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Subject: Water, Wastewater, and Reclaimed Water Rate  
Study 2023 – Rate Design

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## BACKGROUND AND OBJECTIVES

Stantec has conducted a cost of service (COS) and rate design analysis (Analysis) for the City of Flagstaff, AZ Water Services (Utility) as part of a comprehensive rate study (Study) to create 10-year plans for the water, wastewater, and reclaimed water enterprise funds. The last comprehensive rate study conducted by the Utility was published in 2016, and the last rate increases for the enterprise funds were implemented in 2020.

The Analysis and Study aim to accomplish multiple policy strategies including:

- 1) implement rates and fees that are legal, proportional, and equitable;
- 2) develop long-term financial plans that recover the funding needs of the Utility;
- 3) establish fees that cover the costs of service and meet the Utility's regulatory requirements; and
- 4) use forward-thinking and new opportunities to provide rates and pricing strategies that can help achieve long-term goals of the Utility.

This technical memorandum details the water and wastewater cost-of-service results and the water, wastewater, and reclaimed water rate design options and results.

### 1.1 WATER COST-OF-SERVICE RESULTS

The financial planning analysis for the Water Fund evaluated the sufficiency of the Utility's revenues to meet all current and projected financial requirements over a 10-year projection period. More importantly to this Study, it determined the level of rate revenue adjustments necessary in each year of the projection period to provide sufficient revenues to fund the water system cost requirements. This section focuses on the Water Fund revenue requirements, cost allocations, and cost-of-service results.

#### 1.1.1 Revenue Requirement Allocations to Functions

For Fiscal Year (FY) 2024, operating, debt service, and capital expenditures totaled \$23.2 million. The Financial Planning Analysis and COS revealed that, by drawing down reserves of \$5.3 million and collecting non-rate revenues of \$2.7 million, the Utility has a rate revenue requirement of \$15.2 million for FY 2024. For FY 2025, total operating, debt, and capital expenditures, are anticipated to be \$24.6 million.

Under the assumption that the Water Fund will draw down reserves by \$5.0 million and collect non-rate revenues of \$2.6 million, rate revenue requirements are projected to be \$17.0 million for FY 2025, a 12% increase from FY 2024. Since FY 2025 rates are not anticipated to go into effect until September 2024, a 12% rate revenue increase will be accomplished through a 15% rate increase, distributed among customer classes based on cost-of-service results. Table 1 below displays FY 2024 and 2025 rate revenue requirements, summarizing total expenditures by type and uses of reserves and non-rate revenues.

**Table 1-1: FY 2024 and FY 2025 Rate Revenue Requirements - Water**

Water Fund	FY 2024 (millions)	FY 2025 (millions)
<b>Operations &amp; Maintenance</b>	\$11.8	\$15.6
<b>Debt Service</b>	\$1.8	\$1.8
<b>Capital</b>	\$9.6	\$7.2
<b>Total Expenditures</b>	<b>\$23.2</b>	<b>\$24.6</b>
<i>Use of Reserves</i>	(\$5.3)	(\$5.0)
<i>Non-Rate Revenue</i>	(\$2.7)	(\$2.6)
<b>Rate Revenue</b>	<b>\$15.2</b>	<b>\$17.0</b>

In conjunction with Utility Staff, Stantec allocated the City’s water costs that determine the rate revenue requirements in a COS analysis to determine the under or over-recovery of revenues generated from each customer class based on existing rates, accounts, and usage. The COS analysis evaluated projected FY 2025 annual costs the Utility will incur to provide its customers water service and fund the full capital improvement program (CIP). The analysis determined the portion of system costs that are allocable to water resources, water production, transmission/distribution, administration, meters/services, and direct fire protection functions. After reviewing functional allocations with Utility staff, the resulting distribution of costs across functions was determined. Table 2 presents the functional allocation of the FY 2025 rate revenue requirement.

**Table 1-2: Functional Allocation of FY 2025 Rate Revenue Requirement**

Water Function	Water Resources	Water Production	Transmission / Distribution	Administration	Meters/ Services	Fire Protection	Total
Millions of Dollars	\$4.2	\$5.0	\$6.3	\$0.5	\$0.9	\$0.1	<b>17.0</b>
Percent of Total	24.6%	29.6%	37.1%	2.8%	5.3%	0.6%	<b>100%</b>

### 1.1.2 Allocations to Base-Extra Capacity

Customer classes require water service depending on each class's usage characteristics, which vary across customer class in terms of both total volume and peaking factors. Stantec analyzed customer class billable usage for FY 2023 as well as peaking behaviors on a base-extra capacity basis. Under the base-extra capacity method of cost allocation, costs are separated into four primary cost components: base costs, extra capacity costs, customer costs, and direct fire protection costs (AWWA Manual M1). Each functional cost in section 1.1.1 above was allocated in the COS across average day usage, max day usage, max hour usage, fire protection, and customer costs so that functional costs can be allocated across customer classes based on usage characteristics and peaking behaviors. Table 3 below displays the percentage distribution of each functional cost category across the base-extra capacity components.

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**Table 1-3: Percent Allocation of FY 2025 Costs Across Functions**

Water Function	Base Capacity – Average Day	Extra Capacity – Max Day	Extra Capacity – Peak Hour	Fire Protection	Customer
Water Resources	100%	0%	0%	0%	0%
Water Production	67%	33%	0%	0%	0%
Transmission/Distribution	52%	25%	23%	0%	0%
Administration	0%	0%	0%	0%	100%
Meters/Services	0%	0%	0%	0%	100%
Fire Protection	0%	0%	0%	100%	0%

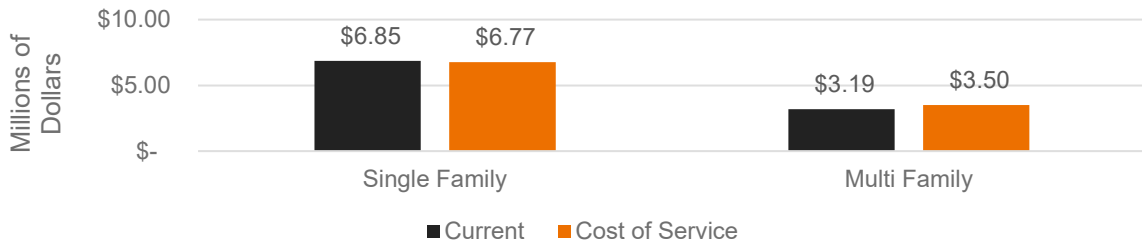
### 1.1.3 Allocations to Customer Classes

In order to allocate the functionalized costs for FY 2025 across customer classes, the Analysis requires summarizing FY 2023 billable units and estimating FY 2024 billable units. Table 4 presents the analysis of billable customer units for FY 2023, with projected consumption for FY 2024 used in the COS analysis. The adjustment in FY 2024 usage was calculated to recover budgeted revenue in FY 2024 based on FY 2023 billable units.

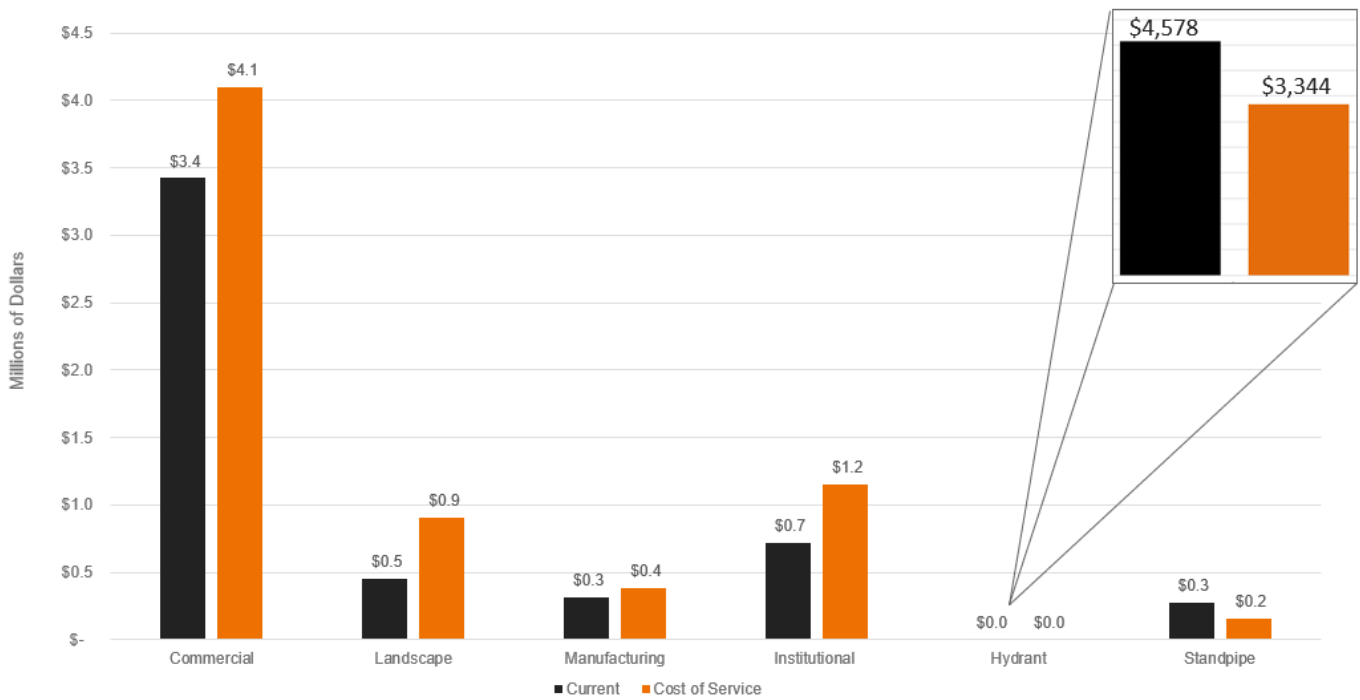
**Table 1-4: FY 2023 and 2024 Billable Units – Water**

Customer Class	2023 Usage (KGAL)	2024 Usage (KGAL)	% Increase in Usage	Max Day Peaking Factor	Max Hour Peaking Factor	ERUs
Single Family	744,542	755,553	1.48%	214%	321%	16,348
Multi Family	550,670	558,814	1.48%	123%	247%	3,541
Commercial	616,305	625,420	1.48%	159%	238%	2,450
Landscape	75,873	76,995	1.48%	363%	544%	444
Manufacturing	63,721	64,663	1.48%	137%	206%	73
Institutional	162,456	164,859	1.48%	183%	274%	61
Hydrant	606	606	0.00%	NA	NA	0
Standpipe	28,600	28,600	0.00%	NA	NA	0
<b>Total</b>	<b>2,242,773</b>	<b>2,275,510</b>	<b>1.46%</b>	<b>NA</b>	<b>NA</b>	<b>22,918</b>

The resulting COS outcome based on FY 2025 cost allocations and estimated customer billable units are presented in the charts below. Figure 1-1 displays the Residential and Multi Family COS results, while Figure 1-2 shows the COS for all other customer classes.



**Figure 1-1: Residential and Multi Family COS Results**



**Figure 1-2: All Other Classes COS Results**

## 1.2 WASTEWATER COST-OF-SERVICE RESULTS

The financial planning analysis for the Wastewater Fund evaluated the sufficiency of the Utility’s revenues to meet all current and projected financial requirements over a 10-year projection period. It also determined the level of rate revenue adjustments necessary in each year of the projection period to provide sufficient revenues to fund the wastewater system cost requirements. This section focuses on the Wastewater Fund revenue requirements, cost allocations, and cost-of-service results.

### 1.2.1 Revenue Requirement Allocations to Functions

For the Wastewater Fund in FY 2024, operating, debt service, and capital expenditures total \$19.2 million. Drawing down reserves by \$7.7 million and collecting non-rate revenues of \$0.9 million leads to a rate revenue requirement of \$10.6 million for FY 2024. For FY 2025, total operating, debt, and capital expenditures, are anticipated to be \$17.3 million. Drawing down reserves by \$3.7 million and collecting non-rate revenues of \$0.6 million results in a rate revenue requirement of \$13.0 million for FY 2025, a 22% increase from FY 2024. Since FY 2025 rates are not anticipated to go into effect until September 2024, a 22% rate revenue increase will be accomplished through a 25% rate increase, distributed among customer classes based on cost-of-service results. Table 5 below displays FY 2024 and 2025 rate revenue requirements, breaking down total expenditures by type and uses of reserves and non-rate revenues.

**Table 1-5: FY 2024 and FY 2025 Rate Revenue Requirements - Wastewater**

Wastewater Fund	FY 2024 (millions)	FY 2025 (millions)
<b>Operations &amp; Maintenance</b>	\$8.3	\$8.7
<b>Debt Service</b>	\$2.6	\$3.1
<b>Capital</b>	\$8.3	\$5.5
<b>Total Expenditures</b>	<b>\$19.2</b>	<b>\$17.3</b>
<i>Use of Reserves</i>	(\$7.7)	(\$3.7)
<i>Non-Rate Revenue</i>	(\$0.9)	(\$0.6)
<b>Rate Revenue</b>	<b>\$10.6</b>	<b>\$13.0</b>

In conjunction with Utility Staff, Stantec allocated the City’s wastewater costs that determine the rate revenue requirements in a COS analysis to determine the under or over-recovery of revenues generated from each customer class. The COS analysis evaluated projected FY 2025 annual costs the Utility will incur to provide its customers wastewater service and fund the full capital improvement program (CIP). The analysis determined the portion of system costs that are allocable to wastewater treatment, collection, interceptors, and administration functions. After reviewing functional allocations with Utility staff, the resulting distribution of costs across functions were determined. Table 6 presents the functional allocation of the FY 2025 rate revenue requirement.

**Table 1-6: Functional Allocation of FY 2025 Rate Revenue Requirement**

Wastewater Function	Treatment	Collection	Interceptors	Administration	Total
Millions of Dollars	\$6.8	\$2.8	\$1.7	\$1.7	<b>\$13.0</b>
Percent of Total	52.4%	21.8%	12.8%	13.0%	<b>100%</b>

Functionalizing the rate revenue requirement for FY 2025 allows for the Analysis to distribute costs to customer classes based on billable units in terms of flow, strength/loadings, and bills or ERUs. In order to distribute costs based on billable units, each functional cost category must be further broken down into flow components, strength/loading components in terms of biochemical oxygen demand (BOD) and total suspended solids (TSS), and customer components. Table 7 below displays the percentage allocation of functional costs across flow, BOD, TSS, and customers. Treatment costs were allocated across flow, BOD, and TSS based on data provided by Utility staff regarding functionalized Net Plant Investment values. All collection and interceptor costs were allocated to flow, and all administrative costs were allocated to customers.

**Table 1-7: Percent Allocation of FY 2025 Costs Across Flow, Loadings, and Customers**

Wastewater Function	Flow	BOD	TSS	Customer
Treatment	53.2%	28.0%	18.8%	0%
Collection	100%	0%	0%	0%
Interceptors	100%	0%	0%	0%
Administration	0%	0%	0%	100%

### 1.2.2 Allocations to Customer Classes

In order to allocate the functionalized costs for FY 2025 across customer classes, the Analysis required summarizing FY 2023 billable units and estimating FY 2024 billable units. Table 8 presents the analysis of billable customer units for FY 2023, with projected consumption for FY 2024 used in the COS analysis. The

adjustment in FY 2024 usage was calculated to recover budgeted revenue in FY 2024 based on FY 2023 billable units. The BOD and TSS concentration assumptions were applied based on a variety of data sources. The Residential and Multifamily concentration assumptions were applied at the concentration surcharge thresholds based on Flagstaff City Code. The concentration assumptions for Hotels & Motels, Restaurants, Industrial Laundries, and Institutional customers were taken from the California Revenue Program Guidelines. All other customer class assumptions were provided by Utility staff from Flagstaff City Code.

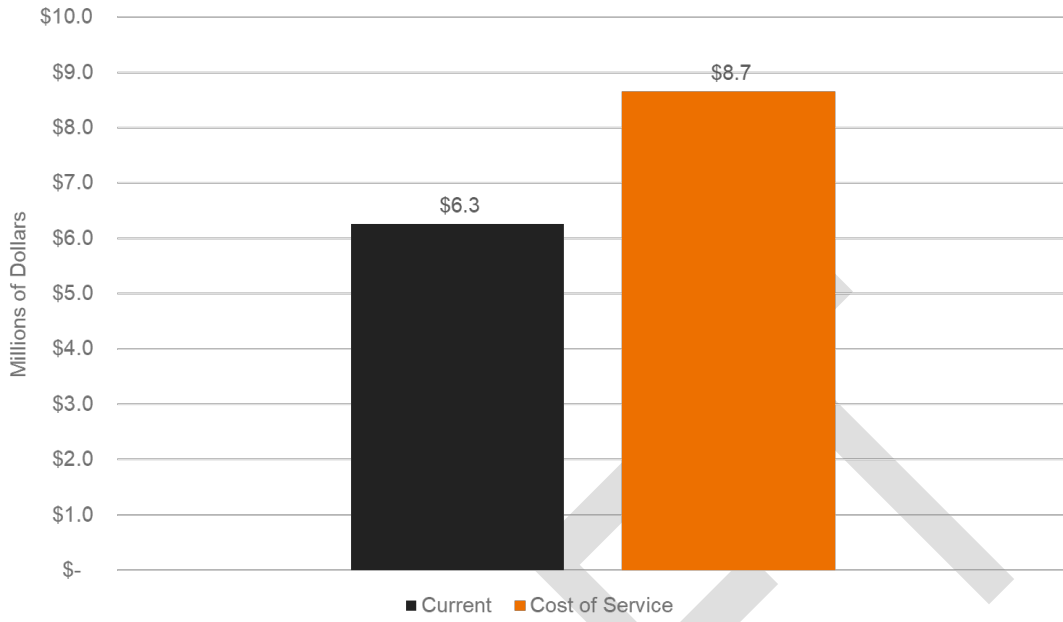
**<sup>1</sup>Table 1-8: FY 2023 and 2024 Billable Units – Wastewater**

Customer Class	2023 Billable Volume (KGAL)	2024 Billable Volume (KGAL)	% Increase in Usage	BOD Concentration (MG/L)	TSS Concentration (MG/L)	ERUs
Residential & Multifamily	1,115,798	1,169,861	4.85%	300	350	253,988
Car Washes	24,570	25,761	4.85%	20	150	437
Laundromats	7,893	8,275	4.85%	150	110	267
Commercial	270,276	283,371	4.85%	200	175	37,833
Institutional	105,650	110,769	4.85%	130	100	2,488
Hotels & Motels	143,353	150,299	4.85%	310	120	5,601
Restaurants	64,844	67,986	4.85%	1,000	600	3,550
Industrial Laundries	9,342	9,795	4.85%	670	680	120
Manufacturing	19,425	20,367	4.85%	200	175	1,050
Pet Food Manufacturing	4,692	4,920	4.85%	701	527	296
Ice Cream Cone Manufacturing	1,312	1,375	4.85%	9,700	100	120
<b>Total</b>	<b>1,767,155</b>	<b>1,852,778</b>	<b>4.85%</b>	<b>NA</b>	<b>NA</b>	<b>305,750</b>

The resulting COS outcome based on FY 2025 cost allocations and estimated customer billable units are presented in the chart below. Figure 1-3 displays the COS results for Residential customer classes while Figure 1-4 displays the COS results for all other customer classes.

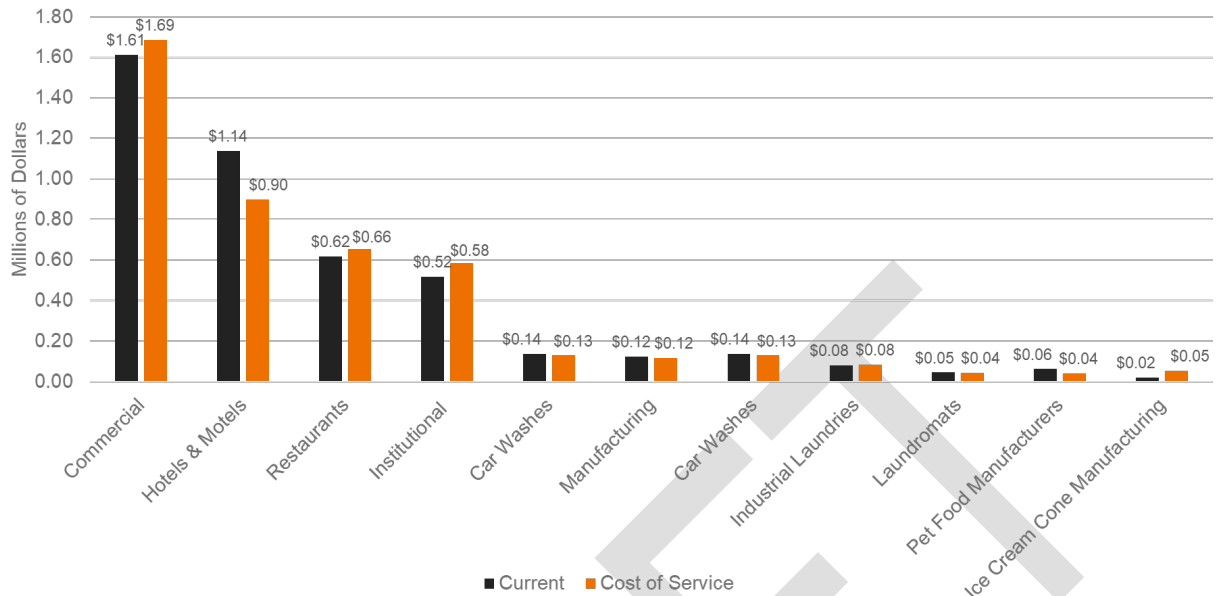
<sup>1</sup> State of California, State Water Resources Control Board, Division of Clean Water Programs, Revenue Program Guidelines, March 1998 Revision, page G-21.





**Figure 1-3: FY 25 Wastewater COS Results for Residential Customers**

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**Figure 1-4: FY 25 Wastewater COS Results by Customer Class**

### 1.3 WATER RATE DESIGN OPTIONS AND RESULTS

Stantec and Utility staff used the COS results to create rate design options that recover necessary costs for the Water Fund while also accomplishing the strategies and priorities set forth by the City of Flagstaff.

These priorities include:

- Revenue stability
- Conservation/demand management
- Administrative burden
- Proportionality (or equity) between classes and within a class
- Affordability

Currently, the Utility collects 29% of rate revenue through fixed charges (policy minimum for the Water Fund is 25%) and the remaining rate revenue through volume charges. The Single Family customer class has tiered volume rates reflecting an inclining block structure, while all other classes have just one volumetric rate per 1,000 gallons. The current water rate schedule is presented in Figure 1-4.

<b>CITY OF FLAGSTAFF WATER &amp; SEWER RATES</b>				
Effective January 1, 2024 (**Subject to Change**)				
<b>MONTHLY FIXED CHARGE</b>				
Meter Size:		Customer Class	Inside City Rate	Outside City Rate
3/4"		All	\$16.64	\$18.30
1"		All	\$19.60	\$21.56
1 1/2"		All	\$26.98	\$29.68
2"		All	\$35.84	\$39.42
3"		All	\$56.52	\$62.17
4"		All	\$86.05	\$94.66
6"		All	\$159.88	\$175.87
8"		All	\$248.47	\$273.32
10"		All	\$351.83	\$387.01
<b>WATER RATES</b>				
POTABLE WATER: (per 1,000 gallons)		Customer Class	Water Rate	Outside City Rate
Single Family	Tier 1 (0 - 3,500 gallons)	R1 or R4	\$3.44	\$3.78
	Tier 2 (3,501 - 6,200 gallons)		\$4.45	\$4.90
	Tier 3 (6,201 - 11,500 gallons)		\$6.86	\$7.55
	Tier 4 (11,501+ gallons)		\$13.72	\$15.09
Multi-Family Units	R2 or R3	\$4.42	\$4.86	
Commercial/Schools	C	\$4.69	\$5.16	
Institutional	NA	\$4.30		
Manufacturing	MN	\$4.63	\$5.09	
Landscaping/Lawn Meters	LM	\$4.69	\$5.16	
Hydrant Meter	HM	\$7.17	\$7.89	
Standpipe	SP	\$9.56		

**Figure 1-5: Current Water Rate Structure**

The sections below detail the resulting rate design options from the Analysis for water based on the COS results and the priorities listed above.

### 1.3.1 COS Unit Rates

The COS unit rates reflect the direct results of the COS with no change to the current rate structure. Under the COS Unit Rates option, the Utility would continue collecting 29% of its rate revenue through fixed charges, and the tier sizes and relative tier prices for Single Family customers would remain the same. Tables 9 and 10 display the current and proposed COS unit fixed rates and volumetric rates respectively.

**Table 1-9: Current and Proposed Fixed Charge Under COS Unit Rate Option (Inside City)**

Meter Size	Current Rate (FY24)	FY25 Fixed Charge (29% Cost Recovery)
¾"	\$16.64	\$16.62
1"	\$19.60	\$23.66
1 ½"	\$26.98	\$41.27
2"	\$35.84	\$62.41
3"	\$56.52	\$129.33
4"	\$86.05	\$182.17
6"	\$159.88	\$463.95
8"	\$248.47	\$569.62
10"	\$351.83	\$1,485.41
<b>Annual Cost Recovery (millions)</b>		<b>\$5.0</b>

**Table 1-10: Current and Proposed Volume Charges Under COS Unit Rate Option (Inside City)**

Customer Class		Tier Price Ratio	Current Rate (FY24)	FY25 Volume Charge (per 1,000 gallons) (71% Cost Recovery)
Single Family	Tier One	1.00	\$3.44	\$3.74
	Tier Two	1.30	\$4.45	\$4.86
	Tier Three	2.00	\$6.86	\$7.48
	Tier Four	4.00	\$13.72	\$14.95
Multi-family			\$4.42	\$4.74
Commercial/Schools			\$4.69	\$5.43
Landscape			\$4.69	\$10.24
Manufacturing			\$4.63	\$5.48
Institutional			\$4.30	\$6.82
Hydrant			\$7.17	\$7.60
Standpipe			\$9.56	\$7.55
<b>Annual Cost Recovery (millions)</b>				<b>\$12.0</b>

Recovering 29% of rate revenue through fixed charges can be beneficial to the Utility by protecting against potential changes in demand and helping to boost bond ratings. However, the City of Flagstaff’s priorities include encouraging conservation and demand management, as well as maintaining affordability. Revenue stability is also a priority for Flagstaff, and the Utility maintains a best practice policy to collect a minimum of 25% of rate revenue through fixed charges. Adhering to this policy, Stantec used rate design principles and the COS results to produce four additional rate options, all of which recover 25% of rate revenue through fixed charges. These rate options are designed to achieve 25% of fixed rate revenue recovery for revenue stability. These options also address conservation and affordability goals by increasing volumetric rates while reducing the monthly fixed charge paid by customers with a standard ¾” meter.

### 1.3.2 Rate Structure Option 1

Current rates and proposed rates under Rate Structure Option 1 are presented in Table 11 and Table 12. This rate option reduces the fixed charge for ¾” meters compared to the COS Unit Rate option, and increases the volumetric rates compared to the COS Unit Rate option. The relative tier pricing ratios for Single Family customers remain the same. All rates represent the inside-City rates. Outside-City rates include a 10% surcharge.

**Table 1-11: Current and Proposed Fixed Charges Under Rate Option 1 (Inside City)**

Meter Size	Current Rate (FY24)	FY 25 Fixed Charge (25% Cost Recovery)
¾”	\$16.64	\$14.33
1”	\$19.60	\$19.86
1 ½”	\$26.98	\$33.66
2”	\$35.84	\$50.23
3”	\$56.52	\$102.68
4”	\$86.05	\$144.10
6”	\$159.88	\$364.97
8”	\$248.47	\$447.80
10”	\$351.83	\$1,165.64
<b>Annual Cost Recovery (millions) – Option 1</b>		<b>\$4.3</b>

**Table 1-12: Current and Proposed Volume Charges Under Rate Option 1 (Inside City)**

Customer Class		Tier Price Ratio	Current Rate (FY24)	FY25 Volume Charge (per 1,000 gallons) (75% Cost Recovery)
Single Family	Tier One	1.00	\$3.44	\$4.23
	Tier Two	1.30	\$4.45	\$5.50
	Tier Three	2.00	\$6.86	\$8.47
	Tier Four	4.00	\$13.72	\$16.93
Multi-family			\$4.42	\$4.97
Commercial/Schools			\$4.69	\$5.62
Landscape			\$4.69	\$10.51
Manufacturing			\$4.63	\$5.56
Institutional			\$4.30	\$6.86
Hydrant			\$7.17	\$7.60
Standpipe			\$9.56	\$7.55
<b>Annual Cost Recovery (millions) – Option 1</b>				<b>\$12.7</b>

### 1.3.3 Rate Structure Option 2

All proposed rate options keep the Single Family tier sizes the same as the current structure, with tier 1 capturing up to 3,500 gallons per month, tier 2 capturing 3,501 to 6,200 gallons per month, tier 3 capturing 6,201 to 11,500 gallons per month and tier 4 capturing all usage above 11,500 gallons per month. Recognizing that Rate Structure Option 1 increases the Single Family tier 2 price significantly, Stantec and Utility staff analyzed the latest census data for the City of Flagstaff. More than one-third of Flagstaff households in 2023 were 3-person households or larger. To mitigate affordability concerns for larger households under Rate Structure Option 1, Stantec adjusted the tier price ratios for Single Family volumetric rates under Rate Structure Option 2, reducing the price of tier 2 consumption to the cost of service for base (average day) usage. Option 2 presents rates for tier 1 and 2 that represents the base costs of service where typical and larger families' rates for indoor use would be closer than they are now. The peaking costs and therefore conservation incentive is placed on tiers 3 and 4.

Under Rate Structure Option 2, the proposed fixed charges remain the same as in Rate Structure Option 1 and would recover 25% of rate revenue, an estimated \$4.3M in FY25. Table 13 presents the current

and proposed volumetric rates under Rate Structure Option 2. All rates represent the inside-City rates. Outside-City rates include a 10% surcharge.

**Table 1-13: Current and Proposed Volume Charges Under Rate Option 2 (Inside City)**

Customer Class		Tier Price Ratio	Current Rate (FY 24)	FY 25 Volume Charge (per 1,000 gallons) (75% Cost Recovery)
Single Family	Tier One	0.95	\$3.44	\$4.48
	Tier Two	1.00	\$4.45	\$4.72
	Tier Three	1.80	\$6.86	\$8.50
	Tier Four	4.00	\$13.72	\$18.88
Multi-family			\$4.42	\$4.97
Commercial/Schools			\$4.69	\$5.62
Landscape			\$4.69	\$10.51
Manufacturing			\$4.63	\$5.56
Institutional			\$4.30	\$6.86
Hydrant			\$7.17	\$7.60
Standpipe			\$9.56	\$7.55
<b>Annual Cost Recovery (millions) – Option 2</b>				<b>\$12.7</b>





### 1.3.4 Rate Structure Option 3

Rate Structure Option 3 also maintains the same fixed charge schedule as Rate Structure Options 1 and 2 and maintains the same Single Family tier price ratios as Rate Structure Option 2, but combines the Commercial/Schools and Institutional customer classes. This effectively increases the volumetric rate for Commercial/Schools and decreases the volumetric rate for Institutional customers compared to Rate Structure Option 2. Table 14 presents the current and proposed volumetric rates under Rate Structure Option 3. All rates represent the inside-City rates. Outside-City rates include a 10% surcharge.

**Table 1-14: Current and Proposed Volume Charges Under Rate Option 3 (Inside City)**

Customer Class		Tier Price Ratio	Current Rate (FY24)	FY 25 Volume Charge (per 1,000 gallons) (75% Cost Recovery)
Single Family	Tier One	0.95	\$3.44	\$4.48
	Tier Two	1.00	\$4.45	\$4.72
	Tier Three	1.80	\$6.86	\$8.50
	Tier Four	4.00	\$13.72	\$18.88
Multi-family			\$4.42	\$4.97
Commercial/Schools			\$4.69	\$5.88
Landscape			\$4.69	\$10.51
Manufacturing			\$4.63	\$5.56
Institutional			\$4.30	\$5.88
Hydrant			\$7.17	\$7.60
Standpipe			\$9.56	\$7.55
<b>Annual Cost Recovery (millions) – Option 3</b>				<b>\$12.7</b>

### 1.3.5 Rate Structure Option 3 – Revised

After Stantec and Utility staff presented Rate Structure Options 1-3 to Flagstaff City Council, Rate Structure Option 3 was selected, but Council requested that the Single Family tier price ratio be revised

such that tier 2 remains at the cost of service for base (average day) usage and tier 3 price ratio increase to 2.0, effectively allowing the tier 1 price ratio to decrease to 0.93. The fixed charge schedule remains constant across Rate Structure Options 1-3 Revised. Table 15 presents the current and proposed volumetric rates under Rate Structure Option 3 Revised. All rates represent the inside-City rates. Outside-City rates include a 10% surcharge.

**Table 1-15: Current and Proposed Volume Charges Under Rate Option 3 Revised (Inside City)**

Customer Class		Tier Price Ratio	Current Rate (FY 24)	FY 25 Volume Charge (per 1,000 gallons) (75% Cost Recovery)
Single Family	Tier One	0.93	\$3.44	\$4.39
	Tier Two	1.00	\$4.45	\$4.72
	Tier Three	2.00	\$6.86	\$9.43
	Tier Four	4.00	\$13.72	\$18.86
Multi-family			\$4.42	\$4.97
Commercial/Schools			\$4.69	\$5.88
Landscape			\$4.69	\$10.51
Manufacturing			\$4.63	\$5.56
Institutional			\$4.30	\$5.88
Hydrant			\$7.17	\$7.60
Standpipe			\$9.56	\$7.55
<b>Annual Cost Recovery (millions) – Option 3 Revised</b>				<b>\$12.7</b>

Rate Structure Option 3 Revised was ultimately selected as the rate structure for implementation, effective September 1<sup>st</sup>, 2024. Figure 1-6 below shows the five-year rate plan under Option 3 Revised.

MONTHLY FIXED CHARGE						
	Current Fixed Charge	September 1st, 2024 - December 31st, 2025	January 1st, 2026 - December 31st, 2026	January 1st, 2027 - December 31st, 2027	January 1st, 2028 - December 31st, 2028	January 1st, 2029 - December 31st, 2029
Meter Size:	Inside City Limits	Inside City Limits	Inside City Limits	Inside City Limits	Inside City Limits	Inside City Limits
0.75	\$16.64	\$14.33	\$16.48	\$18.96	\$21.80	\$25.07
1	\$19.60	\$19.86	\$22.83	\$26.26	\$30.20	\$34.73
1.5	\$26.98	\$33.66	\$38.71	\$44.52	\$51.19	\$58.87
2	\$35.84	\$50.23	\$57.76	\$66.42	\$76.39	\$87.85
3	\$56.52	\$102.68	\$118.09	\$135.80	\$156.17	\$179.59
4	\$86.05	\$144.10	\$165.71	\$190.57	\$219.15	\$252.03
6	\$159.88	\$364.97	\$419.72	\$482.67	\$555.08	\$638.34
8	\$248.47	\$447.80	\$514.97	\$592.21	\$681.05	\$783.20
10	\$351.83	\$1,165.64	\$1,340.48	\$1,541.55	\$1,772.79	\$2,038.71

WATER RATES							
	Current Volume Charge	September 1st, 2024 - December 31st, 2025	January 1st, 2026 - December 31st, 2026	January 1st, 2027 - December 31st, 2027	January 1st, 2028 - December 31st, 2028	January 1st, 2029 - December 31st, 2029	
POTABLE WATER: (per 1,000 gallons)		Inside City Limits	Inside City Limits	Inside City Limits	Inside City Limits	Inside City Limits	
Single Family	Tier 1 (0 - 3,500 gallons)	\$3.44	\$4.39	\$ 5.04	\$ 5.80	\$ 6.67	\$ 7.67
	Tier 2 (3,501 - 6,200 gallons)	\$4.45	\$4.72	\$ 5.42	\$ 6.24	\$ 7.17	\$ 8.25
	Tier 3 (6,201 - 11,500 gallons)	\$6.86	\$9.43	\$ 10.85	\$ 12.47	\$ 14.34	\$ 16.50
	Tier 4 (11,501+ gallons)	\$13.72	\$18.86	\$ 21.69	\$ 24.95	\$ 28.69	\$ 32.99
Multi-Family	\$4.42	\$4.97	\$ 5.72	\$ 6.57	\$ 7.56	\$ 8.69	
Commercial/Schools	\$4.69	\$5.88	\$ 6.76	\$ 7.78	\$ 8.94	\$ 10.29	
Institutional	\$4.30	\$5.88	\$ 6.76	\$ 7.78	\$ 8.94	\$ 10.29	
Manufacturing	\$4.63	\$5.56	\$ 6.39	\$ 7.35	\$ 8.45	\$ 9.72	
Landscaping/Lawn Meters	\$4.69	\$10.51	\$ 12.09	\$ 13.90	\$ 15.99	\$ 18.39	
Hydrant Meter	\$7.17	\$7.60	\$ 8.74	\$ 10.05	\$ 11.56	\$ 13.29	
Standpipe**	\$9.56	\$7.55	\$ 8.68	\$ 9.98	\$ 11.48	\$ 13.20	

Figure 1-6: Five Year Water Rates Under Option 3 Revised

### 1.3.6 Bill Impacts

Under Rate Structure Option 3 Revised, Stantec calculated the bill impacts for typical customers from various customer classes. Using the billing data provided by the Utility, Stantec determined representative customer characteristics for each customer class. Table 16 below presents the typical bill impacts resulting from the FY 2025 rate increase effective September 1, 2024 as well as the proposed 15% FY 2026 rate increase effective January 1, 2026. Proposed rate increases from 2026 through 2029 are 15% annually.

**Table 1-16: Bill Impacts Under Option 3 Revised – FY24 to FY26**

Customer Class	Rep. Meter Size	Avg. Bill Volume (kgals)	Avg. FY 2024 Water Bill	Effective Date 9/1/2024			Effective Date 1/1/2026 (15% Rate Increase)	
				Total Bill*	\$ Change	% Change	Total Bill*	\$ Change
Single Family	¾"	4	\$30.91	\$32.04	\$1.13	3.7%	\$36.84	\$4.81
Multi-family	1"	9	\$59.38	\$64.59	\$5.21	8.8%	\$74.28	\$9.69
Commercial/ Schools	1"	40	\$207.20	\$255.08	\$47.88	23.1%	\$293.34	\$38.26
Landscape	1"	24	\$132.16	\$272.10	\$139.94	105.9%	\$312.92	\$40.82
Manufacturing	1.5"	73	\$364.97	\$439.54	\$74.57	20.4%	\$505.47	\$65.93
Institutional	8"	2,165	\$9,557.97	\$13,179.22	\$3,621.25	37.9%	\$15,156.10	\$1,976.88

## 1.4 WASTEWATER RATE DESIGN OPTIONS AND RESULTS

Stantec and Utility staff used the COS results to create rate design options that recover necessary costs for the Wastewater Fund while also accomplishing the strategies and priorities set forth by the City of Flagstaff. These priorities include:

- Revenue stability
- Conservation/demand management
- Administrative burden
- Proportionality (or equity) between classes and within a class
- Affordability

Currently, the Utility collects all of the wastewater rate revenue through volumetric charges and does not charge a fixed fee for wastewater services. Residential customers are billed based on winter quarter

average (WQA) water usage, while non-residential customers are charged based on billable water flows. Figure 1-7 shows the current wastewater rate schedule as of January 1, 2024.

SEWER RATES			
SEWER: (per 1,000 gallons)	Customer Class	Inside City Rate	Outside City Rate
<b>Residential</b>			
*Single- and Multi-Family	R1 - R4	\$5.35	\$5.89
<b>Non-Residential</b>			
Car Washes	CW	\$5.38	\$5.92
Laundromats	L	\$5.53	\$6.08
Commercial	C	\$5.68	\$6.25
Hotels & Motels	H	\$7.58	\$8.34
Restaurants	RF	\$9.09	\$10.00
Industrial Laundries	IL	\$8.36	\$9.20
Manufacturing	MN	\$6.09	\$6.70
Pet Food Manufacturers	PF	\$13.34	\$14.67
Soft Drink Bottling	SD	\$10.57	\$11.63
Ice Cream Cone Manufacturing	IC	\$16.48	\$18.13
NAU	NA	\$4.91	\$5.40

\*Residential usage based on WQA (usage billed in winter months of December, January, February, March)

**Figure 1-7: Current Wastewater Rate Schedule**

The sections below detail the resulting rate design options from the Analysis for wastewater based on the COS results and the priorities listed above.

### 1.4.1 Rate Structure Option 1

The first rate option adjusts the uniform volume rates by customer class to recover the respective class costs of service for FY 2025. This adjustment results in some classes' rates increasing, with other classes' decreasing to mirror the results of the COS analysis. Table 17 presents the current and proposed rates under Rate Structure Option 1. All rates represent the inside-City rates. Outside-City rates include a 10% surcharge.

**Table 1-17: Current and Proposed Wastewater Charges Under Rate Option 1 (Inside City)**

Customer Class	Current Rate (FY 24)	FY 25 Proposed Option 1 Rates
Residential	\$5.35	\$7.33
Car Washes	\$5.38	\$5.16
Laundromats	\$5.53	\$5.55
Commercial	\$5.68	\$6.11
Institutional	\$4.91	\$5.41
Manufacturing	\$6.09	\$5.92
Hotels & Motels	\$7.58	\$6.14
Restaurants	\$9.09	\$9.54
Industrial Laundries	\$8.36	\$8.81
Pet Food Manufacturers	\$13.34	\$8.56
Ice Cream Cone Manufacturing	\$16.48	\$39.95

### 1.4.2 Rate Structure Option 2

The second rate option is calculated to recover 25% of FY 2025 revenue requirements from a monthly fixed charge by meter size. The charge is determined by evaluating the total number of connections to the wastewater system, identifying the water meter size associated with those connections, and determining an ERU total using factors from the AWWA manuals on flow rates for different meter sizes. These ERUs represent the potential usage of the wastewater system.

The remaining 75% of revenue requirements is recovered through the same sewer rate structure as currently in place – uniform volume rates per 1,000 gallons of billed sewer flow by class. These rates have been adjusted for the costs of service by class. Table 18 shows the proposed fixed charge per ERU, while Table 19 presents the proposed volumetric rates under Rate Structure Option 2 for FY 2025. All rates represent the inside-City rates. Outside-City rates include a 10% surcharge.

**Table 1-18: Proposed Wastewater Fixed Charges (Inside City)**

Meter Size	ERU Factor	FY 25 Fixed Charge (25% Cost Recovery)
¾"	1.00	\$10.39
1"	1.67	\$17.32
1 ½"	3.33	\$34.63
2"	5.33	\$55.41
3"	11.67	\$121.22
4"	16.67	\$173.17
6"	33.33	\$346.33
8"	53.33	\$554.13

**Table 1-19: Current And Proposed Wastewater Volume Charges Option 2 (Inside City)**

Customer Class	Current Rate (FY 24)	FY 25 Individualized Volume Charge (per 1,000 gallons) (75% Cost Recovery)
Residential	\$5.35	\$5.50
Car Washes	\$5.38	\$3.87
Laundromats	\$5.53	\$4.16
Commercial	\$5.68	\$4.58
Institutional	\$4.91	\$4.06
Manufacturing	\$6.09	\$4.44
Hotels & Motels	\$7.58	\$4.61
Restaurants	\$9.09	\$7.16
Industrial Laundries	\$8.36	\$6.61
Pet Food Manufacturers	\$13.34	\$6.42
Ice Cream Cone Manufacturing	\$16.48	\$29.96

Adding on to the priorities addressed in the first two options, the priority of administrative burden and complexity of the rate structure can be addressed by consolidation of the non-residential customer classes. The City has maintained individual customer classes for non-residential type customers with rates that reflect a combination of flows and strengths for many years. As new customers are added, it is important to assign the customer to the correct class. To simplify the current structure, Stantec proposes a consolidation of non-residential customers into classes with like flow and strength characteristics. While variations in flows and strengths exist, the three non-residential classes present a range of loadings (flows and strengths) for each class that can be used to evaluate where a new customer belongs in the consolidated structure.

### 1.4.3 Rate Structure Option 3

The third rate option builds on Options 1 & 2. The fixed charge is the same as in Option 2 and is calculated to recover 25% of the annual revenue requirements.

The remaining revenue requirements are recovered through a uniform volume rate for residential customers and for three non-residential classes:

- Non-residential A
- Non-residential B
- Non-residential C

Residential rates are the same as in Option 2. The non-residential classes' rates are calculated to recover the total costs of service for customers in the consolidated classes. Therefore, the volume rates per 1,000 gallons of billed flows are based on the COS results. New non-residential customers can be assumed to fall under the Non-residential A classification unless they are a higher strength industrial manufacturer.

Table 20 below present the results for FY 2025. All rates represent the inside-City rates. Outside-City rates include a 10% surcharge.



**Table 1-20: Current And Proposed Wastewater Volume Charges Option 3 (Inside City)**

Consolidated Class	Customer Class	Current Rate (FY 24)	FY 25 Consolidated Volume Charge (75% Cost Recovery)
Residential	Residential	\$5.35	\$5.50
Non-Residential A	Car Washes	\$5.38	\$4.45
	Laundromats	\$5.53	
	Commercial	\$5.68	
	Institutional	\$4.91	
	Manufacturing	\$6.09	
	Hotels & Motels	\$7.58	
Non-Residential B	Restaurants	\$9.09	\$7.05
	Industrial Laundries	\$8.36	
	Pet Food Manufacturers	\$13.34	
Non-Residential C	Ice Cream Cone Manufacturing	\$16.48	\$29.96

### 1.4.4 Bill Impacts

For each option, customers will see an effect on their current monthly bills due to the revenue requirements for FY 2025, the adjustment for COS results, and the rate option. The table below presents average monthly bill impacts for each customer class for each of the rate options. Average bill impacts in this table means all monthly bills for 12 months for each customer class were averaged to calculate a change in those monthly bills as a result of the rate option. These may not represent typical bills for the class due to variations in usage and meter size for each class.

**Table 1-21: Potential Bill Impacts for Typical Customer Attributes (Inside City)**

Customer Class	Number of Accounts	Average Meter Size	Average Bill Volume (kgals)	Average FY 2023 Sewer Bill*	Option 1 – COS Results	Option 2 – Fixed + Individualized	Option 3 – Fixed + Consolidated
Residential	21,080	¾"	4.88	\$26.13	\$9.67	\$12.23	\$12.23
Car Washes	13	1 ½"	160.59	\$863.97	(\$35.33)	(\$212.26)	(\$119.54)
Laundromats	6	2"	157.85	\$872.92	\$3.15	(\$161.03)	(\$114.92)
Commercial	1,402	1"	17.60	\$99.96	\$7.57	\$5.07	\$2.73
Institutional	8	4"	9,559	\$46,932.24	\$4,402.71	(\$4,990.00)	(\$1,793.00)
Manufacturing	27	1 ½"	61.74	\$375.99	(\$10.50)	(\$67.72)	(\$67.03)
Hotels & Motels	97	2"	126.75	\$960.76	(\$182.52)	(\$330.31)	(\$350.09)
Restaurants	132	1"	40.86	\$371.41	\$18.39	(\$55.67)	(\$60.00)
Industrial Laundries	1	3"	778.52	\$6,508.40	\$350.33	(\$1,241.91)	(\$896.64)
Pet Food Manufacturers	1	3"	391.04	\$5,216.47	(\$1,780.00)	(\$2,651.00)	(\$2,230.00)
Ice Cream Cone Manufacturing	1	3"	109.3	\$1,801.23	\$2,565.00	\$1,595.00	\$1,595.00

## 1.5 RECLAIMED WATER RATE DESIGN RESULTS

The Utility has established reclaimed water rates for various customer classes as a percentage of potable water rates per 1,000 gallons. The fixed charges for reclaimed water are the same as for potable water. Flagstaff City Council selected Option 3 Revised as the proposed water rate structure for FY 2025 implementation. Council direction was to evaluate more fully the reclaimed water rates within the next year. Figure 1-7 presents the current and proposed reclaimed water fixed and volume rate structures under Option 3 Revised through FY 2029.

MONTHLY FIXED CHARGE							
	Current Fixed Charge	September 1st, 2024 - December 31st, 2025	January 1st, 2026 - December 31st, 2026	January 1st, 2027 - December 31st, 2027	January 1st, 2028 - December 31st, 2028	January 1st, 2029 - December 31st, 2029	
<b>Meter Size:</b>		<b>Inside City Limits</b>	<b>Inside City Limits</b>	<b>Inside City Limits</b>	<b>Inside City Limits</b>	<b>Inside City Limits</b>	
0.75	\$16.64	\$14.33	\$16.48	\$18.96	\$21.80	\$25.07	
1	\$19.60	\$19.86	\$22.83	\$26.26	\$30.20	\$34.73	
1.5	\$26.98	\$33.66	\$38.71	\$44.52	\$51.19	\$58.87	
2	\$35.84	\$50.23	\$57.76	\$66.42	\$76.39	\$87.85	
3	\$56.52	\$102.68	\$118.09	\$135.80	\$156.17	\$179.59	
4	\$86.05	\$144.10	\$165.71	\$190.57	\$219.15	\$252.03	
6	\$159.88	\$364.97	\$419.72	\$482.67	\$555.08	\$638.34	
8	\$248.47	\$447.80	\$514.97	\$592.21	\$681.05	\$783.20	
10	\$351.83	\$1,165.64	\$1,340.48	\$1,541.55	\$1,772.79	\$2,038.71	

RECLAIMED WATER: (per 1,000 gallons)							
	Current Volume Charge	September 1st, 2024 - December 31st, 2025	January 1st, 2026 - December 31st, 2026	January 1st, 2027 - December 31st, 2027	January 1st, 2028 - December 31st, 2028	January 1st, 2029 - December 31st, 2029	Percent of Potable Water Rate Inside City Limits
<b>RECLAIMED WATER: (per 1,000 gallons)</b>		<b>Inside City Limits</b>	<b>Inside City Limits</b>	<b>Inside City Limits</b>	<b>Inside City Limits</b>	<b>Inside City Limits</b>	
Private Residential							35%
Tier 1 (0 - 3,500 gallons)	\$1.63	\$1.96	\$2.19	\$2.45	\$2.76	\$3.11	
Tier 2 (3,501 - 6,200 gallons)	\$1.98	\$2.07	\$2.32	\$2.61	\$2.93	\$3.31	
Tier 3 (6,201 - 11,500 gallons)	\$2.82	\$3.72	\$4.22	\$4.79	\$5.44	\$6.20	
Tier 4 (11,501+ gallons)	\$5.23	\$7.03	\$8.02	\$9.15	\$10.46	\$11.97	
Commercial (no main Ext):	\$2.07	\$2.48	\$2.79	\$3.15	\$3.55	\$4.02	35%
Commercial (w/ main Ext):	\$4.43	\$5.32	\$5.98	\$6.74	\$7.62	\$8.62	75%
Manufacturing (no main Ext):	\$2.04	\$2.37	\$2.66	\$2.99	\$3.38	\$3.82	35%
Manufacturing (w/ main Ext):	\$4.38	\$5.07	\$5.70	\$6.42	\$7.24	\$8.19	75%
NAU (no main Ext):	\$1.93	\$2.48	\$2.79	\$3.15	\$3.55	\$4.02	35%
NAU (w/ main Ext):	\$4.13	\$5.32	\$5.98	\$6.74	\$7.62	\$8.62	75%
Hydrant Meter	\$4.19	\$4.40	\$4.97	\$5.63	\$6.38	\$7.25	50%
Standpipe	\$4.78	\$3.77	\$4.34	\$4.99	\$5.74	\$6.60	50%
Off Peak/Golf Course:*	\$1.80	\$2.16	\$2.43	\$2.74	\$3.09	\$3.50	87%

\*Rate is 87% of the Commercial (no main extension) reclaimed water rate

Figure 1-8: Reclaimed Water Rates Under Option 3 Revised

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