

STAFF REPORT TO FINANCE AND AUDIT COMMITTEE

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DATE: November 6, 2019

TO: **STANDING COMMITTEE ON FINANCE AND AUDIT**

NAME AND TITLE: Kris Dalio, Director of Finance

SUBJECT: 2020-2023 Sewer and Water User Fees

ATTACHMENT(S): National Water and Wastewater Benchmarking Initiative (NWWBI) - Water and Sewer Rate Comparisons with other Canadian Municipalities for 2017

RECOMMENDATION(S):

That the Committee:

1. RECOMMEND to Council approval of Sewer and Water capacity charge, per gallon charge and flat rate charges for each year inclusive of 2020 through 2023 to be effective January 1st of each year, as described in Option 1

presented in the report dated November 6, 2019 from the Director of Finance titled "2020-2023 Sewer and Water User Fees".

PURPOSE:

The Standing Committee on Finance and Audit is requested to review the financial information described in this report and approve the proposed approach with respect to Sewer and Water user fees for 2020 through 2023.

STRATEGIC PRIORITIES:

Providing rate structures that maintain the City's self-sustaining fully funded utilities supports Council's priorities of Sustainable Finance, Sustainable Infrastructure and Organizational Excellence.

POLICY/REGULATORY ANALYSIS:

City utilities are structured to be self-funded through user fees (as per Sustainable Finance Guideline 3) that are invoiced to customers on either a quarterly or semi-annual basis. The rates are developed to provide revenues to fund operating costs, debt payments and maintain a contingency fund. In addition the user fees are required to fund new and renewal of capital infrastructure. Sustainable Finance Guideline 7.0 requires that a contingency of between 5 and 10% of current year's expenditures is to be achieved. Contingency funds are used to fund unexpected expenses and emergency costs. They also reduce the need to borrow temporarily early in the year before revenues from utility bills are received.

FINANCIAL CONSIDERATIONS:

Finance staff has completed a review of the revenue, expenditures and capital needs of the Sewer and Water utilities. That review included a projection for the years 2020 to 2024.

Cost Drivers

The Collective Agreement between the City of Prince George and CUPE Locals 399 and 1048 expires at the end of 2020 but this report has assumed an increase of 2% per year for labour costs.

The City of Prince George continues to work on an asset plan for the utilities that incorporates sustainable approaches to infrastructure management. This plan includes integrated approaches to underground and surface infrastructure renewals. Administration uses local data to determine the actual condition of assets rather than relying on standard national data. Annual average reinvestment (AAR) figures for the utilities' infrastructure are as follows:

Sewer and Water Average AAR		
Infrastructure Type	Sewer	Water
Linear Assets (underground)	\$4,180,290	\$5,260,918
Facilities	1,895,250	1,650,562
Mobile Equipment	530,125	254,865
TOTAL	\$6,605,665	\$7,166,345

Each year, the City attempts to determine, as accurately as possible, an inflationary factor that can be used in the development of capital project cost estimates. We also apply this inflationary factor to the AAR figures when considering the long-term financial plans of the utilities. This year, the City considered five different inflation options:

1. Consumer Price Index (CPI) of 2.3% – the primary challenge for this approach is that the basket of goods is consumer based (food, clothing, etc.), not construction based, and therefore does not provide us with accurate information for construction estimates;
2. City of Prince George growth rate in Gross Domestic Product (GDP) of 1.9% - this approach also struggles with showing a direct link from GDP to Infrastructure Investment;
3. Statistics Canada non-residential construction price index of 5.8% - uses average construction costs from 1981 to 2017 for building construction. Disadvantages are that it is not separated by region and building construction inflation may be different from linear infrastructure inflation;
4. Building construction price index for non-residential buildings for 11 census metropolitan areas across Canada (Vancouver – 5.7%) – provides more regional specific data but still does not take into account variations between large centres and northern communities;
5. Infrastructure construction price index by the City of Ottawa of 5.7% - this is a service developed specifically for the City of Ottawa; it could be done similarly for the City of Prince George but would require ongoing costs, time and resources to do so.

The final three inflation options are the most applicable options and so Administration has used 5% as the inflationary factor for our capital reinvestment needs.

Recommended Increases to Sewer and Water Rates

Administration has prepared three options for the Committee to consider. All options are prepared with the goal of maintaining fully self-funded utilities. Administration is recommending Option 1 as the preferred option.

Option 1 – Adjust Water Capacity Charge and Implement New Sewer Capacity Charge to align with capital cost recovery and increase the Flat Charge for Sewer and Water as described in Option 2

Administration is recommending the implementation of a two cost component structure for metered customers in the Sewer Utility. The goal is to create a system similar to the one used by the Water Utility. Currently, metered customers in Sewer are charged a per imperial gallon rate that recovers the costs associated with delivering the service. Administration is proposing that the charge to customers be split into a capital component (a static charge that is tied to the service size of the pipe to the property); and an operating component (the per imperial gallon charge that is tied to usage).

There is a large capital cost to the utility to have the infrastructure in place and ready to use at a property. The fixed charge is meant to recover this cost even if no usage is taking place. Service lines (connections) have the ability to provide flow in proportion to the pipe diameter to the 2.63 power. A 50mm (2") diameter pipe is capable of providing 6.2 times as much flow as a 25mm (1") diameter pipe. Typical residential service lines are 19mm (0.75") in diameter.

The water utility capacity charge was created in 2004 and the charge per pipe size was calculated by using the 19mm pipe as the base service to calculate the relative share of capacity costs for the metered accounts, taking into consideration flat charge accounts (assuming all 19mm services), and the annual debt servicing costs as a means to allocate the cost recovery on a 19mm equivalency basis. This is the method Administration has prepared the sewer capacity charge model on as well, but due to the City's work in recent years on Asset Management, an AAR figure is a much more accurate and reliable method on which to estimate capital costs for the utilities.

Reviewing the Water Utility using the AAR method, the capital/operating expense recovery that the City should base its revenue collection on is out of balance (we currently over-collect on the capacity charge and under-collect on the per gallon charge) by approximately \$500,000 per year. This is further confirmed by the fact that our imperial gallon charge for water is low when compared to other municipalities. Bringing the water utility billing into balance, using an estimated 2020 AAR of \$7,524,662 (this is the 2019 figure inflated at 5% for linear and facilities, and 2.5% for fleet) for the capital costs of the utility, would be:

PROPOSED WATER CAPACITY CHARGE MODEL FOR 2020				
Service Main Size	# of accounts	19mm Flow Equivalency	Total 19mm Flow Equivalency	Proportional share of AAR per account per year
19mm (0.75") (Flat Charge)	22,150	1.0	22,150	
19mm (0.75") (Meter Charge)	1,842	1.0	1,842	\$221.52
25mm (1")	484	2.0	996	\$455.92
38mm (1.5")	347	6.2	2,148	\$1,371.32
51mm (2")	247	13.4	3,315	\$2,973.16
76mm (3")	31	38.3	1,188	\$8,488.80
102mm (4")	13	83.1	1,080	\$18,404.52
152mm (6")	3	237.2	712	\$52,547.84
203mm (8")	1	507.7	508	\$112,465.84
			33,939	

This results in a lower water capacity charge than Option 2 for all customers, except the one account in the 203mm (8") category. In order to collect the same combined projected revenue as Option 2, the per gallon charge would increase for all customers from \$.00252 to \$.00340 per imperial gallon.

For the Sewer Utility Capacity Charge, an AAR method is still required but the size of pipes that provide the service are different. A 102mm (4") pipe is used for the water connections that are serviced by a 19mm-25mm pipe; a 152mm (6") pipe is used for 38mm-76mm water connections; and a 203mm (8") pipe is used for 102mm and larger water connections. Using a three-tier pipe size system and a 2020 AAR of \$6,922,695 (this is the 2019 figure inflated at 5% for linear and facilities, and 2.5% for fleet) for the capital costs of the utility, the model is calculated as follows:

PROPOSED SEWER CAPACITY CHARGE MODEL FOR 2020				
Service Main Size	# of accounts	19mm Flow Equivalency	Total 19mm Flow Equivalency	Proportional share of AAR per account per year
19mm (0.75") (Flat Charge)	21,875	1.0		
19mm (0.75") (Meter Charge)	1,833	1.0		
25mm (1")	482	2.0		
38mm (1.5")	345	6.2		
51mm (2")	246	13.4		
76mm (3")	31	38.3		
102mm (4")	13	83.1	2,009,705	\$265.54
152mm (6")	3	237.2	147,542	\$758.17
203mm (8")	1	507.7	8,631	\$1,622.68
			2,165,878	

The sewer metered charge is currently \$0.00401/imperial gallon. If the capacity charge is implemented, this charge should be reduced to only reflect the operating cost component of the utility. It is estimated that, on average, only 90% of the water that is consumed in a property will require the use of the sewer infrastructure. As the projected metered water charge for 2020 is \$0.00340/imperial gallon, it is recommended that the new sewer metered charge be \$0.00306/imperial gallon.

For years 2021 through 2023 of this option, the ongoing capacity charge increases and per gallon charge increases would match the flat charge increases as described Option 2. The only exception to this is that the Sewer per gallon charge increase would now have to match the Water per gallon charge increase in order to maintain the 90% ratio.

Option 2 – No changes to the capacity charge structure

Assuming no changes to the structure on which the City collects utility revenue, all sewer utility user fees should increase 5% per year for 2020 through 2023 and all water utility user fees should increase 3% per year for 2020 through 2023 in order to maintain revenue that offset the estimated capital and operating expenses of the utilities. The table below provides a 2018 Year history and projections for 2019 through 2023, and highlights the Single Family Dwelling (SFD) rate for information. The goal in the financial models of the utilities is to have the capital contribution to the reserve match the AAR of each utility.

SEWER	2018	2019	2020	2021	2022	2023
% Increase	0%	3%	5%	5%	5%	5%
SFD Rate	\$445.20	\$458.56	\$481.48	\$505.56	\$530.84	\$557.38
Capital Contribution	\$5,410,284	\$4,900,000	\$5,500,000	\$6,000,000	\$6,500,000	\$7,000,000
WATER	2018	2019	2020	2021	2022	2023
% Increase	0%	0%	3%	3%	3%	3%
SFD Rate	\$499.32	\$499.32	\$514.30	\$529.73	\$545.62	\$561.99
Capital Contribution	\$6,843,261	\$7,200,000	\$7,800,000	\$8,000,000	\$8,200,000	\$8,550,000

Option 3 – Modified Option 1 providing a 2-year phased in approach

Administration was directed to bring back an option that would show a two-year phased in approach to Option 1. The 19mm services receive the largest increase in Option 1, so Option 3 smooths that impact. Option 3 shows the 102mm (4") sewer pipe used for water connections serviced by a 19mm-25mm pipe being introduced at roughly 50% of the anticipated 2021 cost at full implementation.

Comparison of Options

The table below summarizes the multiple changes for the 2020 year presented in all options. It assumes an average consumption per account for each tier shown below. Low consumption users should experience lower costs than presented and high consumption users should see higher costs.

PROJECTED COMBINED SEWER AND WATER UTILITY BILLS								
Service Main Size		2019	2020 Option 1	Option 1 as a %	2020 Option 2	Option 2 as a %	2020 Option 3	Option 3 as a %
19mm (0.75") (Flat)		\$957.88	\$995.78	3.96%	\$995.78	3.96%	\$995.78	3.96%
19mm (0.75") (Metered) - Residential	Avg/gallon Cap. Charge TOTAL	335.33 <u>217.68</u> 553.01	331.73 <u>486.94</u> 818.67		349.71 <u>224.20</u> 573.91		331.73 <u>361.40</u> 693.13	
				48.04%		3.78%		25.33%
19mm (0.75") (Metered) - Commercial	Avg/gallon Cap. Charge TOTAL	1,035.54 <u>217.68</u> 1,253.22	1,024.44 <u>486.94</u> 1,511.38		1,079.94 <u>224.20</u> 1,304.14		1,024.44 <u>361.40</u> 1,385.84	
				20.60%		4.06%		10.58%
25mm (1")	Avg/gallon Cap. Charge TOTAL	1,345.64 <u>674.48</u> 2,020.12	1,331.22 <u>721.18</u> 2,052.40		1,403.34 <u>694.72</u> 2,098.06		1,331.22 <u>595.64</u> 1,926.86	
				1.60%		3.86%		(4.62)%
38mm (1.5")	Avg/gallon Cap. Charge TOTAL	2,659.92 <u>1,457.68</u> 4,117.60	2,631.41 <u>2,128.69</u> 4,760.10		2,773.98 <u>1,501.40</u> 4,275.38		2,631.41 <u>2,128.69</u> 4,760.10	
				15.60%		3.83%		15.60%
51mm (2")	Avg/gallon Cap. Charge TOTAL	5,257.90 <u>4,166.64</u> 9,424.54	5,201.53 <u>3,729.57</u> 8,931.10		5,483.35 <u>4,291.64</u> 9,774.99		5,201.53 <u>3,729.57</u> 8,931.10	
				(5.24)%		3.72%		(5.24)%
76mm (3")	Avg/gallon Cap. Charge TOTAL	4,351.28 <u>9,040.52</u> 13,391.80	4,304.63 <u>9,242.01</u> 13,546.64		4,537.86 <u>9,311.72</u> 13,849.58		4,304.63 <u>9,242.01</u> 13,546.64	
				1.16%		3.42%		1.16%
102mm (4")	Avg/gallon Cap. Charge TOTAL	27,453.77 <u>25,805.40</u> 53,259.17	27,159.47 <u>20,016.44</u> 47,175.91		28,630.96 <u>26,579.56</u> 55,210.52		27,159.47 <u>20,016.44</u> 47,175.91	
				(11.42)%		3.66%		(11.42)%
152mm (6")	Avg/gallon Cap. Charge TOTAL	314,478.99 <u>55,233.48</u> 369,712.47	311,107.85 <u>54,139.80</u> 365,247.65		327,963.54 <u>56,890.48</u> 384,854.02		311,107.85 <u>54,139.80</u> 365,247.65	
				(1.21)%		4.10%		(1.21)%
203mm (8")	Avg/gallon Cap. Charge TOTAL	78,648.10 <u>99,587.72</u> 178,235.82	77,805.02 <u>114,022.84</u> 191,827.86		82,020.46 <u>102,575.36</u> 184,595.82		77,805.02 <u>114,022.84</u> 191,827.86	
				7.63%		3.57%		7.63%

While the 19mm Residential customers have a large percentage increase, they are still well below the flat charge customers, on average. They also have the ability to reduce their bill further through conservation efforts.

The 19mm and 25mm Commercial customers (all the 25mm customers are commercial with the exception of two large residential accounts) also receive a high percentage increase. Examples of customers within these tiers are stratas (apartments), hotels, trailer parks, churches, laundromats and restaurants.

SUMMARY AND CONCLUSION:

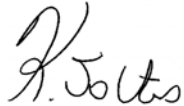
The service of the utilities and their infrastructure should be fully funded through fees paid by the users of the utility. The committee is asked to provide endorsement of the proposed user fee structure in Option 1 that provides for meeting the operational and capital expenses of the Sewer and Water utilities.

RESPECTFULLY SUBMITTED:



Kris Dalio, Director of Finance

APPROVED:



Kathleen Soltis, City Manager
Meeting date: November 18, 2019

Current Assignment

System Type

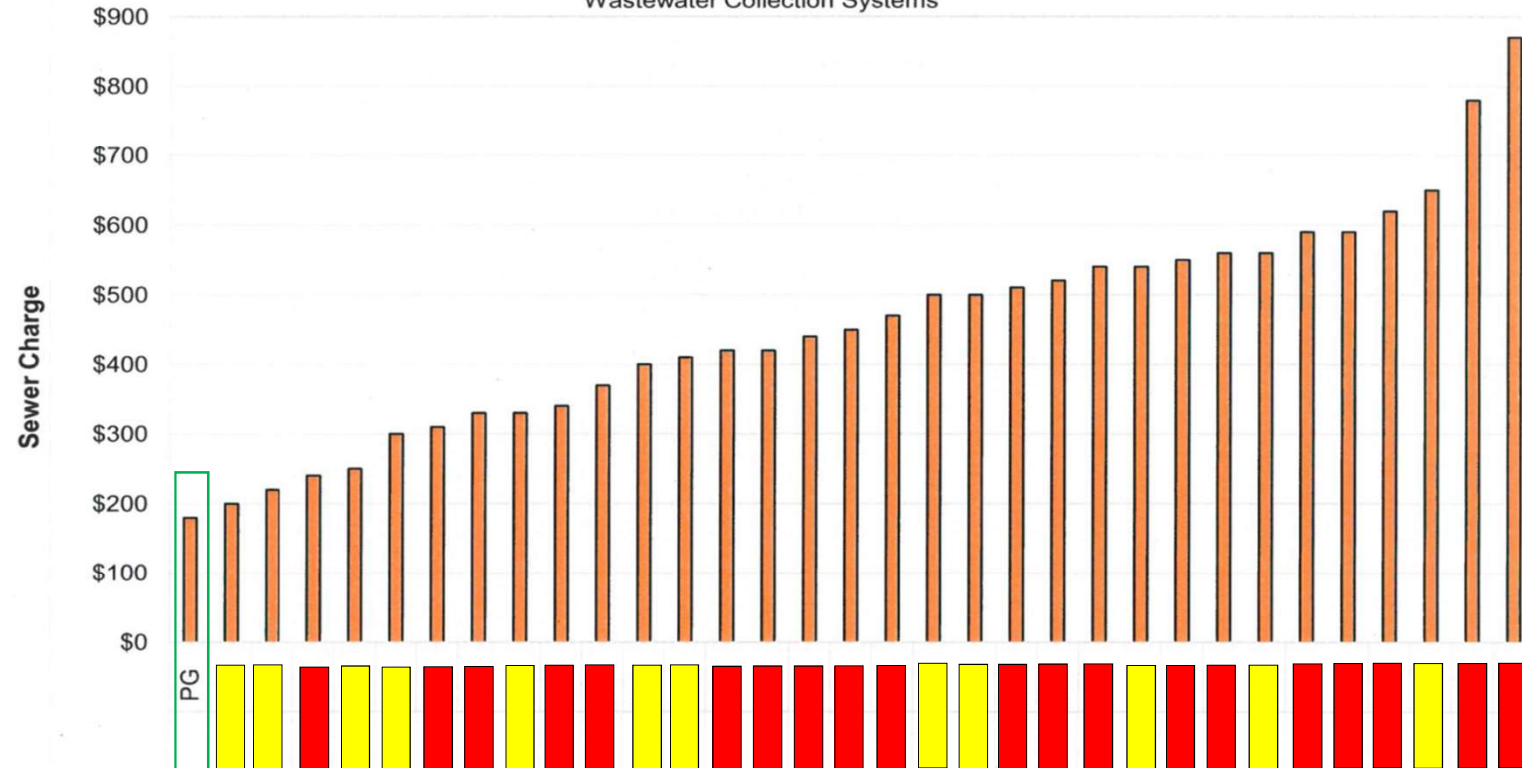
Meet Service Requirements with Economic Efficiency - 1

Sum of 210

Sewer Charge for a Typical Size Residential Connection using Canadian Average

Consumption Rate (210m³ of Water / Year)

Wastewater Collection Systems



Negative Values - no data available

X-axis - in order of increasing sewer costs

210

Abbrev

- Not Comparable to Prince George
- Comparable to Prince George
- Prince George Data

Meet Service Requirements with Economic Efficiency - 1

Water Charge for a Typical Size Residential Connection using Canadian Average Consumption Rate (210m³ / year)
Distribution and Integrated Systems

