City of Bartlett

140 West Clark Street
Bartlett, TX 76511

WATER CONSERVATION PLAN

February 2024

MRB Group Project No. 0213.22001.000

Prepared by:

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I. INTRODUCTION

This Water Conservation Plan is presented by the City of Bartlett pursuant to the requirements of the Texas Water Development Board (TWDB) and the Texas Commission on Environmental Quality (TCEQ). This plan has been developed through consultations with the City of Bartlett staff and the Texas Water Development Board personnel utilizing guidance from the publications made available from the Texas Water Development Board. The plan will meet the requirements of the Texas Administrative Code, Title 31 TAC 10 Rule §363.15 requiring water conservation plans for systems serving 3,300 or more connections.

The Water Conservation Plan organizes the implementation of a group of procedures for reducing the consumption of water, reducing the loss or waste of water, improving or maintaining the efficiency in the use of water, and increasing the recycling/reuse of water. The procedures identified are based on best management practices and measures to try to meet the targets and goals identified in the plan.

This plan should not be confused with the Drought Contingency Plan (Emergency Demand Management), a combination of strategies for responding to temporary and potentially reoccurring water supply shortages and other water supply and distribution emergencies. The City of Bartlett Water Utility Profile has been provided in Appendix A and goes into more detail about the City's utility information.

II. SERVICE AREA DESCRIPTION

The City of Bartlett is located within Williamson and Bell Counties, east of Interstate 35 and Jarrell, TX, and directly south of Temple, TX. Major highways through the City of Bartlett include State Highway 95 and County Highway 487. The Union Pacific Railroad also passes through the City. The City of Bartlett provides water and wastewater utilities

within its corporate boundaries and extraterritorial jurisdiction. The City of Bartlett Service Area Map is provided in Appendix B.

III. WATER SYSTEM DESCRIPTION

The City of Bartlett produces its water supply from two (2) wells drilled into the Edward Balcones Fault Z Aquifer. The City of Bartlett wells are located within the City and are pumped to a ground storage tank. The water is chlorinated as it enters the ground storage tank. Booster pumps distribute the water to the distribution system or one of two elevated storage tanks. The two elevated storage tanks maintain a pressure sufficient to deliver water through the City's distribution system. Based on current development pressures, the City will be planning upgrades to its water system over the next five to ten years. The new water facilities include a new well and upgrades to the booster pump station.

IV. WASTEWATER SYSTEM DESCRIPTION

The City of Bartlett receives wastewater from its customers into the City's collection system. The collection system transports the wastewater to the City's existing facultative lagoon wastewater treatment plant. The City intends to construct a new activated sludge wastewater treatment plant within the next five (5) years. The City owns and operates three (3) lift stations, including the plant lift station.

V. WATER UTILITY PROFILE

As an integral part of the Water Conservation Plan, the Texas Water Development Board requires that the City of Bartlett utilities be evaluated by completing a Water Conservation Utility Profile document. This document is an evaluation of the City's water and wastewater system records and includes customer use characteristics to identify water conservation opportunities and potential water-saving targets and goals. This document is attached as Appendix A.

VI. WATER CONSERVATION OPPORTUNITIES AND GOALS

Research and development of this plan have identified several areas of opportunity in which the City will pursue the maintenance and expansion of its water conservation efforts by adopting the following goals to achieve the targeted long-term reduction in water consumption. Rolling 5-year averages of water consumption and loss from the Utility Profile were used as baseline values:

A. TOTAL WATER CONSERVATION GOALS

BASELINE: 147 gpcd of 5-year average water use
TARGET: 143 gpcd by 2028; 139 gpcd by 2033

B. WATER LOSS GOALS

GOAL: Reduce Water Loss
BASELINE: 78 gpcd of water loss*
TARGET: 76 gpcd by 2028; 74 gpcd by 2033

*Note: The baseline water loss is the average of 2022, 2021 and 2018.

C. RESIDENTIAL GOALS

GOAL: Water Savings Through Conservation Education
BASELINE: 52 gpcd consumption rate
TARGET: 2 gpcd reduction by 2028: 4 gpcd reduction by 2033

GOAL: Promote Low-Flow Fixture Retrofit
BASELINE: 52 gpcd consumption rate
TARGET: 2 gpcd reduction by 2028; 4 gpcd reduction by 2033

GOAL: Reduction of Irrigation Usage

BASELINE: 52 gpcd consumption rate

TARGET: 2 gpcd reduction by 2028; 4 gpcd reduction by 2033

D. MUNICIPAL GOALS

GOAL: Reduction of municipal water consumption

BASELINE: The City does not currently track municipal usage separately, but is now aware of the requirement and will review their billing system to differentiate municipal usage from residential usage.

The 5-and 10-year goals for water savings are summarized in a table in Appendix C.

VII. CONSERVATION METHODS AND IMPLEMENTATION PLAN

The City currently employs numerous Water Conservation oriented programs and efforts. In consideration of conserving its water supply, the City has begun to expand its water conservation program to include more specific elements and to verify their effects.

1. Water Loss Control

Water Loss is water that is being used in the system that is not an approved use. Such uses include but are not limited to faulty metering and distribution pipe leaks. To reduce unaccounted water loss, the City will promote and incorporate the following techniques:

a. Test master meters annually.
b. Test or replace customer meters based on meter life.
c. Promote the use of smaller customer meters, which more accurately meter low flows.

d. Begin a semi-annual leak detection program using acoustic leak detectors or correlators, as the budget allows.
e. The continuous use of a SCADA system to monitor aberrations in consumption. The City will also begin separating out municipal consumption.

2. Maintain Universal Metering Program

To ensure the integrity of the City's consumption data, Bartlett has a universal metering program in place. This program ensures every connection is metered with the correctly-sized meter, and the volume registered is accounted for in the City's records. The meters are replaced once they have reached the end of their useful life (15-20 years) or have become unreliable, whichever comes first.

3. Provide and Promote Water Conservation Education

Substantial reduction in water consumption can be realized if the public is informed about water conservation practices. The City of Bartlett will continue to provide ongoing education to both staff and the public about how to save water in and around residences and businesses by expanding the use of the following techniques:

a. Provide quarterly water conservation literature and brochures to customers at public meeting locations.
b. New customer packets will include water conservation literature.
c. Water bills will include water conservation information before the peak demand season.
d. Public lectures and presentations will be conducted and promoted by the City.
e. Special conservation communications will be presented in the spring of each year in news media articles, City message boards and websites to encourage summertime conservation.

4. Promote Low-Flow Plumbing Fixture Retrofit

The education and information program encourage plumbers and water consumers to retrofit old fixtures (such as plumbing fixtures, lawn watering equipment, and water-using appliances) with water-saving devices. The educational process will focus on the advantages of installing water conservation devices and the availability of these items. This program will be promoted year-round.

5. Promote Reduction of Irrigation Usage

The City will promote reduced irrigation landscaping through the education and information program. This program will provide information about plant species that require less water to existing customers and builders to encourage reduced irrigation. In addition, publishing the cost advantages of more water-efficient lawns and landscaping will promote existing landscaping retrofitting.

6. Study Water Conservation Rate Structure

The City currently employs a rate structure that is not "promotional" (does not encourage excessive use), consisting of a minimum monthly charge plus an additional unit charge per gallon for all water. Residential and commercial users pay the same rate as those users inside and outside the City limits.

A copy of the rate structure is attached as Appendix D.

A study will be conducted to evaluate the potential water conservation benefits when water conservation features are added to the rate structure.

Examples of such features could include the following:

a. Monthly base charge based on meter size.
b. Increasing the charge per gallon for higher users
c. Seasonal rates based on the customer's seasonal variation from summer to winter

VIII. IMPLEMENTATION, AUDITS, AND TRACKING

The City Administrator or his/her duly appointed representative is responsible for the implementation and enforcement of this plan. This plan will be enforced voluntarily (though compliance is encouraged) by the following methods:

1. Service tap applicants will be encouraged to utilize water-conservation plumbing fixtures. Existing water system staff will be used to encourage water-saving plumbing devices to be installed in new buildings.
2. The water rate structure will encourage retrofitting old plumbing fixtures using large amounts of water.
3. Adoption of new plumbing regulations regarding water-conserving plumbing fixtures.
4. Potential city ordinance prohibiting water waste, such as time-of-day watering.

The City Administrator will be responsible for maintaining appropriate records for program verification, and will supervise the execution and implementation of the elements contained herein.

The City of Bartlett is required to provide an annual report describing the implementation and quantitatively tracks the water conservation program relative to the targets and goals identified in the plan. This annual report is due prior to May 1st of each year. It will be prepared under the supervision of the City Administrator in accordance with the format published by the Texas Water Development Board.

In addition to the annual report and audit for the Texas Water Development Board, the City will audit its water consumption monthly to separately identify the total diverted water compared to the total water sold, and water used for flushing, firefighting, water leak losses, and other contributors to the total diverted water. The monthly audit will be used to evaluate the City's progress in the implementation of its Water Conservation Plan.

IX. REGIONAL WATER PLANNING PROVISIONS

The City of Bartlett is located within the Brazos G Water Planning area. The City will deliver a copy of the approved Water Conservation Plan to the Brazos G Water Planning Group and thereafter communicate and coordinate its efforts for water conservation to promote the successful efforts of each.

APPENDIX A

CITY OF BARTLETT UTILITY PROFILE

Texas Water Development Board

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

CONTACT INFORMATION

Name of Utility: City of Bartlett

Public Water Supply Identification Number (PWS ID): 2460006

Certificate of Convenience and Necessity (CCN) Number: 11232

Surface Water Right ID Number: N/A

Wastewater ID Number: WQ00010880001

Contact: First Name: Joseph Last Name: Resendez

Title: City Administrator

Address: 140 W. Clark Street City: Bartlett State: TX

Zip Code: 76511 Email: joseph.resendez@bartlett-tx.us

Telephone Number: 254-527-3219 Date: 5/30/23

Is this person the designated Conservation Coordinator? (●) Yes ( ) No

Coordinator: First Name: Last Name:

Title:

Address: City: State:

Zip Code: Email:

Telephone Number:

Regional Water Planning Group: G

Groundwater Conservation District: 13

Our records indicate that you:

- [x] Received financial assistance of $500,000 or more from TWDB
- [ ] Have 3,300 or more retail connections
- [ ] Have a surface water right with TCEQ

Utility Profile Year: 2023

A. Population and Service Area Data

1. Current service area size in square miles: 1.25

Texas Water Development Board

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

2. Historical service area population for the previous five years, starting with the most current year.

Year	Historical Population Served By Retail Water Service	Historical Population Served By Wholesale Water Service	Historical Population Served By Wastewater Water Service
2022	1,750		1,750
2021	1,685		1,685
2020	1,685		1,685
2019	1,685		1,685
2018	1,685		1,685

3. Projected service area population for the following decades.

Year	Projected Population Served By Retail Water Service	Projected Population Served By Wholesale Water Service	Projected Population Served By Wastewater Water Service
2030	2,091		2,091
2040	2,330		2,330
2050	2,575		2,575
2060	2,828		2,828
2070	3,084		3,084

4. Described source(s)/method(s) for estimating current and projected populations.

The 2021 Brazos G Regional Water Plan, Volume 1 was used to estimate projected populations and the population listed on the water loss audit was used for current populations.

Texas Water Development Board

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

B. System Input

System input data for the previous five years.
Total System Input = Self-supplied + Imported – Exported

Year	Water Produced in Gallons	Purchased/Imported Water in Gallons	Exported Water in Gallons	Total System Input	Total GPCD
2022	73,328,000			73,328,000	115
2021	120,625,000			120,625,000	196
2020	96,841,333			96,841,333	157
2019	90,083,833			90,083,833	146
2018	75,598,000			75,598,000	123
Historic Average	91,295,233	0	0	91,295,233	147

C. Water Supply System

1. Designed daily capacity of system in gallons: 1,368,000

2. Storage Capacity

2a. Elevated storage in gallons: 400,000

2b. Ground storage in gallons: 400,000

Texas Water Development Board

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

D. Projected Demands

1. The estimated water supply requirements for the next ten years using population trends, historical water use, economic growth, etc.

Year	Population	Water Demand (gallons)
2024	1,769	
2025	1,788	
2026	1,807	
2027	1,826	
2028	1,845	
2029	1,865	
2030	1,885	
2031	1,905	
2032	1,925	
2033	1,946	

2. Description of source data and how projected water demands were determined.

The existing 2023 population of the City was used with a growth rate of 1.07% as estimated in the Brazos G Regional Water Plan.

E. High Volume Customers

1. The annual water use for the five highest volume **Retail customers.**

Customer	Water Use Category	Annual Water Use	Treated or Raw
Bartlett ISD	Institutional	2,302,489	Treated
Will-O-Bell	Commercial	1,263,700	Treated
One Stop	Commercial	586,363	Treated
Dollar General	Commercial	451,360	Treated
Munchies	Commercial	347,129	Treated

2. The annual water use for the five highest volume **WHOLESALE customers.**

Customer	Water Use Category	Annual Water Use	Treated or Raw
	Choose		Choose
	Choose		Choose
	Choose		Choose
	Choose		Choose
	Choose		Choose

Texas Water Development Board

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

F. Utility Data Comment Section

Additional Information comments about utility data.

Section II: System Data

A. Retail Water Supplier Connections

1. List of active retail connections by major water use category.

Water Use Category Type	Total Retail Connections (Active + Inactive)	Percent of Total Connections
Residential - Single Family	574	89.97%
Residential - Multi-Family	1	0.16%
Industrial	0	0.00%
Commercial	63	9.87%
Institutional	0	0.00%
Agricultural	0	0.00%
Total	638	

2. Net number of new retail connections by water use category for the previous five years.

	Net Number of New Retail Connections						
Year	**Residential - Single Family**	**Residential - Multi-Family**	**Industrial**	**Commercial**	**Institutional**	**Agricultural**	**Total**
2022	574	1		63			638
2021	563	1		58			622
2020	577	2		60			639
2019	584			59			643
2018	546	0	0	51	0	0	597

Texas Water Development Board

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

B. Accounting Data

The previous five years' gallons of RETAIL water provided in each major water use category.

Year	Residential - Single Family	Residential - Multi-Family	Industrial	Commercial	Institutional	Agricultural	Total
2022	31,957,226	59,020	0	8,778,081	0	0	40,794,327
2021	29,421,257	220,470	0	13,197,592	0	0	42,839,319
2020	30,797,387	1,090,820	0	9,454,227	0	0	41,342,434
2019	30,714,547	0	0	11,809,260	0	0	42,523,807
2018	36,932,000	0	0	10,925,000	0	0	47,857,000

C. Residential Water Use

The previous five years residential GPCD for single family and multi-family units.

Year	Total Residential GPCD
2022	50.1
2021	48.2
2020	51.8
2019	50
2018	60
Historic Average	52

Texas Water Development Board

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

D. Annual and Seasonal Water Use

1. The previous five years' gallons of treated water provided to RETAIL customers.

Month	Total Gallons of Treated Water				
	2022	2021	2020	2019	2018
January	4,728,000	7,873,000	6,241,000	6,241,000	6,122,000
February	5,406,000	12,006,000	11,760,000	7,326,333	4,567,000
March	5,699,000	7,918,000	6,236,333	6,236,333	5,092,000
April	5,755,000	7,266,000	6,020,333	6,020,333	5,040,000
May	5,772,000	6,421,000	5,497,000	5,497,000	3,298,000
June	8,128,000	6,527,000	7,599,667	7,599,667	8,144,000
July	6,648,000	4,260,000	13,294,000	6,084,000	7,344,000
August	7,089,000	4,990,000	5,706,333	5,706,333	5,040,000
September	6,059,000	9,932,000	8,468,667	8,468,667	9,415,000
October	6,025,000	33,720,000	7,039,000	15,786,000	7,613,000
November	5,567,000	14,818,000	9,411,000	8,965,667	6,512,000
December	5,452,000	4,894,000	9,568,000	6,152,500	7,411,000
Total	72,328,000	120,625,000	96,841,333	90,083,833	75,598,000

The volumes shown here do not match the volumes in the table above (B. Accounting Data). However, the data shown is the best available since staffing and software changes have made accessing the historical monthly data impossible.

Texas Water Development Board

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

2. The previous five years' gallons of raw water provided to RETAIL customers.

Month	Total Gallons of Raw Water				
	2022	2021	2020	2019	2018
January					
February					
March					
April					
May					
June					
July					
August					
September					
October					
November					
December					
Total	0	0	0	0	0

3. Summary of seasonal and annual water use.

	Summer RETAIL (Treated + Raw)	Total RETAIL (Treated + Raw)
2022	21,865,000	72,328,000
2021	15,777,000	120,625,000
2020	26,600,000	96,841,333
2019	19,390,000	90,083,833
2018	20,528,000	75,598,000
Average in Gallons	20,832,000	91,095,233

Texas Water Development Board

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

E. Water Loss

Water Loss data for the previous five years.

Year	Total Water Loss in Gallons	Water Loss in GPCD	Water Loss in GCD*
2022	32,321,860	51	139
2021	84,027,267	137	370
2020			
2019			
2018	28,319,556	46	130
Average	28,933,737	47	128

*GCD = gallons per service connection per day

F. Peak Day Use

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)
2022	198,159	237,663	1.20
2021	330,479	171,489	0.52
2020	265,319	289,130	1.09
2019	246,805	210,761	0.85
2018	207,118	223,130	1.08

G. Summary of Historic Water Use

Water Use Category	Historic Average	Percent of Connections	Percent of Water Use
Residential-Single Family	31,964,483	89.97%	74.21%
Residential-Multi-Family	274,062	0.16%	0.64%
Industrial	0	0.00%	0.00%
Commercial	10,832,832	9.87%	25.15%
Institutional	0	0.00%	0.00%
Agricultural	0	0.00%	0.00%
Total	43071377.4		

Texas Water Development Board

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

H. System Data Comment Section

Section III: Wastewater System Data

A. Wastewater System Data

1. Design capacity of wastewater treatment plant(s) in gallons per day: 325,000

2. List of active wastewater connections by major water use category.

Water Use Category	Metered	Unmetered	Total Connections	Percent of Total Connections
Municipal	575		575	90.13%
Industrial	0		0	0.00%
Commercial	63		63	9.87%
Institutional	0		0	0.00%
Agricultural	0		0	0.00%
Total	638	0	638	100.00%

3. Percentage of water serviced by the wastewater system: 100.00%

Texas Water Development Board

UTILITY PROFILE FOR RETAIL WATER SUPPLIER

4. Number of gallons of wastewater that was treated by the utility for the previous five years.

Month	Total Gallons of Treated Water				
	2022	2021	2020	2019	2018
January	1,974,700				
February	2,016,000				
March	2,019,960				
April	1,200,000				
May	589,000	2,695,760			
June	636,000	3,690,000			
July	1,116,000	4,681,000			
August	1,692,600	2,542,000			
September	1,380,000	2,034,000			
October	1,457,000	1,836,750			
November		1,410,000			
December		2,449,000			
Total	14,081,260	21,338,510	0	0	0

5. Could treated wastewater be substituted for potable water?

○ Yes ◉ No

B. Reuse Data

1. Data by type of recycling and reuse activities implemented during the current reporting period.

Type of Reuse	Total Annual Volume (in gallons)
On-site Irrigation	0
Plant wash down	0
Chlorination/de-chlorination	0
Industrial	0
Landscape irrigation (park,golf courses)	0
Agricultural	0
Discharge to surface water	0
Evaporation Pond	0
Other	0
Total	0

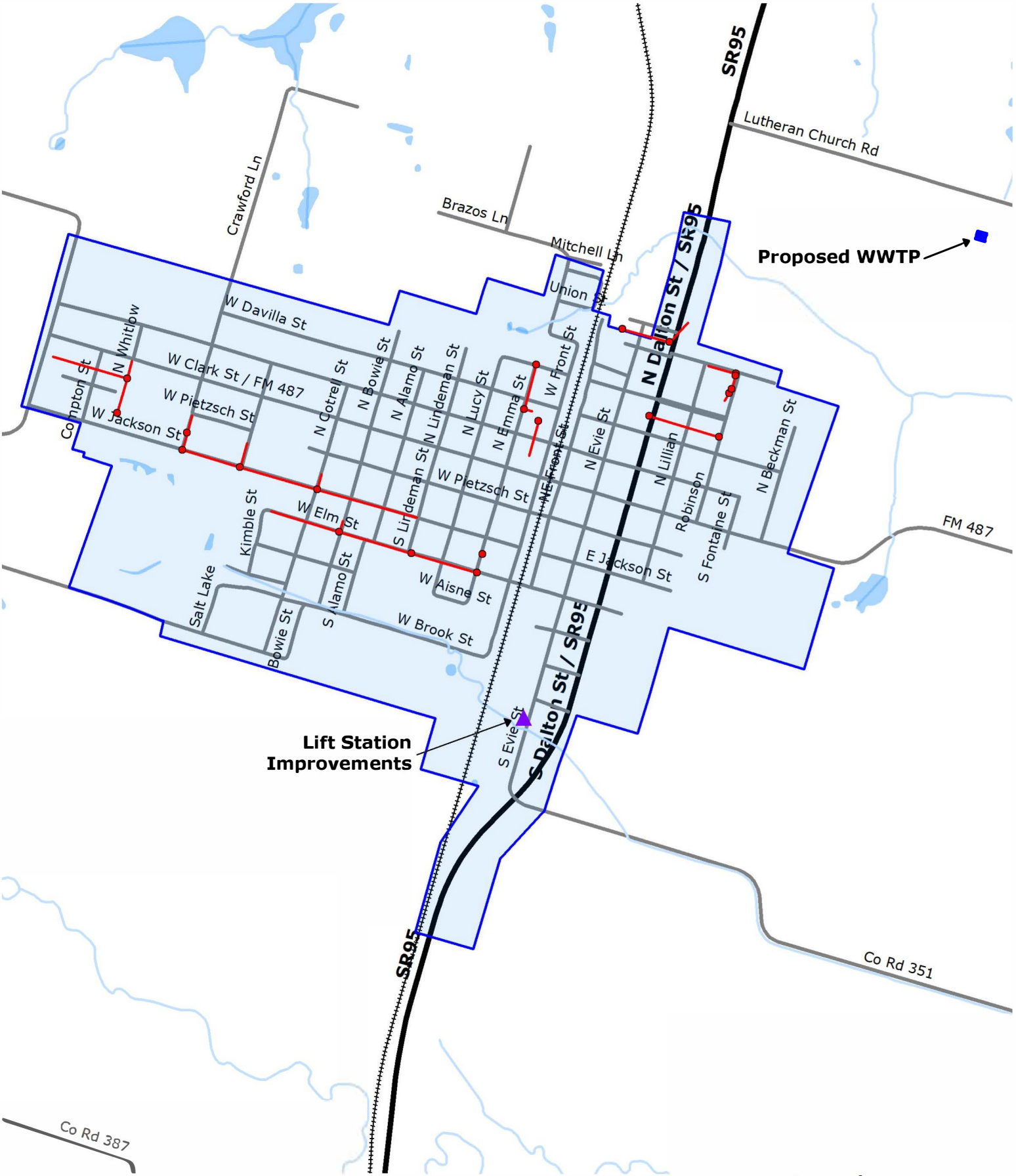
UTILITY PROFILE FOR RETAIL WATER SUPPLIER

C. Wastewater System Data Comment

Additional comments and files to support or explain wastewater system data listed below.

APPENDIX B

CITY OF BARTLETT SERVICE AREA MAP



City of Bartlett, Texas
Texas Water Development Board CWSRF
CCN Map

MRB group

250 ft 1000 ft 1750 ft

N

Legend

- City of Bartlett CCN
- Proposed WWTP
- Sewer Main Replacement
- Evie Lift Station Improvements
- Manhole Replacement

APPENDIX C

5- AND 10-YEAR GOALS FOR WATER SAVINGS

WATER CONSERVATION PLAN
5- AND 10-YR GOALS FOR WATER SAVINGS

Facility Name: City of Bartlett

Water Conservation Plan Year: 2023

	Historic 5yr Average	Baseline	5-yr Goal for year 2028	10-yr Goal for year 2033
Total GPCD[1]	147	147	143	139
Residential GPCD[2]	52	52	50	48
Water Loss (GPCD)[3]	78	78	76	74
Water Loss (Percentage)[4]	53 %	53 %	53 %	53 %

1. Total GPCD = (Total Gallons in System ÷ Permanent Population) ÷ 365
2. Residential GPCD = (Gallons Used for Residential Use ÷ Residential Population) ÷ 365
3. Water Loss GPCD = (Total Water Loss ÷ Permanent Population) ÷ 365
4. Water Loss Percentage = (Total Water Loss ÷ Total Gallons in System) x 100; or (Water Loss GPCD ÷ Total GPCD) x 100

APPENDIX D

CITY OF BARTLETT RATE STRUCTURE

City of Bartlett, TX – Utility Billing Rates

Effective 10-1-2020

Utility	Rate		
Electric - Commercial	$	30.00	Base Fee + $0.0975 per KWH
Electric - Residential	$	30.00	Base Fee + $0.1215 per KWH
Garbage - Sales Tax	$	2.07	1st Receptacle + $1.66 Each Additional Receptacle
Garbage	$	25.00	1st Receptacle + $20 Each Additional Receptacle
Wastewater	$	32.50	Base Fee
Water	$	30.00	Base Fee + $0.006125 per Gallon
W/WW Improvement Repayment	$	8.50	Base Fee

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