	TX0053449	Navarro		City of Dawson	Renewal	no	130,000	200 County Line Road, Dawson, TX 76639	From plant site to unnamed tributary; then to Battle Creek; then to Richland Creek above Richland Chambers Reservoir
3/31/2016	WQ0014854001	TX0130028	Navarro		Texas Department of Transportation	Renewal	no	14,000	14025 Interstate 45 East, Richland, TX 76681	From plant site directly to Richland-Chambers Reservoir
4/6/2016	WQ0010739001		Navarro		City of Barry	Renewal	no	20,000	southwest of State Highway 22 & FM Rd 1126, Navarro County, TX 75102	
4/25/2016	WQ0010402003	TX0056731	Navarro	Corsicana	City of Corsicana	Renewal	no		2151 Jester Drive, Corsicana, TX 75109	From plant site via outfall 001 to Post Oak Creek; Then to Richland-Chambers Reservoir; and via outfall 002 to an unnamed tributary; then to Post Oak Creek; then to Richland Chambers Reservoir
5/3/2016	WQ0011606001	TX0075418	Navarro	Blooming Grove	City of Blooming Grove	Renewal	no	100,000	529 East 4th Street, Blooming Grove, TX 76626	From plate site to an unnamed tributary of Rush Creek; then to Rush Creek; Then to Richland Creek above Richland-Chambers Reservoir

Date Received	Permit No.	EPA I.D. No.	County	City	Name of Applicant	Permit Action	Permit Modification?	Permitted Flow (GPD)	WWTP Address/Location	Outfall Path
5/4/2016	WQ0011646001		Navarro		Mildred Independent School District	Renewal	no	20,000	5 miles southeast of Corsicana at US Highway 287 & Jenkins Rd, Navarro County, TX 75109	
12/23/2015	WQ0010722001	TX0104752	Palo Pinto		City of Graford	Renewal	no	111,000	Northwest of FM Rd 4 & State Highway Spur 397, Palo Pinto County, TX 76449	From plant site to an unnamed tributary of Peach Branch; then to Pecan Branch; then to Keechi Creek; then to Brazos River below Possum Kingdom Lake
8/25/2015	WQ0001903000	TX0062197	Palo Pinto	Palo Pinto	Brazos Electric Power Cooperative	Amendment	removal of the Effluent Characteristics and the limit on total suspended solids from outfall 002; revise the sampling point for outfall 001; the addition of internal outfalls; and the addition of proposed outfall 003		2217 FM Rd 3137, Palo Pinto, TX 76484	From plant site to man-made channel; then to Lake Palo Pinto via outfall 001, 002 and proposed outfall 003.
4/6/2016	WQ0001903000	TX0062197	Palo Pinto	Gordon	Brazos Electric Power Cooperative	Major Amendment	Increase the daily maximum temperature limit at outfall 001; move the effluent sampling point for outfall 001; remove requirements for parameters at outfall 002 that will be controlled at internal outfalls; revise the list of contributing waste streams at outfall 002; additional waste streams at existing internal outfall 102; new internal outfalls for low volume waste sources; remove the pH limits at internal outfalls 201, 202, 203, 204, and 205; and add new stormwater outfall 003	400,000,000	2217 FM Rd 3137, Palo Pinto, TX 76484	Discharged via outfalls 001 and 002 and is proposed to be discharged via outfall 003 directly to Lake Palo Pinto in Segment No. 1230 of the Brazos River Basin

Date Received	Permit No.	EPA I.D. No.	County	City	Name of Applicant	Permit Action	Permit Modification?	Permitted Flow (GPD)	WWTP Address/Location	Outfall Path
9/23/2015	WQ0013304001		Parker		Azle Independent School District	Renewal	no	9,000	10300 South FM Rd 730, Parker County, TX 76020	
10/16/2015	WQ0014054001		Parker	Azle	Springtown Independent School District	Renewal	no	15,000	172 West Reno Road, Reno, TX 76020	Wastewater treatment facility and disposal site are located in the drainage basin of Eagle Mountain Reservoir in Segment No. 0809 of the Trinity River Basin
11/13/2015	WQ0004852000	TX0131504	Parker	Weatherford	Parker County Special Utility District	Renewal	no	198,000	1200 Tidwell Road, Weatherford, TX 76087	From plant site directly to the Brazos River below Possum Kingdom Lake
4/26/2016	WQ0013589001	TX0107981	Parker		Peaster Independent School District	Renewal	no	36,000	3602 Harwell Lake Road, Weatherford, TX 76088	From plant site to stock ponds; then to an unnamed tributary of Dry Creek; then to Dry Creek; then to Rock Creek; then to Brazos River below Possum Kingdom Lake in Segment No. 1206 of the Brazos River Basin
2/23/2016	WQ0013304001		Parker		Azle Independent School District	Renewal	no	9,000	10300 South FM Rd 730, Parker County, TX 76020	Located in drainage basin of Silver Creek in Segment No. 0807 of the Trinity River Basin
3/23/2016	WQ0013759001		Parker		Town of Annetta	Renewal	no	264,000	northwest of Thunder Head Lane & Inglewood Drive, Parker County, TX 76008	disposal site located 1.6 miles north of Deer Creek Wastewater Treatment Facility, Parker County, TX 76008
5/16/2016	WQ0014003001	TX0117919	Parker	Aledo	Cowtown RV Park Ltd	Renewal	no	21,600	7000 East Interstate Highway 20, Aledo, TX 76008	From plant site to an unnamed tributary; then to Clear Fork Trinity River Below Lake Weatherford
5/11/2016	WQ0010847001	TX0027120	Parker	Aledo	City of Aledo	Renewal	no	600,000	600 Barnwell Road, Aledo, TX 76008	From plant site to an unnamed tributary; then to Clear Fork Trinity River Below Lake Weatherford
12/3/2015	WQ0010366001	TX0021687	Rockwall		City of Royse City	Renewal	no	500,000	1 mile south of Interstate Highway 30 & FM Rd 35, Rockwall County, TX 75189	Discharged to Sabine Creek; then to South Fork Sabine River; then to Lake Tawakoni in Segment No. 0507 of the Sabine River Basin

Date Received	Permit No.	EPA I.D. No.	County	City	Name of Applicant	Permit Action	Permit Modification?	Permitted Flow (GPD)	WWTP Address/Location	Outfall Path
4/6/2016	WQ0014469001	TX0126110	Rockwall	Royse City	North Texas Municipal Water District	Renewal	no		1513 Crenshaw Road, Royse City, TX 75189	From plant site to Parker Creek; then to South fork Sabine River; then to Lake Tawakoni
5/9/2016	WQ0010262001	TX0022241	Rockwall	Rockwall	North Texas Municipal Water District	Renewal	no	1,200,000	2215 North Lakeshore Drive, Rockwall, TX 75087	From plant site to Squabble creek; Then to Lake Ray Hubbard
5/4/2016	WQ0012047001	TX0078565	Rockwall	Rockwall	North Texas Municipal Water District	Renewal	no	2,250,000	4920 Horizon Road, Rockwall, TX 75032	From plant site to Buffalo Creek; Then to East Fork Trinity River
10/7/2015	WQ000185400		Somervell	Glen Rose	Luminant Generation Company, LLC	Renewal	no	3,168,000	6322 North FM Rd 56, Glen Rose, TX 76043	Discharged via outfall 001, 002, 003, and 004 to Squaw Creek Reservoir; then to Paluxy River/North Paluxy River in Segment No. 1229 of the Brazos River Basin
2/27/2015	WQ0004877000	TX0131911	Somervell	Glen Rose	Somervell County Water District	Major Amendment	Authorize addition of naofiltration membrane wastewater as an authorized wastestream at an additional daily average flow not to exceed 90,000 gallons per day via outfall 001.	240,000	2099 County Road 301, Glen Rose, TX 76043	From plant site to Wheeler Branch; then to Paluxy River/North Paluxy River in Segment No. 1229 of the Brazos River Basin
9/9/2015	WQ0015376001	TX0136395	Somervell	Glen Rose	OCP-Tres Rios LLC	New	no	24,000	2322 County Road 312, Glen Rose, TX 76043	Discharged to a natural drainage way; then to Brazos River below Lake Granbury in Segment No. 1204 of the Brazos River Basin
9/9/2015	WQ0015250001		Somervell		Earth Promise	Minor amendment	Authorize the relocation of the treatment facility and the point of discharge within the applicant's property boundary		west-southwest of County Road 2008 & County Road 2017, Somervell County, TX 76043	Discharged to a drainage; then to Barkers Branch; then to Paluxy River/North Paluxy River in Segment No. 1229 of the Brazos River Basin
4/27/2015	WQ0004937000	TX0132713	Tarrant		Premium Waters, Inc.	Renewal	no	100,000	west of State Highway 170 & US Highway 277, Tarrant County, TX 76178	From plant site to an unnamed tributary; then to Marshall Branch; then to Lake Turner; then to Marshal Branch; then to Grapevine Lake

Date Received	Permit No.	EPA I.D. No.	County	City	Name of Applicant	Permit Action	Permit Modification?	Permitted Flow (GPD)	WWTP Address/Location	Outfall Path
7/21/2015	WQ0012810001		Tarrant	Newark	Eagle Mountain International Church, Inc.	Renewal	no	10,000	14355 Morris Dido Road, Newark, TX 76071	Located in the drainage basin of Eagle Mountain Reservoir in Segment No. 0809 of the Trinity River Basin
3/28/2016	WQ0010486002	TX0032018	Tarrant	Grapevine	City of Grapevine	Renewal	no	5,750,000	602 Shady Brook Drive, Grapevine, TX 76051	From plant site to Morehead Branch; then to Grapevine Lake
3/31/2016	WQ0013352002	TX0133388	Tarrant	Burleson	Mansfield Independent School District	Renewal	no	20,000	6065 Retta Mansfield Road, Burleson, TX 76028	From plant site to unnamed tributary; then to Valley Branch; then to Walnut Creek; then to Joe Pool Lake
4/6/2016	WQ0013352001		Tarrant	Burleson	Mansfield Independent School District	Renewal	no	12,000	12350 Rendon Road, Burleson, TX 76028	
4/19/2016	WQ0013518001	TX0105872	Tarrant		EMCAD Water and Wastewater, LLC	Renewal	no	96,300	Southwest of FM Rd 1187 & South Hulen Street, 3 miles southwest of FM 1187 & FM Rd 731, Tarrant County, TX 76036	From plant site via a pipe to an unnamed tributary of Deer Creek; then to Deer Creek; then to Village Creek; then to Lake Arlington
4/25/2016	WQ0010494013	TX0047295	Tarrant	Arlington	City of Fort Worth	Renewal	no		4500 Wilma Lane, Arlington, TX 76012	From plant site directly to Lower West Fork Trinity River
5/20/2016	WQ0011183003	TX0023116	Tarrant	Azle	City of Azle	Renewal	no	1,010,000	816 Park Street, Azle, TX, 76020	From plant site via outfall 003; to Reynolds Branch; then to Ash Creek; Then to Eagle Mountain Reservoir and via outfall 004 to an unnamed drainage slough; then to Ash Creek; then to Eagle Mountain Reservoir
5/3/2016	WQ0010612001	TX0066745	Tarrant		St. Francis Village	Renewal	no	85,000	1.5 miles north-northwest of Old Granbury Rd & Saint Francis Village Rd, Tarrant county, 76036	From plant site via pipe to Benbrook Lake
5/3/2016	WQ0014792001	TX0093092	Tarrant	Fort Worth	Benbrook Texas Limited Partnership	Renewal	no	35,000	5130 Ben Day Murrin Road, Lot 841, Fort Worth, TX 76126	From plant site to an unnamed tributary; then to Benbrook Lake

Date Received	Permit No.	EPA I.D. No.	County	City	Name of Applicant	Permit Action	Permit Modification?	Permitted Flow (GPD)	WWTP Address/Location	Outfall Path
9/15/2015	WQ0015342001	TX0136204	Wise	Decatur	City of Decatur	New	no	100,000	158 Private Road 1123, Decatur, TX 76234	Discharged into an unnamed branch; then to Waggoner Branch; then to West Fork Trinity River below Bridgeport Reservoir in Segment No. 0810 of the Trinity River Basin
3/28/2016	WQ0010862001	TX0026689	Wise		City of Runaway Bay	Renewal	no	400,000	2,000 ft. north of US Highway 380 & southwest of the point where US Highway 380 crosses Lake Bridgeport, Wise County, TX 76426	From plant site to Bridgeport Reservoir
5/16/2016	WQ0014306001	TX0124494	Wise		Slidell Independent School District	Renewal	no	20,000	Northeast of FM Rd 455 and County Rd 2822, Wise County, TX 76267	From plant site via pipe to North Hickory Creek; then to Hickory Creek; then to Lewisville Lake in Segment No. 0823 of the Trinity River Basin
5/4/2016	WQ0010701001	TX0024783	Wise		City of Rhome	Renewal	no	100,000	Quail Ridge Drive, northwest of the westbound lanes of State Highway 114 & Burlington Northern Railroad in Wise County, TX 76078	From plant site to an unnamed tributary; then to Elizabeth Creek; then to Denton Creek; Then to Grapevine Lake
5/12/2016	WQ0014339001	TX0057631	Wise	Alvord	City of Alvord	Renewal	no	112,000	south of FM 1655 & Elm Creek, and 0.5 mile southwest of the business district of the City of Alvord, Alvord, TX 76225	From plant site to an unnamed ditch; then to Elm Creek; then to Big Sandy Creek; then to West Fork Trinity River Below Bridgeport Reservoir

Appendix C. 2014 Texas 303(d) List – NCTCOG Regional Planning Area Listed Segments and Associated Impairments

Source: 2014 Texas 303(d) List, TCEQ; 2015

AU_ID	SEG_ID	CATEGORY	IMPAIRMENT
0804_07	0804	5a	dioxin in edible tissue, PCBs in edible tissue
0805_01	0805	5a	dioxin in edible tissue, PCBs in edible tissue
0805_02	0805	5a	dioxin in edible tissue, PCBs in edible tissue
0805_03	0805	5a	bacteria, dioxin in edible tissue, PCBs in edible tissue
0805_04	0805	5a	bacteria, dioxin in edible tissue, PCBs in edible tissue
0805_06	0805	5a	dioxin in edible tissue, PCBs in edible tissue
0806_01	0806	5a	dioxin in edible tissue, PCBs in edible tissue
0806_02	0806	5a	dioxin in edible tissue, PCBs in edible tissue
0808_01	0808	5a	aldrin in fish tissue, dieldrin in edible tissue, PCBs in edible tissue
0829_01	0829	5a	dioxin in edible tissue, PCBs in edible tissue
0829_02	0829	5a	dioxin in edible tissue, PCBs in edible tissue
0829_03	0829	5a	dioxin in edible tissue, PCBs in edible tissue
0841_01	0841	5a	bacteria, dioxin in edible tissue, PCBs in edible tissue
0841_02	0841	5a	bacteria, dioxin in edible tissue, PCBs in edible tissue
0841F_01	0841F	5a	bacteria
0507G_01	0507G	5b	bacteria
0806E_01	0806E	5b	bacteria
0810A_01	0810A	5b	bacteria
0810C_01	0810C	5b	bacteria
0818_09	0818	5b	pH
0818_11	0818	5b	pH
0818_12	0818	5b	pH
0833_03	0833	5b	depressed dissolved oxygen
0833_04	0833	5b	depressed dissolved oxygen

0836B_01	0836B	5b	depressed dissolved oxygen
0838C_01	0838C	5b	bacteria
0841K_01	0841K	5b	bacteria
0841N_01	0841N	5b	bacteria
1204A_01	1204A	5b	bacteria
1221A_01	1221A	5b	bacteria, depressed dissolved oxygen
1221A_02	1221A	5b	bacteria
1223A_01	1223A	5b	bacteria
1226E_01	1226E	5b	bacteria
1226F_01	1226F	5b	bacteria
1226H_01	1226H	5b	bacteria
1226K_01	1226K	5b	bacteria
1226M_01	1226M	5b	bacteria
1227_02	1227	5b	sulfate, total dissolved solids
1255_01	1255	5b	bacteria, excessive algal growth
1255A_01	1255A	5b	bacteria
1255B_01	1255B	5b	bacteria
1255C_01	1255C	5b	bacteria
1255D_01	1255D	5b	bacteria
1255E_01	1255E	5b	bacteria
1255F_01	1255F	5b	bacteria
1255G_01	1255G	5b	bacteria
1255I_01	1255I	5b	bacteria
0306_01	0306	5c	pH
0306_02	0306	5c	pH
0306_03	0306	5c	pH
0507_04	0507	5c	pH

0810_01	0810	5c	bacteria
0814_01	0814	5c	chloride
0814_02	0814	5c	chloride
0814_03	0814	5c	chloride
0814_04	0814	5c	chloride
0819_01	0819	5c	sulfate, total dissolved solids
0820B_01	0820B	5c	bacteria
0821C_01	0821C	5c	bacteria
0821D_01	0821D	5c	bacteria
0826_07	0826	5c	pH
0828A_01	0828A	5c	bacteria
0831_04	0831	5c	depressed dissolved oxygen
0831_05	0831	5c	depressed dissolved oxygen
0833_05	0833	5c	depressed dissolved oxygen
0841V_01	0841V	5c	bacteria
1221F_01	1221F	5c	bacteria
1226A_01	1226A	5c	bacteria
1226B_01	1226B	5c	depressed dissolved oxygen
1255_02	1255	5c	bacteria, depressed dissolved oxygen, excessive algal growth

Appendix D. January 2015 – December 2015 Discharge Monitoring Report Data, NCTCOG Regional Planning Area

Source: TCEQ, 2015; EPA Enforcement and Compliance History Online (ECHO) Facilities Search, 2016, Accessed by NCTCOG: March 2016

*Facility Design Flow may reflect old design flows for some facilities

EPA ID No. (NPDES Permit No.)	TPDES Permit No.	Facility Type	Permitted Facility	County	Facility Design Flow* (MGD)	Outfall	Annual Average Flow (MGD)	Annual Average of Daily Maximum Flow (MGD)	Annual Average 2 Hour Peak Flow (gal/min)	Average of Annual Average (MGD)	Current Permit Issue Date	Current Permit Expiration Date
TX0026808	10039001	Minor	City of Blue Ridge WWTP	Collin	0.14	001A	0.0504	0.092	No Data	No Data	6/12/2014	10/1/2018
TX0023272	14246001	Minor	City of Celina WWTP	Collin	0.5	001A	0.5306	1.535	No Data	No Data	2/24/2014	10/1/2016
TX0024988	11451001	Minor	Seis Lagos WWTP	Collin	0.25	001A	0.1766	0.4518	No Data	No Data	10/6/2011	10/1/2016
TX0027502	10887001	Minor	City of Josephine WWTP	Collin	0.07	001A	0.051075	0.12184	No Data	No Data	3/4/2011	3/1/2016
TX0027723	10172002	Minor	Cottonwood Creek WWTP	Collin	0.3	001A	0.18683	0.27091	No Data	No Data	10/20/2011	10/1/2016
TX0056677	11283001	Minor	Slayter Creek WWTP	Collin	0.25	001A	No Discharge	No Discharge	No Data	No Data	7/11/2012	10/1/2016
					0.5	002A	0.44106	0.81883	No Data	No Data		
TX0076091	10442001	Minor	Farmersville WWTP	Collin	0.255	001A	No Discharge	No Discharge	No Data	No Data	10/28/2011	10/1/2016
TX0103497	10442002	Minor	Farmersville WWTP Unit 2	Collin	0.53	001A	0.51618	1.4089	No Data	No Data	10/31/2011	10/1/2016
TX0127345	14577001	Minor	Bear Creek WWTP	Collin	0.25	001A	0.15041	0.29458	No Data	No Data	9/6/2013	10/1/2016
TX0135020	11516001	Minor	CHM Park WWTP	Collin	0.025	001A	0.017	0.0335	No Data	No Data	10/9/2014	10/1/2017
TX0057959	12051001	Minor	Collin Park Marina WWTP	Collin	0.02	001A	0.00152	0.00256	No Data	No Data	10/4/2011	10/1/2016
TX0002143	10481001	Minor	North Texas MWD WWTF	Collin	0.15	001A	No Discharge	No Discharge	No Data	No Data	5/21/2014	10/1/2016
					0.2	002A	0.01	0.01	No Data	No Data		
					0.18	003A	No Discharge	No Discharge	No Data	No Data		
					0.16	004A	0.00583	0.03	No Data	No Data		

EPA ID No. (NPDES Permit No.)	TPDES Permit No.	Facility Type	Permitted Facility	County	Facility Design Flow* (MGD)	Outfall	Annual Average Flow (MGD)	Annual Average of Daily Maximum Flow (MGD)	Annual Average 2 Hour Peak Flow (gal/min)	Average of Annual Average (MGD)	Current Permit Issue Date	Current Permit Expiration Date
					0.8	005A	No Discharge	No Discharge	No Data	No Data		
					0.2	006A	No Discharge	No Discharge	No Data	No Data		
					0.2	007A	0.15	0.15	No Data	No Data		
					1.89	101A	0.3868	No Data	No Data	No Data		
TX0047911	10363001	Major	North Texas Municipal Water District - Rowlett Creek WWTP	Collin	24	001A	18.4409	37.8714	29187.917	14.89	12/19/2012	10/1/2016
TX0088633	12446001	Major	Wilson Creek Regional WWTF	Collin	56	001A	55.484917	84.63725	77435.75	49.8346	9/11/2014	10/1/2016
TX0025950	10384001	Major	Wylie WWTP	Collin	2	001A	No Discharge	No Discharge	No Discharge	No Discharge	9/30/2008	10/1/2011
TX0022802	10303001	Major	Central Regional WWTF	Dallas	162	001A	163.761	207.109	161809.42	145.0418	11/2/2011	
TX0022811	10984001	Major	Trinity River Authority of TX - Ten Mile Creek WWTP	Dallas	24	001A	19.18366	37.67458	28967.166	15.709	5/22/2013	12/1/2016
TX0023931	10257001	Major	Floyd Branch Regional WWTP	Dallas	4.75	001A	2.89	5.37167	5072.636	2.3566	2/17/2012	9/1/2016
TX0024678	10090001	Major	City of Garland - Duck Creek WWTP	Dallas	30	001A	17.2246	37.90388	17653.3	13.0483	10/1/2012	
TX0047431	10221001	Major	South Mesquite Creek WWTP	Dallas	33	001A	20.81625	40.65233	34584.167	17.88	2/24/2012	10/1/2016
TX0047830	10060001	Major	Central WWTF	Dallas	150	001A	114.425	180.38333	133573.31	100.316	8/13/2012	12/1/2016
TX0047848	10060006	Major	Southside WWTR	Dallas	110	001A	77.03333	100.9416	77905.167	60.391	3/17/2015	12/1/2019
TX0123561	14216001	Major	Muddy Creek Regional WWTP	Dallas	10	001B	7.6996	17.89541	13437.727	6.38036	12/2/2015	10/1/2019
TX0103276	13434001	Minor	City of Hackberry WWTP	Denton	0.13	001A	0.2856	0.46318	No Data	No Data	2/28/2014	10/1/2016

EPA ID No. (NPDES Permit No.)	TPDES Permit No.	Facility Type	Permitted Facility	County	Facility Design Flow* (MGD)	Outfall	Annual Average Flow (MGD)	Annual Average of Daily Maximum Flow (MGD)	Annual Average 2 Hour Peak Flow (gal/min)	Average of Annual Average (MGD)	Current Permit Issue Date	Current Permit Expiration Date
TX0026565	10903001	Minor	Town of Lakewood Village WWTF	Denton	0.047	001A	0.0573	0.1315	No Data	No Data	12/22/2011	10/1/2016
TX0056588	13647001	Minor	Aubrey WWTF	Denton	0.4	001A	0.30875	0.6165	No Data	No Data	10/5/2011	9/1/2016
TX0022403	14372001	Minor	City of Sanger WWTP	Denton	0.98	001A	0.66365	1.0345	No Data	No Data	9/11/2016	10/1/2016
TX0022501	11312001	Minor	City of Justin WWTP	Denton	0.4	001A	0.2533	0.4625	No Data	No Data	10/24/2013	9/1/2016
TX0022659	10361001	Minor	City of Pilot Point WWTP	Denton	0.735	001A	0.3783	1.4125	No Data	No Data	12/16/2011	9/1/2016
TX0024198	10729001	Minor	City of Krum WWTF	Denton	0.137	001A	0.03176	0.17511	No Data	No Data	7/25/2012	10/1/2016
TX0119849	10027004	Minor	Robson Ranch WWTP	Denton	0.25	001A	0.22425	0.33658	No Data	No Data	6/20/2012	9/1/2016
TX0123862	11287003	Minor	Town of Ponder WWTP	Denton	0.225	001A	0.15675	0.344	No Data	No Data	9/28/2011	9/1/2016
TX0124745	14323001	Minor	Peninsula Reg Water Rec Plant	Denton	0.94	001A	0.32625	0.52175	No Data	No Data	10/10/2011	10/1/2016
TX0123901	14245001	Major	Panther Creek WWTP	Denton	5	001B	5.10308	7.42508	8870.75	4.64275	5/23/2015	10/1/2016
TX0020354	10698001	Major	Lakeview Reg Water Rec Plant	Denton	5.5	001A	4.9574	7.77	6954.416	4.293	12/16/2011	10/1/2016
TX0020711	11321001	Major	Town of Flower Mound WWTP	Denton	10	001A	5.30516	8.5073	9418.5608	7.7541	11/4/2011	9/1/2016
TX0047180	10027003	Major	Pecan Creek Water Reclamation Plant	Denton	12	001A	16.4416	24.8083	21809.66	14.735	6/28/2013	10/1/2016
TX0052892	10662001	Major	Prairie Creek WWTP	Denton	12	001A	10.9068	17.114	7249	9.61375	1/8/2015	10/1/2017
TX0053112	11570001	Major	Stewart Creek WWTP	Denton	3.39	001B	2.81916	4.2333	4273.6983	2.87666	1/16/2013	10/1/2016
TX0053783	1160001	Major	Town of Little Elm WWTF	Denton	2	001A	2.88458	4.58116	4333.08	2.633	12/29/2011	10/1/2016

EPA ID No. (NPDES Permit No.)	TPDES Permit No.	Facility Type	Permitted Facility	County	Facility Design Flow* (MGD)	Outfall	Annual Average Flow (MGD)	Annual Average of Daily Maximum Flow (MGD)	Annual Average 2 Hour Peak Flow (gal/min)	Average of Annual Average (MGD)	Current Permit Issue Date	Current Permit Expiration Date
TX0055735	11593001	Major	Trophy Club MUD 1	Denton	1.4	001A	0.9369	1.45675	1324.5198	0.8908	11/29/2011	9/1/2016
TX0103501	14008001	Major	Stewart Creek West WWTP	Denton	5	001A	4.229	7.0904	6258.5	3.8035	10/8/2012	10/1/2016
TX0104957	13457001	Major	Denton Creek Regional WWTF	Denton	5	001A	4.64375	9.43016	9091.333	4.28175	4/27/2012	9/1/2016
						002A	2.21708	8.79375	8281.25	1.8638		
TX0123781	10698002	Major	Riverbend Reg Water Reclamation Facility	Denton	0.5	001A	0.33825	0.8	831.75	0.38	10/21/2014	10/1/2016
					1.5	002A	1.5715	2.7859	2658.166	1.1366		
TX0026581	13675001	Minor	City of Bardwell WWTP	Ellis	0.08	001A	0.0176	0.03633	No Data	No Data	12/14/2012	12/1/2016
TX0026603	14795001	Minor	Palmer WWTF	Ellis	0.226	001A	0.2169	0.7567	No Data	No Data	1/30/2012	12/1/2016
TX0053571	10431001	Minor	City of Maypearl WWTP	Ellis	0.1	001A	0.11175	0.57375	No Data	No Data	9/5/2012	12/1/2016
TX0020290	13937001	Minor	City of Milford WWTP	Ellis	0.06	001A	0.00783	0.0114	No Data	No Data	12/19/2011	12/1/2016
					0.06	002A	0.01733	0.03008	No Data	No Data		
					0.12	101A	0.02516	0.0415	No Data	No Data		
TX0020567	13981001	Minor	Avalon WWTF	Ellis	0.025	001A	0.01294	0.017925	No Data	No Data	6/20/2014	12/1/2016
TX0123056	14195001	Minor	City of Italy WWTF	Ellis	0.65	001A	0.2935	0.621	No Data	No Data		12/1/2015
TX0126616	13904001	Minor	Camp Hobitzelle WWTF	Ellis	0.05	001A	0.05475	0.15275	No Data	No Data	3/6/2012	12/1/2016
TX0025011	10348001	Major	Mountain Creek Reg WWTF	Ellis	0.9	001A	No Discharge	No Discharge	No Data	No Data	5/11/2012	9/1/2016
						002A	2.14916	4.749	4134.5833	1.78625		
TX0027537	10379007	Major	City of Waxahachie WWTP	Ellis	8	001A	5.209	11.96475	11380	4.1419	10/31/2012	12/1/2016

EPA ID No. (NPDES Permit No.)	TPDES Permit No.	Facility Type	Permitted Facility	County	Facility Design Flow* (MGD)	Outfall	Annual Average Flow (MGD)	Annual Average of Daily Maximum Flow (MGD)	Annual Average 2 Hour Peak Flow (gal/min)	Average of Annual Average (MGD)	Current Permit Issue Date	Current Permit Expiration Date
TX0047261	10443002	Major	Oak Grove WWTF	Ellis	3.1	001A	1.92916	3.7133	4088.67	1.7	12/22/2011	12/1/2016
TX0104345	13415001	Major	Red Oak Creek Regional WWTF	Ellis	4.6	001B	4.56533	7.97741	6156.4166	3.7019	6/30/2015	12/1/2017
TX0054348	10405001	Minor	Dublin WWTF	Erath	0.45	001A	0.2328	0.635	No Data	No Data	12/3/2014	3/1/2019
TX0024228	1029001	Major	Stephenville WWTF	Erath	1.85	001A	1.83975	3.989	4094.3946	1.58175	3/7/2014	12/1/2018
						002A	0.113417	0.19683	249.5	0.24575		
TX0027685	14233001	Minor	City of Tolar WWTF	Hood	0.1	001A	0.0651	0.122	No Data	No Data	3/6/2014	3/1/2019
TX0105155	14212001	Minor	Acton MUD - Pecan Plantation	Hood	0.82	001A	0.2665	0.5991	No Data	No Data	5/5/2014	5/1/2019
TX0105163	14211001	Minor	Decordova Bend Estates WWTF	Hood	0.6	001A	0.378	0.8633	No Data	No Data	5/30/2014	5/1/2019
TX0111333	13590001	Minor	City of Lipan WWTF	Hood	0.099	001A	0.0188	0.0094	No Data	No Data	7/8/2014	5/1/2019
TX0129640	14805001	Minor	Cresson WWTF 1	Hood	0.05	001A	0.0093	0.0111	No Data	No Data	5/21/2015	5/1/2019
TX0105210	10178002	Major	City of Granbury WWTF	Hood	2	001A	0.9674	1.3225	2168.5	0.52558	6/27/2014	5/1/2019
TX0022331	13725001	Minor	City of Quinlan WWTF	Hunt	0.3	001A	0.304	1.142	No Data	No Data	4/11/2011	3/1/2016
TX0023558	10383001	Minor	City of Wolfe City WWTF	Hunt	0.195	001A	0.0795	0.127	No Data	No Data	3/1/2011	1/1/2016
TX0024180	10146001	Minor	City of Celeste WWTF	Hunt	0.0948	001A	0.0317	0.197	No Data	No Data	4/11/2011	3/1/2016
TX0024970	10425001	Minor	City of Caddo Mills WWTF	Hunt	0.2	001A	No Discharge	No Discharge	No Data	No Data	5/13/2011	3/1/2016
TX0100021	10760001	Minor	City of Lone Oak WWTF	Hunt	0.06	001A	0.0488	0.059	No Data	No Data	8/20/2013	3/1/2016
TX0072508	13791001	Minor	City of Campbell WWTF	Hunt	0.116	001A	0.039	0.087	No Data	No Data	3/7/2011	3/1/2016

EPA ID No. (NPDES Permit No.)	TPDES Permit No.	Facility Type	Permitted Facility	County	Facility Design Flow* (MGD)	Outfall	Annual Average Flow (MGD)	Annual Average of Daily Maximum Flow (MGD)	Annual Average 2 Hour Peak Flow (gal/min)	Average of Annual Average (MGD)	Current Permit Issue Date	Current Permit Expiration Date
TX0064513	14344001	Minor	City of West Tawakoni	Hunt	0.3	001A	0.149	0.3	No Data	No Data	8/15/2011	3/1/2016
TX0126691	14522001	Minor	City of Hawk Cove WWTP	Hunt	0.2	001A	0.032	0.114	No Data	No Data	1/30/2012	3/1/2016
TX0128392	10425002	Minor	City of Caddo Mills WWTP 2	Hunt	0.375	001A	0.1543	0.411	No Data	No Data	11/4/2011	3/1/2016
TX0020591	10555001	Major	City of Commerce WWTP	Hunt	2	001A	0.9773	1.785	1212.25	0.87683	5/24/2011	1/1/2016
TX0055611	10485002	Major	Greenville Wastewater Reclamation Center	Hunt	4.23	001A	3.7922	5.757	5476.25	3.388	1/22/2014	3/1/2016
TX0128490	14680001	Minor	RV Ranch WWTP	Johnson	0.048	001A	0.01879	0.04068	No Data	No Data	8/31/2015	9/1/2018
TX0058360	14411001	Minor	Blue Water Oaks WWTP	Johnson	0.03	001A	0.0072	0.020508	No Data	No Data	11/26/2013	12/1/2016
TX0024503	10180001	Minor	City of Grandview WWTF	Johnson	0.3	001A	0.0854	0.15754	No Data	No Data	12/5/2011	12/1/2016
TX0104558	14887001	Minor	City of Godley WWTP	Johnson	0.12	001A	0.09908	0.15316	No Data	No Data	10/11/2013	3/1/2016
TX0106291	10611002	Minor	City of Keene WWTP	Johnson	0.83	001A	0.4	0.67051	No Data	No Data	2/9/2012	12/1/2016
TX0124923	14350001	Minor	Johnson County Special Utility District WWTP	Johnson	0.7	001A	0.44892	0.705916	No Data	No Data	9/2/2011	9/1/2016
TX0126179	10547002	Minor	City of Alvarado WWTP	Johnson	0.6	001A	0.3501	0.71365	No Data	No Data	8/7/2012	12/1/2016
TX0047155	10006001	Major	City of Cleburne WWTP	Johnson	6.25	001A	5.40491	10.6893	8091.7258	4.08925	4/24/2015	4/24/2018
						002A	No Discharge	No Discharge	No Discharge	No Discharge		
						003A	No Discharge	No Discharge	No Discharge	No Discharge		

EPA ID No. (NPDES Permit No.)	TPDES Permit No.	Facility Type	Permitted Facility	County	Facility Design Flow* (MGD)	Outfall	Annual Average Flow (MGD)	Annual Average of Daily Maximum Flow (MGD)	Annual Average 2 Hour Peak Flow (gal/min)	Average of Annual Average (MGD)	Current Permit Issue Date	Current Permit Expiration Date
TX0023396	10695001	Minor	City of Kemp WWTP	Kaufman	0.35	001A	0.154967	0.42583	No Data	No Data	3/28/2013	12/1/2016
TX0024929	10834001	Minor	Crandall WWTP	Kaufman	0.9	001A	0.46583	0.99758	No Data	No Data	10/10/2012	10/1/2016
TX0052949	10579001	Minor	City of Mabank WWTF	Kaufman	0.4	001A	0.276167	0.54225	No Data	No Data	12/2/2011	12/1/2016
TX0022527	10747001	Major	Kings Creek WWTF	Kaufman	3	001A	2.4678	5.495	4501.583	2.1019	12/28/2012	12/1/2016
TX0079391	12114001	Major	City of Kaufman WWTP	Kaufman	1.2	001A	0.6456	1.0515	1145.3333	0.58066	1/12/2012	12/1/2016
TX0022420	10444001	Minor	City of Frost MWWTF	Navarro	0.05	001A	0.02088	0.03925	No Data	No Data	12/22/2011	12/1/2016
TX0023027	10745001	Minor	City of Kerens WWTF	Navarro	0.21	001A	0.17136	0.22543	No Data	No Data	3/5/2012	2/1/2017
TX0053449	10026001	Minor	City of Dawson	Navarro	0.13	001A	0.067	0.17958	No Data	No Data	9/2/2011	9/1/2016
TX0073032	11864001	Minor	City of Angus WWTP	Navarro	0.012	001A	0.009908	0.0460167	No Data	No Data	9/28/2011	9/1/2016
TX0075418	11606001	Minor	Blooming Grove WWTP	Navarro	0.1	001A	0.038975	0.21566	No Data	No Data	12/16/2011	9/1/2016
TX0092223	12616001	Minor	City of Goodlow WWTP	Navarro	0.06	001A	No Discharge	No Discharge	No Data	No Data	6/28/2012	2/1/2017
TX0056731	10402003	Major	City of Corsicana WWTP 2	Navarro	4.95	001A	3.1993	6.29525	5396.3333	2.838333	12/23/2013	9/1/2016
						002A	0.3389167	0.094316	1203.9167	0.33725		
TX0101664	11698001	Minor	Palo Pinto County WWTP	Palo Pinto	0.05	001A	0.016766	0.02719	No Data	No Data	9/2/2014	5/1/2019
TX0104752	10722001	Minor	City of Graford WWTP	Palo Pinto	0.111	001A	0.049207	0.111948	No Data	No Data	7/99/2013	5/1/2016
TX0047414	10585001	Major	Pollard Creek WWTP	Palo Pinto	2.35	001A	1.51733	3.429416	2604.1667	1.43308	5/7/2014	5/1/2019
TX0027120	10847001	Minor	City of Aledo WWTP	Parker	0.335	001A	0.304727	0.591273	No Data	No Data	1/19/2012	9/7/2016

EPA ID No. (NPDES Permit No.)	TPDES Permit No.	Facility Type	Permitted Facility	County	Facility Design Flow* (MGD)	Outfall	Annual Average Flow (MGD)	Annual Average of Daily Maximum Flow (MGD)	Annual Average 2 Hour Peak Flow (gal/min)	Average of Annual Average (MGD)	Current Permit Issue Date	Current Permit Expiration Date
TX0032646	10649001	Minor	City of Springtown WWTP	Parker	0.48	001A	0.350583	0.725167	No Data	No Data	12/2/2011	12/1/2016
TX0099732	13834001	Minor	Willow Park WWTP	Parker	0.3	001A	0.364724	0.418558	No Data	No Data	12/5/2011	9/1/2016
TX0023779	10585004	Major	Willow Creek WWTP	Parker	1.26	001A	0.209167	0.9045	50.3167	0.2421667	5/29/2014	5/1/2019
TX0047724	10380002	Major	City of Weatherford WWTP	Parker	4.5	001A	2.287	3.3458	3275.4166	2.178166	5/30/2012	9/1/2016
TX0021687	10366001	Minor	Royse City WWTF	Rockwall	0.5	001A	No Discharge	No Discharge	No Data	No Data	4/14/2011	3/1/2016
TX0126110	14469001	Major	Sabine Creek Regional WWTP	Rockwall	3	001A	1.52016	3.2243	3147.5	1.27308	7/25/2012	3/1/2016
TX0022241	10262001	Major	Squabble Creek WWTF	Rockwall	1.2	001A	0.839583	1.913	2082.75	0.843333	10/12/2012	10/1/2016
TX0078565	12047001	Major	Buffalo Creek WWTP	Rockwall	2.25	001A	1.5125	2.64516	2142.25	1.23975	11/20/2012	10/1/2016
TX0131911	48770001	Minor	Somervell County WTP	Somervell	No Data	001A	0.0629	0.0878	No Data	No Data	6/12/2014	3/1/2019
TX0033316	10177001	Minor	City of Glen Rose WWTP	Somervell	0.6	001A	0.2932	0.6238	No Data	No Data	5/21/2014	3/1/2019
TX0047295	10494013	Major	Village Creek WWTF	Tarrant	166	001A	124	208.33	164547.38	107.51916	12/29/2011	9/1/2016
						101A	17.2458	28.69416	No Data	No Data		
TX0032018	10486002	Major	Peach Street WWTP	Tarrant	5.75	001A	3.86575	5.31175	5378.1667	3.350833	5/5/2014	9/1/2016
TX0023116	11183003	Major	Ash Creek WWTP	Tarrant	0.941	003A	0.851583	1.46933	1038.8369	0.8336667	12/12/2013	12/1/2016
						004A	0.271083	0.92216	1100.4353	0.26291		
						101A	No Data	No Data	2128.6294	1.03267		
TX0057231	11626001	Minor	City of Newark WWTF	Wise	0.1	002A	0.070167	0.1645	No Data	No Data	12/30/2011	12/1/2016

EPA ID No. (NPDES Permit No.)	TPDES Permit No.	Facility Type	Permitted Facility	County	Facility Design Flow* (MGD)	Outfall	Annual Average Flow (MGD)	Annual Average of Daily Maximum Flow (MGD)	Annual Average 2 Hour Peak Flow (gal/min)	Average of Annual Average (MGD)	Current Permit Issue Date	Current Permit Expiration Date
TX0057631	14339001	Minor	City of Alvord WWTP	Wise	0.112	001A	0.076	0.159	No Data	No Data	6/6/2014	12/1/2016
TX0118621	10701002	Minor	Westside WWTF	Wise	0.15	001A	0.105833	0.25425	No Data	No Data	12/13/2013	12/1/2016
TX0026689	10862001	Minor	City of Runaway Bay WWTP	Wise	0.4	001A	0.147583	0.367167	No Data	No Data	1/22/2014	12/1/2016
TX0022632	10131001	Minor	City of Boyd WWTP	Wise	0.12	001A	0.1475	0.317167	No Data	No Data	12/2/2011	12/1/2016
TX0023787	10023001	Minor	Chico WWTF	Wise	0.076	001A	0.109	0.24683	No Data	No Data	8/31/2013	12/1/2016
TX0024783	10701001	Minor	Eastside WWTF	Wise	0.08	001A	0.121667	0.272833	No Data	No Data	12/19/2013	9/1/2016
TX0024911	10009001	Major	City of Decatur WWTP	Wise	1.2	001A	0.835833	1.135083	857.58333	0.7153333	12/16/2011	12/1/2016

Appendix E. NCTCOG Methods for Calculating Discharge Monitoring Report Data and Attribute Descriptions

Source: NCTCOG

Wastewater treatment plants and facilities in the NCTCOG region were researched and identified using the EPA Enforcement and Compliance History Online (ECHO). <https://echo.epa.gov/facilities/facility-search>

EPA ECHO Search Criteria

Type: Water

Geographic Location: Texas, by individual county (NCTCOG 16-County Regional Planning Area)

Facility Characteristics:

Name must contain "WWTP; WWTF" (to capture all permits)

Permit Status: Effective

Permit Type: NPDES Individual Permit

Wastewater Treatment Plants/Facilities Standard Industrial Classification (SIC) Code: 4952, Sewerage Systems

Output information from the EPA ECHO Facilities Search was cross referenced with the Discharge Monitoring Report data received from TCEQ. Daily Average Flow, Daily Maximum Flow, 2-hour Peak Flow, and Annual Average Flow measurements were averaged to generate the data found in the report table (columns described below).

Table Columns

- » **EPA ID No.** – The National Pollutant Discharge Elimination System (NPDES) permit number
- » **TPDES Permit No.** – The Texas Pollutant Discharge Elimination System (TDPES) permit number
- » **Facility Type** – Major/Minor; a design flow of < or = 1 MGD is issued a minor NPDES permit
- » **Permitted Facility** – The name of the permitted facility
- » **County** – Location
- » **Facility Design Flow** – Flow permitted facility is designed to accommodate (MGD) (source: EPA Echo Facilities Search)
- » **Outfall** – Designated outfall at the permitted facility
- » **Annual Average Flow (MGD)** – Calculated by adding up all the daily average flow measurements and dividing by the number of measurements total.
- » **Annual Average Daily Maximum Flow (MGD)** – Calculated by adding up all the Daily Maximum Flow measurements and dividing by the number of measurements total.
- » **Annual Average 2-hour Peak Flow (gal/min)** – Calculated by adding up all the 2-hour Peak Flow measurements and dividing by the number of measurements total.
- » **Average of Annual Average (MGD)** – Calculated by adding up all the Annual Average measurements and dividing by the number of measurements total.

*If the table said Not Received for a measurement, that measurement is not included and the sum will be divided by the number of received measurements only (example 1).

*If the table indicates NODI=C for a measurement (meaning No Discharge; source: TCEQ), that measurement is counted as received and the sum is divided by all received measurements (example 2).

Example 1: All the Daily Av (MGD) measurements would be added up and then divided by 10 instead of 12 to find the Annual Average Flow because 2 measurements were not received.

Monitoring Period	County	Outfall	Parameter	Reported Measure			
				.28 DAILY AV (MGD)			
1/31/2015	Collin	001A	Flow, in conduit or thru treatment plant	0.0437			
2/28/2015	Collin	001A	Flow, in conduit or thru treatment plant	Not Received			
3/31/2015	Collin	001A	Flow, in conduit or thru treatment plant	0.051			
4/30/2015	Collin	001A	Flow, in conduit or thru treatment plant	0.067			
5/31/2015	Collin	001A	Flow, in conduit or thru treatment plant	0.0836			
6/30/2015	Collin	001A	Flow, in conduit or thru treatment plant	0.0708			
7/31/2015	Collin	001A	Flow, in conduit or thru treatment plant	Not Received			
8/31/2015	Collin	001A	Flow, in conduit or thru treatment plant	0.0369			
9/30/2015	Collin	001A	Flow, in conduit or thru treatment plant	0.035			
10/31/2015	Collin	001A	Flow, in conduit or thru treatment plant	0.028			
11/30/2015	Collin	001A	Flow, in conduit or thru treatment plant	0.032			
12/31/2015	Collin	001A	Flow, in conduit or thru treatment plant	0.056			

Example 2: All the Daily Av (MGD) measurements would be added up and divided by 12 to find the Annual Average Flow because NODI=C represents a received measurement of No Discharge, instead of a measurement absence.

Monitoring Period	County	Outfall	Parameter	Reported Measure			
				.111 DAILY AV (MGD)			
1/31/2015	Palo Pinto	001A	Flow, in conduit or thru treatment plant	0.022442			
2/28/2015	Palo Pinto	001A	Flow, in conduit or thru treatment plant	0.020059			
3/31/2015	Palo Pinto	001A	Flow, in conduit or thru treatment plant	0.028224			
4/30/2015	Palo Pinto	001A	Flow, in conduit or thru treatment plant	0.019886			
5/31/2015	Palo Pinto	001A	Flow, in conduit or thru treatment plant	0.085666			
6/30/2015	Palo Pinto	001A	Flow, in conduit or thru treatment plant	0.06582			
7/31/2015	Palo Pinto	001A	Flow, in conduit or thru treatment plant	0.023645			
8/31/2015	Palo Pinto	001A	Flow, in conduit or thru treatment plant	NODI=C			
9/30/2015	Palo Pinto	001A	Flow, in conduit or thru treatment plant	NODI=C			
10/31/2015	Palo Pinto	001A	Flow, in conduit or thru treatment plant	0.17986			
11/30/2015	Palo Pinto	001A	Flow, in conduit or thru treatment plant	0.061358			
12/31/2015	Palo Pinto	001A	Flow, in conduit or thru treatment plant	0.083524			

Appendix F. Water Districts in the North Central Texas Regional Planning Area by County

Source: TCEQ, 2016

Water District Name	Type	County
Frisco Square Management District	MMD	Collin
Lavon Special Utility District	SUD	Collin
McKinney MUD 1 of Collin County	MUD	Collin
McKinney MUD 2 of Collin County	MUD	Collin
Collin County MUD 1	MUD	Collin
Trinity River Authority of Texas	RA	Dallas
Irving Flood Control District Section 1	LID	Dallas
Irving Flood Control District Section 3	LID	Dallas
Valwood Improvement Authority	LID	Dallas
Dallas County Utility & Reclamation District	RA	Dallas
Northwest Dallas County FCD	LID	Dallas
Dallas County Improvement District	MUD	Dallas
North Oak Cliff Municipal Management District	MMD	Dallas
Rockett SUD	SUD	Dallas
Southwest Denton County Road & Utility District	MUD	Denton
Prosper Management District 1	MMD	Denton
Canyon Falls WCID 2	WCID	Denton
Valencia on the Lake WCID	WCID	Denton
Denton County LID 1	LID	Denton
Denton County MUD 4	MUD	Denton
Alpha Ranch WCID	WCID	Denton
Denton County FWSD 1-D	FWSD	Denton
Denton County MUD 6	MUD	Denton
Four Seasons Ranch MUD 1	MUD	Denton
Belmont FWSD 1 of Denton County	FWSD	Denton
Canyon Falls MUD 1	MUD	Denton
Tradition MUD 2 of Denton County	MUD	Denton

Tradition MUD 1 of Denton County	MUD	Denton
Lakeside Utility & Reclamation District	MUD	Denton
Denton County MUD 7	MUD	Denton
Denton County FWSD 7	FWSD	Denton
Smiley Road WCID	WCID	Denton
Belmont FWSD 2 of Denton County	FWSD	Denton
Upper Trinity Regional Water District	OTH	Denton
Denton County FWSD 1-F	FWSD	Denton
Meadow Road Improvement District	WID	Denton
Denton County FWSD 11-C	FWSD	Denton
Denton County FWSD 10	WCID	Denton
Denton County FWSD 11-A	FWSD	Denton
Denton County FWSD 8-A	WCID	Denton
Denton County FWSD 2-A	WCID	Denton
Denton County FWSD 6	FWSD	Denton
Oak Point WCID 4	WCID	Denton
Denton County Development District 4	OTH	Denton
Denton County FWSD 1-B	FWSD	Denton
Ellis County LID 4	LID	Ellis
Ellis County FWSD 3	FWSD	Ellis
Ellis County LID 3	LID	Ellis
Ellis County FWSD 2	FWSD	Ellis
Ellis County FWSD 1	FWSD	Ellis
Buena Vista-Bethel SUD	SUD	Ellis
Mountain Peak SUD	SUD	Ellis
Ellis County Drainage District 1	DD	Ellis
Ellis County MUD 1	MUD	Ellis
Erath County Development District 1	OTH	Erath
Acton MUD	MUD	Hood
Hood County Grandbury MUD 1	MUD	Hood
Lake Granbury Water Improvement District	MUD	Hood
Denton County FWSD 2-B	WCID	Hood

North Hunt SUD	SUD	Hunt
Sunrise MUD of Hunt County	MUD	Hunt
Union Valley Ranch MUD of Hunt County	MUD	Hunt
Caddo Basin SUD	SUD	Hunt
Johnson County FWSD 2	FWSD	Johnson
Johnson County SUD	SUD	Johnson
Las Lomas MUD 3	MUD	Kaufman
Kaufman County Parks Improvement District	OTH	Kaufman
Kaufman County LID 1	LID	Kaufman
Moore Farm WCID 1	WCID	Kaufman
Kaufman County MUD 5	MUD	Kaufman
Kaufman County MUD 6	MUD	Kaufman
Kaufman County FWSD 1A	FWSD	Kaufman
Twin Lakes MUD 1 of Kaufman County	MUD	Kaufman
Triple Creek Municipal Management District	MMD	Kaufman
Fairfields MUD	MUD	Kaufman
Kaufman County FWSD 1D	FWSD	Kaufman
Polo Ridge FWSD	FWSD	Kaufman
Kaufman County FWSD 2	FWSD	Kaufman
Las Lomas MUD 2	MUD	Kaufman
Kaufman County FWSD 1B	FWSD	Kaufman
Kaufman County MUD 14	MUD	Kaufman
Kaufman County MUD 2	MUD	Kaufman
Kaufman County MUD 10	MUD	Kaufman
Kaufman County MUD 11	MUD	Kaufman
Kaufman County MUD 12	MUD	Kaufman
Navarro County LID 11	LID	Navarro
Navarro County LID 10	LID	Navarro
Palo Pinto County WCID 1	WCID	Palo Pinto
Sportsmans World MUD	MUD	Palo Pinto
Palo Pinto County Municipal Water District 1	OTH	Palo Pinto
Morningstar Ranch MUD 1 of Parker County	MUD	Parker

Morningstar Ranch MUD 2 of Parker County	MUD	Parker
Lake Weatherford MUD 1	MUD	Parker
Lake Weatherford MUD 2	MUD	Parker
Rockwall County MUD 8	MUD	Rockwall
Rockwall County MUD 9	MUD	Rockwall
Tarrant Regional Water District	RA	Tarrant
Circle T MUD 2	MUD	Tarrant
Live Oak Creek MUD 1 of Tarrant County	MUD	Tarrant
Viridian Municipal Management District	MMD	Tarrant
Circle T MUD 1	MUD	Tarrant
Great Southwest Improvement District	OTH	Tarrant
Benbrook Water Authority	OTH	Tarrant
Tarrant County FWSD 1	FWSD	Tarrant
Circle T MUD 3	MUD	Tarrant
Rolling V Ranch WCID 1 of Wise County	WCID	Wise

Appendix G. North Central Texas Water Resource Report Questionnaire

Source: NCTCOG

The North Central Texas Council of Governments (NCTCOG) is seeking your input related to water quality in North Central Texas via the following questionnaire.

The focus of the questionnaire will be on, but not limited to: what communities are, or will be doing, related to water resources; water resources programs implemented in the region; addressing concerns of future water management and; establishing regional priorities as they relate to water quality and quantity. The results of the questionnaire will assist NCTCOG in the development of the first North Central Texas Water Resources Report, which will be a part of the 2016 Water Quality Management Plan Update.

The report will be a public friendly document that incorporates the questionnaire data to promote regional collaboration related to water quality efforts. As a part of this report, NCTCOG will be highlighting “**Good Partners in Water Resources**” and case studies based on input received from this questionnaire. This will establish baseline regional information on successful programs going on throughout North Central Texas. This document will be a resource to the region's local governments, entities, and communities about water quality from a regional perspective.

Who can take the questionnaire? More than 1 questionnaire may be submitted from each entity. Please have the staff most familiar with your water resources complete this questionnaire. (If necessary, please coordinate between departments).

Questions? Please call or email Rachel Evans with NCTCOG at 817-695-9223 or Revans@nctcog.org. Thank you for your assistance.

PREPARED IN COOPERATION WITH THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

The preparation of this questionnaire was financed through funding from the Texas Commission on Environmental Quality.

***1. Contact Information**

Name:

Title:

Entity:

Phone Number:

Email Address:

May we contact you with follow up questions? (Y/N)

2. Please review the following programs and check all that your entity provides or participates in:

- Toilet Rebate/Incentive Program
- Rain Barrel Rebate/Incentive Program
- Convert Irrigation System Rebate/Incentive Program
- Water-Wise Garden and Lawn Rebate/Incentive Program
- Shower Head Rebate/Incentive Program
- Fats, Oils and Grease (FOG) Program
- Water Education and Outreach Program
- Texas Smartscape Program
- Watershed Protection Plan
- Integrated Stormwater Management Program (iSWM)
- Sanitary Sewer Overflow Program/SSOI

- Water Shortage Contingency Program
- Construction Activities Ordinances
- Free Irrigation Checks
- Irrigation Guidelines/Ordinances
- Report Illegal Dumping Program
- Report Water Waste Program
- Watering Weather Station
- EPA WaterSense
- Water I.Q.
- TX Stream Team
- Watershed Planning (Greenprinting, Open Space, etc.)
- Watershed Protection Programs (Land Trusts, signage, Low Impact Development, etc.)
- Riparian Buffers Initiatives, Requirements, or Other Programs
- Stormwater Ordinances or Stormwater Fee Credits
- Groundwater Protection Programs
- None
- Other

If other, please specify:

3. Did your entity initiate or implement any best management or voluntary practices to improve water quality or quantity issues in 2014 or 2015?

- Bio-filters
- Wetlands
- Education/Outreach Programs
- Adaptive/Drought Tolerant Landscaping
- Lawn Maintenance Control
- Rain Gardens
- Plant Native Species
- Convert to Drip Irrigation
- Storm Drain Protection
- Infrastructure Replacement Programs
- Green Infrastructure
- Low Impact Development
- None
- Other

If other, please specify:

4. What water related education and outreach strategies does your entity use? Check all that apply:

- Educational materials (e.g. brochures, posters, models/displays tools, watermyyard.org, etc.)
- Educational distribution events (e.g. Earth day, fairs, Eco-fest, etc.)
- Speaking events (e.g. workshops, school presentations, webinars, etc.)
- Volunteer programs (e.g. storm drain marking, TX stream team, Girl/Boy scouts, etc.)
- Contests (e.g. poster contests, video contests, artwork contests, etc.)
- Videos/Blogs/Social Media/Marketing Campaign (e.g. Twitter, Facebook, Instagram, billboards, radio ads, etc)
- None
- Other

If other, please specify:

5. Does your entity engage in any Green Infrastructure or Low Impact Development Programs? Check all that apply:

- Development of incentives
- Grants
- Rebates/installation financing
- Awards and recognition programs
- Stormwater fee discounts

Ordinances

Construction of Green Infrastructure/Low Impact Development (if so, please describe below)

None

Other

If other, please specify:

6. Is your entity using, exploring, or planning to use direct reuse (reclaimed water that is piped directly from a wastewater treatment facility to a drinking water treatment and distribution system) or indirect reuse (reclaimed water that is discharged into a ground or surface water supply which will be treated for potable consumption) to increase existing irrigation or drinking water supplies?

Yes

No

Both

We are not addressing either at this time

Other

If other, please specify:

7. NCTCOG will be featuring on-going projects in the North Central Texas Water Resources Report that demonstrate entities acting as “Good Partners in Water Resources”. If you have carried out a successful strategy, element, or project that you would be willing to share with other organizations, Please provide information related to those programs or initiatives to be featured in the report:



Next

8. Below is a list of topics relating to water quality in North Central Texas. Please check at least 3 that are of interest or considered a priority to your entity:

- Ensuring appropriate surface water supply
- Increasing water conservation
- Enhancing stormwater management
- Implementing green infrastructure/Low impact development
- Preventing the listing of new streams to the State 303(d) Impairment List
- Reducing bacteria loading
- Reducing sediment loading
- Infiltration/Inflow

- Replacing aging infrastructure
- Increasing public awareness
- Water reuse
- Preserving/conserving important open space for water quality/quantity benefits
- Improving groundwater quality
- None
- Other

If other, please specify:

9. Please rate the importance of the water related challenges in North Central Texas:

Not a relevant challenge as we look forward	An important challenge to be aware of	A challenge that should be addressed in the near future	A challenge we should already be addressing for the future
---	---------------------------------------	---	--

Financing for capital improvements	<input type="radio"/> Financing for capital improvements Not a relevant challenge as we look forward	<input type="radio"/> Financing for capital improvements An important challenge to be aware of	<input type="radio"/> Financing for capital improvements A challenge that should be addressed in the near future	<input type="radio"/> Financing for capital improvements A challenge we should already be addressing for the future
Expanding water reuse/reclamation	<input type="radio"/> Expanding water reuse/reclamation Not a relevant challenge as we look forward	<input type="radio"/> Expanding water reuse/reclamation An important challenge to be aware of	<input type="radio"/> Expanding water reuse/reclamation A challenge that should be addressed in the near future	<input type="radio"/> Expanding water reuse/reclamation A challenge we should already be addressing for the future

	Not a relevant challenge as we look forward	An important challenge to be aware of	A challenge that should be addressed in the near future	A challenge we should already be addressing for the future
Public understanding of the value of water	<input type="radio"/> Public understanding of the value of water Not a relevant challenge as we look forward	<input type="radio"/> Public understanding of the value of water An important challenge to be aware of	<input type="radio"/> Public understanding of the value of water A challenge that should be addressed in the near future	<input type="radio"/> Public understanding of the value of water A challenge we should already be addressing for the future
Watershed/source water protection	<input type="radio"/> Watershed/source water protection Not a relevant challenge as we look forward	<input type="radio"/> Watershed/source water protection An important challenge to be aware of	<input type="radio"/> Watershed/source water protection A challenge that should be addressed in the near future	<input type="radio"/> Watershed/source water protection A challenge we should already be addressing for the future
Water conservation/efficiency	<input type="radio"/> Water conservation/efficiency Not a relevant challenge as we look forward	<input type="radio"/> Water conservation/efficiency An important challenge to be aware of	<input type="radio"/> Water conservation/efficiency A challenge that should be addressed in the near future	<input type="radio"/> Water conservation/efficiency A challenge we should already be addressing for the future
Long-term water supply availability	<input type="radio"/> Long-term water supply availability Not a relevant challenge as we look forward	<input type="radio"/> Long-term water supply availability An important challenge to be aware of	<input type="radio"/> Long-term water supply availability A challenge that should be addressed in the near future	<input type="radio"/> Long-term water supply availability A challenge we should already be addressing for the future
Emergency preparedness (drought, flooding)	<input type="radio"/> Emergency preparedness (drought, flooding) Not a relevant challenge as we look forward	<input type="radio"/> Emergency preparedness (drought, flooding) An important challenge to be aware of	<input type="radio"/> Emergency preparedness (drought, flooding) A challenge that should be addressed in the near future	<input type="radio"/> Emergency preparedness (drought, flooding) A challenge we should already be addressing for the future

	Not a relevant challenge as we look forward	An important challenge to be aware of	A challenge that should be addressed in the near future	A challenge we should already be addressing for the future
Cost recovery (pricing water to accurately reflect true cost)	<input type="radio"/> Cost recovery (pricing water to accurately reflect true cost) Not a relevant challenge as we look forward	<input type="radio"/> Cost recovery (pricing water to accurately reflect true cost) An important challenge to be aware of	<input type="radio"/> Cost recovery (pricing water to accurately reflect true cost) A challenge that should be addressed in the near future	<input type="radio"/> Cost recovery (pricing water to accurately reflect true cost) A challenge we should already be addressing for the future

Water loss control	<input type="radio"/> Water loss control Not a relevant challenge as we look forward	<input type="radio"/> Water loss control An important challenge to be aware of	<input type="radio"/> Water loss control A challenge that should be addressed in the near future	<input type="radio"/> Water loss control A challenge we should already be addressing for the future
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If other, please specify:

10. Does your entity have plans to expand your wastewater plant or join a regional system?

- Expand
- Join Regional System
- Not Applicable
- Other

If other, please specify:

11. Does your entity have any septic tank systems in your service area? If so, are these a water quality challenge? How many septic tanks are in your service area?

Yes

No

Other

Comments:

12. In your view, within the next 5 to 10 years, what do you see as emerging or potentially worsening water problems for the region?

13. Which of the following areas are important with regards to the challenge of aging water and wastewater infrastructure? Check all that apply:

Justifying renewing and replacing (R&R) infrastructure programs to oversight bodies (board, council, etc.)

Obtaining R&R infrastructure funding

Addressing declining water sales

Developing/implementing management programs

Prioritizing R&R infrastructure needs

Coordinating R&R infrastructure with other activities (road repairs, redevelopment, etc.)

None

Other

If other, please specify:

14. Which of the following actions are important in protecting North Central Texas water resources? Check all that apply:

Treating stormwater runoff

Improving wastewater treatment

Residential water conservation

Building new water storage structures (dams, reservoirs)

Improving home and garden practices

Preserving and restoring buffer zones and wetlands

Preserving agricultural land and open space

Monitoring groundwater quality

Better management of recreational activities (boating, fishing, ATVs)

Improving water quality monitoring to detect pollution

Making water quality and quantity data available to public

Educating municipal officials

None

Other

If other, please specify:

15. What could the North Central Texas Council of Governments offer to your entity related to water quality and quantity programs/projects?

Appendix H. Public Comments and NCTCOG Response

Received	Entity	Comment	NCTCOG Response	Page Location
6/1/2016	City of Cleburne	<p>Page 35 – The study reports on the Clean Rivers Program partners for the Trinity River basin, but does not include the same type of information from the Brazos River basin nor for the Sulfur or Sabine. The Brazos system already has substantial population growth, increasing water demands, and rapid increases in OSSFs installations and because of available land area will have significant future growth and impacts on Water Quality. Because of this the same level of information from the CRP and BRA should be included in the WQMP report. For full inclusion of all of the NCTCOG counties at least mentions of activities in the Sulfur and Sabine basins within the COG counties should also be included.</p>	<p>NCTCOG updated the language to reflect all the Clean Rivers Programs included in the NCTCOG regional planning area. Each River Basin's programs annual summary document is now provided and linked in the WQMP</p>	<p>Now found on Page 39</p>
		<p>Page 37 – Figure 11 does not include a legend for the royal blue area – I believe this is the NTMWD</p>	<p>NCTCOG update the map to include North Texas Municipal Water District in the legend</p>	<p>Now found on Page 42</p>
		<p>Page 38 – Figure 12 shows two WWTPs in Cleburne, however there is only one WWTP within the area. The second icon may be referring to a second outfall that is permitted for effluent discharges, but does not currently receive discharges. If that is the case and you want to show the permitted discharge points, there is also a third permitted discharge to Lake Pat Cleburne which is not show (but is not in use at this time).</p>	<p>NCTCOG has reviewed the map and identified one of the data points representing an expired permit. The expired permit data point was removed from Figure 12 and Figure 14 to show a more accurate representation of the WWTPs near the City of Cleburne</p>	<p>Now found on Page 43</p>
		<p>Page 49 – This is a similar item to that on page 35, where only Region C information on the Trinity is provided. Region G of the Brazos Basin should have information included and at least a mention that information for the Sabine and Sulfur can be found in their Region's studies.</p>	<p>NCTCOG update the language to reflect all Region Water Planning Groups included in the NCTCOG Boundary. Each Water Planning Group's Water Plan is now provided and linked in the WQMP</p>	<p>Now found on Page 54</p>
		<p>Page 56 – I am not sure how NCTCOG has calculated the population numbers to come up with population declines in Cleburne over the past 6 years. The figures may need confirmation.</p>	<p>NCTCOG has contacted the City of Cleburne to confirm and update the City's population estimates, as appropriate</p>	<p>Now found on Page 61</p>

Received	Entity	Comment	NCTCOG Response	Page Location
5/26/2016	TCEQ	Page 9 - Inclusion of Johnson County as an NCTCOG regional county	NCTCOG updated the language to include Johnson County	
		Page 11 - Why does NCTCOG only do projections for the 12-County MPA instead of the 16-County region?	NCTCOG's Resource Information Services department conducts population forecasts for the 12-County MPA used for regional transportation planning	
		Page 19 - Are there any Recreation Use-Attainability Analysis ongoing in the NCTCOG Region?	NCTCOG has included Table 5 to identify the recent/ongoing RUAAs in the NCTCOG regional planning area	Now found on Page 21
		Page 25 - The listed streams are segments not assessment units	NCTCOG update the language from assessment units to segments	Now found on Page 27
		Page 29 - Can you confirm that TCEQ reviewed the Cedar Creek Watershed Protection Plan?	NCTCOG reached out to Texas A&M AgriLife in June of 2016 and received an updated status for the Cedar Creek WPP. NCTCOG has updated the status found in Table 7.	Now found on Page 33
		Page 29 - The Leon River is also conducting implementation under 319(h) Grant	NCTCOG updated the language in Table 7 to reflect the Leon River WPP implementation under the 319(h) Grant	Now found on Page 33
		Page 39 - Are the OSSFs permitted systems? Do you have an estimate that includes unpermitted systems?	NCTCOG confirmed with Texas A&M AgriLife Extension that the OSSF data reflects permitted systems only. The data is gathered from the US 1990 Census Report for the State of Texas and from the TCEQ website that reports permitted OSSF counts for each County starting in 1990 onwards. Texas A&M AgriLife does not have data on unpermitted OSSFs by County nor do they know where the US Census got the data. NCTCOG added 1990 US Census as a source to the WQMP.	Now found on Page 45

5/31/2016	City of Fort Worth	It looks like the impaired segments map does not have Dioxin for segment 0805. Dioxin made Appendix C, but not the map	NCTCOG update the map to represent the dioxin occurring in segment 0805 of the Trinity River	Now found on Page 25
6/2/2016	City of Mansfield	On the map of monitoring sites (pg. 36) there is a station listed there in Mansfield on Walnut Creek that indicates it is a City of Grand Prairie site, but it in fact is a TCEQ/USGS monitoring site. There is a USGS gaging station at the location and I believe TCEQ contracts with TRA to conduct water quality sampling. It is most likely a CRP site, not GP.	NCTCOG reviewed the monitoring site data and identified the site on Walnut Creek to have two data points representing the same site. NCTCOG reorganized the hierarchy of the Map legend to show USGS/TCEQ data points as the top layers	Now found on page 38
6/8/2016	North Texas Municipal Water District	North Texas Municipal Water District reviewed the Discharge Monitoring Report data in Appendix D and provided data updates to the discharge flow and inspection date to three wastewater treatment plants	NCTCOG updated the Discharge Monitoring Report Data found in Appendix D to reflect the changes provided by NTMWD.	Now found on Page 89
6/16/2016	City of Irving	The City of Irving reviewed the water quality section of the WQMP and asked for more clarification of the term "delisted" as it relates to the Texas 303(d) List and Texas Integrated reports.	NCTCOG has updated the language to in the document to say "removed" instead of "delisted" as well as including the "7 Reasons to Remove a Water Body from the 303(d) List" taken from the 2014 Guidance for Assessing and Reporting Surface Water Quality in Texas. NCTCOG has added the category of each segment "delisted" found in table 6 (page 26) from the 2014 Texas 303(d) list to better define the current status of the segments	Now found on Page 24

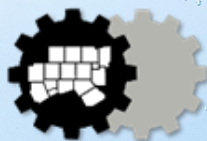
*Comments Received as of June 21, 2016

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North Central Texas Water Resources Report

Produced by the North Central Texas Council of Governments
June 2016



North Central Texas
Council of Governments
Environment & Development



The North Central Texas Council of Governments (NCTCOG) is an association of, for, and by local governments. We assist our members in planning for common needs, cooperating for mutual benefit, and recognizing regional opportunities for improving the quality of life in North Central Texas. This report is an effort by NCTCOG and regional partners in conjunction with the Texas Commission of Environmental Quality to determine what communities in North Central Texas are, or will be doing, related to regional priorities for water resources.

This report shares the results of a questionnaire administrated by NCTCOG. A total of 56 regional entities, including local governments, water districts, groundwater districts, independent school districts, and the general public, responded to the questionnaire in March 2016. The results indicated three priority themes for water resources in North Central Texas; Increasing Public Awareness of Water Resources, Water Conservation & Ensuring Appropriate Water Supply, and Funding for Aging Water & Wastewater Infrastructure.

This report was developed as a part of the 2016 Water Quality Management Plan for North Central Texas. If you would like more information or to view the document, please visit www.nctcog.org/envir or contact Rachel Evans at REvans@nctcog.org.

Prepared in cooperation with the Texas Commission on Environmental Quality and U.S. Environmental Protection Agency

North Central Texas Water Resources Report

Water is an important key to everyday life in North Central Texas

Our Water

In North Central Texas there are many entities working together through regional collaboration to help protect water resources. North Central Texas is growing rapidly. By 2040 the population of the NCTCOG regional planning area will be 10,835,154, nearly double the current population. In order to keep up with the growing demands for on our water resources, regional entities are working to improve the quality and quantity of water in this region.

The Value of Water

Many people do not think about the scarcity and importance of water when it is available to them every day. Water, however, is a precious resource that needs protection. Ensuring appropriate water quality and quantity is a big job, but with the help of individuals, communities, and local governments we can work towards gaining a better understanding of where our water comes from, how to protect the quality, and how to ensure availability of clean water for future generations.

Where Has Your Water Been?

It is commonly known that our water comes from rain falling from the sky, running off into streams and rivers and collecting in lakes, reservoirs and aquifers. But not everyone knows the important series of events that take place to get water from the source to your home. After the water settles in the regional water bodies, local entities called water providers pump the raw, natural water to a water supply facility. Here water is treated to remove any natural or man-made pollutants it picked up during its journey. Water providers sell the clean water to its members and customers, like your local governments. Through vast expanses of water pipelines, water is carried into your community and available for use by you for your everyday needs.

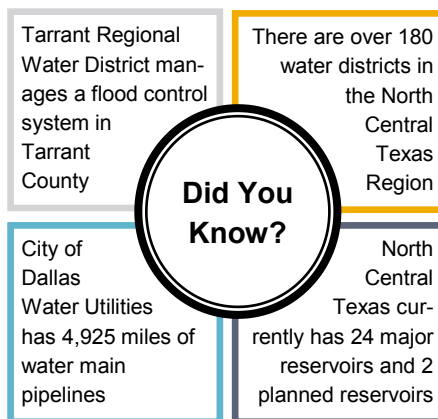
Once water has been used, it becomes wastewater. Wastewater is piped from your home through a series of sewer lines

that are connected to a wastewater treatment plant. Here, the wastewater is treated to remove pollutants and solids and attain clean water that meets standards set by the U.S Environmental Protection Agency (EPA). The treated water, known as effluent, is discharged into local waterways where it is used again to supply drinking water and irrigation needs.

Who Provides Your Water?

In Texas, water is provided via Water Districts which are local, governmental entities that offer services to customers and residents. Services often include, water and wastewater, water conservation, water supply, and solid waste.

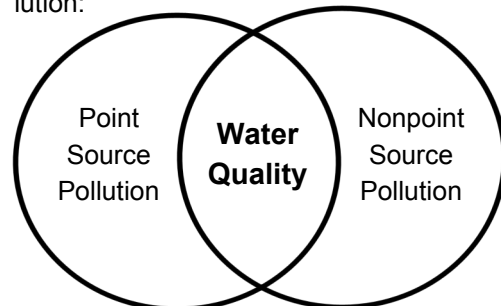
There are 5 major regional water providers in North Central Texas: The North Texas Municipal Water District, Tarrant Regional Water District, Upper Trinity Regional Water District, Dallas Water Utilities, and Fort Worth Water Department. These 5 entities serve more than 4.5 million people in the region. The remainder of the region is served by a variety of other small water districts, including groundwater districts, municipal utility districts, water control and improvement districts, special utility districts, and river authorities.



Water providers bring water to North Central Texas from regional sources, including reservoirs, groundwater, and surface water. They are also responsible for other programs that influence water conservation, water quality, and the future water supply.

Water Pollution

Pollution affects the water quality of streams, rivers, lakes, reservoirs, and groundwater. There are two types of pollution:



Point source pollution typically comes from specific locations or sources such as pipes, permitted facilities, or wastewater treatment plants, and carried to streams, rivers, lakes, wetlands, and ground water.

Nonpoint source pollution is typically caused by rainfall moving over and through the ground. As the runoff moves, it picks up man-made and natural pollutants and carries them to streams, rivers, lakes, wetlands, and groundwater.

In North Central Texas, the water quality is most notably effected by nonpoint source pollution. Some examples of nonpoint source pollution are: sanitary sewer overflows (SSOs), bird and pet waste, fats, oils, and grease, and agricultural practices (fertilizer, feed, and animal feces).

Nonpoint sources of pollution can be eliminated by local governments and communities with the help of a few proactive steps!

Water is an important key to everyday life in North Central Texas

Ways Local Governments are Helping to Reduce Nonpoint Source Pollution

- ◆ Implementing Stormwater Management plans
- ◆ Involvement in Fats, Oils, and Grease programs
- ◆ Implementing Construction Standards
- ◆ Building Green Infrastructure and Low Impact Development
- ◆ Increasing Public Awareness with Outreach and Education programs
- ◆ Planting Native and Drought Tolerant Species
- ◆ Developing and Implementing Watershed Protection Plans
- ◆ Updating Aging Water and Wastewater Infrastructure

Ways You Can Help Reduce Nonpoint Source Pollution

- ⇒ **Pick up pet's waste on walks at the park and your back yard**
Not only is pet waste unsightly and smelly, it is a health risk to pets and people and a water quality issue. Visit www.DFWstormwater.com/petwaste to take the pledge to 'Doo the Right Thing' and clean up after your pets!
- ⇒ **Do not pour your grease down the drain**
Instead, scrape cooled grease into a container and drop off at one of the regional sites participating in the Cease the Grease program. For more information, check out www.ceasethegrease.org to see if your city participates.
- ⇒ **Educate yourself!**
Check out what workshops and programs your cities are offering about water quality, landscaping, best management practices and so much more!
- ⇒ **Plant native species and adaptive species**
Native species are adapted to our regional climate and conditions and require less water and fertilizer! For more information on beautiful, maintainable, and sustainable species, please visit www.TXSmartScape.com.
- ⇒ **Only rain goes down the storm drain!**
Water in storm drains are never treated, so you need to be mindful of what ends up down the drains. Yard waste adds extra nutrients to the water causing impairments to the quality.
- ⇒ **Defend your drains while protecting water quality**
Do not use the toilet as a wastebasket and dispose of household hazardous wastes responsibly. Visit www.DefendYourDrainsNorthTexas.com for more about what to do with wipes, feminine hygiene products, paints, pesticides, medicines, cleaning products, and more.
- ⇒ **Avoid using pesticides and fertilizer on your lawn and gardens**
Instead, use composted yard waste to help your lawn grow.
- ⇒ **Report illegal dumping!**
Trash dumped in unauthorized locations can pollute the water quality and cause major public health and safety concerns. Dumping is illegal and punishable by the Texas Health and Safety Code 365. For more information on how to report illegal dumping, please visit www.ReportDFWDumping.org.



Installation of Bioretention Green Infrastructure on Merritt Road in Rowlett, TX

58% of surveyed entities participate in a Sanitary Sewer Overflow (SSO) program

30% of surveyed entities are engaged in Green Infrastructure or Low Impact Development

15 communities are Integrated Stormwater Management (iSWM) Communities

40% of surveyed entities incorporate Lawn Maintenance or Drought Tolerant Landscaping

Water is an important key to everyday life in North Central Texas

Good Partners in Water Resources

Many North Texas communities are working hard to protect water quality in North Central Texas. Some of these “Good Partners in Water Resources” are highlighted below.

North Texas Municipal Water District: East Fork Wetlands Project



Photos Courtesy of the North Texas Municipal Water District



The North Texas Municipal Water District (NTMWD) is a regional water district that provides and plans for future superior water, wastewater, and solid waste services. As a part of their effort to plan for future water needs, NTMWD developed the East Fork Wetlands Reuse Project to help serve the growing population in the North Central Texas. The East Fork Wetlands Reuse

Project is a man-made wetland that utilizes natural filtration to cleanse raw, natural water from the Trinity River which increases the NTMWD's water supplies for North Central Texas.

The East Fork Wetlands Project was a \$246 million investment by NTMWD to help avoid the severe financial impact that would be caused by a regional water shortage. As the water passes through the 1,840 acres of wetland, aquatic plants clean the water. This natural process removes about 95% of the sediment, 80% of the nitrogen, and 65% of the phosphorus.



The cleansed water is then piped 40 miles to Lavon Lake and blended with NTMWD's other raw water sources for use by their members and customers.

For more Information, please visit: www.ntmwd.com/EastForkRawWaterSupply.

Trinity River Authority: Village Creek-Lake Arlington Watershed Protection Plan

The Trinity River Authority (TRA) is currently developing a watershed protection plan for Lake Arlington and Village Creek. A watershed protection plan is a framework for implementing integrated water quality protection strategies that are driven by stakeholder engagement. Village Creek is currently

listed as an impaired water body on the 2014 Texas 303(d) List, which means that the creek is not meeting designated contact recreation use standards due to elevations in bacteria levels. Lake Arlington acts as a drinking water source for cities and residents in North Central Texas and has concerning levels of chlorophyll-a and nitrate, according to the 2014 Texas Integrated report. A watershed approach is being used to help improve the water quality of the two water bodies. The watershed protection plan that is currently being developed will address the needs of the watershed and communities that interact with it.

Watershed protection plans rely on stakeholder driven decision-making. Any person who lives, works, recreates, or passes through the watershed is considered a stakeholder. If you are a stakeholder or would like more information on how to be involved in the development process, please visit www.trinityra.org/LakeArlingtonVillageCreek.



Images courtesy of the Trinity River Authority



Water is an important key to everyday life in North Central Texas

The City of Cleburne: Industrial Reuse Program

The City of Cleburne has been implementing an industrial reuse program at their wastewater treatment plant since 1997. At the time, the East Loop Reuse project was the largest industrial reuse program in Texas. In 2015, the City of Cleburne applied for a State Water Implementation Fund for Texas (SWIFT) funding opportunity to develop a new project which would tie into the current pipeline called the West Loop Reuse Project. The project would help the City of Cleburne achieve their goal to maximize its use of reuse water. The extension of the East Loop pipeline would help with long-range water supply strategy and defer more expensive sources of water from Lake Whitney.

The West Loop pipeline would supply reclaimed water for oil and gas development, irrigation use by Cleburne Municipal Gold Course and commercial facilities, and industrial use.

The current East Loop reuse program provides reclaimed water from its only wastewater treatment plant to a major industrial customer and a recreational sports complex for irrigation. Looking forward, the demand for water, for both industrial and drinking water use, will continue to grow as the city's population is expected to triple by 2050. The higher demand on available water resources has created a need for new water options which the City of Cleburne is hoping to find new sources from expanding the current reuse system.



Photos courtesy of the City of Cleburne



Lady Bird Johnson Middle School: Net-zero School in North Central Texas

Lady Bird Johnson Middle School is located in Irving, TX and is recognized as the nation's largest net-zero school and the first net-zero school in the State of Texas. At 150,200 square feet, the facility uses wind and solar power to produce as much energy as it consumes from the electric grid over a one year period. This facility incorporates energy reducing systems with goals to reduce energy consumption by over 50% from the traditional school model.

The school educates students on the importance of conserving water. It has a Rainwater Harvesting system where rainwater is collected and stored in a large cistern on site and is used for irrigation of landscaping. Additionally, bio-swales and grass filter strips are present along the parking lot area to reduce sediment removal and improve the water quality of the stormwater run-off. The school also features a Water Conservation Learning Node that provide a hands on learning experience for the students. The green school

concept is connecting children to the real world. Students are able to see their impacts on energy and water consumption on a day to day basis.



Photo courtesy of DFW Solar Tours

The General Services Administration: High Performance Landscapes



The General Services Administration (GSA) partnered with the Fort Worth Botanical Research Institute of Texas (BRIT) to implement a project to conserve water and provide natural habitat for pollinators through the planting of native vegetation at the greater south-west region's Fort Worth Federal Center.

The Fort Worth Federal Center (FWFC) identified "no mow" zones as a part of the pollinator initiative which also influences local water quality by reducing the

amount of yard waste that ends up in the streams. The planting of native vegetation also helps to conserve local water supplies and improve stormwater runoff quality by reducing the amount of water needed to maintain landscapes while decreasing the amount of pesticide, fertilizers, and herbicides used.



Photos courtesy of the General Services Administration

Water is an important key to everyday life in North Central Texas

Water Conservation

Water Conservation is a crucial part of ensuring future water supply and improving water quality for North Central Texas. 85% of surveyed entities agree that residential water conservation is a priority in protecting North Central Texas water resources.

The Texas Water Development Board (TWDB) defines water planning regions in Texas. The NCTCOG region falls mostly within the Region C Water Planning area (which is made up of Cook, Grayson, Fannin, Jack, Wise, Denton, Collin, Parker, Tarrant, Dallas, Rockwall, Ellis, Kaufman, Navarro, Freestone, and part of Henderson County). The Region C Water Planning Group has projected that **27% of the water supply in 2070 will come from water conservation and reuse.**

Benefits of Water Conservation



Simply put, if you use less water, your water bill goes down. Individuals can take small steps in their homes, like turning off the sink when brushing your teeth, minimizing the use of the garbage disposal, or taking shorter showers, to help conserve water and also save a few dollars. This concept can be applied on a larger scale to the North Central Texas region. The financial impact of not having adequate water supply in the future for our growing population will be massive. Additionally, water quality and quantity impact recreation and other economic activities. Maintaining water quality of streams, rivers, and lakes is important long-term. The cleaner the water is, the less it costs to treat the water to acceptable levels.

Water conservation is a necessary component of planning for future water supply. Without it, North Central Texas will be in a water shortage because there are not enough surface water supplies available to support our growing population. Conserving water now allows cities and regions to plan for more efficient use of water resources in the future.

93% of surveyed entities have implemented or sustained conservation best management practices in the past year

Water Wise Landscaping in North Central Texas



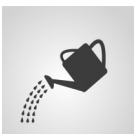
Photo courtesy of Texas SmartScape

How Can You Help?



Have your irrigation systems checked for efficiency

Most cities offer free sprinkler system check-ups. Check out your city's website to find more information.



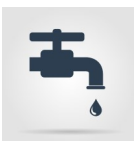
Learn and follow your city's watering schedule

Many cities have a water conservation plan that they implement to help conserve water for future supply. Properly following your water schedule helps your city stay on track with their goals and reduces your water bill.



Did you know your city has a Conservation or Drought Plan?

Every city must develop an implementation plan in the event that heavy drought is depleting available water resources. Visit your city's website to learn more about your city's best management practices for conservation and drought.



Check your toilets and sinks for leaks

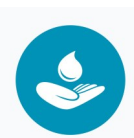
Annually, there is over 1 TRILLION gallons of household leak water waste nationwide. That is equivalent to water use in over 11 million homes.

To learn about how to check and fix leaks in your home from visit www.epa.gov/watersense/our_water/howto.



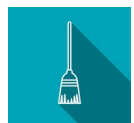
Plant native and drought tolerant species in your yard

Visit www.TXsmartscape.com for information on design, care, and plant search tools to enhance your yard and make it water wise!



See Water Waste? Report it!

Report broken pipes, open hydrants, broken sprinklers, etc. to the property owner, local authorities, or your water management district. Check your city or water district's website for more information on how to report water waste in your community.



Use a broom, not a hose, to clean driveways and sidewalks

Using a hose wastes water and encourages yard waste down the storm drain which can affect the water quality of local streams and rivers.

Water is an important key to everyday life in North Central Texas



Water Reuse

Water reuse, or water recycling, is the process of reusing water that has already been used for residential, commercial or industrial purposes. Water reuse generally occurs for non-potable (non-drinking water) use. This includes agricultural irrigation, landscape irrigation, and industrial processes. However, some projects use reuse water indirectly for potable (drinking water) purposes, such as recharging groundwater aquifers or expanding surface water reservoirs with recycled water. Reused water can help satisfy most water demands by adequately treating the water to ensure the water quality is appropriate for the use.

29% of surveyed entities said they are exploring or already implementing reuse to increase irrigation or drinking water supplies

Water reuse can result in different levels of water quality. Typically, a minimum of secondary treatment to municipal wastewater is required for groundwater recharge. Tertiary treatment generally results in an effluent that meets state and federal water quality standards. Advanced treatment would be necessary if the reuse water was going to meet the desired water quality standards for agricultural irrigation.



2012 Guidelines for Water Reuse, EPA

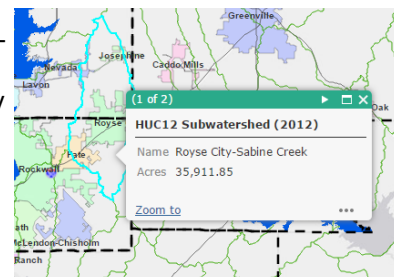
According to the U.S EPA, the cost of treating wastewater to secondary standards for groundwater recharge is generally lower than the cost of potable water from unconventional sources, such as desalination. Several North Central Texas entities have explored water reuse as a way to bolster future water supplies. NCTCOG is exploring how water reuse will support water conservation as a crucial step to supplying future water needs.

Watershed Protection

We all live in a watershed. A watershed is an area of land that water flows across, to a common area, like a stream, river, or lake. There are over 400 different watersheds in the North Central Texas area. Watershed boundaries do not follow city limits or county lines, but extend far into different areas driving regional communication. Watershed pollutants cannot be

contained by jurisdictional boundaries and may cause issues far from the source of the pollutant. Coordinating plans at a watershed level encourages regional collaboration, helps identify pollutant sources, and strengthens teamwork among stakeholders to make real world improvements to the region.

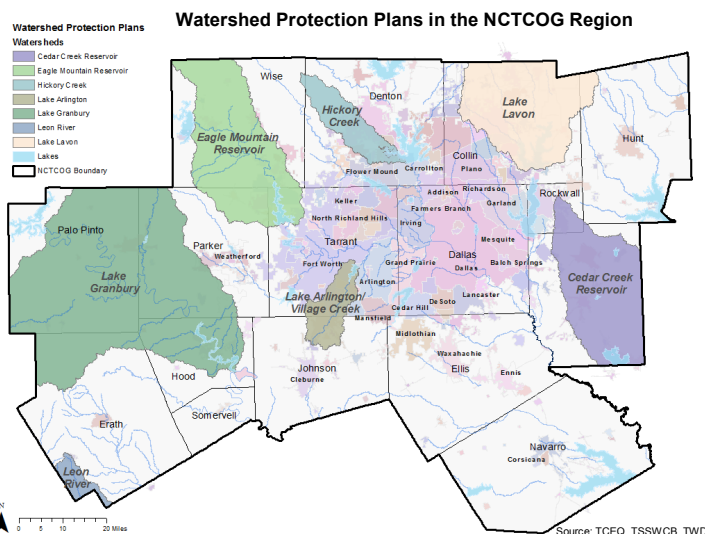
Watershed planning serves as a tool to better leverage the resources of local governments, state and federal agencies, and non-governmental organizations. This approach to watershed management recognizes that solutions to water quality issues must be socially acceptable, economically bearable, and based on environmental goals. Increasing Watershed Protection not only helps improve water quality but also helps obtain goals of ensuring appropriate water supplies for the future.



Example of Watershed Boundaries

What is a Watershed Protection Plan?

A Watershed Protection Plan (WPP) is a coordinated framework for implementing water quality protection and restoration strategies within a watershed. WPPs holistically address all the sources and causes of impairment to both surface and groundwater resources. Developed and implemented through diverse, well integrated partnerships, a WPP assures the long-term health of the watershed. Currently in the North Central Texas Region there are four Watershed Protection Plans in place and two being developed: Cedar Creek Reservoir, Eagle Mountain Reservoir, Lake Granbury, Hickory Creek, Leon River, Lake Arlington & Village Creek (being developed), and Lake Lavon (being developed).



Source: TCEQ, TSSWCB, TWDB

Water is an important key to everyday life in North Central Texas

Water quality standards are established to protect water for designated uses such as drinking, recreation, agricultural irrigation, or protection and maintenance of aquatic life.

Water Quality

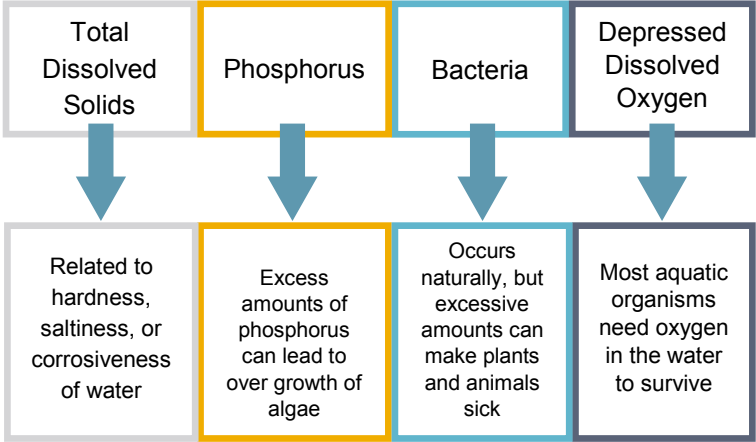
Water quality is a measure of suitability of water for a particular use based on selected physical, chemical, and biological characteristics. To determine water quality, data needs to be collected on several characteristics of the water such as temperature, dissolved mineral content, and number of bacteria. Selected characteristics are then compared to standards to decide if the water is suitable for a particular use. Standards for drinking-water quality ensure that public drinking-water supplies are as safe as possible. The EPA and TCEQ are responsible for establishing these standards.

What's Naturally Occurring in My Water?

Turbidity – Typically after an intense rain storm water running off the land picks up and carries sediment that causes the water to look cloudy or hazy. Sediment runoff occurs naturally, but has increased significantly in the region due to increased impervious surfaces and construction.

Bacteria – All warm blooded mammals have bacteria. However, bacteria at high concentrations in waterways can pose health risks to humans and animals. Bacteria enters the waterway from a variety of sources including, pet and animal waste, stormwater runoff, and over use of pesticides and fertilizers.

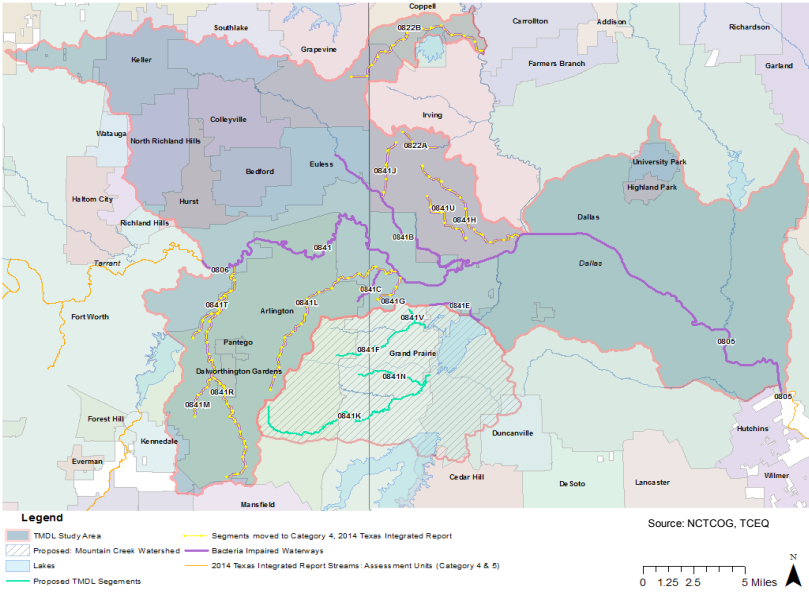
Common Water Quality Pollutants



What is the Region Doing to Improve Water Quality?

Partners in the region including, cities, nonprofit groups, citizen scientists, and variety of stakeholders have begun to coordinate watershed planning. The goal is to protect unimpaired waterbodies from pollution threats and restore impaired, polluted waterbodies. Texas develops a report called the *Texas Index of Water Quality Impairments* that provides assessments of water quality of Texas streams which helps regional stakeholders identify areas of priority for water quality protection and improvement.

Total Maximum Daily Load (TMDL) Study Area



The region is working in partnership with TCEQ on a Total Maximum Daily Load (TMDL) Program. A TMDL measures the amount of pollutant that a stream segment can have and still meet the water quality standards for its designated use. TMDLs help us to measure our efforts to protect and improve the quality of our streams, rivers, lakes, and reservoirs.

Communities within the region are also engaged in the Integrated Stormwater Management (iSWM) program which helps mitigate the impacts of development in a community that results in loss of natural areas, more sources of pollution in runoff and heightened flood risks. iSWM is an initiative that assists cities and counties achieve their goals of water quality protection. For more information and to see if your community is participating, visit www.iswm.nctcog.org.



Water is an important key to everyday life in North Central Texas

Water Supply

By 2040, North Central Texas population will grow by more than 50%. Increasing available water supply is important to support the continual growth in the region.

When asked about emerging or potentially worsening water problems for the region in the next 5 to 10 years, 81% of surveyed entities answered the need to have available water supply for the growing population

Having adequate water supply for the effects the three priority themes of North Central Texas Water Resources.

Without updated water and wastewater infrastructure, necessary water supply will not be able to reach the future growth.

Without water conservation, North Central Texas will not be able to support future demands.

Without public awareness of the value of water, there will be no change in how North Central Texas consumes water. It's through small actions and thoughtful choices that communities will be able to conserve water and protect the quality for future generations.

Wastewater

Water quality standards for wastewater discharges are established by the U.S. EPA and the TCEQ to protect the environment and receiving waterways. Wastewater is water that has been used in homes or by industries and businesses and carried via sewers to be treated at a wastewater treatment facility. Wastewater can include human waste, food scraps, oils, soaps, and chemicals. In homes, wastewater is what goes "down the drain" from sinks, showers, bathtubs, toilets, washing machines, and dishwashers. Businesses and industries release large amounts of wastewater from their machinery, cooling processes, and other uses that also must be cleaned before being released back into surface water.



through the soils for final treatment.

Homeowners who utilize septic tanks must be aware of anything they dump down their sinks or drains because what goes down the drain will end up passing through the septic system and into the local ground and surface water sources. Septic tanks are often associated with water quality issues. It is important that if you have a septic tank that you are properly maintain it. Texas A&M AgriLife Extension has resources available for proper operation and maintenance. For more information, please visit www.OSSF.tamu.edu.

Not all North Central Texas communities are served by wastewater treatment plants. In fact, 55% of surveyed entities utilize septic tanks in their communities as the wastewater treatment source. A septic tank is made up of a collection a storage area and dispersal area. Wastewater is pumped from the source (typically a home) to a pretreatment tank and then distributed for dispersal

What is Stormwater Pollution?

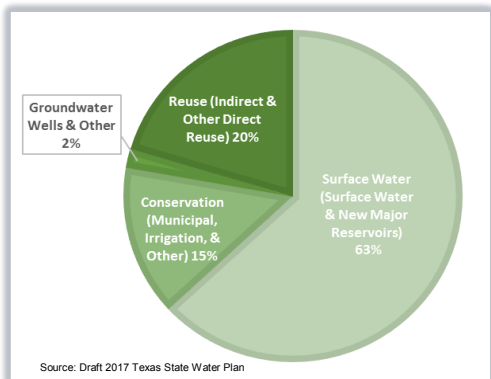
Stormwater is a major cause of water pollution in urban areas. When it rains, stormwater runs over the landscape, picks up pollutants, and carries them to streams and rivers. In urban locations, where there is more concrete and impervious cover, stormwater moves faster and comes in contact with more pollutant sources from the urban landscape.



How Can Cities Reduce Stormwater Pollution?

Cities and local governments can implement "best management practices" to reduce the amount of runoff occurring which also helps improve water quality. Green infrastructure is one type of best management practice that can be incorporated into an urban environment, Green infrastructure uses vegetation, soils, hardscapes, and other elements to help manage the flow and pace of stormwater runoff. The slowing of stormwater allows the water to be absorbed properly into the ground, filtered and cleansed through the soils, and eventually returned to the rivers and streams.

Communities can also practice best management practices to help reduce the amount of pollutants going into the streams and rivers. Individuals need to be conscious of things around the home that could pollute the stormwater, including oil spills, leaking vehicles, and pesticides & fertilizers.



The Texas Water Development Board Region C Water Planning Group develops a regional water plan focused on supply. The planning group looks at the feasibility of water sources and recommends water management strategies for wholesale water providers and for water user groups by county. Moving forward, the water supply for North Central Texas will come from a variety of sources. The pie chart above breaks down projected water supply for the NCTCOG region for 2040.

North Central Texas Council of Governments

Water Quality & Resources Programs, Efforts and Initiatives

Wastewater And Treatment Education Roundtable

Aiming to reduce potential damage to the region's household plumbing systems and wastewater treatment systems as well as to decrease hazards to water quality, the Wastewater And Treatment Education Roundtable (WATER) supports educational efforts related to the proper disposal of items such as wipes; paper towels; feminine hygiene and personal care products; medicines; household hazardous waste; and fats, oils, and grease (FOG). As part of this effort, WATER supports a regional FOG collection during the holidays. To learn more on how to properly dispose of problematic items, visit www.DefendYourDrainsNorthTexas.com.

TMDL Program

North Central Texas Council of Governments is currently working in conjunction with the TCEQ on a Total Maximum Daily Load (TMDL) program for several stream segments in North Central Texas. A TMDL measure the amount of pollutant that a stream segment can have and still meet the water quality standards for its designated use. 17 segments in North Central Texas are currently included in the TMDL program. NCTCOG is coordinating with regional entities to conduct and document efforts to help reduce the bacteria impairment in the stream segments. For more information, please visit www.nctcog.org/TMDL.

Texas SmartScape

The Texas SmartScape program was developed with support from NCTCOG, its member governments, Texas A&M AgriLife Extension, Texas Parks & Wildlife, and Weston Gardens. Texas SmartScape is an outreach program to educate residents on landscape best management practices, including the benefits of using plants that are native or adapted to our regional climate and local conditions. The program goals are to conserve local water supplies and improve stormwater runoff quality by reducing the amount of water needed to maintain landscapes while decreasing the amount of pesticide, fertilizer, and herbicides used. Many cities in the North Texas region have also participated in a recent effort to promote Texas SmartScape plants and the program by partnering with nurseries and garden centers on plant sale events. To learn more, please visit www.TXsmartscape.com.

Regional Ecosystem Framework

The development of the Regional Ecosystem Framework (REF) was a collaboration between the Transportation and Environment and Development department at the NCTCOG. The REF uses a watershed approach to define areas of ecological importance. The REF was developed into an interactive viewer that allows users to evaluate the ecological priorities at the subwatershed level and overlay additional spatial data relevant to efforts to conserve natural areas or mitigate environmental impacts of infrastructure projects. For more information and to view the interactive mapping application, please visit www.nctcog.org/REF.

COMMON VISION Program

The Trinity River COMMON VISION Program is the coordination of local governments along the Trinity River who launched a regional initiative that promote a safe, clean, enjoyable, natural, and diverse Trinity River. The program established the Corridor Development Certificate (CDC) process to stabilize flood risks along the Trinity River. A CDC permit is required to develop land within a specific area of the Trinity floodplain. Under the CDC process, neighboring local governments along the Trinity River Corridor are given the opportunity to review and comment on projects in each other's jurisdiction. This process will help prevent any increase flood risks as the Metroplex continues to grow. For more information, please visit: http://www.nctcog.org/envir/SEEsafe/fpm/C_V_background.asp.

Vision 303(d) Program

In 2011, the state of Texas and EPA developed a new approach to address impaired water bodies. The 303(d) Vision Watershed Priority Strategy improves on the TMDL approach and provides an opportunity to use different methods to address impairments. Through the 303(d) Vision project, Texas A&M AgriLife Research and Extension and a team of partner organizations and stakeholders initiated a 7 year effort to address bacterial impairments in the Upper Trinity River Basin. Currently, the program is conducting education and outreach programs as well as gathering and analyzing existing data on bacteria impairments in the basin and if there are already efforts to protect them. The second phase of the effort will be implementation of needed strategies in the identified impaired areas. For more information, please visit: <http://www.nctcog.org/envir/SEEclean/wq/utrbcc.asp>.

iSWM (Integrated Stormwater Management)

The Integrated Stormwater Management program (iSWM) for Construction and Development is a cooperative initiative that assists cities and counties achieve their goals of water quality protection, streambank protection, and flood mitigation, while also helping communities reach their construction and post construction obligations under state stormwater permits. The program consists of 4 types of documents and tools that can be utilized by regional entities. There are 15 founding iSWM communities in the North Central Texas Region. Moving forward, cities will go through a certification to become an iSWM community. The City of Denton has begun the process to become the first certified member community of the iSWM program. For more information, please visit www.iSWM.nctcog.org.

Trash Free Waters

The EPA is currently working to develop a program with a focused set of national and regional actions that support trash prevention and reduction initiatives by many public and private stakeholders, resulting in significantly less trash entering watersheds. The goal is to begin approaching zero loadings of trash into coastal watersheds and ecosystems within 10 years. NCTCOG is working in partnership with communities along the Trinity River on a Trash Free Waters project to help reduce aquatic trash in the Trinity. For more information, please visit www.epa.gov/trash-free-waters.

For more information on these and other programs from the North Central Texas Council of Governments, please visit www.nctcog.org/envir