



City of Round Rock

Utility Profile and Water Conservation Plan for Municipal and Wholesale Water Use

May 2019

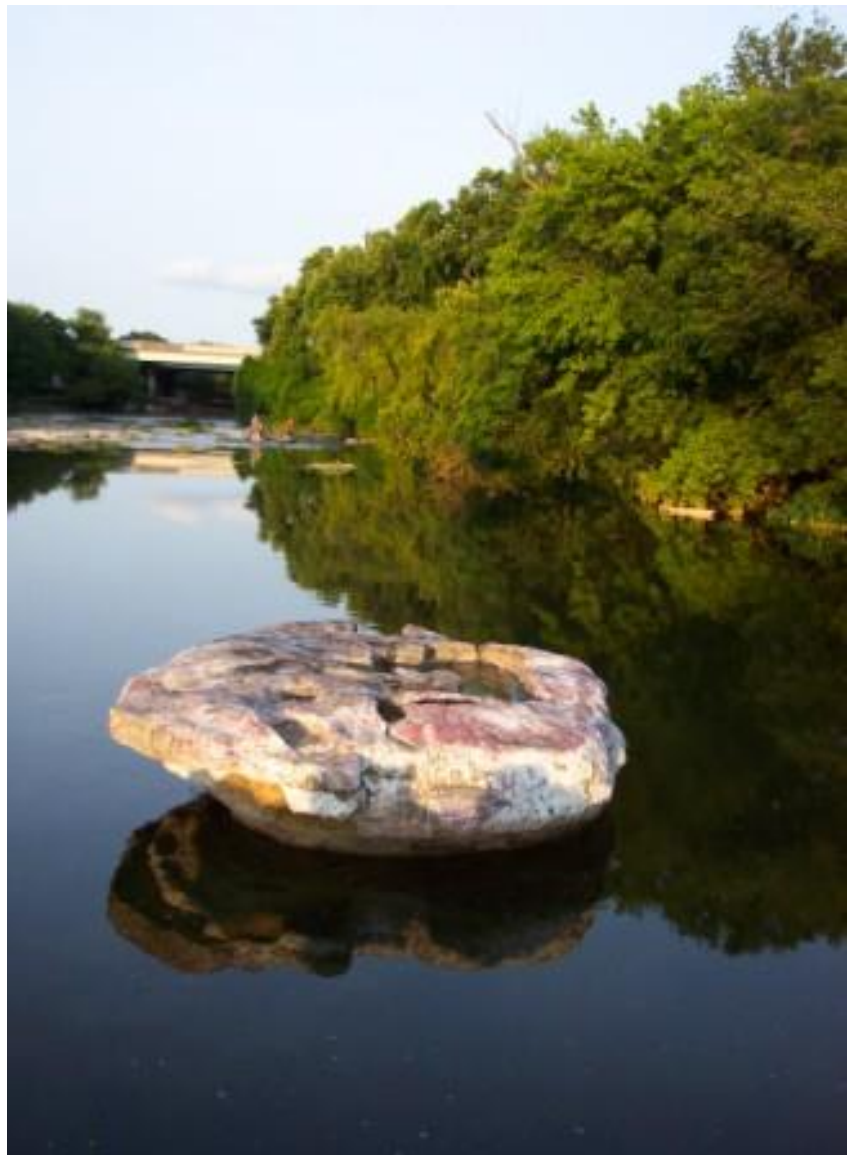


Table of Contents

Utility Profile.....	3
Section I Contact Information.....	3
A. Population projections & service area data.....	3
B. System input.....	4
C. Water supply system.....	4
D. Projected water demand.....	4
Section II Water System Data.....	5
A. Retail water supplier connections.....	5
B. Accounting data.....	5
C. Residential water use.....	5
D. Annual seasonal use.....	6
E. Water loss.....	6
F. Peak day use.....	7
G. Summary of historic water use.....	7
Section III Wastewater System Data.....	7
A. Wastewater collection and treatment.....	7
B. Reuse data.....	8
 Water Conservation Plan.....	 9
1.0 General Information.....	9
2.0 Conservation and water loss targets and goals.....	10
3.0 Metering and leak detection.....	10
4.0 Record management.....	12
5.0 Public information and awareness.....	12
6.0 Non-promotional rate structure.....	14
7.0 Means of implementation and enforcement.....	15
8.0 Tracking targets and goals.....	15
9.0 Coordination with regional water planning groups.....	15
10.0 Wholesale customer conservation requirements.....	15
11.0 Plan review and update.....	16
 Appendix A.....	 17

CITY OF ROUND ROCK

UTILITY PROFILE & WATER CONSERVATION PLAN

FOR RETAIL WATER SUPPLIER

Round Rock prepared this Utility Profile and Water Conservation Plan to comply with Texas Water Code Section 11.1271 and 30 TAC Section 288.2 and 288.5. The utility profile is used to convey information about the City of Round Rock's water, wastewater, and reuse water system to the Texas Commission of Environmental Quality (TCEQ). The water conservation plan provides an overview of Round Rock's current conservation initiatives and future plans. Both documents are required to be updated at least every five years.

UTILITY PROFILE

Section I Contact Information

Name of Utility: City of Round Rock

Public Water Supply Identification Number (PWS ID): TX2460003

Certificate of Convenience and Necessity (CCN) Number: 11047

Wastewater ID Number: 20421

Surface Water Right ID Number: 2350, 2351, 2356, 2430, 12814

Regional Water Planning Group: G

A. Population Projections and Service Area Data

The service area is 34 square miles, in the City of Round Rock, along with the majority of its ETJ. Round Rock's current population is estimated close to 114,000 residents. The City has over 34,000 active water accounts; of these, the majority are residential accounts (approximately 95%). The City also wholesales water to 10 customers: Teravista Municipal Utility District (MUD) Nos. 10 and 11, Paloma Lake MUDs 1 and 2, Vista Oaks, Meadows at Chandler Creek, Walsh Ranch, Fern Bluff, Aqua Water, and Blessing Mobile Home Park. Most of these wholesale customers are residential.

A map of the Round Rock water service area can be found at Figure 1 of Exhibit A.

Population data is estimated from our City Planning Department projections through 2030 for water and wholesale water services. The years were estimated using the growth rate of 2% out to 2060. All projections will be reviewed by the City's Planning Department once the 2020 Census is released.

1. Historical and projected service area population.

Year	Population Served by Retail Water Service	Population Served by Wholesale Water Service	Population Served By Wastewater Service
2018	114,071	32,406	140,819
Year	Projected Population Served by Retail Water Service	Projected Population Served by Wholesale Water Service	Projected Population

			Served By Wastewater Service
2020	121,018	42,776	163,794
2030	145,222	47,053	192,275
2040	174,266	51,759	226,025
2050	209,119	56,934	266,053
2060	209,119	56,934	266,053

B. System Input

Year	Water Produced (gallons)	Purchased/Imported Water (gallons)	Exported Water (gallons)	Total System Input	Total GPCD
2018	7,231,294,845	0	1,193,300,505	6,037,994,340	145
2017	6,879,105,203	0	1,091,075,354	5,788,029,849	144
2016	6,878,483,417	0	859,962,577	6,018,520,840	125
2015	6,857,240,201	0	1,061,083,061	5,796,157,140	153
2014	6,578,898,492	0	957,128,600	5,621,769,892	149
Historic Average	6,885,004,432	0	1,032,510,019	5,852,494,412	143

C. Water Supply System

The City of Round Rock currently obtains its raw water supply from three sources: the Edwards Aquifer and the Lake Georgetown-Lake Stillhouse Hollow System, which is managed by the Brazos River Authority. Past projections indicated that these supplies would not meet the City's ultimate water demand; therefore, Round Rock created a partnership with the cities of Cedar Park and Leander known as the Brushy Creek Regional Utility Authority (BCRUA) in 2008. This authority was tasked with building a regional water treatment and delivery system to deliver water from a third supply, Lake Travis. As of spring 2016, this system was operational, and Cedar Park and Leander are taking water from this supply. Round Rock has not yet taken water from Lake Travis; however, it is an anticipated source of water for future needs.

Not only does this partnership meet Round Rock's long-term needs to the anticipated build-out population in the year 2050, water from several supplies will increase the City's drought tolerance and improve reliability in the event of a catastrophe.

The water treatment plant has a design capacity of 52 million gallons. We currently have 10 million gallons of elevated storage space and 10 million gallons of ground storage.

Water Treatment and Production

The City of Round Rock owns and operates one water treatment plant (WTP) located west of Interstate 35 off Westinghouse Road. The plant is rated to treat 52 million gallons per day (MGD). The City's average daily production for 2018 was 19.655 MGD, combined for surface and ground water production.

The City owns a second WTP, located in Cedar Park, in partnership with the cities of Cedar Park and Leander as part of the BCRUA. Round Rock's capacity in this plant is currently at 5 MGD. The cities of Cedar Park and Leander are currently utilizing this plant and the water, but Round Rock has not yet taken any water from this source.

D. Projected Water Demands

This population projection is the total of retail and wholesale customers. These water demand estimates include total water demand from Lake Georgetown, Lake Stillhouse Hollow, the Edwards Aquifer, and Lake Travis.

Year	Population	Water Demand (gallons)
2020	163,794	8,040,950,000
2021	165,432	8,314,700,000
2022	167,086	9,307,500,000
2023	168,757	9,559,350,000
2024	170,445	9,632,350,000
2025	172,149	9,887,850,000
2026	173,871	10,143,350,000
2027	175,609	10,398,850,000
2028	177,365	10,650,700,000
2029	179,139	10,909,850,000

Section II Water System Data

A. Retail Water Supplier Connections

The City is overwhelmingly residential in our water service connections. The utility billing software system was updated and replaced in March 2018. With that change came changes to how some of our customers are categorized. As staff learns how to use the system options over the next year, the categories may be altered slightly, so we can better account between commercial and industrial customers.

Water Use Category Type	Total Retails Connections (active & inactive)	Percent of Total Connections
Residential—Single Family	32,221	92.14%
Residential—Multifamily	357	1.02%
Industrial	0	0%
Commercial	2307	6.60%
Institutional	84	0.24%
Agricultural	0	0%
Total	34,969	100%

B. Accounting Data

The following chart shows the break down of how much water was provided to each major use category. There has been changes to the City's billing software, which changed some of the customer classes as of 2018. Staff is working to ensure that the data is correct among the classes and updates will be made as needed.

Year	Residential Single Family	Residential Multifamily	Industrial	Commercial	Institutional	Agricultural	Total
2018	3,140,964,018	518,260,200	0	1,796,757,445	60,715,900	0	5,516,697,563
2017	3,130,358,300	501,689,900	3,113,500	1,653,421,700	231,619,600	0	5,520,203,000
2016	2,993,422,800	477,834,200	6,472,800	1,528,235,400	230,061,500	0	5,236,026,700
2015	2,963,836,400	477,072,900	5,168,300	1,387,530,100	306,340,100	0	5,139,947,800
2014	2,879,208,300	455,320,600	4,403,100	1,352,482,500	227,310,600	0	4,918,725,100

C. Residential Water Use

In historical data, the City has not broken down residential GPCD into subcategories for single family and multifamily, so we did not have this data to provide. Moving forward, the residential GPCD will be determined to this scale. Currently the residential GPCD includes both single- and multi-family properties.

Year	Total Residential GPCD
2018	88
2017	90
2016	72
2015	73
2014	73
Historic Average	79

D. Annual and Seasonal Water Use

- The following charts show the previous five years' gallons of treated water provided to retail customers. The highlighted months are the summer, seasonal, water use.

	Total Gallons of Treated Water				
Month	2018	2017	2016	2015	2014
January	418,778,000	429,988,000	443,968,000	386,040,000	399,081,000
February	372,638,000	405,719,000	455,682,000	355,766,000	372,095,000
March	467,679,000	505,953,000	508,499,000	407,073,000	450,241,000
April	543,170,000	557,725,669	500,287,000	471,110,000	544,511,000
May	680,391,000	655,765,000	491,142,000	419,390,000	596,174,000
June	795,634,000	646,923,000	608,273,000	513,463,641	591,902,000
July	848,163,000	939,357,000	888,028,355	767,733,000	703,165,854
August	956,958,000	813,058,000	720,943,409	991,405,000	803,469,000
September	592,366,000	722,228,000	658,122,470	859,201,168	626,681,781
October	483,209,000	626,527,000	670,103,000	733,148,000	602,883,498
November	437,320,000	555,086,000	489,625,000	469,011,000	445,290,000
December	418,050,000	473,415,000	419,406,000	449,613,188	410,520,000
Total	7,014,356,000	7,331,744,669	6,854,079,234	6,822,953,997	6,546,004,133

- Summary of Seasonal and annual water use.

	Summer Retail	Total Retail
2018	2,600,755,000	4,014,356,000
2017	2,399,338,000	7,331,744,669
2016	2,217,244,764	6,854,079,234
2015	2,272,601,641	6,822,953,997
2014	2,098,526,854	6,546,004,133
Average in Gallons	2,317,693,251.80	6,913,827,606.60

E. Water Loss

Water loss data for the previous five years.

Year	Total Water Loss (gallons)	Water Loss (GPCD)	Water Loss (%)
2018	130,230,048	3	2.16%
2017	188,224,408	5	3.25%
2016	508,973,920	11	8.46%
2015	441,373,469	12	7.61%
2014	629,022,998	17	11.19%
Average	379,564,969	10	6.53%

F. Peak Day Use

This chart shows the average daily water use and peak day water use for the previous five years.

Year	Average Daily Use (gal)	Peak Day Use (gal)	Ratio (peak/avg)
2018	19,217,413	28,269,076	1.4710
2017	20,086,971	26,079,760	1.2983
2016	18,778,299	24,100,486	1.2834
2015	18,693,024	24,702,191	1.3215
2014	17,934,257	22,810,074	1.2719

G. Summary of Historic Water Use

Water Use Category	Historic Average	Percent of Connections	Percent of Water Use
Residential Single Family	3,021,557,963	92.14%	57.38%
Residential Multifamily	486,035,560	1.02%	9.23%
Industrial	3,831,540	0%	0.07%
Commercial	1,543,685,429	6.60%	29.31%
Institutional	211,209,540	0.24%	4.01%
Agricultural	0	0%	0%

Section III Wastewater System Data

A. Wastewater Collection and Treatment

The City of Round Rock's wastewater collection system is made up of over 500 miles of collection lines. These lines ultimately discharge at the Brushy Creek Regional Wastewater Treatment Plants (East or West) either directly or through larger diameter regional interceptor lines owned by the Brushy Creek Regional Wastewater Treatment System (BCRWWTs). The wastewater treatment plants and regional collection lines are operated by the City of Round Rock. The East Wastewater Treatment Plant (WWTP) is located southwest of the intersection of U.S. Highway 79 and Red Bud Lane. The West WWTP is located east of the intersection of Georgetown Avenue and Austin Boulevard, at the termination of Austin Boulevard. The City of Round Rock's wastewater collection system is currently covered under the Wastewater Discharge Permit that is held by the BCRWWTs.

The East WWTP currently has a treatment capacity of 21.5 million gallons of wastewater per day from the plant's regional customers. The regional customers include the cities of Round Rock, Cedar Park, Leander and Austin, and the sub-regional customers include Fern Bluff MUD and Brushy Creek MUD. The West WWTP is rated for a maximum flow of 3 MGD.

Because approximately 60 percent of the City is located over the Edwards Aquifer, the City has a

collection system rehabilitation program that includes cleaning and videoing the collection system located in this area every five years. The Edwards Aquifer Protection Program is mandated by the Texas Commission on Environmental Quality (TCEQ). This program also includes inspecting and correcting "problem" areas that require regular maintenance. This program is funded through the self-funded wastewater utility fund.

A map of the wastewater service area can be found at Figure 2 of Exhibit A.

1. List of active wastewater connections by major water use category. The City does not meter individual customers wastewater lines, except for one industrial property.

Water Use Category	Metered	Unmetered	Total Connections	Percent of Total Connections
Municipal	0	15	15	62.50%
Industrial	1	0	1	4.17%
Commercial	0	8	8	33.33%
Institutional	0	0	0	0%
Agricultural	0	0	0	0%
Total	1	23	24	100%

2. Number of gallons of wastewater that was treated by our facility for the previous five years.

Month	Total Gallons of Treated Water				
	2018	2017	2016	2015	2014
January	444,970,000	586,020,000	517,500,000	445,810,000	381,810,000
February	430,490,000	491,170,000	458,360,000	378,070,000	386,690,000
March	499,660,000	524,590,000	530,800,000	530,800,000	448,770,000
April	469,690,000	486,720,000	509,360,000	509,360,000	384,860,000
May	478,950,000	480,460,000	572,410,000	572,410,000	511,350,000
June	463,170,000	476,010,000	608,130,000	608,130,000	430,320,000
July	487,650,000	484,830,000	538,930,000	435,090,000	388,000,000
August	505,910,000	587,240,000	629,780,000	440,050,000	353,340,000
September	541,340,000	540,310,000	520,230,000	444,010,000	352,160,000
October	660,070,000	517,670,000	474,290,000	564,650,000	366,980,000
November	553,500,000	491,740,000	498,940,000	656,110,000	389,290,000
December	599,310,000	549,220,000	568,620,000	545,250,000	385,110,000
Total	6,134,710,000	6,215,980,000	6,427,350,000	6,129,740,000	4,778,680,000

B. Reuse Data

1. Reuse System description

The City of Round Rock wastewater reuse treatment facility is located at the East WWTP and can produce up to six million gallons per day. The City began using Type II wastewater reuse 1997 with a project that provides irrigation water to Forest Creek Golf Course. As of 2015, Round Rock converted all reuse water to Type I reuse. Approximately 230 million gallons were diverted in FY2018, with a peak demand of 2.3 million gallons per day for irrigation.

Treatment, pumping, chlorination, and storage facilities are located at the East WWTP, and 9,000 linear feet of 8-inch and 16-inch transmission and irrigation lines for irrigating in Old Settlers Park (OSP) to the Round Rock Youth Baseball Complex was completed in the Spring of 2012. OSP has

been irrigating trees and sports facilities with reuse water since the completion of these facilities. Additional storage and pumping facilities along with 22,900 linear feet of 8-inch and 16-inch transmission main to the Higher Education Center, Austin Community College, St. David's Hospital, and other parks and schools in the northeast part of the city was completed in November 2014. Subdivisions irrigating common areas and parks have been added since 2013, including Forest Creek HOA, Freeman Park, Forest Grove HOA, Legends Village HOA, and Vizcaya HOA.

Onto the future, the City plans to add an additional 1,500 linear feet of 8-inch transmission main in order to supply Stony Point High School with reuse water. However, the timeline has not yet been determined. Other future planned use is the Kalahari Resort irrigation, once it's developed.

A map of the reuse water distribution system can be found at Figure 3 of Exhibit A.

2. The chart below shows data by type of recycling and reuse activities implemented during 2018. The number in the "Other" category indicates reuse water that is provided free of charge to commercial or industrial customers for irrigation or construction use through our reuse system. The city has two free reuse water filling stations located in different parts of Old Settlers Park. It is metered and read monthly. Plant wash down water is used at our water treatment plant.

Type of Reuse	Total Annual Volume (gallons)
On-site irrigation	0
Plant wash down	1,200,000
Chlorination/de-chlorination	0
Industrial	0
Landscape irrigation	227,000,000
Agricultural	0
Discharge to surface water	0
Evaporation pond	0
Other	233,800
Total	228,433,800

CITY OF ROUND ROCK WATER CONSERVATION PLAN

Section 1.0 General Information

1.1 Declaration of Policy, Purpose and Intent

Although the city's long-range water supply plan indicates that additional water supplies will not be needed to satisfy the projected water demand once the city is built out, the plan also states that an aggressive water conservation program could substantially reduce the average per capita day consumption, prolonging the life of existing water sources and postponing the need to develop new resources. The purpose of the Water Conservation Plan is to establish short and long-term consumption goals and develop implementation strategies and processes for achieving these goals.

1.2 Goals

Develop and implement conservation programs that will:

- Reduce seasonal peak demands
- Reduce water loss, unmetered water, and water waste
- Decrease per capita consumption
- Maintain the community's quality of life while continuing to enhance economic growth
- Establish a heightened public awareness of water conservation in Round Rock
- Audit and retrofit city facilities with water efficient fixtures, landscapes and irrigation systems wherever possible.

1.3 Applicability

This plan and Chapter 10, Section 10.800 of the City of Round Rock Code of Ordinances 2018 edition shall apply to all persons, customers and owners of property who use or allow the use of city water, wherever situated.

1.4 Public Involvement

Opportunity for the public to provide input into the continued development of the Plan or any modifications is accepted by attending City Council meetings, held the second and fourth Thursday of each month or contacting City conservation staff.

Section 2.0 Conservation and Water Loss Targets and Goals

2.1 Water Savings Targets

Five-Year Target

- Over the last five years, Round Rock's total gallons per capita per day (gpcd) have averaged 143 gallons. Our goal is to reduce the total per capita day consumption each year with a target of achieving 125 gpcd.
- Over the last five years, Round Rock's residential gpcd has averaged 73.8 gallons. Our goal is to reduce the residential gpcd consumption each year with a target of achieving 70 gpcd.
- Reduce the actual water loss over the five-year period so that actual water loss is no more than eight percent of the total amount of water treated.

Ten-Year Target

- Maintain the total per capita per day consumption each year until the average per capita day consumption is 120 gpcd or less.
- Reduce and maintain the residential per capita day consumption each year with a target of achieving 65 gpcd.
- Reduce and maintain the actual water loss until it is no more than six percent of the total amount of water treated.

Section 3.0 Metering and Leak Detection

3.1 Metering Devices

Diversion and Production Meters

The Round Rock Water System has six American Water Works Association (AWWA) approved meters. Two magnetic insertion meters are used to measure water diverted from the lake, two venturi meters are used to measure water entering the water treatment plant and the remaining two, one venturi and one insertion magnetic meter, are used to measure treated water leaving the water treatment plant. These meters are calibrated at least once per year to an accuracy of plus or minus one percent. Records of water diverted and produced are collected continuously via a Supervisory Control and Data Acquisition (SCADA) System and compiled monthly.

Additionally, the City's Lake Travis water source is metered by BCRUA by two meters. A strap-on ultrasonic meter is at Lake Travis, measuring what is drawn from the lake. The other is a venturi insertion meter, which meters what enters into the City of Round Rock's water system. The testing of these meters is managed by BCRUA.

Delivery Meters

The City of Round Rock's current ordinance requires all connections to be metered. All wholesale meters are regularly monitored and verified. All water meters are tested and calibrated to AWWA standards. All water meters are read regularly, and the readings are verified for accuracy annually. Meters are replaced and/or repaired as necessary.

Residential meters and commercial meters smaller than 1-inch are replaced at a minimum every 2,000,000 gallons metered or every fifteen years, whichever is sooner. Commercial meters that are 1-1/2 inch to 2-inch are replaced at a minimum of 10,000,000 gallons metered or every 10 years, whichever is sooner. Meters 3-inch or larger are repaired or replaced on-site after failure or unusual meter reads. AMR/AMI registers and meter signal boosters will be replaced after failure or 15 years.

The City has replaced traditional meters with Master Meter's Allegro 2-way meters since 2015. Round Rock upgraded from an AMR metering system to an AMI system which has reduced meter read time, increased meter accuracy, reduced water loss, assumed to increase revenues and reduced staff by four persons. Currently, only one full-time meter reader is employed. The AMI upgrade has provided a wealth of information for utility and water billing staff to assist water customers in regard to high bill complaints, irrigation system usage, and identifying water leaks.

3.2 Leak Detection, Repair and Control of Unaccounted-for, or Non-Revenue Water

In fiscal year, 2016 Round Rock Utilities implemented an annual leak survey program for detection and location of non-evident leaks. This program has continued FY2017, FY2018 and FY 2019. Leak detection technology and expertise are tools whereby a water system can effectively detect and locate non-evident leaks as well as cost effectively locate those hard-to-locate visible leaks that challenge the best repair crews.

Utilizing experienced contractors, sensitive electronic leak sounding instruments were used to monitor all the accessible fire hydrants, selected valves and the water mains between them. Leak detection equipment included use of a microprocessor-based correlator and electro-acoustic leak detector.

During FY2016, five zones were surveyed resulting in 19 leaks. FY2017, nine zones were surveyed resulting in 21 leaks. FY2018, five zones were surveyed resulting 22 leaks. The FY 2019 survey is currently in progress.

During the 1970's and early 1980's the City placed approximately 100 miles of asbestos/concrete (A/C) waterline pipe in the ground during its growth. This pipe's design lifespan in Round Rock's soil conditions was estimated at 40 – 50 years. The shrinking and expanding clay conditions cause rigid and brittle A/C pipe to crack and leak or rupture. Many main breaks in Round Rock can be attributed to the A/C pipe. Beginning in 2007, the City pursued a yearly project of replacing the A/C pipe by the construction process of pre-chlorinated pipe bursting. The City now budgets and funds an annual \$2,000,000 A/C Waterline Replacement Project to help reduce the number of leaks. To date, the City has replaced almost 15 of the 100 miles with high-density polyethylene (HDPE) pipe designed to last 100 years.

A portion of City water customers are notified monthly of their private water leaks. This is completed jointly with the utility billing staff and conservation staff. Data from the AMI water meter is used to determine the volume of the leaks at customers residences. Those with the largest leaks (generally over one gallon per minute) are notified via doorhangers, emails, and/or postal mail. It is the goal to have this process automated in the next year through the www.RRTXwater.com portal, so that all customers with leaks will receive an email, text, or postal mail notification within 24-hours of the leak being flagged by the metering system.

Section 4.0 Record Management

The City receives daily water meter reads twice a day, from all AMI meters within the service area. These are received into our Harmony database. Harmony is used extensively by utility staff to view meter issues (non-reads, stopped meters, tampered with meters, leaks) and when providing usage information to our customers. The city desegregates water records monthly through our utility billing system, Munis, in the following manner:

- 4.1 Water diverted from water sources.
- 4.2 Water pumped into the distribution system.
- 4.3 Water sales including: residential, commercial, public/institutional, bulk water, industrial, irrigation, government, wholesale, and reuse water.
- 4.4 Non-revenue water.
- 4.5 Actual water losses.

Section 5.0 Public Education and Awareness

Water conservation strategies are being implemented using BMPs prepared by the Texas Water Development Board and other agencies. The City intends to evaluate the strategies annually using the following criteria: applicability, potential for saving water, practicality, public acceptance and cost effectiveness.

The conservation program is staffed by a full-time, dedicated conservation coordinator.

5.1 Water Conservation information is provided through:

- The City's electronic newsletter provides seasonal irrigation information and relevant program information, such as promoting rebates, rain barrels sales, and education classes. There is also a newsletter monthly with the utility bill that provides the same information in terms of rebate program information, seasonal irrigation advice, and program promotions. A blog, *The Water Spot* is also published monthly to provide timely water conservation information to water customers.
- Printed material is available to water customers at the Utility Billing office, where a table is set up permanently in the lobby to provide conservation and usage information; dye tablets to check toilets for leaks, rebate program information, and leak detection information. Other freebies are given out throughout the year, such as showerheads, rain gauges, moisture meters, plumbing tape, and other water saving devices.
- Social media outlets, such as the Facebook, Twitter, and Nextdoor are utilized to promote special events, such as a rain barrel sale, or Fix-a-Leak Week, or a necessary action, such as turning off irrigation systems during winter months or not to water during the heat of the day in summer.
- City website (www.roundrocktexas.gov) has the most comprehensive water conservation information on it. It is updated continuously as program information changes, as well as seasonally. Residents can find tips on purchasing water efficient appliances; a lot of irrigation scheduling and troubleshooting information, all rebate programs and applications.
- Public meetings and seminars are offered periodically to residents. Recently the City has held Water Wise Landscaping classes at the public library, free of charge to residents. This has been planned to continue for the next several years. Residents can attend to learn lawn maintenance tips, gardening information, and about native trees and landscaping. Classes are taught by horticulture experts with Texas A & M's AgriLife Extension's Water University staff.

- When a new water account is opened, conservation program information is provided to the customer, along with rates, and payment information. The customer is also given information on the water customer portal (www.RRTXwater.com) that launched in 2018. The customer can register in the portal to see conservation tips, program information, and apply for rebates. The customer can also see hourly, daily, and monthly water use as displayed in gallons or in dollars. The customer can also compare their water use to the city, to their own use over the years, and to similar households.

- Presentations at local service organizations and homeowner associations are conducted as requested, and as staff time allows.

- Ongoing conservation programs include free irrigation system evaluations to water customers and a variety of rebate programs for all customer types. Currently rebates are offered on the following practices and appliances rainwater harvesting rebates, efficient clothes washer, efficient toilets and urinals (for non-residential properties only), a variety of irrigation system conversions, irrigation system checks by a licensed irrigator, and commercial showerheads, faucets, and pre-rinse spray valves.

5.2 The City plans to continue to enhance its public education and awareness component for the next five-year planning period through:

- Continued use and expansion of school education programs. For the second school year (2018-2019), we have contracted with Resource Action Programs to provide a water efficiency program to local 5th grade students. The first year (2017-18) was limited to only two schools to see how well the program was received. The second year is currently happening but was expanded to a few more schools. As the program becomes more known and accepted by the school district, we hope to be able to expand it as budget allows.

- Special events, promotions, workshops, and seminars will be offered as deemed necessary or as able. The City has participated in water promotions over the last several years, such as Fix-A-Leak Week, Drinking Water Week, Imagine a Day Without Water, The Wyland Foundation's Mayor's Conservation Challenge, Water Wise Landscaping seminars, and irrigation education outreach events. More events will be planned as deemed relevant and effective.

- As the program continues to expand and plumbing and irrigation technology improves, there is anticipation of revising existing water conservation incentives and ending programs that have market saturation. There is also continued research on new programs and ordinances to possibly include:

- Water Wise Landscape Design Incentives, possibly including soils, mulch, drought-tolerant plant rebates;
- Amendments to Landscape Development Code to include specifications on soil depth, plant selection;
- Commercial property specific rebates;
- Requiring all non-residential properties with irrigation systems to audit them periodically; and
- Expanding conservation programs to include MUD water customers.

5.3 Additional water reduction and efficiency measures used within the City include:

- The adoption of the 2015 International Plumbing Code, which requires efficient water use fixtures; this also complies with the State of Texas water efficiency requirements.
- The City recycles approximately 98% of the filter backwash water at the water treatment plant.
- The Water Waste Ordinance, part of City Code, which prohibits the waste of water as a result of improper irrigation application, leaks, or other malfunction.
- Voluntary outdoor irrigation is promoted year-round. Residents are encouraged to limit outdoor irrigation to no more than twice per week and not during the hours of 10:00 AM and 7:00 PM.
- New automatic irrigation systems are required adhere to the TCEQ's 2009 irrigation design standards.

Section 6.0 Non-Promotional Rate Structure

Residential Rates

The City of Round Rock began implementation of a year-round, tiered rate structure in 2018 to provide incentive to conserve water during peak landscape irrigation season and discourage unnecessary waste or use of water. Prior to 2018, the tiers were implemented only seasonally during summer months (May – September) each year.

Each customer is charged a monthly base rate based on the size of the water meter; then an amount per thousand gallons. The rate per thousand gallons is determined by the type of property (residential, commercial, reuse, or irrigation-only) and the size of the meter at the property.

Monthly Base Fee	
Meter Size (inches)	Current Rates
5/8	\$16.52
3/4	\$23.00
1	\$36.32
1 1/2	\$69.59
2	\$109.51
3	\$202.68
4	\$335.79
6	\$1,046.86
8	\$1,829.77
10	\$2,873.67
12	\$3,526.11

For a typical household sized meter, 5/8", the first tier is at 15,000 gallons; when 15,000 gallons are used, a second-tier amount is 125% of tier one, per thousand gallons. For residential meters larger than 5/8", the volume amount for the lower block is based on the size of the water meter, then using the number of living unit equivalents for that meter times the 15,000-gallon amount. Tiers two and three increases in price by 125%. Tier four is a 150% increase over tier three.

For a residential property, the tiers look like this:

Tier Volumes (gallons)				
Meter Size	Tier 1	Tier 2	Tier 3	Tier 4
5/8"	0 – 15,000	15,001 – 21,000	21,001 – 27,000	27,001 +
3/4"	0 – 22,500	22,501 – 31,500	31,501 – 40,500	44,501 +
1"	0 – 37,500	37,501 – 52,500	52,501 – 67,500	67,501 +
Tiered Rate (per 1000 gallons)	\$2.56	\$3.20	\$3.85	\$5.77

These rates and tier amounts are reviewed on a regular basis, typically every three years.

Commercial Rates

Commercial, industrial, and multifamily customers pay a monthly base fee according to meter size (see above), as well as a volume rate of \$2.80 per 1000 gallons.

Irrigation Rates

Irrigation-only meters pay the monthly base fee per meter size (see above) and follow the same tiers and rates as mentioned above for residential customers.

Reuse Rates

Reuse water rate structure is a flat rate of 75% of the potable water rate; currently \$1.92 per 1000 gallons. The rates are reviewed on a regular basis.

Section 7.0 Means of Implementation and Enforcement

- 6.1 The City of Round Rock will enforce necessary portions of this plan through ordinances and signed contracts.
- 6.2 The City's sworn police officers, code enforcement officers and other designated personnel will ensure compliance with the water conservation and drought contingency regulations.
- 6.3 Violations will be handled according to the 2018 City Code of Ordinances, Sec. 44-240.
- 6.4 The plan will be implemented immediately upon adoption by City Council.

Section 8.0 Tracking Targets and Goals

The staff shall track target and goals by utilizing the following procedures:

- 7.1 Logs will be maintained for meter calibration, meter testing and meter replacement.
- 7.2 Annual water audits shall be documented and kept in the Water & Wastewater Utility Department files. An outside consulting firm will conduct periodic audits.
- 7.3 Records of all distributed rebates and conservation public education events shall be maintained by conservation staff. These records must include type, number, and location distributed.
- 7.4 Rates are tracked and monitored by the City's Finance Department. An outside consulting firm will conduct reviews of the rates every three years.
- 7.5 Logs of the City's Leak Detection Program will be maintained by designated utility staff. These records will include inspections and soundings of water main fittings and connections and night flow measurements. An outside consulting firm will conduct periodic leak detection audits.

Section 9.0 Coordination with Regional Water Planning Groups

The service area of the City of Round Rock is located within Brazos G Regional Water Planning Group. The City of Round Rock will mail a copy of this Plan to the RWPG and the Texas Water Development Board once it has been approved.

Section 10.0 Wholesale Customer Conservation Requirements

All wholesale water contracts require compliance with the City's Drought Contingency and Water Conservation Plans. Each contract specifies that the water supplied to the wholesale customer may be reasonably limited by the City on the same basis and to the same extent as the supply of water to any other customers within the city.

All wholesale contracts entered into, renewed or extended after the adoption of this plan will include provisions for distributing water to the wholesale customers in accordance with the Texas Water Code, Section 11.039. Customer entities that intend to resell water provided by the City of Round Rock shall require that all successive customers implement conservation measures in accordance with the provisions stated in Title 30, Texas Administrative Code, Chapter 288.

Section 11.0 Plan Review and Update

The City of Round Rock will review and update the Water Conservation Plan as appropriate based on an assessment of the five- and ten-year goals. At a minimum, the Water Conservation Plan will be updated and adopted no later than May 1, 2019 and every five years thereafter, per TCEQ requirements in Title 30 TAC, Chapter 288.30.

The Water Conservation plan and annual Utility Profile will be maintained and submitted by the City of Round Rock Water Conservation Coordinator.

Appendix A

Figure 1—Water Service Area

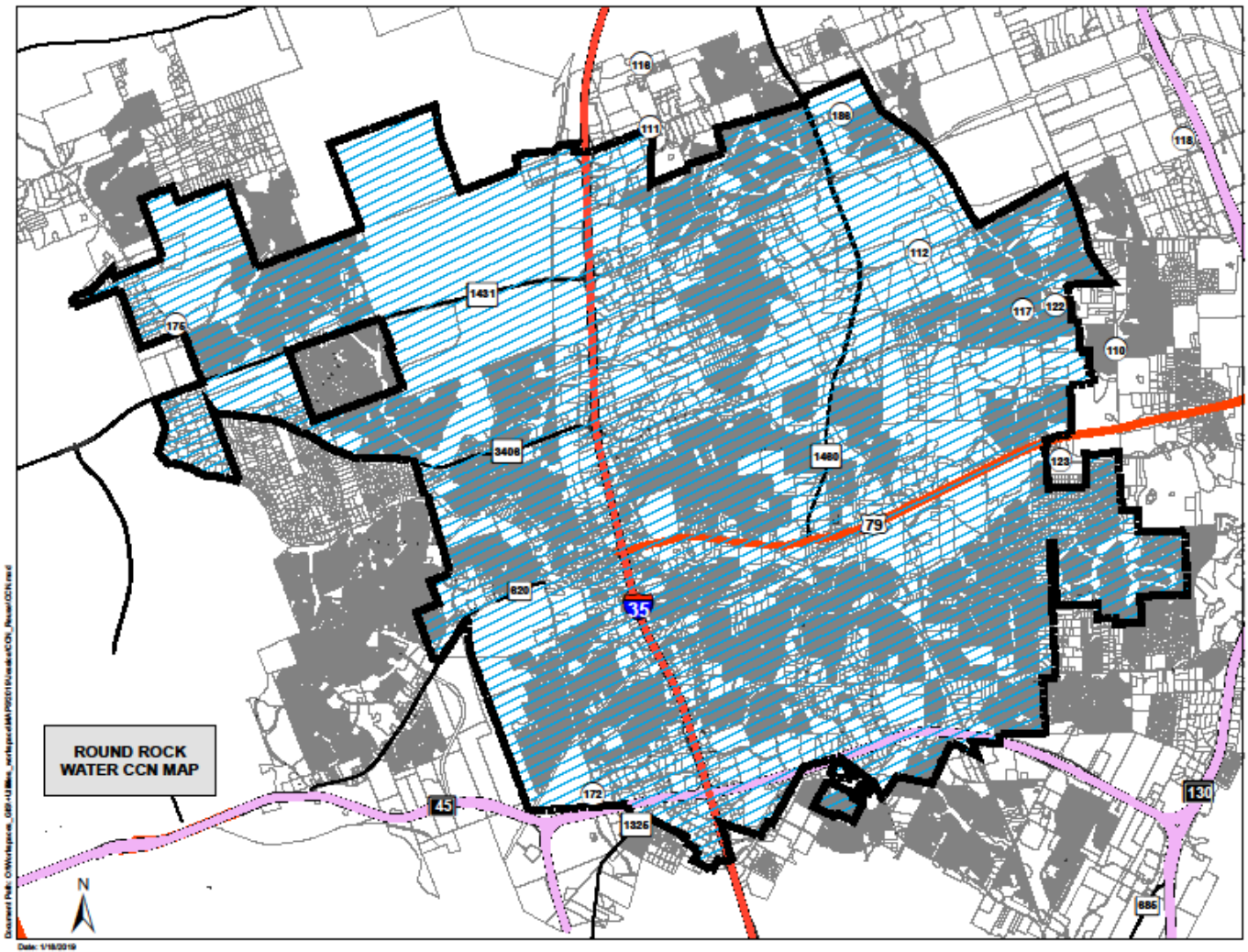


Figure 2—Wastewater Service Area

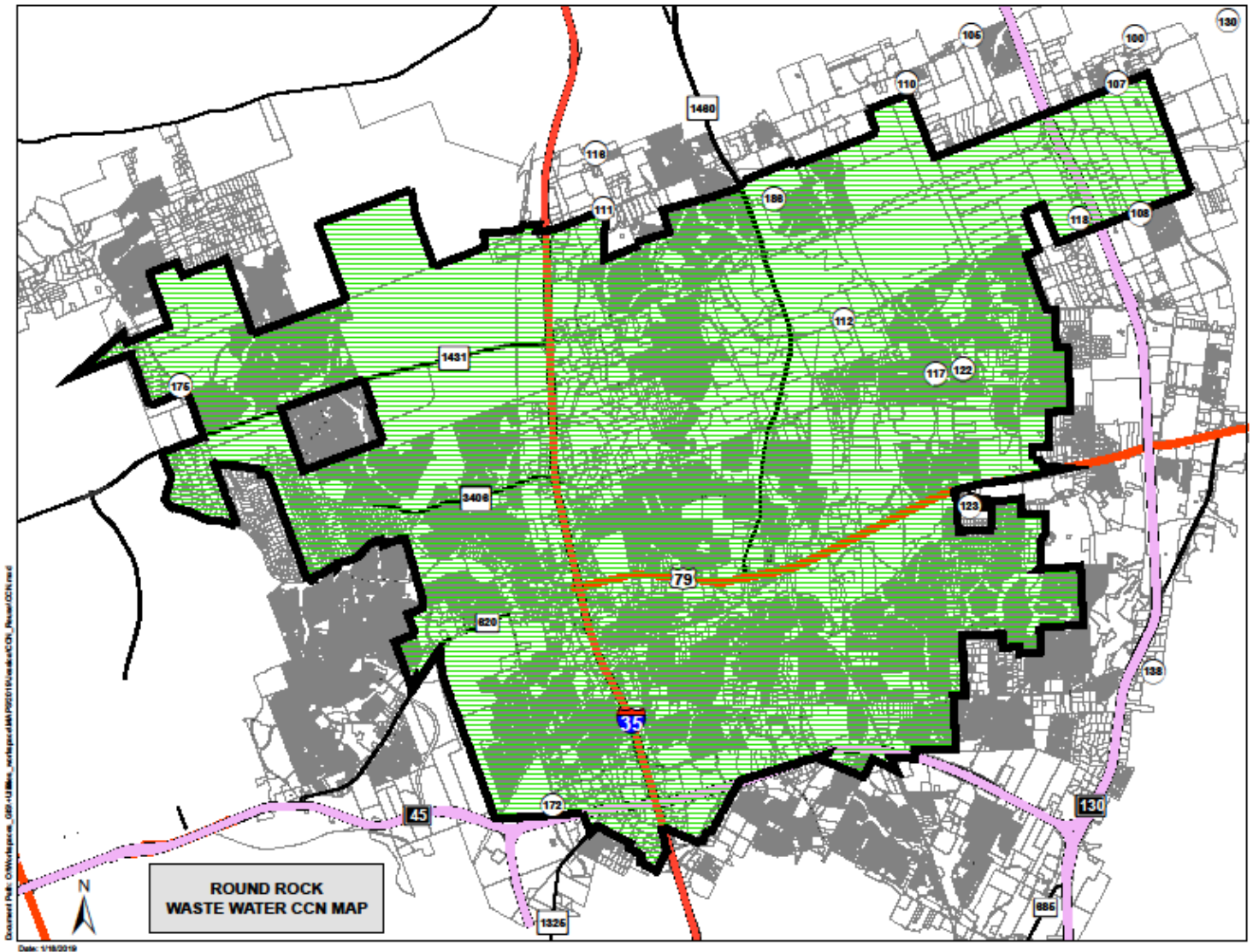


Figure 3—Reuse Water Distribution

