

Utilities 2015-2018 Indicative Rates

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1.0 Introduction:

This report provides Administration's recommendations for the 2015-2018 Water and Wastewater Utilities indicative rates.

Most of the material presented in this attachment was presented at the 2014 March 17 Special Meeting of Council. It is repeated here for completeness, to provide background and rationale for the recommendations in this report.

The proposed indicative rates will enable the delivery of the capital investments outlined in the Water Infrastructure Investment Plan (WIIP) and the increased 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 proposed indicative rates will also lead to the long term financial health of the utilities.

Under the Utilities' business model, the Utilities must ensure that revenues can cover all expenditures. The proposed indicative rates have been built on the assumption that acreage assessments recover about half of the costs of water and wastewater infrastructure required to support growth as per the current Standard Development Agreement. Because the current Agreement is set to expire in 2015, the Utility rates will need to be reviewed once the new Standard Development Agreement is developed and the impacts on the Utilities' revenues can be evaluated.

2.0 Context:

On 2014 February 26, Administration provided the SPC on Utilities and Corporate Services with a report on the progress made to date on the Utilities 2012-2017 Financial Plan (UCS2014-0021). As part of the process to develop the indicative rates for the upcoming 2015-2018 budget cycle, the Utilities outlined the capital and operating pressures facing the Water and Wastewater Utilities.

On 2014 March 17, Administration presented the 2015-2024 Water Infrastructure Investment Plan (WIIP) to Council (C2014-0095). The WIIP is a strategic, long range capital planning document that underpins the delivery of water, wastewater and drainage services. Capital investments are needed to: maintain assets, meet increasingly stringent regulatory requirements, provide reliable and high quality services, and keep pace with growth. The WIIP identifies the infrastructure investments needed to address these four investment drivers and will guide the development of the 2015-2018 capital budget. The WIIP contains a total investment requirement of \$3.5 billion, averaging \$350 million per year for the water, wastewater and drainage lines of service. The water and wastewater component of the WIIP includes a total investment requirement of \$3.0 billion, averaging \$300 million per year. The remaining investments of \$500 million, averaging \$50 million per year are required for the drainage line of service.

Because the Water and Wastewater Utilities operate under a utility business model, its revenues must cover all of the costs to provide the Utilities' services. In addition to reviewing the 10 year WIIP, at the end of every budget cycle, the Utilities must review its operating expenditures to ensure that budgets are aligned with costs.

The Utilities are conducting a cost of service study for water and wastewater services. It is an industry best management practice to conduct cost of service studies every 5 to 10 years. Cost of service is a methodical process by which the costs of providing a service are assigned to customer classes in proportion to the benefit derived by that customer class. 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. In

2013 May, Council received the Water, Wastewater and Drainage Cost of Service Studies Workplan for information (UCS2013-0045). The workplan outlined the studies' objectives and methodology, including details on the guiding principles for utility rates.

At the 2014 March 17 Strategic Session of Council, Administration was directed to incorporate the capital investments as outlined in the WIIP and the operating increases necessary to address new operating pressures into the development of the 2015-2018 indicative rates. Understanding that the timeline to achieve compliance to the Utilities 2012-2017 Utilities Financial Plan has impacts to the rates, Administration was also directed to determine the appropriate utility financial targets for 2015-2018 and 2019-2024. Administration was also directed to incorporate findings and recommendations from the cost of service study regarding the Utility Financial Policies into the development of the 2015-2018 indicative rates.

3.0 Indicative Rates:

Revenues and expenditures for the Water and Wastewater Utilities are recorded and allocated separately. Although the capital and operating pressures facing the Water and Wastewater Utilities are similar, they can have a different level of impact on each of the Utilities. In particular, growth is placing significantly more pressure on the Wastewater Utility. Although population growth affects both Utilities, water conservation efforts have helped to offset the growing demand on the water system. The City's 30 in 30 water efficiency plan aims to accommodate Calgary's future population growth with the same amount of water removed from the river as in 2003. Although water conservation helps to offset the total water consumption, a water treatment plant expansion may still be required to address the increasing peak day water demand and other factors such as regulatory compliance.

As population growth occurs, additional wastewater is produced regardless of water conservation efforts. The Wastewater Utility is experiencing the full impacts of growth and needs to advance many programs to address this. Additional capacity at the wastewater treatment plants and throughout the collection system will be required as population continues to grow at a rapid rate. The need to diversify and expand the biosolids management program is a further example of how growth is impacting the Wastewater Utility.

The Water and Wastewater Utility rates are different because the capital investment needs for infrastructure and operating costs are unique to each Utility, and the amount of debt each Utility has is also different. However, for simplicity the Utilities have developed a blended rate. The blended rate considers a weighted average of the water and wastewater rates. Rates discussed in this report are blended rates and the rate impacts discussed represent a combined impact. The separate rates for water and wastewater which are comprised in the blended rate are shown with the proposed rate scenario in Table 3.

The utility rates are impacted by capital investments, operating expenditures, and the requirements to achieve compliance with the financial policies and targets within the six year timeline approved by Council in 2011. The Utilities have evaluated the rate impacts of each of these variables and have outlined a proposed rate scenario to be considered by Council for the 2015-2018 indicative rates, which allows for financial compliance by 2018, rather than the original timeline of 2017 approved by Council in 2011.

3.1 Capital Investments:

Over the next ten years, additional investments in water, wastewater and drainage infrastructure will be required to address the following:

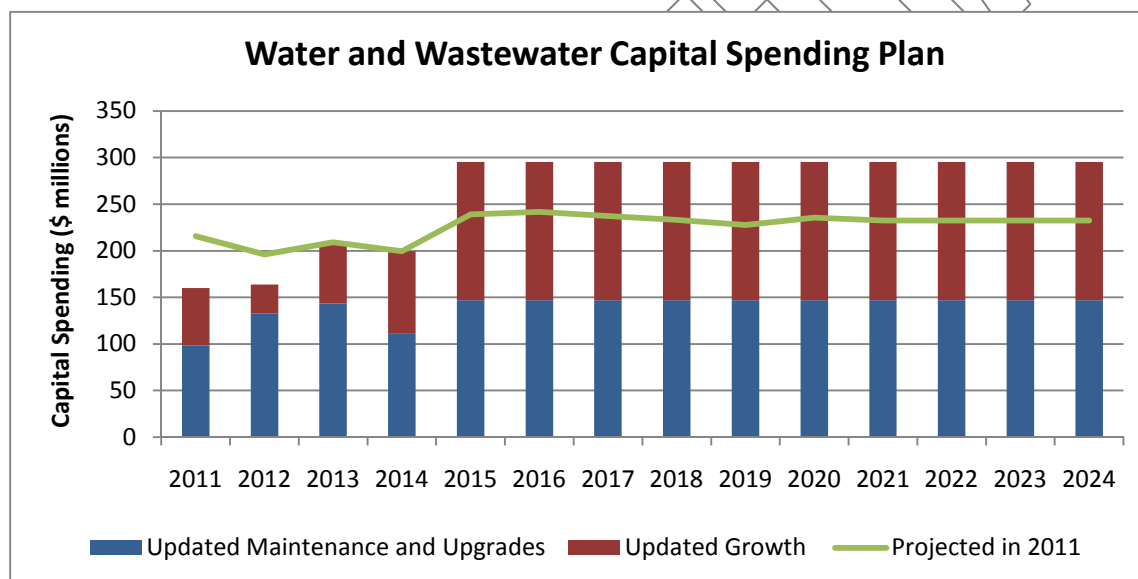
- Aging infrastructure, which impacts the ability to operate efficiently and effectively without service interruptions;

- Changes to regulatory and environmental requirements, which necessitate infrastructure upgrades or the construction of additional infrastructure;
- The need to maintain and enhance service levels in order to continue to provide reliable and trusted water, wastewater and drainage;
- Continued population growth, which triggers capacity upgrades and expansions.

Over the current budget cycle, the Utilities have budgeted \$250 million per year for water and wastewater investments and have delivered around a \$200 million per year capital program for the Water and Wastewater Utilities. The WIIP (C2014-0095) will deliver water and wastewater infrastructure upgrades, new infrastructure and capital maintenance programs valued at \$3.0 billion, averaging \$300 million per year for the next ten years.

The WIIP balances the needs of citizens with business risks and the financial capacity of the Utilities. The result is a plan that provides a logical sequence of capital expenditures over the next ten years. The increase in capital spending from \$200 million to \$300 million (Figure 1) will increase utility rates by about 1.6 percent per year over the four-year budget cycle.

Figure 1: Water and Wastewater Capital Spending Plan



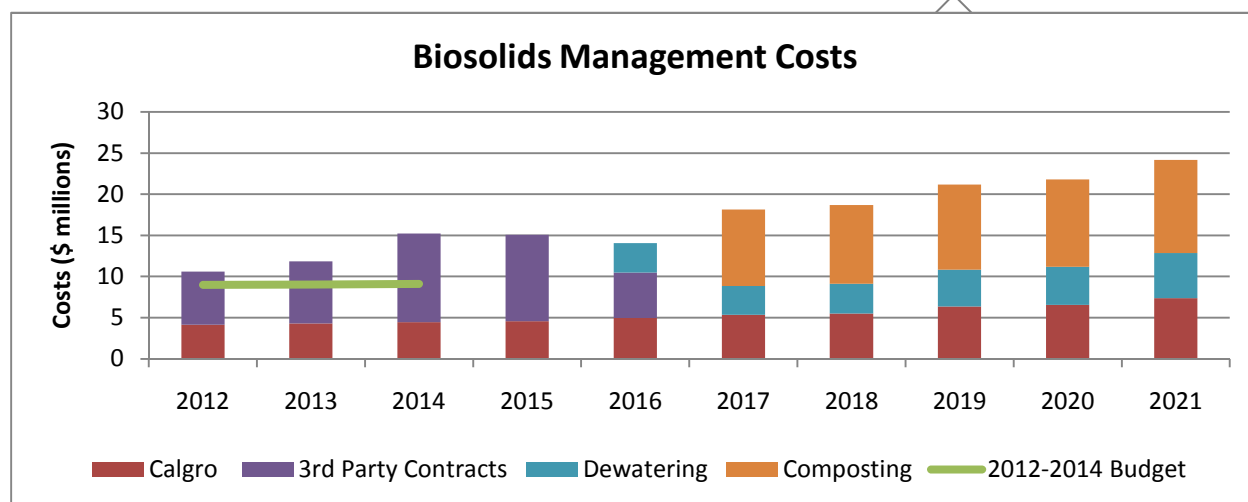
3.2 Operating Expenditures

As outlined in the Utilities Financial Plan Update report (UCS2014-0021), a review of operating pressures and budgets has shown that some operating programs such as energy costs and biosolids management were under-budgeted through the last budget cycle. To manage these operating shortfalls during the current budget cycle, the Utilities have had to make adjustments such as delayed maintenance activities. It is important for the Utilities to make adjustments to revenues to account for these shortfalls when developing the indicative rates. Delayed maintenance would have negative cumulative effects over the long term.

The Utilities are working to implement a diversified biosolids management plan that includes a new dewatering facility and partnering with Waste and Recycling Services on a joint composting facility. The diversified program will allow the Utilities to address the accumulated biosolids and the projected volumes from a growing population. The biosolids management program has been under-budgeted over the 2012-2014 budget cycle by approximately \$1-2 million dollars.

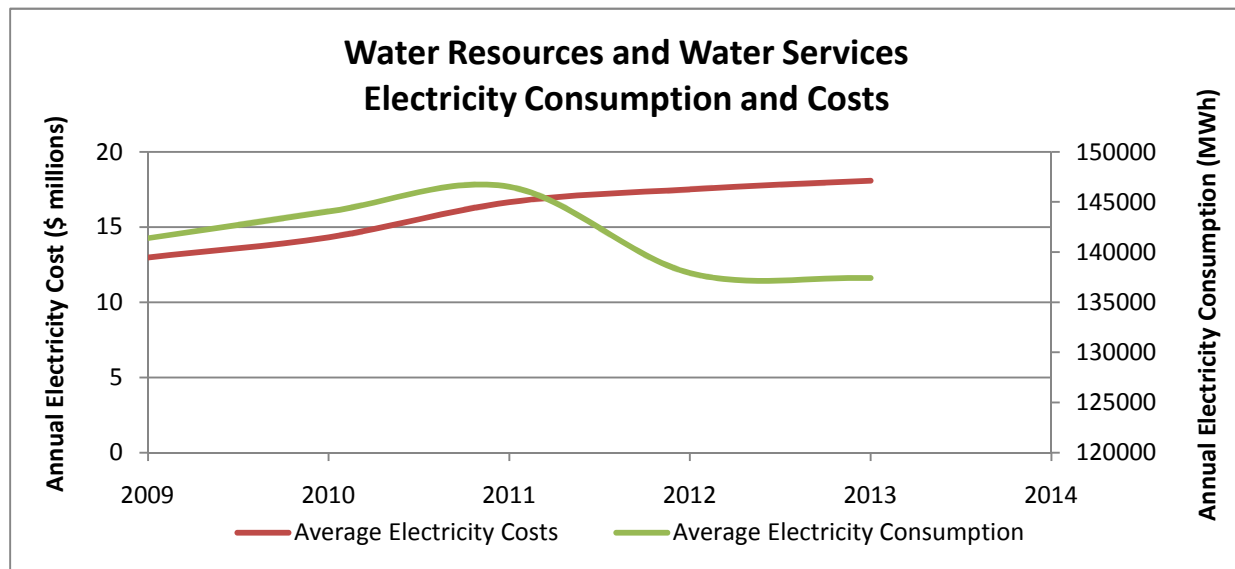
per year. With the composting facility expected to come online in 2017, the Utilities will need to pay for processing of biosolids. This additional operating expenditure related to the composting facility is expected to be approximately \$10 million per year. This composting operating expense will be offset by a reduction in third party contracting for biosolids. The net operating impact related to biosolids management is expected to be between \$7 to 9 million per year (Figure 2). This increase in operating costs will increase utility rates by 0.45 percent per year over the 2015-18 budget cycle.

Figure 2: Biosolids Management Costs



Within the current 2012-2014 budget, the Utilities have an average budget of \$20.7 million per year for energy costs. This energy budget includes both natural gas and electricity. Energy costs have been higher than forecasted over the current 2012-2014 budget cycle. Periodically, electricity suppliers review their operational costs and apply rate riders to customers. Historically, rate riders have been fractions of a cent. However, since 2011, the rider costs have been notably higher, and continue to rise with the latest rider set at 2.17 ¢/kWh for 2014. To try and offset the higher energy costs, the Utilities have implemented initiatives to reduce energy consumption where possible. Despite these efforts to find efficiencies, the energy costs continue to be higher than the budget (Figure 3). Preliminary estimates for additional energy budget impacts are in the range of \$8 to \$10 million per year. This estimate includes a portion for anticipated rate riders and additional energy consumption to operate new and expanded systems. This increase in operating expenditures for energy costs will increase utility rates by 0.6 percent per year over the four-year cycle.

Figure 3: Water Resources and Water Services Electricity Consumption and Costs



The new capital investments included in the WIIP include plant expansions and new facilities. These new facilities and expansions also have operating requirements. These new operating requirements will be phased in over the next budget cycle as new facilities come online. These operating requirements range from \$1 to 5 million per year and will increase utility rates by between 0.1 and 0.3 percent per year.

Overall the review of the operating budgets has shown that an operating increase of \$29 million per year over the 2015-2018 budget cycle will be required to address operating pressures such as increasing energy costs, biosolids management, inflation, costs associated with new capital identified in the WIIP and inflation. The impact of the overall operating budget increase will be a rate increase of 2.0 percent per year over the four year budget cycle.

3.3 Payments to the City

Under the Utility business model, the Utilities pay to The City a return on equity, which is capped at \$42.5 million, and a franchise fee, which is 10 percent of revenue from the sales of goods and services. Hence, any rate increases to support the capital and operating requirements requires an additional contribution (10 percent of that increase), to meet the franchise fee obligation. In this case, the increase in franchise fee as a result of the increase in revenue to support the capital and operating requirements will have about a 0.8 percent impact on the utility rate.

3.4 Financial Plan Compliance

The 2012-2017 Utilities Financial Plan includes the requirement to achieve financial targets by 2017 as shown in Table 1.

Table 1: Utilities Financial Plan Targets

Policy Area	6 Year Financial Plan Target	2011 Actual	2013 Actual
Debt Limit	Maximum \$2.0 billion	\$1.5B	\$1.5B
Debt service	Maximum 40% of revenues	36%	30%
Cash financing of capital maintenance	100%	7%	35%
Sustainment reserve	10% of revenues	0.8%	0.9%
Debt to equity ratio	60/40	71/30	70/30

After two years, the Utilities have made good progress towards the targets in the six year financial plan. When the financial plan was established in 2011, it was envisioned that the Utilities would achieve compliance by 2017 which represented the end of two budget cycles. To align with the new four year budget cycle, the Utilities have evaluated the rate impacts required to achieve the financial targets by 2018.

Based on the projections in 2011, the cash financing of capital maintenance target is achieved first, then the revenue is directed to the sustainment reserve. Therefore, the Utilities considered the rate impact of achieving these targets together. The rate impact to achieve compliance to the cash financing of capital maintenance and sustainment reserve targets by 2018 is expected to be about 1.5 percent.

With the efforts the Utilities are making to cash finance capital maintenance and build up the sustainment reserve, the Utilities are able to better manage debt servicing. The debt servicing compliance is maintained over the next 10 years. The rate impact of complying with the maximum debt limit of \$2 billion is about 2.4 percent. With the efforts to comply with the cash for capital maintenance and the sustainment reserve, the debt to equity ratio reaches compliance by 2018 without any additional rate impacts.

3.5 Proposed Indicative Rate Scenario

Administration has summarized the rate impacts in a proposed indicative rate scenario (Table 2). This proposed rate scenario includes an average operating increase of \$29 million, an average increase of \$100 million in capital spend, and the achievement of financial compliance by 2018 to align with the new four year budget cycle. The total estimated rate impact is 8.3 percent per year. This translates into a \$6.95 increase to the average monthly household bill for 2015.

Table 2: Proposed Blended Indicative Rate

	Increased Operating Costs	Increased Capital Spend	Franchise Fee	Financial Policy			Estimated Total
				100% Cash Financing & 10% Reserves	Debt Limit Debt Servicing Limit	60/40 Debt/Equity	
Budget Requirement	\$29M	\$100M	10% of revenues	By 2018	\$2B max 40% max	By 2018	8.3% (\$6.95)
Estimated Rate Impact (\$ increase to average monthly household bill for 2015)	2.0% (\$1.67)	1.6% (\$1.34)	0.8% (\$0.67)	1.5% (\$1.26)	2.4% (\$2.01)	0% (\$0.00)	

Table 3 shows the separate water and wastewater rate increases which are used to calculate the blended rate. The blended rate is based on a weighted average of the water and wastewater rates and represents the combined impact of the two rates. The weighted average takes into consideration the impact of the separate water and wastewater increases on the average monthly household bill.

Table 3: Proposed Water and Wastewater Indicative Rate Increases:

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

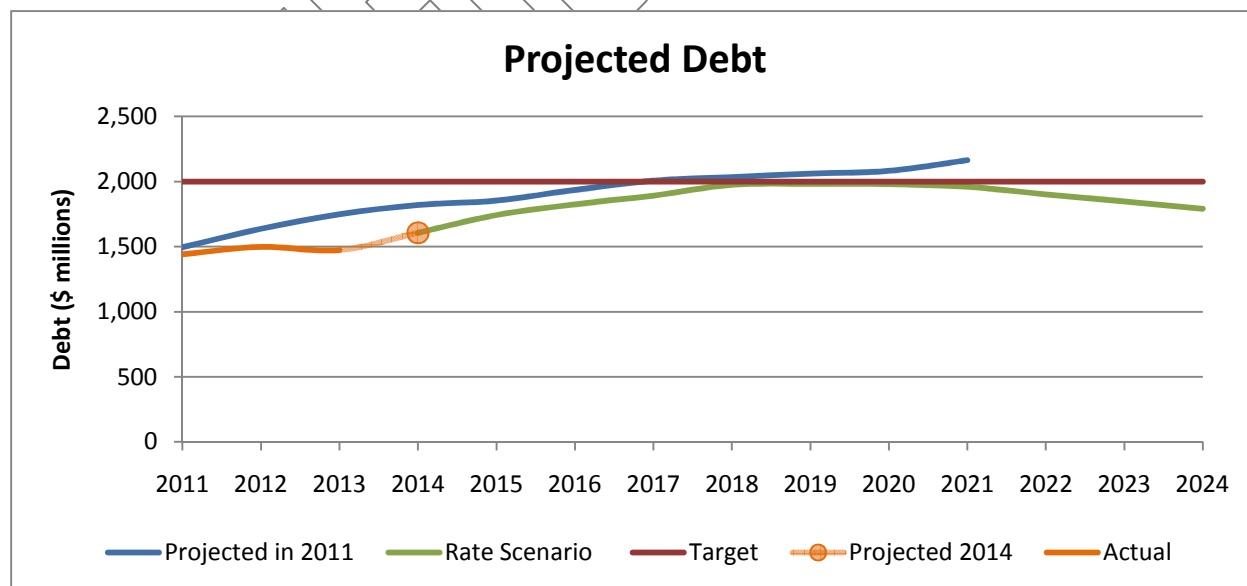
4.0 Financial Compliance Projections:

Based on the proposed rate scenario, the Utilities have updated the ten year projections for each of the financial targets.

4.1 Projected Debt

The previous projection from 2011 had anticipated that the \$2 billion debt target would be exceeded in 2017. Figure 3 shows that the projected debt for the proposed rate scenario is maintained below the \$2 billion debt limit and the previous projection for the next ten years. Even with the increased capital investments required over the next ten years as outlined in the WIIP, the Utilities are projected to maintain the projected debt below the target that aligns with the Corporate long range financial plan.

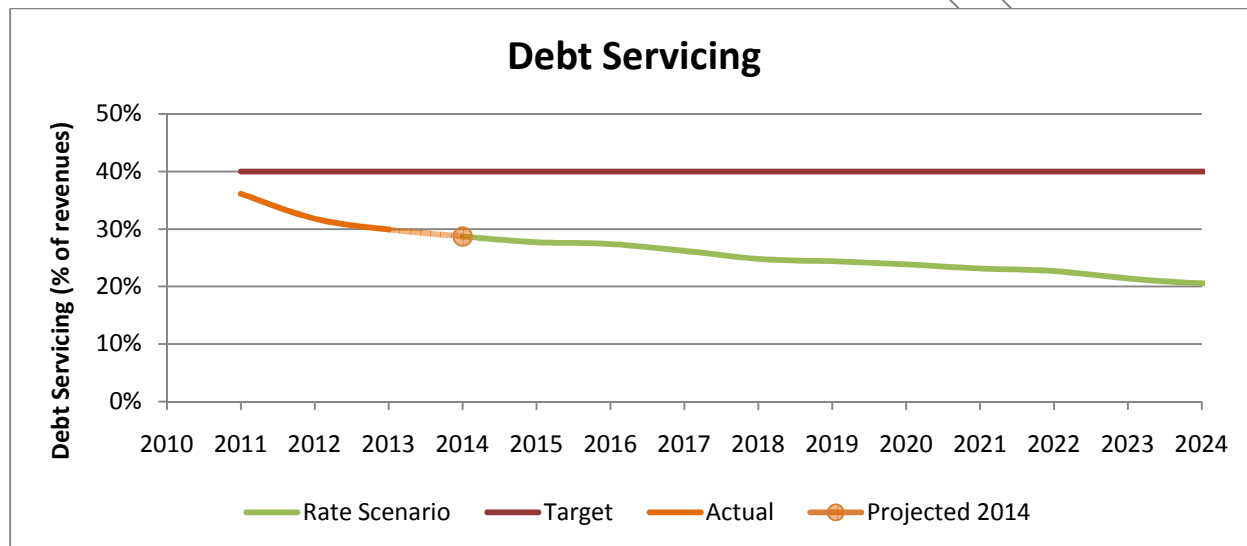
Figure 3: Projected Debt



4.2 Projected Debt Servicing

The projected debt servicing over the next ten years has been evaluated for the proposed rate scenario. The Utilities have been able to make significant progress on the debt servicing target over the last two years. Figure 4 demonstrates that with the efforts the Utilities are making to maintain the projected debt below the target and with the increased cash financing of capital maintenance the Utilities are able to better manage their debt servicing. Debt servicing is maintained below the target of 40 percent of revenues and is trending towards 20 percent over the next ten years.

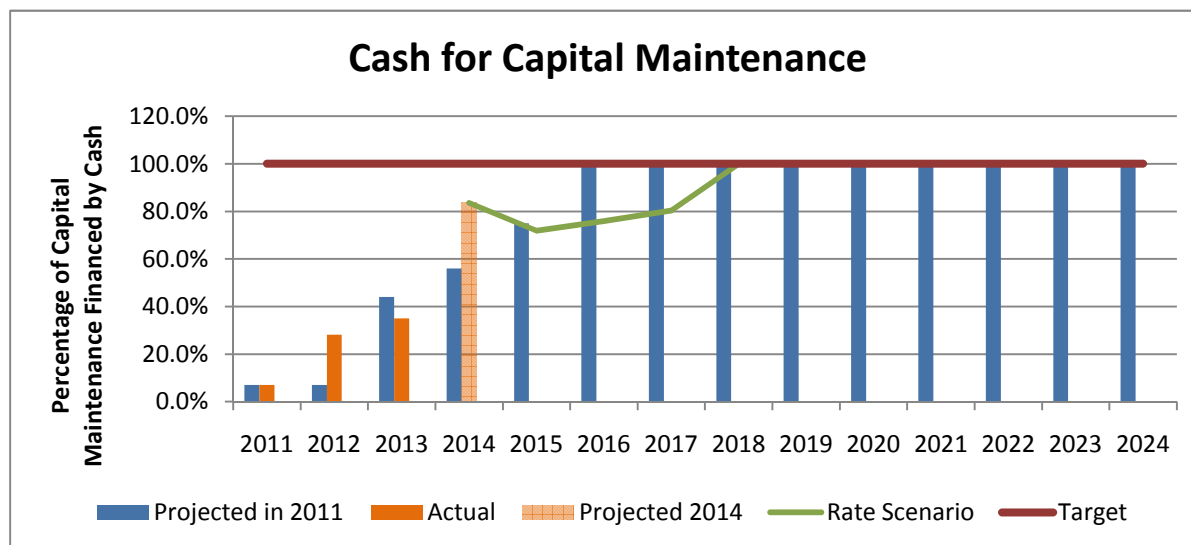
Figure 4: Projected Debt Servicing



4.3 Cash Financing of Capital Maintenance

When the Utilities established the Utilities Financial Plan in 2011, they had projected that the cash financing of capital maintenance target would be achieved first, then the revenue could be directed to establish the sustainment reserve. Figure 5 shows that the Utilities have been making good progress and are projected to achieve compliance by 2018 even with the plans to increase the overall capital program. The slight decrease projected in 2015 is due to the increased in capital spending as outlined in the WIIP for 2015-2024. The increased capital spending results in increased capital maintenance in 2015 but the cash available is not increased at the same rate.

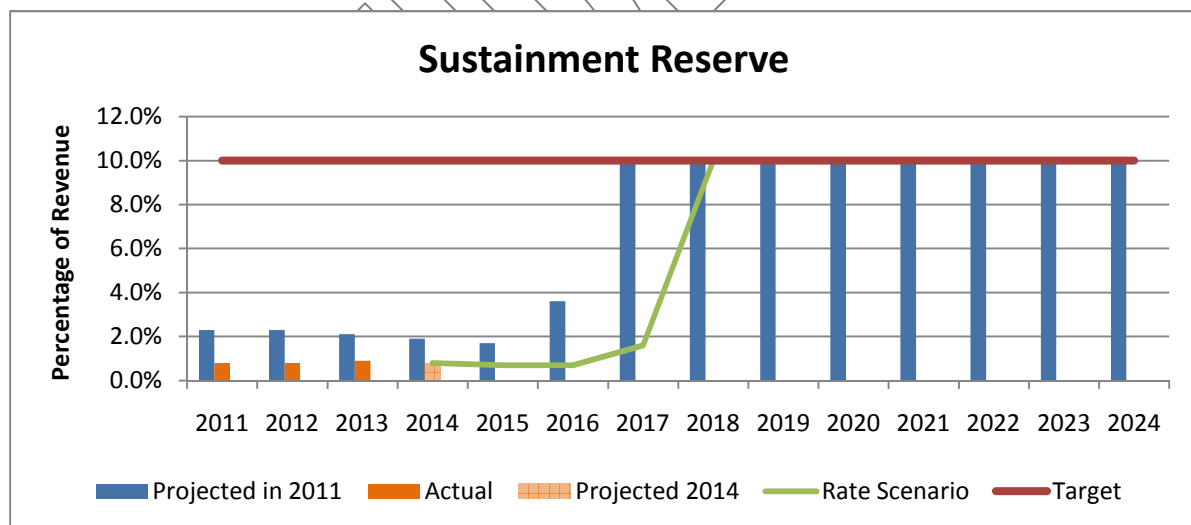
Figure 5: Cash Financing of Capital Maintenance



4.4 Sustainment Reserve

The sustainment reserve target is projected to be achieved in 2018 for the proposed rate scenario. Most of the progress to achieve this target is expected to occur in 2018 once the cash financing of capital maintenance target is achieved.

Figure 6: Sustainment Reserve

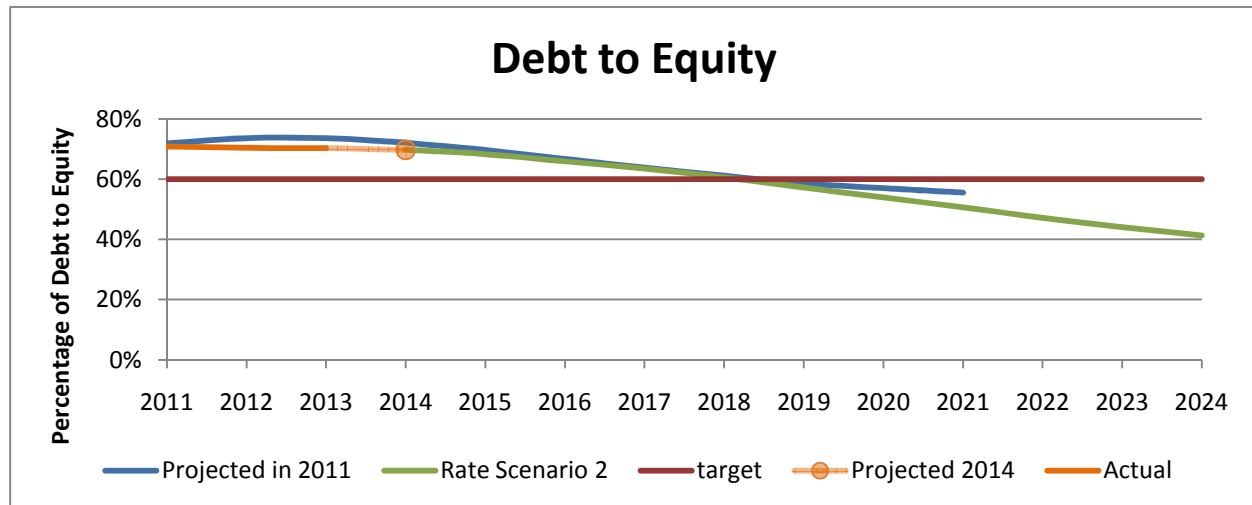


4.5 Debt to Equity

The debt to equity ratio is the parameter most commonly used in the utility industry to monitor the overall financial health of Utilities. The debt to equity ratio is directly related to the total projected debt. Figure 7 shows that the Utilities' debt to equity target is achieved by 2018 with the proposed rate scenario. The progress made to maintain the projected debt below the \$2

billion target for the next ten years allows the Utilities to achieve the debt to equity target without any additional rate impacts.

Figure 7: Debt to Equity Ratio



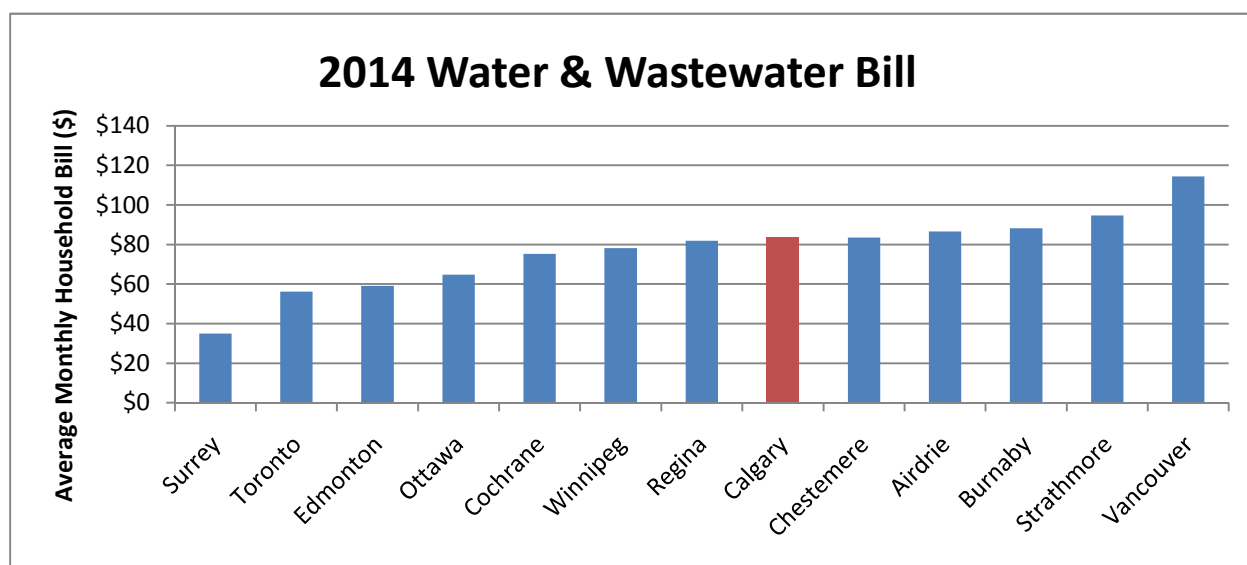
5.0 Continual Improvement in Financial Management

As the Utilities work to achieve compliance to the financial targets set in 2011 over the next budget cycle, work will continue to improve and monitor the overall performance and financial health of the Utilities.

In addition, the Utilities will continue to look for opportunities for improvement. Water Services is undergoing a zero-based review in 2014, with findings and recommendations expected in 2015. Opportunities to continue to increase efficiencies and effectiveness will be implemented through the 2015-2018 budget cycle. It is also expected that a zero based review will be conducted in Water Resources.

The Utilities have compared the 2014 Utility blended rate against that of other Canadian municipalities. Figure 8 shows that Calgary continues to be near the median of the Utility rates. The Utilities have also compared the 2014 rate increases against that of other North American municipalities, which varied from 3 to 16 percent. Calgary's rate increase of 9.8 percent in the 2012-2014 business cycle, was higher than the average 8.0 percent. Not all municipalities have released their 2015 rates, so the Utilities were unable to compare the proposed indicative rate at this time.

Figure 8: 2014 Average Monthly Water and Wastewater Bill



5.1 Cost of Service Study

The water and wastewater cost of service study is underway. One of the outcomes of the study is a review of customer classes and the recommendation of the equitable allocation of costs. This includes rate design considerations for each of the customer classes that reflect the current and future state and support achieving the Utilities Financial Plan. Potential changes to rate structures for each customer class will be reported to Council in the latter half of 2014, along with a proposed implementation plan.

The study also includes a review of the financial policies and targets within the context of rate designs and could result in recommended changes. Preliminary results from the cost of service study have included recommendations regarding the Utilities' reserve levels. Based on a review of industry best practices, the study consultant recommends that an operating reserve be established to meet short term variability in revenues and expenses. The consultant recommended that the sustainment reserve currently being built up by the Utilities be considered an operating reserve. The sustainment reserve target would be within the range recommended for an operating reserve.

In addition, the consultant has recommended that the Utilities consider a capital reserve to meet unexpected capital outlays and overruns. A target for this type of reserve could be based on a percentage of the utility system assets. The study has also found that a rate stabilization reserve is commonly used in industry to manage the level of rates despite variability in water usage, weather and economic cycles.

Based on the preliminary recommendations from the consultant, no changes are recommended to the financial targets and policies at this time because the Utilities will focus on achieving compliance to the financial plan over the 2015-2018 budget cycle. However, further analysis is required to determine the potential need for a capital and/or rate stabilization reserve.

5.2 Revenue Projections

Accurate revenue projections are an important component to mitigating the Utilities' financial risks. The Utilities have been working to improve the revenue projections and will continue to refine the projection methods used over the next budget cycle. To improve the revenue

projections, the Utilities have been analyzing consumption trends to account for the conservation efforts and population growth. In addition, the projections are broken down further and evaluated for each customer class separately. Each customer class is impacted by growth and conservation differently because they have varying levels of fixed rate components. Because the cost of service study is reviewing the equitable allocation between customer classes, these projections will need to be updated once the study is completed. Regular updates to the cost of service study to respond to changes within customer classes will be an important aspect to maintain accurate revenue projections.

5.3 Impacts of Acreage Assessments on Utility Rates:

Under the current Standard Development Agreement, the Utilities share the cost of new growth with the development industry. Acreage assessment rates were set in 2011 to recover about half of the cost of water and wastewater infrastructure required to support growth from the development industry. The remaining half of the costs is recovered through water and wastewater rates. Acreage assessment rates were set using the 10-year investment plan in place at that time. The current Development Agreement is set to expire at the end of 2015.

As part of the development of a new Standard Development Agreement, the Utilities will need to calculate new water and wastewater acreage assessment rates. These rates are based on the estimated growth related expenditures identified in the WIIP over the next ten years. The new 2015-2024 WIIP has increased water and wastewater investments by about \$1.0 billion over ten years, with growth being the most significant driver. Out of the total \$3.5 billion WIIP, 45 to 55 percent of the investments are to support growth.

Preliminary results using the updated 2015-2024 WIIP show that the acreage assessment rates for wastewater would double, assuming that the Utilities continue to share the cost of growth. This significant increase is a direct result of the increased wastewater treatment investments over the next 10 year timeframe. The acreage assessments for water would also increase but not as significantly. Increases to the percentage of cost recovery for water and wastewater infrastructure that supports growth in the new Standard Development Agreement would result in further increases to the acreage assessment rates for water and wastewater.

Water and wastewater infrastructure is considered to be leading infrastructure. The infrastructure needs to be installed before development can occur. The revenue generated from acreage assessments is dependent on the amount of land developed in any one year. As a result, the revenue from acreage assessments is collected after the infrastructure is completed and expenditures are incurred. In some cases, the recovery from acreage assessments can be years later. In the years that development is less than projected, rate revenues would be required to make up any shortfalls for growth related expenditures. Changes to the percentage of cost recovery for growth related water and wastewater infrastructure would result in an increased reliance on acreage assessment revenue for the Utilities. This would lead to an increased revenue cash flow risk.

Because the new Standard Development Agreement will not come into effect until 2016, increased revenues will not be realized until 2017 at the earliest and may not have a significant impact on the Utility rates for 2015-2018. The proposed indicative rates are based on revenue projections that use the acreage assessment rates embedded in the current Standard Development Agreement. Changes to the percentage of cost recovery for growth related water and wastewater infrastructure could have a notable impact on the Utility rates beyond 2017. The increased percentage of cost recovery would increase acreage assessment revenues and would result in downward pressure on the Utility rates. However this rate impact would be partially offset by upward pressure from additional reserve requirements to mitigate the increased revenue risk related to the increased reliance on acreage assessment revenue.

5.4 Financial Targets for 2019-2022

Over the next budget cycle, the Utilities intend to conduct a more detailed review of metrics and targets used in industry to measure the financial health and debt management of the Utilities.

Administration intends to work with a financial consultant to further review a number of financial policies and practices, including:

- Debt limit and debt servicing targets
- Debt to equity ratio
- Reserve levels (with consideration for potential changes to acreage assessments)
- Capital program funding

This information will be used to develop the appropriate financial targets for the 2019-2022 budget cycle.

6.0 Recommendation

Administration recommends that the 2015-2018 Utility indicative rates be developed based on the proposed rate scenario shown in Table 2. The proposed indicative rate includes the capital requirements to deliver the WIIP, operating increases to address operating pressures and the revenues required to achieve compliance with the Utilities financial plan and targets by 2018 to align with the new four year budget cycle.

Administration also recommends that the Utilities incorporate a new cost of service study and an evaluation of financial policies and targets for 2019-2022 in the 2015-2018 Action Plan. More frequent cost of service studies will help the Utilities to mitigate financial risk and further analysis by a financial consultant will help to identify the best metrics to monitor the financial health of the Utilities.

Administration will report back to Council in 2016 with an update on the Utilities Financial Plan progress. Included in this update will be a review of the Utility rates based on the new Standard Development Agreement and any recommended adjustments based on updated revenue projections and reserve targets.