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Director	CAO

COUNCIL AGENDA
Date: July 10, 2017 Item: 5.

DISTRICT OF WEST VANCOUVER
750 17TH STREET, WEST VANCOUVER BC V7V 3T3

5.

COUNCIL REPORT

Date:	June 13, 2017
From:	Michelle MacLean, Business Manager, Engineering & Transportation
Subject:	Utility Rate Review Findings
File:	1700-01

RECOMMENDATION

THAT as described in the report dated June 13, 2017 titled, "Utility Rate Review Findings":

1. the consultant recommendations to adjust the water and sewer rate structures be approved for 2018; and
2. staff proceed with public engagement concerning the rate structure changes and return to Council with final 2018 utility rates and budgets in the fall.

1.0 Purpose

This report documents the objectives, findings and recommendations of the 2017 Utility Rate Review Study, seeks Council approval to implement rate structure changes in 2018, and requests approval to begin public engagement prior to 2018 rate setting in the fall.

2.0 Legislation/Bylaw/Policy

Waterworks Regulation Bylaw No. 4490, 2006, Amendment Bylaw No. 4925, 2016 Effective Date: December 12, 2016

Sewer and Drainage Utility Fee Bylaw No. 4538, 2007, Amendment Bylaw No. 4924, 2016 Effective Date: December 12, 2016

3.0 Background

The District began billing all consumers for water consumption under a full user-pay, universally metered system in January 2007. The Universal Metering Project was implemented to provide customer equity, to promote water conservation, and to detect leaks.

With ten years of data, the District contracted a consultant, FCS Group, in June, 2016 to perform a utility rate review. This study involved a review of previously established utility fiscal policies and an update of the revenue requirements analysis for the study period 2016 through 2022, which led to suggested improvements to the rate structures originally implemented in 2007.

3.1 Previous Decisions

N/A

3.2 History

Historically, the Water and Sewer Utilities have operated under a pay-as-you-go approach. All costs attributable to the production and delivery of potable water and the collection and treatment of sewage are borne by the utilities, and are paid for in the year that they occur. Exceptions to this policy have been related to the investments made in universal metering, and to the development of the Eagle Lake water source.

4.0 Analysis

4.1 Discussion

The utility rate review completed in 2017 verified that many aspects of the water and sewer models continue to be valid, however there are recommendations to adjust the rate structure to meet emerging needs.

The basic framework for evaluating utility revenue requirements and rate structures includes sound financial policies intended to promote the long-term financial viability of each utility. These policies address a variety of topics including: cash management, capital funding strategy, and debt management. The assumptions and policies built into the water and sewer models are described in detail in **Appendix 1**.

Study Objectives

The primary objectives of the utility rate review were to:

- improve the accuracy of the rate model predictions with refined demand and source profiles;
- address costs of the new North Shore Wastewater Treatment Plant; and
- build capital reserves, and increase the capital infrastructure replacement funding, per District fiscal policy.

The rate review also addressed the following continuing objectives of the water and sewer utilities:

- cover the costs of providing services;
- encourage water conservation; and
- provide increased revenue stability and predictability.

The study explored changes to the rate structures to better align District policies, and also entailed a full analysis of revenue requirements and how to achieve them. This report focuses specifically on rate structure recommendations, while the rates themselves will be finalized and brought to Council in the fall as part of the 2018 budget process.

For water conservation, the main focus is on Single Family Residential (SFR) customers, who account for 80% of local water use and 95% of utility customers with a current inclining block structure as follows:

- 0 – 60 cubic metres at $1.15/m^3$;
- 61 – 180 cubic metres at $1.55/m^3$; and
- 180+ cubic metres at $1.93/m^3$.

Based on the analysis, the existing SFR rates are no longer effectively providing a conservation incentive. The original block structure was designed to encourage conservation through an inclining three block structure, and the average, daily per capita demand declined from 2006 to 2011, notwithstanding the impact of weather on water demand.

According to recent usage data, 50% of utility accounts reflect 60 cubic metres or less of water per quarter. This means that half of our customers have no further incentive to reduce their usage, as they are already paying the lowest block rate.

There is a finite volume of water available from Eagle Lake, and any usage above that must be purchased from Metro Vancouver at a higher per unit cost. Therefore, a reduction in usage leverages local water resources produced at a lower cost, which results in environmental benefits and direct cost savings.

Water Utility Rate Design Adjustments

To incentivize water conservation, the study recommends that the existing block structure be changed from three to four blocks as follows:

- 0 – 30 cubic metres;
- 31 – 60 cubic metres;
- 61 – 180 cubic metres; and
- 180+ cubic metres.

Adjusting the pricing differentials between the blocks to create price signals that encourage conservation is also recommended. The lowest consumers are most protected from rate increases and increases will be higher for heavy users. The new four block structure would provide a mechanism to reward low SFR consumers and encourage further conservation, while still recovering sufficient funding for the utility.

No changes to the rate structures are recommended for Multi-Family Residential (MFR) or Commercial customers.

Sewer Utility Rate Design Adjustments

The prominent driver for a sewer rate structure change is the impending increase in the regional levy. Metro Vancouver will build the new North

Shore Wastewater Treatment Plant, the costs of which will be allocated to member municipalities. The study recommends separation of the proportional regional and local revenues, expenses, and rate projections and designs. The main benefit of this change is to increase transparency in customer bills and to better understand the financial drivers in the forecast, in light of anticipated cost increases associated with the new treatment plant.

4.2 Sustainability

The District's universal metering program provides residents opportunity to monitor and control their water usage, as well as provides an incentive to conserve.

4.3 Public Engagement and Outreach

The first quarter, 2017 Utility insert informed residents the study was underway. Presentation of the study findings, recommendations and impact to residents will be presented to the public in the fall of 2017.

4.4 Other Communication, Consultation, and Research

An internal working group of staff from Finance, Engineering Services, Utilities and support from Communications has been involved throughout the rate study.

Details of the 2018 – 2022 utility budgets will be included as part of the communications related to the overall District budget process this fall.

5.0 Options

5.1 Recommended Option

Staff recommend the rate structure adjustments discussed above be implemented for 2018 with staff to conduct public engagement in the fall of 2017. Detailed budgets and proposed 2018 utility rates will be brought to Council for consideration, as part of the budget process this fall.

5.2 Alternative Options

Council may wish to request further study, or retain the existing rate structures.

6.0 Conclusion

It is recommended that the SFR water rate structure be adjusted to incentivize conservation and the sewer utility structure be adjusted to separate the local and regional rates to increase transparency.

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Appendix:
Appendix 1: Assumptions and Policies

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Assumptions and Policies

The following major economic, accounting assumptions, and policies were built into the water and sewer models:

Assumptions:

- General Cost Inflation - assumed to be 2.0% per year,
- Fund Earnings - 1.85% per year based on the 2015 average rate of return,
- Customer Growth - 0.40% per year, and
- Debt - assumed no new debt.

Financial Policies

Operating Cash Reserve

Industry practice for minimum operating reserves ranges from 30 days (8%) to 90 days (25%) of operating expenses, with the lower end more appropriate for utilities with stable revenue streams and the higher end of the range more appropriate for utilities with significant seasonal or consumption fluctuations. In any year where operating reserves exceed the maximum days of operating expenses at year-end, excess cash is "swept" into the capital account to help pay for capital projects. The study recommends target balances of:

- Water: 90 to 120 days of operating expenses
- Sewer: 60 to 90 days of operating expenses

The 2015 drought had a large impact on the reserve. Even with Stage 3 water restrictions in place, Eagle Lake levels were very low, requiring large and un-budgeted, purchases of water from Metro Vancouver. These unexpected weather related budget impacts depleted operating surpluses in the Water Utility in 2015 and 2016.

The water operating cash reserve target is phased in through the study period to smooth rate impacts. Minimums were also raised compared to previous studies to reflect a more conservative approach to counter recent weather instabilities.

Capital Contingency Reserve

The Capital Reserve provides a resource to address a certain degree of unanticipated capital needs without disrupting utility operations. These unplanned capital needs may include project cost overruns, emergency capital repairs to an existing asset, or the need to address a shortfall in a planned capital funding source, such as a grant that fails to materialize. Capital contingencies can also ensure that funding can be available when there is a time-sensitive opportunity

for cost-sharing.

The study recommends target balances of:

- Water: 0.5% of infrastructure, or $1.8 million in 2017.
- Sewer: 0.5% of infrastructure, or $3.7 million in 2017.

Although these targets are not currently being met, the rate strategies build to the target balance by the end of the 5-year period.

Capital Funding Requirements

The District's capital plan is entirely rate-funded, and increases annually in accordance with the District's asset management model. Infrastructure replacement funding is the District's annual rate-funded capital policy. Through this annual "pay-as-you-go" policy the District covers all annual capital needs.

Elasticity

The new water model incorporates elasticity for the two top usage blocks. Elasticity is a method of measuring the impact on usage from an increase in price. For example, if water costs more, behavior will likely change and customers will use less. However, with less usage comes less rate revenue. Elasticity is a tool to adjust rates to minimize the revenue loss. The top two blocks includes adjusted usage for elasticity.

Demand Profiles

To avoid over or under forecasting usage, or revenue, going forward, a three-year average of historical usage data was studied and used for projections. This is called a "demand profile". Demand profiles were built for both utilities to serve as a way to "normalize" annual anomalies or inconsistencies in customer data. The demand profiles will be updated each year to ensure the most accurate forecasts.

An additional source demand profile was studied to forecast the annual purchase cost of water from Metro Vancouver. The additional source demand profile enables more accurate financial modelling of self-produced water from Eagle Lake.