

MEMORANDUM



TO: Mayor and Council
THROUGH: Ken Jones, Deputy City Manager – Chief Financial Officer
FROM: Terry Piekarz, Municipal Utilities Director *TP*
DATE: September 17, 2020
SUBJECT: 2020 Water and Wastewater Rate Study Recommendations

BACKGROUND INFORMATION:

The City of Tempe's Municipal Utilities Department contracted with Stantec Consulting for execution of the 2021-2022 Water and Wastewater Rate Study. The intent of the rate study is to evaluate the cost to provide water and wastewater services, determine revenue needs necessary to maintain the financial stability of the utility and recommend adjustments to water and wastewater charges where appropriate. Such revenue adjustments ensure that inflationary cost increases and other short-term budgetary factors are aligned with financial assumptions, promote the long-term financial viability of the enterprise fund, ensure sufficient financial resources to add, maintain and replace infrastructure and to align costs with City Council's priorities and community values. The City Council Strategic Priorities that guided the rate study are:



Safe & Secure Communities

1.13 Safe Drinking Water:

Achieve or exceed Safe Drinking Water Act compliance regulations for water quality 100 percent of the time.



Strong Community Connections

2.02 Quality of Customer Service:

Achieve satisfaction ratings of "Very Satisfied" or "Satisfied" with the "Quality of Customer Service" greater than or equal to the top 10% of the national benchmark cities as measured in the Community Survey.



Sustainable Growth & Development

4.03 Water Conservation:

Achieve the Council adopted water conservation goal of less than or equal to 110 gallons of residential water use per capita per day (GPCD).



Financial Stability & Vitality

5.01 Level and Quality of Business Services:

Achieve ratings of "Very Satisfied" or "Satisfied" with the "overall level and quality of business services provided by the City of Tempe" greater than or equal to the national benchmark cities as measured in the Business Survey.

In addition to these Strategic Priorities, staff conducted the rate study in accordance with previous guidance as outlined in a Friday Packet that was presented to Council in March 2020.

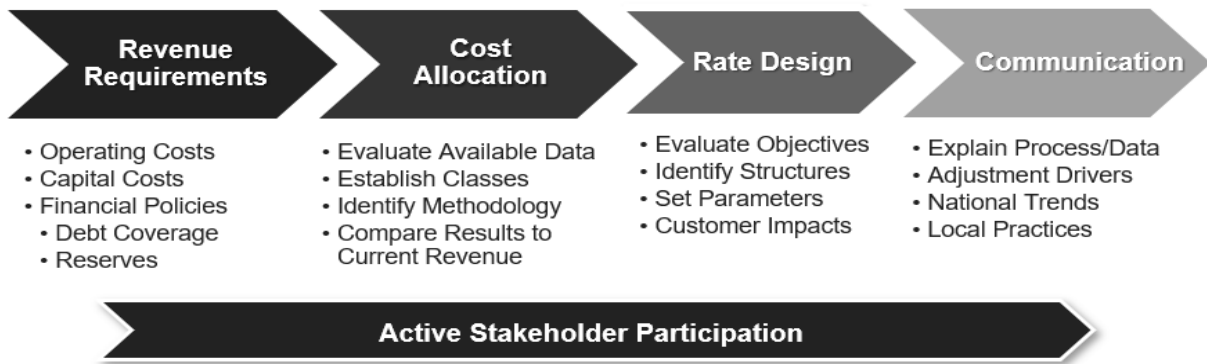
The complete rate study will be available online at www.tempe.gov/utilityratestudy by mid-September.

PROCESS:

The rate study is developed utilizing principles and methodologies established by the American Water Works Association¹, which is industry standard in the United States. Following this methodology, costs are allocated proportionally to each customer class based on the true cost to provide water services to that class. This process of developing rates and charges is Just and Reasonable, per State law, and legally defensible.

In conducting Tempe's water and wastewater rate study, Stantec Consulting followed a four-step process:

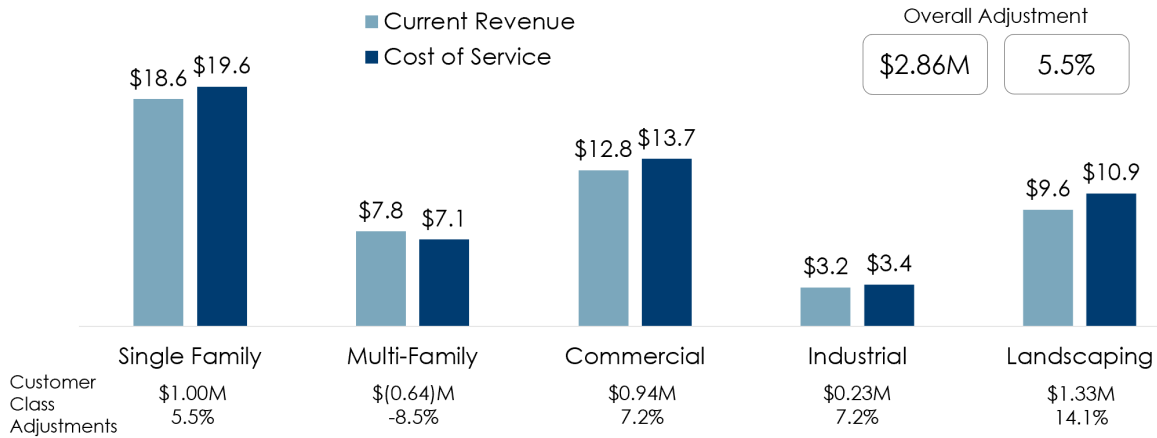
¹ American Water Works Association. (2017). *M1 Principles of Water Rates, Fees and Charges*. (7th ed.)



Step 1: Revenue requirement analysis. The utility’s revenue requirements represent the total amount of money a utility must collect from customers to pay all costs associated with providing the service. This was determined by identifying all current and estimated future operations, maintenance, programmatic and capital costs for a period. This step considers a 10-year period to ensure the long-term sustainability of the revenue fund balance to sufficiently fund services while adhering to the reserve fund balance policy. The rate study identified that the gross revenue requirement to maintain and operate the utility, beginning in fiscal year 2021, is \$59.5 million per year. The net rate revenue requirement for the utility, achieved by miscellaneous offsets and reducing the minimum reserve fund balance, is \$54.8 million. Current rate revenue generates \$51.95 million, meaning that an additional \$2.86 million is needed beginning in fiscal year 2021 to meet the revenue requirements of the utility, an overall 5.5 percent increase over the current rate revenue.

Step 2: Proportional allocation of costs. Cost allocation is the process by which costs are assigned, proportionately, to each customer class based on their respective water demand characteristics. This was achieved by reviewing all customer classifications’ water demand characteristics, including historical customer class water usage and peaking characteristics, along with emerging demographic and conservation trends, to determine the true cost of providing service to each customer class. The precision data provided by the new Advanced Metering Infrastructure (AMI) contributed significantly to this year’s cost allocation process and has provided a clear understanding of customer use and demand characteristics and the true cost of service by customer classification. Prior to AMI, only 12 data points per customer per year were used to conduct this analysis. With AMI, the study was able to analyze 8,760 data points per customer per year. The AMI data clearly and accurately depicted the average day demand (the daily average water usage), the maximum day demand (peak demand days) and the peak hour demand (periods of peak water demand throughout a day that must be met in real time) for each customer class. Of these three types of volume charges, the maximum day and peak hour are especially significant when determining and allocating costs of service because they determine the added capacity that the system must be able to meet at all times, even if they are only one hour of the day or one day of the year. The AMI data was used to determine the added capacity that each customer class places on the system and the cost of the added capacity and service requirements were then calculated and proportionally allocated accordingly.

The chart below summarizes the cost of service analysis compared to current revenue. While the overall system requires an additional 5.5 percent revenue increase, class-specific changes can be higher or lower depending on the current revenue compared to the actual cost of service. Most changes are a direct result of AMI data.



Step 3: Rate design. Rate design is the development of the most appropriate rate structure to satisfy an organization’s strategic and operational goals.

Water service rates are made up of two components, a monthly, fixed customer base charge and a monthly, metered water volume charge. Fixed base charges are charged to recover costs associated with administrative and customer service costs including billing, metering, meter reading and customer service, plus a portion of the average day or “base” system capacity cost. The portion of the average day charge is scaled, by meter size, and calculated using the most recent three-year average of monthly water use.

Industry best practice is to maintain a fixed monthly service charge that generates 20-30 percent of the water utility’s total revenue, with lower levels of fixed cost recovery potentially impacting bond ratings. Tempe’s current fixed monthly service charge has fallen to 19 percent. The rate study recommendation is to increase the fixed monthly service charge to 22 percent.

The customer impact of this recommendation is demonstrated in the table below.

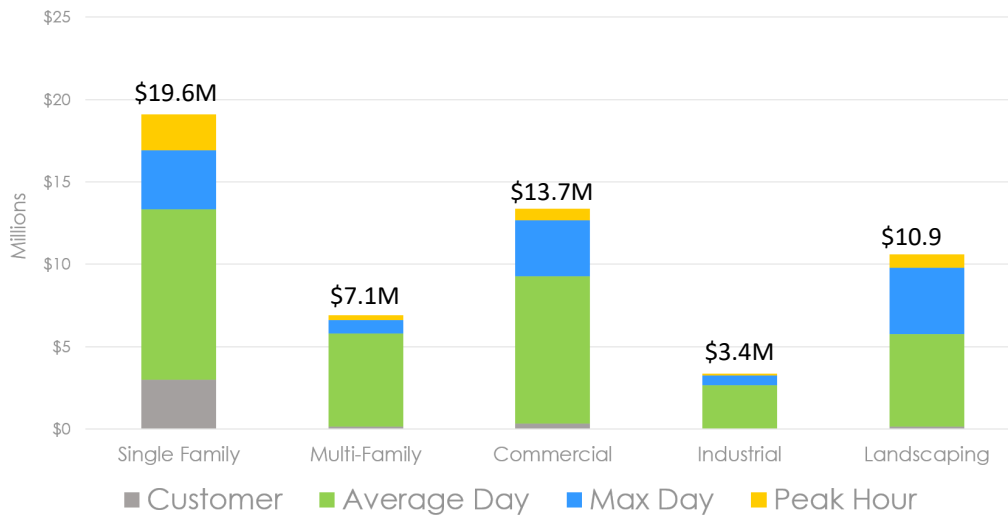
Meter Size	Current Fixed Monthly Service Charge	Recommended Fixed Monthly Service Charge
5/8"	\$11.50	\$13.15
3/4"	\$15.70	\$14.85
1"	\$23.50	\$22.15
1.5"	\$41.60	\$47.00
2"	\$67.90	\$91.60
3"	\$154.00	\$207.25
4"	\$302.00	\$298.70
6"	\$599.00	\$1,148.55
8"	\$1,400.00	\$2,004.35

For single family residential customers, monthly metered water volume charges follow an inclining block (tiered) rate structure. This structure provides for increasing volumetric rates (volume charges) for increasing consumption and helps to recover class-specific costs of service where a customer classification has similar usage patterns. Monthly metered volume charges for other customer classifications follow a uniform volumetric rate (volume charges) structure, typical for cost-recovery from customer classifications with unique usage patterns. Based on the cost allocation analysis, the rate study recommends no changes to single family tier sizing or to the fixed volumetric rate (volume charges) structure for other customer classifications.

This table compares current monthly metered water volume charges to recommended charges.

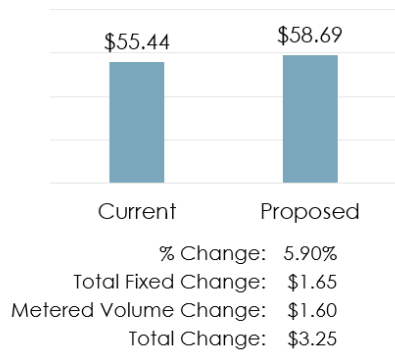
Customer Class		Current Charge (per 1,000 gallons)	Recommended Charge (per 1,000 gallons)
Single Family Inclining Block (tiered) Rate Structure	Single Family – Tier 1	\$1.80	\$1.84
	Single Family – Tier 2	\$2.49	\$2.83
	Single Family – Tier 3	\$3.65	\$3.89
	Single Family – Tier 4	\$4.61	\$4.93
	Single Family – Tier 5	\$5.10	\$5.42
Other Classes Uniform Rate Structure	Multi-family	\$2.51	\$2.05
	Commercial	\$2.59	\$2.65
	Industrial	\$2.63	\$2.77
	Landscaping	\$3.51	\$3.96
	Construction	\$4.07	\$4.07

The chart below is a visual representation of proportional cost allocation by customer classification, by cost component, as described above and recommended per the rate study. Accounting for small differences due to number rounding, the total costs equal the \$54.8 million net revenue requirement for Fiscal Year 2021, identified in Step 1.

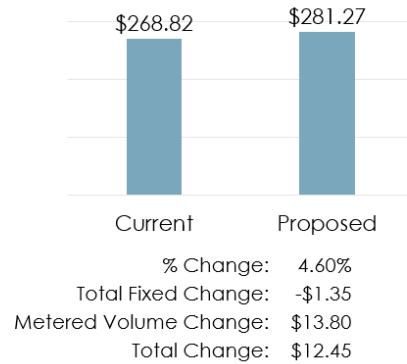


Rate design also included an analysis of the impact of the proposed revenue increase or rate structure changes on customers. The following charts depict the monthly water bill impact of the 5.5 percent revenue increase, compared to the current rates, for two single family residential customers in different tiers.

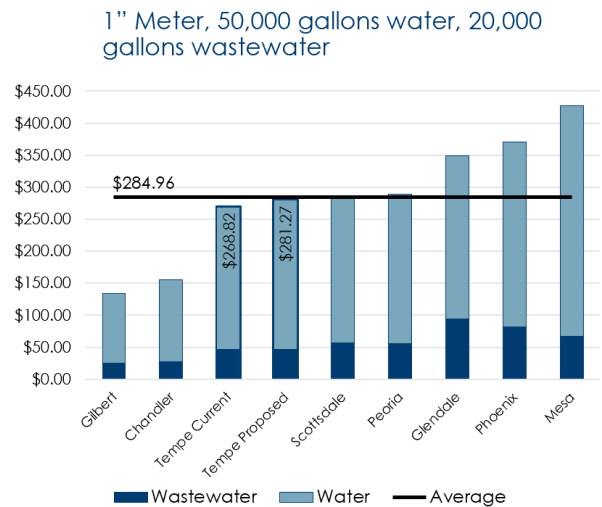
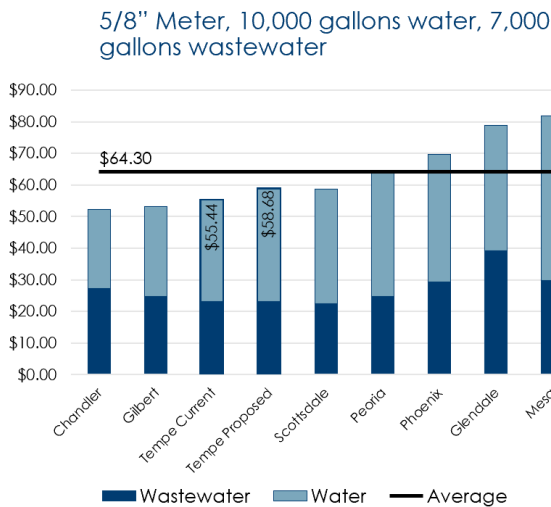
5/8" Meter, 10,000 gallons water, 7,000 gallons wastewater



1" Meter, 50,000 gallons water, 20,000 gallons wastewater



With the 5.5 percent revenue increase, the average monthly bill for single family residential customers in Tempe is still below average, compared to other local municipalities. The following charts compare the monthly bill of two single family residential customers in different tiers.



Step 4: Communication. Throughout any rate study process, communication is key to ensuring customer involvement and understanding, by all involved, of the rate study process and data, the potential need for adjustments, national trends and Council priorities. Active stakeholder participation is an effective way of involving representatives of the community served and receiving input and ensuring transparency.

Municipal Utilities and Neighborhood Services formed an external community stakeholder group consisting of representatives from each water customer class, including low-income customers, neighborhood associations, commercial entities and organizations, and community organizations. Stantec and the City hosted four working stakeholder meetings throughout the rate study to review, discuss and receive input on the various components of the process and recommendations.

Neighborhood Services also developed a robust public involvement and outreach plan to ensure broad community engagement (see Attachment 1: Public Involvement Plan). Municipal Utilities will collaborate with Neighborhood Services and Communication and Media Relations to host a number of outreach and engagement initiatives including two public meetings – one during a weekday and one during a weekend – a marketing campaign that includes traditional printed materials, a digital effort through social media and formal presentations to Tempe’s Neighborhood Advisory Commission and Sustainability Commission.

RATE STUDY RECOMMENDATIONS:

Water

- 5.5 percent overall revenue increase.
- Adjust fixed monthly service charges.
- Proportionally adjust cost of service for each customer classification, resulting in varying revenue adjustments by customer class.

Wastewater

- Zero percent revenue increase.

Flood Irrigation

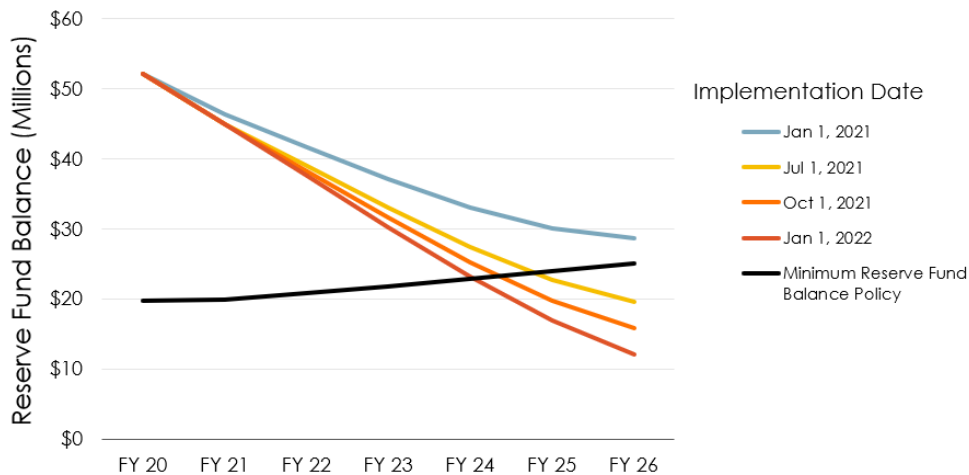
- 9.7 percent revenue increase required to maintain 50 percent cost recovery. See Appendix A for details.

GUIDANCE REQUESTED:

Municipal Utilities staff requests Council guidance to proceed with the proposed recommendations outlined above.

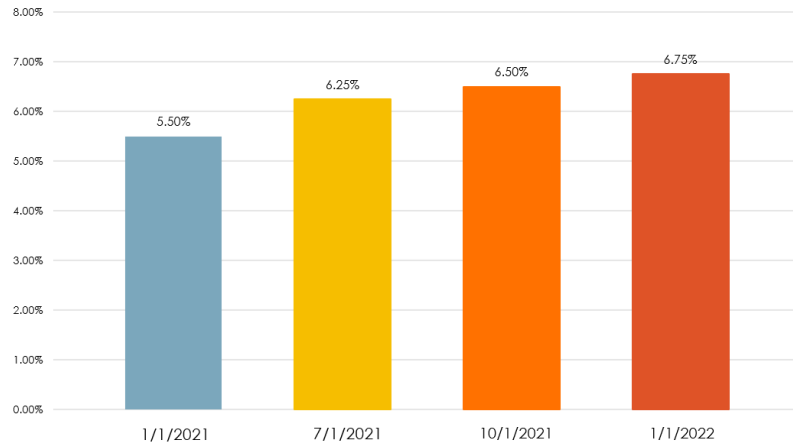
Historically, a revenue increase would become effective January 1 of the following year. Given the current economic uncertainty amid the coronavirus pandemic, Council may consider a delayed implementation of these changes. The graph below demonstrates the impact of a delayed implementation of the revenue increase past January 1, 2021 (blue) on the utility’s reserve fund balance. While a temporary postponement of rate increases will result in an accelerated draw down (spending) of the utility’s reserve fund balance and likely result in higher revenue increases necessary in the future, it may be both prudent and appropriate to draw upon the utility’s “rainy day fund” at this time as to not add further pressure to the financial burden customers are currently facing. Staff does not recommend extending the implementation beyond July 1, 2020.

An annual 5.5 percent revenue increase is required, starting in January 2021, to meet forecasted expenses and stay at or above the utility’s minimum reserve fund balance

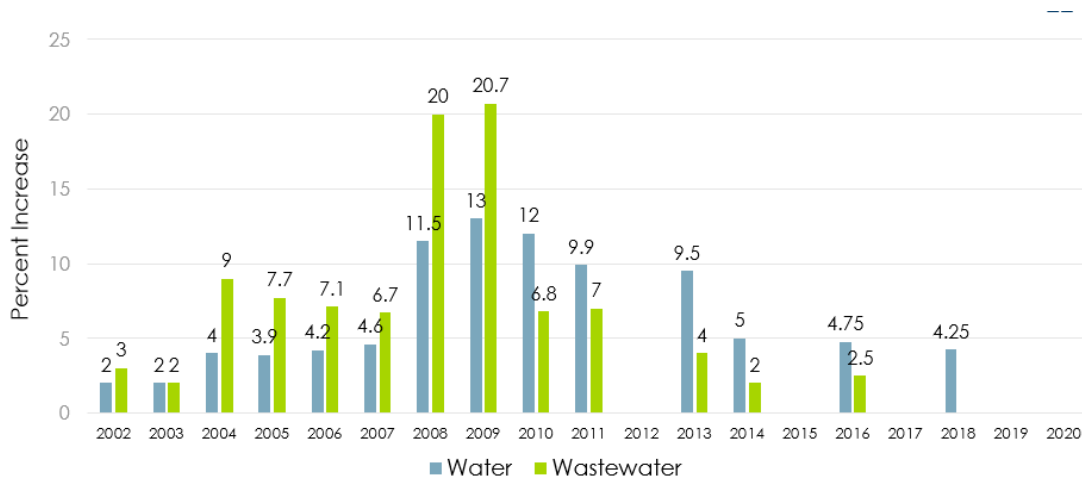


This graph indicates the estimated percent of revenue increase needed to stay at or above the utility's minimum reserve fund balance policy should the recommended 5.5 percent "levelized" revenue increase be postponed to after January 1, 2021.

Future Revenue Increases to Maintain Minimum Reserve Fund Balance Policy



It is not uncommon to experience the need for significant revenue increases following years where at least nominal increases were not adopted. This "rate spiking" can be avoided, often, by implementing measured, consistent revenue increases over time, instead of postponing or skipping annual revenue increases. The water utility is in a favorable financial position due to our reserve fund balance, which can be utilized to "dampen" rate spikes and not impact customers dramatically. This strategy of reserve fund balance utilization or "draw-down", was included in this year's rate study and is reflected in the recommendations. This graph represents the water and wastewater revenue increases, or lack thereof, over the last 18 years.



After receiving guidance from City Council, staff will gather public feedback on the proposed changes and return to Council for formal policy approval.

Public meetings will be held in September and October, followed by the actions listed below with tentative dates:

- Pursuant to A.R.S. section 9-511.01²(A)(2), Council to adopt the Notice of Intention to hold a Public Hearing on December 3, 2020 – September 24, 2020
- Pursuant to A.R.S. section 9-511.01²(A)(1), publish the written report supporting rate recommendations with the City Clerk's Office – November 2, 2020
- Pursuant to A.R.S. 9-511.01²(B), Public Hearing and Council Adoption of Rates – December 3, 2020

ATTACHMENTS:

Attachment 1: Public Involvement Plan

² A.R.S. section 9-511.01. Retrieved from
<https://www.azleg.gov/viewdocument/?docName=https://www.azleg.gov/ars/9/00511-01.htm>

APPENDIX A: Flood Irrigation

Flood irrigation service is a distinct service that provides irrigation water to 900 private customers and 16 parks in Tempe. The flood irrigation program is currently projected to recover under half of the cost to operate the system in Fiscal Year 2021. The rate study recommends a revenue increase to maintain the current Council policy of 50 percent recovery of total operating costs.

	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Adjustment Factor:	9.7%	2.2%	2.2%	2.2%	2.2%
Revenue					
Flood Irrigation Revenue	\$329,100	\$336,340	\$343,706	\$351,096	\$358,644
Transfer in from GF	\$119,573	\$122,204	\$124,880	\$127,565	\$130,307
Total Revenue	\$448,673	\$458,544	\$468,586	\$478,661	\$488,952
Cost Recovery:	50.0%	50.0%	50.0%	50.0%	50.0%
Expenses					
Capital Expenses	\$261,597	\$261,597	\$261,597	\$261,597	\$261,597
Operating Costs	\$635,948	\$655,027	\$674,677	\$694,918	\$715,765
Total Expenses	\$897,545	\$916,624	\$936,274	\$956,515	\$977,362

The following charts depicts the semi-annual bill impact of maintaining the current Council policy of 50 percent recovery of total operating costs for two customers with differing lot sizes.

