

*City Manager's Recommended Budget  
Water & Sewer Fund  
FY 2022-2023*



*Prepared by:  
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April 12, 2022*



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## INTRODUCTION

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April 12, 2022

Dear Mayor and Council:

It is my distinct honor to submit the City Manager's recommended budget for the Water and Sewer Fund (Fund 31) for fiscal year beginning July 1, 2022, and ending June 30, 2023. This budget is balanced at \$ 11,437,900 and has been prepared in accordance with the Local Government Budget and Fiscal Control Act. In accordance with General Statutes, a public hearing to receive public input on the proposed budget will be held Monday, April 25, 2022 at 6pm, at which time the Council may consider adoption at this meeting.

Coming out of what we believe to be the worst of COVID, the City must prepare to move forward as the economy continues to improve. Within this document, you will find the recommended budget and proposed fees, which charts our course for the next year.

In recent fiscal years, the City has moved forward conservatively, as have other jurisdictions. Revenues have held steady overall, with some even exceeding original budget estimates.

This proposed budget is much like prior year budgets. However, the adoption of the revised fee schedule positions the City to take advantage of the infrastructure funding that is currently inundating State funding sources. In order to be eligible for those opportunities, Graham must prove it is not undercutting rates and unduly subsidizing our expenses with State dollars. If a rate increase is approved, the requested effective date is May 1, 2022, while the budget ordinance will become effective July 1, 2022.

As this City Council has indicated, an investment in our infrastructure and employees is essential to the effective operation of our government. The proposed budget does include one new full-time position, Water Quality Technician, at a pay grade 16. This position will be shared equally with the City of Mebane.

I am personally honored to serve as your City Manager and look forward to working with you to finalize a budget for the upcoming fiscal year that will best serve the citizens of Graham.

Sincerely,

*Megan Garner*

Megan Garner  
City Manager

## WATER AND SEWER FUND

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The City is at a critical point in funding much needed upgrades and projects throughout our utility system, which operates as an enterprise fund. These investments not only allow for the efficient delivery of service to our citizens, but also improve capacity throughout our system. This enterprise operation is capital intensive, requiring constant maintenance, replacement, and upgrading. The enterprise is also subject to significant regulatory oversight that often comes with a significant cost to meet. In FY 2020-2021, the City began to appropriate funds to cover the debt service for recent projects and look ahead towards major projects that have a significant financial impact. Continuing this practice is recommended for FY 2022-2023. The most notable capital project on the immediate horizon is the upgrade of our wastewater treatment plant.

### Revenues

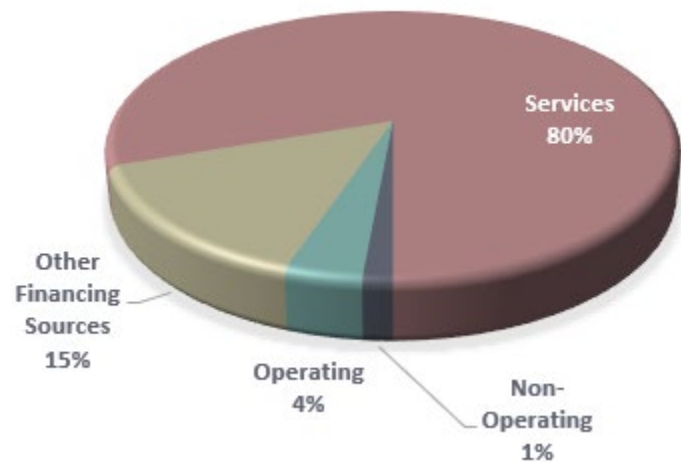
This fund is operated to account for the activities of the Water and Sewer System. It is classified as an enterprise fund rendering services on a user basis. Water and sewer charges account for the largest source of revenue for this fund at \$9,180,300 or 80% of the total revenues for the fund. Below is a summary of our estimated revenues by category:

**Non-Operating:** The revenues from partnerships, leases, and interest on investments make up the entirety of Non-Operating Revenue.

**Operating:** Operating revenues include assessments, taps, system development fees, plumbing permits, and inspection fees. System Development Fees must be transferred to the Water and Sewer Capital Reserve Fund.

**Other Financing Sources:** Regional partnerships for both water and sewer, retained earnings appropriations, and the sale of surplus properties are revenues included in this category.

**Services:** Water and sewer service charges, water and sewer surcharges, and regional partnership revenue are included in Services revenue. A rate study was developed to avoid future rate shock and provide funding for future required capital projects, including the WWTP upgrade. However, with the recent skyrocketing of construction and material prices, the already significant cost to upgrade the



wastewater treatment plant has grown exponentially. Following a graduated rate increase approach for FY 2022-2023 and understanding the necessity to fund the even larger capital improvement of the wastewater treatment plant upgrade, the following adjustments to rates are recommended:

- *Water Rates:* Based on expenditures, water rates are proposed for an increase for all tiers of the usage and base rates are recommended to increase \$5.03.
- *Sewer Rates:* Sewer charges must generate enough revenue to cover approximately \$5,340,725 in expenditures including debt service for the Boyd Creek Pump station and the anticipated debt service for Waste Water Treatment Plant Improvements and Expansion. To cover these expenditures, sewer rates are proposed to increase for all tiers of the usage and base rate is recommended to increase \$5.03.
- *Examples:* The charts below show the existing rate structure for water and sewer customers using 1,000 gallons per month and 5,000 gallons per month.

1,000 gallons		5,000 gallons	
Current water	\$6.45	Current water	\$20.45
Proposed water	\$8.49	Proposed water	\$23.31
Current sewer	\$7.66	Current sewer	\$41.46
Proposed sewer	\$11.01	Proposed sewer	\$49.00

Departmental Summary and Annual Comparison				
Department	Budget FY 2021-2022	MANAGER'S RECOMMENDATION	Difference	% Difference
WATER AND SEWER BILLING	613,100	678,800	65,700	10.72%
WATER AND SEWER DISTRIBUTION	2,050,800	3,113,800	1,063,000	51.83%
MAINTENANCE & LIFT STATION	292,200	229,800	(62,400)	-21.36%
WATER TREATMENT PLANT	2,032,500	2,379,200	346,700	17.06%
WASTEWATER TREATMENT PLANT	1,622,100	1,889,900	267,800	16.51%
NON DEPARTMENTAL ADMIN	2,383,000	3,146,400	763,400	32.04%
	<b>8,993,700</b>	<b>11,437,900</b>	<b>2,444,200</b>	<b>27.18%</b>



## Expenditures

Overall expenditures for the Water and Sewer Fund are proposed at an increase of \$2,444,200 over the current year. The primary difference between the two years are outlays for the aforementioned debt services (\$552,000), Waste Water Treatment Plant Upgrade Loan Fees (\$1,400,000), Boyd Creek Sewer Basin Point Repair (\$500,000). If these items were exempted, overall expenditures would realize a slight decrease. Below are highlights from the various departments:

- Water and Sewer Billing:** Responsible for the support of the billing, collections, metering and customer service functions for Water and Sewer operations.

**Total:** \$678,800  
**Prior year:** \$631,100  
**Capital:** None

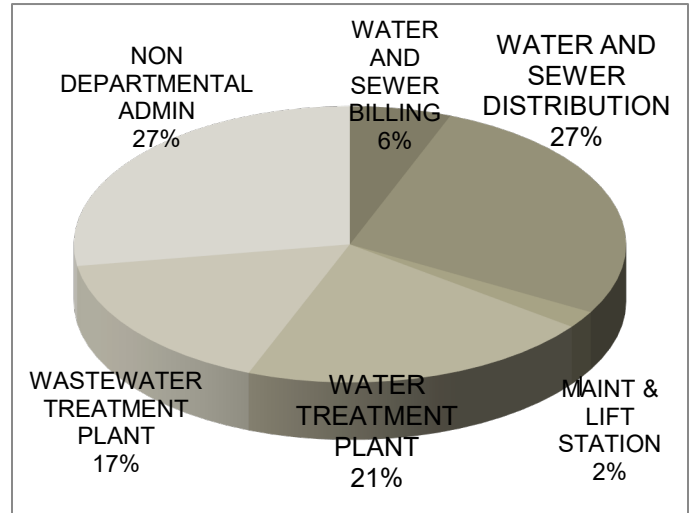
- Water and Sewer Distribution and Lift Stations:**

These two departments support the maintenance of nearly 200 miles of water and sewer lines, outfalls, force mains and their associated lift stations. A significant problem for this department is inflow and infiltration into wastewater lines. Tests and studies have been deployed in recent years, such as smoke testing a slip-lining, to identify distressed areas within the system.

**Total:** \$3,113,800 (W/S Distribution), \$229,800 (Maintenance and Lift Stations)  
**Prior year:** \$2,050,800 (W/S Distribution), \$292,200 (Maintenance and Lift Stations)  
**Capital:** Boyd Creek Sewer Shed Point Repair, Long & Albright Project, Chemical Root Control, Manhole Rehab, Sewer Main Cured in Place Pipe Lining, Sewer Truck Replacement, Mini Excavator, SCADA PLC Replacement

- Water Treatment Plant:** The City of Graham is co-owner of the Graham-Mebane Water Treatment Plant with the City of Mebane. The Water Plant operates 24 hours per day to provide 3.8 million gallons of water per day to the City, and area partnerships and customers. This department is challenging to budget for due to the unpredictability of knowing what chemicals and parts may be needed beyond the funded amount and any cost increases during the year. It is not uncommon for adjustments throughout the year to accommodate changes.

**Total:** \$2,379,200  
**Prior year:** \$2,032,500  
**Capital:** Chemtrac, SCADA PLC Replacement, Lake Safe Yield Study



- **Wastewater Treatment Plant:** Using biological treatment methods, the Wastewater Treatment Plant has a capacity to treat 3.5 million gallons per day and operates at an average 2.0 million gallons per day. The plant must function at all times and meet stringent environmental standards. Construction to expand the Treatment Plant is anticipated to begin Spring 2023 and will expand capacity to 5 million gallons per day.

**Total:** \$1,889,900

**Prior year:** \$1,622,100

**Capital:** SCADA PLC Replacement, Bar Screen Replacement, Spare Pumps

- **Non-Departmental:** Debt service, intergovernmental wastewater treatment, insurance and bonds, and post-employment benefits expenses are included in this expense category. Expenses are expected to increase by \$763,400; \$1,400,000 of cost in this department is to cover loan fees associated with the Waste Water Treatment Plant Upgrade.

**Total:** \$3,146,400

**Prior year:** \$2,383,000

**Capital:** None

## APPENDIX 1: INCLUDED CAPITAL IMPROVEMENTS

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### Types of Projects that are Considered Capital Improvement Projects

The following are types of projects that are included in the CIP:

- Any acquisition of land for a public purpose;
- Any construction of a new facility (a public building, or water lines, playfield etc.), or an addition to, or extension of, such a facility;
- A nonrecurring rehabilitation (something which is infrequent and would not be considered annual or other recurrent maintenance) or major repair of all or a part of a building, its grounds, or a facility, or of equipment, provided that the cost is \$5,000 or more and the improvement will have a useful life of 10 years or more;
- Purchase of major equipment (items with a cost individually, or in total, like radios), of \$5,000 or more, which have a useful life of five years or more;
- Any planning, feasibility, engineering, or design study related to an individual capital improvement project, or to a program that is implemented through individual capital improvement projects;
- Street resurfacing, sewer slip-lining or similar recurring maintenance projects that exceed \$5,000 in aggregate.

### Priority

HIGH priority projects:

- Are mandated by local, state or federal regulations, or;
- Result in unacceptable outcomes if the project is deferred, or;
- Are a high priority for City Council, or;
- Substantially reduce losses or increase revenues.

MEDIUM priority projects:

- Maintain or improve existing service levels, or;
- Result in better efficiency or service delivery, or;
- Reduce operational costs, or;
- Improve workforce morale.

LOW priority projects:

- Improve quality of life, or;
- Are not high or medium priority.



Categories

- I. Health/Safety/Welfare – projects that protect the health, safety and welfare of the community and the employees serving it.
- II. Maintenance/Replacement – projects that provide for the maintenance of existing systems and equipment.
- III. Expansion of Existing Programs – projects which enhance the existing systems and programs allowing for expansion of existing services.
- IV. New Programs – projects that allow for expansion into new programs and services.

Current Budget Year Projects and Capital Requests		
31-4600-7300	Boyd Creek Sewer Basin Point Repair	500,000
31-4600-7400	Service Truck (replaces 1998 model)	70,000
31-4600-7400	Mini Excavator	80,000
31-4700-7400	SCADA PLC upgrade at lift stations.	15,000
31-4800-7300	SCADA PLC upgrade at plant	45,000
31-4800-7400	Pump	0
31-4800-7400	As Needed	15,000
31-5900-7300	Replace SCADA PLCs that are 21 years old and outdated.	55,000
31-5900-7400	Bar Screen Replacement	235,000
31-5900-7400	As Needed	15,000
31-4600-7300	Long & Albright	801,000
	<b>TOTAL</b>	<b>1,831,000</b>

## APPENDIX 2: WATER & SEWER CAPITAL IMPROVEMENT SCHEDULES

### Water & Sewer Fund Summary

As previously mentioned, the Water and Sewer Fund is capital intense. Aging infrastructure and regulatory mandates require that the City understand and prepare for upcoming projects. Unlike the General Fund, Water and Sewer Fund Capital Improvements look beyond 5 years and plan for a 10-year capital improvement plan. For the 10-year schedule of improvements, it is estimated that the Water and Sewer Fund will require approximately \$54,000,000 in capital investment.

#### Water / Sewer Fund Totals

	Fiscal Year	FY 2022-2023	FY 2023-2024	FY 2024-2025	FY 2025-2026	FY 2026-2027	Total
<b>Subtotal</b>		20,672,000	9,601,500	1,238,000	2,685,000	2,790,000	36,986,500
<b>Request</b>							
4500 - Adm. Water Bill & Meter		0	0	0	0	0	0
4600 - Water & Sewer Distribution		16,410,000	8,885,000	230,000	2,290,000	2,040,000	29,855,000
4700 - Maintenance & Lift Station		3,540,000	65,000	40,000	40,000	540,000	4,225,000
4800 - Water Treatment Plant		368,000	299,500	730,000	275,000	165,000	1,837,500
5900 - Wastewater Treatment Plant		354,000	352,000	238,000	80,000	45,000	1,069,000
							36,986,500
<b>Subtotal</b>		20,672,000	9,601,500	1,238,000	2,685,000	2,790,000	

#### Water / Sewer Fund Totals

	Fiscal Year	FY 2027-2028	FY 2028-2029	FY 2029-2030	FY 2030-2031	FY 2031-2032	Total
<b>Subtotal</b>		5,005,000	1,321,500	2,920,000	2,011,000	6,080,000	17,337,500
<b>Request</b>							
4500 - Adm. Water Bill & Meter		0	0	0	0	0	0
4600 - Water & Sewer Distribution		4,230,000	910,000	2,735,000	1,675,000	3,765,000	13,315,000
4700 - Maintenance & Lift Station		215,000	165,000	90,000	40,000	40,000	550,000
4800 - Water Treatment Plant		300,000	221,500	85,000	61,000	205,000	872,500
5900 - Wastewater Treatment Plant		260,000	25,000	10,000	235,000	2,070,000	2,600,000
							17,337,500
<b>Subtotal</b>		5,005,000	1,321,500	2,920,000	2,011,000	6,080,000	

## APPENDIX 3: DEPARTMENT SCHEDULES

### 4600 - Water & Sewer Distribution

	Fiscal Year	FY 2022-2023	FY 2023-2024	FY 2024-2025	FY 2025-2026	FY 2026-2027	Total
<b>Subtotal</b>		16,410,000	8,885,000	230,000	2,290,000	2,040,000	29,855,000
<b>Request</b>							
10" Water Main Renewal- Phase 1 & 2		8,550,000	4,500,000				13,050,000
Boyd Creek Sewershed Point Repair		500,000					500,000
Hwy 49 & Hwy 54 WS line Replacement			500,000				500,000
Haw River Sewer Outfall and Manhole Rehab		2,500,000					2,500,000
New & Parker St Sewer Pipe Replacement		500,000					500,000
600 New Street Sewer Main Replacement		600,000					600,000
Southern Water Interconnection						1,750,000	1,750,000
Small Waterline Replacements			2,000,000		2,000,000		4,000,000
West Elm St Waterline Replacement		1,200,000					1,200,000
Downtown Water and Sewer Improvements		1,200,000					1,200,000
Hanover Rd Sewer Rehab		1,000,000	1,000,000				2,000,000
Backhoe Replacement					100,000		100,000
Water and Sewer Assessment			300,000				300,000
Chemical Root Control		35,000	35,000	40,000	40,000	45,000	195,000
Manhole Rehab		50,000	50,000	50,000	50,000	50,000	250,000
Sewer Main Cured in Place Pipe Lining		100,000	100,000	100,000	100,000	150,000	550,000
Distribution System Hydraulic Model				20,000			20,000
Water and Sewer Development Fee Study				20,000			20,000
Service Truck Replacement		75,000					75,000
Pickup Truck 4x4						45,000	45,000
Mini Excavator 22		100,000					100,000
Kimrey Rd Outfall			400,000				400,000
							29,855,000
<b>Subtotal</b>	0	16,410,000	8,885,000	230,000	2,290,000	2,040,000	

	Fiscal Year	FY 2027-2028	FY 2028-2029	FY 2029-2030	FY 2030-2031	FY 2031-2032	Total
<b>Subtotal</b>		4,230,000	910,000	2,735,000	1,675,000	3,765,000	13,315,000
<b>Request</b>							
Elevated Storage Tank						3,500,000	3,500,000
Cheek Lane Water Main Extension		1,000,000					1,000,000
Lacy Holt Rd-Extend Water Main Loop			600,000				600,000
Pine and Burton Sewer Replacement		1,000,000					1,000,000
Manhole Rehab		60,000	60,000	60,000	70,000	70,000	320,000
Sewer Main Cured in Place Pipe Lining		150,000	150,000	150,000	150,000	150,000	750,000
Distribution System Hydraulic Model				25,000			25,000
Water and Sewer Development Fee Study		20,000			20,000		40,000
Service Truck Replacement					85,000		85,000
Pickup Truck 4x4						45,000	45,000
Backhoe Replacement					100,000		100,000
Mini Excavator 22			100,000				100,000
Trollingwood 16" TL Connection		2,000,000					2,000,000
Woody Dr. 16" TL Connection					1,250,000		1,250,000
Harden St. 16" TL Connection				2,500,000			2,500,000
							13,315,000
<b>Subtotal</b>	0	4,230,000	910,000	2,735,000	1,675,000	3,765,000	

4700 - Maintenance & Lift Stations

	Fiscal Year	FY 2022-2023	FY 2023-2024	FY 2024-2025	FY 2025-2026	FY 2026-2027	Total
<b>Subtotal</b>		3,540,000	65,000	40,000	40,000	540,000	4,225,000
<b>Request</b>							
Cooper Rd. HR Lift Station Upgrade/Relocation		3,500,000					3,500,000
Spare Pumps For Lift Stations		40,000	40,000	40,000	40,000	40,000	200,000
Cherry Lane.Lift Station Upgrade						500,000	500,000
Kubota UTV			25,000				25,000
							0
							4,225,000
<b>Subtotal</b>	0	3,540,000	65,000	40,000	40,000	540,000	

	Fiscal Year	FY 2027-2028	FY 2028-2029	FY 2029-2030	FY 2030-2031	FY 2031-2032	Total
<b>Subtotal</b>		215,000	165,000	90,000	40,000	40,000	550,000
<b>Request</b>							
Service Truck w/ Lift		175,000					175,000
Spare Pumps For Lift Stations		40,000	40,000	40,000	40,000	40,000	200,000
New Holland Tractor w/ cab			125,000				125,000
SCADA Communications Upgrade				50,000			50,000
							0
							550,000
<b>Subtotal</b>	0	215,000	165,000	90,000	40,000	40,000	

4800-Water Treatment Plant

	Fiscal Year	FY 2022-2023	FY 2023-2024	FY 2024-2025	FY 2025-2026	FY 2026-2027	Total
<b>Subtotal</b>		368,000	299,500	730,000	275,000	165,000	1,837,500
<b>Request</b>							
Deionized Water System			6,500				6,500
DR6000 Spectrophotometer			13,000				13,000
THM Analyzer						45,000	45,000
TOC Analyzer				30,000			30,000
Chemtrac		16,000					16,000
PLC Replacement		95,000					95,000
Entrance Gate			15,000				15,000
Enclose Bleach Bulk Tanks			150,000				150,000
Rebuild Raw Water #4					75,000		75,000
Upgrade Raw Water #3			115,000				115,000
Lake Safe Yield Study		227,000					227,000
Filter Media Rebuild						120,000	120,000
Chemical Building Roof Replacement		30,000					30,000
Spillway Improvements					200,000		200,000
Air Scour Backwash				700,000			700,000
							1,837,500
<b>Subtotal</b>	0	368,000	299,500	730,000	275,000	165,000	

	Fiscal Year	FY 2027-2028	FY 2028-2029	FY 2029-2030	FY 2030-2031	FY 2031-2032	Total
<b>Subtotal</b>		300,000	221,500	85,000	61,000	205,000	872,500
<b>Request</b>							
Deionized Water System			6,500				6,500
DR6000 Spectrophotometer					16,000		16,000
SCADA Upgrade						50,000	50,000
AWD SUV				45,000			45,000
Ross Valve Replacement					45,000		45,000
Rebuild Raw Water Pump 1			85,000				85,000
Rebuild High Service Pump 2				40,000			40,000
Engineering PER		300,000					300,000
Filter Media Rebuild			130,000				130,000
Resurface Plant Dr.						155,000	155,000
							872,500
<b>Subtotal</b>	0	300,000	221,500	85,000	61,000	205,000	

5900-Wastewater Treatment Plant

	Fiscal Year	FY 2022-2023	FY 2023-2024	FY 2024-2025	FY 2025-2026	FY 2026-2027	Total
<b>Subtotal</b>		354,000	352,000	238,000	80,000	45,000	1,069,000
<b>Request</b>							
Sludge Feed Pump VFD				18,000			18,000
PLC Upgrade		130,000					130,000
Vacuum Pump		6,500					6,500
Deionized Water System		7,500					7,500
Fume Hood			10,000				10,000
Sludge Tanker Pump			12,000				12,000
Sludge Tanker					40,000		40,000
Secondary Clarifier #1 and #3				200,000			200,000
Secondary Clarifier #2 and #4			300,000				300,000
Door replacements		10,000					10,000
SCADA Upgrade				20,000			20,000
Influent Roof Replacement			30,000		40,000		70,000
Bar Screen		200,000					200,000
Digester Blowers						45,000	45,000
							0
<b>Subtotal</b>							1,069,000
	0	354,000	352,000	238,000	80,000	45,000	

	Fiscal Year	FY 2027-2028	FY 2028-2029	FY 2029-2030	FY 2030-2031	FY 2031-2032	Total
<b>Subtotal</b>		260,000	25,000	10,000	235,000	2,070,000	2,600,000
<b>Request</b>							
Deionized Water System					10,000		10,000
Sterilmatic Sterilizer					25,000		25,000
BOD Incubator		10,000					10,000
Sludge Transport Truck		250,000					250,000
Resurface Plant Dr.					200,000		200,000
DR 3900 Spectrophotometer				10,000			10,000
SCADA Upgrade						25,000	25,000
Kubota UTV			25,000				25,000
Maintenance Truck 4x4						45,000	45,000
Class A Bio-solids						2,000,000	2,000,000
							2,600,000
<b>Subtotal</b>	0	260,000	25,000	10,000	235,000	2,070,000	



## APPENDIX 4: PROPOSED RATES AND FEE SCHEDULE

*Proposed effective date: May 1, 2022*

### User Fees

#### Water Rates

Water Base Rate (per month)	\$5.03
Water Rates per 1,000 gallons (inside city limits)	
0-2,500	\$3.47
2,501-10,000	\$3.85
10,001-100,000	\$3.91
100,001-1,000,000	\$3.96
1,000,001-2,000,000	\$4.02
2,000,000+	\$4.07
Water Rate (Outside City Limits)	Double inside rates
Water Base Rate (Outside City Limits)	\$10.06
Municipal Customers (per 1,000 gallons)	Inside rates
Delinquent Fee	2% (Minimum of \$5)
Non-payment Fee	\$40
*Water Deposit (Inside Residential)	\$80
*Water Deposit (Outside Residential)	\$160
*Water Deposit (Inside Non-residential)	\$100
*Water Deposit (Outside Residential)	\$200
Meter Tampering Fee	\$100
**Meter Testing Fee (Inside)	\$10
**Meter Testing Fee (Outside)	\$20
Service Initiation Fee	\$10

Backflow Annual Testing (For Irrigation Accounts)	\$10.42 per month
<p>*No deposit required for property owners. Deposits required for rental or leased property and refundable when final bills are paid.</p> <p>**During testing, if meter checks out of limits estimated by AWWA, money shall be refunded and adjustment made to water bill. If meter tests are within AWWA Standards, the fee shall remain with the City.</p>	

### Sewer Rates

Sewer Base Rate (per month)	\$5.03
Sewer Rates per 1,000 gallons:	
0-2,500	\$5.99
2,501-10,000	\$11.60
10,001-100,000	\$11.67
100,001-1,000,000	\$11.75
1,000,001-2,000,000	\$11.82
2,000,000+	\$11.91
Unmetered Sewer Charge (per month)	\$46.56
Outside User Sewer Surcharge (per month)	\$19.80