

Water Use of Texas Water Utilities

2020 Biennial Report



87th Texas Legislative Session

Water Use of Texas Water Utilities, January 1, 2021

Water Use of Texas Water Utilities

Fourth Biennial Report to the Texas Legislature

Peter Lake, Chairman

Kathleen Jackson, Member

Brooke Paup, Member

Jeff Walker, Executive Administrator

January 1, 2021



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1. Executive Summary

In 2011, the 82nd Texas Legislature enacted Senate Bill 181, which revised the Texas Water Code §16.403 and §16.404 and directed the Texas Water Development Board (TWDB) and the Texas Commission on Environmental Quality (TCEQ) to develop a uniform method for calculating water use and a related reporting program for municipalities and water utilities with more than 3,300 connections. The measure also required submission of a legislative report regarding statewide water usage by water utilities. In response to that legislation, the TWDB and TCEQ, in conjunction with the Water Conservation Advisory Council, developed *Guidance and Methodology for Reporting on Water Conservation and Water Use* for water utilities and the public (www.twdb.texas.gov/conservation/doc/SB181Guidance.pdf). The guidance document sets out the necessary methods for calculating uniform water use data. Water utilities should use the methods prescribed in the guidance document when they respond to the TWDB's Water Use Survey, an annual survey that requests and collects water use data for the calendar year.

From the Water Use Survey 2019 reporting year, 394 public water systems in the state served more than 3,300 customer connections and provided water use data. Significant findings include the following:

- Nearly two-thirds of these 394 public water systems were municipality-owned, although authorities/districts, water supply corporations, and investor-owned utilities were also represented.
- About 82 percent of the systems reported water use by the various customer sectors in 2019 compared to 67 percent in 2012. The fact that some water systems did not report by various customer sectors was mostly because they did not report single-family and multifamily sectors separately for residential water use.
- On average, more than half of metered municipal water was delivered to single-family and multifamily residential customers.
- In general, as systems became larger, the relative percentage of their metered water delivered to residential sectors (single and multifamily) decreased and deliveries to non-residential sectors increased. For the smaller systems, residential sectors averaged 71 percent of total deliveries compared to 48 percent for metropolitan systems.

This report finds that the pattern and volume of system water usage can vary significantly between utilities, but there also appear to be commonalities. As was the trend in past reports, more utilities are making progress in being able to categorize the sectors where they deliver water. With this knowledge, water utilities are better able to select the most appropriate

conservation strategies, measure their implementation, identify areas of further potential water savings, and plan for long-term needs.

2. Introduction

As documented in regional and state water plans, planning for the state's water supply is essential to avoid negative economic impacts and ensure the health and safety of Texas residents. Of all the identified strategies to ensure future water supply, conservation is often the least expensive. For Texas water utilities to develop effective programs to save water, they must have a comprehensive understanding of how that water is used. This requires measuring water use and interpreting the meaning of those metrics. That necessary understanding is the basis of Texas Water Code §16.403 and §16.404 and this biennial report (see Appendix A for a description of Texas Water Code §16.403 and §16.404).

Purpose of Report

As required by Texas Water Code §16.403(e), this report provides the most recent data relating to statewide water use in residential, industrial, agricultural, commercial, and institutional sectors. The most recent data for municipalities and utilities with more than 3,300 connections is also reported. This data is collected through the TWDB's annual Water Use Survey and used for the development of water use estimates

(www.twdb.texas.gov/waterplanning/waterusesurvey/estimates/index.asp).

Sector-based reporting, the means to report how much water was used by various customer sectors, can be highly beneficial to water providers by providing more specific information regarding customers and their usage. When system water use data is limited to the total volume of water diverted and the population served, total gallons per capita per day is the default metric often used to evaluate performance. This can be misleading, however, because of highly variable water use profiles. It is important to keep in mind that the more detailed the information obtained per water use sector, the greater the understanding of how water is being used and where opportunities for conservation exist.

Detailed information about amounts of water delivered to the different customer sectors can be used by a system for internal evaluation purposes and as a planning tool in evaluating its own conservation programs and system needs. In addition, such detailed information allows the system to develop better targets and goals to include in conservation plans. Similarly, state planning efforts can benefit from higher resolution, sector-based water data that improves

understanding of water use and conservation opportunities for various types of water use throughout the state.

Ability for Water Utilities to Report

It is very important for water utilities to maintain and collect data relating to water use, population, and conservation plan implementation because that information is critical in planning for long-term needs. Over time, utilities can monitor trends in residential, industrial, commercial, institutional, and agricultural use to discover any long-term reduction brought about by the implementation of various programs.

The classification of customer accounts and the reporting of such information take time for the system to prepare. The Texas Legislature and water professionals recognize that many utilities' customer accounting and billing systems may not be able to categorize their customers and their water use. Because of the possible difficulties in reporting water use by the specified categories, Texas Water Code §16.404 specifies that the TCEQ may not adopt a rule requiring an entity to report data that is more detailed than a system's existing billing system is able to produce directly. The TCEQ, however, may require that billing systems purchased after September 1, 2011, be capable of reporting such detailed information.

Data Challenges

The overall entity response rate in the 2019 TWDB Water Use Survey was 70 percent;¹ however, some utilities respond one year but not the next.² Because the TWDB uses self-reported data from the surveys to prepare this report, analyzing changes over time becomes problematic when utilities do not consistently report their annual water use.

Sector-based water use reporting could be difficult and burdensome for smaller water utilities due to limited resources; therefore, this report uses the connection threshold of 3,300, representing a population of roughly more than 10,000 persons. From the 2019 Water Use Survey, 394 water utilities served more than 3,300 customer connections. About 82 percent of water utilities serving more than 3,300 customer connections reported water use by the various customer sectors compared to 67 percent in 2012. The primary reason utilities did not report by

¹ Volumetrically, the response rate represents roughly 97 percent of the estimated statewide water use.

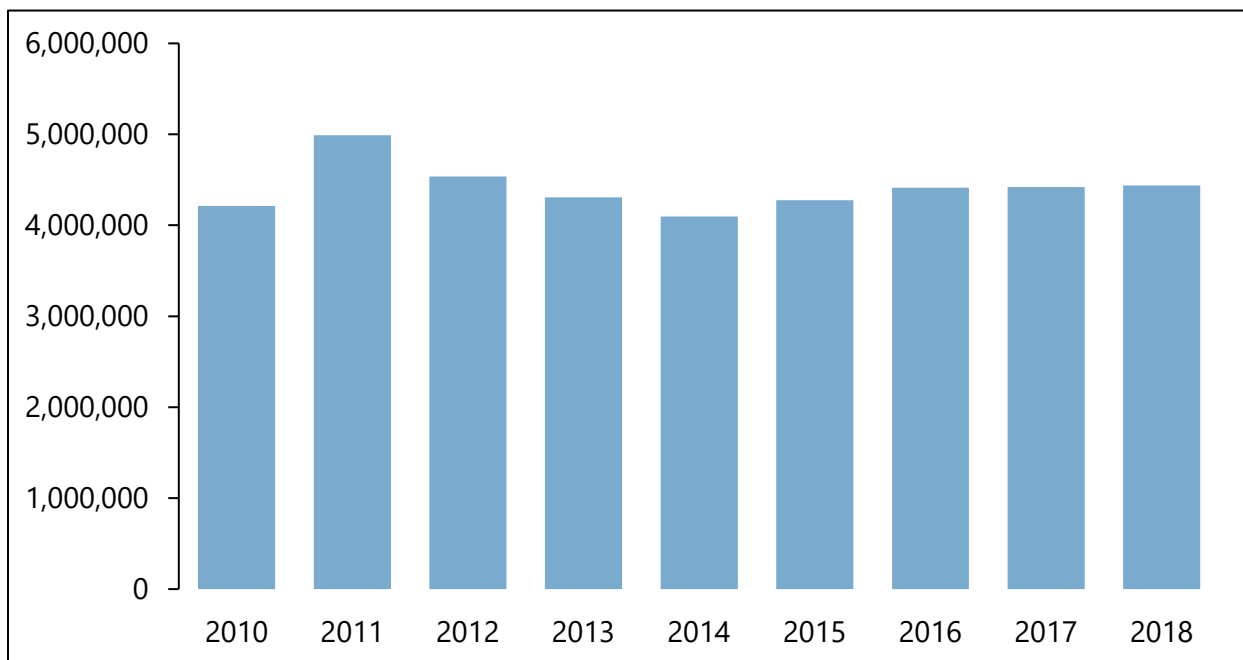
² Systems that do not submit their annual Water Use Survey are not eligible for TWDB funding or water right permits from the TCEQ.

customer sectors was because single-family and multifamily sectors were not separated for residential water use reporting.

3. Estimated Statewide Municipal Water Use

Water use can vary significantly from year to year depending on weather. For that reason, it is beneficial to look at long-term trends. In 1999, reporting total water use data through the Water Use Survey became mandatory for water utilities, greatly increasing the reliability of water use data around the state. Statewide, the municipal water use “all time” peak was during the drought in 2011 (Figure 1).³ Thereafter, statewide municipal water use declined to 2014 as the drought receded but then increased slightly in recent years.

Figure 1 – Annual statewide municipal water use (acre-feet)



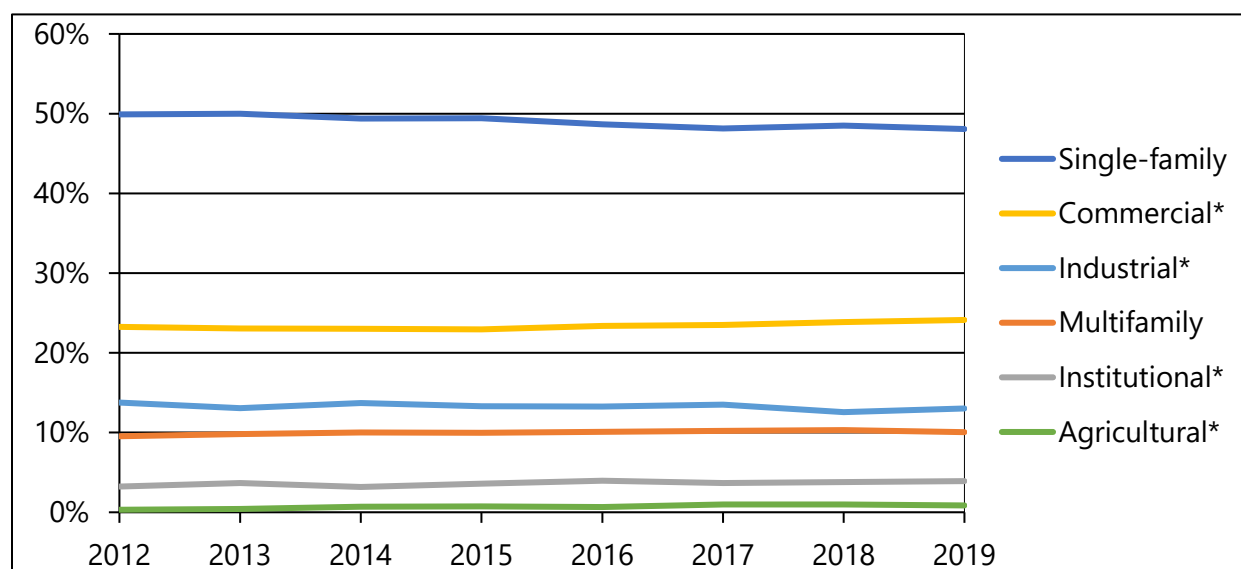
³ Municipal water use does not include water volumes sold to large manufacturing, mining, or steam-electric power facilities.

4. Sector-Based Water Use

Categorizing water use into six sectors first became standardized in the 2012 reporting year (see Appendix B for definitions of each sector). About 82 percent of water utilities serving more than 3,300 customer connections reported water use by customer sectors annually in the 2012 through 2019 Water Use Surveys. This is up from 67 percent in 2012. Some changes in volume below may be a result of reclassification of water use, for instance, from industrial to commercial between 2017 and 2019 in Figure 2.

From 2012 to 2019, the state’s population grew by more than 2.9 million people, an increase of 11.3 percent.⁴ Despite this growth, single-family and multifamily sector-based water uses have held steady since 2016.

Figure 2 – Historical share of annual water use by customer sector



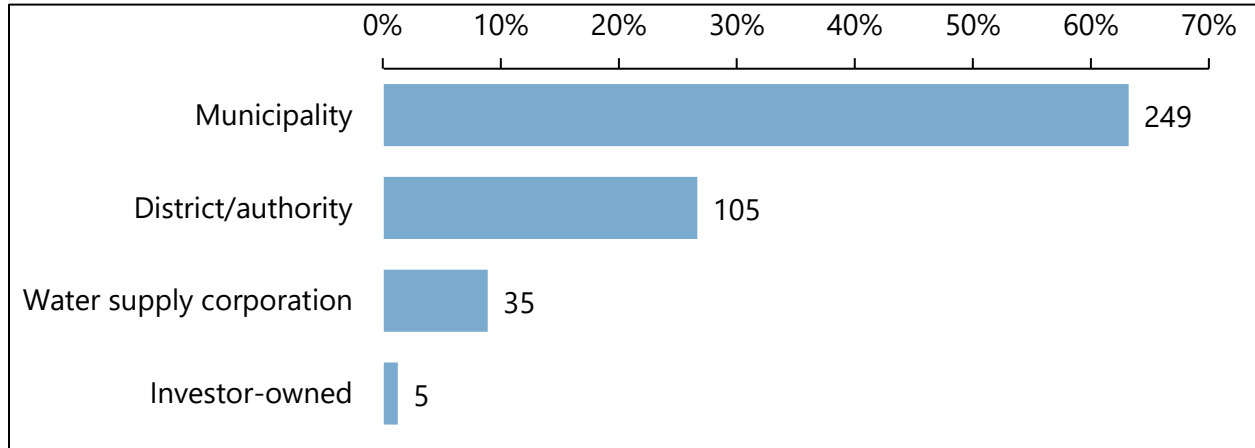
* Water for these categories represents water supplied by utilities and does not include statewide use.

In 2019, the TWDB sent annual water use surveys to more than 4,600 public water systems. Each water system, whether a municipality-owned system, a district, a water supply corporation, or an investor-owned utility, may own one or more of the surveyed public water systems. Three hundred ninety-four utilities met the criteria of serving more than 3,300 connections in the 2019

⁴ U.S. Census Bureau population estimates: www.census.gov/programs-surveys/popest/data/tables.html

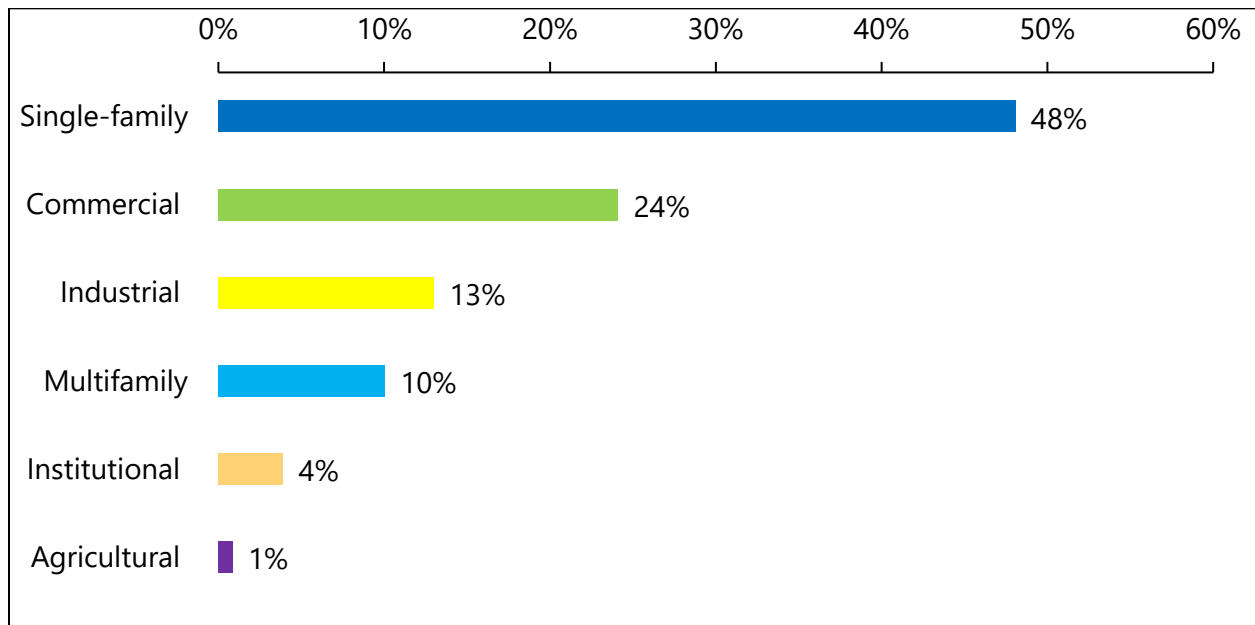
reporting year (Appendix C). More than 60 percent of these utilities were municipality owned, although all types of ownership were represented by at least one system (Figure 3).

Figure 3 – Water systems by ownership type



Of the 394 public water systems that met the criteria of serving more than 3,300 connections in 2019, about 82 percent of these systems reported water use by the various customer sectors. Of those reporting by sector, well over half of the metered water volume was delivered to residential customers consisting of single-family (48 percent) and multifamily (10 percent) customers (Figure 4).

Figure 4 – Sector-based water use, 2019



Note: Sectors are shown as a percentage of total metered water by volume.

Water Use by System Size

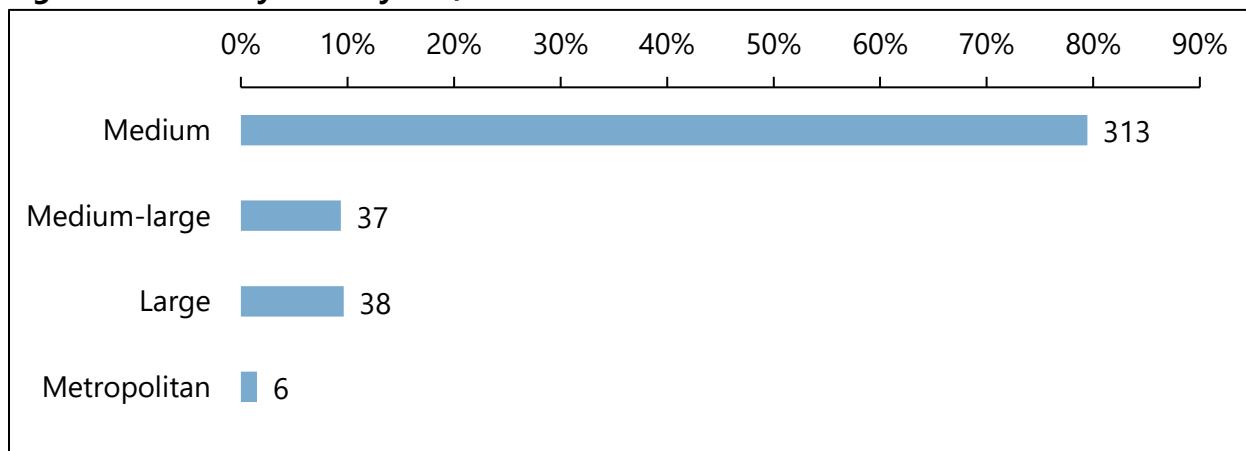
Each system serves a different customer base; however, it is instructive to categorize water systems by general size to examine if there are common characteristics. Table 1 represents the four general size categories based on the total connections reported in the TCEQ’s Safe Drinking Water Information System.

Table 1 – System size categories based on total connections

Size categories	Total connections	General population
Medium	3,300–16,667	10,000–50,000
Medium-large	16,668–33,333	50,001–100,000
Large	33,334–166,666	100,001–500,000
Metropolitan	> 166,666	> 500,000

The criterion of 3,300 connections was set forth in Texas Water Code §16.403. The medium category distinguishes systems from the small-system designation of utilities with fewer than 3,300 connections used by the U.S. Environmental Protection Agency’s Drinking Water Infrastructure Needs Survey and Assessment. The additional break points for the size categories were selected for this report based upon population thresholds for various local government development powers, such as extra-territorial jurisdiction buffer size and eligibility for federal Community Development Block Grants. Most water utilities fall into the medium category (Figure 5).

Figure 5 – Water systems by size, 2019

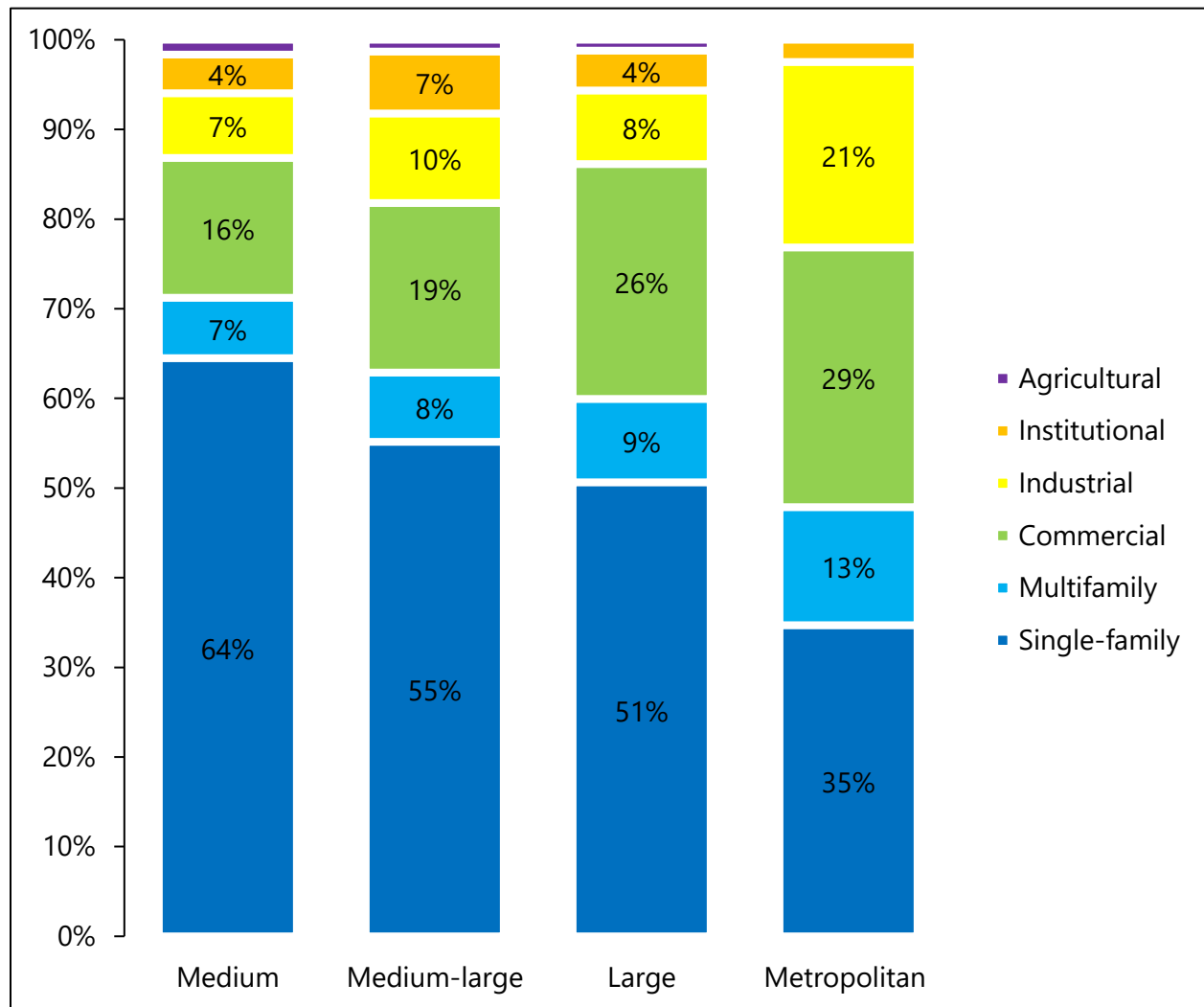


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It is generally the case that smaller systems will have a greater percentage of their water used for single-family residences (Figure 6). As a community and its water system grow, more multifamily, institutional, commercial, and industrial customers tend to be established. Furthermore, agricultural water use tends to decrease as a system becomes larger and more urbanized.

The customer base of utilities is unique to the water demands of their location, other utilities in the surrounding area, and available water sources. For example, the industrial sector of metropolitan utilities is heavily weighted by the City of Houston’s provision of 43 percent industrial use.

Figure 6 – Sector-based water use by size, 2019



Note: Unlabeled sectors represent less than 4 percent.

5. Daily Water Use

Comparing gallons of per capita daily water use is often difficult and unproductive due to variations in assumptions and calculations. Texas Water Code §16.403 directed the TWDB and TCEQ to develop a uniform methodology of calculating the total and residential water use in gallons per capita daily. The average total gallons per capita daily generally increases with the size of the system since larger systems tend to have more institutional, commercial, and industrial customers. In other words, more water is used, but not necessarily by residents themselves.

Regarding per capita water use (Table 2), 2018 values are used because the system service area population estimates are based on the U.S. Census block group data and utility service area boundaries. Also, the 2019 Census data was not available at the time of this report.

The average residential (single-family and multifamily) water use in gallons per capita daily, often referred to as GPCD, typically decreases as the size category of the utility increases. However, in Table 2, the residential GPCD held steady for the medium to large categories and, as expected, dropped for metropolitan systems. Water loss of approximately 20 GPCD appears to be relatively consistent, regardless of size category of the utility. Total water use in GPCD is the highest among large systems.

Because some systems respond to the survey one year but not the next or they do not consistently report their annual water use by sector, analyzing trends over time can be problematic and misleading. Therefore, it is important for individual systems to carefully track their own changes over time.

Table 2 – Average per-capita daily water use by system size, 2018 (gallons)

	Medium	Medium-large	Large	Metropolitan	All analyzed
Residential	82	82	82	68	82
Water loss	20	21	19	23	20
Total water use	137	134	142	125	137

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When water use by sector is available, the resulting average per-connection daily water use better characterizes the system and its customers. When daily water use per connection is calculated, the water use variation between different customer sectors becomes apparent (Table 3). The higher per-connection water usage for multifamily connections is possibly an indication of the difficulty utilities face in determining the number of apartment units/connections versus a single master meter serving an entire apartment complex. Instructions in the Water Use Survey specify the intent to collect the number of housing *units* rather than a count of the master connections for each apartment complex.

Table 3 – Average per-connection daily water use by sector and utility size, 2019 (gallons)

	Medium	Medium-large	Large	Metropolitan	All analyzed utilities
Single-family residential	228	240	229	198	220
Multifamily residential	229	168	197	554	296
Commercial	744	946	1,355	1,636	1,259
Industrial	10,294	28,640	32,729	180,925 ⁵	41,996
Institutional	1,647	1,811	2,242	1,457	1,770
Agricultural	936	698	585	0	724
Total water use	296	331	342	457	364

⁵ The industrial sector of metropolitan utilities is heavily influenced by the City of Houston's industrial water use.

6. TWDB Online Data-Collection Efforts

Consolidated Reporting

In 2013, the 83rd Texas Legislature appropriated funds for the TWDB to consolidate online reporting for the Water Use Survey, Water Loss Audit, and the Conservation Plan Annual Report.⁶ As noted earlier, Water Use Survey data from public water systems provided the information analyzed in this report. The integration of the data collection between the survey, audit, and Conservation Plan Annual Report provides a unique opportunity to view how utilities use, lose, and conserve their water.

In 2016, the Water Use Survey and the Water Loss Audit were integrated so that all common information entered in the survey automatically populates in the audit's online form. A subsequent phase of the project, which became operational in January 2018, created an online reporting tool for the Conservation Plan Annual Report. Like the Survey-Audit integration, any common data entered into the first two forms is populated in the Conservation Plan Annual Report. The consolidation and implementation of the innovative online tool save utility staff time and improve the quality of the data collected.

Public Water System Boundary Viewer

The TWDB administers a statewide public water system service boundary mapping application, the "Texas Water Service Boundary Viewer." This online application strives to provide the best current data available on the service areas for all community public water systems within Texas. In conjunction with the annual Water Use Survey, water system participants are able to update their boundaries or verify that the boundaries on file correctly display their service area. In January 2020, the application became available to the public to view the water service boundaries and related reports, including historical water use and TCEQ public water system information. This innovative tool has improved the quality and usefulness of information already being collected in the Water Use Survey.

⁶ 83rd Texas Legislature, General Appropriations Act, p. VI-61, paragraph 24.

7. Conclusion

Texas water systems, at the provider level, continue to improve their ability to understand their individual customer base and the volume of water delivered to customers. For providers that do not track water use by customer sectors because of limited billing systems, updated systems could enable them to better identify their customer types. This could make it easier for them to compare their own water use over time and discover any long-term reductions brought about by the implementation of targeted water conservation efforts. It would also help them plan better for long-term needs.

8. Appendix A – General Description of Texas Water Code §16.403 and §16.404

In 2011, the 82nd Texas Legislature passed Senate Bill 181 to address the calculation and reporting of water usage by municipalities and water utilities for state water planning and other purposes. Through amendments to Chapter 16 of the Texas Water Code, this legislation established a consistent method for reporting water use data and improving conservation reporting procedures.

Texas Water Code §16.053(e) requires that regional water plans include information on projected water use and conservation in the regional water planning area, as well as the implementation of projects and water conservation strategies necessary to meet the state's water demands based on these projections. Evaluating implementation of such conservation strategies is dependent upon utilities measuring their water use in a consistent manner over time.

Senate Bill 181 added §16.403 and §16.404 to the Texas Water Code. Section 16.403, Water Use Reporting, required the TWDB and TCEQ, in consultation with the Water Conservation Advisory Council (WCAC), to develop a uniform, consistent methodology for calculating water use and a guidance document for reporting on water conservation. Municipalities and water utilities with more than 3,300 connections are required to use these methodologies in their efforts to develop water conservation plans and prepare annual reports and five-year implementation reports. Section 16.404, Rules and Standards, directs the TWDB and TCEQ to require an entity to report the most detailed level of water use data that the entity can produce.

Texas Water Code §16.404 required that by January 1, 2015, and on that date of each subsequent odd-numbered year, the TWDB shall submit to the legislature a report regarding the statewide water usage by water utilities in the residential, industrial, agricultural, commercial, and institutional sectors, as well as the data collection and reporting program developed.

Development of the Data Collection and Reporting Program

The Senate Bill 181 Committee composed of staff from the TWDB and TCEQ, as well as interested members of the WCAC, developed the reporting methodology. The committee met periodically in late 2011 and early 2012 to discuss rules, definitions, calculations, guidance documents, and other requirements pertaining to implementation of the bill. The Senate Bill 181 Committee developed documents and posted them in December 2012 on the TWDB's website

for public review. The documents resulted in the *Guidance and Methodology for Reporting on Water Conservation and Water Use*. Much of the following information can be found in the guidance document available on the TWDB's website.

Water Use Calculation Methodology

Texas Water Code §16.403 states that "a sector-based water use metric, adjusted for variables in water use by municipalities and water utilities, is necessary to provide an accurate comparison of water use and water conservation among municipalities and water utilities." The TWDB and TCEQ, in consultation with the WCAC, developed a uniform, consistent methodology and guidance for calculating water use and conservation that a municipality or water utility can use when developing water conservation plans and preparing reports required under this code. At a minimum, this sector-based methodology and guidance are required by Texas Water Code §16.403(b) to include

- a method of calculating total water use by a municipality or water utility, including water billed and nonrevenue water used, and a method of calculating water use for each sector of water users served by a municipality or water utility;
- a method of calculating total water use by a municipality or water utility in gallons per capita per day;
- a method of classifying water users within sectors;
- a method of calculating water use in the residential sector that includes both single-family and multi-family residences, in gallons per capita per day;
- a method of calculating water use in the industrial, agricultural, commercial, and institutional sectors that is not dependent on a municipality's population or the number of customers served by a water utility; and
- guidelines on the use of service populations by a municipality or water utility in developing a per-capita-based method of calculation, including guidance on the use of permanent and temporary populations in making calculations.

The results of the collaboration between the TWDB, TCEQ, and WCAC in developing the methodology and guidance can be found in *Guidance and Methodology for Reporting on Water Conservation and Water Use*.

9. Appendix B – Sector Descriptions

Total Water Use and Residential Water Use

The legislature directed the TWDB and TCEQ, in consultation with the Water Conservation Advisory Council (WCAC), to develop “a uniform, consistent methodology and guidance for calculating water use,” including total water use in gallons per capita daily and residential (single family and multifamily) in gallons per capita daily (Texas Water Code §16.403[b]). The previously mentioned Senate Bill 181 Committee developed this methodology and guidance, and a full description of the gallons per capita daily figures can be found in *Guidance and Methodology for Reporting on Water Conservation and Water Use*.⁷

Total Water Use

“Total gallons per capita per day takes into account all water use sectors that a system may have including residential, industrial, commercial, institutional, and agricultural. This metric then divides the total volume of water taken into the system by a population number, even though not all of the water use may be population-dependent.” (Guidance, p. 29)

Residential Water Use

“Residential gallons per capita per day — the total gallons sold for residential use by a public water supplier divided by the residential population served and then divided by the number of days in the year.” (Texas Administrative Code Chapter 288.1) (Guidance, p. 33)

Single-family Residential

Single-family residential use is defined as the use of water that is delivered to single residences, which applies to indoor and outdoor uses. Single-family residential use is a classification of housing in which a single detached dwelling is a freestanding residential building. However, duplexes are also included in the single-family residential sector due to the similarity in water use and the common practice of allowing duplexes within single-family residential zoning areas.

Multifamily Residential

Multifamily residential use is a classification of housing in which multiple separate housing units for residents are contained within one building or several buildings within one complex. Water

⁷ www.twdb.texas.gov/conservation/doc/SB181Guidance.pdf (Hereafter referred to as Guidance)

use and the number of units (connections) are often difficult for utilities to report, as the apartment complex may be categorized as commercial and the complex may have a single meter.

Institutional

Institutional use is defined as the use of water by an establishment dedicated to public service, such as a school, university, church, hospital, nursing home, prison, or government facility. All facilities dedicated to public service are considered institutional regardless of ownership. (Guidance, p. 15)

Commercial

Commercial use is defined as the use of water by a place of business, such as a hotel, restaurant, or office building. This does not include multifamily residences or agricultural, industrial, or institutional users. (Guidance, p. 14)

Industrial

Industrial use is defined as the use of water in processes designed to convert materials of a lower order of value into forms having greater usability and commercial value, and the development of power by means other than hydroelectric (agricultural use is excluded). (Guidance, p. 14)

Agricultural

Agricultural use is defined as any water use involving agriculture, including irrigation. Agriculture is defined to include the following activities:

- Cultivating the soil to produce crops for human food, animal feed, or seed planting, or for production of fibers
- Practicing floriculture, viticulture, silviculture, and horticulture, including the cultivation of plants in containers or non-soil media by a nursery grower
- Raising, feeding, or keeping animals for breeding purposes or for production of food or fiber, leather, pelts, or other tangible products having a commercial value
- Raising or keeping equine animals
- Managing wildlife
- Planting cover crops, including cover crops cultivated for transplantation, or leaving land idle for the purpose of participating in any governmental program or normal crop or livestock rotation procedure (Guidance, p. 14)

10. Appendix C – Water Systems by Size with 3,300 or More Connections

(FWSD=Fresh Water Supply District, MUD=Municipal Utility District, MWS=Municipal Water System, SUD=Special Utility District, WCID=Water Control and Improvement District, WSC=Water Supply Corporation, WSD=Water Supply District)

MEDIUM

ACTON MUD	CITY OF BROWNWOOD	CITY OF GROVES
AGUA SUD	CITY OF BUDA	CITY OF HALTOM CITY
ATASCOSA RURAL WSC	CITY OF BURKBURNETT	CITY OF HARKER HEIGHTS
BACLIFF MUD	CITY OF BURLESON	CITY OF HEATH
BENBROOK WATER AUTHORITY	CITY OF CARTHAGE	CITY OF HENDERSON
BENTON CITY WSC	CITY OF CEDAR HILL	CITY OF HEWITT
BETHESDA WSC	CITY OF CELINA	CITY OF HIDALGO
BI COUNTY WSC 1	CITY OF CIBOLO	CITY OF HIGHLAND VILLAGE
BOLIVAR PENINSULA SUD	CITY OF CLEBURNE	CITY OF HORSESHOE BAY
BOLIVAR WSC	CITY OF CLEVELAND	CITY OF HUMBLE
BORGER MWS	CITY OF CLUTE	CITY OF HUTTO
BRIDGESTONE MUD	CITY OF COLLEYVILLE	CITY OF INGLESIDE
BROOKESMITH SUD	CITY OF CONVERSE	CITY OF JACKSONVILLE
BRUSHY CREEK MUD	CITY OF COPPELL	CITY OF JASPER
CADDO BASIN SUD	CITY OF COPPERAS COVE	CITY OF JERSEY VILLAGE
CANYON MWS	CITY OF CORINTH	CITY OF KATY
CASH SUD	CITY OF CORSICANA	CITY OF KELLER
CIMARRON MUD	CITY OF CROWLEY	CITY OF KENNEDALE
CITY OF ALAMO	CITY OF DEER PARK	CITY OF KERMIT
CITY OF ALICE	CITY OF DENISON	CITY OF KERRVILLE
CITY OF ALVIN	CITY OF DONNA	CITY OF KILGORE
CITY OF ANDREWS	CITY OF DUMAS	CITY OF KINGSVILLE
CITY OF ANGLETON	CITY OF DUNCANVILLE	CITY OF KYLE
CITY OF ANNA	CITY OF EL CAMPO	CITY OF LA MARQUE
CITY OF ARANSAS PASS	CITY OF ELGIN	CITY OF LA PORTE
CITY OF ATHENS	CITY OF ENNIS	CITY OF LAGO VISTA
CITY OF AZLE	CITY OF FATE	CITY OF LAKE JACKSON
CITY OF BALCH SPRINGS	CITY OF FOREST HILL	CITY OF LAMESA
CITY OF BASTROP	CITY OF FORNEY	CITY OF LAMPASAS
CITY OF BAY CITY	CITY OF FORT STOCKTON	CITY OF LANCASTER
CITY OF BEDFORD	CITY OF FREDERICKSBURG	CITY OF LEVELLAND
CITY OF BEEVILLE	CITY OF FREEPORT	CITY OF LOCKHART
CITY OF BELLAIRE	CITY OF FRIENDSWOOD	CITY OF MABANK
CITY OF BELLMEAD	CITY OF FULSHEAR	CITY OF MANOR
CITY OF BELTON	CITY OF GAINESVILLE	CITY OF MARSHALL
CITY OF BIG SPRING	CITY OF GALENA PARK	CITY OF MELISSA
CITY OF BOERNE	CITY OF GATESVILLE	CITY OF MERCEDES
CITY OF BONHAM	CITY OF GLENN HEIGHTS	CITY OF MIDLOTHIAN
CITY OF BRENHAM	CITY OF GRAHAM	CITY OF MINERAL WELLS
CITY OF BRIDGE CITY	CITY OF GRANBURY	CITY OF MOUNT PLEASANT
CITY OF BROWNFIELD	CITY OF GREENVILLE	CITY OF MURPHY

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MEDIUM (continued)

CITY OF NAVASOTA	CITY OF UNIVERSAL CITY	HARRIS COUNTY MUD 120
CITY OF NEDERLAND	CITY OF UNIVERSITY PARK	HARRIS COUNTY MUD 157
CITY OF ORANGE	CITY OF UVALDE	HARRIS COUNTY MUD 165
CITY OF PALESTINE	CITY OF VERNON	HARRIS COUNTY MUD 167
CITY OF PAMPA	CITY OF WATAUGA	HARRIS COUNTY MUD 168
CITY OF PARIS	CITY OF WEATHERFORD	HARRIS COUNTY MUD 200
CITY OF PECOS	CITY OF WEBSTER	HARRIS COUNTY MUD 24
CITY OF PFLUGERVILLE	CITY OF WESLACO	HARRIS COUNTY MUD 26
CITY OF PLEASANTON	CITY OF WEST UNIVERSITY PLACE	HARRIS COUNTY MUD 285
CITY OF PORT LAVACA	CITY OF WHITE SETTLEMENT	HARRIS COUNTY MUD 368
CITY OF PORT NECHES	CITY OF WOODWAY	HARRIS COUNTY MUD 419
CITY OF PORTLAND	CITY OF WYLIE	HARRIS COUNTY MUD 53
CITY OF PRINCETON	CLEAR BROOK CITY MUD	HARRIS COUNTY MUD 55
CITY OF RICHLAND HILLS	CLWSC CANYON LAKE SHORES	HARRIS COUNTY MUD 71
CITY OF RICHMOND	CNP UTILITY DISTRICT	HARRIS COUNTY MUD 81
CITY OF RIO GRANDE CITY	CONSOLIDATED WSC 287 SOUTH	HARRIS COUNTY MUD 82
CITY OF ROBINSON	COUNTY LINE SUD	HARRIS COUNTY UTILITY DISTRICT 6
CITY OF ROCKPORT	CRYSTAL CLEAR SUD	HARRIS COUNTY WCID 109
CITY OF ROCKWALL	CYPRESS HILL MUD 1	HARRIS COUNTY WCID 21
CITY OF ROMA	CYPRESS SPRINGS SUD	HARRIS COUNTY WCID 36
CITY OF ROSENBERG	DALHART MWS	HARRIS COUNTY WCID 96
CITY OF ROYSE CITY	DEL RIO UTILITIES COMMISSION	HARRIS MONTGOMERY CO MUD
CITY OF SACHSE	DENTON COUNTY FWSD 1	386
CITY OF SAGINAW	DENTON COUNTY FWSD 7 LANTANA	HEREFORD MWS
CITY OF SAN BENITO	EAST CEDAR CREEK FWSD	HORIZON REGIONAL MUD
CITY OF SAN JUAN	BROOKSHIRE	HUDSON WSC
CITY OF SCHERTZ	EAST CENTRAL SUD	JONAH WATER SUD
CITY OF SEABROOK	EAST FORK SUD	KEMPNER WSC
CITY OF SEAGOVILLE	EAST RIO HONDO WSC	KINGSLAND WSC
CITY OF SEGUIN	ECTOR COUNTY UTILITY DISTRICT	LAGUNA MADRE WATER DISTRICT
CITY OF SELMA	FORT BEND COUNTY MUD 128	LAKE CITIES MUA
CITY OF SILSBEE	FORT BEND COUNTY MUD 142	LAKEWAY MUD
CITY OF SNYDER	FORT BEND COUNTY MUD 23	LAMAR COUNTY WSD
CITY OF SOUTH HOUSTON	FORT BEND COUNTY MUD 25	LANGHAM CREEK UTILITY DISTRICT
CITY OF SOUTHLAKE	FORT BEND COUNTY MUD 30	LEE COUNTY WSC
CITY OF STEPHENVILLE	FORT BEND COUNTY MUD 58	LINDALE RURAL WSC
CITY OF SUGAR LAND -	FORT BEND COUNTY WCID 2	LUMBERTON MUD
GREATWOOD	GALVESTON COUNTY WCID 1	MACEDONIA EYLAU MUD 1
CITY OF SUGAR LAND - NEW	G-M WSC	MANVILLE WSC
TERRITORY	GOFORTH SUD	CITY OF LANCASTER
CITY OF SULPHUR SPRINGS	GREEN VALLEY SUD	CITY OF LEVELLAND
CITY OF SWEETWATER	HARRIS COUNTY FWSD 51	CITY OF LOCKHART
CITY OF TAYLOR	HARRIS COUNTY FWSD 61	CITY OF MABANK
CITY OF TERRELL	HARRIS COUNTY MUD 1	CITY OF MANOR
CITY OF TEXAS CITY	HARRIS COUNTY MUD 102	CITY OF MARSHALL
CITY OF TOMBALL	HARRIS COUNTY MUD 105	CITY OF MELISSA

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MEDIUM (continued)

CITY OF MERCEDES	CITY OF TAYLOR	HARRIS COUNTY FWSD 61
CITY OF MIDLOTHIAN	CITY OF TERRELL	HARRIS COUNTY MUD 1
CITY OF MINERAL WELLS	CITY OF TEXAS CITY	HARRIS COUNTY MUD 102
CITY OF MOUNT PLEASANT	CITY OF TOMBALL	HARRIS COUNTY MUD 105
CITY OF MURPHY	CITY OF UNIVERSAL CITY	HARRIS COUNTY MUD 120
CITY OF NAVASOTA	CITY OF UNIVERSITY PARK	HARRIS COUNTY MUD 157
CITY OF NEDERLAND	CITY OF UVALDE	HARRIS COUNTY MUD 165
CITY OF ORANGE	CITY OF VERNON	HARRIS COUNTY MUD 167
CITY OF PALESTINE	CITY OF WATAUGA	HARRIS COUNTY MUD 168
CITY OF PAMPA	CITY OF WEATHERFORD	HARRIS COUNTY MUD 200
CITY OF PARIS	CITY OF WEBSTER	HARRIS COUNTY MUD 24
CITY OF PECOS	CITY OF WESLACO	HARRIS COUNTY MUD 26
CITY OF PFLUGERVILLE	CITY OF WEST UNIVERSITY PLACE	HARRIS COUNTY MUD 285
CITY OF PLEASANTON	CITY OF WHITE SETTLEMENT	HARRIS COUNTY MUD 368
CITY OF PORT LAVACA	CITY OF WOODWAY	HARRIS COUNTY MUD 419
CITY OF PORT NECHES	CITY OF WYLIE	HARRIS COUNTY MUD 53
CITY OF PORTLAND	CLEAR BROOK CITY MUD	HARRIS COUNTY MUD 55
CITY OF PRINCETON	CLWSC CANYON LAKE SHORES	HARRIS COUNTY MUD 71
CITY OF RICHLAND HILLS	CNP UTILITY DISTRICT	HARRIS COUNTY MUD 81
CITY OF RICHMOND	CONSOLIDATED WSC 287 SOUTH	HARRIS COUNTY MUD 82
CITY OF RIO GRANDE CITY	COUNTY LINE SUD	HARRIS COUNTY UTILITY DISTRICT 6
CITY OF ROBINSON	CRYSTAL CLEAR SUD	HARRIS COUNTY WCID 109
CITY OF ROCKPORT	CYPRESS HILL MUD 1	HARRIS COUNTY WCID 21
CITY OF ROCKWALL	CYPRESS SPRINGS SUD	HARRIS COUNTY WCID 36
CITY OF ROMA	DALHART MWS	HARRIS COUNTY WCID 96
CITY OF ROSENBERG	DEL RIO UTILITIES COMMISSION	HARRIS MONTGOMERY CO MUD 386
CITY OF ROYSE CITY	DENTON COUNTY FWSD 1	HEREFORD MWS
CITY OF SACHSE	DENTON COUNTY FWSD 7	HORIZON REGIONAL MUD
CITY OF SAGINAW	LANTANA	HUDSON WSC
CITY OF SAN BENITO	EAST CEDAR CREEK FWSD	JONAH WATER SUD
CITY OF SAN JUAN	BROOKSHIRE	KEMPNER WSC
CITY OF SCHERTZ	EAST CENTRAL SUD	KINGSLAND WSC
CITY OF SEABROOK	EAST FORK SUD	LAGUNA MADRE WATER DISTRICT
CITY OF SEAGOVILLE	EAST RIO HONDO WSC	LAKE CITIES MUA
CITY OF SEGUIN	ECTOR COUNTY UTILITY DISTRICT	LAKEWAY MUD
CITY OF SELMA	FORT BEND COUNTY MUD 128	LAMAR COUNTY WATER SUPPLY DIST
CITY OF SILSBEE	FORT BEND COUNTY MUD 142	LANGHAM CREEK UTILITY DISTRICT
CITY OF SNYDER	FORT BEND COUNTY MUD 23	LEE COUNTY WSC
CITY OF SOUTH HOUSTON	FORT BEND COUNTY MUD 25	LINDALE RURAL WSC
CITY OF SOUTHLAKE	FORT BEND COUNTY MUD 30	LUMBERTON MUD
CITY OF STEPHENVILLE	FORT BEND COUNTY MUD 58	MACEDONIA EYLAU MUD 1
CITY OF SUGAR LAND -	FORT BEND COUNTY WCID 2	MANVILLE WSC
GREATWOOD	GALVESTON COUNTY WCID 1	MAURICEVILLE MUD
CITY OF SUGAR LAND - NEW	G-M WSC	MEMORIAL VILLAGES WATER AUTHORITY
TERRITORY	GOFORTH SUD	MILITARY HWY WSC LAS RUSIAS
CITY OF SULPHUR SPRINGS	GREEN VALLEY SUD	MILITARY HWY WSC PROGRESO
CITY OF SWEETWATER	HARRIS COUNTY FWSD 51	MISSION BEND MUD 2

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MEDIUM (continued)

MONTGOMERY COUNTY MUD 46 WELLBORN SUD
MONTGOMERY COUNTY MUD 47 WELLS BRANCH MUD 1
MONTGOMERY COUNTY MUD 60 WEST CEDAR CREEK MUD
MONTGOMERY COUNTY MUD 67 WEST JEFFERSON COUNTY MWD
MONTGOMERY COUNTY MUD 7 WEST TRAVIS COUNTY PUBLIC
MONTGOMERY COUNTY MUD 8 UTILITY
MONTGOMERY COUNTY MUD 9 WICKSON CREEK SUD
MONTGOMERY TRACE WATER WINDERMERE COMMUNITY
SYSTEM ZAPATA COUNTY WATERWORKS
MOUNTAIN PEAK SUD
MUSTANG SUD
NEW CANEY MUD
NEWPORT MUD
NORTH AUSTIN MUD 1
NORTHTOWN MUD
NORTHWEST HARRIS COUNTY
MUD 5
NORTHWEST PARK MUD
NUECES COUNTY WCID 3
NUECES COUNTY WCID 4
ORANGE COUNTY WCID 1
PASEO DEL ESTE MUD 1
PECAN GROVE MUD
PERRYTON MWS
PLAINVIEW MWS
PONDEROSA FOREST UTILITY
DISTRICT
PORTER SUD
QUAIL VALLEY UTILITY DISTRICT
RAYFORD ROAD MUD
REMINGTON MUD 1
ROCKETT SUD
S S WSC
SARDIS LONE ELM WSC
SAWS CASTLE HILLS
SAWS TEXAS RESEARCH PARK
SJWTX TRIPLE PEAK PLANT
SOUTHWEST MILAM WSC
SOUTHERN MONTGOMERY CO
MUD
SPRING CREEK UTILITY DISTRICT
SPRINGS HILL WSC
TALTY SUD
THE WOODLANDS MUD 1
TIMBER LANE UTILITY DISTRICT
TOWN OF ADDISON
TOWN OF FAIRVIEW
TOWN OF HIGHLAND PARK
TOWN OF LITTLE ELM
TOWN OF PROSPER
TRAVIS COUNTY WCID 17
TRI SUD

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MEDIUM-LARGE

AQUA WSC
CITY OF BRYAN
CITY OF CEDAR PARK
CITY OF CONROE
CITY OF DESOTO
CITY OF EAGLE PASS
CITY OF EDINBURG
CITY OF EULESS
CITY OF FARMERS BRANCH
CITY OF GALVESTON
CITY OF GRAPEVINE
CITY OF HUNTSVILLE
CITY OF HURST
CITY OF LEANDER
CITY OF LONGVIEW
CITY OF LUFKIN
CITY OF MANSFIELD
CITY OF MISSION
CITY OF NACOGDOCHES
CITY OF NORTH RICHLAND HILLS
CITY OF PHARR
CITY OF PORT ARTHUR
CITY OF ROWLETT
CITY OF SAN MARCOS
CITY OF SHERMAN
CITY OF SUGAR LAND
CITY OF THE COLONY
CITY OF VICTORIA
CITY OF WAXAHACHIE
CLEAR LAKE CITY WA
HARLINGEN WATER WORKS
SYSTEM
JOHNSON COUNTY SUD
SAWS NORTHEAST
SHARYLAND WSC
SOUTHERN UTILITIES
TEXARKANA WATER UTILITIES
TOWN OF FLOWER MOUND

LARGE

AMARILLO MWS
BROWNSVILLE PUBLIC UTILITIES
CITY OF ABILENE
CITY OF ALLEN
CITY OF ARLINGTON
CITY OF BAYTOWN
CITY OF BEAUMONT
CITY OF CARROLLTON
CITY OF COLLEGE STATION
CITY OF CORPUS CHRISTI
CITY OF DENTON
CITY OF FRISCO
CITY OF GARLAND
CITY OF GEORGETOWN
CITY OF GRAND PRAIRIE
CITY OF IRVING
CITY OF KILLEEN
CITY OF LAREDO
CITY OF LEAGUE CITY
CITY OF LEWISVILLE
CITY OF MCKINNEY
CITY OF MESQUITE
CITY OF MIDLAND
CITY OF ODESSA
CITY OF PASADENA
CITY OF PEARLAND
CITY OF PLANO
CITY OF RICHARDSON
CITY OF ROUND ROCK
CITY OF SAN ANGELO
CITY OF TEMPLE
CITY OF TYLER
CITY OF WACO
CITY OF WICHITA FALLS
LUBBOCK PUBLIC WATER
SYSTEM
MCALLEN PUBLIC UTILITY
NEW BRAUNFELS UTILITIES
NORTH ALAMO WSC

METROPOLITAN

CITY OF AUSTIN
CITY OF DALLAS
CITY OF FORT WORTH
CITY OF HOUSTON
EL PASO WATER UTILITIES
SAN ANTONIO WATER
SYSTEM