



Water Rates Review

Town of Gibsons

February 16, 2016

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Gibsons annual review of infrastructure funding requirements, long term financial model, projection of demand and rate schedule are powered by Econics WaterWorth™ v3.1 software platform.



1.0 Executive Summary

This report is an update to the financial and rate review process for the Town of Gibsons water utility. This process has been underway since 2013 to assist the Town to improve the financial health and rate equity of the water utility. This latest review builds upon previous reviews incorporating historical actual information in developing projections for future years.

The distribution network includes 38 km of water mains, much of which is nearing the end of its service life. The replacement value for the water infrastructure has increased significantly to \$35 Million since the March 2015 report largely due to the updating of unit replacement costs for distribution pipes.

The Water Supply Strategy Update recently completed by Urban Systems proposed a priority schedule to replace pipe over the next 20 years based on a risk assessment rather than projecting a replacement service based on age only. This has been incorporated into the WaterWorth™ financial model projections: the planned capital expenditure budget addresses the need for replacing high priority infrastructure.

The financial health of the water utility has been somewhat bolstered by the 2015 Special Levy, however some unforeseen factors continue to place pressure on the Town's financial position. These include: higher than expected operating and maintenance costs; an unexpected refund to a commercial customer due to a billing error; lower than expected consumption; and a slight increase to capital budget following from the Water Supply Strategy Update.

The water utility continues to rely on funding from the annual gas tax grant to supplement revenues. While the Town intends to eventually eliminate reliance on the gas tax, it will continue to be used over the next decade in support of the high priority pipe replacement work. Extended use of the gas tax is appropriate as pipe replacement typically results in significant replacement of asphalt resulting in two asset classes benefiting from the gas tax.

For 2016, it is proposed to continue with the rate schedule previously developed with the following amendments: eliminate the 14m3 allowance; apply another Special Levy for \$75.00; and introduce a Bulk Water Facilities Charge of \$21.50 embedded into the existing parcel tax to recover the new costs applied by the SCRD.

2.0 Infrastructure Funding Requirements

The water infrastructure owned by the Town of Gibsons includes the 38 km of pipework which distributes water throughout the community. These pipes vary in the years they were installed and to a large degree because of that, they also vary in the material from which they are constructed. Figure 1 below shows the distribution of pipe material by length organized by the decade they came into service.

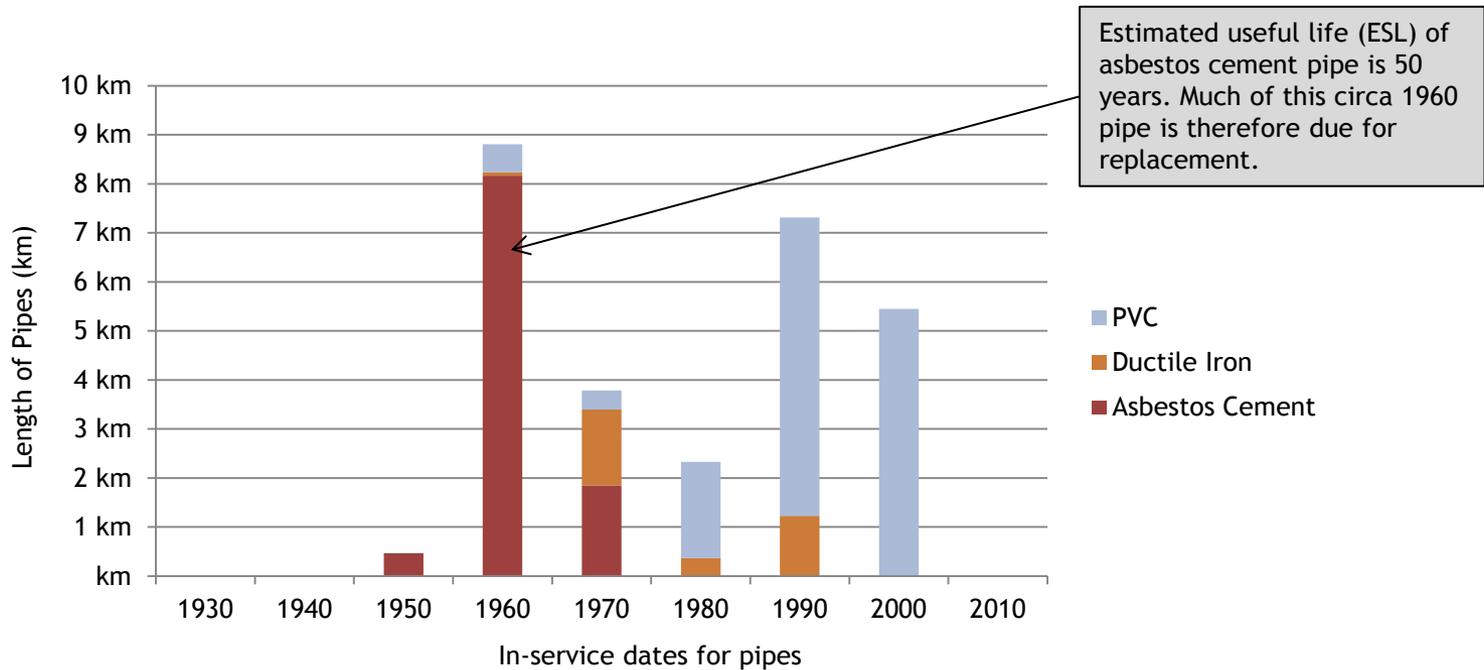


Figure 1: Distribution Pipes Length by In-service Years



2.0 Infrastructure Funding Requirements

Distribution pipes vary in diameter depending on capacity requirements. As the Town grows, capacity requirements increase and eventually some pipes need to be replaced with larger diameter pipes. The Water Supply Strategy Update recently completed identifies varying priorities of pipe replacement in some cases driven by condition and other cases by the need to increase capacity. Figure 2 below shows the current distribution of pipework by diameter today, and what the distribution will look like following replacements with bigger pipes.

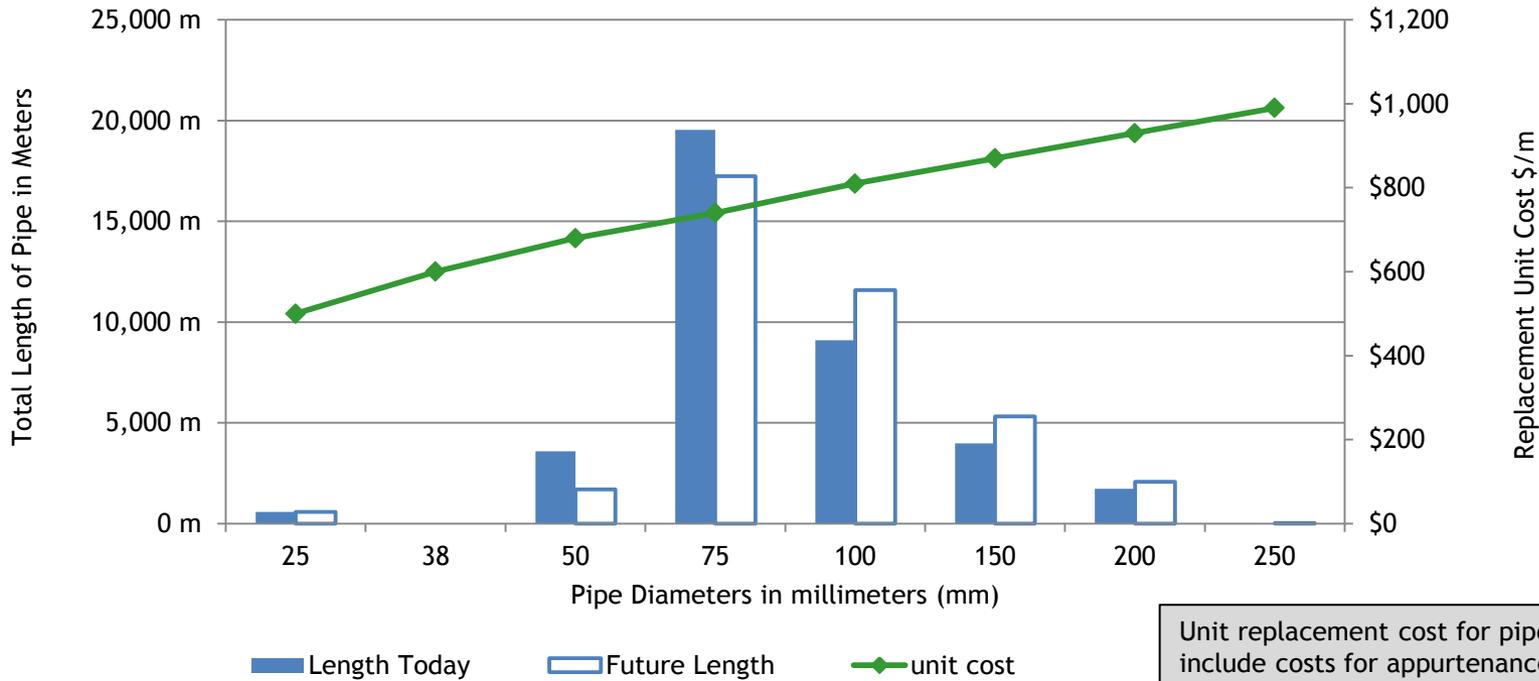


Figure 2: Comparing Diameter of Pipes Today and in the Future.

Unit replacement cost for pipes include costs for appurtenances associated with pipes. (Eg: valves, hydrants, elbows, thrust blocks, etc...)



2.0 Infrastructure Funding Requirements

The total estimated replacement value of the Town water infrastructure is \$35 Million the large majority attributable to the pipe network (see the Figure 3 legend below for breakdown). Figure 3 shows the estimated replacement time frame for the entire infrastructure over the next 100 years. The dash line represents the average of these expenditures over 100 years and is termed: the Average Annual Cost of Sustainable Ownership (ACSO). To maintain sustainability an Annual Contribution for Asset Replacement (ACFAR) should equal ACSO over the long term.

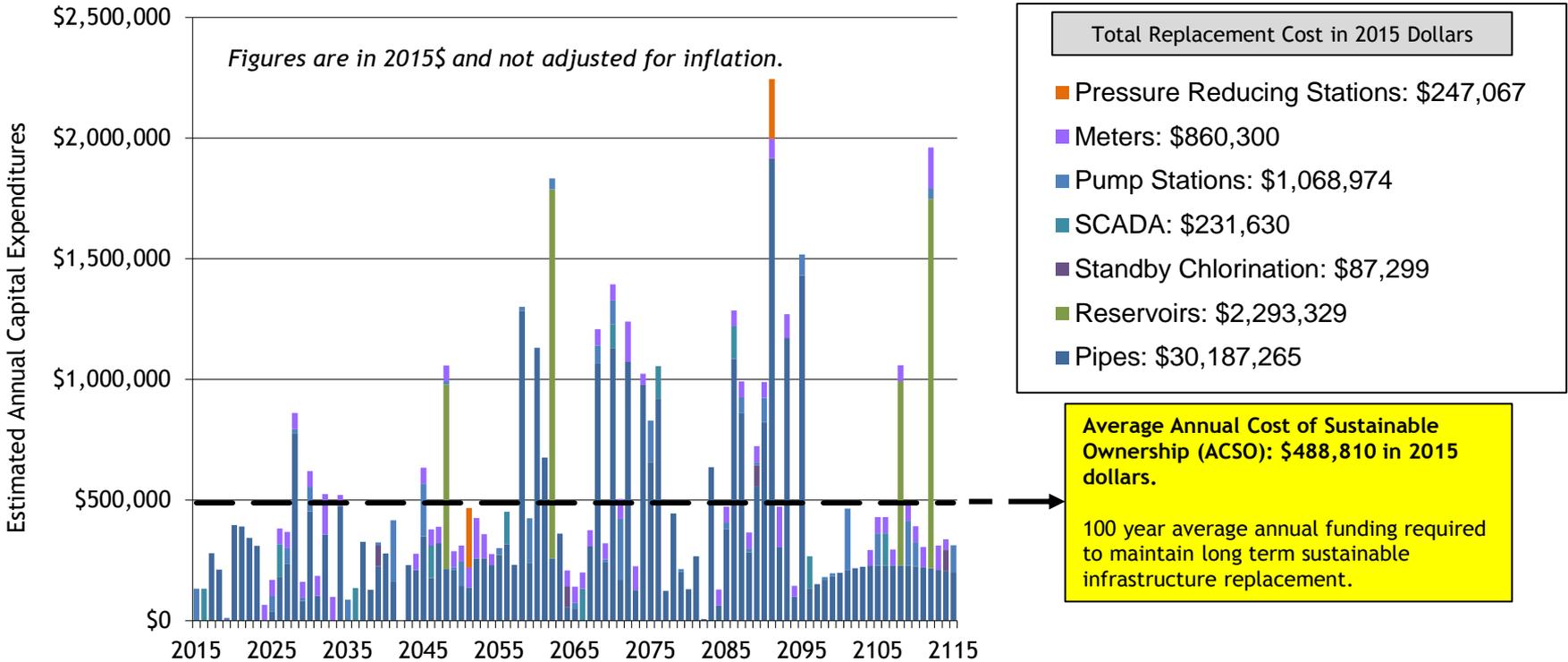


Figure 3: Long Term Estimated Capital Expenditure Schedule



2.0 Infrastructure Funding Requirements

The Water Supply Strategy Update identified certain high priority pipes that should be replaced in the short and medium term. Figure 4 below depicts the projected capital expenditures over the next 25 years for the high priority pipes as well as other non-linear assets. The ACSO over this 25 year period is \$287,131 and is in line with the budget in the Water Supply Strategy Update corresponding to priority 1, 2 and 3 capacity pipe replacement.

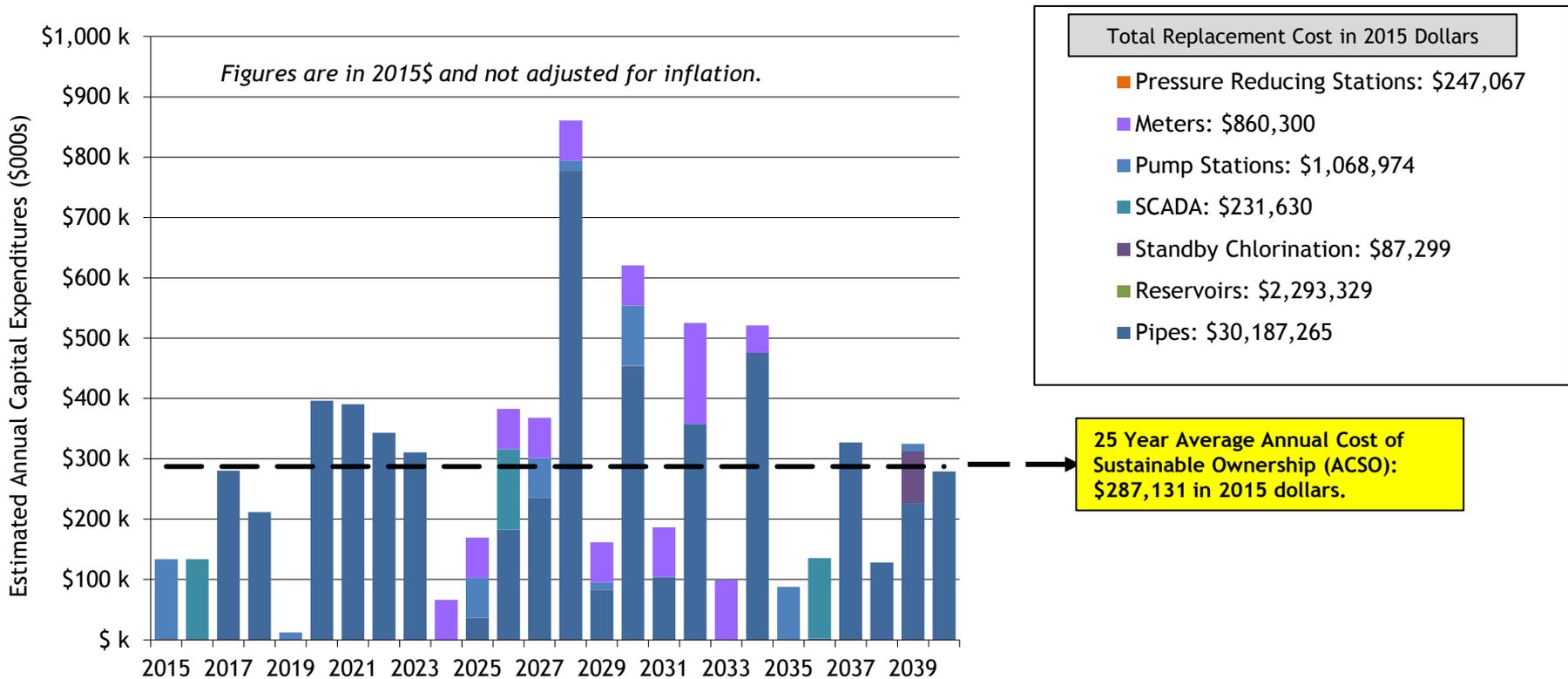


Figure 4: Asset Replacement Expenditures (100 year projection)



3.0 Long Term Financial Model (LTFM)

Figure 5 below shows the 20 year financial plan with the goal to decrease reliance on gas tax, address the infrastructure replacement needs, and building up the reserve fund to over \$500k to provide a contingency for future unforeseen expenditures.

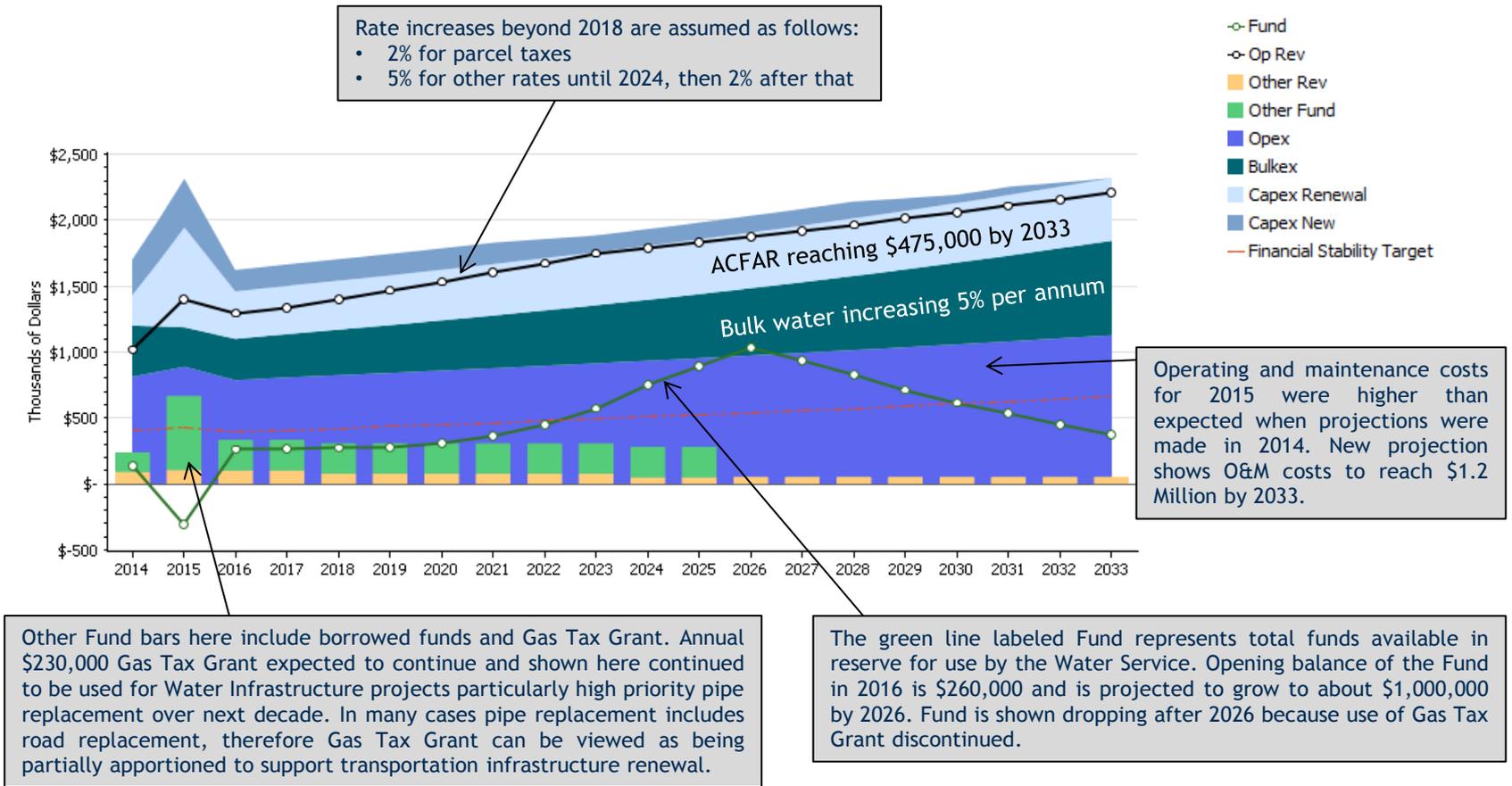


Figure 5: Revenues and Expenditures over Twenty Years



4.0 Rate Equity

The proposed rate schedule continues to support transitioning to rate equity between customer categories. Figure 6 below compares both the target and actual costs of water for each customer category. The target is the cost that should be paid by the category and is the same across all categories, as shown by the black outline boxes in Figure 6. The actual amounts paid by the categories are shown by the shaded bars. Figure 6 shows that Multifamily is currently over-paying but that annual decreases to Multifamily rates in the next couple of years will bring their actual closer to the target. ICI on the other hand is underpaying and with increases to rates, as shown in the rates schedule, the actual will get closer to the target by 2018. Single family is currently close to the target.

$$\text{target average price} = \frac{\text{total system revenues}}{\text{total billable consumption}}$$

$$\text{actual average price} = \frac{\text{customer revenue contribution}}{\text{total billable consumption}}$$

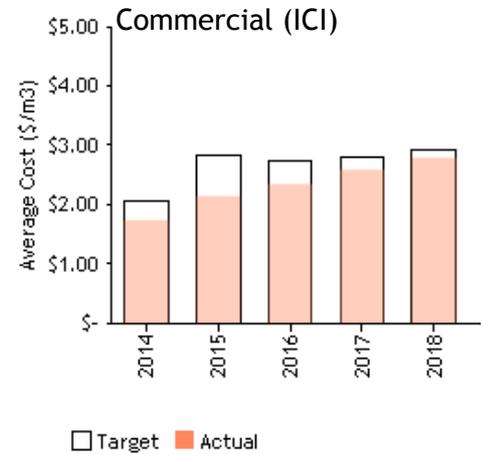
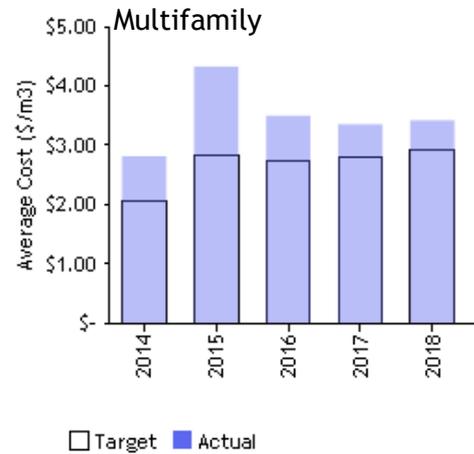
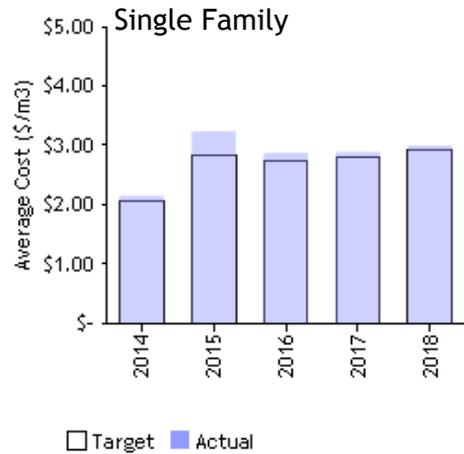


Figure 6: Comparing Average Cost by Customer Category



5.0 Revenue Projections

Table 1 below compares the previous revenue projections from the March 2015 report with the actual revenues collected for 2015.

- Line 1 shows the revenues projected based on the rates adopted for 2015
- Line 2 shows that the actual revenues collected for 2015
- Line 3 shows the shortfall for 2015 of \$130,000. This is due to two factors: refund due to a billing error to an ICI customer totalling \$87,000; and lower than expected consumption resulting in less revenues from the variable rates
- Line 4 shows the new revenue projections based on making a minor modification to the rate schedule from the March 2015 report

Table 1: Revenue Projections and Actuals (\$000s)

		2014	2015	2016	2017	2018	Total
Line 1	March 2015 Projection		\$1,501	\$1,267	\$1,326	\$1,390	\$5,484
Line 2	Actuals	\$1,044	\$1,370				
Line 3	Shortfall in Projection		\$130				
Line 4	Feb 2016 Projection			\$1,295	\$1,333	\$1,401	\$5,399

New revenue projections for 2016 onward are higher than original projections from March 2015 Report due to additional revenues from removal of the 14m3 allowance. Four year total (2015-2018) under new revenue projections still fall short of March 2015 projections; however, this shortfall corresponds to the one-time ICI refund which is proposed to be recouped using another application of the special levy.



6.0 Rate Schedule

This table depicts the rate schedule plan developed in 2014 that had as a main objective to rebalance rate equity while maintaining revenue sufficiency.

Table 2: Schedule of Rate Adjustments Developed in 2014

Customer Class		2014	2015	2016	2017	2018
Single Family	fixed charge	25.0%	20.0%	20.0%	5.0%	5.0%
	variable charge	15.0%	11.0%	10.0%	4.0%	6.0%
	parcel taxes	2.0%	2.0%	2.0%	2.0%	2.0%
Multi Family	fixed charge	(10.0%)	(10.0%)	(10.0%)	(10.0%)	(10.0%)
	variable charge	15.0%	11.0%	10.0%	4.0%	6.0%
	parcel taxes	2.0%	2.0%	2.0%	2.0%	2.0%
ICI	fixed charge	26.0%	130.4%	65.8%	21.0%	12.7%
	variable charge	15.0%	5.0%	5.0%	5.0%	5.0%
	parcel taxes	2.0%	2.0%	2.0%	2.0%	2.0%

Parcel tax increases fixed at 2% across all categories. Parcel taxes currently large component of Multifamily cost. Therefore by keeping increases low, equity is more easily achieved.

Continue steady decrease in Multifamily base fees and increase to ICI base fees in order to rebalance equity between categories.



6.0 Rate Schedule

This table shows the proposed values for rates and charges to take effect for spring of 2016.

Table 3: Schedule of Rates

Customer Class	2014	2015	2016	2017	2018
charges apply semi-annually, except tax and levy apply once annually					
Single Family					
Fixed Charge	\$28.75	\$34.50	\$41.40	\$43.47	\$45.64
Variable Charge (\$/m3)					
Tier 1 (0m3 to 138m3)	\$0.98	\$1.09	\$1.20	\$1.24	\$1.32
Tier 2 (139m3 to 275m3)	\$1.32	\$1.47	\$1.61	\$1.68	\$1.78
Tier 3 (276m3 +)	\$1.67	\$1.85	\$2.04	\$2.12	\$2.25
Multi Family					
Fixed Charge	\$20.70	\$18.63	\$16.77	\$15.09	\$13.58
Variable Charge					
Tier 1 (0m3 to 138m3)	\$0.98	\$1.09	\$1.20	\$1.24	\$1.32
Tier 2 (139m3 to 275m3)	\$1.32	\$1.47	\$1.61	\$1.68	\$1.78
Tier 3 (276m3 +)	\$1.67	\$1.85	\$2.04	\$2.12	\$2.25
Commercial					
Fixed Charge	\$14.50	\$33.41	\$55.39	\$67.02	\$75.53
Meter base charge (3/4")	\$27.40	\$63.13	\$104.67	\$126.65	\$142.73
Meter base charge (4")	\$405.15	\$933.47	\$1,547.69	\$1,872.70	\$2,110.53
Variable Charge					
Tier 1 (0m3 to 138m3)	\$0.98	\$1.03	\$1.08	\$1.13	\$1.19
Tier 2 (139m3 to 275m3)	\$1.32	\$1.39	\$1.46	\$1.53	\$1.60
Tier 3 (276m3 +)	\$1.67	\$1.75	\$1.84	\$1.93	\$2.03
Parcel Tax	\$190.00	\$194.00	\$198.00	\$202.00	\$206.00
Special Levy (proposed)		\$154.00	\$75.00		
Bulk Water Facility Charge			\$21.50		

Eliminate the 14m3 allowance

Elimination of the 14m3 allowance is a way of generating the additional revenues needed to compensate for the 2015 revenue shortfall while also being fair since this change will affect all customers equally (very few customers use less than 14m3 per half year.)

2016 Special Levy (proposed)

Another application of the Special Levy is required for 2016 in order return to the pre-boil water financial position. 2015 had higher than expected O&M costs, and lower consumption revenues including a refund of \$87,000 to an ICI customer for a billing error.

Note: % increases include a 2% cost of living increase. Charges apply semi-annually.



6.0 Rate Schedule - Sample Billings

The following table shows how sample customer billings for each customer category would change from 2015 to 2016.

Table 4: Sample Customer Billings (Annual Charges)

	Annual Use (m3)	2014 Bill	2015 Bill	2016 Bill	Increase / (Decrease)
Single Family (low)	120 m3	\$ 148	\$ 169	\$ 227	\$ 58
Single Family (median)	160 m3	187	213	275	62
Single Family (high)	300 m3	332	375	452	79
Multi-Family (median)	111 m3	123	128	167	39
ICI (3/4" meter, low use)	120 m3	174	288	450	162
ICI (3/4" meter, moderate use)	400 m3	491	621	799	178
ICI (1" meter, high use)	4,530 m3	7,354	7,838	8,414	576
ICI (4" meter, high use)	7,542 m3	13,120	14,806	16,769	1,963
Parcel Tax Base		190	194	198	4
Parcel Tax Special Levy			154	75	(79)
Parcel Tax Bulk Water Facilities Charge				21.50	21.50
Total Parcel Tax			\$348	\$294.50	(\$53.50)

Notes:

1. Calculations assume even distribution of usage between billing periods. Percent increases include a cost of living 2% increase.
2. Billings calculated are based on two semi-annual billing periods that span Oct to Sept.



7.0 Recommendations

The following table lists previous recommendations that have been completed and additional recommendations for consideration in 2016.

Table 5: Recommendations

Recommendations		Status
1	Adopt proposed rate adjustments as outlined in Table 3 which include: <ul style="list-style-type: none"> adopting rates as shown in column for 2016 in Table 3; elimination of the 14m³ allowance for all categories; application of the Special Levy for \$75.00 per parcel for 2016 only; and, introduction of the Bulk Water Facilities Charge to the parcel tax. 	Proposed March 2016
2	Review replacement cost for non-linear assets	Proposed 2016
3	Review unit replacement cost for linear assets	Completed 2015
4	Undertake more leak detection and condition assessments on certain assets, particularly assets nearing the 2/3 rd or later stage in their estimated service life	Ongoing
5	Review Town’s Development Cost Charges (DCC) and update the DCC Bylaw as appropriate	Completed 2015
6	Update the Long Term Financial Model	Ongoing
7	Continue with ongoing cost of service analysis and rate structure analysis so that additional improvements can be proposed in a subsequent rate schedule and presented to council for feedback.	Ongoing
8	Link the activities of planning capital projects (new and asset renewal) with the Long Term Financial Model to streamline the budget process.	Ongoing