

# Memorandum



CITY OF DALLAS

DATE January 29, 2018

Honorable Members of the Government Performance & Financial Management  
Committee: Jennifer S. Gates (Chair), Scott Griggs (Vice Chair), Sandy Greyson,  
TO Lee M. Kleinman, Philip T. Kingston, Tennell Atkins, Kevin Felder

SUBJECT **Water and Wastewater Retail Cost of Service Rate Study**

On Monday, February 5, 2018, Dallas Water Utilities will brief the Government Performance & Financial Management Committee on the Water and Wastewater Retail Cost of Service Rate Study. I have attached the briefing for your review.

Please let me know if you need additional information.

A handwritten signature in blue ink that reads "M. Elizabeth Reich".

M. Elizabeth Reich  
Chief Financial Officer

Attachment

c: Honorable Mayor and Members of the City Council  
T.C. Broadnax, City Manager  
Larry Casto, City Attorney  
Craig D. Kinton, City Auditor  
Billerae Johnson, City Secretary (Interim)  
Daniel F. Solis, Administrative Judge  
Kimberly Bizer Tolbert, Chief of Staff to the City Manager  
Majed A. Al-Ghafry, Assistant City Manager

Jon Fortune, Assistant City Manager  
Joey Zapata, Assistant City Manager  
Jo M. (Jody) Puckett, Assistant City Manager (Interim)  
Nadia Chandler Hardy, Chief of Community Services  
Raquel Favela, Chief of Economic Development & Neighborhood Services  
Theresa O'Donnell, Chief of Resilience  
Directors and Assistant Directors

# Water and Wastewater Retail Cost of Service Rate Study

**Government Performance  
and Financial Management  
Committee**

**February 5, 2018**

**Terry S. Lowery  
Director (Interim)  
Dallas Water Utilities**

**Rick Giardina, CPA  
Executive Vice President  
Raftelis Financial  
Consultants, Inc.**



## City of Dallas



# Purpose

- Provide background on the comprehensive retail cost of service study and rate model
- Provide results of the study, recommended cost allocations and alternative residential rate structure
- Receive Committee input on recommendations for updated cost of service and rate structure

# Background

- A comprehensive water and wastewater retail cost of service study has not been performed since 2002
- The success of the City of Dallas Water Conservation Program has resulted in changes in water consumption patterns and customer demands
- A new initiative for the 2016 Water Conservation Work Plan included the need for an update to the retail cost of service and rate model including:
  - An evaluation of current cost allocations between customer classes
  - An examination of rate structure, including additional tiers for some or all customer classes



# Cost of Service Study Scope of Work

Perform a comprehensive water and wastewater retail cost of service study to evaluate the following for appropriateness and provide alternatives:

- Allocation of fixed and variable costs (customer charge/volume charge)
- Allocation of costs between retail classes to reflect current system usage
- Existing rate structures including:
  - Number of water rate tiers and current volumetric thresholds
  - Wastewater rate structure, including an overall unit rate for all classes
- Current customer classes to include consolidation or addition of one or more classes

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# Scope of Work, continued

- Calculate impacts to customers and revenue recovery from alternative rate structures to ensure equitable recovery of costs from different customer classes
- Benchmarking as a basis of comparison for selected metrics
- Develop a cost of service and rate model compatible with DWU's existing wholesale cost of service model
- Implement rates in the City's billing system if applicable

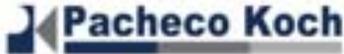
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# Study Conducted by Raftelis Team

- Consulting team hired in 2017 and led by Raftelis Financial Consultants, Inc.



IN ASSOCIATION WITH



- Leaders in the industry



AWWA



WEF



EPA

# Raftelis Financial Consultants, Inc.

*we wrote*  
**THE BOOK**



*with*  
**70** + **UTILITY FINANCIAL/RATE CONSULTANTS,**  
RAFTELIS HAS THE LARGEST PRACTICE IN THE NATION.

# Identifying Rate Study Objectives

The rate structure should account for:

- **Equity:** Recover costs from users in proportion to their use of the system
- **Revenue Stability:** Provide for a steady and predictable stream of revenues
- **Rate Stability:** Minimize adverse rate impacts on and within each customer class
- **Conservation/Demand Management:** Encourage efficient water use; assist in managing system demand

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# Achieving Rate Study Objectives



Update and analyze cost of service for water and wastewater retail services and consider alternative rate structure to address changes in cost of service



Develop new water and wastewater retail cost of service rate model for DWU's future use

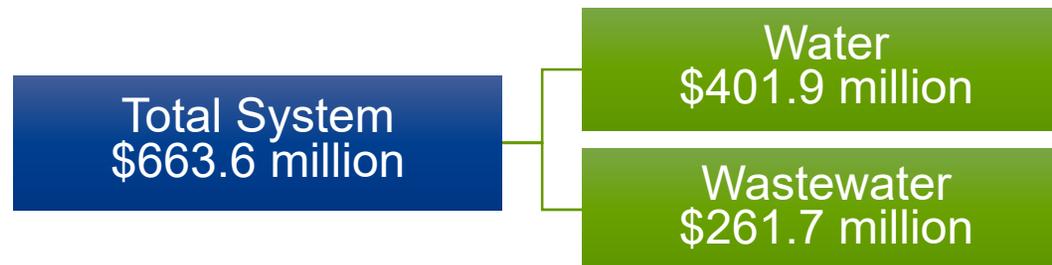
# History of DWU Rate-Setting Practice

- Previous rate model developed in 2002
- Cost of service consistent with AWWA Manual M-1 and industry practices
- Rates reflect system characteristics and DWU objectives
- Annually updated by DWU staff
- Used to determine annual rate increases with COS outputs

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# FY 2019 Revenue Requirements

- Total system revenue requirements
  - Proposed FY 2019 budget
  - Incorporates recent reduction in raw water costs as a result of SRA settlement
  - Results in overall reduction of revenue needs
- Allocation of gross revenue requirements:



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# Net Retail Rate Revenue Requirements

(in millions)

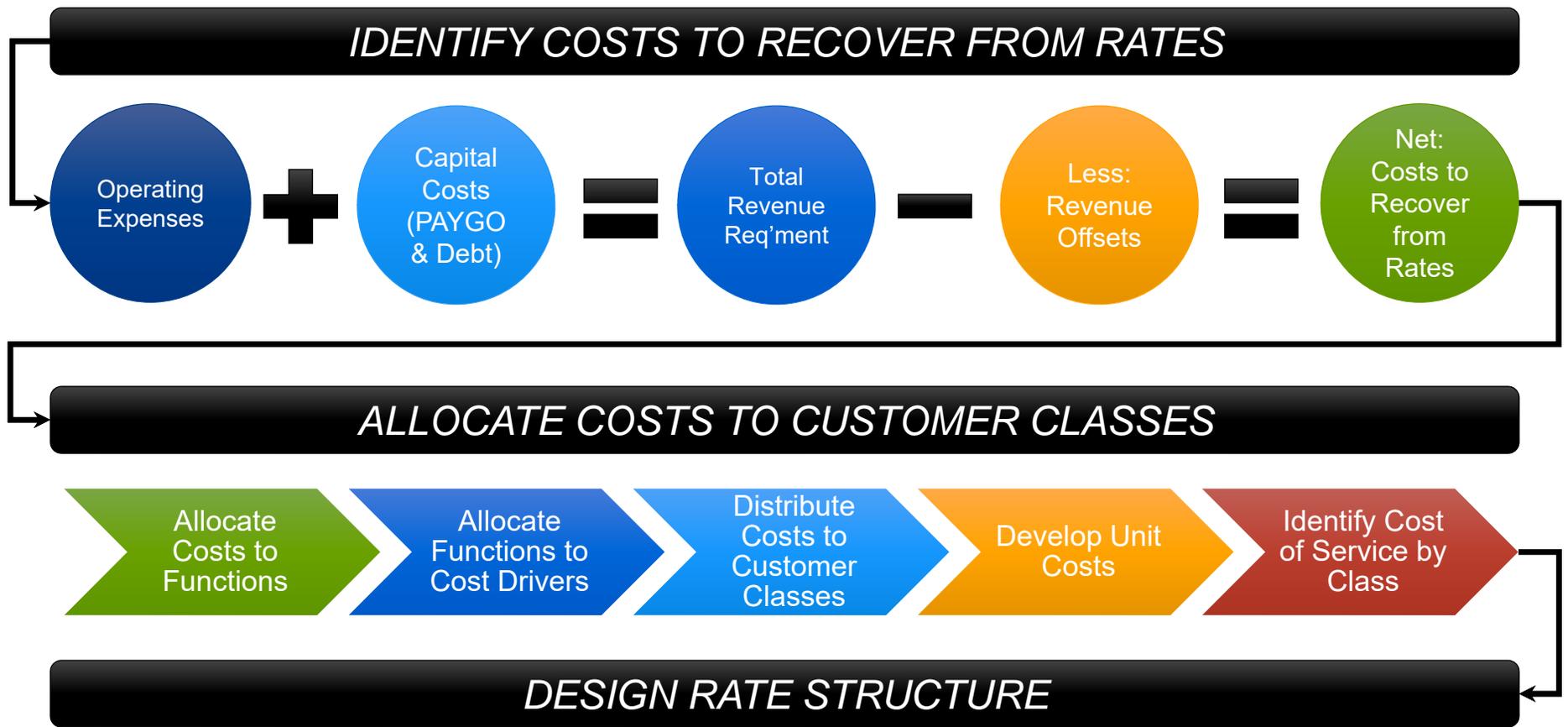
	<u>Water</u>	<u>Wastewater</u>	<u>Combined</u>
<b>Total Gross Revenue Requirements</b>	\$401.9	\$261.7	\$663.6
<b>Less:</b>			
Wholesale	\$92.0	\$12.0	\$104.0
All Other Revenue	12.3	15.3	27.5
<b>Net Retail Rate Revenue Requirements</b>	<b>\$297.6</b>	<b>\$234.4</b>	<b>\$532.0</b>

## Conduct Customer Class Cost of Service Analysis

### By Customer Class

Residential	?	?	?
General Services	?	?	?
Optional General Services	?	?	?
<b>Total of Net Rate Revenue Requirement:</b>	<b>\$297.6</b>	<b>\$234.4</b>	<b>\$532.0</b>

# Cost of Service Process



# Net Retail Rate Revenue Requirements

(in millions)

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## Results of Customer Class Cost of Service Analysis

### By Customer Class

Residential	\$130.9	\$96.7	\$227.6
General Services	150.2	133.3	283.5
Optional General Services	16.5	4.4	20.9
<b>Total of Net Rate Revenue Requirement:</b>	<b>\$297.6</b>	<b>\$234.4</b>	<b>\$532.0</b>

# Revenue Comparison at Existing Rates

<b>By Customer Class</b>	<b><u>Water</u></b>	<b><u>Wastewater</u></b>	<b><u>Combined</u></b>
<b>Residential</b>			
Revenue at Existing Rates (FY 2018)	\$133.6	\$97.0	\$230.6
Net Adjusted Revenue Requirements	130.9	96.7	227.6
<i>Rate Revenue Increase/(Decrease)</i>	-2.0%	-0.3%	-1.3%
<b>General Services</b>			
Revenue at Existing Rates (FY 2018)	\$151.1	\$133.8	\$284.9
Net Adjusted Revenue Requirements	150.2	133.3	283.5
Increase/(Decrease)	-0.6%	-0.4%	-0.5%
<b>Optional General Services</b>			
Revenue at Existing Rates (FY 2018)	\$16.1	\$4.3	\$20.4
Net Adjusted Revenue Requirements	16.5	4.4	20.9
Increase/(Decrease)	2.5%	2.6%	2.5%
<b>Combined Retail Classes</b>			
Revenue at Existing Rates (FY 2018)	\$300.8	\$235.1	\$535.9
Net Adjusted Revenue Requirements	\$297.6	\$234.4	\$532.0
Increase/(Decrease)	-1.0%	-0.3%	-0.7%

# Why Do Some Customers Pay More for Water Service than Others?

Customer classes with higher peaking profiles responsible for larger portion of peak use facilities costs

- Residential
- General Services
- Optional General Services



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# Why Do Some Customers Pay More for Wastewater Service than Others?

- A small subset of customers with higher strength effluent pay a surcharge rate
- For customer classes, inflow and infiltration (I&I) is the primary differentiator
  - $\frac{1}{2}$  of I&I costs allocated by connection (account)
  - $\frac{1}{2}$  of I&I costs allocated by flow



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# Rate Design

- Allows the utility to recover the revenue required from each customer class to achieve specific policy objectives
    - Broad latitude to implement desired rate designs
- 

- Water rate structure
  - Alternatives were considered for the residential class
  - No change in rate structures for other classes
- Wastewater rate structure
  - No change

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# Existing Customer Charges

Customer Charge			
Meter Size	Water	Sewer	Total
5/8"*	\$5.33	\$4.78	\$10.11
3/4"	\$7.40	\$6.55	\$13.95
1"	\$10.78	\$9.45	\$20.23
1 1/2"	\$20.00	\$18.30	\$38.30
2"	\$32.54	\$28.50	\$61.04
3"	\$77.00	\$69.50	\$146.50
4"	\$126.62	\$111.42	\$238.04
6"	\$251.45	\$219.31	\$470.76
8"	\$418.53	\$366.09	\$784.62
10" or larger	\$642.66	\$575.21	\$1,217.87

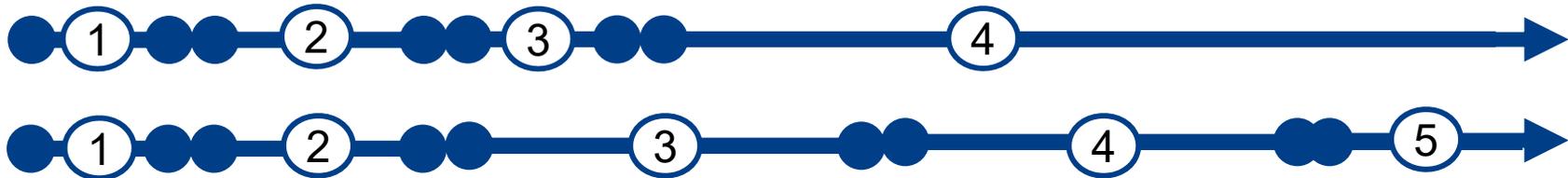
\* 5/8 is the typical residential customer size

# Existing Volumetric Rates

	<b>Water</b>	<b>Sewer</b>
<b>Residential</b>	(User Rate per 1,000 gallons)	
Up to 4,000 gallons	\$1.92	\$5.38
4,001 to 10,000 gallons	\$4.34	\$5.38
10,001 to 15,000 gallons	\$6.20	\$5.38
Above 15,000 gallons	\$8.75	\$5.38
<b>General Services</b>		
Up to 10,000 gallons	\$3.76	\$4.17
Above 10,000 gallons	\$4.08	\$4.17
Above 10,000 gallons & 1.4x annual average monthly usage	\$6.20	\$4.17
<b>Optional General Services</b>		
1st million gallons or less (minimum)	\$2,231.50	\$3.75
Above 1 million gals. (per 1,000 gals.)	\$3.15	\$3.75
Sewer metered separately		\$3.80

# Proposed Residential Rate Structure

## Existing Rate Structure Tiers



## Proposed Rate Structure Tiers

### EXISTING RATE STRUCTURE

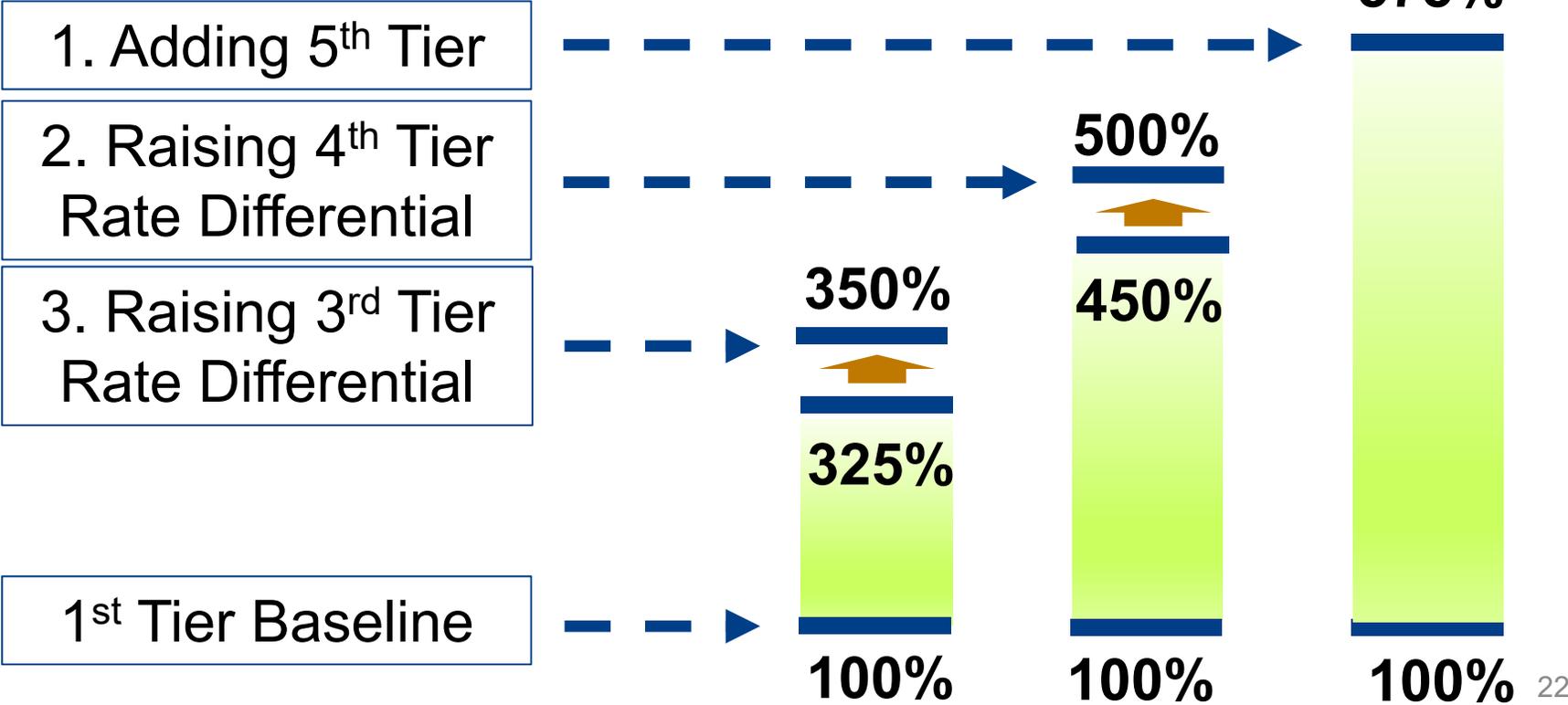
- Tier 1: 0 – 4,000 gallons
- Tier 2: 4,001 – 10,000 gallons
- Tier 3: 10,001 – 15,000 gallons
- Tier 4: Above 15,000 gallons

### PROPOSED RATE STRUCTURE

- Tier 1: 0 – 4,000 gallons
- Tier 2: 4,001 – 10,000 gallons
- Tier 3: 10,001 – 20,000 gallons
- Tier 4: 20,001 – 30,000 gallons
- Tier 5: Above 30,000 gallons

# Tier 5 Rate – 575% of Tier 1

Rate Differentials Used to Calculate Rates

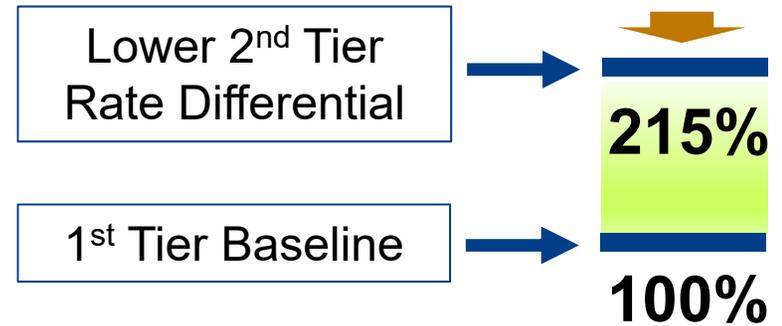


# Areas to Balance Conservation Pricing

## 1. Tier 1 Rate

Tier 1 rate is lower to assist with affordability.

## 2. Tier 2 Rate



## 3. Expanding Tier 3 Volumetrically

### Existing Rate Structure



Tier 3: 10,001 – 15,000 gallons  
to  
Tier 3: 10,001 – 20,000 gallons

### Proposed Rate Structure



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# Proposed Customer Charges – No Change from Existing

Customer Charge			
Meter Size	Water	Sewer	Total
5/8"*	\$5.33	\$4.78	\$10.11
3/4"	\$7.40	\$6.55	\$13.95
1"	\$10.78	\$9.45	\$20.23
1 1/2"	\$20.00	\$18.30	\$38.30
2"	\$32.54	\$28.50	\$61.04
3"	\$77.00	\$69.50	\$146.50
4"	\$126.62	\$111.42	\$238.04
6"	\$251.45	\$219.31	\$470.76
8"	\$418.53	\$366.09	\$784.62
10" or larger	\$642.66	\$575.21	\$1,217.87

\* 5/8 is the typical residential customer size

# Proposed Water Volumetric Rates

		<b>Water Rates</b> (User Rate per 1,000 gallons)			
<b>Residential</b>		<i>Existing</i>	<i>Proposed</i>	<b>Proposed Residential</b>	
Up to 4,000 gallons	\$1.92	\$1.86	Up to 4,000 gallons		
4,001 to 10,000 gallons	\$4.34	\$4.00	4,001 to 10,000 gallons		
10,001 to 15,000 gallons	\$6.20	\$6.50	10,001 to 20,000 gallons		
Above 15,000 gallons	\$8.75	\$9.30	20,001 to 30,000 gallons		
		\$10.70	Above 30,000 gallons		
<b>General Services</b>					
Up to 10,000 gallons	\$3.76	\$3.73			
Above 10,000 gallons	\$4.08	\$4.05			
Above 10,000 gallons & 1.4x annual average monthly usage	\$6.20	\$6.16			
<b>Optional General Services</b>					
1st million gallons or less (minimum)	\$2,231.50	\$2,287.29			
Above 1 million gals. (per 1,000 gals.)	\$3.15	\$3.24			
Sewer metered separately	N/A	N/A			

# Proposed Sewer Volumetric Rates

		<b>Sewer Rates</b> (User Rate per 1,000 gallons)			
<b>Residential</b>		<i>Existing</i>	<i>Proposed</i>	<b>Proposed Residential</b>	
Up to 4,000 gallons	\$5.38	\$5.36	Up to 4,000 gallons		
4,001 to 10,000 gallons	\$5.38	\$5.36	4,001 to 10,000 gallons		
10,001 to 15,000 gallons	\$5.38	\$5.36	10,001 to 20,000 gallons		
Above 15,000 gallons	\$5.38	\$5.36	20,001 to 30,000 gallons		
		\$5.36	Above 30,000 gallons		
<b>General Services</b>					
Up to 10,000 gallons	\$4.17	\$4.15			
Above 10,000 gallons	\$4.17	\$4.15			
Above 10,000 gallons & 1.4x annual average monthly usage	\$4.17	\$4.15			
<b>Optional General Services</b>					
1st million gallons or less (minimum)	\$3.75	\$3.86			
Above 1 million gals. (per 1,000 gals.)	\$3.75	\$3.86			
Sewer Metered Separately	\$3.80	\$3.91			

# Customer Impact Analysis – Residential

Residential Tier	Monthly Usage (gallons)	Monthly Bill (FY 2018 Rates)	Monthly Bill (FY 2019 Rates)	\$ Change	% Change	% of Customers in Tier
0 to 4,000 gallons	2,300	\$26.90	\$26.72	-\$0.18 <sup>a</sup>	-0.7%	36.4%
4,001 to 10,000 gallons	6,400	\$58.87	\$57.70	-\$1.17 <sup>b</sup>	-2.0%	40.4%
10,001 to 20,000 gallons	13,700	\$97.44	\$96.16	-\$1.28 <sup>c</sup>	-1.3%	15.4%
20,001 to 30,000 gallons	23,800	\$182.50	\$172.47	-\$10.03 <sup>d</sup>	-5.5%	4.3%
Above 30,000 gallons	51,800	\$427.50	\$463.39	\$35.89 <sup>e</sup>	8.4%	3.5%

Data based on January 2016 through December 2016 usage

- <sup>a</sup> Average water and sewer use: 2,300 gallons
- <sup>b</sup> Average water use 6,400 gallons and sewer use: 5,700 gallons
- <sup>c</sup> Average water use 13,700 gallons and sewer use: 5,700 gallons
- <sup>d</sup> Average water use 23,800 gallons and sewer use: 5,700 gallons
- <sup>e</sup> Average water use 51,800 gallons and sewer use: 5,700 gallons



# Revenue Stability Considerations

- Measured based on fixed revenue from customer charges
  - With overall revenue reduction, no change in customer charge revenue – remains at current FY 2018 levels of 12.2% of total retail rate revenue
- 10% volumetric elasticity for new Tier 5 volume is included in rate determination

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*thank*  
**YOU**

**CONTACT**

**Rick Giardina, CPA:** 303.305.1136 / [rgiardina@raftelis.com](mailto:rgiardina@raftelis.com)

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# Next Steps

- Council Committee
  - Consideration of alternative residential water rate structure
  - Provide feedback and direction for DWU staff and consulting team
- Consulting team
  - Finalize analysis based on feedback
  - Train DWU staff on new COS Rate Model for future use
- Final recommendations to be included in FY 2018-19 Operating Budget to be effective October 1, 2018

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# Water and Wastewater Retail Cost of Service Rate Study

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