

# **2014 Water and Wastewater Cost of Service Study Findings and Recommendations**

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## 1.0 Introduction

This report provides the findings and recommendations for the 2014 Water and Wastewater Cost of Service Study. The proposed customer classes and rate implementation plan will enable the delivery of the capital investments outlined in the Water Infrastructure Investment Plan (WIIP) and the operating expenditures that are necessary for the Utilities to continue to deliver high quality services to Calgarians, while meeting regulatory requirements and providing the infrastructure necessary for a growing city.

The Water and Wastewater Cost of Service Study evaluated existing water and wastewater customer classes and recommends customer class groupings and rate implementation strategies to achieve utility system equity objectives.

The Study consists of three phases. Phase 1 focused on the revenue required to fund the planned operating and capital expenditures along with meeting the Utilities' financial targets over the next four years. This work was approved by Council on 2014 May 05. Phase 2 of the study provided an equitable basis for distributing the cost of utility service to each class of customer in proportion to the distinct demands they place on the utility system and is discussed in this report. Phase 3 will design the final rate structure, including fixed and variable portions of the rates for customers from 2015-2018 and will be prepared in conjunction with Action Plan 2015-2018.

## 2.0 Context

Water and wastewater utility best practice is to conduct cost of service studies every five to ten years. The purpose of a cost of service analysis is to provide an equitable basis for distributing the cost of utility service to each class of customer in proportion to the distinct demands they place on the utility system. Detailed cost allocations, along with appropriate customer class designations, help to improve the degree of equity that can be achieved in the rate structure designs.

In addition to ensuring the equitable allocation of costs, these studies are an analytical tool to support financial management, and provide validation and documentation for ratemaking decisions. The Water and Wastewater Utilities must recover all of the costs to provide water and wastewater services.

On 2011 June 28, as part of the Utilities Financial Plan (C2011-66), Council directed Administration to incorporate a cost of service study for the Utilities and Drainage in the 2012- 2014 business plan.

On 2013 May 01, Utilities and Corporate Services Committee received the water, wastewater and drainage cost of service studies work plan for information (UCS2013-0045).

At the 2014 March 17 Strategic Session, Council adopted Report C2014-0088 (2015-2018 Utility Rate Scenarios) and directed Administration to return to the 2014 May 5 Strategic Planning Meeting of Council with indicative rates for the 2015-2018 Action Plan.

At the 2014 May 5 Strategic Session of Council, Council adopted Report C2014-0103 (2015-2018 Utility Indicative Rates) and directed Administration to prepare the 2015-2018 Action Plan based on the recommended indicative Water and Wastewater rate increases, Utility financial targets for 2015-2018 and an implementation plan for the cost allocation recommendations of the Cost of Service Study.

The City provides water and wastewater services to over 340,000 customers with different water and wastewater needs. Since the 2004 Cost of Service Study, customer usage patterns have changed which has shifted the allocation of system costs among customer classes. If one customer class places a higher proportional demand on the system, that customer class should pay for a higher portion of the system costs. Conservsly, increases to one customer class require downward adjustments to other customer classes to restore equity among the customer classes. As such, adjustments to customer classes are revenue neutral to the Water and Wastewater Utilities.

### 3.0 Revenue Requirements

At the 2014 May 5 Strategic Session of Council, Council adopted Report C2014-0103 (2015-2018 Utility Indicative Rates) and directed Administration to prepare the 2015-2018 Action Plan based on the recommended indicative Water and Wastewater rate increases as outlined in Table 1.

**Table 1: 2015-2018 Approved Indicative Rates:**

	2015	2016	2017	2018
Blended Rate Increases	8.3%	8.3%	8.3%	8.3%
Water Rate Increases	2.0%	2.0%	2.0%	2.0%
Wastewater Rate Increases	16.9%	15.8%	14.9%	14.2%

The indicative rate increases were analyzed as Phase 1 of the Cost of Service Study and are required to meet the operating, capital and financial targets of the Utilities from 2015-2018.

### 4.0 Guiding Principles for Utility Rates

It is important to Utility customers, and The City of Calgary, that the user rates be founded on a sound set of principles. The guiding principles of the Water and Wastewater Cost of Service Study can be organized into three interdependent categories, including:

1. Financial Sustainability;
2. Fairness and Equity to Customers; and,
3. Water Resource Management.

#### 4.1 Financial Sustainability

The Water and Wastewater Cost of Service Study must deliver sufficient and predictable revenue in order to meet current and future regulatory requirements, and provide reliable services desired by customers. The Utility needs to receive sufficient and predictable revenue to recover its full costs. The Water and Wastewater Cost of Service Study must offer rate stability and predictability to the Utility and the Utility's customers; and set rate structures that provide flexibility to adapt to changing supply and demand patterns.

#### 4.2 Fairness and Equity to Customers

The Water and Wastewater Cost of Service Study must deliver a solution that is equitable to all customers. The rates that a customer pays should reflect the cost of providing the service to the customer and the rates for each customer class should reflect their fair share based on usage patterns and service benefits offered. The Water and Wastewater Cost of Service Study will also produce rate structures that are transparent and easy to understand.

#### 4.3 Water Resource Management

The Water and Wastewater Cost of Service Study will establish a rate that allows The City to continue to meet current and future regulatory requirements, while encouraging customers to adopt behaviours focused on water conservation, and protecting the watershed and river water quality.

### 5.0 Cost of Service Methodology

Equitable utility system cost recovery is achieved by setting rates consistent with the costs incurred by the utility on behalf of the customer. Ideally, each customer would have their own unique rate based on their specific property and service requirements. However, it is not practical to implement and track individual rate structures for hundreds of thousands of customers; nor is that approach practiced in the industry. The development of customer classes serves as an approximation of this ideal by grouping together customers with similar usage patterns for the purpose of allocating costs. The Water and Wastewater Cost of Service Study identified, and grouped costs, by key drivers; analyzed usage patterns and grouped customers into customer classes; and allocated the appropriate share of system costs to each class. The cost of service analysis was performed based on historic billing data from 2010-2012.

## 6.0 Water Utility Customer Class Cost Allocation

The Water cost of service analysis was based on the following key drivers:

- **Customers:** Costs are allocated to customer classes based on their proportional share of total number of accounts (meters). These costs include charges such as the cost to print bills for each customer.
- **Meters & Services:** Costs are allocated in proportion to total meter service equivalents (MSEs). This statistic relates to the number and size of meters included in each customer class. The American Water Works Association (AWWA) has developed meter service equivalency factors that reflect relative costs for installation and maintenance of different size meters, using the smallest meter as the baseline (industry standard). The costs for installing, maintaining and replacing customer meters and services increases with the size of the service. Having a fixed charge based on the corresponding equivalent meter ratio reflects these costs.
- **Base Demand:** Costs are allocated in proportion to total annual water usage consumed by the customer classes within a 12-month period.
- **Peak Demand:** In addition to meeting total water demands as discussed above (base demand); water system infrastructure is designed to meet total system peak day demands. The Cost of Service Study allocated peak related costs to customer classes based on the ratio of actual measured peak month use to actual measured average annual use. August was identified as the peak demand month.
- **Fire Protection:** Typically, fire protection costs are assigned on an incremental (oversizing) basis, recognizing that water service remains the primary system objective. Costs are allocated to customer classes based on The City's documented fire flow requirements weighted with proportional shares of total system meter capacity equivalents (MCEs). The AWWA has developed meter capacity equivalency factors that reflect relative maximum potential flow for different sized meters, using the smallest meter as the baseline (industry standard).

## 6.1 Water Utility Customer Class Evaluation

With the key drivers defined, the Study allocated system costs by the drivers, and then applied the costs to customer classes that behaved with similar usage patterns. The following water customer classes were evaluated (Table 2):

- **Residential.** The residential classes include Residential Metered (single family, duplex, townhouse), Residential Flat (non-metered) and Multi-Family Metered (multiplex > 2 units, apartments). Residential is the largest customer class in terms of number of accounts; and exhibits relatively low average annual usage per account. Residential Metered has a high peak use due to summer outdoor watering. Residential Flat is not metered and is assumed to use 50 percent more water than residential metered customers. Residential Metered and Flat have the lowest fire flow requirement (5,000 litres per minute). On the other hand, Multi-Family Metered uses more water than Residential Metered and Flat but less per individual unit. Multi-Family Metered also uses less peak water and has an increased fire flow requirement.
- **General Service (GS).** The General Service classes include General Service Regular (meter size <= 25 mm, 40 mm, 50 mm) and General Service Large (meter size => 75 mm). General Service customers include industrial, commercial, institutional, municipal, and others. General Service Large exhibits significantly higher average use per account compared to all other customer classes. General Service Regular uses more peak water than the Large customers which could indicate a seasonal nature for some business operations. Fire flow requirement are 15,000 litres per minute for all General Service customers.
- **General Service Irrigation** (general service, municipal) – This customer class contains a small number of accounts. It has the highest incremental peak demand since the majority of usage occurs during the peak months and has no fire flow requirement.

- **Bulk Water** – This customer class contains a nominal number of accounts, a comparative average use per account as to General Service Regular; and relatively high incremental peak month use, possibly due to the construction season. There is no fire flow requirement.

**Table 2: Customer Class Statistics**

Customer Class	# of Accounts	Average Monthly Use (m <sup>3</sup> )	Peak Month Ratio	Fire Flow (L/min)
Residential Flat	9,592	25.21	1.21	5,000
Residential Metered	329,263	16.80	1.21	5,000
Multi-Family Metered	4,548	9.63	1.08	10,000
General Service – Regular	13,576	91.57	1.18	15,000
General Service – Large	1,443	1,554.26	1.08	15,000
General Service - Irrigation	5,594	37.93	2.84	N/A
Bulk Water	120	124.09	1.35	N/A

## 6.2 Detailed Analysis of Cost Allocation by Customer Class

An analysis was undertaken to understand the decline across different customer classes and the impacts on the allocation of costs. Customer class shifts are due to a combination of changes in customer usage patterns since the previous 2004 Cost of Service Study; existing rate structures and customer class rate increases since the previous study; and differing methods used for allocating fire protection and peak demand costs.

**Base Demand:** Base water demand decreased for most customers between the two study periods (Figure 1). However, base demand decreased proportionally more for Residential customers (Figure 2) due to the conservation efforts and education programs undertaken with these customers over the last 10 years. This larger decrease in residential demand means other customer classes are now attributed a larger portion of the system costs as they are using a larger proportional share of the entire system.

**Figure 1: 10 Year Change in Calgary Water Consumption**

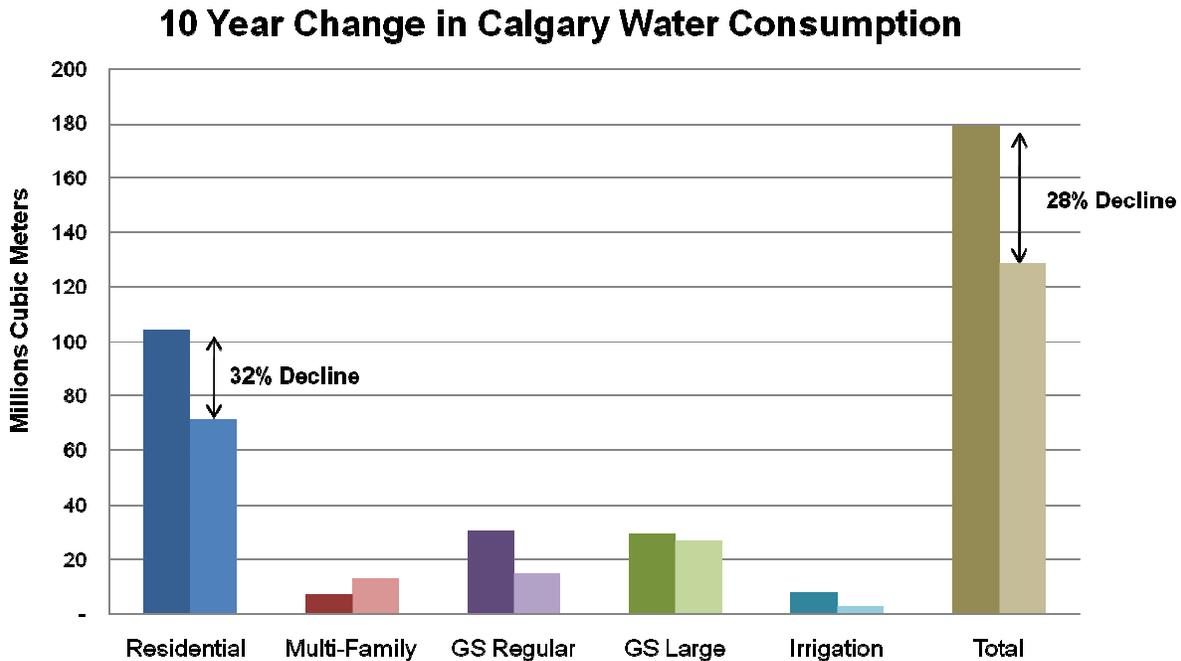
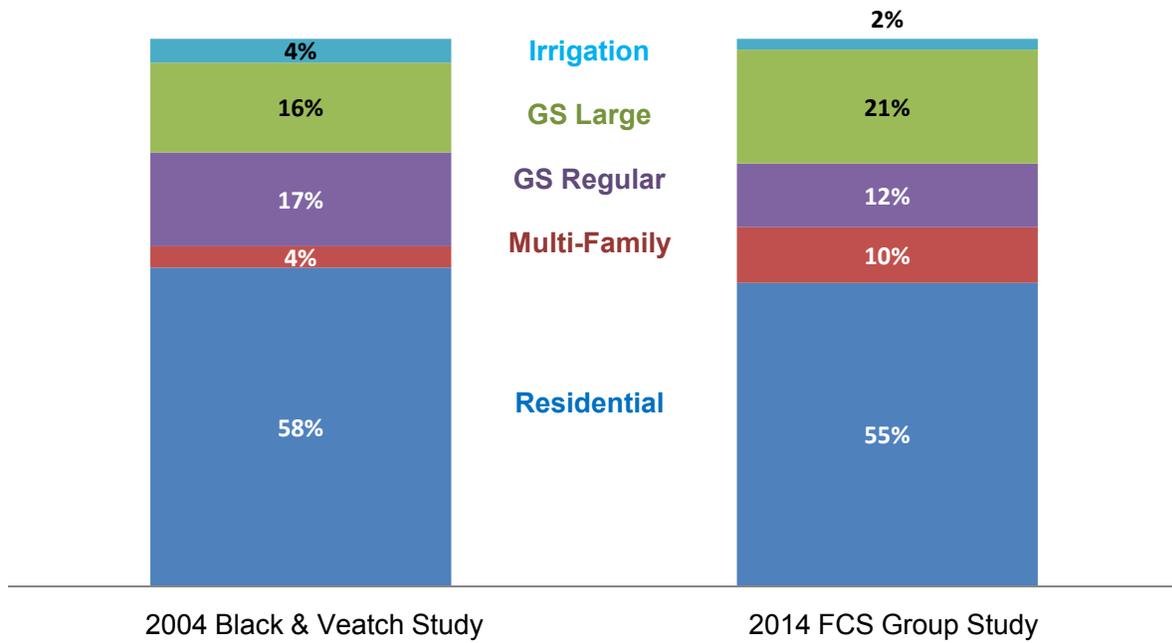


Figure 2: 10 Year Change in Proportional System Use

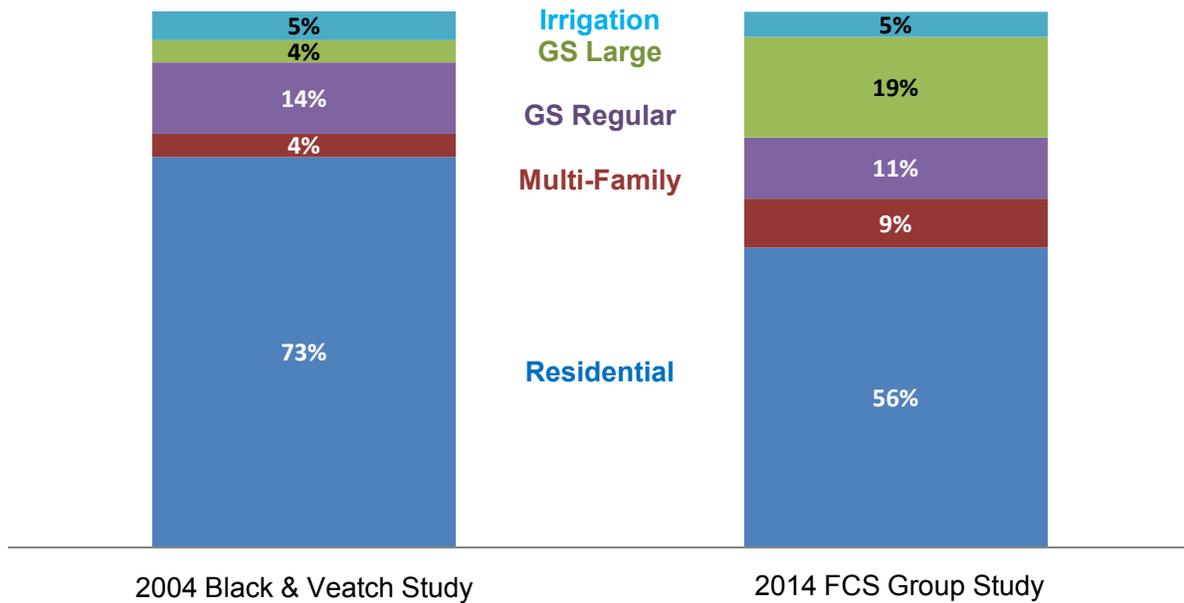
## 10 Year Change in Proportional System Use



**Peak Demand:** The Cost of Service Study allocated peak use related costs to customer classes in proportion to the ratio of actual measured peak month use to actual measured average annual use. August was identified as the peak demand month. Peak demand was previously allocated based on an estimate of peak hour demand. Peak hour data is only available for the total system. The current methodology uses actual peak month data for each class as this information is available and defensible. Figure 3 show the change in peak water use between the two studies.

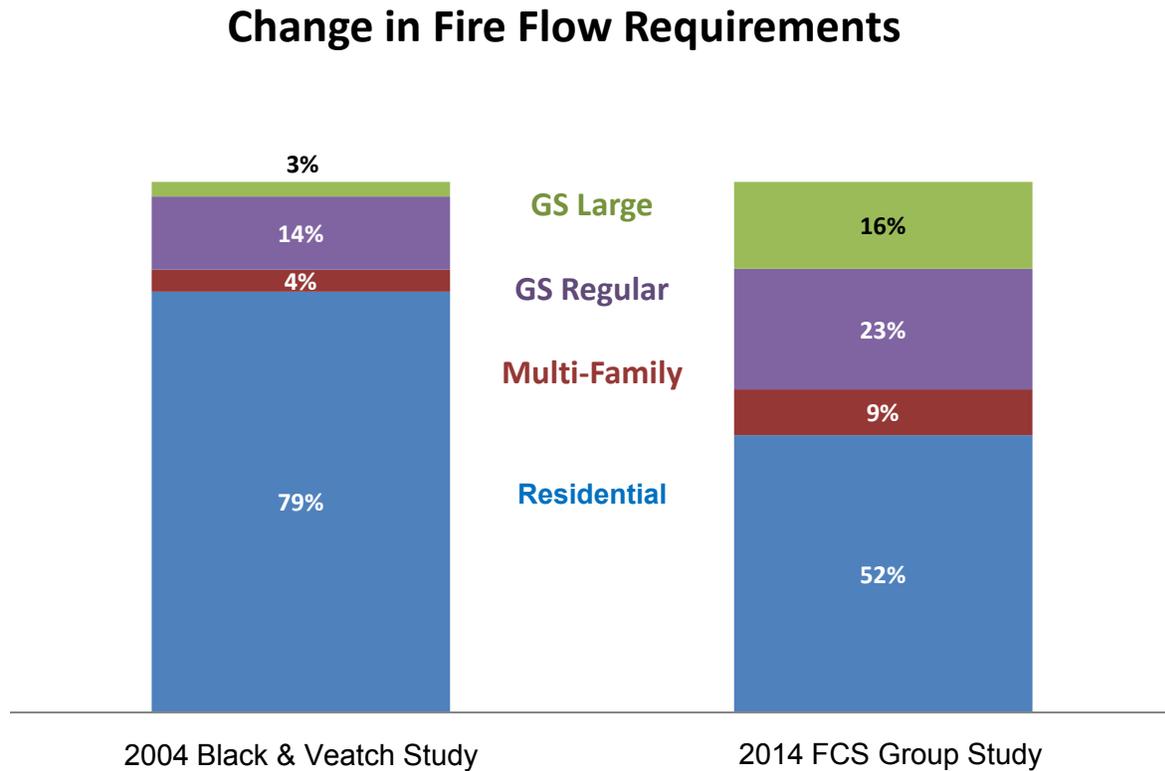
**Figure 3: Change in Proportional Peak Use by Customer Class**

### Change in Portion of Peak Use



**Fire Flows:** Fire protection costs were previously allocated in proportion to all other costs weighted with customer data statistics. This approach over allocated costs to Residential customers, and under allocated costs to General Service customers, since they have a much higher fire flow requirement. The current method uses actual fire flow requirements by class. Figure 4 shows the change in fire flow requirements between the two studies.

**Figure 4: Change in Fire Flow Requirements by Customer Class**



### 6.3 Water Utility System Costs by Customer Class

The selected customer class groupings were applied to the system costs to determine the proportional share of costs assigned to each customer class. Figure 5 presents the allocation of system costs to customer classes.

**Figure 5: Water Customer Class Percentage Allocation Results**

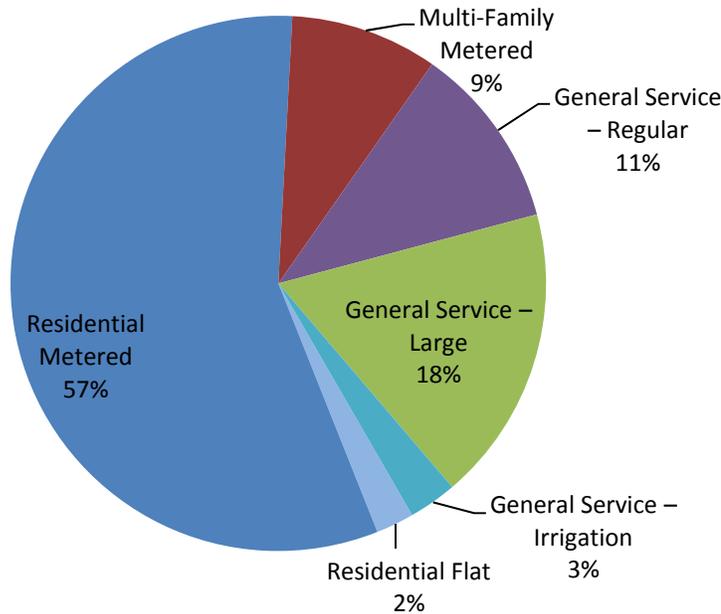


Table 3 shows the results of the Water Cost of Service Study by customer class and compares the forecasted revenues collected based on current rates versus an equitable allocation based on system use. The Study found that adjustments to customer class rates are required to move towards an equitable allocation of system costs. In particular, Residential Metered and Flat are currently paying more than an equitable share of system costs, where as General Service Regular and Large are paying less than a fair share of system costs. Section 8 discusses alternatives to begin to return to an equitable allocation of costs between customer classes.

**Table 3: 2015 Water Cost of Service Results**

Customer Classes	Revenue with Existing Rates	2015 Cost of Service	Variance
Residential Flat	\$7,334,050	\$6,408,374	-12.62%
Residential Metered	\$182,981,891	\$157,934,916	-13.69%
Multi-Family Metered	\$23,565,341	\$24,627,913	4.51%
General Service - Regular	\$26,422,939	\$30,973,745	17.22%
General Service - Large	\$28,779,713	\$49,745,417	72.85%
General Service - Irrigation	\$8,842,046	\$8,147,194	-7.86%
Bulk Water	\$260,241	\$348,661	33.98%
<b>TOTAL</b>	<b>\$278,186,220</b>	<b>\$278,186,220</b>	<b>0.00%</b>

## 7.0 Wastewater Utility Customer Class Cost Allocation

Wastewater system costs were allocated based on the following drivers:

- **Customer:** Costs are allocated to customer classes based on their proportional share of total number of accounts or dwelling units.
- **Flow:** Costs are allocated to customers based on their proportional share of estimated sewer contribution. Since sewer flow is not measured for the majority of individual customers, water usage is used as a proxy for wastewater volume<sup>1</sup>. The study estimated customer class sewer contribution by applying return factors to actual water use. Actual sewer contribution is used for those customers with measured sewer flow. The Study used calculated winter period flows for Residential (90 percent of water use) and Multi-Family (97 percent of water use), and maintained the current 90 percent factor used in the previous study for General Service.
- **Strength:** Costs are allocated in proportion to total estimated flow for all domestic strength customers and in proportion to extra strength concentration for customers with above-average strength (>300 mg/l for BOD and TSS and >100 mg/l for FOG).

## 7.1 Wastewater Utility Customer Class Evaluation

With the key drivers defined, the Study allocated system costs by the drivers and then applied the costs to customer classes that behaved with similar usage patterns (Table 4). The following wastewater customer classes were evaluated:

- **Residential** - The residential classes include Residential Metered (single family, duplex, townhouse), Residential Flat (non-metered), and Multi-Family Metered (multiplex > 2 units, apartments). The residential classes have the largest number of customers and exhibit relatively low wastewater contribution per account at domestic level strength (<300 mg/l BOD and TSS; <100 mg/l FOG). Multi-Family Metered produces more flow, but a lower contribution per dwelling, and has a higher return factor than Residential Metered and Residential Flat, which separates these three customers into separate classes.
- **General Service** - The wastewater General Service class includes all meter sizes and includes industrial, commercial, institutional, and municipal customers. The major cost differential for sewer customer classes is strength concentration. All General Service customers are assumed to have domestic strength and extra strength surcharges are applied as a separate class.
- **Extra Strength** – This class is monitored for General Service customers who contribute above average strength (>300 mg/l BOD and TSS; and > 100 mg/l FOG) to the system. Costs attributable only to this class are directly assigned to the class (e.g. monitoring, sampling).
- **Septage Haulers** – This class consists of a nominal number of accounts with relatively high contribution per account and very high strength.

**Table 4: Customer Class Statistics**

Customer Class	# of Accts	Average Monthly Water Use per Unit (m <sup>3</sup> )	Wastewater Return Factor (% of water use)	Average Monthly Est. Flow per Unit (m <sup>3</sup> )	BOD (mg/L)	TSS (mg/L)	Oil & Grease (mg/L)
Residential Flat	10,962	29.77	90	26.80	300	300	100
Residential Metered	311,520	18.30	90	16.47	300	300	100
Multi-Family Metered	4,547	9.20	97	8.93	300	300	100
General Service [a]	14,869	221.54	90	199.38	300	300	100
Extra Strength Surcharge	-				926	435	294
Septage Hauling	46	N/A	N/A	447.58	4,200	4,200	1,900

[a] Includes effluent metered flow

<sup>1</sup> In 2012 42 groundwater customers and 12 effluent customers were metered

## 7.2 Wastewater Utility System Costs by Customer Class

The selected customer class groupings were applied to the system costs to determine the proportional share of costs assigned to each customer class. Figure 6 presents the allocation of system costs to customer classes

**Figure 6: Customer Class Percentage Allocation Results**

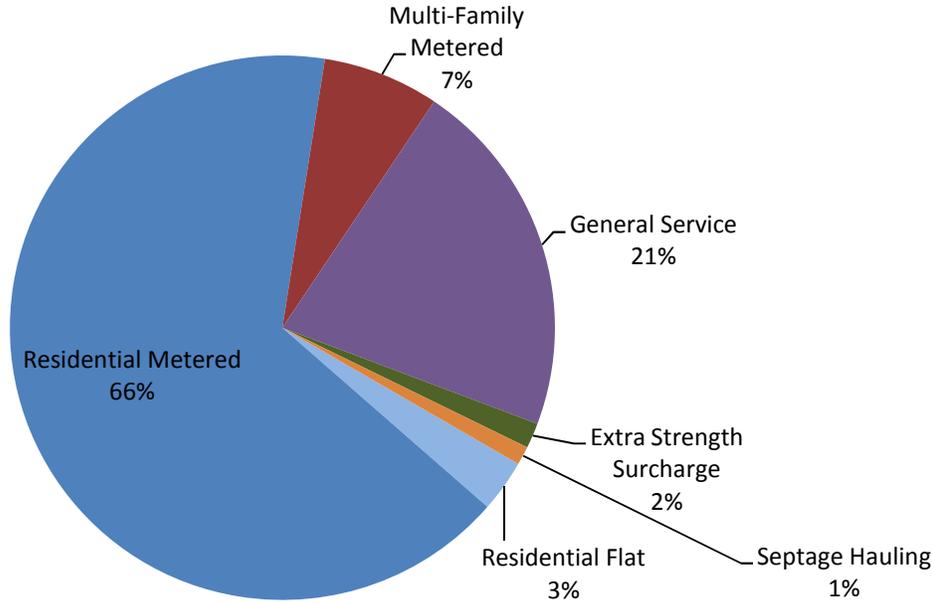


Table 5 shows the results of the Wastewater Cost of Service Study by customer class and compares the forecasted revenues collected based on current rates versus an equitable allocation based on system use. The Study found that the revenue collected from most wastewater customers are in line with the cost of service with the exception of Residential Flat which is paying less than a fair share of its costs, while extra strength and septage hauling customers are currently paying more than their indicated cost of service. A reallocation of costs is required for Residential Flat and Extra Strength Surcharge customers. The cost of service for Septage Hauling customers needs further review to ensure all costs to provide the services associated with the new septage hauling facility are allocated to this customer class. This review will be included in the scope of the next Cost of Service Study, to be completed in 2015-2018.

**Table 5: 2015 Wastewater Cost of Service Results**

Customer Classes	Revenue with Existing Rates	2015 Cost of Service	Variance
Residential Flat	\$6,059,014	\$7,440,279	22.90%
Residential Metered	\$155,040,842	\$158,173,981	2.09%
Multi-Family Metered	\$16,636,123	\$16,427,431	-1.13%
General Service	\$52,936,481	\$51,475,379	-2.64%
Extra Strength Surcharge	\$5,846,698	\$3,812,369	-38.22%
Septage Hauling	\$3,367,495	\$2,557,214	-24.08%
TOTAL	\$239,886,653	\$239,886,653	0.00%

## 8.0 Implementation Alternatives

Indicative rate phase-in strategies were prepared and evaluated as part of the Water and Wastewater Cost of Service Study. Consistent with the indicative rates that were approved by Council in May, all customer classes will receive the blended rate increase of 8.3 percent in 2015, with the exception of Bulk Water. The cost of service implementation options would start in 2016. Each option has assigned 2015 rate increases to match the approved indicative rates, with the exception of Bulk Water. First year water rate increases vary slightly by class to achieve a combined water and wastewater increase of 8.3 percent. This approach was chosen to give customers time to prepare for the increases.

### 8.1 Option 1: 100 Percent Equitable Collection of Costs by 2018

The Cost of Service Study considered the impact to key customer classes of shifting to 100 percent equitable recovery of costs by 2018. Figure 7 shows the equity gap to close to obtain 100 percent equitable allocation by 2018.

**Figure 7: Equitable allocation of System Costs Achieved by 2018**

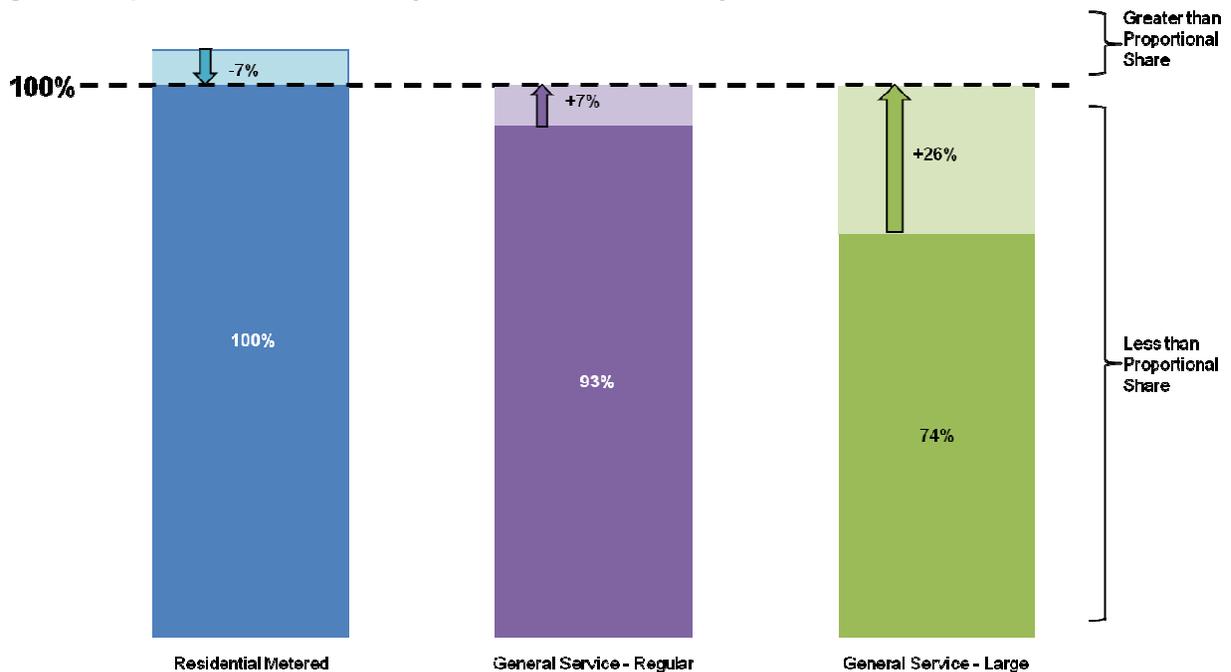
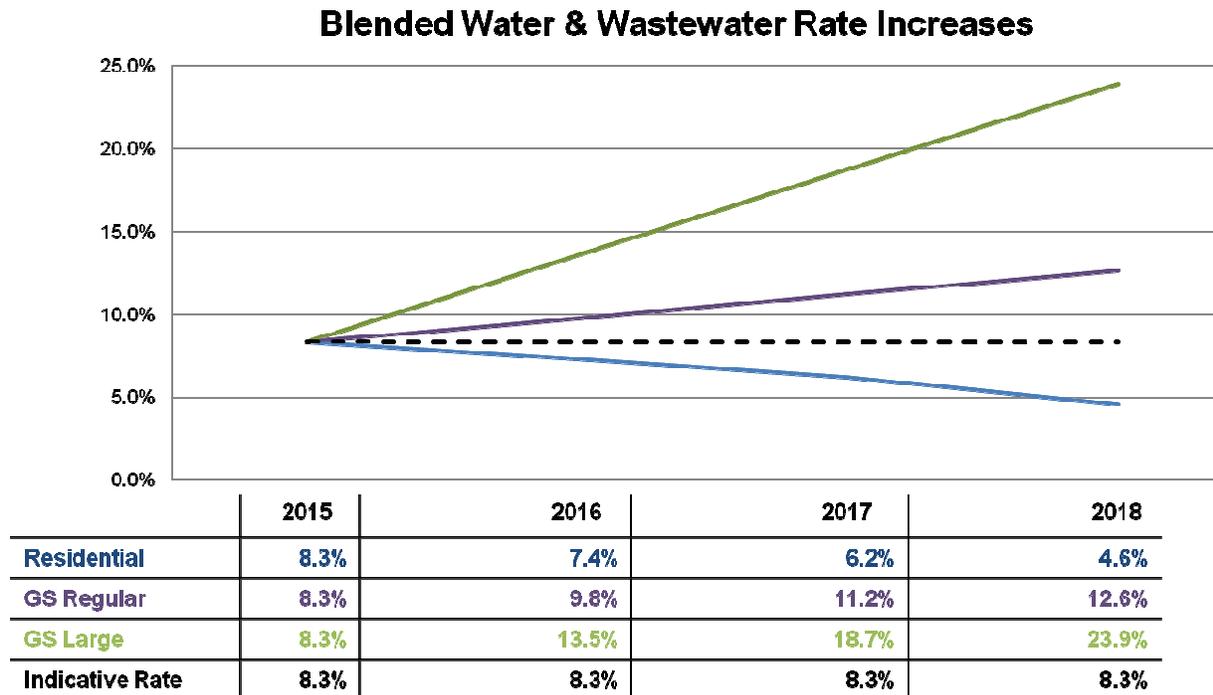


Figure 8 shows the required rate increases within major customer classes to achieve equitable allocation by 2018.

**Figure 8: Rate Increases to Close 100 Percent of the Cost Allocation Gap by 2018**



As shown in Figure 8, large short-term rate increases of up to 24 percent to General Service Large customers would be required and these customers have not had time to prepare for such increases. Administration does not recommend this course of action due to the impact it would have on General Service customers.

### 8.2 Option 2: Close the Equity Gap 50 Percent by 2018

With consideration for all three guiding principles for utility rates, the Cost of Service Study considered moving towards the equitable collection of costs while recognizing the importance of financial sustainability to the customer classes. This option moves customers towards a fair and equitable allocation of costs without rate increases that could be detrimental to any one class. Option 2 includes a phase in strategy to close the current outstanding equity gap in the blended water and wastewater utilities rates by 50 percent by 2018 (Figure 9).

**Figure 9: 50 Percent Equitable allocation of System Costs Achieved by 2018**

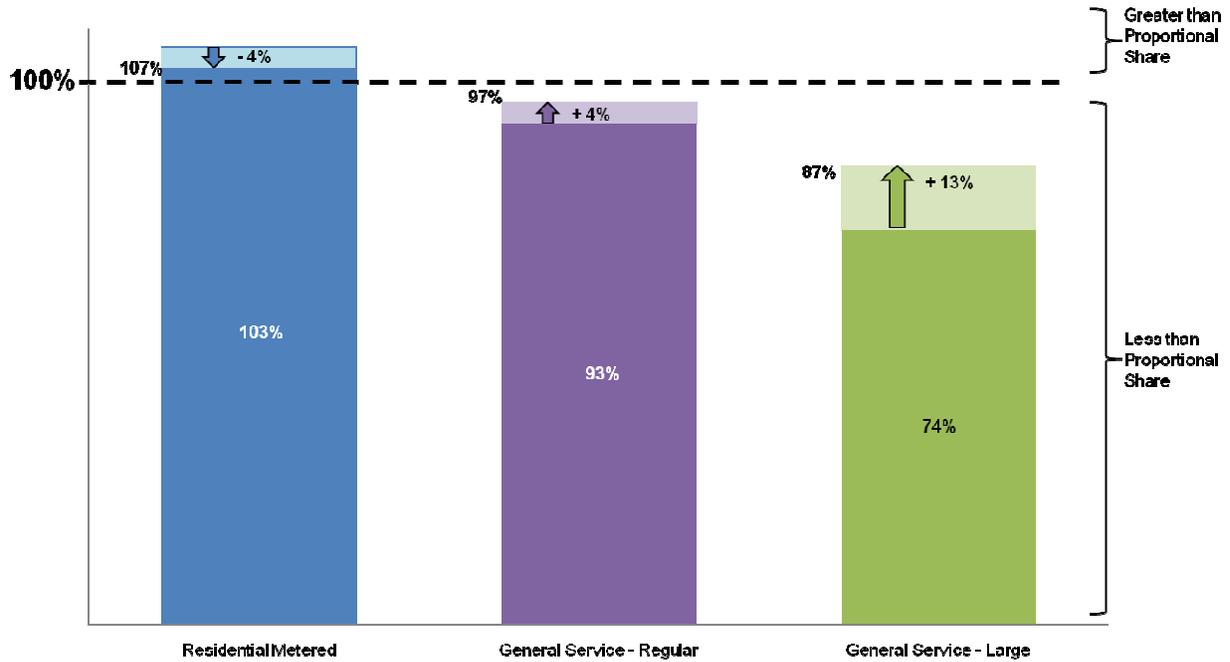


Figure 10 shows the corresponding rate increases required within the major customer classes to close 50 percent of the existing cost allocation gap by 2018. The resulting rate increases for each of the customer classes does not vary as significantly as option 1 from the overall 8.3 percent blended increase. As shown in Figure 10, the 2018 rate increase for General Service Large customers is reduced to 16 percent instead of the 24 percent seen in option 1.

**Figure 10: Rate Increases to Close 50 Percent of the Cost Allocation Gap by 2018**

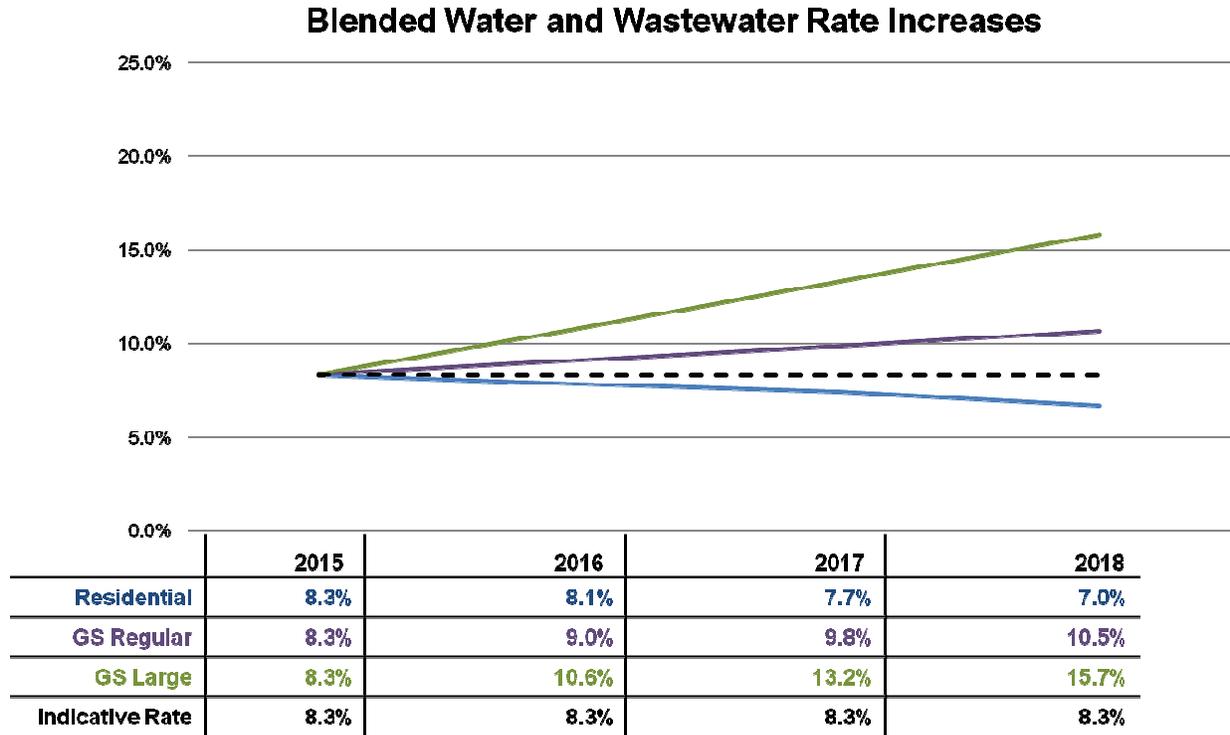
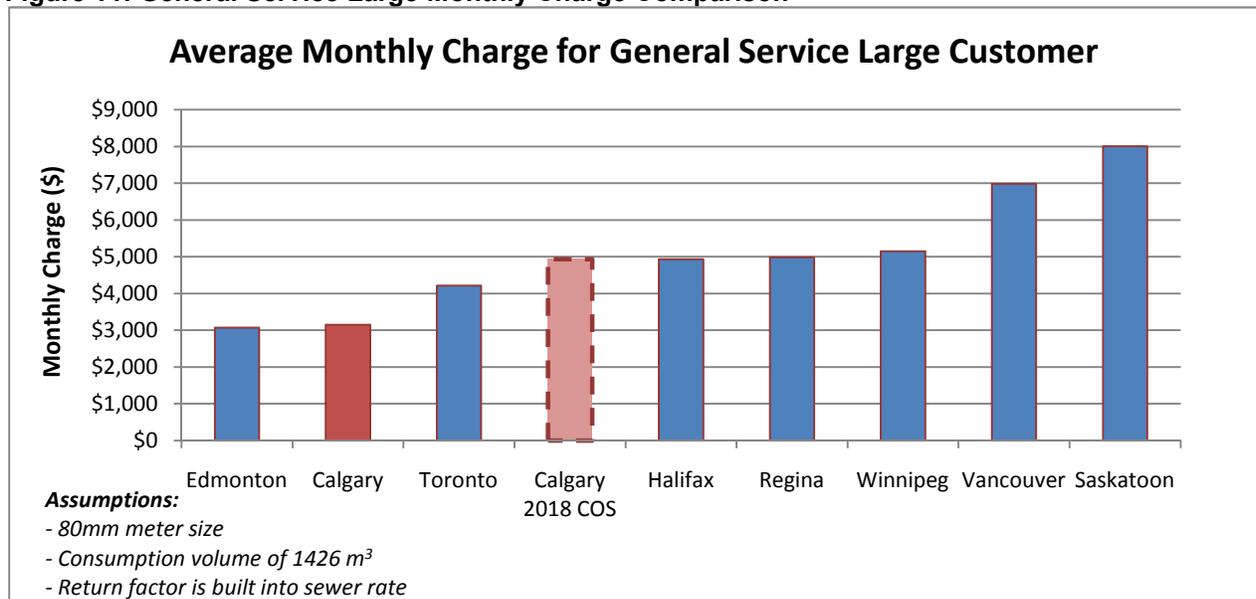


Figure 11 shows the forecasted average monthly charge for General Service Large customers in Calgary compared to other major Canadian municipalities. Even with the rate changes phased in to 2018, Calgary remains comparably affordable to large industry and institutions compared to the 2014 charges in other municipalities.

**Figure 11: General Service Large Monthly Charge Comparison**



## 9.0 Recommendation

Over the 2015-2018 budget cycle, Administration recommends to implement first year rate increases based on the 8.3 percent blended indicative rate approved by Council 2014 May, with the exception of Bulk Water, followed by implementation of option 2 to close the equity gap 50 percent by 2018. Specifically:

- Residential Metered is moved closer to full cost of service over the study period to promote fairness and equity between customer classes
- Residential Flat water rate is maintained at the indicative rate to continue to encourage customers to move to a meter. Wastewater is increased to return to equitable share of costs.
- Multi-Family Metered and Bulk Water are phased to reach their full cost of service.
- General Service Regular and Large are phased in halfway to full cost of service from their current position, with incrementally larger increases towards the end of the current budget cycle. This approach gives more time for these customers to prepare for rate increases and apply conservation techniques to reduce their share of system costs.
- Irrigation maintains the indicative rate increase for 2015 and is then held constant to continue to promote conservation and environmental protection while equity is improved over the budget cycle.
- Extra Strength surcharges are increased at the approved indicative rate for 2015, followed by small increases to reach an equitable allocation of costs by 2018.
- Septage Hauling is increased by indicative wastewater system increases to continue to promote environmental protection.
- Although only a water customer, Bulk Water is increased in a linear fashion to produce a smoother rate increase as it moves towards an equitable allocation of costs.

Administration recommends that rates are developed based on this Cost of Service Study phase-in strategy. Final rate designs will be presented to Council in 2014 November as part of Action Plan 2015-

2018. Council has directed that another Cost of Service Study be done in the 2015-18 cycle, which will serve as a check that new rate increases continue the trend to equity between customer classes.

Table 6 shows the combined rate phase in strategy recommended for all customers. Table 7 shows the water rate phase in strategy recommended for all customers. Table 8 shows the wastewater rate phase in strategy recommended for all customers.

**Table 6: Blended Utility Rate Phase in Strategy**

Customer Class	2015 % of COS	2015	2016	2017	2018	2018 % of COS
Residential Flat	97%	8.3%	13.7%	15.1%	16.5%	106%
Residential Metered	107%	8.3%	8.1%	7.7%	7.0%	103%
Multi-Family Metered	98%	8.3%	7.9%	8.3%	8.6%	100%
General Service-Regular	93%	8.3%	9.0%	9.8%	10.5%	97%
General Service- Large	74%	8.3%	10.6%	13.2%	15.7%	87%
General Service-Irrigation (water only)	109%	2.0%	0.0%	0.0%	0.0%	106%
Extra Strength (wastewater only)	161%	16.9%	0.2%	0.2%	0.2%	100%
Bulk Water (water only)	75%	9.4%	9.4%	9.4%	9.4%	100%
Septage Hauling (wastewater only)	132%	16.9%	15.8%	14.9%	14.2%	127%
Total	100%	8.3%	8.3%	8.3%	8.3%	100%

**Table 7: Water Rate Phase in Strategy**

Customer Class	2015 % of COS	2015	2016	2017	2018	2018 % of COS
Residential Flat	114%	2.1%	2.0%	2.0%	2.0%	115%
Residential Metered	116%	2.1%	0.9%	-0.2%	-1.7%	109%
Multi-Family Metered	96%	3.0%	2.9%	2.9%	2.9%	100%
General Service – Regular	85%	1.2%	3.7%	4.4%	5.3%	92%
General Service – Large	58%	1.2%	7.4%	12.4%	17.4%	77%
General Service – Irrigation	109%	2.0%	0.0%	0.0%	0.0%	106%
Bulk Water	75%	9.4%	9.4%	9.4%	9.4%	100%
Total	100%	2.0%	2.0%	2.0%	2.0%	100%

For all blended customers to experience a blended 8.3 percent increase, the exact portions of the water bills in 2015 differs somewhat. It is not possible to have all customers have a blended 8.3 percent increase in 2015 and a 2.0 percent increase in water and a 16.9 percent increase in wastewater. Thus, water rates in 2015 vary somewhat from the approved 2.0 percent.

**Table 8: Wastewater Rate Phase in Strategy**

Customer Class	2015 % of COS	2015	2016	2017	2018	2018 % of COS
Residential Flat	81%	16.9%	27.8%	27.8%	27.8%	100%
Residential Metered	98%	16.9%	16.6%	15.7%	14.5%	100%
Multi-Family Metered	101%	16.9%	15.1%	15.1%	15.1%	100%
General Service	103%	16.9%	14.5%	14.5%	14.5%	100%
Extra Strength Surcharge	161%	16.9%	0.2%	0.2%	0.2%	100%
Septage Hauling	132%	16.9%	15.8%	14.9%	14.2%	127%
Total	100.0%	16.9%	15.8%	14.9%	14.2%	100%