

# Summary of the 2019 Rate Study

(Rate Study prepared by Jacobs with the Assistance  
of Davenport & Company LLC)

## Review of Capacity Charges

(Prepared by Jacobs)

March 5, 2019



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# 1. Summary of the 2019 Rate Study

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# Background of the Utility System



## The Utility System

- The City of Petersburg's, (the "City") financial challenges over the past several years have resulted in pent-up needs/demand for capital funding, renewal and replacement, etc. in the City's Water and Sewer Utility System (the "Utility System").
- The City undertook emergency turnaround efforts in FY2017 and FY 2018, which included:
  - Corrective actions to address the Utility System's billing and collections.
  - Two rate increases that were previously recommended (but not implemented) by Draper Aden & Associates in order to stabilize the Utility System's finances.
- In August 2017, the City undertook a Rate Study (the "2017 Rate Study") based on the following:
  - Recognition that the Utility System provides an essential service that is paid for by the users.
  - The City's General Fund is not in a position to subsidize or support the Utility System.
  - The 2017 Rate Study was an important requirement of the Commonwealth and its financing entity Virginia Resources Authority ("VRA") due to the City's outstanding Utility debt issued through VRA.
  - A long-term planning approach was necessary so that the City could finance Utility capital needs through a combination of debt and equity and operate the Utility System on a sustainable basis.

# Background of the Utility System (cont.)



## The Utility System

- The 2017 Rate Study prepared by CH2M (now known as Jacobs) with the assistance of Davenport & Company LLC) projected 15% rate increases each year from FY2019 through FY2022, which totaled 75% over four years, to fund the City's deferred capital needs and continuing operations.
- The City did not adopt the 15% rate increase for FY2019, however, the City's New Management team continued to overhaul the Utility System's processes, billings and collections to further improve the Utility System's financial position.
  - As a result, collections and revenues are up and Utility Enterprise Fund cash flow is enhanced.
  - The City is poised to realistically consider a multi-year Plan of Finance for its backlog of Utility Enterprise Fund capital needs.
- The New Management's prudent long-term planning approach recognizes that the City's General Fund is not in a position to support the Utility System and undertaking the 2019 Rate Study will:
  - Satisfy VRA's requirements with respect to the City's existing VRA debt.
  - Provides a roadmap for the Utility System's multi-year planning purposes that contemplates a G.O./Revenue Bond issue in the second half of calendar year 2019 (after the FY2018 Audit and FY2020 Budget is completed).
  - Enable rate setting decisions to be based on the most current data and analytics.
  - Ensure that City Council is aware of the rate increases necessary for the Utility System to sustainably provide essential water and sewer services.

# Goals & Objectives of the 2019 Rate Study



The 2019 Rate Study was performed by Jacobs (formerly CH2M) with the assistance of Davenport & Company LLC, as Financial Advisor to the City

## Key Goals/Objectives for the 2019 Rate Study

1. Incorporate the most recent data and information related to improved operations (i.e. billings, collections) and enable the City assess performance of the Utility System.
2. Provide City Council and Management with the most recent data and analytics on which to base rate setting and operating decisions in order to continue to strengthen and maintain the Utility System as a self supporting entity.
3. Refine the appropriate rate structure so that future rate increases and charges are set at a minimum level to maintain long-term financial sustainability and ability to provide an essential service to the citizens of the City.
4. Enable the City to structure the operations so that the users of the Utility system pay for the services provided.
5. Provide the basis for funding mechanism and strategy to finance vital pent up capital needs of the Utility System.
  - Based on the Utility System’s current CIP and assumptions for the next five years, it is anticipated that the City will need to undertake a G.O./Revenue Bond financing for Utility Capital Needs in the second half of calendar year 2019.



# Key Assumptions of the 2019 Rate Study

## Key Assumptions of the 2019 Rate Study include:

- Comprehensive Annual Financial Report for FY2017 and Unaudited financial data for FY2018;
- Customer account and billing data provide by the City for October 2017 through September 2018.
- No growth in customer accounts or usage.
- Estimated \$43.2 Million capital investment in accordance with the schedules and cost estimates as prepared by the City and its consulting engineer, Timmons Group.
- Pro-forma projections prepared by Davenport & Company LLC based on information and assumptions provided by the City.
- 80% Collections rate.
- Expense (Operations and Maintenance) growth rate of 2.5%.
- Increases in the City's Operating Budget for member allocated costs related to capital investments of ARWA (\$3.9 Million) and SCWA (\$44 Million).
- Payment in Lieu of Taxes ("PILOT") to the General Fund budgeted at \$750,000 beginning in FY2020.
- Debt Service Coverage of 1.25 times assuming Utility CIP needs are funded from double-barreled General Obligation Utility Revenue Bonds.
- Rate Smoothing over several years (FY2020 through FY2022).
- Rate increases applied equally to water and sewer rates.



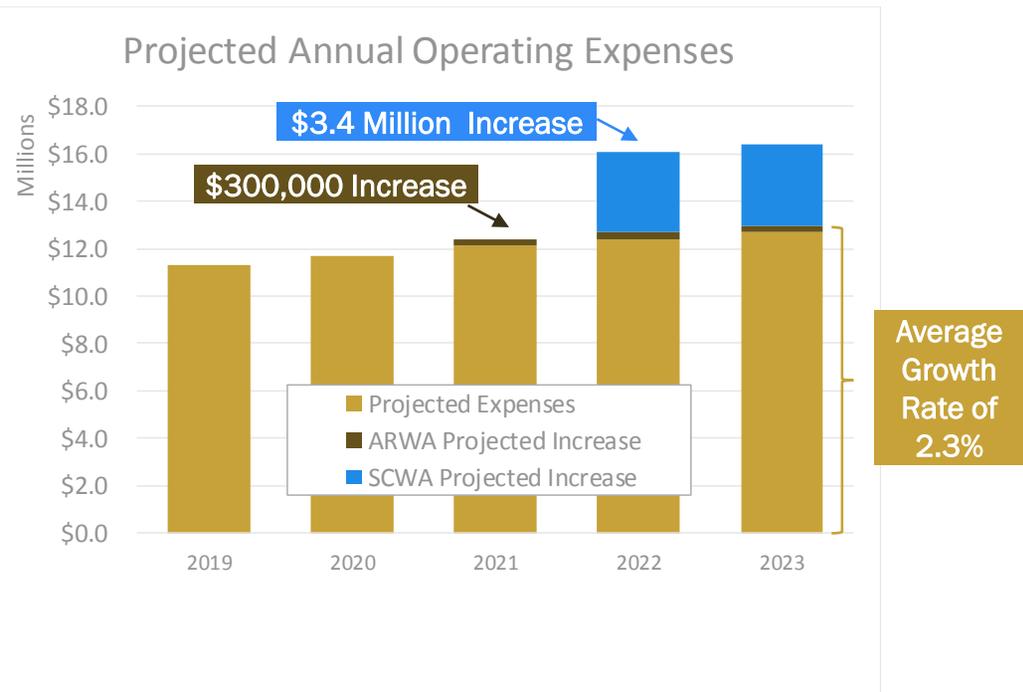
# Operating Expense Assumptions

## Projected Expenses based on FY2019 Budget:

- Projected Expenses (General O&M, PILOT and existing ARWA/SCWA Service Payments) assume average growth of 2.3%.

## Increases due to ARWA and SCWA Capital Investment:

- Independently funded by each Authority with debt service passed through to the City as an increase in Service Payments (i.e. Operating Budget Expense item)
- **ARWA Lake Chesdin Dam Project** City allocated share of \$3.9 Million impacts FY2021 Budget.
  - Adds approximately \$300,000 per year beginning in FY2021.
- **SCWA Wastewater Treatment Plant** City allocated share of \$44 Million impacts FY2022 Budget.
  - Adds approximately \$300,000 per year beginning in FY2022.



# Capital Assumptions

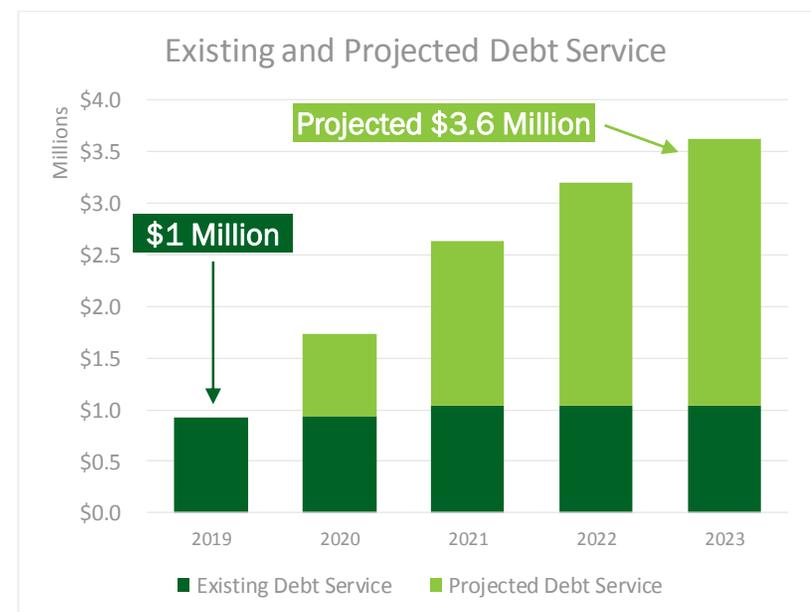
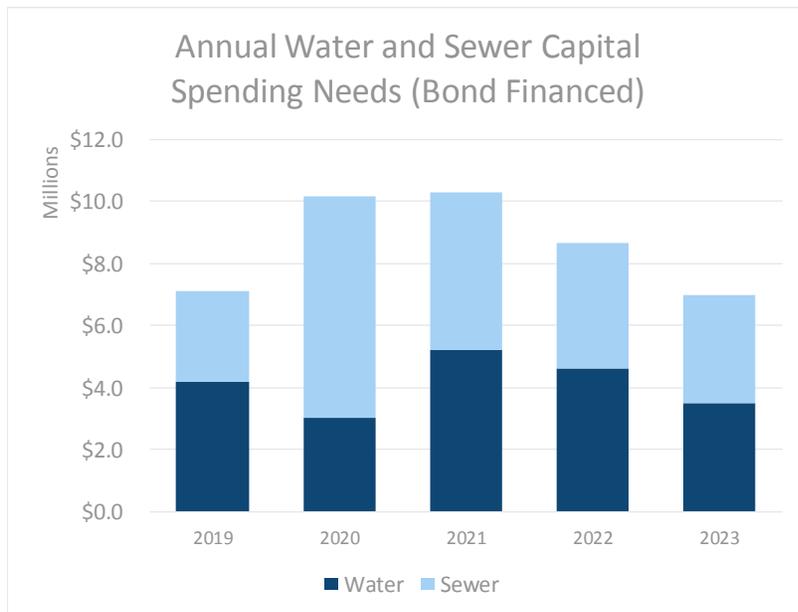


## City Capital Assumptions include:

- Total City needs approximate \$43.2 Million from FY2019 to FY2023.
  - \$20.5 Million Water
  - \$22.7 Million Sewer
- FY 2019 Funded from City Utility Cash and VRA Bond Proceeds.
- Beginning in FY2020 (Calendar year 2019), funded from City issued G.O./Revenue Bonds

## Preliminary Debt Service Projections

- Existing Debt Service approximates \$1 Million per year.
- Projected Peak Debt Service reaches \$3.6 Million per year and assumes:
  - \$43.2 Million of Capital Needs financed with City issued G.O./Revenue Bonds
  - Planning rate of 5.0%
  - Level Debt Service repayment over 25 years.





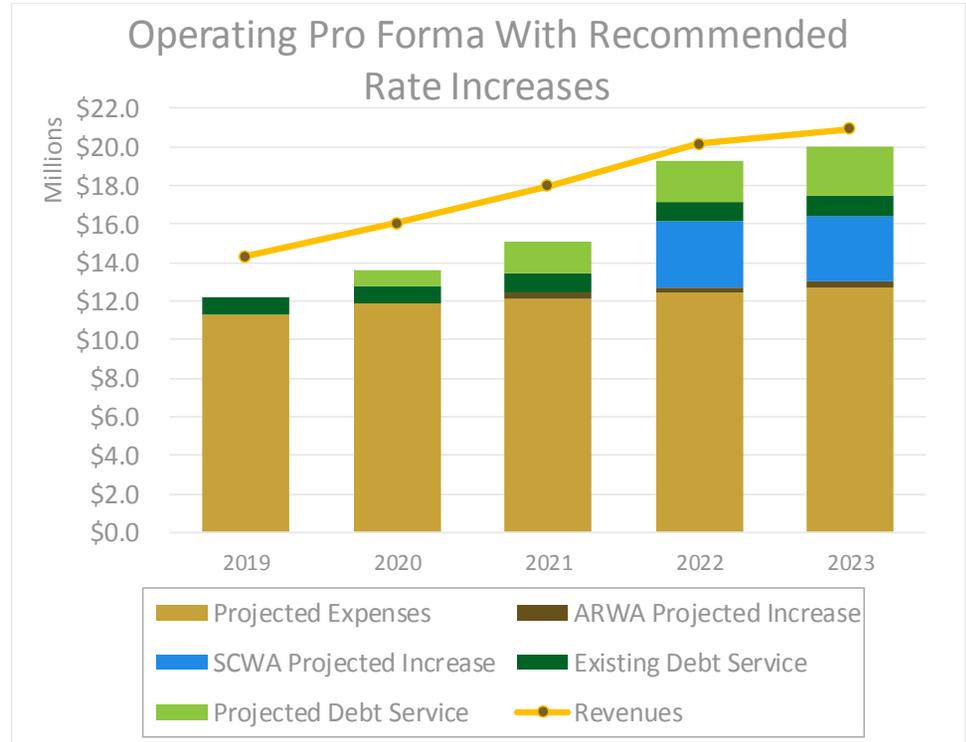
# Operating Pro Forma with Recommended Rate Increases

## Operating Pro Forma:

- Incorporates all projected City Utility System expenses and projected expense increases related to \$3.9 Million ARWA and \$44 Million SCWA capital investments.
- Incorporates all projected debt service related to the City's \$43.2 Million capital needs.
- Minimum debt service Coverage of 1.25x of all debt.

## Recommended Rate Increases

Fiscal Year	2017 Rate Study	2018 Rate Study	
2019	15.00%	NA	
2020	15.00%	12.20%	
2021	15.00%	12.20%	
2022	15.00%	12.20%	
<b>FY 2019-23</b>	<b>60.00%</b>	<b>36.60%</b>	<b>Total Through FY 2023</b>
<b>2023</b>	<b>NA</b>	<b>3.95%</b>	<b>New Projection Year</b>



# Conclusions



## 2019 Rate Study Conclusions

- Over the next five years the City will have approximately \$91.1 Million of capital needs to be addressed:
  - \$47.9 Million will be financed by ARWA and SCWA and the City’s allocable shares will be passed along as a part of the monthly expenses payments per separate agreements.
  - \$43.2 Million will need to be financed by the City and cause debt service payments to increase to a projected level of \$3.6 Million per year.
  
- The Previous 2017 Rate Study recommended rate increases of 15% per year over four years (FY2019 through FY 2022) totaling 75% over years.
  
- Based on the 2019 Rate Study, over the same four years (FY2019 through FY 2022) recommended rate increases total 36.6%.
  - It is important to note that the City did not implement the 15% Rate increase for FY2019 as recommended in the 2017 Rate Study.
  - The recommended rate increases are lower over the same time period due to a combination of factors including improved financial performance (billings and collection), budget discipline, and reduced debt service coverage assumptions due to the use of “double-barreled” G.O./Utility Revenue Bonds.
  - Note: the 2019 Rate Study includes one additional projection year – FY2023 with a recommended 3.95% rate increase.

# Conclusions (cont.)



## Affordability Metrics

- The table below evaluates a typical residential bill for a 5/8 meter and 5,000 gallons usage per month in comparison to the EPA Affordability Threshold in terms of a percentage of Median Household Income (MHI)

FY 2018 Rates					
	A	B = (Ax12)	C	D = B/C	EPA
	Monthly	Annual	Median	Annual	Affordability
	Bill	Bill	Household	Bill as a %	Threshold <sup>(2)</sup>
			Income (MHI) <sup>(1)</sup>	of MHI	
Water Service	\$17.01	\$204.12	\$31,798.00	0.64%	2.50%
Sewer Service	\$44.06	\$528.72	\$31,798.00	1.66%	2.00%
<b>Total</b>	<b>\$61.07</b>	<b>\$732.84</b>	<b>\$31,798.00</b>	<b>2.30%</b>	<b>4.50%</b>

FY 2023 Rates					
	A	B = (Ax12)	C	D = B/C	EPA
	Monthly	Annual	Median	Annual	Affordability
	Bill	Bill	Household	Bill as a %	Threshold <sup>(2)</sup>
			Income (MHI) <sup>(1)</sup>	of MHI	
Water Service	\$24.98	\$299.76	\$31,798.00	0.94%	2.50%
Sewer Service	\$64.70	\$776.40	\$31,798.00	2.44%	2.00%
<b>Total</b>	<b>\$89.68</b>	<b>\$1,076.16</b>	<b>\$31,798.00</b>	<b>3.38%</b>	<b>4.50%</b>

(1) U.S. Bureau of Census. 21901 Income in the past 12 Months (in 2015 inflation adjusted dollars).

(2) ESCM, AWWA, & WEF. 2013 "Affordability Assessment Tool for Federal Water Mandates"

Both Water and Sewer Bills are below their respective EPA Affordability Thresholds.

On a combined basis at 2.30%, the Water and Sewer Bills are below the combined 4.50% Threshold.

The Water Bill remains below the EPA Affordability Threshold for Water, but the Sewer Bill exceeds its Threshold.

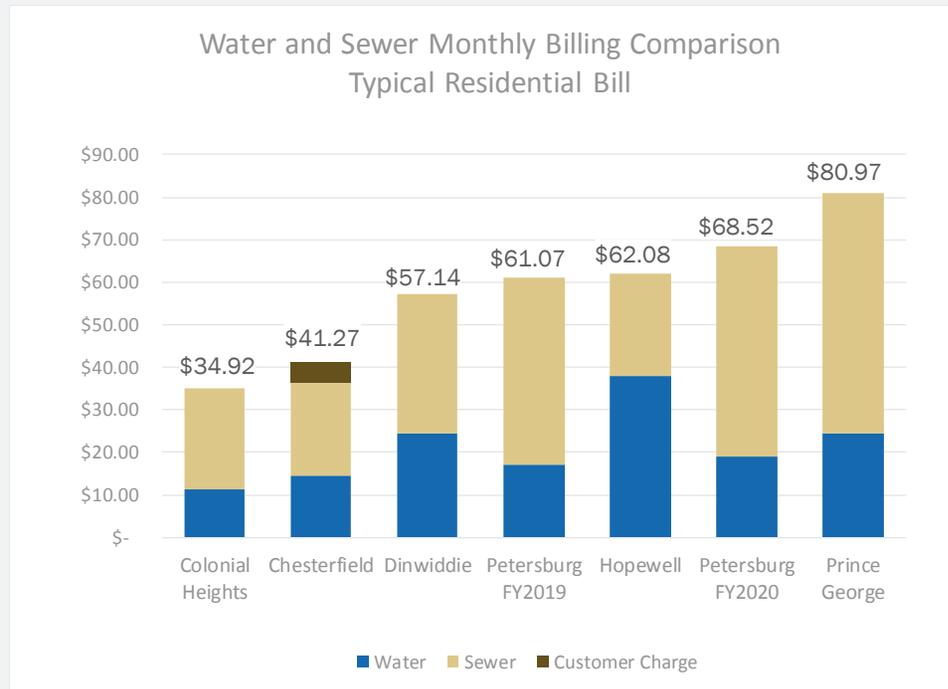
However, on a combined basis at 3.39%, the Water and Sewer Bills are below the combined 4.50% Threshold.

# Conclusions (cont.)



## Rate Comparison – Surrounding Jurisdictions

- The information below shows a typical residential bill for a 5/8 inch meter and 5,000 gallons usage per month for Petersburg based on the City’s FY2019 rates and recommended FY2020 rates as compared to surrounding jurisdictions.



	Colonial Heights	Chesterfield	Dinwiddie	Petersburg FY2019	Hopewell	Petersburg FY2020	Prince George
Water	\$ 11.17	\$ 14.56	\$ 24.32	\$ 17.01	\$ 38.02	\$ 19.09	\$ 24.41
Sewer	\$ 23.76	\$ 21.64	\$ 32.82	\$ 44.06	\$ 24.06	\$ 49.43	\$ 56.56
Customer Charge	\$ -	\$ 5.08	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total</b>	<b>\$ 34.92</b>	<b>\$ 41.27</b>	<b>\$ 57.14</b>	<b>\$ 61.07</b>	<b>\$ 62.08</b>	<b>\$ 68.52</b>	<b>\$ 80.97</b>

Typical Residential Bill is based on a 5/8” meter, 5,000 gallons consumption and most current rate structure for surrounding jurisdictions published on their websites.

# Recommendations



## 2019 Rate Study Recommendations

- Implement the recommended rate increase for FY2020 and the rate plan as identified in the 2019 Rate Study report.
- Continue billing system improvements, improvements in procedures and processes for addressing unpaid bills and meter monitoring.
- Continue to monitor collection rate for future impact on water and sewer rates. Improvement in the collection rate can help improve revenue recognition and improve financial performance.
- Continue corrective actions, including implementation of “Shot-off” policy and more aggressive pursuit of collections.
- Consider implementing some form of customer assistance program, such as bill discounts, assistance with water audits and in-home appliance repairs, if providing such assistance is deemed consistent with City values and goals for the Utility System.
- Revisit the Rate Study on an annual basis in order to take advantage of further improvements in the Utility System’s performance that may help mitigate future rate increases.



## 2. Review of Capacity Charges

(Prepared by Jacobs)

# Capacity Charge Review and Analysis



## Review of Capacity Charges as performed by Jacobs (formerly CH2M).

### Purpose

- To review the City's current Capacity Charges for residences based on the size of the meter (i.e. 5/8 inch or 1 inch) and develop potential alternative Capacity Charge structures that would be revenue neutral (resulting in no revenue increase or decrease to the City).
- Based on Jacobs Review, the following Options have been identified:
  - Option 1: Same Capacity Charge of All Meter Sizes and Types
  - Option 2: Capacity Charges Based on Meter Capacity assuming a 5/8 Inch Base Meter
  - Option 3: Hybrid Approach assuming 5/8, 3/4 and 1 Inch Meters Pay the Same.

# Summary of Options



## Summary of Options: Capacity Charge by Meter Size

Meter Size	Petersburg Monthly Capacity Charge*	Option 1	Option 2	Option 3
5/8 inch	\$8.84	\$15.60	\$8.83	\$12.48
3/4 inch	\$8.84	\$15.60	\$13.25	\$12.48
1 inch	\$22.12	\$15.60	\$22.08	\$12.48
1-1/2 inch	\$38.67	\$15.60	\$44.15	\$37.44
2 inch	\$70.68	\$15.60	\$70.64	\$59.91
3 inch	\$141.34	\$15.60	\$132.45	\$112.32
4 inch	\$220.86	\$15.60	\$220.76	\$187.21
6 inch	\$441.76	\$15.60	\$441.51	\$374.41
8 inch	\$883.52	\$15.60	\$706.42	\$599.06
10 inch	\$1,369.44	\$15.60	\$1,015.48	\$861.15

\* based on Rates and Fees as of July 1, 2017

# Advantages and Disadvantages



Option	Advantages	Disadvantages
<b>1. Capacity Charge is the same for all meter sizes and customer types</b>	Avoids different charges for residential properties with different meter sizes	Does not address cost of installation, readiness to serve, and capacity demand based on meter size. Shifts costs to smaller meter sizes
<b>2. Capacity Charges based on meter capacity factors assuming on 5/8 inch meter</b>	Realigns the capacity charge based on meter capacity.	Does not address different charges for residential properties with different meter sizes, unless City verifies and/or replaces meter greater than 5/8 inches.
<b>3. Hybrid approach assuming 5/8, 3/4, and 1 Inch Meters Pay the Same</b>	Avoids different charges for most of the properties.	Does not address different charges for residential properties with different meter sizes

## Conclusions

- Charging residential customers with a 1 inch meter the same amount as a 5/8 inch meter, but not doing the same for commercial and industrial customers could be considered an instance of rate discrimination that could result in a legal challenge.
  - The City should consult with City Attorney regarding legal ramifications.
  
- Option 2 is recommended as it assigns a Capacity Charge based meter size that is proportionally larger than a 5/8 inch meter. However, this option does not address difference charges for residential properties with different meter sizes.
  - The City may want to consider a project to verify and replace residential meters with meters of an appropriate capacity for residential usage for a cost.
  - If a meter greater than 5/8 inch is required, justification will be available for higher monthly charge.
  
- If the City is not able to verify and replace residential meters with meters of an appropriate capacity for residential use, Option 1 provides the best option to avoid different charges for residential properties with different meter sizes. This is especially true since most customers are residential with 5/8 inch meters.
  - However, this option undercharges meters that have significantly higher capacity.
  
- Option 3 is not recommended because it does not address the inter- and intra-class subsidy and would result in an unfair and inequitable rate structure. For example, there residential properties with meter sizes greater than 1 inch

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