Executive Summary Report

Cost of Service Rate Study

Prepared for

CITY OF Salem AT YOUR SERVICE

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Executive Summary

Background

The City of Salem's water, wastewater and stormwater rate setting policies and methodologies were originally established by City Council in 2002 and a comprehensive Cost of Service Analysis (COSA) update was conducted 10 years later (in 2012). In 2009, the City initiated a stormwater utility feasibility study that concluded (in December 2010) with adoption of a plan to 'decouple' wastewater and stormwater rates over a four-year period, beginning January 2013. The final phase of the rate decoupling was implemented in 2016. Since that time there have been minor adjustments to the utility rates, in addition to application of planned system-wide revenue slope increases.

The City recently adopted a policy to update COSA every four years – with the expectation that more frequent updates will enhance rate equity and stability. In early 2018, the City initiated the current COSA update to review and update the water, wastewater, and stormwater rates within the context of current system costs and user characteristics. As part of this effort, the Cost of Service Analysis Update Policy Advisory Committee (CUPAC) was re-established to review the City's policy framework used for rate setting. As in the 2012 update, CUPAC consisted of a subset of W/WWTF members, and included four City Councilors, and two citizen members.[1] The preliminary recommendations of CUPAC were presented to the Water Wastewater Task Force (W/WWTF) in July 2018; final recommendations were fully endorsed on August 23, 2018.

Policy Objectives

The following seven policy objectives were established by CUPAC as the highest priority considerations to be used in evaluating rate options:

- Equitable - Rate structure reflects cost of providing service to different groups based on area, function, customer class, and service characteristics.
- Adequate Revenue - The utility rates are sufficient to generate revenues required to support operations, maintain and develop capital infrastructure, and preserve or enhance the financial integrity of the utility system.
- Beneficial to Economy - Rate structure is supportive of business retention or expansion and industrial development.
- Rate Stability - Rate design and financial planning promote small steady increases over time rather than substantial fluctuations which may be unpredictable for customers. Changes in rate structure are transitioned to mitigate impacts.

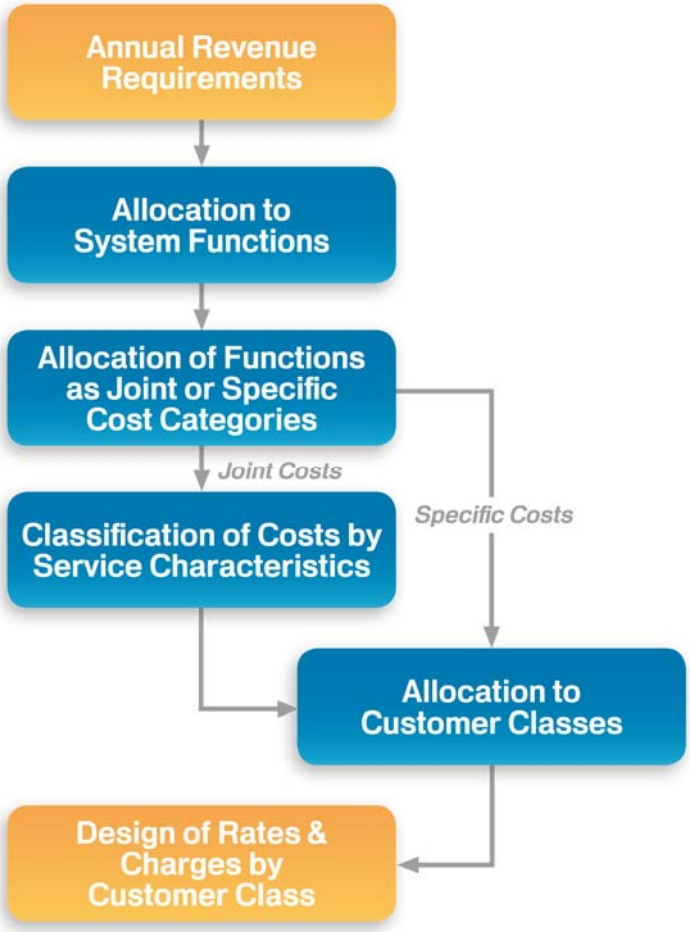
[1] Councilor Brad Nanke, Councilor Steve McCoid, Councilor Cara Kaser, Councilor Jim Lewis, Laura Tesler and Ryan Mann.

- Revenue Stability - Rate structure provides predictable revenue source that is less sensitive to changes in demand or weather patterns.
- Understandable - Rates and fees are transparent and easy to for general public to understand and calculate based on information provided.
- Defensible – Rates follow standard industry practice and a COSA framework.

For each COSA policy issue, CUPAC evaluated the existing policy and alternatives based on the established objectives.

Cost of Service Analysis Overview

The general process for developing cost of service rates is illustrated in the diagram below. This process begins with the development of utility revenue requirements (i.e., the annual costs to be recovered from rates for each system), and is followed by a four-step cost allocation process. The City maintains a long-term financial forecasting model that it reviews and updates every two years for use in developing planned system-wide revenue slope increases. The financial plan is used to establish the annual revenue requirements for each COSA update.



The first step of the cost allocation process is to determine what it costs the utility to perform different **system functions**. Water system functions typically include supply, transmission, treatment, storage, pumping, customer service, and fire protection. Wastewater functions typically include treatment, collection, pumping, and customer service. Stormwater functions include water quality, water quantity, and customer service.

Next, functional costs are grouped by **joint and specific categories**. This process allows for certain types of costs (e.g., industrial monitoring costs) to be allocated directly to benefiting customers, and other costs (e.g. water or wastewater treatment), to be distributed across all customers of the system.

Following functionalization and joint and specific groupings, costs are **classified by service characteristics**. Some costs incurred by the utility are a function of the quantity of water

consumed or volume of wastewater or stormwater discharged by customers. Other costs are associated with serving customers regardless of the quantity that flows through the system. The American Water Works Association recommends classification of water system costs based on average and peak demands, and customer services. Water Environment Federation and U.S. Environmental Protection Agency methods classify wastewater system costs according to flow (average and peak wet weather), biochemical oxygen demand[2] (BOD) loadings, total suspended solids[3] (TSS) loadings, and customer services. Stormwater costs are classified as account or volume-based. Costs are classified among these service characteristics, so that they may then be allocated to customer classes in proportion to system demands.

In the final step of the cost allocation process, the characteristics of the utilities' customers are analyzed and costs are **allocated by customer class**. For water systems, user characteristics include average and peak water demands, the number of meters by meter size, and the number of customers. User characteristics of wastewater systems are typically defined by wastewater flows (metered or estimated from water use records), strengths (BOD and TSS loadings), and the number of customer accounts or dwelling units. Stormwater usage is estimated by the number of customers and the amount of impervious area generating stormwater runoff.

The last step in the rate development process is the design of the rate structure and the development of rates. There are a variety of rate structure options available to meet a wide range of policy objectives. Rates generally are comprised of a fixed charge per customer per billing period, and a volume charge that varies based on water usage or estimated wastewater flow or stormwater runoff.

Within industry guidelines, jurisdictions have flexibility to select rate setting approaches that are most consistent with local policies and objectives. Therefore, the policy recommendations of CUPAC and the W/WWTF, along with technical considerations (system operation and design) provide the framework for the methodologies and rates presented in this report.

Policy Framework

The policy framework for the updated COSA consists of both foundational policy decisions of CUPAC and the W/WWTF from prior COSA updates, as well as recommendations specific to 2018 policy issues. A summary of the COSA-related policy recommendations is provided below.

Foundational Policies

Table ES-1 provides a summary of foundational policies established in prior updates. The CUPAC reviewed these issues again at a high level, and found the prior decisions to be consistent with the City's current policy objectives, so no changes are recommended.

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[2] BOD is the quantity of oxygen used in the biochemical oxidation of organic matter in a specified time and at a specified temperature.

[3] TSS are solids that float on the surface of, or are in suspension in wastewater or other liquids, and are largely removable by laboratory filtering.

Table ES-1
Summary of COSA Foundational Policies

Policy Issue	Recommendation
Distance & Elevation Surcharges	No rate differentials based on customer location or elevation.
Water discounts for Industrial	Exempt industrial customers from storage above "GO" (the lowest pressure zone), as well as pumping, and some distribution costs.
Outside-City Surcharge	7.5% surcharge for all outside-city customers except Keizer & Turner which were phased-out in 2015 (per 2008 Council policy)
Infiltration and Inflow (I/I) Cost Allocation	In considering the costs associated with building and maintaining extra capacity in the wastewater system associated with I/I, 75% of costs will be allocated to customers classes based on the number dwelling unit equivalents (residential) or accounts (nonresidential), and 25% will be based on wastewater volume. The residential unit equivalent for multifamily customers is 10 percent per dwelling unit.
Public Fire Protection Cost Allocation	In considering the costs associated with building and maintaining extra capacity in the water system for public fire protection, 100% of costs will be allocated to customers through the fixed meter charge, standardized based on a one-inch meter.
Water Volume Rates	Recover water system volume rates based on a uniform volume rate structure for each customer class and service area.
Wastewater Volume Rates	For the purpose of assessing wastewater volume rates for all non-monitored customers, compute each customer's winter average water use, in order to exclude non-sewered water uses like irrigation that generally occur during the summer.

2018 Policy Issues

With the completion of the wastewater and stormwater rate decoupling in 2016, and a generally stable cost structure for the wastewater system since the prior COSA update in 2012, there were no major policy issues specific to the wastewater system in the 2018 update. Key policy issues related to the water and stormwater system revenue slopes and the system-specific COSA issues are summarized below.

Water System

The policy questions considered by CUPAC related to the water COSA include whether the utility should:

- Continue the incremental shift in revenue recovery from volume charges to fixed charges to enhance revenue stability (a strategy that began in 2012), and
- Provide rate relief for irrigation customers (an issue that was raised in 2016, with the recommendation to consider in the 2018 COSA update).

Furthermore, in the process of reviewing specific water system costs and revenues for the current rate setting period, two allocation issues were identified for discussion by CUPAC: whether Aquifer Storage and Recovery (ASR) costs, and one-time revenue from the sale of water rights should be considered as specific costs/revenues to inside-city customers only, or "common to all" (i.e., shared by all customers, regardless of geographic area). Once the technical and policy updates were completed, and the revised rates and bills determined, a final recommendation was made by the CUPAC and W/WWTF related to phasing rate increases for wholesale customers.

A brief discussion of each issue follows, along with specific recommendations.

Revenue Recovery through Fixed Charges: The policy framework for the 2012 COSA included the goal of enhancing revenue stability through increasing the percentage of annual water rate revenue recovered through fixed (customer and meter) charges to approximately 15 percent, from 10 percent previously. In 2016, the W/WWTF further considered the issue, and recommended that fixed charge revenue increase further (to 20 percent), phased in over two years. The majority of the costs of the water system are fixed (i.e., do not fluctuate with water demand), so reduced water use (like the system has experienced over the last decade) often results in the need for additional rate increases in the short term, in order for the system to remain financially viable. New industry guidelines suggest revenue recovery from fixed charges in the 40-50 percent range, even under water conservation best management practices.

Recommendation: Continue recent practice to shift additional revenue recovery to the fixed charges, with the goal of reaching 25 percent by Fiscal Year (FY) 2019/20 (the second year of the current rate setting period).

Irrigation Pricing: When the original COSA was under development in the late 1990's (ultimately adopted in 2002), system peak demands were projected to exceed available supplies within a 20-year time period. The result was adoption of a pricing structure that emphasized variable charges, and imposed rate differentials by customer class based on peak usage requirements. This pricing structure, applied to system production and customer class usage characteristics developed in 2012, resulted in water sold specifically for irrigation purposes being priced significantly higher (60 percent or more) than the water sold for general use to residential, multifamily, commercial, and other classes. In 2016, the W/WWTF considered a proposal to decrease rates for the irrigation customer class by 27 percent based on more current usage information, and a modified approach to peak cost allocation. However, the proposal was not endorsed by the W/WWTF, so no change was made to irrigation rates, pending further consideration in the 2018 COSA update.

Recommendation: The 2018 COSA followed the same technical framework used for the prior 2012 COSA update; however, more recent system and customer class records showed a reduction in peak demands generally for the water system, and a significant reduction in the peak use factors for irrigation customers (relative to other types of customers). These two factors resulted in a reduction in irrigation volume rates of nearly 17 percent, so no further policy adjustments were considered.

Allocation of Revenue from Sale of Water Rights: A major funding source (about $11 million) for water system capital projects over the next four years is revenue from the sale of water rights. This funding offsets what otherwise would be required from water rate increases. As a new and temporary source of revenue specific to the 2018 COSA update, the CUPAC considered how the revenue from this sale of a City asset should be allocated among water system customers.

Recommendation: The revenue from the sale of water rights (a City asset) is allocated only to customers inside the City.

Allocation of ASR costs: In the prior COSA, capital and operating costs for ASR were allocated across all user classes and areas because the ASR system was considered an indirect benefit to all customers of the system. In reviewing the cost allocation for purposes of the 2018 COSA, City staff recommended reclassification of ASR costs as inside-city only, reflecting usage of the system primarily by inside-city customers.

Recommendation: The costs associated with ASR are allocated only to customers inside the City.

Phasing of Wholesale Customer Rates: The updated COSA analysis resulted in substantial rate increases for wholesale water customers of between 29 and 42 percent in 2019. These increases are the result of changes to the utility cost structure – primarily an increase in water treatment, Franzen reservoir and upper transmission costs, which all customers share in. Rates for inside-city customers did not result in the same immediate impact due to off-setting revenue from the sale of the Willamette River water rights in the short-term.

Recommendation: Smooth the increases for wholesale customers over a period of four years, equal to the remaining duration of payments from the sale of water rights.

Stormwater System

The City's stormwater utility rate structure and projected rates were developed in FY 2012-13, as part of the prior COSA update. A four-year phase-in plan was adopted, which included a general cost escalation factor of about three percent per year. The COSA rates were fully implemented in January 2016, and were subsequently increased by three percent in each of the following two years (consistent with the system-wide planned revenue slope).

The policy questions considered by CUPAC related to the stormwater COSA were whether the utility should:

- Continue the annual revenue slope at 3 percent per year.
- Apply the annual rate increases uniformly to both the base and variable rates, or adjust as appropriate based on the updated COSA.

Revenue Slope: The 2018 COSA update concluded that stormwater system costs – primarily costs associated with operating and maintaining the system to meet water quality and quantity standards -- have increased more than originally projected. These increases reflect a growing and evolving system – both in terms of the number of facilities and expanded activities related to regulatory compliance and green infrastructure. Furthermore, capital costs are projected to increase (even though the City has reduced debt service costs through refinancing), in order to meet regulatory and asset replacement needs.

Recommendation: The CUPAC endorsed the need for a 5 percent annual revenue slope to build additional revenue capacity to fund requirements during the 5-year financial planning period. The first 2 years of these increases are built into the updated COSA rates presented in this report.

Rate Structure: The COSA update informs not only the overall system requirements, but also how the individual rate components need to change in order to generate an equitable recovery of costs from system users. In the case of the stormwater rates, the COSA results

show an increase in variable rate-related costs (namely water quality and quantity related costs), relative to account-based costs (primarily customer service and street sweeping costs).

Recommendation: The CUPAC endorsed adjusting the rate structure to reflect the updated COSA results by rate component.

Recommended Rates

The updated COSA results in some shifts in system cost recovery among customer classes and rate components, as a result of both the revised policy framework and changes to the cost structure (i.e., how the costs of the systems align with functions and service characteristics). System cost structures change over time as a result of ongoing capital investment driven by regulatory requirements, capacity expansion, new technologies, and asset management plans. Operating budgets reflect changes resulting from capital improvements, maintenance requirements, and other factors.

The updated COSA rates for the 2-year rate setting period are presented for each system below. In addition to the updated COSA framework, the proposed rates include the recommended revenue slope for each system:

- Wastewater – 2.5 percent
- Water – 3.0 percent
- Stormwater – 5.0 percent

For the utility system as a whole (all three systems combined), the projected revenue slope approximates 3 percent per year. Revised rates are assumed to be implemented January 1 of each year.

Water System

Current (2018) and updated COSA (2019 and 2020) water rates are shown in Table ES-2 (following page). The updated COSA results are highlighted by:

1. For all customers, a shift in revenue recovery from volume charges to fixed charges reflecting both the updated system cost structure (relatively larger increases in billing and meter-related cost components), as well the policy goal of 25 percent revenue recovery from fixed charges by 2020.
2. Relatively higher increases in volume rates for outside-city customers, reflecting both an increase in "common to all" costs (primarily water treatment, Franzen reservoir, and upper transmission costs), and the policy decision to apply temporary revenue from the sale of water rights to inside-city customers exclusively.

As with existing rates, the revised rate schedule includes a fixed monthly service charge which varies by meter size, and a volume rate per hundred cubic feet (ccf) for each customer class. Volume rate differentials among customer classes reflect both updated system peak demand characteristics, and service delivery requirements. As with current rates, revised rates for customers in unincorporated areas outside the City include a 7.5 percent surcharge per current policy.

Table ES-2
City of Salem Cost of Service Analysis
Comparison of Current and Revised COSA Water Rates[1]

		Inside-City			*Outside-City*	
	Existing	**Revised**[1]	**Revised**[1]	**Existing**	**Revised**[1]	**Revised**[1]
Effective January…	2018	2019	2020	2018	2019	2020
Volume Rate ($/ccf)[2]						
Residential	$2.62	$2.56	$2.54	$2.85	$3.05	$3.02
Multiple Dwelling	$2.12	$2.16	$2.14	$2.30	$2.53	$2.52
Irrigation	$4.20	$3.50	$3.44	$4.55	$4.25	$4.19
Commercial	$2.16	$2.26	$2.24	$2.34	$2.66	$2.64
Industrial	$1.52	$1.53	$1.53			
Institutional	$1.84	$2.09	$2.08			
Public Building	$2.55	$2.45	$2.43	$2.76	$2.91	$2.88
Wholesale ($/ccf)[2]						
East Salem Water District				$1.07	$1.15	$1.23
City of Turner				$0.92	$0.98	$1.05
Orchard Heights				$2.56	$2.79	$3.05
Monthly Service Charge Meter Size ($/Meter)[3]						
5/8" or ¾"	$9.18	$10.15	$11.38	$9.87	$10.88	$12.25
1"	$10.02	$12.83	$15.41	$10.77	$13.76	$16.58
1.5"	$15.87	$21.74	$26.69	$17.06	$23.34	$28.71
2"	$22.87	$32.44	$40.23	$24.59	$34.83	$43.26
3"	$41.56	$60.95	$76.32	$44.68	$65.49	$82.06
4"	$62.57	$93.03	$116.93	$67.26	$99.97	$125.71
6"	$120.96	$182.14	$229.72	$130.03	$195.77	$246.96
8"	$412.88	$627.69	$793.67	$443.85	$674.73	$853.21
10"	$646.42	$984.13	$1,244.84	$694.90	$1,057.91	$1,338.22

[1] Revised rates include impact from change in revenue slope as well as COSA
[2] ccf = hundred cubic feet (748 gallons)
[3] Outside-City meter charges vary by service area for wholesale customers; rates shown in this table are for Orchard Heights and retail customers

Wastewater System

The current and revised wastewater rates that are shown in Table ES-3 consist of monthly fixed charges that are designed to recover customer, billing, and 75 percent of infiltration and inflow (I/I) costs, and volume charges that are designed to recover the customer flow and the remaining 25 percent of system I/I costs, as well as wastewater strength-related costs. The volume rates for commercial customers are higher than residential customers (in all areas) due to the higher estimated wastewater strengths of these customers. As with water service to outside-city users, wastewater service to customers outside the City limits in unincorporated areas (other than Turner and Keizer) reflect inclusion of a 7.5 percent surcharge.

Table ES-3
City of Salem Cost of Service Analysis
Comparison of Current and Revised Wastewater Rates[1]

Effective January…..	Existing 2018	Revised 2019	Revised 2020
Volume Rate ($/ccf)[2]			
Inside-City			
Residential	$3.41	$3.49	$3.60
Multifamily	$3.41	$3.49	$3.60
Commercial	$4.70	$4.80	$4.94
Outside-City			
Keizer[3]			
Residential	$3.45	$3.54	$3.64
Multifamily	$3.45	$3.54	$3.64
Commercial	$4.75	$4.86	$5.00
Labish/Chatnicka	$3.71	$3.80	$3.92
East Salem/Jan Ree			
Residential	$3.71	$3.80	$3.92
Multifamily	$3.71	$3.80	$3.92
Commercial	$5.12	$5.22	$5.38
Wholesale			
Turner	$3.38	$3.51	$3.61
Fixed Charge ($/Bill)			
Inside-City			
Residential	$14.44	$14.88	$15.01
Multifamily			
Duplexes	$15.70	$16.15	$16.29
Triplexes	$16.95	$17.42	$17.57
Quads	$18.21	$18.69	$18.85
Five and above	$19.46	$19.97	$20.12
DUs over 5	$1.26	$1.27	$1.28
Commercial	$21.63	$21.91	$22.45
Outside-City			
Keizer[3]			
Residential	$12.84	$13.01	$13.06
Multifamily			
Duplexes	$14.12	$14.31	$14.37
Triplexes	$15.41	$15.61	$15.67
Quads	$16.69	$16.91	$16.98
Five and above	$17.97	$18.21	$18.29
DUs over 5	$1.28	$1.30	$1.31
Commercial	$20.23	$20.26	$20.72
Labish	$15.72	$16.18	$16.33
East Salem/Jan Ree/Chatnicka			
Residential	$15.72	$16.18	$16.33
Multifamily (3 units +)			
Duplexes	$17.09	$17.57	$17.72
Triplexes	$18.46	$18.96	$19.11
Quads	$19.83	$20.34	$20.51
Five and above	$21.20	$21.73	$21.90
DUs over 5	$1.37	$1.39	$1.39
Commercial	$23.56	$23.85	$24.43

[1] Revised rates include impact from change in revenue slope as well as COSA
[2] ccf = hundred cubic feet (748 gallons)
[3]Volume rates include directly assigned administrative costs; fixed charges exclude billing costs

As required by clean water regulations, the wastewater flows for certain industrial and institutional customers are monitored for flow volume and pollutant loads. Because the City has specific information on the discharge characteristics of these customers, they are charged individually based on a set of unit costs for flow, BOD, TSS, billing and sampling. Current and revised industrial and institutional rates are shown in Table ES-4.

Table ES-4
City of Salem Cost of Service Analysis
Comparison of Current and Revised Monitored Wastewater Rates

Component	Effective January….	Existing 2018	Revised 2019	Revised 2020
Flow ($/MG)		$3,082.67	$3,300.63	$3,400.32
BOD ($/1,000 lbs)		$355.25	$345.23	$355.89
TSS ($/1,000 lbs)		$256.27	$246.48	$253.01
Billing ($/bill) – Industrial		$1,963.57	$1,901.27	$2,012.50
Billing ($/bill) – Institutional		$1,091.70	$1,065.66	$1,127.99

As shown in Table ES-4, the revised COSA results in some shifts among rate components, with flow costs increasing, and other costs decreasing slightly in the first year. Billing charges are lower for institutional customers due to the less frequent monitoring/sampling performed for these customers.

Stormwater

The current and updated COSA rates for stormwater are shown in Table ES-5. The City Council adopted the stormwater rate structure methodology in 2010. Based on that policy direction, a portion of the stormwater costs are recovered through a base charge per customer (including billing costs and the costs associated with streets and public parking) and the remaining costs are recovered through the equivalent dwelling unit (EDU) charge, where an EDU is defined as 3,000 square feet of impervious area for nonresidential customers. Residential customers are charged based on a 3-tiered EDU structure, where the rate increases for homes with larger impervious area.

Table ES-5
City of Salem Cost of Service Analysis
Current and Revised COSA Stormwater Rates

Rate Component	Effective January…	Existing 2018	Revised 2019	Revised 2020
Residential				
Tier 1 (<2,225 ft2)		$4.70	$5.04	$5.32
Tier 2 (2,225-3,675 ft2)		$5.38	$5.76	$6.08
Tier 3 (over 3,675 ft2)		$6.04	$6.48	$6.84
Base Charge ($/Acct/Mo)		$10.39	$10.63	$11.09
EDU Charge ($/EDU/Mo)[1]		$5.38	$5.76	$6.08
Total Charge for 1 EDU		**$15.76**	**$16.40**	**$17.17**

[1] EDU = 3,000 square feet of impervious area

The COSA results show an increase in EDU rate-related costs (namely water quality and quantity related costs, relative to account-based costs (primarily customer service and street sweeping costs) recovered through the base charge. Revised stormwater rates shown in Table ES-5 also include a 5 percent annual revenue slope.

Combined Sample Bills

A combined water/wastewater/stormwater bill for a typical residential customer inside the City is shown in Table ES-6. A typical single family customer falls in the Tier 2 subclass for stormwater, and has a ¾" water meter, with monthly water use and sewer base of 8.0 and 6 hundred cubic feet, respectively. As shown in Table ES-6, the monthly bill increases for a typical residential customer are $2.13 (2.5 percent) with the proposed 2019 rates, and $2.77 (3.2 percent) as a result of the 2020 rates. The initial (2019) increase is slightly lower than the 2020 increase reflecting COSA shifts for both water and stormwater. The 2020 increase approximates the overall utility revenue slope of 3 percent.

Table ES-6

City of Salem Cost of Service Analysis

Sample Bill for Typical Inside-City Residential Customer

	Month Use (Ccf)	Specific Info[1]	Current FY2017/18	Proposed FY2018/19	Proposed FY2019/20
Water	8.0	0.75	$30.14	$30.63	$31.70
Wastewater	6.0		$34.90	$35.82	$36.61
Storm		Tier 2	$15.77	$16.39	$17.17
Subtotal			$80.81	$82.84	$85.48
Franchise Fee			$4.04	$4.14	$4.27
Total Bill			**$84.85**	**$86.98**	**$89.75**
Percent Change				2.5%	3.2%
Dollar Change				$2.13	$2.77

[1] Water meter size (inches) and residential rate tier for stormwater

Bills impacts for nonresidential customers are shown in Table ES-7, and are summarized as follows:

- **Multifamily**: generally, multifamily customers will experience bill increases consistent with the planned revenue slope, with the exception of accounts with large water meters, but relatively low water volumes, which will see larger percentage increases. Very large unit accounts with significant stormwater EDUs (primarily mobile home parks) will also experience higher increases.

- **Commercial**: generally, commercial bills will increase relatively more than other inside-city customer classes owing both to increases in water volume rates specific to that class (reflecting updated water peaking requirements) and general increases in fixed charges, as well as stormwater EDU rate increases.

- **Public**: The bills for public customers will vary depending on the combination of water use and meter size. Specifically, customers with larger meter sizes and relatively lower water use, and customers with a large number of stormwater EDUs, will experience higher rate increases.

- **Industrial** – Bill impacts will vary depending on a customer's individual system impacts. A customer with lower water and wastewater system impact, but high stormwater EDUs will experience proportionately higher bill increases (in percentage terms). Customers with larger water or sewer contributions will see relatively smaller increases as a result of relatively flat water volume rates and reductions in wastewater loading rates.

- **Institutional** – Like commercial bills, institutional bills will increase as a result of higher water volume rates (reflecting updated peaking requirements), as well as stormwater increases. Institutional customers also tend to have higher wastewater volumes relative to loadings, so sewer bills will also generally increase.

- **Irrigation** – Bills for water only irrigation customers will decrease significantly as a result of the updated water COSA – specifically a reduction in the peaking requirements for these users collectively.

Table ES-7
City of Salem Cost of Service Analysis
Sample Bills for Nonresidential Customers

	Month Use (ccf)	Other Info[1]	Current FY2017/18	Proposed FY2018/19	Proposed FY2019/20
Multifamily - Fourplex					
Water	10.0	1.0	$31.22	$34.43	$36.81
Wastewater	7.0	4.0	42.08	43.12	44.05
Stormwater		1.2	16.85	17.54	18.39
Subtotal			$90.15	$95.09	$99.25
Franchise Fee			4.51	4.75	4.96
Total w/Franchise Fee			**$94.65**	**$99.85**	**$104.21**
Percent Change				5.5%	4.4%
Dollar Change				$5.19	$4.36
Multifamily - Large					
Water	300.0	2.0	$658.87	$680.44	$682.23
Wastewater	300.0	116.0	1,182.32	1,207.94	1,242.20
Stormwater		56.2	312.75	334.34	352.79
Subtotal			$2,153.94	$2,222.72	$2,277.22
Franchise Fee			107.70	111.14	113.86
Total w/Franchise Fee			**$2,261.63**	**$2,333.86**	**$2,391.08**
Percent Change				3.2%	2.5%
Dollar Change				$72.23	$57.22
Multifamily - Mobile Home					
Water	1,000	2.0	$2,142.87	$2,192.44	$2,180.23
Wastewater	992	213.0	3,664.26	3,746.21	3,857.56
Stormwater		350.8	1,897.69	2,031.24	2,143.95
Subtotal			$7,704.82	$7,969.89	$8,181.74
Franchise Fee			385.24	398.49	409.09
Total w/Franchise Fee			**$8,090.07**	**$8,368.38**	**$8,590.83**
Percent Change				3.4%	2.7%
Dollar Change				$278.32	$222.45
Commercial - Large EDU					
Water	315	2.0	$703.27	$744.34	$745.83
Wastewater	300		1,431.63	1,461.91	1,504.45
Stormwater		177.4	964.80	1,032.45	1,089.68
Subtotal			$3,099.70	$3,238.70	$3,339.96
Franchise Fee			154.99	161.94	167.00
Total w/Franchise Fee			**$3,254.69**	**$3,400.64**	**$3,506.96**
Percent Change				4.5%	3.1%
Dollar Change				$145.95	$106.32
Commercial - Small EDU					
Water	80.0	1.5	$188.67	$202.54	$205.89
Wastewater	68.0		341.23	348.31	358.37
Stormwater		4.1	32.45	34.25	36.02
Subtotal			$562.35	$585.10	$600.28
Franchise Fee			28.12	29.25	30.01
Total w/Franchise Fee			**$590.47**	**$614.35**	**$630.29**
Percent Change				4.0%	2.6%
Dollar Change				$23.89	$15.94

[1] Water = ccf, wastewater = mg
[2] Water meter size (inches) and EDUs for stormwater

Table ES-7
City of Salem Cost of Service Analysis
Sample Bills for Nonresidential Customers (Continued)

	Month Use (ccf)	Other Info[1]	Current FY2017/18	Proposed FY2018/19	Proposed FY2019/20
Public					
Water	61.0	3.0	$197.11	$210.40	$224.55
Wastewater	53.0		270.73	276.31	284.27
Stormwater		13.5	83.02	88.39	93.17
Subtotal			$550.86	$575.10	$601.99
Franchise Fee			27.54	28.76	30.10
Total w/Franchise Fee			**$578.40**	**$603.86**	**$632.09**
Percent Change				4.4%	4.7%
Dollar Change				$25.45	$28.23
Industrial					
Water	6,375	6.0	$9,810.96	$9,935.89	$9,983.47
Wastewater					
Flow (mg)	5.8		17,879.49	19,143.65	19,721.86
BOD (1,000 lbs)	237		84,265.30	81,888.56	84,417.11
TSS (1,000 lbs)	13		3,434.02	3,302.83	3,390.33
Fixed			1,963.57	1,901.27	2,012.50
Stormwater		91.3	501.58	536.52	566.19
Subtotal			$117,854.92	$116,708.72	$120,091.46
Franchise Fee			5,892.75	5,835.44	6,004.57
Total w/Franchise Fee			**$123,747.66**	**$122,544.16**	**$126,096.04**
Percent Change				-1.0%	2.9%
Dollar Change				($1,203.51)	$3,551.88
Institutional					
Water	2,062	8.0	$4,206.96	$4,937.27	$5,082.63
Wastewater					
Flow (mg)	1.3		4,007.47	4,290.82	4,420.42
BOD (1,000 lbs)	4.8		1,705.20	1,657.10	1,708.27
TSS (1,000 lbs)	4.6		1,178.84	1,133.81	1,163.85
Fixed			1,091.70	1,065.66	1,127.99
Stormwater		230.8	1,252.09	1,340.04	1,414.35
Subtotal			$13,442.27	$14,424.70	$14,917.51
Franchise Fee			$672.11	$721.23	$745.88
Total w/Franchise Fee			**$14,114.38**	**$15,145.93**	**$15,663.38**
Percent Change				7.3%	3.4%
Dollar Change				$1,031.55	$517.45

[1] Water = ccf, wastewater = mg

[2] Water meter size (inches) and EDUs for stormwater

Table ES-7
City of Salem Cost of Service Analysis
Sample Bills for Nonresidential Customers (Continued)

	Month Use (ccf)	Other Info[1]	Current FY2017/18	Proposed FY2018/19	Proposed FY2019/20
Irrigation					
Water	280	2.0	$1,198.87	$1,012.44	$1,003.43
Backflow Prevention			1.50	1.50	1.50
Subtotal			$1,200.37	$1,013.94	$1,004.93
Franchise Fee			60.02	50.70	50.25
Total w/Franchise Fee			**$1,260.39**	**$1,064.64**	**$1,055.18**
Percent Change				-15.5%	-0.9%
Dollar Change				($195.75)	($9.46)

[1] Water = ccf, wastewater = mg

[2] Water meter size (inches)