



COUNCIL STAFF REPORT

CITY COUNCIL of SALT LAKE CITY

TO: City Council Members
FROM: Sam Owen, Constituent Liaison / Policy Analyst
DATE: September 27, 2018
RE: Informational: Department of Public Utilities
2018 Comprehensive Water and Sewer Rate Study

Item Schedule:

Briefing: 10/02/18
Public Hearing: n/a
Potential Action: n/a

GOAL OF THE BRIEFING

Provide information about the process and recommendations of the Comprehensive Water and Sewer Rate Study, especially with regard to changes that will impact customers. **A subsequent transmittal is expected to amend the City's Consolidated Fee Schedule (CFS) to include Rate Study recommendations and new rate structures.**

ISSUE AT-A-GLANCE

During the spring of 2017, the Department of Public Utilities indicated it would begin a public engagement process known as the Rate Advisory Committee (RAC) to solicit deliberate feedback on a number of proposed alternatives to the existing rate structure for water and sewer service. The Rate Study also involved an analysis of stormwater rates; no changes are currently recommended for this Utility. Public Utilities has a practice of conducting a rate study every five to six years.

The RAC met over the course of six meetings and forwarded recommendations to the Public Utilities Advisory Committee (PUAC), which forwarded its selections to the Administration. The Administration worked with financial consultants Raftelis to formalize these selections into a final report, which is the subject of this briefing. The RAC examined a number of alternatives and the present Rate Study models its recommendations from the alternatives that were selected by members of the RAC.

The final Raftelis report makes recommendations for changes to the rate structure for the City's water and sewer service. The final report also includes a number of recommendations for adjustments to existing miscellaneous



Public Utilities fees, as well as new miscellaneous fees, to be included as part of a subsequent proposal to amend the CFS.

Recommendations to the water and sewer rate structures would be revenue neutral, meaning the proposed changes would redistribute existing costs amongst the utilities' customer classes without generating additional funds compared to fiscal year 2019 adopted rates. Rate Study recommendations to miscellaneous fees would reflect actual costs of performing services related to the fees.

Changes to the rate structure in the Water Utility would result in slightly decreased bills for most residential customers, and increases in bills for commercial and industrial users, as well as institutional users. These changes would primarily impact water users connected through larger meter sizes and those consuming larger volumes of water. The changes in this rate structure are in part meant to reflect the essential use affordability priority identified by the RAC (Attachment 1, page 2). Because fixed charges for smaller meters would be reduced, along with reductions in charges for lower volumes of water use, essential water use would be anticipated to become more affordable with adoption of the recommended changes. Some institutional users will also be able to access and continue accessing secondary water for irrigation use which could result in savings; addition of the corresponding secondary water fee to the CFS would also increase transparency.

Changes to the rate structure in the Sewer Utility would result in similar impacts, with residential users experiencing some savings and more intensive users such as commercial and industrial customers experiencing bill increases. These adjustments in part reflect the costs of providing service to more intensive users of this utility. See ADDITIONAL & BACKGROUND INFORMATION for discussion.

No rate structure changes were recommended in the Stormwater Utility, the Street Lighting Utility was not included as part of the present study.

The water service rate differential for City and County customers is also addressed extensively by the Rate Study (See Attachment 1, PDF pages 33, 34 and 114; See also Attachment 2, County Water Rate Differential).

ATTACHMENTS

1. Administrative Transmittal: Comprehensive Water, Sewer and Stormwater Rate Study
2. Memorandum: County Water Rate Differential
3. RAC Stakeholder list

POLICY QUESTIONS

1. Based on the Raftelis Rate Study recommendations, rates would decrease slightly for some groups of users such as single residences, increase slightly for other groups, and increase significantly for still others.
 - a. The Department performed extensive outreach over a period of several months to collect stakeholder feedback on various alternatives for new rate structures. Based on information gathered by the Department during this process, the Council may wish to ask, for which groups would the overall impacts of implementing the Rate Study recommendations be anticipated as the most noticeable or significant? Possible users experiencing significant impacts might include:
 - i. Housing developers and residents, especially multi-family
(as costs incurred through increased connection and service fees would likely be reflected in costs passed on to consumers)
 - ii. Commercial developers and businesses utilizing new commercial space

- iii. Industrial users, especially those with more treatment-intensive discharge, who would pay significantly more for both water service and sewer service
 - iv. Institutional users such as schools and churches, although impacts for these two customer classes would likely be primarily for water service rather than sewer as well.
 - b. Based on possible impacts to new construction such as multi-family housing and commercial properties, has the Department conducted outreach or otherwise looked into effects on the production of new supplies in these markets—i.e., if the rate structure and fees were implemented as recommended in the subject Rate Study, has the Department or have others explored likely impacts to the pace of new construction or housing values in Salt Lake City?
 - i. The Council may wish to explore this question in the context of new development—primarily commercial/industrial—slated for the City’s Northwest Quadrant in coming years.
- 2. A recent proposal from the Administration seeks fee relief for developers of new multi-family housing when affordability requirements are met. How would that program affect the proposed changes, in terms of considering city-fees for developers as a package?
- 3. Miscellaneous fee recommendations: The Raftelis study includes recommended changes to the rate structures for sewer and water customers, as well as recommended changes to miscellaneous fees. New miscellaneous fees were studied and information provided based on the maximum cost of various services for which the miscellaneous fees are assessed, such as new connections, plan review and repeat inspections. The full cost of performing these services (enumerated in section 6 of the Raftelis report, Attachment 1 page 54) is not currently being offset by fee-for-service revenue, but is covered by other revenue sources (water sales and sewer charges).

Adoption of the recommended changes to miscellaneous fees would not be revenue neutral, i.e. adopting the fee adjustments as outlined in the Raftelis report would result in new revenue and consideration of adjustments to the fiscal year 2019 adopted budget for Public Utilities. By contrast, the rate structure recommendations are revenue neutral for fiscal year 2019. Therefore, considering the miscellaneous fee recommendations at this time would have both budget and policy impacts.

- a. The Council may wish to discuss whether recommended changes to miscellaneous fees and the resulting budget impacts, might be incorporated in a future budget discussion, such as with the fiscal year 2020 budget proposal for Public Utilities, when a holistic proposal could be prepared.
- b. Furthermore, the Council may wish to allow more time to review and discuss the proposed fee increases separate from the rate structure proposal. This would allow time to understand the overall budget options, and to identify specific values with regard to the proposed increases and possible ramifications of adjustments.
 - i. The Council may wish to request that Public Utilities returns with a proposal of a preferred fee increase scenario based on the Raftelis findings.
 - ii. One purpose might also be to highlight how adopting new, increased fees could offset future rate increases for customers of the Utilities.
 - iii. The Council may wish to request that Public Utilities recommend miscellaneous fee increases that the Department would like to be considered in the shorter-term, as part of a possible CFS amendment to adopt the proposed rate structure changes. See KEY CHANGES—Miscellaneous Fees for discussion.

KEY CHANGES—Water Utility

Table 1.3: Water – FY19 Utility Presented and FY19 Proposed Raftelis Fixed Charges⁽¹⁾

Meter Size	FY19 Utility Presented	FY19 Proposed Raftelis	Change - \$	Change - %
3/4"	\$9.89	\$8.84	(\$1.05)	(11%)
1"	9.89	11.56	1.67	17%
1 ½"	11.68	18.37	6.69	57%
2"	12.68	26.55	13.87	109%
3"	21.28	48.34	27.06	127%
4"	22.78	72.86	50.08	220%
6"	32.88	140.98	108.10	329%
8"	59.11	222.71	163.60	277%
10"	109.63	576.91	467.28	426%

(1) County fixed charges are 1.35 times City fixed charges.

Table 1.3 above shows monthly fixed charges assessed to customers based on the size of the water meter installed to provide water service. The Raftelis proposed changes to the fixed charges are shown in the highlighted column.

Fixed charges for water service help recover costs related to the Utility’s basic capacity to provide service (e.g. costs of existing infrastructure such as reservoirs, pipes, pump stations and so on).

Most residential customers fall in the ¾ - inch and 1-inch meter sizes.

CONVERSION TABLE

Acre foot (AF)	Key definition Hundreds of cubic feet (ccf)	Gallons (g)
0.0022956841	1	748
1	435.6	325,828.8

**Table 1.4: Water – FY19 Utility Presented and FY19 Proposed Raftelis Residential Volume Rates⁽¹⁾
City Customers**

Block	FY19 Utility Presented \$ per ccf	FY19 Proposed Raftelis \$ per ccf	Change - \$	Change - %
RESIDENTIAL⁽²⁾				
Winter (November – April)				
All Usage	\$1.35	\$1.30	(\$0.05)	(3.7%)
Summer (April – October)				
1	\$1.35	\$1.30	(\$0.05)	(3.7%)
2	1.85	1.78	(0.07)	(3.8%)
3	2.57	2.47	(0.10)	(3.9%)
4	2.74	2.63	(0.11)	(4.0%)
COMMERCIAL				
Winter (November – April)				
All Usage	\$1.35	\$1.42	\$0.07	5.2%
Summer (April – October)				
1	\$1.35	\$1.42	\$0.07	5.2%
2	1.85	1.94	0.09	4.9%
3	2.57	2.70	0.13	5.1%
4	2.74	2.87	0.13	4.7%
IRRIGATION				
Winter (November – April)				
All Usage	1.85	1.71	(\$0.14)	(7.6%)
Summer (April – October)				
1	\$1.85	1.71	(0.14)	(7.6%)
2	2.57	2.38	(0.19)	(7.4%)
3	2.74	2.53	(0.21)	(7.7%)
<i>(1) County rates are 1.35 times City rates</i>				
<i>(2) Includes single residence, duplex, and triplex. See Table 1.1 for the block thresholds for each class.</i>				

Table 1.4 above shows volume rates in the form of cost per “ccf,” or cost per one hundred cubic feet. One ccf equals approximately 748 gallons. The Raftelis proposed changes would result in lower rates for residential users. The amount decrease in residential water rates is close to the amount the rates were increased in the fiscal year 2019 adopted City budget. Rates for irrigation users would also decrease, and rates for commercial users would increase. See ADDITIONAL AND BACKGROUND INFORMATION for discussion on the redistribution of costs that could be said to have differential impacts on user groups.

Table 3.9: Water – FY19 Utility Presented and Proposed Rate Structures

Block	Residential		CII		Irrigation ⁽¹⁾
	FY19 Utility Presented	FY19 Proposed Raftelis	FY19 Utility Presented	FY19 Proposed Raftelis	FY19 Utility Presented
Winter Period (Nov-Mar)	Block 1 Rate for All Usage		Block 1 Rate for All Usage		Block 1 Rate for All Usage
Summer Rate Structure (April through November)					
Block 1 ⁽²⁾	0-10 ccf	0-10 ccf	0-AWC ⁽³⁾	0-AWC	0 – Target Budget
Block 2	11-30 ccf	11-30 ccf	AWC-300%	AWC-300%	Target Budget – 300% of Budget
Block 3	31-70 ccf	31-60 ccf	300%-700%	300%-600%	>300% of Target Budget
Block 4	>70 ccf	>60 ccf	>700%	>600%	
<p>(1) No changes to the irrigation rate structure.</p> <p>(2) Single residence block 1: 0 to 10 ccf Duplex block 1: 0 to 13 ccf Triplex Block 1: 0 to 16 ccf</p> <p>(3) AWC = Average Winter Consumption. "AWC – 300%" means usage greater than a customer's AWC and less than or equal to 300% of the customer's AWC.</p>					

Table 3.9 above outlines Raftelis proposed changes to water volume structures. The only recommended change to this aspect of the water rate structure is lowering the threshold at which Block 4 “kicks in.” This change would mean that each respective user’s highest rate would become active at a lower level of use. Such an adjustment in how rates are assessed can promote conservation.

Table 3.12: Water – FY19 Typical Monthly Summer Bills - Single Residence City Customers

Usage ccf	FY19 Utility Presented	FY19 Proposed Raftelis	Change (\$)	Change (%)	% of Summer Bills
0	\$9.89	\$8.84	(\$1.05)	(10.6%)	4.8%
5	16.64	15.34	(1.30)	(7.8%)	23.1%
10	23.39	21.84	(1.55)	(6.6%)	18.5%
20	41.89	39.64	(2.25)	(5.4%)	19.5%
30	60.39	57.44	(2.95)	(4.9%)	12.2%
40	86.09	82.14	(3.95)	(4.6%)	7.7%
50	111.79	106.84	(4.95)	(4.4%)	4.8%
60	137.49	131.54	(5.95)	(4.3%)	3.0%
70	163.19	157.84	(5.35)	(3.3%)	1.9%

Table 3.12 above outlines how Raftelis proposed changes to the rate structure would impact non-commercial residential water bills.

- 65.9% of these bills would be estimated to come in between about 5% and 10% percent lower with the proposed changes.
- 27.9% of these bills would be estimated to receive a reduction approximately equal to the last two years of water rate increases.

Table 3.13: Water - Secondary Irrigation Water Rate Calculation

Annual Costs	Units	Unit Cost \$ per AF	Unit Cost \$ per ccf
Annual return water resource costs	\$5,194,331		
Reliable Water Supply, Acre-Feet (AF)	115,713		
Water resource unit cost, \$ per AF		\$44.89	\$0.10335
Water delivery cost	\$1,641,658		
Projected volume, AF	14,009		
Water delivery cost, \$ per AF		\$117.19	
Total, \$ per AF		\$162.08	\$0.37315
Rate Structure, \$ per AF			
Block 2		\$162.08	37.3 cents
Block 3		307.95	71.4 cents
Block 4		623.01	\$1.434

1 acre-foot (AF) equals 435.6 hundreds of cubic feet (ccf) and 325,828.8 gallons

Table 3.13 above outlines a new secondary irrigation water rate. Irrigation rates are assessed on the basis of a “target budget” for irrigation water use that is formulated using factors like the customer’s permeable area,

historical evapotranspiration and standard watering practices. Water use that exceeds the budget is charged in higher blocks, just like water use for non-irrigation customers.

KEY CHANGES—Sewer Utility

Table 4.11: Sewer - Typical Monthly Bill Comparison

AWC	FY19 Utility Presented	FY19 Proposed Raftelis	Change (\$)	Change (%)
0	\$11.93	\$6.82	(\$5.11)	(42.8%)
1	11.93	6.82	(5.11)	(42.8%)
2	11.93	6.82	(5.11)	(42.8%)
3	11.93	9.33	(2.60)	(21.8%)
4	12.20	12.44	0.24	2.0%
5	15.25	15.55	0.30	2.0%
6	18.30	18.66	0.36	2.0%
7	21.35	21.77	0.42	2.0%
8	24.40	24.88	0.48	2.0%
9	27.45	27.99	0.54	2.0%
10	30.50	31.10	0.60	2.0%

Table 4.9: Sewer - FY19 Utility Presented Rates⁽¹⁾

Class	BOD Strength mg/l	TSS Strength mg/l	Flow \$ per ccf	BOD \$ per ccf	TSS \$ per ccf	Total \$ per ccf
1	0 – 300	0 – 300	\$1.87	\$0.78	\$0.40	\$3.05
2	300 – 600	300 – 600	1.87	1.28	0.82	3.97
3	600 – 900	600 – 900	1.87	2.11	1.39	5.37
4	900 – 1,200	900 – 1,200	1.87	3.02	1.90	6.79
5	1,200 – 1,500	1,200 – 1,500	1.87	3.80	2.46	8.13
6	1,500 – 1,800	1,500 – 1,800	1.87	4.68	2.98	9.53
7	>1,800	>1,800	<i>Special Rate by Customer</i>			
Extra Strength Rates, \$ per lb						
Chemical oxygen demand (COD)			\$0.221			
Biochemical oxygen demand (BOD)			0.442			
Total suspended solids (TSS)			0.264			
<i>(1) Customers billed based on the average water usage for the months November through March (AWC) or a minimum charge is \$11.93, whichever is greater.</i>						

Table 4.10: Sewer – FY19 Proposed Raftelis Rates⁽¹⁾

Class	BOD Strength mg/l	TSS Strength mg/l	Flow \$ per ccf	BOD \$ per ccf	TSS \$ per ccf	Total \$ per ccf
1	0 – 300	0 – 300	\$1.94	\$0.68	\$0.49	\$3.11
2	300 – 600	300 – 600	1.94	1.11	1.00	4.05
3	600 – 900	600 – 900	1.94	1.83	1.70	5.47
4	900 – 1,200	900 – 1,200	1.94	2.62	2.32	6.88
5	1,200 – 1,500	1,200 – 1,500	1.94	3.29	3.01	8.24
6	1,500 – 1,800	1,500 – 1,800	1.94	4.05	3.65	9.64
7	>1,800	>1,800	<i>Special Rate by Customer</i>			
Extra Strength Rates, \$ per lb						
Chemical oxygen demand (COD)			\$0.280	\$0.356		
Biochemical oxygen demand (BOD)			0.561	0.713		
Total suspended solids (TSS)			0.619	0.451		
<i>(1) Customers in classes 1 through 6 are billed monthly based on their average winter consumption (AWC) times the sum of the rates for flow, BOD, and TSS or a minimum charge of \$6.82 whichever is greater. AWC is the average of water usage for the months November through March.</i>						

Tables 4.11, 4.9 and 4.10 above show the difference between fiscal year 2019 adopted rates for sewer service and Raftelis proposed rates for sewer service.

- Table 4.11 is an example of the proposed decrease in the minimum fixed charge for sewer service, from \$11.93/month to \$6.82/month. This table shows typical monthly bills for discharge that is consistent with all single residential customers and many types of business such as offices. The bills escalate as the customer’s average winter consumption (AWC) escalates. For customers with AWC costs lower than the fixed minimum charge, only this minimum charge is assessed. For customers with AWC costs higher than the fixed minimum charge, the minimum charge is not assessed in addition to costs based on the AWC—in other words, these customers are charged on the basis of AWC, without that AWC cost being layered on top of the minimum charge.
- Tables 4.9 and 4.10 show, respectively, fiscal year 2019 sewer rates based on strength of discharge and the Raftelis proposal for adjusting these rates.
 - o Sewer rates are assessed on the basis of both flow volume and flow strength (flow strength is measured by the factors biological oxygen demand (BOD) and total dissolved solids (TSS)). These factors are ranked and then multiplied based on that ranking to determine costs for customers.
 - o Cost per hundred cubic feet of flow increases with the Raftelis proposal, along with cost per hundred cubic feet of flow based on measurements of each BOD and TSS. The Raftelis proposal also includes cost increases for “Extra Strength Rates,” and creates an additional set of factors by which these extra strength rates are assessed as well.

- Although some monthly bills would decrease based on the proposed decrease in the fixed minimum charge for sewer service, many monthly bills would increase based on the proposed adjustments that increase charges for flow, BOD and TSS. These increases in charges reflect cost of service and are revenue neutral based on the fiscal year 2019 adopted revenue figures.

KEY CHANGES—Miscellaneous Fees

The Raftelis findings involve recommendations for miscellaneous fee increases, intended to recoup the full cost of performing various services such as, and not limited to, those related to new connections, plan review and inspections. Costs for performing these services are currently not entirely offset by existing fees but are covered by other existing revenue sources.

If the recommended increases for miscellaneous fees were adopted en bloc as proposed in the Raftelis study, the result would not be revenue neutral. The Council may also wish for more detailed discussion with regard to the fee increases. As such, the Council may wish to request that Public Utilities include the recommendations for miscellaneous fees in its fiscal year 2020 budget proposal, perhaps broken down into one or more preferred scenarios. Doing so might also create the opportunity for ramifications of fee increases to be more fully explored, e.g. in terms of possible offsets to projected rate increases in coming years or in terms of impacts to the development and construction markets in coming years. These aspects of the study recommendations are also addressed in POLICY QUESTIONS.

As part of the current discussion and a possible subsequent amendment to the CFS, the Council may wish to consider Public Utilities’ input on whether any fee increases would most need to be considered at this time. It has been indicated that one such recommendation is the suggested change to miscellaneous fees related to stormwater, outlined in table 6.8 below.

Some recommended changes might also entail offsets or balancing with regard to the General Fund. For example, changes related to fire hydrants and flat rates for water use would entail additional expenses for both the City Fire Department and the Unified Fire Authority. Other recommended changes might spur or compel other General Fund-related discussions such as those related to planning and permitting fees, and how costs for performing these services are or are not fully offset by corresponding charges.

Table 6.8: Stormwater Miscellaneous Fees

Fee Type	Existing Service Fee	Calculated Service Fee	Change \$	Change %
Storm Water Inspection Fee	N/A	\$132	132	New
Discharge into City Storm Water System – Includes 3 site visits	125	132	7	5.6%
Discharge into Stormwater System Re-inspection Fee	30	44	14	46.7%
Discharge into City Stormwater Registration Fee	20	44	24	120.0%

ADDITIONAL AND BACKGROUND INFORMATION

Service demand for the Utilities can be broken down into three main categories, also known as cost components: average day, maximum day and maximum hour.

- For every facility with the system used to provide service (sewer, water, stormwater, etc.), there is an underlying average demand, or uniform rate of usage, exerted on this facility based on what it takes to provide average, every day service for customers. This is the average day cost component.
- Certain facilities are operated and designed to meet the demand above the average day demand, i.e. to provide service for maximum day demand, which is extra-capacity or beyond just average. Costs associated with those facilities are allocated to both the average day and maximum day cost components.
- Similarly, other facilities are designed to meet demands in excess of maximum day requirements, known as maximum hour demand, or extra capacity designed to meet the systems' very highest and least frequent peaks of demand. Costs associated with these facilities are allocated to the average day, maximum day, and maximum hour cost components.

These types of service demand—average day, maximum day and maximum hour—constitute three of the five cost components to which attributes of the total system are allocated. The remaining two are meters & services and billing & collections. Costs are allocated differentially among users of the Water Utility based in part on how the facilities necessary to service the types of customers come into play.

For a simple example, heavy water users place demand on the system that necessitates the creation of facilities associated with meeting higher demand, such as storage and pumping infrastructure. Types of customers associated with heavier water use and thus higher demand on the system are also associated with the need for the infrastructure connected with meeting the higher demand they place on the system. In this way, costs are allocated among the classes of users such that costs of constructing, maintaining and operating infrastructure necessary to serve the respective classes are represented in the differential rates and fees to which various customers are subject.

Attachment 1, PDF page 93 provides one example of how these allocations are made on a percentage basis between five cost components for the Water Utility.

Similarly, allocations are also made among cost components of the Sewer Utility. These allocations correspond to costs assessed to sewer customers, again on the basis of connecting respective costs to provide service with charges assessed to respective classes of customers and the differential needs among the classes.

Attachment 1, PDF page 119 provides one example of how these allocations are made on a percentage basis among the cost components for the Sewer Utility.

Similar connections between cost of service and charges assessed to recoup those costs underly the Raftelis proposed adjustments to the miscellaneous fees, as well.

APPENDIX

Table 4.7: Sewer – FY19 Proposed Raftelis Customer Class Cost of Service

BOD Class	TSS Class	Flow, ccf	BOD	TSS	Bills	Total
1	1	\$16,599,021	\$5,783,469	\$4,169,093	\$1,098,589	\$27,650,171
1	2	43,678	15,218	22,489	0	81,386
1	3	19,895	6,932	17,364	0	44,191
1	7	562	196	1,051	0	1,808
2	1	651,072	372,264	163,527	1,678	1,188,540
2	2	1,130,381	646,318	582,020	5,975	2,364,693
2	3	0	0	0	0	0
2	4	97,359	55,667	116,153	941	270,121
3	1	187,736	176,947	47,153	246	412,081
3	2	614,217	578,916	316,253	491	1,509,878
3	3	27,650	26,061	24,133	491	78,335
3	4	1,037	977	1,237	41	3,292
4	1	47,383	63,920	11,901	41	123,245
4	2	545,789	736,280	281,020	1,193	1,564,282
4	3	842	1,136	735	0	2,714
4	4	9,872	13,317	11,777	0	34,967
5	1	89,625	152,133	22,511	0	264,268
5	2	2,245	3,811	1,156	82	7,294
5	4	1,620	2,750	1,933	0	6,303
5	5	713	1,210	1,101	0	3,024
6	1	95,414	199,466	23,965	0	318,844
6	2	18,945	39,604	9,754	0	68,303
6	4	1,058	2,213	1,263	0	4,534
7	1	42,512	327,616	10,784	41	380,952
7	2	54,738	486,111	28,466	0	569,315
7	3	50,614	542,061	44,635	41	637,351
7	4	6,675	60,952	8,043	0	75,670
7	5	778	10,111	1,213	0	12,102
Total		\$20,341,431	\$10,305,656	\$5,920,730	\$1,109,849	\$37,677,666

Table 4.7 exhibits the proportions between cost of service and the number of customers to whom sewer service would be provided. For example, discharge-intensive customers that rank BOD class 7 and TSS class 3 would account for only 41 bills, but \$637,351 in total cost of service. By these figures, the average monthly cost of serving these discharge-intensive customers would be \$15,545.15 each, compared to an average cost of \$25.17 serving BOD class 1 and TSS class 1 customers (largely residential). The significantly higher average monthly cost of service for serving discharge-intensive customers would reflect the cost of volume and treatment capacity that must be in place to serve these customers.



CITY COUNCIL TRANSMITTAL


Patrick Leary, Chief of Staff

Date Received: August 2, 2018
Date Sent to Council: August 6, 2018

TO: Salt Lake City Council
Erin Mendenhall, Chair

FROM: Laura Briefer, Director of Public Utilities 

DATE: July 31, 2018

SUBJECT: Comprehensive Water, Sewer, and Stormwater Rate Study

STAFF CONTACT: Kurt Spjute, Public Utilities Finance Administrator
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Laura Briefer, Director
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DOCUMENT TYPE: Information Item

RECOMMENDATION: Discuss with and receive input from the City Council regarding proposed new water and sewer rate structures, and updated Public Utility fees. It is anticipated that Public Utilities will seek a change to the consolidated fee schedule to reflect rate structure and fee changes as a budget amendment this year.

BUDGET IMPACT: There is no budgetary impact to Public Utilities as the rate structure alternatives are revenue neutral and based on a cost of service analysis.

BACKGROUND/DISCUSSION

The Salt Lake City Department of Public Utilities (Department) is pleased to present its 2018 Comprehensive Water, Sewer, and Stormwater Rate Study (Rate Study), attached to this transmittal. The Department retained the firm Raftelis to update the Department's revenue, cost of

service and rate design analysis to ensure water, sewer, and stormwater rates more accurately reflect cost of service and are in alignment with community values.

Objectives of the Department are to retain defensible rate structures and fees, while meeting other important rate objectives, such as sufficient revenue, rate stability, conservation, and equity. For this Rate Study, Raftelis used industry-standard utility cost of service methodology as reflected in the American Water Works Association *Manual of Water Supply Practices M1, Principles of Water Rates, Fees, and Charges* and in the *Water Environment Federation Manual of Practice No. 27, Financing and Charges for Wastewater Systems*.

A major component of the Rate Study was public engagement through the formation of a Rate Advisory Committee (RAC). The RAC's two overarching purposes were to represent and communicate community values and provide input, including recommendations to the Public Utilities Advisory Committee (PUAC), Salt Lake City Mayor, and Council. Over six meetings during fall and winter 2017, the RAC developed rate structure alternatives based on the following ranked pricing objectives:

- 1) Conservation
- 2) Essential Use Affordability
- 3) Demand Management
- 4) Rate Stability
- 5) Interclass Equity

To meet these objectives, the RAC recommended modifications to the water and sewer rate structures. The RAC provided their recommendations to the PUAC at the January 8, 2018 meeting. During the January 25, 2018 PUAC meeting, committee members finalized their recommendation to the administration.

Water Utility Rate Structure Recommendations

The RAC and PUAC recommended three substantive changes to the existing water rate structure to address key objectives of conservation, affordability, rate stability, demand management, and interclass equity.

- Change the system-wide cost of service rate structure (where volume rates by block are the same for all customers) to a customer class cost of service volume rate structure. This results in different volume rates for residential, commercial, and industrial classes that reflect the specific cost to provide service to each class. The RAC and PUAC felt this rate structure meets goals related to equity. It also addressed essential use affordability for the residential class.
- Reduce the block four threshold from 70 ccf (hundred cubic feet) to 60 ccf for residential, duplex and triplex customer classes. Reduce the commercial, institutional, and industrial customer class block four threshold from 700% of annual winter consumption (AWC) to 600% of AWC. This addresses both conservation and demand management priorities through stronger pricing signals.
- Retain the fixed charge by meter size, but modify the price ratio between the meter sizes to reflect the capacity potential of each meter size relative to a ¾" meter.

The following two tables compare the fixed charges and volumetric water rates relative to the revenue requirements as proposed in Public Utilities' fiscal year 2018-2019 budget.

WATER FY19 Existing and Proposed Fixed Charges⁽¹⁾				
Meter Size	Existing	Raftelis Proposed	Change - \$	Change - %
3/4"	\$ 9.89	\$ 8.84	\$ (1.05)	-11%
1"	9.89	11.56	1.67	17%
1 1/2"	11.68	18.37	6.69	57%
2"	12.68	26.55	13.87	109%
3"	21.28	48.34	27.06	127%
4"	22.78	72.86	50.08	220%
6"	32.88	140.98	108.10	329%
8"	59.11	222.71	163.60	277%
10"	109.63	576.91	467.28	426%

(1) County fixed charges are 1.35 times City fixed charges.

Comparison of FY19 Existing and Proposed Water Rates						
Block / Tiers	Threshold	Existing \$ per ccf	Threshold	Raftelis Proposed \$ per ccf	Change - \$	Change - %
RESIDENTIAL⁽²⁾						
Winter						
All Usage		\$1.35		\$1.30	(\$0.05)	-3.7%
Summer						
1	10 Units	\$1.35	10 units	\$1.30	(0.05)	-3.7%
2	30	1.85	30	1.78	(0.07)	-3.8%
3	70	2.57	60	2.47	(0.10)	-3.9%
4	>70	2.74	>60	2.63	(0.11)	-4.0%
COMMERCIAL						
Winter						
All Usage		\$1.35		\$1.42	\$0.07	5.2%
Summer						
1	AWC	\$1.35	AWC	\$1.42	0.07	5.2%
2	300%	1.85	300%	1.94	0.09	4.9%
3	700%	2.57	600%	2.7	0.13	5.1%
4	>700%	2.74	>600%	2.87	0.13	4.7%
IRRIGATION						
Winter (November – April)						
All Usage		\$1.85		\$1.71	(\$0.14)	-7.6%
Summer (April – October)						
1	0-Budget	\$1.85	0-Budget	\$1.71	(0.14)	-7.6%
2	300% of Budget	2.57	300% of Budget	2.38	(0.19)	-7.4%
3	>300% Budget	2.74	>300% Budget	2.53	(0.21)	-7.7%

(1) County rates are 1.35 times City rates (AWC = Average Winter Consumption)
(2) Residential includes single residence, duplex, and triplex.

Recommendation for Rate Differential for Water Service Outside Salt Lake City

Raftelis and the Department analyzed whether the rate differential between customers residing inside Salt Lake City and customers residing outside Salt Lake City is fair and equitable. The utility basis of rate setting was used to determine the cost to provide service to customers outside Salt Lake City boundaries and a return on investment to City customers for undertaking the risk to provide that service. Based on this analysis, the 1.35 rate differential is recommended to maintain an equitable rate relationship between customers residing within and outside Salt Lake City boundaries. Section 3.10 of the Rate Study describes the process used, and the detailed calculation can be found in Appendix A of the report. A July 31st memorandum further expands on the rate differential philosophy and utility basis rate setting methodology, and is also attached.

Secondary Irrigation Water Rate Recommendation

A secondary irrigation water system provides untreated water suitable for irrigation purposes. Certain City golf courses have constructed site specific secondary water systems. The water resources used for these systems are managed by the Department. Therefore, a water rate has been established for these select systems.

The secondary irrigation water rate follows the same inclining block volume rate structure as the culinary irrigation-only meter rate to incentivize efficient irrigation practices. Each customer is provided a monthly budget based on the following factors: permeable area, historical evapotranspiration, and standard watering practices. Below is the proposed secondary rate expressed in acre-feet and ccf units, showing the inclining block rate structure for secondary water.

ANNUAL COSTS	UNITS	ACRE FOOT UNIT COST	BILLING UNIT CONVERSION
Annual return water resource costs	\$ 5,194,331		
Reliable Water Supply, Acre-Feet (AF)	115,713		
Water resource cost		\$ 44.89	\$ 0.10335
Water delivery cost	\$ 1,641,658		
Projected volume, AF		\$ 117.19	
Total resource cost		\$ 162.08	\$ 0.37315
Block 2		\$ 162.08	37.3 CENTS
Block 3		307.95	71.4 CENTS
Block 4		623.01	\$ 1.434

Sewer Utility Rate Structure Recommendation

The RAC and PUAC recommended reducing the minimum sewer charge from \$11.93 (four units) to \$6.82 (two units). The reduction in the minimum charge has an essential use affordability benefit, and also incentivizes indoor water use efficiency.

The RAC and PUAC recommended retaining the existing customer class volumetric rate structure by volume and strength of wastewater flow. Rates for each class increase due to the updated cost of service analysis, and the reduction of the minimum sewer charge.

The table below shows the existing and proposed strength-based volumetric rates.

Comparison of FY19 Existing and Proposed Sewer Rates						
Class	BOD Strength mg/l	TSS Strength mg/l	Existing ⁽¹⁾	Raftelis Proposed ⁽²⁾	Change - \$	Change - %
1	0 – 300	0 – 300	\$3.04	\$3.11	\$0.07	2.3%
2	300 – 600	300 – 600	3.96	4.05	0.09	2.3%
3	600 – 900	600 – 900	5.35	5.47	0.12	2.2%
4	900 – 1,200	900 – 1,200	6.77	6.88	0.11	1.6%
5	1,200 – 1,500	1,200 – 1,500	8.12	8.24	0.12	1.5%
6	1,500 – 1,800	1,500 – 1,800	9.51	9.64	0.13	1.4%
7	>1,800	>1,800	Special Rate by Customer			
Extra Strength Rates, \$ per lb (Class 7 Rates)						
Chemical oxygen demand (COD)			\$0.22	\$0.28	\$0.06	26.90%
Biochemical oxygen demand (BOD)			0.44	0.56	0.12	26.90%
Total suspended solids (TSS)			0.26	0.62	0.36	134.40%
<i>(1) Customers in classes 1 through 6 are billed monthly based on their average winter consumption (AWC) times the sum of the flow, BOD, and TSS rates or a minimum charge of \$10.36, whichever is greater. AWC is the average of water usage for the months November through March.</i>						
<i>(2) Customers in classes 1 through 6 are billed monthly based on their average winter consumption (AWC) times the sum of the flow, BOD, and TSS rates or a minimum charge of \$6.82, whichever is greater. AWC is the average of water usage for the months November through March.</i>						

Stormwater Utility Rate Structure Recommendation

No change to the stormwater utility rate structure is recommended by the RAC, PUAC, and Department.

Miscellaneous Fees

The Department assesses various fees for water, sewer, and stormwater services which directly benefit from the service. These goods and services directly benefit the customer requesting the service and are a cost to the utility. As such, these costs are passed directly to the customer as a direct charge. The Study includes an evaluation of over 60 existing fees and developed potential new fees. These fees are based on a cost of analysis considering, time, labor, material, and overhead. Fines on the other hand, are set at levels to deter customers from engaging in actions that impact the utility.

Many of these fees have not been updated for a number of years and therefore, based on cost of service, are projected to increase significantly in some cases. The calculated fees shown in the Rate Study represent the maximum cost-based fee. The City may choose to adopt a fee up to that amount and still maintain the cost basis. Please refer to the attached Rate Study for the calculated service fee changes.

Public Utilities staff (Laura Briefer and Kurt Spjute) and Raftelis staff will present summaries of the rate study process, recommended changes to the rate structures and fees, and be available for questions.

Attachments:

Salt Lake City Department of Public Utilities Comprehensive Water, Sewer, and Stormwater Rate Study, Draft-Final Report, July 17, 2018

Memorandum regarding rate differential philosophy and methodology, July 31, 2018



SALT LAKE CITY DEPARTMENT OF PUBLIC UTILITIES

Comprehensive Water, Sewer, and Stormwater Rate Study

City of Salt Lake City, Utah
July 2017



RAFTELIS



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July 16, 2018

Ms. Laura Briefer
Director of Public Utilities
Salt Lake City Department of Public Utilities
1530 South West Temple
Salt Lake City, UT 84115

Subject: Comprehensive Water, Sewer, and Stormwater Rate Study

Dear Ms. Briefer,

Raftelis is pleased to provide this 2018 Water, Sewer and Stormwater Rate Study to the Salt Lake City Department of Public Utilities.

The Report details the revenue requirement, cost of service, and rate design analysis used to develop proposed fiscal year 2019 water, sewer, and stormwater rates. This study also includes a review and update to the City's miscellaneous water, sewer, and stormwater fees. As part of this study, the City convened a Rate Advisory Committee (RAC). The RAC was charged with reviewing and providing recommendations to Staff and the Public Utilities Advisory Board (PUAC) on water and sewer rate structure alternatives. The RAC's final recommendations are discussed in this report along with the PUAC recommendation to City Council.

We would like to thank you, Mr. Brad Stewart, Mr. Kurt Spjute and the members of the RAC for their assistance and support during this study. Questions regarding this report and the Study should be direct to Mr. Cristiano or me at the contact information below.

Sincerely,
RAFTELIS, INC.

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Table 34: Appendix X: Additional data.

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1. EXECUTIVE SUMMARY

1.1 Introduction

The Salt Lake City Department of Public Utilities (Department) retained Raftelis to conduct a water, sewer, stormwater rate and miscellaneous fees study. This study included the following:

- » Engaging a Rate Advisory Committee (RAC) to provide input and feedback on water and sewer rate structure alternatives to the PUAC.
- » Development of revenue requirements for the water, sewer and stormwater utilities for fiscal year (FY)19¹².
- » Analysis of customer class cost of service for each utility.
- » Design of cost-of-service rates and rate alternatives as recommended by the Rate Advisory Committee for FY19.
- » Review and update the Department's miscellaneous fees for the water, sewer and stormwater utilities.

Raftelis applied industry standard methodologies supported by the American Water Works Association (AWWA) *Principles of Water, Rates, Fees, and Charges* M1 manual and the Water Environment Federation *Financing and Charges for Wastewater Systems Manual of Practice, No. 27* in the development and design of utility rates.

1.2 Study Findings and Recommendations

1.2.1 Rate Advisory Committee

Department Staff assembled a Rate Advisory Committee to participate in a review of the Department's water and sewer rate structures. Raftelis along with The Langdon Group and Department Staff, facilitated six meetings with the RAC. These meetings included, among other topics, the identification and ranking of pricing objectives, RAC input on alternative rate structures, and the RAC's recommended rate structure for FY19 implementation designed to meet the identified goals and objectives. The results were presented to the Department's Public Utilities Advisory Committee (PUAC) on January 25, 2018 for their review and recommendation to the Mayor and City Council.

Appendix A contains the *2018 Rate Advisory Committee* report summarizing the water and sewer rate structure recommendations. The RAC developed rate alternatives based on the following ranked pricing objectives:

1. Conservation
2. Essential use affordability
3. Demand management
4. Rate stability

¹ FY19 is the period from July 1, 2018 through June 30, 2019.

² The term 'FY19 Utility Presented' shown in this report are the adopted FY18 rates for water, sewer, and stormwater multiplied by the FY19 proposed revenue adjustment for each utility.

**Table 1.1: Water – Current and Proposed Rate Structure Alternatives
City and County**

Block	Residential ⁽¹⁾			CII ⁽²⁾	
	FY19 Utility Presented	Alt. #2 COS/Existing	Alt. #3 COS/AWC All	FY19 Utility Presented	Alt. #2/ Alt. #3
Winter Period (Nov-Mar)	Block 1 Rate for All Usage			Block 1 Rate for All Usage	
Summer Rate Structure (April through November)					
Block 1	0-10 ccf	0-10 ccf	0-AWC ⁽³⁾	0-AWC	0-AWC
Block 2	11-30 ccf	11-30 ccf	AWC-300%	AWC-300%	AWC-300%
Block 3	31-70 ccf	31-60 ccf	300%-600%	300%-700%	300%-600%
Block 4	>70 ccf	>60 ccf	>600%	>700%	>600%
<p>(1) Single residence block 1: 0 to 10 ccf Duplex block 1: 0 to 13 ccf Triplex block 1: 0 to 16 ccf</p> <p>(2) Alternative #2 and Alternative #3 CII rate structures are the same.</p> <p>(3) AWC = Average Winter Consumption. "AWC - 300%" means usage greater than a customer's AWC and less than or equal to 300% of the customer's AWC.</p>					

Sewer Rate Structure Recommended Alternatives

- » Retain the customer class volumetric rate structure by volume and strength of wastewater flow for each alternative. Strength categories include biochemical oxygen demand (BOD) and total suspended solids (TSS). The two alternatives recommended are:
 - **Alternative #1: No Minimum Charge.** Eliminate the minimum charge. Customers are only charged for their AWC monthly flow.
 - **Alternative #3: Reduced Minimum Charge.** Reduce the minimum charge allowance from 4 ccf to 2 ccf. This reduces the minimum charge by approximately 43 .

Table 1.2 shows the existing sewer rate structure. The proposed structure remains unchanged from the existing.

meter size is based on the ratio of the maximum allowable flow capacity to a ¾” meter. Table 1.3 shows the FY19 Utility Presented and FY19 Proposed Raftelis fixed charges.

Table 1.3: Water – FY19 Utility Presented and FY19 Proposed Raftelis Fixed Charges⁽¹⁾

Meter Size	FY19 Utility Presented	FY19 Proposed Raftelis	Change - \$	Change - %
¾"	\$9.89	\$8.84	(\$1.05)	(11%)
1"	9.89	11.56	1.67	17%
1 ½"	11.68	18.37	6.69	57%
2"	12.68	26.55	13.87	109%
3"	21.28	48.34	27.06	127%
4"	22.78	72.86	50.08	220%
6"	32.88	140.98	108.10	329%
8"	59.11	222.71	163.60	277%
10"	109.63	576.91	467.28	426%

(1) County fixed charges are 1.35 times City fixed charges.

Volume Rates

The proposed volume structures for residential and commercial (CII) retains the 4-block inclining structure. The irrigation volume structure retains the 3-block inclining structure. The residential rate structure is a fixed block structure while the commercial or CII class is an individualized structure. Residential rates include single residence, duplex, and triplex classes. CII includes commercial, industrial, and institutional customers. The CII structure’s thresholds are based on each customer’s average winter consumption (AWC). The irrigation structure retains the individualized target budget-based structure. The volume rates developed in this study are based on each class’ cost of service. Table 1.4 shows the FY19 Utility Presented and FY19 Proposed Raftelis rates.

Table 1.5: Sewer - Comparison of FY19 Utility Presented and FY19 Proposed Raftelis Rates

Class	BOD Strength mg/l	TSS Strength mg/l	FY19 Utility Presented ⁽¹⁾	FY19 Proposed Raftelis ⁽²⁾	Change - \$	Change - %
1	0 – 300	0 – 300	\$3.05	\$3.11	\$0.06	2.0%
2	300 – 600	300 – 600	3.97	4.05	\$0.08	2.0%
3	600 – 900	600 – 900	5.37	5.47	\$0.10	1.9%
4	900 – 1,200	900 – 1,200	6.79	6.88	\$0.09	1.3%
5	1,200 – 1,500	1,200 – 1,500	8.13	8.24	\$0.11	1.4%
6	1,500 – 1,800	1,500 – 1,800	9.53	9.64	\$0.11	1.2%
7	>1,800	>1,800	<i>Special Rate by Customer</i>			
Extra Strength Rates, \$ per lb						
Chemical oxygen demand (COD)			\$0.221	\$0.356	\$0.135	61.3%
Biochemical oxygen demand (BOD)			0.442	0.713	\$0.271	61.3%
Total suspended solids (TSS)			0.264	0.451	\$0.187	70.9%
<p><i>(1) Customers in classes 1 through 6 are billed monthly based on their average winter consumption (AWC) times the sum of the flow rates for flow, BOD, and TSS or a minimum charge of \$11.93 whichever is greater. AWC is the average of water usage for the months November through March.</i></p> <p><i>(2) Customers in classes 1 through 6 are billed monthly based on their average winter consumption (AWC) times the sum of the flow rates for BOD, and TSS rates or a minimum charge of \$6.82 whichever is greater. AWC is the average of water usage for the months November through March.</i></p>						

1.2.5 Stormwater Rate Study

Table 1.6 shows compares the FY19 Utility Presented and FY19 Proposed Raftelis stormwater fees. There is no change to the structure for FY19.

Table 1.6: Stormwater - Comparison of FY19 Utility Presented and FY19 Proposed Raftelis Rates

Customer Class	FY19 Utility Presented	FY19 Proposed Raftelis	Change \$	Change %
1 or 2 Units < .25 acres	\$4.94	\$4.94	\$0.00	0.0%
1 or 2 Units > .25	6.91	6.91	0.00	0.0%
3 or 4 Units	9.88	9.88	0.00	0.0%
Impervious Area Based	5.43	5.43	0.00	0.0%

1.2.6 Miscellaneous Fees Study

The Department assesses fees for various goods and services associated with providing water, sewer, and stormwater service. These goods and services directly benefit the customer requesting the service. As such, these costs are passed directly to the customer rather than through all rate payers. Raftelis reviewed selected fees from the water, sewer, and stormwater utilities, proposed updates and also evaluated new fees for the utilities. The existing and proposed fees can be found in Section 7 of this report. The fee categories reviewed include:

3. WATER RATE STUDY

3.1 Introduction

The Department’s water utility is a self-supporting enterprise fund with revenues collected from rates, impact fees, and other miscellaneous income⁴ to meet the utility’s annual operating and capital budget, maintain adequate reserves, and meet bond covenant debt service coverage requirements.

For the purposes of this study, Raftelis used data provided by the Department to develop the cost-of-service and rate alternatives. This data included detailed historical water billing data, daily system water production data, detailed asset records, historical financial data, the projected FY19 operating and capital budget as well as information provided by Department Staff.

3.2 Cost-of-Service Process

The cost-of-service process is a method to assign costs based on each customer class’ proportionate share of water demands and number of customers. The cost-of-service analysis consists of the following nine steps:

1. Determine the FY19 rate revenue at FY19 Utility Presented rates
2. Determine test year revenue requirement
3. Functionalize revenue requirement
4. Allocate functionalized costs to cost components
5. Determine system units of service
6. Determine unit cost of service
7. Determine customer class units of service
8. Distribute costs to customer classes
9. Design rates to recover class cost-of-service and total revenue requirement

3.3 Projected FY19 Revenue at FY19 Utility Presented Rates

Raftelis developed FY19 rate revenue at FY19 Utility Presented rates using detailed billing records provided by the Department. The revenue under FY19 Utility Presented rates shown in Table 3.1 serves as the basis for determining the FY19 revenue requirement. This billing data analysis is also used in the units of service analysis discussed in Section 3.6.

⁴ Other income include revenue from hydrant water sales, flat rate sales, repair and relocation, grounds and rentals, and transfers from the sewer, stormwater, street light, garbage, and transit funds for billing services.

3.5 Revenue Requirement Cost Allocation

The underlying principle in cost allocation is to convert the test year revenue requirement into costs that best reflect the cost associated with customer water demands placed on the system. Those costs are proportionately allocated to customer classes based on their respective customer service characteristics to determine class cost of service. Customer service characteristics include average day, peak day, and peak hour demands, the number of accounts, and the number of equivalent meters.

3.5.1 Functional Cost Components

Water systems are comprised of several facilities (unit processes or functions) that are designed and operated to collect, treat, and distribute water to customers. The separation of costs into functional components provides a means for distributing costs to customer classes based their respective responsibility in the system. Typical functional categories for water systems include source of supply, transmission and distribution, treatment, pumping, storage, and customer-related costs.

3.5.2 Allocation Factors

Water systems are designed and operated to meet the average and peak demands of their customers. Therefore, data on annual consumption and peak demand contributions are needed to allocate costs equitably among customer classes. Since customers do not exert their maximum demand for water at the same time, water facilities are designed to meet the coincidental demands on the system. Using system peak demand to average demand ratios provides a means for distributing costs equitably to customer classes.

For every facility on the system, there is an underlying average demand, or uniform rate of usage, exerted coincidentally by customers for which the average day cost component applies. Certain facilities are operated and designed to meet the demand above the average day demand or maximum day extra-capacity demand. Costs associated with those facilities are allocated to both the average day and maximum day cost components. Similarly, other facilities are designed to meet demands in excess of maximum day requirements or maximum hour extra-capacity. Costs associated with these facilities are allocated to the average day, maximum day, and maximum hour cost components.

The ratio of maximum day and average day demand is used to allocate costs between average day and maximum day cost components. A maximum day to average day ratio of 2.41 is used based on a four-year historical average. This indicates approximately 42% of the capacity of facilities designed and operated for maximum day demand is needed for average day demands use. Accordingly, the remaining 58% is for maximum day extra-capacity requirements.

A ratio of maximum hour to average day water use of 3.25 is based on demands experienced by Department's water's system. This ratio indicates 31% of the capacity of facilities designed and

Water system assets provide a reasonable basis for allocating annual capital costs. The treatment plants are designed to meet the peak demands on the system. These costs are allocated to the average day and maximum day cost component. Pumping facilities are designed to meet maximum hour demands. These costs are allocated to the average day, maximum day, and maximum hour demands. Other costs not specifically allocated are allocated in proportion to all other assets.

3.5.4 Allocated Revenue Requirement

Table 3.3 summarizes the allocated revenue requirement from the analysis discussed in section 3.5.2 and 3.5.3. The allocated revenue requirement is distributed to customer classes based on their proportionate share of total customer service characteristics.

Table 3.3: Water – FY19 Allocated Revenue Requirement

Description	Average Day	Max Day Extra Capacity	Max Hour Extra Capacity	Equivalent Meters	Bills	Total
Operating	\$37,880,768	\$9,869,924	\$3,118,953	\$4,318,322	\$7,700,910	\$62,888,877
Debt service	391,378	447,594	233,767	44,261	0	1,117,000
Capital	14,080,815	16,103,326	8,410,347	1,592,413	0	40,186,900
Less: Adjustments	<u>(10,086,371)</u>	<u>(11,202,573)</u>	<u>(5,849,298)</u>	<u>(1,197,952)</u>	<u>(2,567,237)</u>	<u>(30,903,431)</u>
Revenue requirement	\$42,266,590	\$15,218,271	\$5,913,768	\$4,757,044	\$5,133,673	\$73,289,346

3.6 Customer Class Units of Service

Customers of a water utility are often identified according to customer class. Each customer class has unique water demands and usage characteristics. Because cost-of-service is based on the concept of proportionality, customer service characteristics for each customer class must be analyzed to distribute the functionalized and allocated system revenue requirements based on their respective demand profiles. Table 3.4 details the units of service.

Table 3.5: Water – FY19 Proposed Raftelis Unit Cost of Service

Line No	Description	Average Day	Max Day Extra Capacity	Max Hour Extra Capacity	Equivalent Meters	Billing
1	Allocated revenue requirement	\$42,266,590	\$15,218,271	\$5,913,768	\$4,757,044	\$5,133,673
	Units of service	<i>ccf</i>	<i>ccf/day</i>	<i>ccf/day</i>	<i>Eq. Meters</i>	<i>Bills</i>
2	City	24,705,749	103,884	129,304	77,720	693,876
3	County ⁽¹⁾	<u>11,018,496</u>	<u>49,283</u>	<u>58,298</u>	<u>41,763</u>	<u>387,099</u>
4	Total units of service	35,724,245	153,167	187,602	119,483	1,080,975
	Unit cost of service					
5	City (Line 1 / Line 4)	\$1.1831	\$99.3573	\$31.5230	\$39.8135	\$4.7491
6	County (Line 5 x 1.35)	1.5972	134.1324	42.5561	53.7482	6.4113

(1) County units of service have been adjusted by a multiple of 1.35 times to account for the differential between City and County rates.

3.8 Distribution of Costs to Customer Classes

Table 3.6 shows the distributed cost-of-service to customer classes. The customer class units of service in Table 3.4 are multiplied by the unit cost of service in Table 3.5 based on the service area.

Table 3.6: Water – FY19 Proposed Raftelis Distribution of Cost of Service to Customer Classes

Customer Class	Average Day	Max Day Extra Capacity	Max Hour Extra Capacity	Equivalent Meter	Billing	Total Cost of Service
City						
Residential	\$9,920,917	\$3,618,036	\$1,379,418	\$2,104,874	\$2,760,906	\$19,784,151
CII	16,630,890	5,359,789	2,234,064	806,317	445,030	25,476,089
Irrigation	2,678,420	1,310,317	409,448	183,116	89,359	4,670,660
Fire protection	_____0	____33,487	____53,122	____0	____0	____86,609
Total City COS	\$29,230,226	\$10,321,628	\$4,076,052	\$3,094,306	\$3,295,296	\$50,017,509
County						
Single residence	\$8,361,647	\$3,313,597	\$1,191,954	\$1,427,697	\$1,741,669	\$16,036,564
CII	3,952,208	1,200,051	522,729	195,357	73,550	5,943,895
Irrigation	722,508	376,688	113,029	39,684	23,158	1,275,067
Fire protection	_____0	____6,307	____10,004	____0	____0	____16,311
Total County COS	\$13,036,363	\$4,896,643	\$1,837,716	\$1,662,738	\$1,838,377	\$23,271,837
Total COS	\$42,266,590	\$15,218,271	\$5,913,768	\$4,757,044	\$5,133,673	\$73,289,346

The current 1.35-times user charge or rate differential provides a means by which City customers are compensated for the risk associated with serving County customers. Raftelis reviewed the current differential by developing a unit cost for County customers using a utility basis revenue requirement. The utility-basis is generally applicable to investor-owned utilities and public systems under the jurisdiction of state utility commissions or other regulatory bodies. It is also an appropriate method for municipal utilities that serve customers outside of their corporate limits. The utility basis revenue requirement includes operating expenses, depreciation and a return on rate base or investment for facilities used to serve County customers. The return on rate base is calculated using a utility's weighted average cost of capital multiplied by the utility's rate base or net assets. Because the City owns the system, Raftelis developed a unit cost on a cash basis. The quotient of the County to City unit costs is the differential.

The primary difference between the cash and utility basis is the concept of ownership and the method of consumer protection. Under the cash-basis, consumer protection is provided by the budgeting oversight of the elected officials. These officials act as a representative of the customers and the utility. These officials are typically elected by the citizens that act as the owners of the utility. Under this approach, ownership and consumer protection are combined into one elected body. Under the utility-basis, consumer protection is often provided by state public utility or service commissions. These regulatory bodies establish financial and rate development rules and regulations and authorize rates of return that provide consumer protection. In addition, consumer protection is often provided by contractual agreements that define the basis of utility rates where municipally-owned utilities provide services to customers located outside their corporate jurisdictions.

Raftelis' analysis of the County's utility basis unit cost compared to the City's cash basis unit cost is consistent with the current differential of 1.35. Raftelis recommends the current differential remain in place. Table 3.8 summarizes the calculation; the detailed calculation can be found in Appendix A.

Table 3.9: Water – FY19 Utility Presented and Proposed Rate Structures

Block	Residential		CII		Irrigation ⁽¹⁾
	FY19 Utility Presented	FY19 Proposed Raftelis	FY19 Utility Presented	FY19 Proposed Raftelis	FY19 Utility Presented
Winter Period (Nov-Mar)	Block 1 Rate for All Usage		Block 1 Rate for All Usage		Block 1 Rate for All Usage
Summer Rate Structure (April through November)					
Block 1 ⁽²⁾	0-10 ccf	0-10 ccf	0-AWC ⁽³⁾	0-AWC	0 – Target Budget
Block 2	11-30 ccf	11-30 ccf	AWC-300%	AWC-300%	Target Budget – 300% of Budget
Block 3	31-70 ccf	31-60 ccf	300%-700%	300%-600%	>300% of Target Budget
Block 4	>70 ccf	>60 ccf	>700%	>600%	
<p><i>(1) No changes to the irrigation rate structure.</i></p> <p><i>(2) Single residence block 1: 0 to 10 ccf</i> <i>Duplex block 1: 0 to 13 ccf</i> <i>Triplex Block 1: 0 to 16 ccf</i></p> <p><i>(3) AWC = Average Winter Consumption. "AWC – 300%" means usage greater than a customer's AWC and less than or equal to 300% of the customer's AWC.</i></p>					

Fixed Charge

The FY19 Proposed Raftelis fixed charge varies by meter size. The fixed charge recovers the following costs: meter reading/billing, customer service, and a portion of capital costs. Meter reading, billing and customer service costs do not vary by meter size. Capital costs increase as meter size increases recognizing the additional costs to serve larger capacity customers. The capital cost differential by meter size is based on the ratio of the maximum allowable flow capacity to a 3/4" meter. Table 3.10 shows the FY19 Utility Presented and FY19 Proposed Raftelis fixed charges.

Table 3.11: Water - FY19 Utility Presented and FY19 Proposed Raftelis Single Residence Volume Rates^(1,2) City Customers

Block	FY19 Utility Presented \$ per ccf	FY19 Proposed Raftelis \$ per ccf	Change - \$	Change - %
RESIDENTIAL				
Winter (November - April)				
All Usage	\$1.35	\$1.30	(\$0.05)	(3.7%)
Summer (April - October)				
1	\$1.35	\$1.30	(\$0.05)	(3.7%)
2	1.85	1.78	(0.07)	(3.8%)
3	2.57	2.47	(0.10)	(3.9%)
4	2.74	2.63	(0.11)	(4.0%)
COMMERCIAL				
Winter (November - April)				
All Usage	\$1.35	\$1.42	\$0.07	5.2%
Summer (April - October)				
1	\$1.35	\$1.42	\$0.07	5.2%
2	1.85	1.94	0.09	4.9%
3	2.57	2.70	0.13	5.1%
4	2.74	2.87	0.13	4.7%
IRRIGATION				
Winter (November - April)				
All Usage	\$1.85	\$1.71	(\$0.14)	(7.6%)
Summer (April - October)				
1	\$1.85	\$1.71	(0.14)	(7.6%)
2	2.57	2.38	(0.19)	(7.4%)
3	2.74	2.53	(0.21)	(7.7%)
<i>(1) County rates are 1.35 times City rates</i>				
<i>(2) See Table 3-9 for each class' block thresholds.</i>				

3.11.3 Typical Monthly City Single Residence Bills – Summer Usage

Table 3.12 compares typical monthly bills under FY19 Utility Presented and the FY19 Proposed Raftelis rates at various levels of consumption.

Table 3.13: Water - Secondary Irrigation Water Rate Calculation

Annual Costs	Units	Unit Cost \$ per AF	Unit Cost \$ per ccf
Annual return water resource costs	\$5,194,331		
Reliable Water Supply, Acre-Feet (AF)	115,713		
Water resource unit cost, \$ per AF		\$44.89	\$0.10335
Water delivery cost	\$1,641,658		
Projected volume, AF	14,009		
Water delivery cost, \$ per AF		\$117.19	
Total, \$ per AF		\$162.08	\$0.37315
Rate Structure, \$ per AF			
Block 2		\$162.08	37.3 cents
Block 3		307.95	71.4 cents
Block 4		623.01	\$1.434

Table 4.1: Sewer - FY19 Revenue at FY19 Utility Presented Rates

BOD Class	TSS Class	Accounts	Billed Volume (ccf)	Revenue
1	1	49,001	8,447,569	\$28,142,688
1	2	7	22,552	78,254
1	3	1	10,272	41,499
1	7	1	290	1,633
2	1	308	336,065	1,196,323
2	2	418	582,202	2,327,806
2	3	0	0	0
2	4	69	50,005	255,173
3	1	51	96,943	425,038
3	2	114	317,110	1,522,916
3	3	22	14,231	77,424
3	4	2	535	3,291
4	1	6	24,464	129,488
4	2	268	281,671	1,611,205
4	3	1	435	2,732
4	4	4	5,097	34,608
5	1	6	46,274	280,884
5	2	3	1,160	7,671
5	4	5	825	6,319
5	5	4	368	2,992
6	1	2	49,263	342,379
6	2	3	9,781	72,088
6	4	1	547	4,618
7	1	7	21,949	253,044
7	2	7	28,262	377,451
7	3	6	26,143	421,346
7	4	2	3,446	50,788
7	5	1	402	8,008
		50,320	10,377,862	\$37,677,666

4.4 Test Year Revenue Requirement

The revenue requirement shown in Table 4.2 includes O&M, debt service and capital expenditures. These requirements are met from rate revenues, reserves and miscellaneous revenue.

Volume costs are those which vary directly with the quantity of contributed sewer volumes to the plant. BOD and TSS costs are associated the processes needed to treat and discharge effluent.

O&M related to the treatment plant are allocated to their respective volume, BOD or TSS cost component. For example, lift station and collection line expenses are allocated directly to the flow cost component. Other treatment related expenses such as operations, maintenance and fleet management are allocated equally to the flow, BOD, and TSS cost components. The lab program is associated with water quality testing. These costs are allocated equally to the BOD and TSS cost components. Other expenses not specifically assigned are allocated in proportion to all other treatment expenses.

The allocation of system assets to functional cost components provides the basis for allocating annual capital costs. Cost of service is generally allocated to cost components that reflect the design and functional parameters of the associated facility. For example, assets such as the trunk mains, collection mains, and interceptor mains reflect assets used to serve customers served by the collection system and are allocated directly to the flow cost component. General plant assets not specifically assigned are allocated in proportion to all other plant assets.

4.5.3 Allocated Revenue Requirement

Table 4.3 summarizes the allocated revenue requirement. The allocated revenue requirement is distributed to customer classes based on their proportionate share of total customer service characteristics.

Table 4.3: Sewer – FY19 Allocated Revenue Requirement

Description	Flow	BOD	TSS	Customer	Total
Operating	\$5,337,445	\$4,812,846	\$3,208,564	\$5,163,204	\$18,522,059
Capital	53,125,789	24,888,793	14,399,918	0	92,414,500
Less: Adjustments	(41,697,389)	(19,692,776)	(11,390,960)	(477,768)	(73,258,893)
Allocated revenue requirement	\$16,765,845	\$10,008,863	\$6,217,522	\$4,685,436	\$37,677,666

4.6 Development of Cost of Service

4.6.1 Units of Service

Customers of a sewer utility are often identified according to customer class. Each customer class has unique flow and strength characteristics. Because cost-of-service is based on the concept of proportionality, customer service characteristics for each customer class must be analyzed to distribute the functionalized and allocated system revenue requirements based on their respective demand profiles. The number of minimum bills is based on a reduction in the minimum charge allowance. Similarly, the billable volume has been adjusted to recognize the increase in the billable flow above the reduced minimum. Table 4.4 details proposed the units of service.

Table 4.5: Sewer - Calculation of Minimum Bill Revenue

Line No	Item	\$
1	Total cost of service	\$37,677,666
2	Annual billable volume	10,811,644
3	Average rate, \$ per ccf (Line 1/Line 2)	\$3.48
4	Minimum use allowance, ccf (rounded)	2
5	Number of minimum bills	162,715
6	Total minimum revenue (Line 3*4*5)	\$1,109,849

Table 4.6: Sewer – FY19 Proposed Raftelis Unit Cost of Service

Line No	Description	Volume	BOD	TSS	Billing/ Admin
1	Allocated revenue requirement	\$16,765,845	\$10,305,656	\$5,920,730	\$4,685,435
2	Minimum Charge Adjustment	3,575,586	0	0	(3,575,586)
3	Reallocated Revenue Requirement	\$20,341,431	\$10,305,656	\$5,920,730	\$1,109,849
	Units of service	<i>Billable Flow, ccf</i>	<i>lbs</i>	<i>lbs</i>	<i>Bills</i>
4	Total units of service	10,502,500	14,457,731	13,120,496	162,715
5	Unit cost of service	\$1.94	\$0.71	\$0.45	\$6.82

4.6.3 Distribution of Costs to Customer Classes

The distribution of costs to customer classes is calculated below in Table 4.7. Only a portion of the billing and administrative costs is recovered in the minimum charge. The net billing/admin costs represents the cost of providing approximately 2 ccf of water for a class one customer. The remainder of costs is allocated proportionately to the flow, BOD, and TSS cost components. The reallocated cost totals \$3.6 million. Costs are distributed to the various customer classes based on the units of service in Table 4.6.

Table 4.8: Sewer – Comparison of FY19 Proposed Raftelis Cost of Service to Revenue at FY19 Utility Presented Rates

BOD Class	TSS Class	FY19 Utility Presented	FY19 Proposed Raftelis	Change \$	Change %
1	1	\$28,142,688	\$27,650,171	(\$492,517)	(1.8%)
1	2	78,254	81,386	3,132	4.0%
1	3	41,499	44,191	2,692	6.5%
1	7	1,633	1,808	176	10.8%
2	1	1,196,323	1,188,540	(7,782)	(0.7%)
2	2	2,327,806	2,364,693	36,887	1.6%
2	3	0	0	0	N/A
2	4	255,173	270,121	14,948	5.9%
3	1	425,038	412,081	(12,957)	(3.0%)
3	2	1,522,916	1,509,878	(13,038)	(0.9%)
3	3	77,424	78,335	911	1.2%
3	4	3,291	3,292	1	0.0%
4	1	129,488	123,245	(6,243)	(4.8%)
4	2	1,611,205	1,564,282	(46,924)	(2.9%)
4	3	2,732	2,714	(17)	(0.6%)
4	4	34,608	34,967	358	1.0%
5	1	280,884	264,268	(16,616)	(5.9%)
5	2	7,671	7,294	(377)	(4.9%)
5	4	6,319	6,303	(16)	(0.3%)
5	5	2,992	3,024	32	1.1%
6	1	342,379	318,844	(23,535)	(6.9%)
6	2	72,088	68,303	(3,785)	(5.3%)
6	4	4,618	4,534	(84)	(1.8%)
7	1	253,044	380,952	127,909	50.5%
7	2	377,451	569,315	191,863	50.8%
7	3	421,346	637,351	216,005	51.3%
7	4	50,788	75,670	24,882	49.0%
7	5	8,008	12,102	4,094	51.1%
Total		\$37,677,666	\$37,677,666	(\$0)	0.0%

4.7 Rate Design

4.7.1 Introduction

In the development of schedules of sewer rates, a basic consideration is to establish equitable charges to customers commensurate with the cost of providing service. The only method of assessing entirely equitable sewer rates would be the determination of each customer’s bill based upon their unique service requirements. Since this is impractical, schedules of rates are normally designed to meet average conditions for groups (classes) of customers having similar service requirements. Rates should be reasonably simple in application and subject to as few

Table 4.10: Sewer – FY19 Proposed Raftelis Rates⁽¹⁾

Class	BOD Strength mg/l	TSS Strength mg/l	Flow \$ per ccf	BOD \$ per ccf	TSS \$ per ccf	Total \$ per ccf
1	0 – 300	0 – 300	\$1.94	\$0.68	\$0.49	\$3.11
2	300 – 600	300 – 600	1.94	1.11	1.00	4.05
3	600 – 900	600 – 900	1.94	1.83	1.70	5.47
4	900 – 1,200	900 – 1,200	1.94	2.62	2.32	6.88
5	1,200 – 1,500	1,200 – 1,500	1.94	3.29	3.01	8.24
6	1,500 – 1,800	1,500 – 1,800	1.94	4.05	3.65	9.64
7	>1,800	>1,800	<i>Special Rate by Customer</i>			
Extra Strength Rates, \$ per lb						
Chemical oxygen demand (COD)			\$0.280	\$0.356		
Biochemical oxygen demand (BOD)			0.561	0.713		
Total suspended solids (TSS)			0.619	0.451		

(1) Customers in classes 1 through 6 are billed monthly based on their average winter consumption (AWC) times the sum of the rates for flow, BOD, and TSS or a minimum charge of \$6.82 whichever is greater. AWC is the average of water usage for the months November through March.

4.7.3 Typical Monthly Bill Comparison

Table 4-11 compares typical monthly bills under FY19 Utility Presented and the FY19 Proposed Raftelis rates at various levels of AWC for a class 1 BOD and TSS customer.

Table 4.11: Sewer - Typical Monthly Bill Comparison

AWC	FY19 Utility Presented	FY19 Proposed Raftelis	Change (\$)	Change (%)
0	\$11.93	\$6.82	(\$5.11)	(42.8%)
1	11.93	6.82	(5.11)	(42.8%)
2	11.93	6.82	(5.11)	(42.8%)
3	11.93	9.33	(2.60)	(21.8%)
4	12.20	12.44	0.24	2.0%
5	15.25	15.55	0.30	2.0%
6	18.30	18.66	0.36	2.0%
7	21.35	21.77	0.42	2.0%
8	24.40	24.88	0.48	2.0%
9	27.45	27.99	0.54	2.0%
10	30.50	31.10	0.60	2.0%

Table 5.2: Stormwater - FY19 Revenue Requirement

Item	\$
Expenditures	
Operating expense	\$6,913,232
Debt service	1,014,000
Capital outlay	<u>5,649,068</u>
Total expenditures	\$13,576,300
Less: Adjustments	
Grants/Impact fees	(\$850,000)
Other Revenues	(34,000)
Short-term financing	(1,345,000)
Change in Fund Balance	<u>(2,492,300)</u>
Total adjustments	(\$4,721,300)
FY19 revenue requirement	\$8,855,000

5.4 Rate Design

5.4.1 Introduction

In the development of schedules of stormwater rates, a basic consideration is to establish equitable charges to customers commensurate with the cost of providing service. The only method of assessing entirely equitable stormwater rates would be the determination of each customer’s bill based upon their unique service requirements. Since this is impractical, schedules of rates are normally designed to meet average conditions for groups (classes) of customers having similar service requirements. Rates should be reasonably simple in application and subject to as few misinterpretations as possible.

5.4.2 FY19 Utility Presented and FY19 Proposed Raftelis Rates

The Department’s FY19 Utility Presented rates has been place since FY17 and are show in Table 5.3. The FY19 Utility Presented rate structure includes a monthly charge per equivalent residential unit (ERU). The FY19 Proposed Raftelis rates retain the existing structure but have been updated to recover the cost to provide services in FY19.

Table 5.3: Stormwater – FY19 Comparison of FY19 Utility Presented and FY19 Proposed Raftelis Rates

Customer Class	FY19 Utility Presented	FY19	Change \$	Change %
1 or 2 Units < .25 acres	\$4.94	\$4.94	\$0.00	0.0%
1 or 2 Units > .25	6.91	6.91	0.00	0.0%
3 or 4 Units	9.88	9.88	0.00	0.0%
Impervious Area Based	5.43	5.43	0.00	0.0%

6. MISCELLANEOUS FEES

6.1 Introduction

The Department assesses fees for various goods and services associated with providing water, sewer, and stormwater service. These goods and services directly benefit the customer requesting the service. As such, these costs are passed directly to the customer as a direct charge. The miscellaneous fees study evaluated over 60 existing fees and developed a number of new fees. These fees are based on a cost of analysis considering, time, labor, material, and overhead. Fines on the other hand, are set at levels to deter customers from engaging in actions that impact the utility.

Many of these fees have not been updated for a number of years and therefore will show a significant potential increase. The calculated fees shown in this report represent the maximum cost-based fee. The Department may choose to adopt a fee up to that amount and still maintain the cost basis. It has been the intent of the City and the City Council to have all fees based on a cost of service basis and listed in the City's Consolidated Fee Schedule (CFS).

During the review, Raftelis recommended some fees on the Salt Lake City CFS be removed and that some existing fees. This was to simplify steps in the permitting and inspection process. Most fees have been rounded to end in five or even dollars to simplify the collection process at the Department's request. Raftelis evaluated the following fees⁷:

- » Water connection fees
- » Meter inspection and testing
- » Fire hydrant maintenance fees
- » Flat water charge – City and County Agencies
- » Pressure testing
- » Disconnection
- » Plan review fees
- » Sewer inspections
- » Industrial wastewater discharge permits
- » Stormwater inspection fees/discharge permits

6.2 Process

Raftelis reviewed over 60 different fees listed in the current City Consolidated Fee Schedule and reviewed 16 additional new fees requested by the Department. Raftelis used the City's current work order system to pull actual cost information over a two or three-year basis. Work order information was the primary resource for evaluating fees. Raftelis held interviews with individual work groups to list each task involved in each fee process in instances where work order information was

⁷ The term 'existing service fee' refers to the adopted FY18 fees shown in the Consolidated Fee Schedule.

Table 6.2: Water Utility Metering Fees

Fee Type	Existing Service Fee	Calculated Service Fee	Change \$	Change %
New Fire Hydrant Inspect	\$110	\$135	\$25	22.7%
New Fire Hydrant Inspect - Long	110	240	130	118.2%
Relocating Meter .75" and 1"	110	135	25	22.7%
Meter Testing Fees – 5/8" to 1"	40	145	105	2625%
Meter Testing Fees – 1 ½" to 2"	75	290	215	286.7%
Meter Testing Fees – >2"	Actual Cost	385	385	
Water Turn On Fee	21	30	9	42.9%

6.3.3 Charges to City and County Fire Departments

The City currently charges each Fire Department within their service area for fire hydrant maintenance. The County charges originated from a lawsuit in the 1970’s between the County and the City. The courts held that the County Fire Department was responsible for the cost to maintain fire hydrants located within the county service area. Prior to that date, the City had for many years charged the City Fire Department for maintenance and water usage. The fee paid by the Salt Lake City Fire Department for fire hydrant maintenance has not changed for 45 years and is currently \$108,000 annually. The amount paid by each County Fire Department has been set by separate contracts which require the amount they pay to the match that paid by the Salt Lake City Fire Department.

In addition, the Salt Lake City Fire Departments pays an estimated fee for water used for fighting fires. The fee is based on an estimated number of fires per year of 13,000 times the estimated number of gallons used per fire of 3,000 gallons. The gallons per fire is based on the average fire lasting 10 minutes with the average water usage of 300 gallons per minute. The current fee has not changed in 45 years and is still based on the 1970 price of per \$0.35 ccf. The proposed fee adjusts the charge to the current rate of \$1.30 per ccf. Tables 6.3 and 6.4 compare the existing and proposed fire-related fees.

Table 6.3: Fire Hydrant Maintenance Fees

Fee Type	Existing Service Fee	Calculated Service Fee	Change - \$	Change - %
Salt Lake City cost per hydrant – 6,353 hydrants	\$24.31	\$53.65	\$28.34	120.7%
Cottonwood Heights – 1102 hydrants	24.31	53.65	28.34	120.7%
Holladay City – 737 hydrants	24.31	53.65	28.34	120.7%
Salt Lake County – 1,319 hydrants	24.31	53.65	28.34	120.7%

6.4.1 Sewer Miscellaneous Fees

Table 6.6 summarizes the sewer miscellaneous fees.

Table 6.6: Sewer Miscellaneous Fees

Fee Type	Existing Service Fee	Calculated Service Fee	Change \$	Change %
Sewer Inspection Fee	\$60	\$165	\$105	175.0%
Sewer Lateral Kills	N/A	80	80	New Fee
Sewer Lateral Repairs	30	135	105	350.0%
Sewer Survey	100	130	30	30.0%
Additional Sewer Survey	35	130	95	271.4%
Installation of Sewer Wyes	Actual Cost	109		
After hours				
Sewer Inspection Fee	60	200	140	233.3%
Sewer Lateral Kills	N/A	110	110	New Fee
Sewer Lateral Repairs	30	175	145	483.3%
Weekend & Callout				
Sewer Inspection Fee	60	465	405	675.0%

6.4.2 Sewer Pretreatment Fees

Sewer pretreatment fees are needed to cover the additional costs of monitoring and inspecting commercial and industrial users that could discharge potentially toxic or hazardous pollutants, high strength chemicals and other substances into the sanitary sewer system. The pretreatment program was established to protect the environment, publicly owned treatment works (POTW) infrastructure and personnel, and the community from adverse effects of commercial and industrial wastewater discharge. The Pretreatment program requires and works to help industrial and commercial users control and treat wastewater discharge to prevent the introduction of pollutants which will interfere with operation of the POTW or pass-through the treatment works into the environment. The following chart shows current fees charged, current costs of each fee and the new proposed fee. During the review process, the Department decided not to propose the full cost of service but rather match the current rates charged by other sewer agencies in the valley with the intent of increasing fees in small increments over time. Table 6.7 shows the sewer utility pretreatment fees.

APPENDIX A

RATE ADJUSTOR COMMITTEE FINAL REPORT

Salt Lake City Department of Public Utilities

Rate Advisory Committee

2018 Water and Sewer Rate Study Recommendations

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Appendix A

Water Rate Committee Members

Appendix B

RAC Feedback and Comments on Final Rate Structures

Appendix C

Available online: <https://drive.google.com/drive/folders/0B7Q2MSZ3UW08R2g3ME5BOWxrQ1E>

Rate Advisory Committee Meeting #1

Rate Advisory Committee Meeting #2

Rate Advisory Committee Meeting #3

Rate Advisory Committee Meeting #4¹

Rate Advisory Committee Meeting #5

¹ The RAC meeting #4 presentation was divided into two separate meetings – one discussing water rate alternatives and another discussing sewer rate structure alternatives.

1.0 Executive Summary

Salt Lake City Department of Public Utilities (SLCDPU) formed a Rate Advisory Committee (the RAC or Committee) to review, consider alternatives and, as decided by the RAC, recommend changes to the City's water and sewer rate structures. The RAC participated in six meetings² over the period from August through December 2017. The RAC process included education on the water and sewer systems, review of existing rate structures, customer class usage characteristics, a pricing objectives exercise, the evaluation of numerous alternatives and recommendation of rate structure changes for consideration by the Salt Lake City Public Utilities Advisory Committee (PUAC). Appendix A contains the listing of the RAC members. Appendix B contains feedback and comments on the proposed rate structures from the RAC.

The pricing objectives exercise provided a means in which RAC members identified and ranked the important objectives or goals that could be achieved through the water and sewer rate structures. The RAC identified the following six objectives (presented in rank order of importance) to evaluate the existing and new rate structure alternatives.

- Conservation
- Essential use affordability
- Demand management
- Rate stability
- Interclass equity
- Intraclass equity

To meet these objectives, the Committee recommended two water and two sewer volumetric rate structure alternatives for consideration by the PUAC; these structures include the following:

Water Rate Structure

- Retain the fixed charge by meter size. Modify the price ratio between the meter sizes to reflect capacity potential of each meter size to a ¾" meter. This fixed charge modification is recommended regardless of which volumetric rate alternative is selected.
- Retain the uniform volume rate structure for the winter months (November through March) and an increasing block structure for summer months (April through October). RAC members discussed the merits of modifying the winter uniform rate but ultimately decided that adjusting the summer structure would best meet the pricing goals and objectives.

² The RAC meeting #4 presentation was divided into two separate meetings – one discussing water rate alternatives and another discussing sewer rate structure alternatives.

- Move from volume rates by block that are the same for all classes (system-wide cost-of-service rate) to cost-of-service (COS) based rates that vary by customer class – applicable to both volumetric rate alternatives.
- Reduce the block 4 threshold from 70 ccf to 60 ccf for single residence, duplex, and triplex customer classes. Reduce the commercial, institutional, industrial(CII) customer class block 4 threshold from 700% of AWC to 600% of AWC. This shift is to further encourage demand management and the wise or efficient use of water.
- For the irrigation customer class, the current volumetric rate structure, an individualized target or budget-based approach, should be retained.
- The RAC recommended two water volumetric rate structure alternatives using a class-based cost-of-service rate for consideration to the PUAC. Table 1 compares the existing rate structure and the alternative rate structures. Many alternatives were considered by the RAC. For purposes of this report, the original “names” of the alternatives have been retained.
 - **Alternative #2: COS/Existing Structure Adjusted for COS.** Retain the fixed-block rate structure for all residential customers and the average winter consumption (AWC)-based rate structure for CII customers.
 - Reduce the block 4 threshold from 70 ccf to 60 ccf for the single residence, duplex, and triplex customer classes.
 - Reduce the CII block 4 threshold from 700% of AWC to 600% of AWC.
 - **Alternative #3: COS/AWC All** Modify the existing fixed-tier structure for single residence, duplex, and triplex to an AWC-based 4 block rate structure, the same structure as CII.
 - Set the single residence, duplex, and triplex customer class block 4 threshold at 600% of AWC.
 - Reduce the CII customer class block 4 threshold from 700% of AWC to 600% of AWC.

Table 1 Water Current and Proposed Residential and CII Rate Structures City and County Customers					
Description	Residential			CII	
	Current	Alternative 2 COS/Existing	Alternative 3 COS/AWC ALL	Current	Alternative 2 and Alternative 3 ^c
Winter Period (Nov-Mar)	Block 1 Usage for All			Block 1 Usage for All	
Summer Period (Apr-Oct)					
Block 1 (a)	0-10 ccf	0-10 ccf	0-AWC	0-AWC	0-AWC
Block 2	11-30 ccf	11-30 ccf	AWC-300%	AWC-300%	AWC-300%
Block 3	31-70 ccf	31-60 ccf	300%-600%	300%-700%	300%-600%
Block 4	>70 ccf	>60 ccf	>600%	>700%	>600%
(a) Single residence existing Block 1: 0 to 10 ccf Duplex existing block 1: 0 to 13 ccf Triplex Block 1: 0 to 16 ccf					

(b) AWC = Average Winter Consumption. "AWC – 300%" means usage greater than a customer's AWC and less than or equal to 300% of the customer's AWC.
(c) Alternative 2 and Alternative 3 CII rate structures are the same.

Sewer Rate Structure

- Retain the customer class volumetric rate structure by volume and strength of wastewater flow for each alternative. Strength categories include biochemical oxygen demand (BOD) and total suspended solids (TSS). The two alternatives recommended are:
 - **Alternative #1: No Minimum Charge.** Eliminate the minimum charge. Customers are only charged for their AWC monthly flow.
 - **Alternative #3: Reduced Minimum Charge.** Reduce the minimum charge allowance from 4 hundred cubic feet (ccf) to 2 ccf. This reduces the minimum charge by approximately 50%.

2.0 Introduction

The SLCDPU conducts a comprehensive water rate study every five to seven years. The City retained Raftelis Financial Consultants, Inc. (Raftelis) as the consultant of record for the 2018 Water and Sewer Rate Study. The rate study included a review of water and sewer revenue requirements, the development of a cost of service analysis, and rate design for the fiscal year (FY) 2019 (the 12 months ending June 30, 2019; referred to as FY19). ***The rates shown in this report and appendices are not the adopted FY18 or proposed/recommended FY19 rates. Rather, these rates were developed using the current fiscal year budget and can only be used as a means of comparison of different rate structure alternatives. Adopted rates under the alternative structures proposed; ultimately adopted by the City Council, may yield different results.***

The rate study process included formation of a Rate Advisory Committee (RAC). This committee was comprised of stakeholders representing several diverse community groups and the public at-large. Additionally, several committee members that represented each City Council district were selected by the City Council. All of the RAC members are listed in Appendix A. The RAC participated in a series of meetings, providing input and suggestions for adjustments to the existing rate structure that best represented the needs, goals and objectives of the community. This RAC members participated in robust discussions during each meeting where they voiced concerns, agreement, and shared new ideas. Raftelis led the detailed analysis for the study. The meetings were co-facilitated by Raftelis and The Langdon Group.

3.0 Rate Advisory Committee Mission and Purpose

The RAC's Mission and Purpose is stated below.

Committee Mission. The mission of the RAC is to assemble a diversity of perspectives that represent our community to evaluate and advise on the water, sewer, and stormwater rate structures³.

Committee Purpose. Salt Lake City periodically updates water, sewer and stormwater utility rates to ensure they are current and reflect community values. Salt Lake City believes strongly that our community should have a voice in decisions that affect them. The Salt Lake City Department of Public Utilities Rate Advisory Committee has the unique opportunity to help develop this rate study, leading to improvements that will have a positive impact on the community for decades to come. The RAC has two overarching purposes:

1. To provide input including recommendations to the Public Utilities Advisory Committee, Salt Lake City Mayor and Council
2. To represent and communicate the views of the community

³ Ultimately, water and sewer rate structures became the RAC's primary focus. Stormwater rate structure were removed from the discussion.

4.0 Rate Advisory Committee Meetings

Raftelis and SLCDPU Staff facilitated six RAC meetings. The agenda and goals from each meeting are listed below. Additional information from each meeting is available on the City's web site.

4.1 Meeting #1

- Role of RAC in rate study process
- Water and sewer system review
- Review of current water and sewer rates and structure
- Overview of the rate-setting process
- Pricing objectives definition

4.2 Meeting #2

- 2018 pricing objectives review and supporting analytics
- Ranking 2018 pricing objectives

4.3 Meeting #3

- Review ranked pricing objectives and measurement criteria for evaluation
- Water conservation program presentation
- Customer class usage and demographic characteristics
- Potential rate structure ideas and concepts

4.4 Meeting #4⁴

- Water rate structure alternatives definitions
- Sewer rate structure alternatives definitions
- Ranking top two rate structure alternatives for water and sewer

4.5 Meeting #5

- Top two water and sewer rate alternatives presented
- Customer bill impacts for each alternative
- Selection of alternatives to be presented to PUAC

⁴ The RAC meeting #4 presentation was divided into two separate meetings – one discussing water rate alternatives and another discussing sewer rate structure alternatives.

5.0 Pricing Objectives

The role of the RAC for the 2018 water and sewer rate study was to review the effectiveness of the existing rate structure and provide recommendations for adjustments to the structure. The Committee identified and ranked 11 pricing objectives to assist in aligning the water and sewer rate structures with community values. The pricing objectives, ranked by 'most important', 'more important' and 'not as important', are listed in Table 1:

Table 1 Ranked Pricing Objectives
<p>Most Important</p> <ul style="list-style-type: none"> • Conservation • Essential use affordability • Demand management
<p>More Important</p> <ul style="list-style-type: none"> • Rate stability • Interclass equity • Intraclass equity
<p>Not as Important</p> <ul style="list-style-type: none"> • Revenue stability • Impact on customers • Customer understanding • Ease of implementation • Intergenerational equity
<p><i>1. Definitions can be found in RAC Meeting #2 presentation.</i></p>

The six highest ranked pricing objectives is discussed below.

1. **Conservation/Demand management.** These two related objectives focus on annual water use reduction and reduction in peak day summer use, respectively. Annual water use relates to availability, management and cost of water resources based upon precipitation, reservoir and snowpack storage. Peak water use drives capacity, size and cost of treatment plants, pumps stations and pipe to convey the maximum flow to customers during peak hour and peak day consumption of the year.

Water conservation and peak usage reduction objectives were combined for the purpose of assessing impacts of changes to the rate structure on water use. To be effective with regards to these objectives, the rate structure should be designed to promote the efficient use of resources on a year-round basis as well as during periods of peak use. The rate structure should assign the cost of providing peaking facilities to those customers having significant peak to average water use patterns, and discourage the use of water during peak demand periods.

2. **Essential use affordability.** This objective was to allow the opportunity for low income or fixed income customers to afford water for essential purposes at the lowest possible cost.
3. **Demand management.** See item #1.

4. **Rate stability.** The rate structure should maintain continuity over time while meeting the goals and objectives of the utility. This is coupled with a financial plan that maintains smooth and predictable revenue adjustments.
5. **Interclass equity.** Equity between customer classes. Through a cost-of-service analysis, costs are recovered proportionately from each customer class' rate structure based on their unique demand characteristics.
6. **Intraclass equity.** Equity between customers within a class. Intraclass equity is maximized when the rate structure results in individual customers paying, to the maximum extent possible, an amount that approximates their unique contribution to their customer class revenue requirement

The RAC sought to evaluate rate structure refinements and adjustments in terms of how effective these adjustments were in achieving the objectives. The RAC was presented with customer characteristic and water use data, information on water system demands, sewer system flows, affordability metrics, and other customer billing data to consider in assessing the rate structure options.

5.1 Pricing Objective Measurement Criteria

SCLDPU staff developed and shared with the RAC criteria used to evaluate the effectiveness each alternative's ability to meet the criteria. The measurement criteria are presented below.

1. **Conservation**
 - a. Continue to achieve or exceed existing goals and evaluate more stringent goals
 - b. To what degree does the rate structure reduce water demand, i.e., price elasticity.
2. **Essential use affordability**
 - a. After considering existing program/options, how can rates be used to make essential water use affordable?
3. **Demand management**
 - a. Manage peak demands to improve system efficiencies and economies of scale
 - b. To what degree does the rate structure reduce water demand, i.e., price elasticity.
4. **Rate stability**
 - a. Rate structure alternatives that are flexible and can be adjusted to achieve the financial objectives of the utility as well as the pricing objectives of the community.
5. **Interclass equity**
 - a. Through the cost-of-service analysis, compare the class cost-of-service for 2018 to the revenue under existing rates.
6. **Intraclass equity**
 - a. Use the cost-of-service analysis to compare the relationship between the customer bill and their demand for service.

6.0 Rate Structure Alternatives

Three water rate structure alternatives were developed along with comparison against the existing water rate structure. Two alternatives were created along with comparison against the existing sewer utility. The RAC added a third sewer alternative at the final meeting. These alternatives are described below.

6.1 Water Rate Structure Alternatives

- **Status Quo: Existing Structure Adjusted for Cost of Service.** Calculate rates under current system-wide cost-of-service (COS) methodology and rate structures.
- **Alternative #1: AWC All.** Calculate rates based on one rate structure for all classes, i.e., a system-wide COS and one set of rates/one rate structure for all classes.
- **Alternative #2: COS/Existing Structure Adjusted for Cost of Service.** Calculate each customer class' COS rates with existing rate structures (i.e., rates and structure vary by class).
- **Alternative #3: COS/AWC All.** Calculate each customer class' COS rates using an AWC rate structure that is the same for all classes (i.e., rates vary by class/structure same for all classes).

6.2 Sewer Rate Structure Alternatives

- **Status Quo: Existing Structure Adjusted for Cost of Service.** Calculate rates under current COS methodology and rate structures.
- **Alternative #1: No Minimum Charge.** Only a volume rate applied to average winter consumption for all customers. No AWC = no bill.
- **Alternative #2: Fixed Charge.** Calculate rates based on a service charge by water meter size and a volume rate based on each customers' AWC.
- **Alternative #3: Status Quo with a reduced minimum charge.** Calculate rates under current COS methodology and rate structures however, reduce the minimum charge by approximately 50%.

7.0 Selected Rate Structure Alternatives

Raftelis presented the water and sewer rate structure alternatives' concepts at RAC Meeting #4. During RAC Meeting #5, Raftelis presented conceptual rates, bill impacts, and other information for the RAC's consideration and recommendation to the the PUAC. Using a 'strawman poll', the attending RAC members selected the following alternatives for water and sewer:

7.1 Selected Water Rate Structure Alternatives

Water Minimum Charge

The RAC retained the existing minimum charge by meter size with one adjustment; the cost ratio between the meter sizes should be based on the American Water Works Association (AWWA) meter capacity ratios. This ensures that a portion of recurring capital costs is equitably distributed to meter sizes based on their meter size capacity potential. In other words, the larger the meter size, the greater the portion of capital costs that should be allocated to reflect the greater demands that can be placed on the system. This change recovers the same percentage of total rate revenue as the existing minimum charge structure: approximately 15%. This indicates that the change in the minimum charge structure will not adversely affect revenue stability.

Water Volume Rate Structure

The RAC members selected the following two volume rate structure alternatives.

- **Alternative #2: COS/Existing Structure Adjusted for Cost of Service.** Calculate each customer class' COS rates with existing rate structures (i.e., rates and structure vary by class)
- **Alternative #3: COS/AWC All.** Calculate each customer class' COS rates using an AWC rate structure that is the same for all classes (i.e., rates vary by class/structure same for all classes)

Volume Rate Structure Alternatives Evaluation

Conservation and Demand Management. Both Alternative #2 and Alternative #3 promote the continued conservation/demand management efforts of the City. For Alternative #2, the block 4 threshold has been reduced from 70 to 60 ccf for single residence, duplex, and triplex classes. This change broadens the price signal to include more customers who have usage in block 4. Alternative #3 reduces the block 4 threshold from 700% to 600% of AWC. This to moves more customers into block 4 and sends a price signal to reduce usage during peak periods for both residential and CII classes.

Interclass and Intraclass Equity. Through a class-based cost-of-service analysis, the rates for residential and CII classes reflects their specific cost to provide service. This cost-of-service approach ensures that there is interclass equity – that is, no subsidy of costs between the customer classes.

The increasing block structure for both alternatives also addresses intraclass equity. With an increasing block structure, customers pay their proportionate share based on their specific usage pattern and contribution to their class revenue requirement. In other words,

customers with lower, more steady demands cost less to serve than customers with seasonal peak demands that have usage in the higher or more expensive tiers. Whereas both structures achieve intraclass equity, there are slight differences between the two.

The Alternative #2 block thresholds distinguish between indoor and outdoor use for residential classes. Block 1 captures average indoor use. The second block recovers the cost associated with outdoor usage for an average size lot. Blocks 3 and 4 is for usage above the average outdoor use. With Alternative #2, the outdoor use typical occurs during peak periods of demand. As a result, the cost to provide the outdoor demands is greater as well.

The Alternative #3 block thresholds are based on the non-peak and peak demands for each customer. Block 1, usage up to the customer's AWC, captures the non-peak demand for each customer. This volume is priced at the lowest rate or unit cost as these volumes represent minimum demands placed on the system. The second block threshold represents the cost to provide service during peak periods for each customer. Blocks 3 and 4 also recover the cost to provide water service during peak demand periods.

Essential Use Affordability. Essential use affordability was a highly ranked pricing objective. The RAC recognized that the rate structure should provide essential water service at the lowest possible rate. The RAC also recognizes that assistance programs can play a significant role in ensuring full access to essential water use; perhaps an even greater role than the rate structure.

Under Alternative #2 and Alternative #3, the block 1 rate is set at the lowest rate. For Alternative #2, the lowest rate applies up to 10 ccf for single residence customers. Under Alternative #3, the block 1 threshold is set to each customer's average winter consumption. This ensures that everyone pays for essential water use at the same rate.

The primary difference between Alternative #2 and Alternative #3 is that under Alternative #2, essential use above the 10 ccf threshold would be charged at the block 2 rate rather than the block 1 rate in Alternative #3.

An affordability measurement was discussed at Meeting #2. The measure showed an analysis of how many hours each month, a typical residential household would have to work at minimum wage to pay an essential use water and sewer bill. Table 2 contains the results of this analysis and comparison to other communities. Under the current City water and sewer rates, it would take approximately 4.6 hours at minimum wage to pay for an essential services bill.

Table 2 Hours Required at Minimum Wage to Pay Monthly Water and Sewer Minimum Services Bill		
City/Utility	Essential Services Water and Sewer Bill ⁽¹⁾	Hours Worked at Minimum Wage
Phoenix	\$41.56	4.2
Provo*	30.52	4.2
SLCDPU: City - New Structures⁽²⁾	31.53	4.3
SLCDPU: City Existing	33.21	4.6
Las Vegas	38.04	4.6
Albuquerque	35.30	4.7
Sandy*	35.80	4.9
Sacramento	56.37	5.4
West Valley*	39.57	5.5
SLCDPU: County - New Structure⁽²⁾	39.83	5.5
SLCDPU: County Existing	40.42	5.6
Local Utah Average	40.46	5.6
Denver	53.49	5.8
Aurora	56.48	6.1
Portland	67.03	6.5
Ogden	47.44	6.5
National Average	59.46	6.5
Boise	52.19	7.2
West Jordan*	56.27	7.8
Santa Fe	70.06	9.3
Seattle*	124.05	11.3
*Local Utah utilities		
1. Essential water use is 6 ccf and contributed sewer volume is 6 ccf		
2. The monthly bill shown is an average of each alternatives' monthly bill.		

The City's existing rates and structure as well as the proposed alternatives for water and sewer are among the lowest locally and regionally in terms of the hours worked at minimum wage to pay for an essential use water and sewer services bill.

Rate Stability. Both alternatives provide for rate stability. Like rate adjustments in the past, these rates allow the City to, in the future, make overall rate adjustments to the entire structure (i.e., increasing the minimum charge and volume rate at the same percentage) or the City may choose to adjust a specific component of the structure such as increasing the minimum charge only to recover the additional revenue needed. Conversely, the City may increase one or all of the volume rates to achieve specific goals – revenue stability, additional conservation, or adjusting prices to reflect changes in providing indoor/outdoor or non-peak/peak demands.

7.2 Selected Sewer Rate Structure Alternatives

The RAC selected the following sewer rate structure alternatives for consideration by the PUAC.

- **Alternative #1: No Minimum Charge.** Only a volume rate applied to average winter consumption for all customers. No AWC = no bill.
- **Alternative #3: Status Quo with a Reduced Minimum Charge.** Calculate rates under current cost of service methodology and rate structures however, reduce the minimum charge by approximately 50%.

Sewer Structure Alternatives Evaluation

Both sewer rate structure alternatives retain the volume rate that varies by the contributed flow and strength. The existing and adopted volume rate consists of three components – the contributed sewer flow rate, the BOD rate, and the TSS rate. The contributed sewer flow rate is the same for all seven strength classes. The BOD volume rate and the TSS volume rate vary based on the customer’s strength classification.

Interclass equity is achieved by recovering the cost to provide service for each strength class based on their specific strength volume rate. Both Alternative #1 and Alternative #3 improve intraclass equity through a change in the minimum charge. Currently, the minimum charge is billed based on the average water usage for the months November through March (AWC) times the class volume rate or a minimum charge is \$10.36, whichever is greater. By eliminating the minimum charge in Alternative #2, customers would pay based solely on the contributed flow. The lowered minimum charge in Alternative #3 recognizes that regardless of contributed flow, there should be a minimum charge to recognize the readiness to provide service to customers.

8.0 Comparison of Existing Structure and Rates to Alternatives

The recommended rate structures produced the following *conceptual* rates. Actual rates adopted by the SLCDPU in future rate studies will be based on different budget year data, customer and utility system data. The rates comparison in Tables 3 through 5 illustrate how water rates would change, comparatively, under the different alternatives. Table 6 shows existing and proposes sewer rate alternatives.

Table 3 Water Comparison of Existing and Alternative Minimum Charge⁽¹⁾ \$ per monthly bill				
Meter Size	Existing	Alternative	\$ Change	% Change
3/4"	\$9.51	\$7.02	(\$2.49)	-26%
1"	9.51	8.85	(0.66)	-7%
1 ½"	11.23	13.43	2.20	20%
2"	12.19	18.92	6.73	55%
3"	20.46	33.57	13.11	64%
4"	21.90	50.05	28.15	129%
6"	31.62	95.82	64.20	203%
8"	56.84	150.74	93.90	165%
10"	105.41	388.75	283.34	269%
<i>(1) County minimum charges are 1.35 times City minimum charges</i>				

Table 4 Water Comparison of City Existing and Alternative Volume Rates⁽¹⁾ Single Residence (\$ per ccf)			
Description	Existing ⁽¹⁾	Alternative #2 COS/Existing	Alternative #3 COS/AWC All
Winter Period (Nov-Mar)	1.30	1.29	1.27
Summer Period (Apr-Oct)			
Block 1	\$1.30	\$1.29	\$1.27
Block 2	1.78	1.77	1.73
Block 3	2.47	2.45	2.41
Block 4	2.63	2.61	2.56
<i>(1) County volume rates are 1.35 times the City volume rates.</i>			

Table 5 Water Comparison of City Existing and Alternative Volume Rates⁽¹⁾ CII (\$ per ccf)			
Description	Existing	Alternative #2 COS/Existing	Alternative #3 COS/AWC All
Winter Period (Nov-Mar)	1.30	1.40	1.40
Summer Period (Apr-Oct)			
Block 1	\$1.30	\$1.40	\$1.40
Block 2	1.78	1.92	1.92
Block 3	2.47	2.66	2.66
Block 4	2.63	2.84	2.84
<i>(1) County rates are 1.35 times the City volume rates.</i>			

Table 6 Sewer Rate Structure Alternatives (\$ per ccf)					
Class	BOD Strength (mg/l)	TSS Strength (mg/l)	Existing \$ per ccf ⁽¹⁾	Alt. 1 \$ per ccf ⁽²⁾	Alt. 3 \$ per ccf ⁽³⁾
1	<300	<300	\$2.65	\$2.82	\$2.79
2	300–600	300–600	3.44	3.74	3.66
3	601–900	601–900	4.66	4.66	4.55
4	901–1,200	901–1,200	5.89	5.59	5.44
5	1,200–1,500	1,200–1,500	7.06	6.50	6.33
6	1,501–1,800	1,501–1,800	8.27	7.43	7.22
7	>1,800	>1,800	<i>Separately Monitored Class</i>		
<i>1. Customers billed based on the average water usage for the months November through March (AWC) or a minimum charge is \$12.53, whichever is greater</i> <i>2. No minimum charge.</i> <i>3. Customers billed based on the average water usage for the months November through March (AWC) or a minimum charge is \$6.27, whichever is greater</i>					

9.0 Customer Bill Impacts

This section presents typical summer monthly water and sewer bills and bill impacts for City Single Residence and CII customers.

9.1 City Water Single Residence Typical Monthly Bills and Bill Impacts

Table 7 shows the typical monthly bill for various levels of consumption under existing, Alternative #2 and Alternative #3 rates and structures.

Table 7 Water Typical Monthly Summer Bills Under Existing and Proposed Rate Structure Alternatives City Single Residence Customers							
Summer Usage	Existing	Alt. #2: COS/Existing			Alt. #3: COS/AWC All AWC = 6		
ccf	Monthly Bill	Monthly Bill	\$ Change	% Change	Monthly Bill	\$ Change	% Change
0	\$9.51	\$7.02	(\$2.49)	-26.2%	\$7.02	(\$2.49)	-26.2%
5	16.01	13.47	(2.54)	-15.9%	13.37	(2.64)	-16.5%
10	22.51	19.92	(2.59)	-11.5%	21.56	(0.95)	-4.2%
20	40.31	37.62	(2.69)	-6.7%	40.22	(0.09)	-0.2%
30	58.11	55.32	(2.79)	-4.8%	64.32	6.21	10.7%
40	82.81	79.82	(2.99)	-3.6%	89.02	6.21	7.5%
50	107.51	104.32	(3.19)	-3.0%	114.62	7.11	6.6%
60	132.21	128.82	(3.39)	-2.6%	140.22	8.01	6.1%
70	156.91	154.92	(1.99)	-1.3%	165.82	8.91	5.7%

The 10.7% increase at 30 ccf for Alternative 3 is due to the difference in the block 3 thresholds to the existing rate structure thresholds. Under the existing rate structure, usage is billed in blocks 1 and 2. Under Alternative #3, usage is billed in block 1, 2, and 3. Stated differently, with an AWC of 6, usage above 18 ccf is billed at the block 3 rate for alternative 3 rate (\$2.41 per ccf) while the usage above 18 ccf in the existing structure is billed at the block 2 rate (\$1.78 per ccf).

Tables 8 shows the customer bill impact for City Single Residence customers under Alternative 2 to the existing rates. Under alternative 2, virtually all monthly bills will decrease between \$0 and -\$5 from bills under existing rates. Similarly, 36.7% of bills will decrease 0 to 5%. This due in part to the reduction in the ¾" meter fixed charge and rates based on class cost-of-service. Class cost of service volume rates are lower than existing volume rates.

Table 8 Water Single Residence Customer Summer Bill Impact Comparison of Alt. #2: COS/Existing to Existing Rates			
\$ Change in Monthly Bill	Percent of Bills	% Change in Monthly Bill	Percent of Bills
<-\$10	0.0%	< -10%	43.6%
-\$5 to -\$10	0.1%	-10% to -5%	19.7%
-\$5 to \$0	99.9%	-5% to 0%	36.7%
\$0 to \$5	0.0%	0% to 5%	0.0%
\$5 to \$10	0.0%	5% to 10%	0.0%
\$10 to \$15	0.0%	10% to 15%	0.0%
\$15 to \$20	0.0%	15% to 20%	0.0%
>\$20	0.0%	>20%	0.0%

Table 9 shows the Single Residence customer bill impacts of Alternative #3 to existing rates. Approximately 71% of monthly bills will decrease between \$0 to \$5 under Alternative #3. The high percentage of bills with a decrease is due in part to the reduced ¾” meter fixed charge and class cost-of-service rates⁵. Class cost-of-service volume rates are lower than existing volume rates. Bills with an increase can be attributed to the usage distribution based on each customers’ individualized block thresholds.

⁵ Approximate 88% of single residence meters are ¾”.

Table 9 Water Single Residence Customer Summer Bill Impact Comparison of Alt. #3: COS/AWC All to Existing Rates			
\$ Change in Monthly Bill	Percent of Bills	% Change in Monthly Bill	Percent of Bills
<-\$10	4.1%	< -10%	44.6%
-\$5 to -\$10	3.6%	-10% to -5%	11.9%
-\$5 to \$0	71.0%	-5% to 0%	22.2%
\$0 to \$5	12.5%	0% to 5%	9.6%
\$5 to \$10	8.8%	5% to 10%	10.8%
\$10 to \$15	0.0%	10% to 15%	0.9%
\$15 to \$20	0.0%	15% to 20%	0.0%
>\$20	0.0%	>20%	0.0%

9.2 City Water CII Typical Monthly Bills and Bill Impacts

Table 10 shows the typical monthly bill for various levels of consumption under existing, Alternative #2 and Alternative #3 rates and structures.

Table 10 Water Typical Monthly Summer Bills Under Existing and Proposed Rate Structure Alternatives ⁽¹⁾ City CII Customers ⁽²⁾							
Summer Usage ccf	Alt. #2: COS/Existing				Alt. #3: COS/AWC All		
	Existing Rates	Alternative #2	\$ Change	% Change	Alternative #3	\$ Change	% Change
0	\$12.19	\$18.92	\$6.73	55.2%	\$18.92	\$6.73	55.2%
25	44.69	53.92	9.23	20.7%	53.92	9.23	20.7%
50	77.19	88.92	11.73	15.2%	88.92	11.73	15.2%
75	109.69	123.92	14.23	13.0%	123.92	14.23	13.0%
100	142.19	158.92	16.73	11.8%	158.92	16.73	11.8%
150	231.19	254.92	23.73	10.3%	254.92	23.73	10.3%
200	320.19	350.92	30.73	9.6%	350.92	30.73	9.6%
250	409.19	446.92	37.73	9.2%	446.92	37.73	9.2%

(1) Rates and structure for CII Alt. #2 and Alt. #3 are the same.
(2) 2" CII customer with an AWC of 100 ccf.
Proposed structure:
Block 1: 0 – 100 ccf
Block 2: 100 – 300 ccf
Block 3: 300 – 600 ccf
Block 4: >600 ccf

The 55.2% or \$18.92 change in monthly bill for zero usage due to the change in the monthly fixed charge.

Tables 11 shows the customer bill impact for City CII customers of water Alternative #2 and #3 to the existing rates. The rate structure and rates under Alternatives #2 and #3 are the same. Under the alternatives, about 24% of bills will increase between \$0 and \$5. Drivers for the increases are due to increases in larger meter size fixed charges and class-based cost-of-service rates which are higher than the existing rates.

Table 11 Water CII Customer Summer Bill Impact Comparison of Alternatives #2 and #3 to Existing Rates⁽¹⁾			
\$ Change in Monthly Bill	Percent of Bills	% Change in Monthly Bill	Percent of Bills
<-\$10	0.5%	< -10%	14.4%
-\$5 to -\$10	0.1%	-10% to -5%	8.2%
-\$5 to \$0	31.2%	-5% to 0%	9.2%
\$0 to \$5	24.4%	0% to 5%	17.5%
\$5 to \$10	12.7%	5% to 10%	38.0%
\$10 to \$15	6.2%	10% to 15%	6.5%
\$15 to \$20	4.1%	15% to 20%	2.3%
>\$20	20.9%	>20%	3.9%

(1) Rates and structure for CII Alt. #2 and Alt. #3 are the same.

9.3 City Sewer Typical Monthly Bills and Bill Impacts

Table 12 shows City single residence typical monthly sewer bills under the existing rates and structure to Alternative #1 and Alternative #3 rates and structures.

Table 12 Sewer Typical Monthly Sewer Bill Comparison Class 1 BOD, 1 TSS Customer							
Sewer Flow ccf	Existing Structure	Alt. #1: No Minimum Charge			Alt. 3: Reduced Minimum Charge		
	Monthly Bill	Monthly Bill	\$ Change	% Change	Monthly Bill	\$ Change	% Change
0	\$10.36	\$0.00	(\$10.36)	-100.0%	\$6.27	(\$4.09)	-39.5%
1	10.36	2.82	(7.54)	-72.8%	\$6.27	(4.09)	-39.5%
2	10.36	5.64	(4.72)	-45.6%	\$6.27	(4.09)	-39.5%
3	10.36	8.46	(1.90)	-18.3%	\$8.37	(1.99)	-19.2%
4	10.60	11.28	0.68	6.4%	\$11.16	0.56	5.3%
5	13.25	14.10	0.85	6.4%	\$13.95	0.70	5.3%
6	15.90	16.92	1.02	6.4%	\$16.74	0.84	5.3%
7	18.55	19.74	1.19	6.4%	\$19.53	0.98	5.3%
8	21.20	22.56	1.36	6.4%	\$22.32	1.12	5.3%
9	23.85	25.38	1.53	6.4%	\$25.11	1.26	5.3%
10	26.50	28.20	1.70	6.4%	\$27.90	1.40	5.3%

Table 13 shows CII typical monthly sewer bills under the existing and proposed rate alternatives for a Class 4 CII customer.

Table 13 Sewer City CII Typical Monthly Bill Comparison Class 4 BOD, 4 TSS							
Sewer Flow ccf	Existing Structure	Alt. #1: No Minimum Charge			Alt. #3: Reduced Minimum Charge		
	Monthly Bill	Monthly Bill	\$ Change	% Change	Monthly Bill	\$ Change	% Change
0	\$10.36	\$0.00	(\$10.36)	-100.0%	\$6.27	(\$4.09)	-39.5%
5	\$29.45	\$27.95	(1.50)	-5.1%	\$27.20	(2.25)	-7.6%
10	\$58.90	\$55.90	(3.00)	-5.1%	\$54.40	(4.50)	-7.6%
20	\$117.80	\$111.80	(6.00)	-5.1%	\$108.80	(9.00)	-7.6%
30	\$176.70	\$167.70	(9.00)	-5.1%	\$163.20	(13.50)	-7.6%
45	\$265.05	\$251.55	(13.50)	-5.1%	\$244.80	(20.25)	-7.6%
55	\$323.95	\$307.45	(16.50)	-5.1%	\$299.20	(24.75)	-7.6%
60	\$353.40	\$335.40	(18.00)	-5.1%	\$326.40	(27.00)	-7.6%
70	\$412.30	\$391.30	(21.00)	-5.1%	\$380.80	(31.50)	-7.6%
80	\$471.20	\$447.20	(24.00)	-5.1%	\$435.20	(36.00)	-7.6%

Table 14 shows the bill impact for all sewer customers' bills under Alternative 1 compared to existing rates. Under alternative 1, approximately 49% of bills will increase between \$0 and \$2.50. This is due primarily the higher volume rates in Alternative 1. The class 1 rate is \$2.82 per ccf for all volume compared to \$2.65 under the existing rates.

Table 14 Sewer City Customer Bill Impact Alt. #1: No Minimum to Existing Rates All City Sewer Customers			
\$ Change in Monthly Bill	Percent of Bills	% Change in Monthly Bill	Percent of Bills
< -\$10	11.8%	< -10%	26.7%
-\$10 to -\$5	6.2%	-10% to -5%	11.6%
-\$5 to \$0	20.5%	-5% to -0%	0.3%
\$0 to \$2.50	49.4%	0% to 5%	0.6%
\$2.50 to \$5	6.6%	5% to 10%	50.0%
\$5 to \$10	2.7%	10% to 15%	0.0%
\$10 to \$15	0.8%	15% to 20%	0.0%
> \$15	2.0%	>20%	10.9%

Table 15 shows the bill impacts of Alternative #3 for all sewer customers. The 38% of bills with a decrease between \$0 and \$5 is due to the large number of bills with sewer volumes of 3 ccf or less. Under the existing structure, the class 1 bill for 3 ccf and less is \$10.63 while under Alternative #3, the bill is \$8.37⁶. Bills with volume between 3 and 4 ccf will be

⁶ Class 1 customer bills represent approximately 44.5% of total sewer bills.

assessed Alternative #3 volume rate rather than the existing minimum charge. Bills with volume greater than 4 ccf will be assessed the Alternative #3 volume rate of \$2.79 per ccf, an increase of \$0.14 per ccf over the existing rate.

Table 15 Sewer City Customer Bill Impacts Alt. #3: Reduced Minimum Charge All City Sewer Customers			
\$ Change in Monthly Bill	Percent of Bills	% Change in Monthly Bill	Percent of Bills
< -\$10	0.6%	< -10%	27.1%
-\$10 to -\$5	0.1%	-10% to -5%	11.1%
-\$5 to \$0	37.8%	-5% to -0%	0.3%
\$0 to \$2.50	51.3%	0% to 5%	0.6%
\$2.50 to \$5	5.6%	5% to 10%	50.0%
\$5 to \$10	2.2%	10% to 15%	0.0%
\$10 to \$15	0.6%	15% to 20%	0.0%
> \$15	1.7%	>20%	10.8%

APPENDIX A
Rate Advisory Committee Roster

**2018 Salt Lake City Water, Sewer, and Stormwater Rate Study
Rate Advisory Committee Roster**

Committee Member	Organization	Email
City and County		
Lehua Weaver	Salt Lake City Council	lehua.weaver@slcgov.com
Jen Seelig	Salt Lake Mayor's Office	jennifer.seelig@slcgov.com
Nate Salazar	Salt Lake Mayor's Office (alternate)	nate.salazar@slcgov.com
Melissa Jensen	Salt Lake City HAND	melissa.jensen@slcgov.com
Kristin Riker	Salt Lake City Department of Public Services (golf, parks, facilities)	Kristin.riker@slcgov.com
Debbie Lyons	Salt Lake City Sustainability Department	debbie.lyons@slcgov.com
Peter Makowski	Salt Lake City Economic Development Department	Peter.makowski@slcgov.com
Karen Wiley	Salt Lake County	KWiley@slco.org
Wayne Johnson	Salt Lake County	WJohnson@slco.org
Kent Moore	PUAC	kentwmoore@gmail.com
Ted Wilson	PUAC	tedwilson.sl@gmail.com
Ratepayers		
Camille Cook	City Council District 1	Cambam85@gmail.com
David Troester	City Council District 2	davidbtroester@yahoo.com
Don Butterfield	City Council District 3	donaldbutterfield@gmail.com
Jen Colby	City Council District 4	blackplum102@gmail.com; jen.colby@utah.gov
Ralph Chipman	City Council District 5	rchipmancpa@yahoo.com
Joan Ogden	City Council District 6	jpogden@xmission.com
Bill Murray	City Council District 7	mmrcon@aol.com
Greg Libecchi	Salt Lake City School District	Greg.Libecchi@slcschools.org
Yousef Abouzelof	City Creek	abouzelofy@utpma.com
Dean Barney	LDS Church	BarneyDA@pripd.com
Cory Higgins	University of Utah	cory.higgins@fm.utah.edu
Brad Shafer	Industrial	brad.c.shafer@andeavor.com
Mike Ferro	Commercial Developer	ferro@iproperties.com
Jarom Matsuda	Dairy	jarom.matsuda@whitewave.com
Jennifer Godfrey	Low income advocacy group	jennifer.godfrey@utahca.org
Camille Winnie	Major SLC Business	camille@downtownslc.org
Jeff Silvestrini	Millcreek City	jsilvestrini@millcreek.utah.gov
Community and Interest Groups		
Mike Wilson	Metropolitan Water District of Salt Lake & Sandy	wilson@mwdsls.org
Nick Schou	Utah Rivers Council	Nick@utahrivers.org
Amelia Nuding	Western Resource Advocates	amelia.nuding@westernresources.org
Carole Stone Straughn	Utah League of Women Voters	carolefs222@gmail.com
Jesse Dean	Downtown Alliance	jesse@downtownslc.org
Salt Lake City Department of Public Utilities		
Laura Briefer	Director	Laura.Briefer@slcgov.com
Jesse Stewart	Deputy Director	Jesse.Stewart@slcgov.com
Brad Stewart	Development Engineer	Brad.stewart@slcgov.com
Kurt Spjute	Chief Financial Officer	Kurt.Spjute@slcgov.com
Mark Christensen	Finance Manager	Mark.Christensen@slcgov.com
Stephanie Duer	Conservation Coordinator	stephanie.duer@slcgov.com
Kristeen Schumacher	Capital Projects Engineer	Kristeen.Schumacher@slcgov.com
Carly Castle	Special Projects Manager	Carly.Castle@slcgov.com
Holly Mullen	Communications	holly.mullen@slcgov.com
Consulting Project Team		
Rick Giardina	Raftelis Financial Consultants	rgiardina@raftelis.com
Todd Cristiano	Raftelis Financial Consultants	tcristiano@raftelis.com
Erik Jorgensen	Raftelis Financial Consultants	ejorgensen@raftelis.com
Jim Lewis	Raftelis Financial Consultants	jimlewis1834@gmail.com
Siobhan Locke	The Langdon Group	Siobhan.locke@langdongroupinc.com

APPENDIX B
RAC Member's Feedback

RE: RAC Comments - Reminder

Jen Colby <jen.colby@utah.edu>

Fri 12/15/2017 4:15 PM

To: Locke, Siobhan <Siobhan.Locke@slcgov.com>;

Hi Siobhan,

Thank you for the reminder. I had hoped to send a few comments earlier in the week but with two big projects due for finals and some other commitments, that obviously didn't happen. Also, I spoke up regularly so many of my thoughts or concerns are probably already recorded.

Here are the few suggestions I would like to make or reiterate:

- A conservation price signal is important and yet only one component as we have learned; some sort of conservation fee that would pay for programming should be considered in the rate structure.
- A must more robust consumer assistance program should be created and funded with a fee, not a voluntary contribution.
- In the next rate review, a fee structure that ties summer use to landscape parcel area (from water mapping data that will be forthcoming) should be evaluated for all customers. Outdoor use is only somewhat related to indoor use and much more heavily tied to landscape area. A "thrifty" water rate tied to landscape area should be set as base, with then increasing costs for more water.
- Winter water usage matters, and reducing base helps reduce peak, especially for larger users. Consider setting the block breaks at lower levels, say 1-8 rather than 1-10 etc.
- CII is too broad of a category and should be subdivided once business types are better documented. Different rates should then be considered for these categories (water, sewer, maybe stormwater). The City should use business licensing forms to record this data and share with Public Utilities.
- We didn't really talk stormwater rates but there is enormous need to reduce runoff and these rates should be examined more closely in the future (structure and actual rates).

I appreciate all of your team's work along with that of staff and RAC members. I look forward to seeing the final outcomes of this process.

Sincerely,

Jen Colby, District 4 Representative

Siobhan Locke

From: Carole Straughn <carolefs222@gmail.com>
Sent: Wednesday, December 13, 2017 6:49 PM
To: Siobhan Locke
Cc: Ann O'Connell; Kathy Biele
Subject: RAC Input from LWVSL

Hello Siobhan,

I was pleased to take part in the 2017 Rate Advisory Committee, representing the League of Women Voters - Salt Lake. I thought the broad representation of many stakeholders, the organized process and the presentation of difficult material was well done. Kudos to Laura Briefer, her staff and the consultants.

While time was short, I believe the process could be improved in at least two ways: more presentations by staff and by more dialogue among stakeholders on the committee. The information given by Water Conservation Manager, Stephanie Duer, illustrates the kind of deep knowledge and unique perspectives staff can bring to the process that we lay people cannot possibly do. Also, I would like to have had a stronger sense of the various interests brought to the table by committee members, and a chance to forge common solutions, perhaps in small group discussions.

Based on water studies and consensus taken by LWVSL, I can confidently state that we support the major priorities selected by the committee: conservation, essential use affordability, and demand management. We also agree with the secondary priorities of rate stability and interclass and intraclass equity.

We will support the fixed tier structure and oppose AWC multiples for the residential class until we have the data on how much water is needed to maintain the City's urban forest. We feel that normal, prudent irrigation of land surrounding homes should fall into Tier Two and that allowing only three times the average winter usage of six ccf would put residential trees at risk, if they needed more like 22-24 ccf. Or we might find that people increased their winter usage to enable themselves to affordably water their trees in summer.

We support the use of cost of service for each class in determining rates, which improves interclass equity, and we support the lowering of rates for the smaller meter sizes, which should help make essential use more affordable.

Obviously, not all problems can be solved by water rate structure alone, but also by changes in the city revenue, budget, legal remedies, public information and public participation. Thus we would like to see resources shifted to conservation efforts such as public education and citations for wanton waste. We would like a system whereby no one would become homeless, because they could not pay their water bill. And we would like to see broader citizen participation on the boards of various water managing entities.

Again, thank you for inviting the Salt Lake League to participate on this year's RAC Committee.

Respectfully,

Carole Stone Straughn
League of Women Voters - Salt Lake
801-664-5897

APPENDIX C
RAC Presentations

Available Online:

<https://drive.google.com/drive/folders/0B7Q2MSZ3UW08R2g3ME5BOWxrQ1E>

A□□ENDI□ B□

WATER □ TILIT □ CO □ T O □
□ ER □ ICE

2023年

2023年1-6月

2023年1-6月

2023年1-6月

资产类别	资产名称	数量	2023年1-6月				Customer Costs	
			原值	净值	折旧	减值	折旧	减值
			元	元	元	元	元	元
Land								
1	土地	1						
2	土地	1						
3	土地	1	100	0	0	0	0	
4	土地	1	100	0	0	0	0	
5	土地	1	100	0	0	0	0	
6	污水处理站	1	222	282	0	0	0	
7	污水处理站	1	222	282	0	0	0	
8	污水处理站	10	222	282	0	0	0	
9	污水处理站	10	222	282	0	0	0	
10	污水处理站	1	222	282	0	0	0	
11	污水处理站	1	222	282	0	0	0	
12	污水处理站	10	100	0	0	0	0	
13	污水处理站	1	222	282	0	0	0	
14	污水处理站	1	222	282	0	0	0	
15	污水处理站	1	222	282	0	0	0	
16	污水处理站	1	222	282	0	0	0	
17	污水处理站	1	222	282	0	0	0	
18	污水处理站	1	222	282	0	0	0	
19	污水处理站	1	100	0	0	0	0	
20	污水处理站	1	222	282	0	0	0	
21	污水处理站	1	222	282	0	0	0	
22	污水处理站	1	222	282	0	0	0	
23	污水处理站	1	222	282	0	0	0	
24	污水处理站	10	222	282	0	0	0	
25	污水处理站	1	100	0	0	0	0	
26	污水处理站	1	100	0	0	0	0	
27	污水处理站	1	100	0	0	0	0	
28	污水处理站	10						
29	污水处理站	1	212	222	262	0	0	
30	污水处理站	1						
31	污水处理站	1						
32	污水处理站	1	100	0	0	0	0	
33	污水处理站	1	100	0	0	0	0	
34	污水处理站	1	222	282	0	0	0	
35	污水处理站	1	212	222	262	0	0	
36	污水处理站	1	0	622	222	0	0	
37	污水处理站	1	0	622	222	0	0	
38	污水处理站	1	2032	2222	2222	0	0	
39	污水处理站	11	2212	2222	1222	222	0	
40	污水处理站	1	212	222	262	0	0	
41	污水处理站	1						
42	污水处理站	1						
43	污水处理站	1						
44	污水处理站	1						
45	污水处理站	1						
46	污水处理站	1	212	222	262	0	0	
47	污水处理站	10						
48	污水处理站	1						
49	污水处理站	1						
50	污水处理站	1						

2020-2021

2020-2021

2020-2021

2020-2021

Code	Description	2020-2021					Customer Costs	
		2020-2021	2020-2021	2020-2021	2020-2021	2020-2021	2020-2021	
		2020-2021	2020-2021	2020-2021	2020-2021	2020-2021	2020-2021	
5101 Water Supply								
1	00100	21000000	21000000	0	0	0	0	
	00000	860000	0	128000	20000	20000	128000	
		21000000	21000000	128000	20000	20000	128000	
5103 Water Power & Pumping								
	00000	0	200000	260000	0	0	0	
	00000	1060000	81000	60000	0	0	0	
6	00000	20000	0	100000	60000	0	0	
		2000000	880000	1000000	60000	0	0	
5105 Water Purification								
8	00600	21000000	21000000	0	0	0	0	
	00000	1000000	260000	210000	0	0	0	
10	00800	1000000	680000	60000	0	0	0	
11	00000	1000000	600000	200000	0	0	0	
12	01000	0	0	0	0	200000	0	
12	01100	2000000	2000000	0	0	0	0	
12	01100	0	0	0	0	0	0	
12	01200	60000	260000	200000	0	0	0	
16	01800	200000	100000	80000	0	0	0	
12	02000	100000	80000	60000	0	0	0	
18		2000000	2600000	2800000	0	2000000	0	
5107 Transmission & Distribution								
12	01000	2000000	2000000	280000	200000	200000	0	
20	01200	2000000	2000000	100000	60000	200000	0	
21	01000	60000	200000	200000	100000	200000	200000	
22	01600	1000000	2000000	160000	200000	60000	1000000	
22	01000	2000000	1000000	1000000	2000000	1000000	0	
22		21000000	20000000	2800000	2000000	2000000	2000000	
5109 Shops & Maintenance								
1	02000	2180000	2100000	200000	20000	200000	200000	
	02100	2000000	1600000	200000	100000	180000	200000	
	02200	2000000	2000000	100000	200000	60000	1000000	
	02300	860000	260000	200000	200000	80000	880000	
	02400	680000	0	0	0	680000	0	
6	02000	680000	200000	110000	260000	200000	1000000	
	02000	2000000	1000000	800000	100000	100000	2000000	
8		2000000	2000000	2800000	2000000	2800000	2000000	
5111 Water Customer Service								
	02600	21000000	0	0	0	0	21000000	
10	02000	1000000	0	0	0	0	1000000	
11	02800	1000000	0	0	0	0	1000000	
12	02000	1000000	0	0	0	0	1000000	
12		20000000	0	0	0	0	20000000	
5113 Water Administration								
12	02100	2000000	2600000	100000	260000	200000	2000000	
12	02000	2000000	1000000	200000	180000	200000	2000000	
16	02000	600000	200000	200000	200000	200000	2000000	
12	02000	680000	100000	80000	100000	200000	2000000	
18	26000	2000000	2000000	600000	200000	2000000	600000	
12		20000000	20000000	2800000	2000000	2000000	20000000	
Other Operating Expenses								
20	20000	2000000	2000000	2000000	2000000	2000000	2000000	
21	20000	2000000	2000000	200000	200000	200000	2000000	
22	20000	0	0	0	0	0	0	
22		20000000	20000000	2000000	2000000	2000000	20000000	

2020

2020 2020 2020 2020 2020 2020

2020 2020 2020 2020 2020 2020

2020 2020 2020 2020 2020 2020

2020	2020	2020	2020	2020	2020
City					
2020 2020 2020 2020	8787787	267712	227722	22868	2817722
2020	12026622	227722	20821	207722	227708
2020 2020	2762822	127188	127782	27722	18816
2020 2020 2020 2020 2020 2020	0	222	1682	0	0
2020 2020	22772222	127722	127722	227722	227722
County					
2020 2020 2020 2020	27722082	27722	28202	267762	221626
2020	277227711	87722	127782	26722	117722
2020 2020	277220	2808	2626	228	2612
2020 2020 2020 2020 2020 2020	0	22	222	0	0
2020 2020	277227722	27722	27722	27722	27722
2020 2020 2020 2020	277227722	127722	127722	127722	2772212

(1) Residential includes single residence, duplex, and triplex.

2021 12 31

2021 12 31 2021 12 31 2021 12 31 2021 12 31 2021 12 31

2021 12 31 2021 12 31 2021 12 31 2021 12 31 2021 12 31

2021 12 31 2021 12 31 2021 12 31 2021 12 31 2021 12 31

	M 2021 12 31				
2021 12 31 2021 12 31	2021 12 31 2021 12 31	2021 12 31 2021 12 31	2021 12 31 2021 12 31	2021 12 31 2021 12 31	2021 12 31 2021 12 31
	?	?	?	?	?
City					
2021 12 31 2021 12 31	2021 12 31	2021 12 31	2021 12 31	2021 12 31	2021 12 31
2021 12 31	2021 12 31	2021 12 31	2021 12 31	2021 12 31	2021 12 31
2021 12 31 2021 12 31	6000	2000	2000	2000	1000
2021 12 31 2021 12 31 2021 12 31 2021 12 31	0000	0000	1000	0000	0000
2021 12 31 2021 12 31	2021 12 31	2021 12 31	2021 12 31	2021 12 31	2021 12 31
County					
2021 12 31 2021 12 31 2021 12 31 2021 12 31	10000	10000	16000	20000	20000
2021 12 31	2000	6000	2000	2000	1000
2021 12 31 2021 12 31	1000	2000	1000	0000	0000
2021 12 31 2021 12 31 2021 12 31 2021 12 31	0000	0000	0000	0000	0000
2021 12 31 2021 12 31 2021 12 31	2021 12 31	2021 12 31	2021 12 31	2021 12 31	2021 12 31
2021 12 31 2021 12 31 2021 12 31 2021 12 31	100000	100000	100000	100000	100000

(1) Residential includes single residence, duplex, and triplex.

2021-2022

2021-2022 2021-2022 2021-2022 2021-2022 2021-2022

2021-2022 2021-2022 2021-2022

2021-2022 2021-2022 2021-2022

	2021-2022	2021-2022	2021-2022	2021-2022	2021-2022	2021-2022
City						
2021-2022	100	100	100	100	100	100
2021	100	100	100	100	100	100
2021-2022	100	100	100	100	100	100
2021-2022 2021-2022	000	100	100	100	000	000
County						
2021-2022	100	100	100	100	100	100
2021	100	100	100	100	100	100
2021-2022	100	100	100	100	100	100
2021-2022 2021-2022	000	100	100	100	000	000

(1) Residential includes single residence, duplex, and triplex.

2021 12 31

2021 12 31 2021 12 31 2021 12 31 2021 12 31 2021 12 31

2021 12 31 2021 12 31 2021 12 31 2021 12 31 2021 12 31

2021 12 31 2021 12 31 2021 12 31 2021 12 31 2021 12 31

	2021 12 31	2021 12 31	2021 12 31	2021 12 31	2021 12 31
City					
2021 12 31 2021 12 31	2021 12 31	2021 12 31	2021 12 31	2021 12 31	2021 12 31
2021 12 31	2021 12 31	2021 12 31	2021 12 31	16212	8212
2021 12 31 2021 12 31	6212	8212	6212	2212	1212
2021 12 31 2021 12 31 2021 12 31 2021 12 31	0212	0212	0212	0212	0212
2021 12 31 2021 12 31	6212	6212	68212	6212	6212
County					
2021 12 31 2021 12 31	1212	1212	20212	20212	2212
2021 12 31	212	212	8212	212	1212
2021 12 31 2021 12 31	1212	212	1212	0212	0212
2021 12 31 2021 12 31 2021 12 31 2021 12 31	0212	0212	0212	0212	0212
2021 12 31 2021 12 31	20212	2212	21212	2212	2212
2021 12 31 2021 12 31 2021 12 31 2021 12 31	100212	100212	100212	100212	100212

(1) Residential includes single residence, duplex, and triplex.

Table 1

2019-2020 Budget Request for Fire Department

2019-2020 Budget Request for Fire Department

2019-2020 Budget Request for Fire Department

2019-2020 Budget Request	2019-2020 Budget Request		2019-2020 Budget Request		2019-2020 Budget Request
	2019-2020 Budget Request	2019-2020 Budget Request	2019-2020 Budget Request	2019-2020 Budget Request	
City					
2019-2020 Budget Request	1,234,567	1,234,567	1,234,567	1,234,567	1,234,567
2019-2020 Budget Request	2,345,678	2,345,678	2,345,678	2,345,678	2,345,678
2019-2020 Budget Request	3,456,789	3,456,789	3,456,789	3,456,789	3,456,789
2019-2020 Budget Request	0	0	0	0	0
2019-2020 Budget Request	7,037,034	7,037,034	7,037,034	7,037,034	7,037,034
County					
2019-2020 Budget Request	6,789,012	6,789,012	6,789,012	6,789,012	6,789,012
2019-2020 Budget Request	7,890,123	7,890,123	7,890,123	7,890,123	7,890,123
2019-2020 Budget Request	8,901,234	8,901,234	8,901,234	8,901,234	8,901,234
2019-2020 Budget Request	0	0	0	0	0
2019-2020 Budget Request	23,580,369	23,580,369	23,580,369	23,580,369	23,580,369
2019-2020 Budget Request	30,617,403	30,617,403	30,617,403	30,617,403	30,617,403

(1) Units of service adjusted for County 1.35 differential. Units of service will increase for County and decrease for City.

(2) Residential includes single residence, duplex, and triplex.

2012

2012

2012

2012

		Member	Member	Member		
City						
City	2012011	201618006	20120118	20102322	20160206	201282121
City	16520320	20120182	2012062	806212	2012020	201206082
City	20162820	1210212	201228	182116	82222	20120660
City	0	201282	20122	0	0	86502
City	20120122	20122122	2012012	20120122	20120122	201210122
County						
County	20161622	201210222	201210222	201221622	201211662	201620622
County	20120108	1200021	201222	122222	20120	20120122
County	20120108	2016588	112022	201682	201228	1222062
County	0	6202	10202	0	0	16211
County	20120122	20120122	20120112	20122222	20120122	201201122
County	20120122	201210221	201210222	20120122	20120122	201201222

(1) Residential includes single residence, duplex, and triplex.

2021

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	2021	2021	2021	2021
City				
2021	2021	2021	2021	2021
2021	2021	2021	2021	2021
2021	2021	2021	2021	2021
2021	2021	2021	2021	2021
2021	2021	2021	2021	2021
County				
2021	2021	2021	2021	2021
2021	2021	2021	2021	2021
2021	2021	2021	2021	2021
2021	2021	2021	2021	2021
2021	2021	2021	2021	2021

(1) Residential includes single residence, duplex, and triplex.

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2020年12月31日 2020年12月31日	2020年12月31日	2020年12月31日	2020年12月31日
\$ Per Equivalent Meter	3.32	4.48	1.35
2020年12月31日 2020年12月31日	2020年12月31日	2020年12月31日	2020年12月31日
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Unit Cost, \$ per Bill	4.75	6.41	1.35
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Unit Cost, \$ Equivalent Meter	0.77	1.04	
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2020年12月31日			20202020

Table B-22
Salt Lake Department of Public Utilities
2018 Water Rate Study
Development of County Differential

Description	Cash Basis			City	County
	Operating	Capital	Total		
				67.8%	32.2%
Operation and Maintenance Expense					
Metropolitan Water Assessment	7,021,892		7,021,892	4,758,397	2,263,495
Metropolitan Water Purchases	16,150,108		16,150,108	10,944,148	5,205,960
Other Operating	36,810,911		36,810,911	24,944,975	11,865,936
Debt Service		1,805,572	1,805,572	1,223,549	582,023
Capital					
Capital Outlay		1,915,000	1,915,000	1,297,703	617,297
Watershed Purchases		1,500,000	1,500,000	1,016,477	483,523
Other Capital Improvements		10,006,500	10,006,500	6,780,921	3,225,579
Total Revenue Requirement	59,982,911	15,227,072	75,209,983	50,966,170	24,243,813
Less: Revenue Req. Adjustments					
Bond Proceeds			0	0	0
Impact Fees		(500,000)	(500,000)	(338,826)	(161,174)
Other Contributions		(1,255,000)	(1,255,000)	(850,453)	(404,547)
Change in Reserve		3,039,453	3,039,453	2,059,690	979,763
Other Income	(2,858,710)		(2,858,710)	(1,937,210)	(921,500)
Interest Income	(346,380)		(346,380)	(234,725)	(111,655)
Total Revenue Requirement Adjustments	(3,205,090)	1,284,453	(1,920,637)	(1,301,523)	(619,114)
Net Revenue Requirement	56,777,821	16,511,525	73,289,346	49,664,647	23,624,699
FY2017 Consumption				23,715,492	11,281,090
Unit Cost, \$ per ccf				2.09	2.09

Description	Utility Basis			City	County
	Operating	Capital	Total		
					32.2%
Operation and Maintenance Expense					
Metropolitan Water Assessment			7,021,892		2,263,495
Metropolitan Water Purchases			16,150,108		5,205,960
Other Operating			36,810,911		11,865,936
Depreciation Expense			8,342,288		2,689,123
Metropolitan Return on Rate Base					3,835,954
Return on Rate Base			12,105,650		3,837,090
Total Revenue Requirement			80,430,849		29,697,559
Less: Revenue Req. Adjustments					
Bond Proceeds					0
Impact Fees					0
Other Contributions					0
Change in Reserve					0
Other Income			(2,858,710)		(921,500)
Interest Income			(346,380)		(111,655)
Total Revenue Requirement Adjustments			(3,205,090)		(1,033,155)
Net Revenue Requirement			77,225,759		28,664,403
FY2018 Consumption					11,281,090
Utility Basis Unit Cost, \$ per ccf					2.54

	Total	County	City
Total Cash Basis Revenue Requirement	\$73,289,346		
Less: County Utility Basis Revenue Requirement		28,664,403	

Net City Revenue Requirement		44,624,943
Consumption, 2019 projections	11,281,090	23,715,492
Net City Unit Cost, \$ per ccf	2.54	1.88
Multiplier		1.35

Weighted Average Cost of Capital	Weight	%	%	WACC
Equity1	301,242,524	96.9%	6.3%	6.1%
Debt	9,760,261	3.1%	3.2%	0.1%
Total	311,002,785	0.0%	0.0%	6.2%

Weighted Average Cost of Capital	Weight	%	%	WACC
Equity2	1	50.0%	6.3%	3.2%
Debt	1	50.0%	3.2%	1.6%
Total	2	0.0%	0.0%	4.7%

Rate of Return Average **5.5%**

1. Cost of equity estimated using build-up method from 2016 Duff and Phelps Valuation Handbook, Guide to Cost of Capital
2. Assumes a 50/50 cost of equity and cost of debt which is the typical industry weighting.

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2020-2021	2020-2021	2021-2022
	2020-2021	
1	2020-2021 2020-2021 2020-2021	21820000
2	2020-2021	6028000
3	2020-2021 2020-2021	8626000
4	2020-2021 2020-2021	211026000
	2020-2021	
5	M 2020-2021 2020-2021 2020-2021	212820000
6	2020-2021	22200000
7	2020-2021	22820000
8	2020-2021 2020-2021 2020-2021	26262000
9	2020-2021 2020-2021	222228200
10	2020-2021 2020-2021 2020-2021	222222000

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10100	2280001	2280001	000	000	2280001	000
10200	1222222	20000	000	000	622222	000
10600	1212220	20000	000	000	622222	000
10800	822206	20000	000	000	622222	000
11000	222200	20000	000	000	622222	000
11200	222268	20000	000	000	622222	000
11100	222266	000	622222	262222	000	000
11200	2222082	222222	222222	222222	000	000
11200	2012022	222222	222222	222222	000	000
12200	222228	222222	222222	222222	000	000
12200	2012000	222222	222222	222222	000	000
12200	822226	000	622222	262222	000	000
11200	1222282				100000	000
11200	122220	000	000	000	000	100000
11200	222212	000	000	000	000	100000
222222	2222000	000	000	000	000	100000
222222	268220	000	000	000	000	100000
222222	0	000	000	000	100000	000
222222	0	000	000	000	000	100000
222222	0	000	000	000	000	100000

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10100	2280001	2281222	20	20	2201222	20
10200	1222222	2022060	0	0	2222222	0
10600	1212220	2222212	0	0	2282222	0
10800	822206	2222222	0	0	2222222	0
11000	222200	102228	0	0	2222822	0
11200	222268	162282	0	0	2222082	0
11100	222266	0	222261	122260	0	0
11200	2222082	1222202	12220306	228221	0	0
11200	2012022	2282212	2822022	218280	0	0
12200	222228	1222220	12226221	2822622	0	0
12200	2012000	662222	822222	282222	0	0
12200	822226	0	2222866	228220	0	0
11200	1222282	0	0	0	1222282	0
11200	122220	0	0	0	0	1222220
11200	222212	0	0	0	0	222212
222222	2222000	0	0	0	0	2222000
222222	268220	0	0	0	0	268220

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222222	2222222	2222222	2222222	2222222	2222222	2222222
222222	2222222	2222222	2222222	2222222	2222222	2222222

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2020/2021

2020/2021 Financial Statement

2020/2021 Budget

2020/2021 Financial Statement

	2020/2021	2020/2021	2020/2021	2020/2021	2020/2021	2020/2021
2020/2021 Financial Statement						
2020/2021 Financial Statement	1000000	2838	2162	1777	2177	000
2020/2021 Financial Statement	200000	2838	2162	1777	2177	000
2020/2021 Financial Statement	2000	000	000	000	10000	000
2020/2021 Financial Statement	10000	000	000	000	10000	000
2020/2021 Financial Statement	200000	000	000	000	10000	000
2020/2021 Financial Statement	200000	000	000	000	10000	000
2020/2021 Financial Statement	120000	000	000	000	10000	000
2020/2021 Financial Statement	200000	000	000	000	10000	000
2020/2021 Financial Statement	100000	000	000	000	10000	000
2020/2021 Financial Statement	200000	000	000	000	000	10000
2020/2021 Financial Statement	120000	000	000	000	000	10000
2020/2021 Financial Statement	21002000					
2020/2021 Budget						
2020/2021 Budget	20	20	20	20	20	20
2020/2021 Budget	21000000	202122	202112	16280	22222	0
2020/2021 Budget	200000	202122	12211	11002	12212	0
2020/2021 Budget	20	0	0	0	0	0
2020/2021 Budget	22000	0	0	0	2000	0
2020/2021 Budget	20	0	0	0	0	0
2020/2021 Budget	210000	0	0	0	10000	0
2020/2021 Budget	220000	0	0	0	20000	0
2020/2021 Budget	220000	0	0	0	20000	0
2020/2021 Budget	20	0	0	0	0	0
2020/2021 Budget	212000	0	0	0	12000	0
2020/2021 Budget	222000	0	0	0	22000	0
2020/2021 Budget	20	0	0	0	0	0
2020/2021 Budget	210000	0	0	0	10000	0
2020/2021 Budget	21222222	222222	222222	212222	222222	22
2020/2021 Budget	283822	222222	222222	122222	222222	22
2020/2021 Budget	0	0	0	0	0	0
2020/2021 Budget	21222222	222222	222222	212222	222222	22
2020/2021 Budget	21222222	222222	222222	212222	222222	22
2020/2021 Budget	21222222	222222	222222	212222	222222	22

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2012-2013	2012	2013	2013	2012-2013	2012
2012-2013	2012-2013	2012-2013	2012-2013	2012-2013	2012-2013
2012-2013	2012-2013	2012-2013	2012-2013	2012-2013	2012-2013
2012-2013	2012-2013	2012-2013	2012-2013	2012-2013	2012-2013
2012-2013	2012-2013	2012-2013	2012-2013	2012-2013	2012-2013

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2012-2013	2012	2013	2013	2012-2013	2012
2012-2013	2012-2013	2012-2013	2012-2013	2012-2013	2012-2013
2012-2013	2012-2013	2012-2013	2012-2013	2012-2013	2012-2013
2012-2013	2012-2013	2012-2013	2012-2013	2012-2013	2012-2013
2012-2013	2012-2013	2012-2013	2012-2013	2012-2013	2012-2013
2012-2013	2012-2013	2012-2013	2012-2013	2012-2013	2012-2013
2012-2013	2012-2013	2012-2013	2012-2013	2012-2013	2012-2013

1. Minimum bill revenue is equal to the system rate (\$ per ccf) x 2 ccf x number of projected minimum bills
 Minimum bills recover more the billing/admin costs. Revenue in excess of the billing and admin costs
 is reallocated as a credit to the flow cost component.

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 2010000

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)=(j)/(a)	(p)=(k)/(a)	(q)=(l)/(b)	(r)=(m)/(e)
	1000 ccf					1000 lbs					\$1,000							
	1000 ccf	1000 ccf	1000 lbs	1000 lbs	1000 bills	1000 ccf	1000 lbs	1000 lbs	1000 bills	1000 ccf	1000 lbs	1000 lbs	1000 bills	1000	\$ per ccf	\$ per ccf	\$ per ccf	\$ per bill
1	850	21	821	222	161	81	26	212	200	1666	286	222	100	28016	122	068	022	682
2	220	122	1202	1210	1	222	1022	1252	022	1222	1022	1221	2	2202	122	121	120	682
3	222	21	1202	862	0	222	252	652	022	821	222	82	1	1202	122	122	120	682
4	212	61	1212	622	0	202	222	222	022	602	812	120	1	12260	122	252	222	682
5	22	1	222	22	0	022	1252	022	002	22	160	2	0	222	122	222	221	682
6	60	0	222	22	0	022	222	022	002	112	221	0	0	222	122	222	252	682
7	80	0	2202	206	0	022	1222	1252	002	122	1222	1	0	1222	Special Rate			
	10002	10002	10000	10012	100	10000	10000	10000	10000	20001	20000	20001	20011	20000				

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		2020年12月31日	2020年12月31日	2020年12月31日	2020年12月31日
2020年12月31日	2020年12月31日	2020年12月31日	2020年12月31日	2020年12月31日	2020年12月31日
1	1	2282122688	22226202121	22222221222	(1.8%)
1	2	282222	812286	222222	4.0%
1	2	212222	222221	222222	6.5%
1	2	122222	122208	122222	10.8%
2	1	122262222	122282220	22228222	(0.7%)
2	2	222222306	222262222	22228222	1.6%
2	2	0	0	0	#DIV/0!
2	2	22222222	22222221	1222228	5.9%
2	1	22222228	22222281	22222222	(3.0%)
2	2	122222216	122202228	22222222	(0.9%)
2	2	22222222	22222222	222222	1.2%
2	2	2222221	22222222	1	0.0%
2	1	12222288	12222222	22222222	(4.8%)
2	2	122222202	1222622282	22222222	(2.9%)
2	2	22222222	22222222	222222	(0.6%)
2	2	22222208	22222222	222222	1.0%
2	1	22222282	222222228	22222222	(5.9%)
2	2	22222221	22222222	22222222	(4.9%)
2	2	62222222	62222222	222222	(0.3%)
2	2	22222222	22222222	222222	1.1%
6	1	22222222	22222222	22222222	(6.9%)
6	2	22222288	68222222	22222222	(5.3%)
6	2	22222218	22222222	222222	(1.8%)
2	1	22222222	22222222	12222222	50.5%
2	2	22222222	22222222	12222222	50.8%
2	2	22222222	62222222	22222222	51.3%
2	2	22222288	22222222	22222222	49.0%
2	2	822222	12222222	22222222	51.1%
2020年12月31日		222222222222	222222222222	22222222	222222

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日期	12月		日期	日期
	日期	日期		
1	11月	6日	12月	1日
2	11月	6日	12月	1日
3	11月	6日	12月	1日
4	11月	6日	12月	1日
5	11月	6日	12月	1日
6	11月	6日	12月	1日

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日期	12月		日期	日期
	日期	日期		
1	11月	1日	12月	1日
2	11月	1日	12月	1日
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4	11月	1日	12月	1日
5	11月	1日	12月	1日
6	11月	1日	12月	1日

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日期	12月		日期	日期	日期	日期
	日期	日期				
1	11月	11日	12月	1日	1日	1日
2	11月	11日	12月	1日	1日	1日
3	11月	11日	12月	1日	1日	1日
4	11月	11日	12月	1日	1日	1日
5	11月	11日	12月	1日	1日	1日
6	11月	11日	12月	1日	1日	1日

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日期	12月		日期	日期	日期	日期
	日期	日期				
1	11月	11日	12月	1日	1日	1日
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3	11月	11日	12月	1日	1日	1日
4	11月	11日	12月	1日	1日	1日
5	11月	11日	12月	1日	1日	1日
6	11月	11日	12月	1日	1日	1日

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日期	12月		日期	日期	日期	日期	日期
	日期	日期					
1	11月	11日	12月	1日	1日	1日	1日
2	11月	11日	12月	1日	1日	1日	1日
3	11月	11日	12月	1日	1日	1日	1日
4	11月	11日	12月	1日	1日	1日	1日
5	11月	11日	12月	1日	1日	1日	1日
6	11月	11日	12月	1日	1日	1日	1日

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日期	12月		日期	日期
	日期	日期		
1	11月	11日	12月	1日
2	11月	11日	12月	1日
3	11月	11日	12月	1日

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2020 12 20	2020 12 20	M 2020 12 20	2020 12 20	2020 12 20
0	211	268	2020 12	2020 12
1	11	68	2020 12	2020 12
2	11	68	2020 12	2020 12
2	11	2	2020 12	2020 12
2	120	12	0	2020 12
2	12	12	0	2020 12
6	180	1866	0	2020 12
2	21	21	0	2020 12
8	220	2288	0	2020 12
2	22	22	0	2020 12
10	200	210	0	2020 12
210				

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**AWC BILLING
TECHNICAL
MEMORANDM**

TECHNICAL MEMORANDUM

To: Kurt Spjute
Chief Financial Officer
Salt Lake City Department of Public Utilities

From: Todd Cristiano, Manager
Raftelis

Date: May 3, 2018

Re: Average winter consumption for water and sewer billing

Introduction

Salt Lake City Department of Public Utilities (Department) requested a review and comparison of average winter consumption (AWC)-based rate structures for water and sewer utilities. Raftelis identified five utilities for comparison.

The Department's current water AWC structure applies to commercial, industrial, institutional (CII) customers. The sewer AWC structure applies to all customers. The Department's current AWC policies are summarized below.

-) AWC is the average of the water use for the months November through March.
-) The AWC structure applies to CII water customers
-) Water customers with no previous AWC or without a full five months of water usage for the winter period are assigned the CII AWC based on meter size. The AWC is adjusted after five months of winter billing data is available.
-) Sewer customers with no AWC are charged for all billable volume until their 5-month winter period can be established.
-) A customer's water AWC is calculated using a 3-year rolling average of the winter period.
-) A customer's sewer AWC is recalculated each year.

Analysis

Rate structures are more successful when they are supported by specific goals and objectives that incorporate utility and the rate-payer community values. Overarching goals such as defensibility and revenue sufficiency ensure that other pricing objectives can be supported. Other goals such as a rate structure that is easy to understand and can be easily administered are also critical.

During the 2018 rate study process, the Rate Advisory Committee (RAC) identified pricing objectives that best aligned with meeting community goals. The ranked objectives included: conservation, essential use affordability, demand management, rate stability, interclass equity, and intraclass equity. The committee used those objectives to provide recommendations on water and sewer rate structure alternatives to Department staff and the Public Utilities Advisory Committee (PUAC). Although administrative ease and rate structure understandability were not specifically identified, the RAC retained the basic components of the water and sewer structures to avoid customer confusion.

The Department's current water and sewer AWC calculation and application varies between the two utilities. As noted above, a new customer without a historical AWC is assigned the meter size class average for water and is charged for all billable water volume for sewer. As a result, a new sewer customer is paying for both indoor and outdoor water use. Outdoor water use does not return directly to the treatment plant. This creates an inequity between new and existing sewer customers.

The Department's water AWC is based on 3-year rolling average. Based on discussions with Staff, this rolling average is to 'smooth' out any variances on a year-to-year basis. Conversely, the sewer AWC is reset each year. While the water AWC rolling average may mitigate spikes in water bills, the sewer AWC and resulting bills could vary year-to-year.

Survey

Raftelis reviewed the policies for the following five utilities that use AWC-based rate structures. The Department's policies are included for comparison. Salt Lake City, City of Thornton, El Paso Water Utilities, and Albuquerque Bernalillo County Water Authority each operate water and sewer utilities and bill for both. Water One and Wichita either do not jointly operate water and sewer utilities, or they use an AWC structure for just one utility. We have included these utilities because of the similarities to the Department's rate structures.

1. Salt Lake City Department of Public Utilities
2. City of Thornton, CO
3. El Paso Public Utilities, TX (EPWU)
4. Albuquerque Bernalillo County Water Utility Authority, NM (ABCWUA)
5. Water One/Johnson County Wastewater, KS
6. Wichita, KS

had consumption. For example, if they connected February 1, the AWC used beginning with the April bill would be based on the average of February and March consumption.

- J) **AWC for new commercial customers.** Assign a default commercial AWC by meter size. If a customer connects within the winter month billing period, recalculate their AWC for April billings based on the average daily water use for the months the account was active during the winter period.
- J) **Residential customer input.** Allow customer service representatives to adjust the default AWC based on customer specific circumstances. In most instances, the AWC will be 6 – 8 ccf. If a customer asks for more based on their specific circumstances, allow the CSR's to use discretion in setting the initial AWC. The AWC will be active at most for 12 months before being recalculated.
- J) **Commercial customer input.** Commercial customers with the same meter sizes may have significantly different demands. Assigning a default AWC will work in some instances but not all. Allow the commercial customer to work with the Department to set an initial AWC prior to the next AWC recalculation.

Excerpts from AWC Codes and Ordinances

(copied directly from ordinances)

City of Thornton, CO

Water and Wastewater: "Average Winter Consumption" or "AWC" means the average of monthly water meter readings for the billing periods representing November through February (the winter period). The AWC is calculated as winter period consumption divided by the winter period number of days multiplied by 30.42. The process of determining the AWC shall be repeated once each year. In the event that an AWC cannot be established or is not representative of actual use, then the class average for the same meter size shall be used until an AWC can be established.

EPWU

Water and Wastewater: Average Winter Consumption (AWC) is the average amount of water used during the most recent December, January, and February billing periods. The commodity charge for new customers will be calculated using the class average AWC by meter size for their respective class until they establish an AWC base.

ABCWUA

Water: For all customers, the average monthly water use for the months of December, January, February and March for each account. If a customer has a new account and does not have a full four months to calculate a winter mean or if a customer's winter mean is zero, then the mean for that customer will be based off the class and size average mean. For those customers that have a winter mean greater than zero but less than 4 and does not fall in the category of a new account then their winter mean used for the Conservation Surcharge will be 4.

Wastewater: Customers With Water Service. The commodity charge for usage during the months of December, January, February and March (winter months) shall be based upon 95% of the metered or estimated volume of water usage during each of these months for each account. The commodity charge for usage during other months shall be based upon 95% of the metered or estimated volume of water usage during that month or shall be based upon 95% of the prior winter months' average,

Wichita, KS

Water Only: Average winter consumption (AWC) shall be defined as the arithmetic mean of monthly consumption computed by adding the metered consumption on bills rendered during the months of December, January, February and March and then dividing by this sum by the number of billings rendered during these same months. Each customer's AWC shall be recalculated in April of each year. Metered consumption charges for the ensuing twelve months shall be computed utilizing the AWC as calculated each April, apportioning usage among the applicable rate blocks as designated below. In those instances where no consumption data exists for the calculation of an AWC for particular customers, the director of public works and utilities shall determine the most appropriate method of establishing average winter consumption for such circumstances. The minimum monthly AWC for any metered service sized one (1) inch or less shall be 6,000 gallons. If a billing period or greater than one month (defined as days of service within twenty eight to thirty one days) is used, the actual or minimum AWC shall be adjusted accordingly on a daily basis.



To: Laura Briefer, Director of Public Utilities
Salt Lake City Department of Public Utilities

From: Rick Giardina, Executive Vice President
Todd Cristiano, Manager

Date: July 31, 2018

Re: County Water Rate Differential

Rate Differential Philosophy

Local government water and wastewater utility service providers often apply a differential or multiplier on user rates to customers served outside their jurisdictional boundaries (outside city rates). This is a customary practice in the rate-setting process and is supported by leading industry organizations such as the American Water Works Association and the Water Environment Federation. For many states, including Utah, state statutes give utilities the legislative authority to set rates including rates for customers outside the jurisdictional boundaries. In addition, states such as Wyoming, Wisconsin, and Florida have statutes defining the criteria for establishing outside city rate differentials.

The primary difference between customers within a utility's jurisdictional boundary (inside city) and outside city is a matter of ownership. Inside city customers are considered owners and outside city customers are non-owners. Non-owners are not responsible for operating the system to regulatory standards, the repayment of debt, or payment of property taxes benefiting the utility. The capital investment and operation and maintenance expenses to serve outside city customers is often greater than the cost to serve city customers, e.g., similar investment but fewer customers per line mile. Finally, non-owners do not have legal standing in the governance of the utility. When a utility agrees to serve outside city customers, they assume several risks. In exchange for those risks, non-owners are required to pay a return on investment on the assets funded by owners to serve non-owners. The return applied to non-owners' rates is typically stated as a differential. Thus, the outside city rates are the product of the inside city rates multiplied by the differential.

For the Salt Lake City Department of Public Utilities (Department), the risk of serving outside city (County) customers includes the legal responsibility for all debt repayments, all insurance risk, and the payment of property taxes by City customers for facilities that benefit all customers. City customers pay property tax to the Metropolitan Water District of Salt Lake and Sandy (MWDSL). The MWDSL was formed in 1935 with the goal of firming water supply and building infrastructure for the benefit of its member cities.

Although the City takes on risk to serve County customers, there are mutual benefits for both the City and County. These benefits include:

-) Economies of scale of operating one integrated system over two smaller systems. Operating larger facilities typically results in lower costs.
-) Avoiding or eliminating redundant facilities to provide the same service as one larger facility. This results in operational and capital savings over time.

-) Consolidated approach to water resource management to ensure efficient use of supply reservoirs, aqueducts, and other facilities to benefit both the City and County customers.

The Department has assessed a differential since the late 1970's to compensate City customers for these risks and investments. This County differential started at 1.5 times (x) City rates and has been as high as 1.63x. The 2018 water rate study affirmed the current County differential of 1.35x City rates.

Utility Basis Rate Setting Methodology

The Department uses the "utility basis" of rate setting to determine the County rate differential. The American Water Works Association, *M1 Manual - Principles of Rates, Fees, and Charges*, 7th edition states:

"...when that utility serves outside of its legal boundaries to nonowner customers, it is often appropriate to develop (or restate) the revenue requirements for the outside retail or wholesale customers on a utility basis, which provides for an appropriate (fair) return to the owners based on the value of the assets devoted to serving the nonowner customer groups. When properly established, the rate of return under the utility-basis approach is considered fair to both the owner (inside) customers and the nonowner (outside) customers. It compensates the owners for the risks incurred in providing services outside its jurisdictional boundaries, while at the same time protecting outside customers from excessive rates and fees."

The utility basis revenue requirement determines the cost to provide service to County customers and includes a return on investment to City customers for undertaking the risk to serve County customers. The formula used to determine utility basis is as follows:

Revenue Requirement = O + Depr + r*RB where:

O = Operating expenses

Depr = Depreciation expense

r = Rate of return on investment

RB = Rate Base where (V-D-C+WC):

V = Gross value of plant in service to serve County customers

D = Accumulated depreciation of plant in service

C = Contributions in aid of construction

WC = Working capital

Operating expenses recover the recurring costs to operate and maintain the system on a continuous basis. Depreciation expense represents the loss in value of an asset to due to age and/or obsolescence. This is a proxy for the cost to reinvest in system facilities. In a similar fashion, the return on investment on plant in service is used to reinvest in system facilities. However, a portion of the return is used to compensate City customers for the risk of serving County customers.