



Governance and Priorities Committee Report

For the Meeting of February 12, 2015

To: Governance and Priorities Committee
From: Susanne Thompson, Director of Finance
Subject: Sewer Rate Method Calculation Options

Date: January 30, 2015

Executive Summary

The City charges its utility customers a sewer user fee to fund the City's sanitary sewer system. The City also charges a Capital Regional District (CRD) sewer fee. This fee offsets the CRD's annual requisition for operating and maintaining CRD sewer trunk mains, overseeing the Liquid Waste Management Plan and for sewage treatment and disposal. Since 2013, the CRD's requisition has been increasing significantly due to the expected costs for the CRD Sewer Treatment project. Consequently sewer fees are an increasing proportion of Victoria ratepayers' utility bills.

The City has received numerous complaints regarding its method for calculating sewer fees. Both City sewer and CRD sewer fees are based 100% on water consumption. Some ratepayers feel that it is an unfair rate method because it is not indicative of sewer discharge in all circumstances. For instance, during summer months, ratepayers will often water their gardens and lawns. In addition, some commercial customers consume water as part of the manufacturing process.

The City conducted a survey of 42 municipalities and found that only 23% used full water consumption for residential users (35% for commercial). In addition, many of these municipalities had mitigating terms in their bylaws for instances where water consumption was not indicative of sewer discharge. For full survey results please see Appendix A.

Summarized in Appendix E are the costs and benefits of the six rate models that have been analysed. Whichever rate model is selected, there is no reduced overall cost to the ratepayer pool. Some options require additional staffing which would increase the overall cost to the ratepayer pool. Selecting a new rate model would redistribute sewer costs in a more equitable manner.

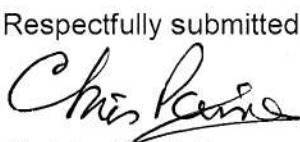
A modified calculated consumption option (Option 6 in Appendix E) is recommended because it addresses customer's concerns regarding equity and fairness without adding any additional financial cost to the overall ratepayer pool. The City's analysis found that summer consumption is approximately 30% higher than non-summer consumption. This increased consumption can generally be attributed to summer watering. Therefore a 30% lower summer rate would result in a sewer fee that was more indicative of actual sewer discharge. This option would require a 13% increase (\$2.06 to \$2.33) for the rate during October – May and a 20% decrease to the rate during June – September (2.06 to \$1.61).

A discounted summer sewer rate model fails to address the concerns of customers who use water during the manufacturing process. Therefore it is recommended that staff explore further options that would allow the Director of Engineering to vary the rate model where it can be demonstrated that the sewer discharge is significantly less than water consumption.

Recommendation:

1. That Council direct staff to draft amendments to the Sanitary Sewer and Stormwater Utilities Bylaw for Council's consideration so that sewer rates are 30% lower during the months of June through September.
2. That Council direct staff to explore possible amendments to the Sewer and Stormwater Utilities Bylaw that would allow the Director of Engineering to vary the rate model where it can be demonstrated that the sewer discharge is significantly less than water consumption.

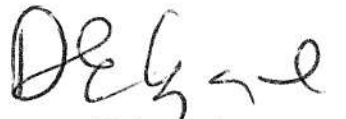
Respectfully submitted



Christopher Paine
Manager-Revenue



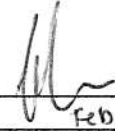
Susanne Thompson
Director of Finance



Dwayne Kalynchuk
Director of Engineering & Public Works

Report accepted and recommended by the City Manager:

Date:


Feb. 3, 2015

Purpose

The purpose of this report is to seek Council direction regarding the possibility of altering the City and CRD Sewer rate calculation method for utility billing.

Background

The City's financial sustainability policy requires that utilities should be fully financed by user fees. This allows customers to control their level of consumption and have some control over the size of user fee. The City charges its utility customers a sewer user fee to fund the City's sanitary sewer system. The City also charges a Capital Regional District (CRD) sewer fee. This fee offsets the CRD's annual requisition for operating and maintaining CRD sewer trunk mains, overseeing the Liquid Waste Management Plan and for sewage treatment and disposal. Since 2013, the CRD's requisition has been increasing significantly due to the expected costs for the CRD Sewer Treatment project¹.

Both of these fees are based solely on water meter consumption readings throughout the year. The water meter reading is multiplied by the City sewer rate and CRD sewer rate to determine the fee. Customers receive utility bills three times a year, with each bill including four months of water consumption. Customers have been separated into different reading routes. This results in the City issuing bills each month to different parts of the City. This ensures that readings and billings happen on a continuous basis. Typically, the summer billing has more water consumption due to lawn and garden watering, resulting in higher sewer fees. Many customers have expressed their concerns that it is unfair that watering results in higher sewer fees as this water does not enter the sewer system.

The component of the CRD sewer fee related to the construction of the sewer treatment plant is expected to grow by \$1.8 - \$2M (Victoria share only) per year up to and including 2017. The CRD expects the ongoing costs of the construction to be fully phased in by this point. It is unclear at this time what the sewer treatment costs would be for Victoria ratepayers if the City participated in a different sewer treatment option.

The City's sewer rate is also anticipated to increase. Rainwater inflow and infiltration is a significant problem in the City. Also, the existing system is at or near capacity in much of the downtown and City trunk mains. In 2007 a study of the section of the sewage system that drains directly to Clover Point identified \$30 million of upgrades required. Much of the work is being deferred until the location(s) of the wastewater treatment facilities are confirmed. Once the location(s) are known, an updated Master Plan will be developed.

In 2009, the City's sewer fee and the CRD sewer fee together accounted for 30% of the utility bill for a typical single family dwelling². In 2014, the City's sewer and the CRD sewer fee accounted for 45% of the utility bill and in 2017, this proportion is projected to account for approximately 55%. In response to the numerous complaints and expected increases to sewer fees, the City conducted a survey of 42 similar municipalities in BC. The full survey results can be viewed in Appendix A.

¹ The CRD has indicated that they will continue to collect in advance for a regional sewage treatment plant until other treatment plant options are implemented

² Assuming consumption of 100 units of water per year

Issues & Analysis

A review of similar BC municipalities was conducted to determine the various rate models used to bill for sewer utilities. Many municipalities have varying rate methods for commercial/industrial and residential customers. Thus a rate method survey was conducted for both residential and commercial/industrial.

The survey found that municipalities calculate sewer user fees in five main ways: (1) Fixed fees, (2) property or parcel taxes, (3) full water consumption³, (4) reduced water consumption⁴ and (5) calculated water consumption⁵. This report also analyzes a sixth option: reduced summer sewer consumption rate. Some municipalities don't have water meters installed for their customers. The results below are for municipalities that have meters installed:

Rate Method	Residential		Commercial	
Fixed Fees	8	27%	7	18%
Property or parcel taxes	3	10%	3	7%
Consumption (100%)	7	23%	14	35%
Reduced consumption (60-90%)	8	27%	12	30%
Calculated consumption	4	13%	4	10%
Total	30	100%	40	100%

Locally, Victoria is one of only 2 municipalities that bases its sewer fee on full water consumption:

Municipality	Calculation Method	Comments
Central Saanich	Reduced water consumption	No sewer service available
Colwood	Calculated consumption	
Highlands	Not applicable	
Esquimalt	Property or parcel taxes	No sewer service available
Langford	Reduced water consumption	
Metchosin	Not applicable	
North Saanich	Fixed fees	Mitigating terms: garden meter consumption subtracted from consumption
Oak Bay	Full water consumption	
Saanich	Calculated consumption	Lowest of last three consumption
Sidney	Calculated consumption	
Sooke	Property taxes or parcel taxes	
View Royal	Calculated consumption	
Victoria	Full water consumption	Mitigating terms for community gardens, urban gardens and lawn bowling clubs

³ The full water consumption rate method refers to the use of 100% of the water meter consumption reading to determine the volume of sewer discharge

⁴ The reduced water consumption rate method refers to the use of a reduced percentage of water meter consumption, such as 80%, to determine the volume of sewer discharge for all billings year round

⁵ The calculated consumption rate method refers to the use of a calculation derived from water meter consumption to determine the volume of sewer discharge; an example would be an average or annualized consumption value

Some municipalities have implemented mitigating terms in their sanitary sewer bylaws for customers who discharge significantly less sewer than water that is consumed. For instance, some customers may use water in a manufacturing process and therefore the water meter consumption (or a reduced consumption value) is not indicative of their sewer discharge.

Some examples of mitigating terms (see Appendix E for more detail):

- Readings from sewer meters are permitted
- Readings from a garden or irrigation meter are subtracted from overall consumption
- Opportunities for industrial or commercial customers to demonstrate that sewer discharge is far less than water consumption by measuring and monitoring sewer discharge with a sewer meter
- Opportunities for the Director of Engineering to review volume and use his/her discretion

For the seven municipalities that charge for residential sewer based on 100% of the water meter consumption, three have mitigating terms in their bylaw. For the 14 municipalities that charge for commercial sewer based on 100% of the water meter consumption, seven have mitigating terms in their bylaw.

Options & Impacts

Whichever rate model is selected, overall ratepayers as a whole will be paying the same amount or more toward the sewer utility and CRD sewer requisition. A new rate model would simply shift fees from some ratepayers to others. There are many variables to consider when selecting a rate model including: (1) fairness and equity, (2) accuracy, (3) administrative cost and burden, and (4) externalities and incentives. Below are the six rate model options analyzed in more detail. For a summary, please refer to Appendix E.

Option 1: Flat fee

Fairness and equity	This model is generally not viewed as fair from a user fee perspective. Fees are not based on utility use or property value. Fees are based on property classification and/or number of dwelling units.
Accuracy	Flat fees are not indicative of actual usage.
Administrative cost and burden	This rate model is administratively simple and would result in no incremental cost to the City. While this method is simpler to administer, it would likely result in more complaints since the model is not indicative of actual usage.
Externalities and incentives	Ratepayers would have no rate incentive to conserve water. The City's financial sustainability policy requires that utilities should be fully financed by user fees. This allows customers to control their level of consumption and have some control over the size of user fee.

Option 2: Property and/or parcel taxes

Fairness and equity	This model is generally not viewed as fair from a user fee perspective because it is not based on actual usage of the utility.
Accuracy	Property value is not indicative of actual usage.
Administrative cost and burden	This rate model is administratively simple and would result in no incremental cost to the City. While this method is simpler to administer, it would likely result in more complaints since the model is not indicative of actual usage.
Externalities and incentives	Ratepayers would have no rate incentive to conserve water. The City's financial sustainability policy requires that utilities should be fully financed by user fees. This allows customers to control their level of consumption and have some control over the size of user fee.

Option 3: Full water consumption (status quo)

Fairness and equity	This model is generally viewed as fairer than property taxes but less fair than the calculated consumption models.
Accuracy	This model is somewhat indicative of actual sewer discharge but can be inaccurate in lawn and garden watering months and with certain industrial and commercial customers.
Administrative cost and burden	Consumption values require no further calculation and thus this model is administratively simpler than calculated consumption. There will be no incremental cost to remaining with this rate model.
Externalities and incentives	There is a greater incentive to conserve water in this model than any other rate model. This results in ratepayers choosing to use less water for outdoor watering.

Option 4: Reduced water consumption (for all billings)

Fairness and equity	This rate model is sometimes viewed as more equitable than the water consumption model and less equitable than the calculated consumption model. However, there would be no actual shift in burden from one ratepayer to another since this model is not based on actual discharge.
Accuracy	Reducing the sewer consumption to a flat percentage may be more indicative of actual annual flows. For instance, it may be true that the City's average sewer discharge is 80% of the water consumption. But moving to this model would require an increased in sewer fees of approximately 25% to generate the required revenue. This would result in no shift of the fee burden distribution among ratepayers.
Administrative cost and burden	This rate model would result in no further administrative cost or burden than the current model.
Externalities and incentives	Ratepayers would see no change to their incentive to conserve water or water their gardens. Rates would have to rise by 25% (assuming an 80% factor is used) to compensate for the reduced chargeable consumption. This may appear like there is an increased burden to the ratepayer but in reality the reduced consumption units would completely offset the rate increase. Also there would be no actual shift in burden from one ratepayer to another since this model is not based on actual discharge.

Option 5: Calculated sewer consumption

Fairness and equity	This model is commonly viewed as the most equitable model in terms of distributing sewer costs to ratepayers based on sewer discharge.
Accuracy	This model is most indicative of actual sewer discharge flows. Rates would have to rise by 8-12% (depending on method used) to compensate for the reduced chargeable consumption.
Administrative cost and burden	This model would require additional software and staffing to be implemented effectively. At this time it is unknown how much additional staffing is required. This model would also benefit from the planned meter replacement program as it will allow more timely collection of flow data.
Externalities and incentives	This model would essentially shift sewer fees from those who consume water for non-sewer purposes to those who don't. For instance, it will shift sewer fees from those who water their gardens during the summer to those who don't. Since non-summer sewer flows would be used to calculate a sewer fee, there is a reduced incentive to conserve water during summer months. Since there would be lower sewer consumption volumes, sewer rates would have to rise an estimated 8-12% to balance the utility budget.

Option 6 (recommended): Modified calculated sewer consumption (discounted summer rate)

Fairness and equity	This model is commonly viewed as the most equitable model in terms of distributing sewer costs to ratepayers based on sewer discharge.
Accuracy	This model is fairly indicative of actual sewer discharge flows. Summer consumption is approximately 30% greater than other consumption periods. If this increase is assumed to be a result of summer watering, then the sewer consumption rate should be 30% lower to compensate. The off-summer consumption rate would need to rise by 13% to \$2.33/unit and the summer consumption rate would be reduced to \$1.61/unit. This would result in the same municipal revenues as the current rate model.
Administrative cost and burden	This rate model would result in no material administrative cost or burden than the current model.
Externalities and incentives	This model would essentially shift sewer fees from those who consume water for non-sewer purposes to those who don't. For instance, it will shift sewer fees from those who water their gardens during the summer to those who don't. This would result in a reduced incentive to conserve waters since summer fees would be calculated using a discounted rate.

An additional option would be to provide ratepayers with mitigating terms in the bylaw. Terms could allow the Director of Engineering at his discretion to vary consumption calculations for accounts with large discrepancies between the volume of water consumed and the volume of sewer discharged.

Changing the rate calculation model may result in shifting user fees from one segment of the ratepayer population to another segment. Each model balances competing principles. For instance, one model may discourage garden and lawn watering while encouraging water conservation. Thus, there will be widely varying opinions on what is the most appropriate and fair option.

A modified calculated consumption option (Option 6 in Appendix E) is recommended because it addresses customer's concerns regarding equity and fairness without adding any additional financial cost to the overall ratepayer pool. The City's analysis found that summer consumption is approximately 30% higher than non-summer consumption. This increased consumption can generally be attributed to summer watering. Therefore a 30% lower summer rate would result in a sewer fee that was more indicative of actual sewer discharge. This option would require a 13% increase (\$2.06 to \$2.33) for the rate during October – May and a 20% decrease to the rate during June – September (2.06 to \$1.61). If Council approves the proposed meter replacement program in the 2015 financial plan, the City will have greater ability to monitor consumption during specific timeframes. This would allow billing to become more indicative of actual sewer discharge.

A discounted summer sewer rate model fails to address the concerns of customers who use water during the manufacturing process. Therefore it is recommended that staff explore further options that would allow the Director of Engineering to vary the rate model where it can be demonstrated that the sewer discharge is significantly less than water consumption.

Recommendations

1. That Council direct staff to draft amendments to the Sanitary Sewer and Stormwater Utilities Bylaw for Council's consideration so that sewer rates are 30% lower during the months of June through September.
2. That Council direct staff to explore possible amendments to the Sewer and Stormwater Utilities Bylaw that would allow the Director of Engineering to vary the rate model where it can be demonstrated that the sewer discharge is significantly less than water consumption.

Appendix A: Full Residential Survey Results

Municipality	Do they have metered accounts?	Sewer volume measurement method	Permitted to use a Sewer Meter or other mitigation?	General Rate Category	Other comments
Abbotsford	Yes	90% water consumption	Yes	Reduced consumption	
Campbell River	Yes	100% water consumption	Yes	Full water consumption	
Central Saanich	Yes	80% for Jan - Apr billing	No	Reduced consumption	Minimum amount billed
Chilliwack	Yes	90% water consumption	No	Reduced consumption	
Colwood	Yes	Annualized winter consumption	No	Winter consumption	
Coquitlam	No	N/A	N/A	Taxes/Parcel	
Cranbrook	Yes	100% water consumption	No	Full water consumption	Flat fee for non-metered accounts
Delta	Yes	80% water consumption	Yes	Reduced consumption	
Duncan	No	N/A	No	Fixed	
Highlands	Yes	N/A	N/A	Taxes/Parcel	CRD provides water and water meters
Esquimalt	Yes	N/A	N/A	Taxes/Parcel	City of Victoria provides water and water meters
Kamloops	No	N/A	N/A	Fixed	
Kelowna	No	N/A	N/A	Fixed	
Ladysmith	No	N/A	N/A	Fixed	
Lake Cowichan	Yes	N/A	N/A	Fixed	If it exceeds a threshold they are charged an additional consumption fee at 80%
Langford	Yes	Annualized winter consumption	No	Reduced consumption	CRD on taxes; contracted to corix
Langley (City)	Yes	80% water consumption	No	Reduced consumption	
Langley (Township)	No	N/A	N/A	Fixed	
Maple Ridge	No	N/A	N/A	Fixed	
Merritt	Yes	N/A	N/A	Fixed	
Nanaimo	Yes	N/A	N/A	Fixed	Meters only for new developments
Nelson	No	N/A	N/A	Fixed	
New Westminster	No	N/A	N/A	Fixed	
North Saanich	Yes	N/A	N/A	Fixed	
North Vancouver (City)	No	N/A	N/A	Fixed	
North Vancouver (District)	Yes	100% water consumption	Yes	Full water consumption	Mitigation: sewer meter or if less than 80% discharged Treasurer can adjust
Oak Bay	Yes	60% water consumption	Yes	Full water consumption	Mitigation: no sewer charge for water that goes through garden meter
Osoyoos	Yes	80% water consumption	Yes	Reduced consumption	Mitigation: effluent flow meter
		100% water consumption if above			
Parksville	Yes	100 units	No	Fixed	+477 per cubic meter after first 100
Penticton	Yes	N/A	N/A	Fixed	
Port Alberni	Yes	N/A	N/A	Fixed	
Port Coquitlam	Yes	N/A	N/A	Fixed	
Port Moody	No	N/A	N/A	Fixed	
Powell River	No	N/A	N/A	Fixed	
Prince George	Yes	100% water consumption	No	Full water consumption	
Richmond	Yes	100% water consumption	No	Full water consumption	
Saanich	Yes	Lowest of last three billings	No	Average Consumption	
		4th quarter based on highest of			
Sidney	Yes	last three	Yes	Average Consumption	Mitigation: outside irrigation meter subtracted from consumption total
Sooke	Yes	N/A	N/A	Taxes/Parcel	
					Mitigation: manager may review volume and use a different calculation method
Surrey	Yes	80% of water consumption	Yes	Reduced consumption	
Vancouver	Yes	100% water consumption	No	Full water consumption	
View Royal	Yes	winter consumption	No	Winter Consumption	

Appendix B: Full Non-Residential Survey Results

Municipality	Do they have metered accounts?	Sewer volume measurement method	Permitted to use a Sewer Meter or other mitigation?	General Rate Category	Other comments
Abbotsford	Yes	90% water consumption	Yes	Reduced water consumption	
Campbell River	Yes	100% water consumption	Yes	Full water consumption	
Central Saanich	Yes	80% for Jan - Apr billing	No	Reduced water consumption	
Chilliwack	Yes	90% water consumption	No	Reduced water consumption	
Colwood	Yes	Annualized winter consumption	No	Average consumption	
Coquitlam	Yes	100% water consumption	Yes	Full water consumption	
Cranbrook	Yes	100% water consumption	No	Full water consumption	
Delta	Yes	80% water consumption	Yes	Reduced water consumption	
Duncan	Yes	80% water consumption	No	Reduced water consumption	
Highlands	Yes	N/A	N/A	Taxes/Parcel	CRD provides water and water meters
Esquimalt	Yes	N/A	N/A	Taxes/Parcel	City of Victoria provides water and water meters
Kamloops	Yes	varies	Yes	Reduced water consumption	Flows calculated by Public Works
Kelowna	Yes	100% water consumption	Yes	Full water consumption	Mitigation: credit meter
Ladysmith	No	N/A	N/A	Fixed	
Lake Cowichan	Yes	N/A	N/A	Fixed	If it exceeds a threshold they are charged an additional consumption fee at 80%
Langford	Yes	annualized winter consumption	No	Reduced water consumption	CRD on taxes; outsourced to corix
Langley (City)	Yes	80% water consumption	No	Reduced water consumption	
Langley (Township)	Yes	80% water consumption	Yes	Reduced water consumption	Mitigation: Director of Engineering can vary method
Maple Ridge	Yes	100% water consumption	No	Full water consumption	Fee is 57% of whatever water consumption fee is
Merritt	Yes	N/A	N/A	Fixed	All commercial customers have meters but rate is flat
Nanaimo	Yes	N/A	N/A	Fixed	
Nelson	Yes	100% water consumption	No	Full water consumption	
New Westminster	Yes	80% water consumption	No	Reduced water consumption	
North Saanich	Yes	N/A	N/A	Fixed	
North Vancouver (City)	Yes	N/A	Yes	Fixed	Mitigation: if discharge is less than 40% then they can apply for fixed rate
North Vancouver (District)	Yes	100% water consumption	Yes	Full water consumption	Mitigation: sewer meter or if less than 80% discharged Treasurer can adjust
Oak Bay	Yes	100% water consumption	Yes	Full water consumption	Mitigation: no sewer charge for water that goes through garden meter
Osoyoos	Yes	80% water consumption plus lesser of winter and summer	Yes	Reduced water consumption	mitigation is effluent flow meter
Parksville	Yes		No	Fixed	
Penticton	Yes	N/A	N/A	Fixed	
Port Alberni	Yes	100% water consumption	No	Full water consumption	
Port Coquitlam	Yes	100% water consumption	Yes	Full water consumption	Mitigation: sewer meter or if less than 75% discharged Treasurer can adjust
Port Moody	Yes	80% water consumption	Yes	Reduced water consumption	Mitigation: sewer meter or discretion of manager or 60% for institutional
Powell River	No	N/A	N/A	Fixed	
Prince George	Yes	100% water consumption	No	Full water consumption	
Richmond	Yes	100% water consumption	No	Full water consumption	
Saanich	Yes	Lowest of last three billings 4th qtr based on highest of last three	No	Average Consumption	
Sidney	Yes		Yes	Average Consumption	Mitigation: outside irrigation meter deducted from overall consumption
Sooke	Yes	N/A	N/A	Taxes/Parcel	
Surrey	Yes	80% water consumption	Yes	Reduced water consumption	Mitigation: manager may review volume and use a different calculation method
Vancouver	Yes	100% water consumption	No	Full water consumption	
View Royal	Yes	winter consumption	No	Winter Consumption	

Appendix C: Residential Survey Results for Municipalities with meters installed

Municipality	Do they have metered accounts?	Sewer volume measurement method	Permitted to use a Sewer Meter or other mitigation?	General Rate Category
1 Abbotsford	Yes	90% water consumption	Yes	Reduced consumption
2 Campbell River Central	Yes	100% water consumption	Yes	Full water consumption
3 Saanich	Yes	80% for Jan - Apr billing	No	Reduced consumption
4 Chilliwack	Yes	90% water consumption	No	Reduced consumption
5 Colwood	Yes	Annualized winter consumption	No	Winter consumption
6 Cranbrook	Yes	100% water consumption	No	Full water consumption
7 Delta	Yes	80% water consumption	Yes	Reduced consumption
8 Highlands	Yes	N/A	N/A	Taxes/Parcel
9 Esquimalt	Yes	N/A	N/A	Taxes/Parcel
10 Lake Cowichan	Yes	N/A	N/A	Fixed
11 Langford	Yes	Annualized winter consumption	No	Reduced consumption
12 Langley (City)	Yes	80% water consumption	No	Reduced consumption
13 Merritt	Yes	N/A	N/A	Fixed
14 Nanaimo	Yes	N/A	N/A	Fixed
15 North Saanich North Vancouver	Yes	N/A	N/A	Fixed
16 (District)	Yes	100% water consumption	Yes	Full water consumption
17 Oak Bay	Yes	60% water consumption	Yes	Full water consumption
18 Osoyoos	Yes	80% water consumption	Yes	Reduced consumption
19 Parksville	Yes	100% water consumption if above 100 units	No	Fixed
20 Penticton	Yes	N/A	N/A	Fixed
21 Port Alberni	Yes	N/A	N/A	Fixed
22 Port Coquitlam	Yes	N/A	N/A	Fixed
23 Prince George	Yes	100% water consumption	No	Full water consumption
24 Richmond	Yes	100% water consumption	No	Full water consumption
25 Saanich	Yes	Lowest of last three billings 4th quarter based on highest of last three	No	Average Consumption
26 Sidney	Yes		Yes	Average Consumption
27 Sooke	Yes	N/A	N/A	Taxes/Parcel
28 Surrey	Yes	80% of water consumption	Yes	Reduced consumption
29 Vancouver	Yes	100% water consumption	No	Full water consumption
30 View Royal	Yes	winter consumption	No	Winter Consumption
Fixed		8	26.67%	
Taxes/Parcel		3	10.00%	
Full consumption		7	23.33%	
Reduced Consumption		8	26.67%	
Calculated Consumption		4	13.33%	
		30	100.00%	

Appendix D: Non-Residential Survey Results for Municipalities with meters installed

Municipality	Do they have metered accounts?	Sewer volume measurement method	Permitted to use a Sewer Meter or other mitigation?	General Rate Category
1 Abbotsford	Yes	90% water consumption	Yes	Reduced water consumption
2 Campbell River	Yes	100% water consumption	Yes	Full water consumption
3 Central Saanich	Yes	80% for Jan - Apr billing	No	Reduced water consumption
4 Chilliwack	Yes	90% water consumption	No	Reduced water consumption
5 Colwood	Yes	Annualized winter consumption	No	Average consumption
6 Coquitlam	Yes	100% water consumption	Yes	Full water consumption
7 Cranbrook	Yes	100% water consumption	No	Full water consumption
8 Delta	Yes	80% water consumption	Yes	Reduced water consumption
9 Duncan	Yes	80% water consumption	No	Reduced water consumption
10 Highlands	Yes	N/A	N/A	Taxes/Parcel
11 Esquimalt	Yes	N/A	N/A	Taxes/Parcel
12 Kamloops	Yes	varies	Yes	Reduced water consumption
13 Kelowna	Yes	100% water consumption	Yes	Full water consumption
14 Lake Cowichan	Yes	N/A	N/A	Fixed
15 Langford	Yes	annualized winter consumption	No	Reduced water consumption
16 Langley (City)	Yes	80% water consumption	No	Reduced water consumption
17 Langley (Township)	Yes	80% water consumption	Yes	Reduced water consumption
18 Maple Ridge	Yes	100% water consumption	No	Full water consumption
19 Merritt	Yes	N/A	N/A	Fixed
20 Nanaimo	Yes	N/A	N/A	Fixed
21 Nelson	Yes	100% water consumption	No	Full water consumption
22 New Westminster	Yes	80% water consumption	No	Reduced water consumption
23 North Saanich	Yes	N/A	N/A	Fixed
24 North Vancouver (City)	Yes	N/A	Yes	Fixed
North Vancouver				
25 (District)	Yes	100% water consumption	Yes	Full water consumption
26 Oak Bay	Yes	100% water consumption	Yes	Full water consumption
27 Osoyoos	Yes	80% water consumption	Yes	Reduced water consumption
28 Parksville	Yes	plus lesser of winter and summer	No	Fixed
29 Penticton	Yes	N/A	N/A	Fixed
30 Port Alberni	Yes	100% water consumption	No	Full water consumption
31 Port Coquitlam	Yes	100% water consumption	Yes	Full water consumption
32 Port Moody	Yes	80% water consumption	Yes	Reduced water consumption
33 Prince George	Yes	100% water consumption	No	Full water consumption
34 Richmond	Yes	100% water consumption	No	Full water consumption
35 Saanich	Yes	Lowest of last three billings 4th qtr based on highest of last three	No	Average Consumption
36 Sidney	Yes	three	Yes	Average Consumption
37 Sooke	Yes	N/A	N/A	Taxes/Parcel
38 Surrey	Yes	80% water consumption	Yes	Reduced water consumption
39 Vancouver	Yes	100% water consumption	No	Full water consumption
40 View Royal	Yes	winter consumption	No	Winter Consumption
Fixed		7		17.50%
Taxes/Parcel		3		7.50%
Consumption		14		35.00%
Reduced Consumption		12		30.00%
Calculated Consumption		4		10.00%
		40		100.00%

Appendix E: Cost/Benefit Analysis

Option	Incremental Costs	Equity (user pay)	Incremental Administrative burden	Water conservation	Garden watering	Sewer Rate Increase?
1: Flat Fee	\$0	Somewhat equitable	None	No rate incentive to conserve	Neutral	N/A
2: Property Tax	\$0	Not equitable	None	No rate incentive to conserve	Neutral	Property tax increase
3: Full water consumption (status quo)	\$0	Fairly equitable	None	High rate incentive to conserve	High incentive not to water	No
4: Reduced consumption	\$0	Fairly equitable	None	High rate incentive to conserve	High incentive not to water	Yes + 25%
5: Calculated consumption	Additional staffing and software TBD ⁶	Most Equitable	Additional staffing	Moderate rate incentive to conserve	Moderate incentive not to water	Yes + 8-13%
6: Modified calculated consumption (discounted summer sewer rate)	\$0	Most Equitable	None	Moderate rate incentive to conserve	Moderate rate incentive not to water	Yes + 13% for off-summer months and -20% for summer months
Mitigating Terms in Bylaw						
• Irrigation/sewer/garden meters	Additional Staffing required TBD	Most Equitable	Additional meter read staff TBD	Moderate financial incentive to conserve	Moderate incentive not to water	Yes + TBD
• Allow Director to vary rate calculation if actual flows differ significantly ⁷	TBD	Fairly equitable but not to garden watering	TBD	Moderate financial incentive to conserve	High incentive not to water	TBD

⁶ To be determined, more analysis required

⁷ Assumes that garden watering consumption would not cause a large enough difference for a rate variation