



The Regional Municipality of Durham

Committee of the Whole Agenda

Council Chambers
Regional Headquarters Building
605 Rossland Road East, Whitby

Wednesday, December 11, 2019

9:30 AM

1. Declarations of Interest

2. Statutory Public Meetings

There are no statutory public meetings

3. Delegations

There are no delegations

4. Presentations

- 4.1 John Presta, Director, Environmental Services, Works Department; and Mary Simpson, Director, Financial Planning & Purchasing, Finance Department, re: Recommended 2020 Water and Sanitary Sewer User Rates (2019-COW-33) [Item 6. B)]

5. Correspondence

6. Reports

- | | |
|---|----------|
| A) 2020 Water Supply and Sanitary Sewerage Strategic Issues and Financial Forecast (2019-COW-32) | 3 - 18 |
| B) Recommended 2020 Water and Sanitary Sewer User Rates (2019-COW-33) | 19 - 94 |
| C) Oral Health Clinic Relocation and Expansion to Meet the Needs of the Ontario Seniors Dental Care Program (2019-COW-34) | 95 - 101 |

- D) Authorization to Initiate a Comprehensive Review for the Design of a Proposed Community Improvement Plan for Durham Region
(2019-COW-35)

102 - 111

7. Confidential Matters

There are no confidential matters to be considered

8. Other Business

9. Adjournment

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The Regional Municipality of Durham Report

To: The Committee of the Whole
From: Commissioner of Finance and Commissioner of Works
Report: [#2019-COW-32](#)
Date: December 11, 2019

Subject:

2020 Water Supply and Sanitary Sewerage Strategic Issues and Financial Forecast

Recommendations:

That the Committee of the Whole recommends to Regional Council:

- A) That the 2020 Water Supply and Sanitary Sewerage Strategic Issues and Financial Forecast be received and forwarded to the 2020 Business Planning and Budget deliberations for Water Supply and Sanitary Sewerage Services, including the practice of using existing asset management reserve funds, based on asset management best practices to address the needs of the Regional water supply and sanitary sewer systems.
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Report:

1. Introduction

- 1.1 The Region's vision for sustainable water supply and sanitary sewerage is integral to achieving the goals within the Durham Region Strategic Plan. Long-term financial planning is necessary to ensure that the Region's water supply and sanitary sewerage systems continue to address the regulatory requirements and accommodate the growth and rehabilitation needs of Durham's communities.
- 1.2 The 2020 Water Supply and Sanitary Sewerage Strategic Issues and Financial Forecast provides analysis of key water supply and sanitary sewer servicing needs.

2. Proposed 2020 Water Supply and Sanitary Sewerage Capital Program

- 2.1 The proposed 2020 Water Supply (\$76.2 million) and Sanitary Sewerage (\$69.0 million) Capital Budgets identified in this report includes Construction of Municipal Services capital only (i.e. watermains, sanitary sewers, pumping stations, reservoirs and plants). There are other capital projects included in the water supply and sanitary sewerage budgets for items such as equipment, vehicles and building

repairs which are not included in this report. These smaller capital items are proposed at \$4.7 million for water supply in 2020 and \$7.2 million for sanitary sewer in 2020.

2.2 The proposed 2020 Water Supply and Sanitary Sewerage Capital Budgets will:

- address critical requirements for the Region's water supply and sanitary sewerage infrastructure network;
- ensure regulatory compliance;
- invest in new infrastructure to address anticipated growth; and
- invest in infrastructure addressing climate change mitigation and adaptation.

2.3 The following table provides a list of the major capital projects in the proposed 2020 Water Supply and Sanitary Sewerage Capital programs.

Table 1
Highlights of the Proposed 2020 Water Supply and
Sanitary Sewerage Capital Programs

Water Supply	\$million	Sanitary Sewer	\$million
Watermain replacement / rehabilitation to address critical needs	\$18.2	Sanitary sewer replacement to address critical needs	\$5.6
Watermain Petition Projects:			
- Ontoro Blvd (Ajax)	1.8		
- Fielding Court (Ajax)	0.6		
Plant and Water Pumping Stations (WPS) and Reservoirs:		Plant and Sanitary Sewage Pumping Stations (SSPS):	
- Seaton Zone 4 Reservoir and Zone 5 WPS, Pickering	6.7	- Conlin Road SSPS expansion and feedermain, Oshawa (Construction of feedermain in 2020)	3.5
- Cannington New Well & Pumphouse	5.0	- Courtice Water Pollution Control Plant (WPCP) remediation works	3.5
- Oshawa Zone 4 Water Storage Facility	3.2	- Water Street SSPS (Whitby) upgrades (Design and Construction)	2.6
- Zone 1 Reservoir, Newcastle	3.0	- Fuel Tank Compliance	2.0
- Whitby Water Supply Plant (WSP) Expansion (Design)	2.5	- Lake Simcoe WPCP Upgrades (Brock)	1.6
- Ajax WSP expansion (EA) and rehabilitation work	3.6	- Bayly Street SSPS Upgrades (Pickering)	1.5
- Whitby Zone 4 Water Storage facility	1.7	- Madawaska SSPS standby power (Oshawa)	1.3
- Thickson Road Zone 3 WPS expansion, Whitby	1.6	- Corbett Creek WPCP (Whitby) Expansion (EA)	1.0
- Sunderland New Well and Pumphouse (Design)	1.0	- Cannington WPCP Lagoon system (Conceptual Design)	1.0
Water filling stations	3.2	Duffin Creek Water Pollution Control Plant (WPCP):	
Replacement of water meters	3.1	- Replacement of Reactors 1 & 2 (\$20.0 million, York Share - \$14.8 million)	5.2
Replacement of lead water service connections	1.0	- Digester Mixing Improvements (\$1.0 million, York Share - \$0.7 million)	0.3

		- Environmental Lab Upgrades (\$0.4 million, York share - \$0.2 million)	0.2
		- Remedial Works (\$1.3 million, York share - \$0.8 million)	0.5
New feeder mains (growth related):		New trunk sanitary sewers (growth related):	
- Conlin Rd., Oshawa	4.2	- West Brooklin Trunk Sewer, Whitby	8.3
- Bloor St., Oshawa	1.5	- Wilmot Trunk Sewers, Newcastle	4.4
- Zone 4 feeder main from WPS to Zone 4 Reservoir, Oshawa	1.2	- Courtice Trunk Sewer (Phase 3), Courtice	2.0
		- Port Darlington Trunk Sewer, Bowmanville	1.7

3. 2020 Overall Financial Outlook

3.1 The following table provides the proposed financing for the 2020 water supply and sanitary sewerage capital programs (\$76.2 million for water supply and \$69.0 million for sanitary sewerage):

Table 2
Proposed 2020 Financing
(\$ millions)

	Water Supply	Sanitary Sewerage
Development Charges		
Upfront ⁽¹⁾	\$ 21.5	\$ 21.3
sub-total	21.5	21.3
User Rate		
Upfront	39.9	22.5
Asset Management Reserve Fund	5.2	8.6
sub-total	45.1	31.1
Other Financing		
York Region (Share of York Durham Sewage System)	0.2	16.6
Frontage Charges	1.9	-
Seaton Landowners Group (Upfront and ASDC Funding)	7.5	-
sub-total	9.6	16.6
Total Financing	\$ 76.2	\$ 69.0

Note:

1. Includes residential and non-residential development charges.

3.2 The proposed 2020 water supply and sanitary sewerage financing:

- Includes the recommended overall user rate increase of 3.2 per cent;
- Does not require any debenture financing;
- Does not recommend any draws from the water supply and sanitary sewerage treatment plant / rate stabilization reserve funds for the construction of municipal services capital as no large expansion / rehabilitation projects are planned for 2020 (section 4.0 deals with potential future uses of these reserve funds), but does draw on the Asset Management Reserve Funds; and
- Allows all capital projects ready for construction in 2020 to proceed.

- 3.3 The overall water supply and sanitary sewer user rate increase of 3.2 per cent for 2020 accommodates the anticipated loss in user revenue from the reduced operations at General Motors regarding the assembly and feeder plants in Oshawa. The anticipated impact from the reduced operations at General Motors and the related feeder plants is approximately a one per cent overall user rate increase. The projected lost revenue from General Motors in 2020 is more than offset by an anticipated increase in revenue from higher residential consumption through growth and a levelling off of per household consumption.
- 3.4 Depending on the future uses of the General Motors site in Oshawa, the reduction in usage at this site will provide opportunities to review timing of future infrastructure projects.

4. 2021 - 2029 Capital Program and Financing

- 4.1 The nine-year Capital Forecast (2021-2029) for Water Supply and Sanitary Sewerage is approximately \$2.6 billion (approximately \$1.5 billion for sanitary sewerage and \$1.1 billion for water supply related to construction of municipal services) and includes new and expanded vertical and linear infrastructure to accommodate growth and significant investments to address the asset management priorities to maintain robust operating systems.
- 4.2 Achieving the capital program in the forecast period (2021-2029) will likely require additional debt financing and may require future user rate increases of approximately four to six per cent per year. The pressures on future user rates is the result of:
- future replacement / rehabilitation needs as identified in the annual asset management report;
 - significant growth-related capital projects (i.e. plant expansions) where the non-residential development charges shortfall is funded by user rates; and
 - the increase in operating costs resulting from an expanding water supply and sanitary sewerage system.
- 4.3 The 2021-2029 capital program (construction of municipal services) includes some major building expansions for water supply (i.e. expansion of the Ajax, Whitby and Bowmanville Water Supply Plants) and sanitary sewage (i.e. expansion of the Corbett Creek and Coutice Water Pollution Control Plants and the Conlin Road Sanitary Sewage Pumping Station). These major capital projects include a significant share of costs to be funded by industrial development charges. However, it is anticipated that the majority of the share of costs attributed to industrial development charges will need to be funded by user rates as the rate of industrial development does not provide sufficient development charge revenues.
- 4.4 Regional Council has previously approved the use of the water supply and sanitary sewerage treatment plant / rate stabilization reserve funds for rehabilitation / replacement and growth-related capital projects. In accordance with the Long-Term Financial Planning Framework recently adopted by Regional Council, staff has identified the following opportunities to utilize the water supply and sanitary

sewerage treatment plant / rate stabilization reserve funds:

Reserve Fund	Balance as of Sept. 30, 2019	Potential future uses over the nine year forecast (2021-2029)
Water Asset Management Reserve Fund	\$12.2 million	Beaverton WSP upgrades in 2021 (\$2.6 million user revenue) and replacement of the Hortop Water Pumping Station in 2021-2022 (\$10.3 million user revenue). Water supply assets considered in poor to very poor condition – over \$300 million.
Sewer Asset Management Reserve Fund	\$12.9 million	Water Street SSPS upgrades in 2021 (\$5.6 million user revenue) and Duffin Creek WPCP Digester improvements in 2021 (\$4.2 million user revenue). Sanitary sewer assets considered in poor to very poor condition – over \$350 million.
Water Supply Treatment Plant / Rate Stabilization Reserve Fund	\$96.8 million	The user rate share of the Ajax, Whitby and Bowmanville Water Supply Plant expansion projects over 2022-2025 (\$74 million)
Sanitary Sewerage Treatment Plant / Rate Stabilization Reserve Fund	\$153.6 million	The user rate share of the Duffin Creek WPCP over 2021-2026 (replacement of incinerators and twinning of York Durham Trunk Sanitary Sewer), Courtice Trunk Sanitary Sewer (2022) and expansions of the Corbett Creek and Courtice WPCPs over 2026 -2028 (\$177 million)

- 4.5 The utilization of these reserve funds will be considered on an annual basis as part of long-term financial planning to mitigate user rate increases and recommendations will be presented to Regional Council.

5. Asset Management Update

- 5.1 Since 2004, the Region has developed and published an annual Asset Management Report. The report collects and analyzes data which is critical to ensure sound and timely investments are made to maintain the Region's existing assets at a level to meet service delivery expectations and minimize the cost of assets over their lifecycles. The following table provides a summary of the 2019 Asset Management Report (Report #2019-COW-16) for water supply and sanitary sewerage systems.

Table 3
Asset Management Update
(\$2018)

Estimated Replacement Value of Water Supply and Sanitary Sewerage Systems \$9.4 billion or 65% of Durham's total assets	
Water Supply	Sanitary Sewerage
Replacement value of \$4.44 billion <ul style="list-style-type: none"> - \$0.88 billion in vertical assets (treatment, pumpage and storage) - \$3.56 billion in linear assets (water distribution) 	Replacement value of \$4.96 billion <ul style="list-style-type: none"> - \$1.31 billion in vertical assets (treatment, pumpage and storage) - \$3.65 billion in linear assets (collection)
Approximately 93 per cent of assets rated fair to very good	Approximately 93 per cent of assets rated fair to very good
Forecasted capital projects to address assets in poor / very poor condition, at the end of their useful life or in need of timely rehabilitation / replacement include: <ul style="list-style-type: none"> - Ajax WSP upgrades in 2020 (\$2.5 million) - Whitby WSP upgrades, after expansion work is completed (\$22.9 million) - Rehabilitation to the Oshawa WSP over 2021-2028 (\$5.0 million) - Port Perry WSP upgrades in 2022 (\$23.4 million) - Orono water supply system upgrades in 2023 (\$2.8 million) - Bowmanville WSP upgrades in 2020-2021 (\$3.4 million) - Blackstock water supply system upgrades in 2020 (\$2.2 million) - Beaverton water supply system upgrades in 2021 (\$2.9 million) - Greenbank water supply system – replacement of well and upgrades (\$1.8 million in 2022-2023) - Replacement of Hortop Water PS over 2020-2022 (total cost estimated at \$10.3 million) - Upgrades totaling nearly \$19.0 million to the following Water Pumping Stations: <ul style="list-style-type: none"> o Rosebank Rd. WPS over 2026-2028; o Cherrywood WPS over 2020-2026; 	Forecasted capital projects to address assets in poor / very poor condition, at the end of their useful life or in need of timely rehabilitation / replacement include: <ul style="list-style-type: none"> - Port Darlington WPCP rehabilitation works in 2021-2022 (\$8.3 million) - Courtice WPCP remediation works (\$14.3 million over 2020-2026) - Lake Simcoe WPCP upgrades (\$3.5 million in 2020) - Newcastle WPCP optimization / capacity re-rating (\$13.1 million over 2021-2022) - Uxbridge WPCP: <ul style="list-style-type: none"> o Optimization upgrades in 2021 (\$5.6 million) o Rehabilitation works in 2025 (\$1.5 million) - Corbett Creek WPCP projects: <ul style="list-style-type: none"> o New headworks building in 2021 (\$6.4 million) o Works to rectify deficiencies (\$8.0 million in 2021) - Duffin Creek WPCP (Durham's share): <ul style="list-style-type: none"> o Replacement of reactors (\$44.8 million by 2025) o Digester Mixing improvements in 2021 (\$6.3 million total cost) o Remedial works in 2021 (\$5.8 million)

<ul style="list-style-type: none"> ○ Grandview WPS over 2021-2022; ○ Waverly Rd. WPS over 2021-2022; ○ Taunton Road WPS in 2022; ○ Concession St. WPS over 2021-2022; ○ Newtonville WPS over 2022-2024; and ○ Mill St. WPS over 2022-2024. 	<ul style="list-style-type: none"> - Sanitary Sewage Pumping Station Replacements: <ul style="list-style-type: none"> ○ Simcoe Street South SSPS in 2021 (\$4.9 million) ○ Madawaska SSPS in 2026 (\$5.0 million) ○ Water St. SSPS (Port Perry) in 2021 (\$23.1 million total cost – rehab. and expansion) - Upgrades totaling \$5.9 million to the following SSPS: <ul style="list-style-type: none"> ○ Cochrane Street SSPS in 2020; ○ Cloverridge SSPS in 2022; and ○ Bayly St. SSPS in 2020 - Over \$125 million in funding to replace and rehabilitate sanitary sewers over 2020-2029
<ul style="list-style-type: none"> - Over \$165 million in funding to replace and rehabilitate watermains over 2020-2029 	

6. Clean Water and Wastewater Fund (CWWF)

- 6.1 The Federal Government approved eighteen projects that the Region submitted in 2016 and 2018 (twelve completed to date) under the CWWF totaling \$44.08 million as follows:

Table 4
CWWF Funding Allocation
(\$ millions)

Federal Contribution	\$22.04 (50%)
Provincial Contribution	11.02 (25%)
Regional Contribution	<u>11.02 (25%)</u>
Total	<u>\$44.08</u>

- 6.2 Project spending must be completed by March 31, 2020 and staff anticipate that all projects under the CWWF program will be completed within this timeline. Nearly \$4.0 million from the sanitary sewer treatment plant rate stabilization reserve fund was used to fund the Regional contribution. Grant programs provide an opportunity to advance capital projects within the Region and the rate stabilization reserve funds are important financial tool to provide matching contributions.

7. Climate Change

- 7.1 The Region's water supply and sanitary sewerage programs are significant components of the Region's corporate climate change initiatives. The Region's water supply and sanitary sewerage capital and operating programs provide mitigation and adaptation measures and strategies to address the Region's climate change initiatives. Significant climate change initiatives are underway within both water supply and sanitary sewer programs.

- 7.2 The Region's multi-disciplinary Asset Management Staff Working Group works to ensure both adaptation planning and energy and water efficiency and conservation efforts are integrated into financial planning, asset management, risk management and business planning as part of best business practices.
- 7.3 The ongoing capital projects being completed to address the asset management needs of the Region also serve to address climate change initiatives (i.e. reduce greenhouse gas emissions and increase the Region's adaptive capacity and resiliency to changes in climate). The following provides a list of capital works that will address climate change initiatives:
- Aggressive replacement of deficient watermain and sanitary sewers reduce infiltration of groundwater into the sanitary sewer collection system to mitigate flooding, inflow and infiltration;
 - Upgrades to plants and pumping stations which include electrical upgrades and standby power to operate systems during communications and electrical power failures;
 - Enhanced erosion protection at creek crossings to protect watermains and sanitary sewer systems;
 - Energy conservation measures are incorporated into asset management and financial planning processes;
 - Recapturing of gases / steam generated from processing activities at the Region's WPCPs to heat plants which reduces greenhouse gas emissions (e.g. Biogas utilization at the Courtice, Corbett Creek and Duffin Creek WPCPs);
 - Integrated Resource Recovery Studies are nearing completion at the Courtice WPCP and have been initiated at the Duffin Creek WPCP to review alternatives of potential energy efficiency, use of on-site energy resources and reducing emissions.
- 7.4 Future capital investments will be fully assessed and reported through established processes based upon Regional Council direction, including full technical, environmental and financial assessments supporting long-term sustainability. A full life-cycle approach will continue to ensure a sustainable strategy and funding related to climate change adaptation initiatives.

8. Bulk Water Hauler Services

- 8.1 The Region of Durham currently provides bulk water through five existing water filling stations and the issuance of hydrant permits for use on fire hydrants.
- 8.2 A hydrant permit is issued to a specific user for usage on a particular hydrant location and is valid for one year. Although hydrant permits provide a convenient and accessible water source with no waiting time for permit holders, this method of providing bulk water is vulnerable to unaccountable water use and can put the security and water quality of the Region's system at risk
- 8.3 The Region currently has five automated bulk water filling stations (built in the early 1970s). The following provides their location and associated challenges:

- Bowmanville WSP (deemed out of way for water haulers);
- Whitby WSP (deemed out of way for water haulers);
- Harwood Avenue Water Pumping Station in Ajax (traffic concerns);
- Port Perry at Municipal Well #3 and #4 (traffic concerns); and
- Beaverton WSP.

8.4 The benefits of the existing filling stations include year round access providing accurate reading flows to ensure cost recovery of usage and being equipped with backflow prevention. However, they have a slow fill rate and the number of users is limited to the number of keys available at each filling station.

8.5 Staff are implementing the following approved improvements to address the concerns with the existing filling stations and hydrant permit program:

- The implementation of bulk water filling stations throughout the Region which will reduce the reliance on the issuance of hydrant permits; and
- The use of meters and backflow preventers on specific priority fire hydrants for which a hydrant permit is issued.

8.6 The following provides an update on future bulk water filling stations:

- Construction of the new filling station at the Oshawa / Whitby Depot will commence in 2020;
- A bulk water filling station is being planned at the proposed Zone 4 Reservoir location for Seaton on the north side of Highway 7 in Pickering. This project will be tendered in 2020 with a construction period of twenty-four months;
- In addition to these two new filling stations, staff are planning for up to six additional bulk water filling stations and continue to explore opportunities to coordinate the installation of additional bulk water filling stations throughout the Region at other locations and potentially in conjunction with the future construction of Regional infrastructure.

8.7 As a means to reduce the risk of unaccounted-for water and to ensure appropriate backflow prevention measures are used, the Region purchased ten hydrant meter assemblies in 2018 that include a backflow preventer and a tamper resistant cage which can monitor usage at select hydrants throughout the Region, targeting the largest bulk water hydrant users. The hydrant meter assemblies were located strategically based on a combination of criteria as follows:

- Highest consumption locations;
- Distance away from bulk filling stations;
- Construction locations; and
- Locations that are difficult to monitor.

9. Affordability

9.1 As illustrated in the 2020 Water and Sanitary Sewer User Rate Report, the annual cost of water and sanitary sewer services for a typical Durham Region residential

customer in 2019 is approximately \$967 (assuming 225.5 m³ usage). Staff have reviewed this annual cost of water and sewer in a number of ways as follows:

- A comparison with thirteen large municipalities in Ontario shows Durham Region's annual cost of \$967 ranking fifth lowest and below the average for these thirteen municipalities (i.e. the average was \$1,027); and
- A comparison with other utility costs, where the annual combined water supply and sanitary sewer costs (\$967) are lower than all other utilities considered, including electricity, natural gas, cell phone, internet and cable services.

9.2 Regional staff are also investigating various affordability metrics related to income to gauge the relative affordability of Durham's water and sewer user rate costs. Although in comparative terms, Durham's average residential water and sanitary sewer rates compare favorably with other municipalities and utilities, these measures do not directly address the issue of affordability. A frequently used metric for assessing affordability is to compare water and sewer charges to average family income. A US Environmental Protection Agency report on drinking water affordability cites several studies which suggests an affordability threshold for water and sewer in the range of 1.5% to 2.5% of annual household income. The water and sanitary sewer service costs in Durham for an average customer represent about 1% of the average census family income. Since this comparison only represents an average, more in-depth comparisons would be beneficial and informative.

9.3 A paper was commissioned in 2019 by the American Water Works Association (AWWA), the National Association of Clean Water Agencies (NACWA), and the Water Environmental Federation (WEF) in the United States looking at various methodologies for evaluating affordability in the water sector. The report analyzes water affordability for American households and suggests implementing a two-part metric that captures both the household burden of water service, and the level of economic stress on the community as follows:

- Household Burden Indicator which measures the relative economic burden of water and sewer costs on low income households; and
- Poverty Prevalence Indicator which measures the degree to which poverty is prevalent in a community.

9.4 However, the paper does not explain how the thresholds establishing what constitutes an affordable versus an unaffordable result have been established nor is it clear the suitability in a Canadian context. The paper states that additional research is clearly needed to establish and confirm appropriate affordability benchmarks based on the recommended affordability metrics.

9.5 Staff have contacted Halifax and Thunder Bay who are reviewing the applicability of these two metrics. Staff will continue to investigate potential affordability metrics in 2020 and follow up with other municipalities who are considering the metrics from the paper noted above and / or any other affordability metrics.

9.6 Although the costs of water and sewer services in Durham are lower than all other utilities, the costs can nevertheless be a challenge for some residents. The following programs are in place to alleviate these challenges in making payments:

- Referral to assistance through the Low Income Energy Assistance Program (LEAP) through the Housing Help Durham office which is a year-round program to assist low-income customers with their utility bill payments where families and individuals may qualify for a one time grant through an application process;
- Extension of payment due date for seniors to align bill with pension payments;
- Individual payment arrangements will be considered for customers facing extreme difficulties (i.e. loss of job or critical illness);
- The new water billing system and customer portal will enable other options for customers such as making regular payments to spread the cost of water consumption evenly over the year;
- Water consumption information is available from the Works Department to assist in lowering consumption; and
- The Commissioner of Finance has the authority to write-off (up to \$2,500 for water and \$2,500 for sanitary sewer), however this is for high bill complaints generally a result of extreme plumbing problems.

10. Regulatory

Lead Water Services

10.1 Recent media attention and reports on lead water services has heightened the awareness of water quality. The replacement of private pipes and plumbing is a challenge to ensure property owners take action.

10.2 Health Canada has a proposed guideline for lead in drinking water. The proposed guideline has a couple of significant changes as follows:

- Lowering the maximum acceptable concentration (MAC) for lead in drinking water from 10 ug / l to 5 ug / l; and
- Applying the proposed MAC to water samples taken at the tap.

10.3 If Health Canada's guideline is adopted in regulation by the Province of Ontario, water utilities will have a challenge to meet "at the tap" compliance as there is limited or no access to the customer's private plumbing system. Regional staff will monitor any change in regulations for lead and update Committees and Council on any challenges to meet potential new requirements.

10.4 The drinking water limit for lead in Ontario is 0.010 milligrams per litre (parts per million) or 10 micrograms per litre (parts per billion) under Ontario Regulation (O.Reg.) 169/03 of the Ontario Drinking Water Quality Standards (ODWQS). This is the existing regulatory limit in Ontario for water distribution systems.

10.5 It is important to note that when drinking water leaves a water supply plant or

municipal well, it typically contains no measurable level of lead.

ECA Modernization

10.6 The Ministry of Environment, Conservation and Parks (MECP) is completing a project to replace the existing process of issuing an Environmental Compliance Approval (ECA) for each storm and sanitary sewer extension. The new process will issue system wide ECAs for the entire sewer system similar to the License that's issued for the water systems. Initially, the system wide ECA for the sanitary sewer system will only be for the collection system, including sanitary sewage pumping stations, and will not include treatment plants, which will continue to have separate ECAs. Currently, expansions to the collection system are reviewed by Region of Durham (Durham) staff under the Transfer of Review (ToR) Agreement between MECP and Durham. Durham reviews the design documentation against MECP guidelines and recommends approval of the works to MECP if all of the requirements are met. However, the process still requires MECP to receive the submission, check it for completeness and issue the ECA.

10.7 Under the proposed process, Durham will have a system wide ECA and can approve system expansions provided that they are designed in accordance with MECP Design Criteria. The approved expansion is documented as an appendix to the ECA and will be included in the ECA description when the ECA is renewed based on a 5 year schedule. This process is significantly more streamlined for both Durham and MECP staff.

Perfluoroalkyl Substances

10.8 Perfluoroalkyl (PFAS) substances are an emerging regulatory issue in Canada and the United States of America. The sources of PFAS substances can originate from fire-fighting foams, consumer products, packaging, landfills and industrial processes. The regulatory requirements for drinking water are developing and emerging as there is limited data on the substances. There is considerable variation in the magnitude of guidelines between regulatory agencies currently.

11. Utility Management Model

11.1 The Region is a member and has participated in the Canadian National Water and Wastewater Benchmarking Initiative (NWWBI). The NWWBI has developed a Utility Management Model for water supply and sanitary sewerage services. The NWWBI Utility Management Model includes the following seven high level performance goals that utilities aspire to:

Goal 1 – Ensure adequate capacity.

Goal 2 – Protect the environment.

Goal 3 – Provide reliable and sustainable service and infrastructure.

Goal 4 – Protect public health and safety.

Goal 5 – Provide a safe and productive workplace.

Goal 6 – Have satisfied and informed customers

Through the collection and analysis performance of operational data, the Region has established a process to strive to meet these goals on an annual basis through the annual review of the Asset Management Plan, Operating and Capital Business Plans, and User Rate Study. Long term planning is used in developing the 10-year Capital Forecast, Strategic Issues and Financial Forecasts, Development Charges Study, and Financial Water Plan.

12. Growth

- 12.1 There are a number of development areas being planned and implemented within each municipality. The proposed 2020 Water Supply and Sanitary Sewerage Capital Budget and Forecast identifies the required servicing infrastructure for the designated urban areas.
- 12.2 Regional staff monitor the utilization of major water supply and sanitary sewage infrastructure to plan major infrastructure expansions, system capacity and reliability.
- 12.3 The opportunity for deferring major infrastructure expansion within the Oshawa / Whitby service area is dependent on the rate of development. Proposed development in the West Whitby, Brooklin, Whitby Harbour, Kedron and Oshawa intensification service areas will be monitored on an annual basis.

13. Modernization

- 13.1 In 2020 staff will be initiating a new project called Smart Cities Initiative; 'Smart City' is a designation given to a city that incorporates information and communication technologies to enhance the quality and performance of urban services such as energy, transportation and utilities to improve efficiency.
- 13.2 Recent advances in water distribution system remote sensing technologies now enable utilities to optimize system operations, as well as observe and react to abnormal situations, in ways that were previously not possible. Remote sensors can now be deployed that can enable real time monitoring of the distribution system using pressure and temperature monitoring as well as acoustic hydrophones.
- 13.3 Sensor benefits include continuous monitoring, this allows for early detection of any problems or issues. The sensors are self-contained and non-invasive, therefore no service disruptions during installation or operation. The sensors facilitate automated analysis that enable fast results and rapid decision making.
- 13.4 Real time monitoring of pressure, temperature and acoustic hydrophones, allow Operators to proactively identify and resolve issues in the system like leaks, breaks, pressure fluctuations and transients. This data can improve insight into the operation of our system.
- 13.5 There are two types of sensors proposed to be installed under the initiative:
 - Hydrant Retrofit Internal Type – this assembly will be installed in the barrel of the hydrant. The data will be sent wirelessly to a central server where the data can

be integrated with the Region's existing data management platform; and

- Hydrant Retrofit External Type– this is assembled on the ports of the hydrant. The data will be sent wirelessly to a central server where the data can be monitored via a cloud-based web service. This service can be set up to analyze the data and provide operational recommendations to staff.

13.6 The intent of this project is to field test the two types of sensors noted above and select areas in the water distribution system where operational information can be reviewed and analyzed. A minimum period of one year is proposed to ensure adequate operational data is collected. A report will summarize the results of the testing and make recommendations with respect to potential future installations.

Digital Data Management

13.7 Digital data management involves the definition and implementation of policies, practices and procedures that facilitate the effective and efficient use of digital data. Over the last year the staff at Duffin Creek Water Pollution Control Plant have been implementing a digital data management system called Eramosa Reporting and Information System (e.RIS).

13.8 The e.RIS is also planned to be implemented in the Region's water supply and sanitary sewerage service areas within the Plant Operations Division.

14. Financial Forecast and Risks / Uncertainties and Mitigation Measures

14.1 The following table provides the 2019 approved budget, 2020 recommended budget and 2021-2029 forecasted capital program (construction of municipal services capital only) and financing for water supply and sanitary sewerage services. As shown in the table below, there are years where expenditures spike due to large plant expansion projects. Application of the treatment plant / rate stabilization reserve funds will mitigate the debenture requirements for these projects, avoiding interest costs.

14.2 However, it is anticipated that additional debt financing will be required. A review of the timing of these projects and use of reserve funds and debenture financing will be conducted on an annual basis as part of the long-term financial strategy.

Table 5
Water and Sewer Capital Program and Financing
Construction of Municipal Services Capital Only

Water Supply

Expenditures

Total Construction of Municipal Services
Existing Debenture Payments
Future Debt Payments

Expenditures Total

Approved	Rec.	Forecast					
2019	2020	2021	2022	2023	2024	2025 to 2029	2020 to 2029 Total
\$ 110.0	\$ 76.2	\$ 213.1	\$ 318.8	\$ 81.8	\$ 168.5	\$ 359.0	\$ 1,217.5
\$ 1.7	\$ 1.7	\$ 1.7	\$ 1.7	\$ 1.7	\$ 1.7	\$ 8.5	\$ 16.9
\$ -	\$ -	\$ -	\$ -	\$ 12.7	\$ 12.7	\$ 114.1	\$ 139.5
\$ 111.7	\$ 77.9	\$ 214.8	\$ 320.5	\$ 96.2	\$ 182.9	\$ 481.6	\$ 1,374.0

Financing

Development Charges
Asset Management Reserve Fund
Treatment Plant / Rate Stabilization RF
Debenture Proceeds
Other Financing
User Revenues

Financing Total

2019	2020	2021	2022	2023	2024	2025 to 2029	2020 to 2029 Total
\$ 59.7	\$ 22.1	\$ 147.2	\$ 52.2	\$ 52.6	\$ 35.6	\$ 224.7	\$ 534.3
\$ 5.0	\$ 5.2	\$ 6.2	\$ 14.5	\$ 5.2	\$ 5.2	\$ 26.2	\$ 62.6
\$ 2.0	\$ -	\$ -	\$ 50.6	\$ -	\$ -	\$ -	\$ 50.6
\$ -	\$ -	\$ -	\$ 98.4	\$ -	\$ 46.4	\$ 39.2	\$ 184.0
\$ 4.8	\$ 9.6	\$ -	\$ 2.5	\$ -	\$ 59.1	\$ 4.0	\$ 75.2
\$ 40.2	\$ 41.0	\$ 61.4	\$ 102.3	\$ 38.5	\$ 36.6	\$ 187.5	\$ 467.2
\$ 111.7	\$ 77.9	\$ 214.8	\$ 320.5	\$ 96.2	\$ 182.9	\$ 481.6	\$ 1,374.0

Sanitary Sewerage

Expenditures

Total Construction of Municipal Services
Existing Debenture Payments
Future Debt Payments

Expenditures Total

Approved	Rec.	Forecast					
2019	2020	2021	2022	2023	2024	2025 to 2029	2020 to 2029 Total
\$ 106.4	\$ 68.9	\$ 207.5	\$ 189.3	\$ 197.4	\$ 80.8	\$ 853.5	\$ 1,597.5
\$ 21.8	\$ 21.0	\$ 14.5	\$ 13.0	\$ 12.2	\$ 11.5	\$ 41.0	\$ 113.3
\$ -	\$ -	\$ -	\$ -	\$ 5.8	\$ 12.5	\$ 133.8	\$ 152.1
\$ 128.2	\$ 90.0	\$ 222.0	\$ 202.3	\$ 215.4	\$ 104.8	\$1,028.3	\$ 1,862.8

Financing

Development Charges
Asset Management Reserve Fund
Treatment Plant / Rate Stabilization RF
Debenture Proceeds
Other Financing
User Revenues

Financing Total

2019	2020	2021	2022	2023	2024	2025 to 2029	2020 to 2029 Total
\$ 27.1	\$ 34.9	\$ 64.2	\$ 41.0	\$ 57.4	\$ 46.1	\$ 256.3	\$ 499.9
\$ 8.2	\$ 8.6	\$ 18.4	\$ 8.6	\$ 8.6	\$ 8.6	\$ 43.2	\$ 96.2
\$ -	\$ -	\$ 6.5	\$ 10.5	\$ 14.3	\$ -	\$ 71.7	\$ 103.0
\$ 25.9	\$ -	\$ -	\$ 44.8	\$ 51.7	\$ -	\$ 276.7	\$ 373.3
\$ 36.6	\$ 16.6	\$ 95.6	\$ 52.9	\$ 22.3	\$ 20.4	\$ 234.0	\$ 441.8
\$ 30.4	\$ 29.8	\$ 37.3	\$ 44.4	\$ 61.1	\$ 29.6	\$ 146.4	\$ 348.7
\$ 128.2	\$ 90.0	\$ 222.0	\$ 202.3	\$ 215.4	\$ 104.8	\$1,028.3	\$ 1,862.8

Notes:

1. Debenture financing and application of the treatment plant / rate stabilization reserve funds are subject to Council approval.
2. Assumes residential and non-residential growth forecasts are achieved.
3. Subject to change in subsequent Strategic Issues and Financial Forecast Reports.

14.3 Currently, the 2019 residential development charge collections are tracking below targeted levels. Lower residential development charge receipts will result in a greater share of development charge revenue being directed to fund committed debt servicing costs. As a result, the capital program is reviewed annually and re-prioritized and potentially deferring the timing of capital projects to match available DC receipts.

14.4 In order to mitigate potential risks facing the Region, a number of key long-standing financial policies with regard to capital financing have been adopted which guide the Regional Long-term Financial Planning process. Examples of how these policies are utilized are reflected throughout this report. These policies include:

- Long term financial planning, including multi-disciplinary studies, risk assessments and asset management, including business case analyses where appropriate;
- Limit the use of development charge financing for the current year's capital program to the prior year's development charge reserve fund balances to ensure we are only spending what we have, not speculation on what may be collected (i.e. the anticipated development charge reserve fund balances as of December 31, 2019 determined the available financing for the 2020 growth related water supply and sanitary sewerage capital program);
- Maintenance and accumulation of reserve funds to provide financing for projects and provide flexibility to stabilize user rates; and
- Focus on "pay-as-you-go" capital financing and ensure continued financial flexibility through long term planning and prudent issuance of debentures.

15. Conclusion

15.1 The 2020 capital program for water supply and sanitary sewerage is achievable with the financial plan outlined in the report, including the water and sanitary sewer user rate increase as recommended to the Committee of the Whole on December 11, 2019 (Report #2019-COW-33: Recommended 2020 Water and Sanitary Sewer User Rates). The 2020 Water Supply and Sanitary Sewerage Business Plans and Budgets will be presented to the Finance and Administration Committee on December 10, 2019 and Regional Council on December 18, 2019.

Respectfully submitted,

Original Signed By

N. Taylor, BBA, CPA, CA
Commissioner of Finance

Original Signed By

S. Siopis, P. Eng.
Commissioner of Works

Recommended for Presentation to Committee

Original Signed By

Elaine C. Baxter-Trahair
Chief Administrative Officer



The Regional Municipality of Durham Report

To: Committee of the Whole
From: Commissioner of Finance and Commissioner of Works
Report: [#2019-COW-33](#)
Date: December 11, 2019

Subject:

Recommended 2020 Water and Sanitary Sewer User Rates

Recommendations:

That the Committee of the Whole recommends to Regional Council:

- A) That the 2020 Regional water rates increase by 2.3% and Regional sanitary sewer rates increase by 4.0% from the 2019 user rate levels as set out in Schedule 1 and Schedule 2 respectively (attached), effective January 1, 2020 (increase for an average residential customer of 3.2%);
- B) That the 2020 Raw Water rates for the Whitby raw water customers be increased by 5.0% as set out in Schedule 1 (attached), effective January 1, 2020;
- C) That the 2020 water charges for the Sun Valley Heights Homeowners Co-operative Water System be as set out in Schedule 3 (attached), effective January 1, 2020;
- D) That the 2020 Regional Water and Sanitary Sewer Systems Miscellaneous Fees and Charges be as set out in Schedule 4 (attached), effective January 1, 2020;
- E) That the 2020 fee schedule for laboratory services at the Regional Environmental Laboratory located at the Duffin Creek Water Pollution Control Plant be as set out in Schedule 5 (attached), effective January 1, 2020; and
- F) That the Regional Solicitor be instructed to prepare the necessary by-laws to implement the foregoing recommendations.

Executive Summary:**1. Background**

- 1.1 This report relates to the recommended Water and Sanitary Sewer User Rates to be effective January 1, 2020. It is presented concurrently with and supports Report #2019-COW-32: 2020 Water Supply and Sanitary Sewerage Strategic Issues and Financial Forecast, which describes the financing of proposed capital works in 2020 and future years.
- 1.2 The Region's water and sanitary sewer user rates are reviewed annually, and recommendations are made to Council in December, prior to a January 1st implementation of approved user rates. It is imperative that user rates be approved in 2019 in order that they can be implemented with the first customer billings commencing early January 2020.
- 1.3 The water and sanitary sewage systems are "User Pay" as property taxes are not used to fund water and sanitary sewage systems costs.
- 1.4 Public notification that the proposed 2020 water and sanitary sewer user fees and related charges will be considered by the Committee of the Whole on December 11th and by Regional Council on December 18th, 2019, was provided twice in local newspapers throughout the Region on November 7th and 14th, 2019 and was posted on the Region's website.

2. Highlights

- 2.1 2020 Recommended Water and Sanitary Sewer User Rate Increases
 - 2.1.1 The recommended 2.3% water user rate increase and 4.0% sanitary sewer user rate increase (3.2% combined for an average residential customer) supports an increase in net user rate supported expenditures of 3.5% for water and 5.5% for sanitary sewage. The current 2019 and recommended 2020 Water and Sanitary Sewer User Rates are provided in Schedule 1 and Schedule 2 respectively (attached). This represents approximately \$30.56 per year for an average residential customer.
 - 2.1.2 The recommended user rates are based on operating, capital costs and financing as outlined in detail in #2019-F-52: 2020 Current and Capital Business Plans and Budgets and Nine-Year Capital Forecasts for the Water Supply and Sanitary Sewerage Systems (on the December 10th Finance and Administration Committee agenda), as well as customer and consumption projections described below.
 - 2.1.3 For water, the user rate increase of 2.3% is required to finance a proposed preliminary 2020 net user rate supported budgeted expenditure increase of \$3.80 million or 3.5% over 2019, which will allow for:
 - A net Operating Cost increase of \$2.37 million mainly for annual economic and inflationary increases for services and supplies, annualization of 2.3 Full Time Equivalents (FTE's) from 2019 and 4.4 new FTE's for 2020; and
 - A Capital Program/Contribution increase of \$1.43 million in the user rate

supported contribution.

2.1.4 For sanitary sewer, the user rate increase of 4.0% is required to finance the proposed preliminary 2020 user rate supported budgeted net expenditure increase of \$5.59 million or 5.5% over 2019, which will allow for:

- A net Operating Cost increase of \$3.51 million mainly for annual economic and inflationary increases for services and supplies, annualization of 2.3 Full Time Equivalents (FTE's) from 2019 and 2.2 new FTE's for 2020;
- A Capital Program/Contribution increase of \$3.50 million (user rate share); and
- A Debt Repayment decrease of \$1.42 million (user rate share) due to debt retirement related to the York Durham system.

2.1.5 The impact on water and sewer system user revenues of the planned closing of the General Motors (GM) assembly plant and related feeder plants has been integrated into the water and sewer user rate projections. In 2018, GM-related water and sewer user rate revenues represented about 1% of total user rate revenues. The recommended overall water and sewer user rate increase of 3.2% incorporates this 1% loss of revenue with the remaining 2.2%, if there was no impact from General Motors, in line with the rate of inflation.

2.2 Basis for the Proposed 2020 User Rates

- The projected data used to develop the 2020 user rates includes the following:

Projected Data Used to Develop 2020 Water & Sanitary Sewer User Rates

Parameter	Water	Sanitary Sewage
Customers		
- Number	179,293	175,252
- Growth from 2019 Actual	1.00%	1.05%
Consumption/Flow		
- Cubic metres (millions)	52.66	50.67
- Increase from 2019 Budget	1.1%	1.1%
Projected User Rate Supported Expenditures		
- Total Expenditures	\$111,720,800	\$107,677,900
- Increase from 2019 Budget	3.5%	5.5%
User Rate Change Required		
- Percent	2.3%	4.0%
- Impact on Revenue of 1% Rate Change	\$1,092,000	\$1,035,000

- **Impact of a 1% Rate Change** - Any change in either expenditures or other revenues by \$1,092,000 for water or \$1,035,000 for sanitary sewer is equivalent to a 1% change in the respective user rate.

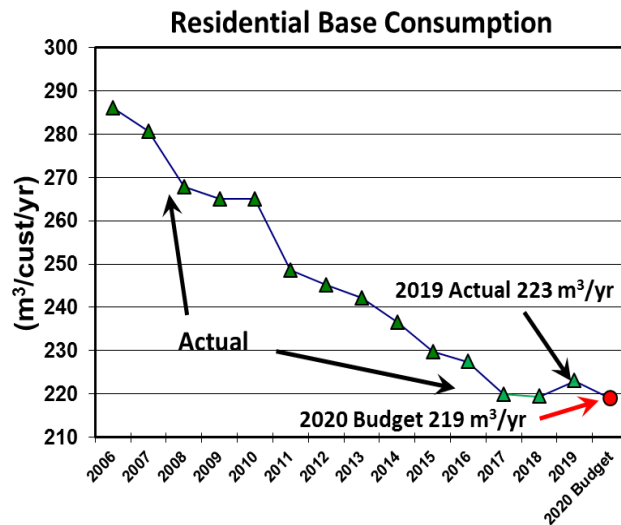
2.3 Customer and Consumption Projections

2.3.1 Customer growth in 2020 is projected at 1.00% for water and 1.05% for sanitary sewage.

2.3.2 Billed water consumption for 2020 is projected as follows:

- **Overall** – Total billed 2020 water consumption and sewage flows are projected to both increase by 1.1% compared to 2019 budget.

- **Residential** – Residential water consumption has two components: Basic day-to-day usage year-round (Base Consumption) and seasonal usage. Base Consumption is recalculated each year using data up to May, that is excluding seasonal summer usage. For several years, residential Base Consumption per customer steadily decreased. Contributing factors included the water efficient fixtures required in new construction by the Provincial Building Code and the popularity of more water efficient appliances.



Until recently the average decline in residential Base Consumption has been 2.4% per year. Starting in 2017, data is suggesting a levelling off, with 2019 coming in slightly higher than 2018. Base usage in 2020 is projected to have levelled off at 219 m³/customer per year.

- **Non-Residential (ICI) Consumption Share** – ICI consumption share relative to residential usage is projected to decrease to 25% in 2020 from 28% in 2019 due to a combination of a projected 3.3% increase in residential usage and a projected 4.7% decrease in ICI usage.
- **Small to Medium Size ICI Water Users** – Although 1st block consumption is projected to increase, consumption in the second-rate block is projected to decrease for a combined impact of a 3.6% decrease.
- **Large Water Users** – Based on current large customer consumption levels compared to 2019 Budget, it is projected that 2020 3rd block consumption will be 7.3% lower than budgeted for 2019.

2.4 Customer Impacts

2.4.1 Average Residential Customers – It is projected that in 2020, the average annual

residential per customer consumption will be 225.5 m³ (includes base usage at 219.0 m³ and seasonal usage at 6.5 m³). The recommendation that the 2020 water and sanitary sewer user rates be increased over 2019 rate levels results in an increase of \$7.64 or 3.2% on a quarterly bill (\$30.56 per annum) for the average customer.

2020 Proposed Regional User Rate Charges				
Typical Residential Customer Impact				
Annual Water Consumption	49,610	gallons/year		
	225.5	m ³ /year		
Billings (\$/quarter)				
	2019	2020		
	Actual	Proposed	Increase	
Water	\$118.72	\$121.45	\$2.73	2.3%
Sewage	\$123.05	\$127.96	\$4.91	4.0%
Total (\$/quarter)	\$241.77	\$249.41	\$7.64	3.2%
Annual Billing (\$/year)	\$967.08	\$997.64	\$30.56	3.2%

- 2.4.2 **Industry** - The proposed 2020 water and sanitary sewer user rates result in a bi-monthly increase of \$2,922 or 3.3% for a customer using 227,272 m³ annually (50 million gallons - a customer in the top 25 users) as indicated below:

2020 Proposed Regional User Rate Charges				
Large Industrial Customer Impact				
Annual Water Consumption	50,000,000	gallons/year		
	227,272	m ³ /year		
Billings (\$ bimonthly)				
	2019	2020		
	Actual	Proposed	Increase	
Water	\$34,822	\$35,626	\$804	2.3%
Sewage	\$52,932	\$55,050	\$2,118	4.0%
Total (\$ bimonthly)	\$87,754	\$90,676	\$2,922	3.3%
Annual Billing (\$/year)	\$526,524	\$544,056	\$17,532	3.3%

2.5 Competitiveness of Durham's Water and Sewage Rates

- 2.5.1 **Residential customers** - Of 13 larger municipalities surveyed across Ontario, Durham's 2019 Regional water and sanitary sewer charges are below average and are the 5th lowest.
- 2.5.2 **Large users** - The Region's 2019 water and sewage rates were the 3rd lowest, for a large user, of the 13 municipalities surveyed. The Region's declining block rates reflect the Region's reduced unit cost of servicing large customers.
- 2.5.3 **Affordability** – Although in comparative terms, Durham's average residential water and sewer charges compare favorably with other municipalities and utilities, these measures do not directly address the issue of affordability. A frequently used metric for assessing affordability is by comparing water and sewage charges

to average family income, expressed as a percentage. A US Environmental Protection Agency report on drinking water affordability lists a number of studies which suggest an affordability threshold for water and/or sewage charges in the range of 1.5% to 2.5% of average annual income. Durham's water and sewer service costs combined, for an average customer, are below the threshold at about 1% of the average Oshawa census family income. Since this comparison only represents an average, more in-depth comparisons would be more informative. Regional staff are investigating various affordability metrics related to income to gauge in more comprehensive terms the relative affordability of Durham's water and sanitary sewer service charges.

2.6 Other Fees & Charges

- 2.6.1 **Schedule 1 – Recommended Raw Water Rate** – The Region operates a raw water system in Whitby which is supplied from the Whitby Water Supply plant. By 2020 the number of customers connected to the Region's Raw Water System will have been reduced from three (3) at the beginning of 2018 to one (1) by the end of 2019. Two customers will have converted their raw water usage to Regional potable water. The raw water rate, which is separate from the potable water rate, will be re-analyzed once the full impact of the changes in raw water consumption and costs can be established. Based on the impact of reduced raw water consumption and operating costs in 2020, it is recommended that the raw water rate be increased by 5% or 1.6 cents/cubic metre which is in line with the recommended 2.0 cents/m³ increase in the third (3rd) block rate. The proposed 2020 raw water rate is approximately 38% of the 3rd block potable water rate.
- 2.6.2 **Schedule 3 –Sun Valley Heights Homeowners Co-operative Water System Recommended Charges** – The charges for this local system serving 17 customers are separate from the Regional water and sewage rates. The 2020 recommended rate has been adjusted based on projected costs for this local system and is recommended to increase by \$6 per quarter (\$24/year or about 1.4%).
- 2.6.3 **Schedule 4 – Recommended Miscellaneous Fees & Charges** – This schedule includes a number of fee categories, each reviewed individually. Most of the recommended 2020 charges increases vary from no increase to about 2%. The recommended charges which differ from current 2019 fees and charges are **bolded**.

Specific considerations and circumstances warrant changes beyond 2% to the following fees and charges:

- **Items 9) to 16) Water & Sanitary Sewer Frontage Charges** – Historically the Region has allowed customers to convert frontage charges from a single upfront payment to payments spread out over 10-years at 6% interest. At the June 26, 2019 Council meeting, approval was provided for extensions in the Greenbelt resulting from successful petitions and that customers be offered optional 10 or 15-year repayment at the prime rate of

the Region's financial institution plus 1.5%, with the prime rate based on the date of the final letter outlining fees owing. Staff was also directed to review frontage charge repayment terms in general as part of the 2020 User Rate Study.

The following is recommended for all frontage charges both inside and outside the Greenbelt, for both water and sanitary sewerage systems and for both petition and non-petition projects:

- **Repayment Period** - Terms of 10 or 15-years be offered to the customer.
 - **Interest Rate** – Set at the prime rate of the Region's financial institution plus 1.5%, with the prime rate based on the date of the final letter outlining fees owing.
 - **Payments Calculated on an Individual Basis** – Repayment is billed on the water and sewer bills (residential are quarterly) and the amount in each instance will be established in accordance with the above parameters. Since the annual payments will now be case-specific, standard fixed annual amounts will no longer apply and are removed from the Miscellaneous Fees & Charges schedule.
 - **Applies to All Cases** – As noted above, these terms would apply to both petition and non-petition as well as both the water and sanitary sewerage systems.
- **Item 20) Unmetered Water used for construction (building purposes) per service** – The volume of water used during home or building construction up until completion, and meters are installed, typically during subdivision construction, is charged to builders by means of the building purposes charge. The 2017 User Rate report set out a staged increase in the Building Purposes charge over the period 2017 to 2020. The recommended 2020 Building Purposes Charge based on 2019 rates and 200 m³ per unit is \$222, an increase from \$187 in 2019.
 - **Item 36) - Water from Water Supply Plants, Water Pollution Control Plants, Works Depots & Bulk Filling Stations** – Customers can sign up for keys which allow them to purchase water from bulk filling stations which are located at five (5) of the Region's water supply plants. It is recommended that three of the current charges, a Minimum Volume Charge, a Flat Rate and an Annual Account Administration Fee be eliminated and replaced with a simpler approach of charging a one-time new account fee (\$42.00) plus a monthly service charge (\$21.00). The recommended charges are based on a cost analysis of operating the program and align the charges with the approach used for the potable water system.

2.6.4 **Schedule 5 – Recommended Laboratory Fees** – The recommended 2020 Fee Schedule for Laboratory Services at the Regional Environmental Laboratory is provided in Schedule 5.

3. New Water Billing System

In 2019, the Region implemented a new modern waterbilling system. To be launched in early 2020, the billing system will feature a new web-based customer portal, “MyDurhamWater”, which will provide customers with online access to their accounts to:

- View billing information online;
- Enter meter readings online;
- Choose from multiple payment options, including e-payments;
- Receive bills online through paperless e-billing; and
- Seamlessly access the Region’s website for rates and other water billing information.

4. Risk Factors

The water and sanitary sewer user rates required to support the capital forecasts to 2029 include preliminary cost estimates for known projects and in some cases only allowances have been made until detailed designs are complete. However, there are other factors that will have cost implications which are unknown at this time and have not been quantified. The factors that will put additional pressures on future user rates include:

- Potential for further reductions in water usage and thus related revenues without resulting in corresponding cost reductions;
- Any economic decline could result in lower system utilization with consequent decrease in water and sanitary sewer user rate revenues;
- Market price impacts and volatility, including energy input prices and related equipment and supplies; and
- Increased capital investment costs due to asset management and climate change conditions.

5. Future Issues

5.1 Based upon projections to 2029, it is estimated that the combined water and sewer user rate increase of approximately 4% to 6% per year may be required over the forecast period depending on future customer growth, water demand, operating costs and debt charge decisions. The cost factors behind these significant increases include the following:

- Customer growth may be lower than experienced for a number of years and is projected to remain at low levels;
- Billed water consumption has levelled off in the past few years, with reduced consumption per customer offset by increases in number of customers, it is projected that total consumption will continue at current levels;

- Water supply and sanitary sewerage infrastructure require large capital investments to meet regulatory, asset management, climate change adaptation/mitigation and growth-related requirements, in particular for treatment plant and trunk main services. In addition, the forecast debt servicing costs are projected to increase;
- Water and sewage user rates are the funding source for capital investments for rehabilitation and replacement in order to maintain assets in a good state for operations, as well as a portion of growth costs (net of development charge contributions and grants); and
- Regulatory changes mandating investments in infrastructure are unknown until site specific review and engineering is conducted.

5.2 Total and user rate share of major water and sewage systems capital projects over the forecast period (2020-2029) are discussed in Report #2019-COW-32: 2020 Water Supply and Sanitary Sewerage Strategic Issues and Financial Forecast.

6. Schedules of Rates & Fees

6.1 The recommended Durham Region 2020 water and sanitary sewer user rates, fees and charges are set out in the attached schedules, as follows:

- The recommended 2020 Water User Rates are 2.3% higher than the 2019 rates and are set out in Schedule 1.
- The recommended 2020 Raw Water Rate for the Whitby raw water customers is 5.0% higher than 2019 and is set out in Schedule 1.
- The recommended 2020 Sewage User Rates are 4.0% higher than the 2019 rates and are set out in Schedule 2.
- The recommended 2020 Water Rate for the Sun Valley Heights Homeowners Co-operative Water System is set out in Schedule 3.
- The recommended 2020 Water & Sanitary Sewer Systems Miscellaneous Fees & Charges (adjusted to reflect changes in cost structures and inflation) are set out in Schedule 4.
- The recommended 2020 Fee Schedule for Laboratory Services at the Regional Environmental Laboratory located at the Duffin Creek WPCP is set out in Schedule 5.

7. Attachments

Schedule 1 – Recommended 2020 Water User Rates

Schedule 2 – Recommended 2020 Sewage User Rates

Schedule 3 – Recommended 2020 Water Rate for the Sun Valley Heights Homeowners Co-operative Water System

Schedule 4 – Recommended 2020 Water & Sanitary Sewer Systems Miscellaneous Fees & Charges

Schedule 5 – Recommended 2020 Fee Schedule for Laboratory Services at the Regional Environmental Laboratory Located at the Duffin Creek WPCP

Appendix 1 - Detailed Report

Original Signed by

Nancy Taylor, BBA, CPA, CA
Commissioner of Finance

Original Signed by

Susan Siopis, P. Eng.
Commissioner of Works

Recommended for Presentation to Committee:

Original Signed by

Elaine Baxter-Trahair
Chief Administrative Officer

Schedule 1 - Recommended 2020 Water User Rates

REGIONAL MUNICIPALITY OF DURHAM								
Water User Rate Schedule					2020 Rate Increase = 2.3%			
Monthly								
Effective January 1, 2020								
Volumetric Charges								
Block		Consumption Range			Current		Proposed	
		From	To	Units	2019		2020	
First Block		0	to 45	cubic metres/month	\$1.112	/cubic metre	\$1.137	/cubic metre
		0	to 10,000	gallons/month	\$5.054	/1,000 gallons	\$5.170	/1,000 gallons
		0	to 1,600	cubic feet/month	\$3.149	/100 cubic feet	\$3.221	/100 cubic feet
Second Block		46	to 4,500	cubic metres/month	\$0.946	/cubic metre	\$0.967	/cubic metre
		10,001	to 1,000,000	gallons/month	\$4.298	/1,000 gallons	\$4.397	/1,000 gallons
		1,601	to 160,000	cubic feet/month	\$2.678	/100 cubic feet	\$2.739	/100 cubic feet
Third Block		Over	4,500	cubic metres/month	\$0.868	/cubic metre	\$0.888	/cubic metre
		Over	1,000,000	gallons/month	\$3.946	/1,000 gallons	\$4.037	/1,000 gallons
		Over	160,000	cubic feet/month	\$2.458	/100 cubic feet	\$2.515	/100 cubic feet
Basic Charges (\$/month)								
		Service Charge		Minimum Charge		Unmetered Fire Line Charge		
Meter/Fire Line Size		Current	Proposed	Current	Proposed	Current	Proposed	
Inches	mm	2019	2020	2019	2020	2019	2020	
Standard	Standard	\$18.68	\$19.11	n/a	n/a	n/a	n/a	
1-inch	25-mm	\$37.97	\$38.84	\$63.00	\$65.00	\$14.43	\$14.76	
1 ½-inch	38-mm	\$80.82	\$82.68	\$121.00	\$124.00	\$19.39	\$19.84	
2-inch	51-mm	\$174.55	\$178.56	\$234.00	\$239.00	\$37.54	\$38.40	
2 ½-inch	64-mm	n/a	n/a	n/a	n/a	\$49.74	\$50.88	
3-inch	76-mm	\$306.83	\$313.89	\$400.00	\$410.00	\$65.94	\$67.46	
4-inch	102-mm	\$610.12	\$624.15	\$790.00	\$808.00	\$131.90	\$134.93	
5-inch	127-mm	n/a	n/a	n/a	n/a	\$177.10	\$181.17	
6-inch	152-mm	\$1,133.93	\$1,160.01	\$1,442.00	\$1,476.00	\$243.55	\$249.15	
8-inch	203-mm	\$1,933.10	\$1,977.56	\$2,370.00	\$2,425.00	\$405.82	\$415.15	
10-inch	254-mm	\$3,145.71	\$3,218.06	\$3,755.00	\$3,841.00	\$647.57	\$662.46	
12-inch	305-mm	n/a	n/a	n/a	n/a	\$913.03	\$934.03	
Flat Rate (includes consumption)								
		Current	Proposed					
		2019	2020					
Monthly/unit		\$43.95	\$44.96					
Quarterly/unit		\$131.85	\$134.88					
Annually/unit		\$527.40	\$539.52					
Other - Raw Water Rate					Recommended Raw Water Rate Increase: 5.0%			
				Current	2019	Proposed	2020	
All volumes								
				cubic metres	\$0.323 /cubic metre	\$0.339 /cubic metre		
				gallons	\$1.469 /1,000 gallons	\$1.542 /1,000 gallons		
Late payment charge is 2%. A bill payment is late if not made within 16 days of the date on which the bill is issued.								

Schedule 2 - Recommended 2020 Sewage User Rates

REGIONAL MUNICIPALITY OF DURHAM								
Sewage User Rate Schedule					2020 Rate Increase = 4.0%			
Monthly								
Effective January 1, 2020								
Volumetric Charges								
Block	Consumption Range				Current 2019		Proposed 2020	
	From	To	Units					
First Block	0	to 45	cubic metres/month		\$1.806	/cubic metre	\$1.878	/cubic metre
	0	to 10,000	gallons/month		\$8.209	/1,000 gallons	\$8.537	/1,000 gallons
	0	to 1,600	cubic feet/month		\$5.114	/100 cubic feet	\$5.319	/100 cubic feet
Sewer rate expressed as a % of water rate					162.4%		165.1%	
Second Block	46	to 4,500	cubic metres/month		\$1.589	/cubic metre	\$1.653	/cubic metre
	10,001	to 1,000,000	gallons/month		\$7.224	/1,000 gallons	\$7.513	/1,000 gallons
	1,601	to 160,000	cubic feet/month		\$4.501	/100 cubic feet	\$4.681	/100 cubic feet
Sewer rate expressed as a % of water rate					168.1%		170.9%	
Third Block		Over 4,500	cubic metres/month		\$1.336	/cubic metre	\$1.389	/cubic metre
		Over 1,000,000	gallons/month		\$6.071	/1,000 gallons	\$6.314	/1,000 gallons
		Over 160,000	cubic feet/month		\$3.782	/100 cubic feet	\$3.934	/100 cubic feet
Sewer rate expressed as a % of water rate					153.9%		156.4%	
Basic Charges (\$/month)								
Meter	Service Charge		Minimum Charge		Flat Rate/unit			
	Current 2019	Proposed 2020	Current 2019	Proposed 2020	Current 2019	Proposed 2020	Current 2019	Proposed 2020
Standard	\$7.08	\$7.36	No minimum charge		\$48.13		\$50.05	
All other sizes								
Monthly	\$7.08	\$7.36	\$48.00	\$50.00	\$48.13		\$50.05	
Quarterly	\$21.24	\$22.08			\$144.39		\$150.15	
Annually	\$84.96	\$88.32			\$577.56		\$600.60	
Late payment charge is 2%. A bill payment is late if not made within 16 days of the date on which the bill is issued.								

Schedule 3 - Recommended 2020 Water Charges for the Sun Valley Heights Homeowners Co-operative Water System

Sun Valley Home Owners Co-Operative 2020 Projected Costs

Cost Item	Budget 2019 \$	Projected Cost 2020 \$
Hydro Electricity	2,000	2,000
Property Taxes	446	500
Laboratory Costs	2,255	2,255
Vehicle	2,870	2,870
Operator & Reports	16,513	16,847
Operation Materials	2,600	2,600
Maintenance Materials & Other	600	600
Machinery and Equipment	1,550	1,550
TOTAL	28,834	29,222
Monthly charges per property owner (billings sent quarterly)	\$141	\$143
Annual cost per property owner	\$1,692	\$1,716

Schedule 4 - Recommended 2020 Water & Sanitary Sewer Systems Miscellaneous Fees & Charges

THE REGIONAL MUNICIPALITY OF DURHAM

WATER & SANITARY SEWER SYSTEMS MISCELLANEOUS CHARGES

(Excludes Any Applicable Taxes – except where noted)

Schedule 4 - Recommended 2020 Miscellaneous Charges Item Number & Description	By-Law Schedule Reference		Existing 2019 Charges		Recommended 2020 Charges
	Water By-law #89-2003	Sewer By-law #90-2003	Water \$	Sewer \$	Note: Changes are in Bold \$
SERVICE CONNECTION RELATED CHARGES					
1) Water Service Connection Charges, for single family and semi-detached residential lots including those for pre-installed stubs: a) 19mm (3/4") diameter - Base Rate – Apr 1 – Nov 30 - Winter Rate – Dec 1 – Mar 31 b) 25mm (1") diameter - Base Rate – Apr 1 – Nov 30 - Winter Rate – Dec 1 – Mar 31	D1		3,700.00 4,810.00 4,600.00 5,980.00		3,700.00 4,810.00 4,600.00 5,980.00
2) Water Service Connections, not covered above, including apartment buildings (from duplexes to multi floor buildings), townhouses and condominiums on blocks of land or recreational, institutional, commercial and industrial buildings: a) 19-mm (3/4") diameter minimum charge b) 25-mm (1") diameter minimum charge	D2		Actual Cost 3,700.00 4,600.00		Actual Cost 3,700.00 4,600.00
3) Inspection of an installation of a separate fire line on private property	D3		125.00		125.00
4) Sanitary Sewer Service Connection Charges for single family and semi-detached residential lots for pre-installed stubs 100 or 125mm (4" or 5") diameter: - Base Rate (Apr 1 – Nov 30) - Winter Rate (Dec 1 – Mar 31)		C1		3,843.00 5,005.00	3,843.00 5,005.00
5) Sanitary Sewer Service Connections, not covered above, including apartment buildings (from duplexes to multi-floor buildings), townhouses and condominiums on blocks of land or recreational, institutional, commercial and industrial buildings: - Minimum Charge		C2		Actual Cost 3,843.00	Actual Cost 3,843.00
6) Storm Sewer Service Connections: - Minimum Charge		C3		Actual Cost 3,843.00	Actual Cost 3,843.00

Schedule 4 - Recommended 2020 Miscellaneous Charges	By-Law Schedule Reference		Existing 2019 Charges		Recommended 2020 Charges
	Water By-law #89- 2003	Sewer By-law #90- 2003	Water \$	Sewer \$	Note: Changes are in Bold \$
Item Number & Description					
7) Reuse of Water/Sewer Service Connection where building has been or will be demolished or removed: - Inspection fee	D4	C4	125.00	125.00	125.00 each
- Where a disused Water/Sewer Service Connection is to be replaced by the Region			See above service connection charges		
8) Disconnecting, rendering inoperable, reconnecting or restoring Water/Sewer connection	D5	C5	Actual Cost		Actual Cost
FRONTAGE CHARGES (see Notes 1 to 6)					
9) Frontage charges for non-standard watermain sizes and frontage charges for watermain projects initiated by petition.	E1 & E2		Actual Cost		Actual Cost
10) Standard 150-mm (6-inch) diameter Watermain (Note 3) - /metre - /foot	E1 & E2		378.00 115.21		460.00 140.21
11) Standard 200-mm (8-inch) diameter Watermain - /metre - /foot	E1 & E2		436.00 132.89		528.00 160.93
12) Standard 300-mm (12-inch) diameter Watermain - /metre - /foot	E1 & E2		476.00 145.08		570.00 173.74
13) Frontage charges for non-standard Sanitary Sewer sizes and frontage charges for Sanitary Sewer projects initiated by petition.		D1 & D2		Actual Cost	Actual Cost
14) Standard 200-mm (8-inch) diameter Sanitary Sewer (Note 3) - /metre - /foot		D1 & D2		419.00 127.71	507.00 154.53
15) Standard 250-mm (10-inch) diameter Sanitary Sewer - /metre - /foot		D1 & D2		477.00 145.39	575.00 175.26
16) Standard 300-mm (12-inch) diameter Sanitary Sewer - /metre - /foot		D1 & D2		529.00 161.24	637.00 194.16
Note (1) – Property owners requiring non-standard main sizes charged actual cost.					
Note (2) – Frontage charges may be financed at an annual interest rate of the prime rate of the Region’s financial institution plus 1.5% for a payment term of 10 or 15 years. The payment term is at the option of the Property Owner. Frontage charges shall be added to the Property Owner’s Water and Sewer bill and will be billed and collected in the same manner as Water and Sewer Rates.					
Note (3) – Residential frontage charges to be assessed on the basis of a standard 150-mm (6-inch) diameter watermain and a standard 200-mm (8-inch) diameter sanitary sewer.					
Note (4) – Any frontage charges for non-standard main sizes, or any extraordinary circumstances, be assessed by					

Schedule 4 - Recommended 2020 Miscellaneous Charges Item Number & Description	By-Law Schedule Reference		Existing 2019 Charges		Recommended 2020 Charges
	Water By-law #89- 2003	Sewer By-law #90- 2003	Water \$	Sewer \$	Note: Changes are in Bold \$
the Commissioners of Finance and Works on a case by case basis to ensure full cost recovery.					
Note (5) – Rate may vary if estimated construction costs vary significantly from the rates noted above.					
Note (6) – Frontage charges for petition projects shall be based on actual costs.					
MISCELLANEOUS CHARGES					
17) <u>Water Shut Off/Turn On</u> Initiated by Customer: During normal Regional working hours: - Shut Water Off - Turn Water On - Shut Off & Turn On During Same Call After normal Regional working hours: - Shut Water Off - Turn Water On - Shut Off & Turn On During Same Call Initiated by Region: For failure by the Customer to arrange with the Region for meter installation, replacement, repair or inspection or meter reading (off or on, each) For Water Shut Off Notification prior to shut off action being taken For Water Shut Off for collection action, (water not necessarily shut off) for non- payment of Water/Sewer bill, or any Regional invoice, or for violation of any provision of the Water System/Sewer System By-laws (water not necessarily shut off) Turn Water On	F1	E1			
			80.00		80.00
			80.00		80.00
			80.00		80.00
			120.00		120.00
			120.00		120.00
			120.00		120.00
			80.00		80.00
			25.00 for both		25.00 for both
			94.00 for both		94.00 for both
			80.00 for both		80.00 for both
18) Standby charge while water service is shut off but not disconnected or water service is available for fire protection purposes but not connected	F2		Standard Service Charge		Standard Service Charge
19) <u>Testing of Water Meter</u> Initiated by Customer: - Deposit Fee where the meter is found to measure the flow of water within or below AWWA Specifications - Up to a maximum size of 25mm - Over 25mm Fee if meter is found to measure the flow of water above AWWA specifications	F3		210.00		210.00
			210.00 Actual Cost		210.00 Actual Cost
			No Charge		No Charge
20) Unmetered water used for construction (building purposes) per service	F4		187.00		222.00

Schedule 4 - Recommended 2020 Miscellaneous Charges Item Number & Description	By-Law Schedule Reference		Existing 2019 Charges		Recommended 2020 Charges
	Water By-law #89- 2003	Sewer By-law #90- 2003	Water \$	Sewer \$	Note: Changes are in Bold \$
21) Drawing Regional water from hydrant for purposes other than fire protection (All Users) - /cubic metre - /1000 gallons - Deposit - Administrative Charge - Minimum Charge per Month - Valve installation/removal	F5		3.80 17.29 1,800.00 132.00 1,800.00 107.00		3.88 17.64 1,800.00 134.77 1,800.00 109.25
22) Repair or replacement of frozen, damaged or missing water meter - Up to a maximum size of 19mm (3/4") - Over 19mm (3/4")	F6		210.00 Actual Cost		210.00 Actual Cost
23) Thawing of service pipes	F7		No Charge		No Charge
24) Thawing of private hydrants or unmetered Fire Lines	F8		Actual Cost		Actual Cost
25) Cleaning sanitary sewer services		E3		No Charge	No Charge
26) Repair to or renewal of sanitary building sewers		E4		No Charge	No Charge
27) Supplying Statement of Account	F9	E5	35.00 for both		35.00 for both
28) Charge for Regional Solicitor providing information	F10	E6	94.00 for both		94.00 for both
29) Processing of Dishonoured Payments	F11	E7	48.00 for both		48.00 for both
30) Account Payment Transfer Fee	F12	E8	11.00 for both		11.00 for both
31) New Account & Change of Occupancy Fee	F13	E9	42.00 for both		42.00 for both
32) Charge for Late Payment of Water/Sewer Surcharge Rates	F14	E10	2%		2%
33) Lien Administration Fee	F15	E11	50.00 for both		50.00 for both
34) Installation and removal of anti-tampering devices on fire hydrants & curb stops	F16		138.00		138.00
35) Cross Connection Control Program Test Report	New		25.00		25.00
36) Water from Water Supply Plants, Water Pollution Control Plants, Works Depots & Bulk Filling Stations - /cubic metre - /1000 gallons - Service Charge \$/month - Minimum Volume Charge \$/per month - Occasional Users – Flat Rate - Account Administration Fee \$/year - New Account Fee - Key Deposit - Refundable on return of key (based on fee in year Key Deposit made) - Access card	F17		3.15 14.32 n/a 150.00 38.50 125.90 n/a 214.30 177.90 35.70		3.22 14.64 21.00 n/a n/a n/a 42.00 218.80 181.64 36.45
37) Fire Flow tests: - Full test (May 1 – Oct 31)	F18		467.20		467.20

Schedule 4 - Recommended 2020 Miscellaneous Charges Item Number & Description	By-Law Schedule Reference		Existing 2019 Charges		Recommended 2020 Charges
	Water By-law #89- 2003	Sewer By-law #90- 2003	Water \$	Sewer \$	Note: Changes are in Bold \$
- Full test (Nov 1 – Apr 30)			812.90		812.90
- Opening Hydrants (May 1 – Oct 31)			320.30		320.30
- Opening Hydrant (Nov 1 – Apr 30)			652.80		652.80
38) Sewage Surcharge and Compliance Agreements		E12		1,885.00	1,885.00
39) Disposal of Septic Tank and Holding Tank Waste and the disposal of Water Pollution Control Plant Sludge:		E2			
a) Hauled Domestic Waste					
- /cubic metre				19.56	19.56
- /1000 gallons				88.93	88.93
b) Sludge from WPCP within the Regions of York and Durham and trucked to the incineration facilities at Duffin Creek WPCP					
- /cubic metre				16.19	16.19
- /1000 gallons				73.59	73.59
c) Annual charge for registration of Haulers (up to 10 vehicles)				175.00	175.00
- Additional stickers if more than 10 vehicles, or replacement stickers – per sticker				10.20	10.20
d) ICI Sector areas (discharges up to 50,000 gallons)				522.75	522.75
e) ICI Sector areas (discharges of 50,001 to 100,000 gallons)				1,024.59	1,024.59
40) Copies of By-laws Water System, Sewer System and Sewer Use (+ Applicable taxes)	F19	E13	20.50/copy		20.50/copy
41) Sewer TV Inspection Reports and Videos per report or video (+ Applicable taxes)		E14		20.43	21.51
42) Sewer Use By-law Agreement extra strength waste (\$/k.g.)				0.53	0.53
43) Sewer Appeal Application per request		E15		850.00	950.00

Schedule 5 - Recommended 2020 Fee Schedule for Laboratory Services at the Regional Environmental Laboratory Located at the Duffin Creek WPCP

THE REGIONAL MUNICIPALITY OF DURHAM					
2020 FEES AND CHARGES					
WORKS DEPARTMENT - ENVIRONMENTAL LABORATORY					
				2020 Changed Bold	
Description		2019 Rate (before appl. Taxes)		2020 Rate (before appl. Taxes)	
Laboratory Fees Page 1 of 9		\$		\$	
ONTARIO DRINKING WATER REGULATION 170/03 PACKAGES					
Microbiological					
Presence/Absence Test (P/A for TC, EC)		\$14.30		\$14.30	
Treated Water (P/A, HPC or BKD)		\$26.50		\$26.50	
Well Water/Raw/Reg.319 (TC, EC)		\$27.50		\$27.50	
Well Water/Treated/Distribution (TC, EC, HPC)		\$37.70		\$37.70	
Single test by membrane filtration (e.g. MFHPC, MFTC)		\$13.30		\$13.30	
Test for E. coli by membrane filtration		\$14.30		\$14.30	
Inorganic Chemical					
All Parameters required under O.Reg. 170/03 Schedule 23 plus additional metals (Al, As, B, Ba, Cd, Co, Cr, Cu, Fe, Hg, Mn, Mo, Ni, Pb, Sb, Se, U, Zn)		\$80.60		\$80.60	
Inorganic Ions required under O.Regulation 170/03 (F, NO ₂ , NO ₃ , Na)		\$79.60		\$79.60	
Inorganic Ions required under O.Reg. 170/03 plus additional Ions (Hardness*, Ca, Mg, Na, K, Ammonia, F, Cl, Br, NO ₂ , NO ₃ , PO ₄ , SO ₄)		\$79.60		\$79.60	
(Nitrite, Nitrate)		\$52.00		\$52.00	
(Sodium)		\$34.70		\$34.70	
(Fluoride)		\$34.70		\$34.70	
(Lead testing as required under O.Regulation 170)		\$35.70		\$35.70	
(Lead testing as required under O.Regulation 243) - For Standing & Flushed		\$150.00		\$150.00	
Organic Chemical					
THMs (Trihalomethanes)		\$102.00		\$102.00	
bromodichloromethane	bromoform				
dibromochloromethane	chloroform				
THM (Total)					
All Parameters required under Schedule 24 (Includes all Parameters described under the following test CODES listed in this book - VOC, OC, TRIAZ, OP, PHENAC, CHLORPHEN, CARBUREA, GLYPH, DIPARA, PCB)		\$1,264.80		\$1,400.00	
Combined Packages					
York Region Drinking Water Package A (Includes DW2M (less TURB), Hg, B, Ba, U, VOC, OC, TRIAZ, OP, PHENAC, CHLORPHEN, CARBUREA, GLYPH, DIPARA, PCB)		\$1,285.20		\$1,285.20	
*Calculation included (no charge).					

THE REGIONAL MUNICIPALITY OF DURHAM				
2020 FEES AND CHARGES				
WORKS DEPARTMENT - ENVIRONMENTAL LABORATORY				
		2020 Changed Bold		
Description		2019 Rate (before appl. Taxes)	2020 Rate (before appl. Taxes)	
Laboratory Fees Page 2 of 9		\$	\$	
MICROBIOLOGICAL TESTS				
O.Regulation 170/03				
Presence/Absence Test (P/A for TC, EC)		\$14.30	\$14.30	
Treated Water (P/A, HPC or BKD)		\$26.50	\$26.50	
Well Water/Raw/Reg.319 (TC, EC)		\$27.50	\$27.50	
Well Water/Treated/Distribution (TC, EC, HPC)		\$37.70	\$37.70	
Raw Water Intake, Municipal (TC, EC, BKD)		\$32.60	\$32.60	
Treated/Distribution Water (TC, EC, BKD, HPC)		\$42.80	\$42.80	
Single test by membrane filtration (e.g. MFHPC, MFTC)		\$13.30	\$13.30	
Test for E. coli by membrane filtration		\$14.30	\$14.30	
New Mains				
New Water Mains (TC, EC, BKD, HPC)		\$42.80	\$42.80	
Waste Water				
E.coli (Final Effluent)		\$16.30	\$16.30	
E.coli (Sludge / Cake)		\$30.60	\$30.60	
Final Effluent (TC, EC)		\$30.60	\$30.60	
Final Effluent (TC, EC, FS)		\$40.80	\$40.80	
Microscopic Examination		\$100.00	\$100.00	
Recreational Water				
E.coli (Lake/Beach/Creek/Pond/River)		\$14.30	\$14.30	
Lakes / Bathing beaches (TC, EC, FS)		\$37.70	\$37.70	
Any Single Membrane Filtration Test (eg. FC - MFFC, AE - MFAE, PS, SA etc.)		\$25.50	\$25.50	
Raw and Treated Water				
Algae Enumeration and Identification		\$100.00	\$100.00	
Algae by Microscopic Particulate Analysis		\$500.00	\$500.00	
Microcystin		\$153.00	\$153.00	
F Specific Coliphages		\$200.00	\$200.00	
Mycology (Fungi)				
Fungal Enumeration		\$25.00	\$25.00	
Fungal Identification (Consultation Required)		\$130.00	\$130.00	
Air Quality (Microbial - Bacteria, Yeasts & Molds)		\$75.00	\$75.00	
Enumeration of Bacteria, Yeast and Molds by RODAC plates (BHI & SAB/MEA)		\$75.00	\$75.00	
Protozoa Testing				
Cryptosporidium and Giardia (MBCG)		\$816.00	\$816.00	
Cryptosporidium, Giardia and Microscopic Particulate Analysis (MBCGMPA)		\$1,100.00	\$1,100.00	
Pigment Bearing Algae and Diatoms (MBPBAD)		\$500.00	\$500.00	
Cryptosporidium, Giardia and Pigment Bearing Algae and Diatoms (MBCGPBAD)		\$1,100.00	\$1,100.00	
Sterility (Spore) Testing				
Bacillus subtilis (DRY)		\$50.00	\$50.00	
Bacillus stearothermophilus (STEAM)		\$50.00	\$50.00	
Other Bacteriological Groups				
Private Wells (TC, EC)(Signed Report faxed next day)		\$76.50	\$76.50	
Iron Bacteria - Presence/Absence		\$75.00	\$75.00	
Sulphur Bacteria - Presence/Absence		\$75.00	\$75.00	
Iron & Sulphur Bacteria - Presence/Absence		\$125.00	\$125.00	
Enumeration for (TC, EC, FC, HPC, BKD, PS, AE or FS) per parameter		\$51.00	\$51.00	

THE REGIONAL MUNICIPALITY OF DURHAM					
2020 FEES AND CHARGES					
WORKS DEPARTMENT - ENVIRONMENTAL LABORATORY					
				2020 Changed Bold	
Description		2019 Rate		2020 Rate	
		(before appl. Taxes)		(before appl. Taxes)	
		\$	\$	\$	\$
		Water	S/S/S	Water	S/S/S
Laboratory Fees Page 3 of 9					
GENERAL INORGANIC TESTS					
pH, Conductivity, Alkalinity Total (CaCO3)		\$27.50	\$32.60	\$27.50	\$32.60
Alkalinity, Total (CaCO3)		\$16.30	\$21.40	\$16.30	\$21.40
Alkalinity, Total (CaCO3) (plus hydroxide, carbonate and bicarbonate)	New test			\$20.00	\$26.00
Conductivity		\$11.20	\$16.30	\$11.20	\$16.30
pH		\$11.20	\$16.30	\$11.20	\$16.30
Fluoride by Ion Selective Electrode		\$21.40	\$27.50	\$21.40	\$27.50
Total Residual Chlorine		\$11.20	\$19.40	\$11.20	\$19.40
Free Residual Chlorine		\$11.20	\$19.40	\$11.20	\$19.40
Colour		\$16.30	\$19.40	\$16.30	\$19.40
Turbidity		\$16.30	\$19.40	\$16.30	\$19.40
Biochemical Oxygen Demand (BOD5)		\$35.70	\$42.80	\$35.70	\$42.80
Carbonaceous Biochemical Oxygen Demand (cBOD5)		\$35.70	\$42.80	\$35.70	\$42.80
Chemical Oxygen Demand (COD)		\$31.60	\$37.70	\$31.60	\$37.70
Dissolved Organic Carbon (DOC)		\$29.60	\$37.70	\$29.60	\$37.70
Cyanide (Total)		\$40.80	\$47.90	\$40.80	\$47.90
Cyanide (Free)		\$40.80	\$47.90	\$40.80	\$47.90
Phenol		\$37.70	\$45.90	\$37.70	\$45.90
Sulphide (S2-)		\$37.70	\$45.90	\$37.70	\$45.90
Dissolved Solids, Fixed Dissolved Solids, Volatile Dissolved Solids*		\$26.50	\$29.60	\$26.50	N/A
Total Suspended Solids (SS)		\$15.30	\$17.30	\$15.30	\$17.30
Total Suspended Solids, Fixed Suspended Solids, Volatile Suspended Solids*		\$21.40	\$24.50	\$21.40	\$24.50
Total Solids (TS)		\$13.30	\$15.30	\$13.30	\$15.30
Total Solids, Fixed Total Solids, Volatile Total Solids*		\$19.40	\$21.40	\$19.40	\$21.40
Total Dissolved Solids, Total Suspended Solids, Total Solids		\$35.70	\$42.80	\$35.70	\$42.80
Total Oil & Grease		\$53.00	\$63.20	\$53.00	\$63.20
Total / Mineral / Animal & Vegetable* Oil & Grease		\$80.60	\$96.90	\$80.60	\$96.90
Volatile Acids		\$30.60	\$30.60	\$30.60	\$30.60
S/S/S = Sewage, Sludge and Soil					
*Calculation included (no charge).					

THE REGIONAL MUNICIPALITY OF DURHAM					
2020 FEES AND CHARGES					
WORKS DEPARTMENT - ENVIRONMENTAL LABORATORY					
				2020 Changed Bold	
Description		2019 Rate		2020 Rate	
		(before appl. Taxes)		(before appl. Taxes)	
		\$	\$	\$	\$
		Water	S/S/S	Water	S/S/S
Laboratory Fees Page 4 of 9					
<u>GENERAL INORGANIC TESTS</u>					
<u>Ion Chromatography</u>					
Hardness*, Ca, Mg, Na, K, Ammonia, F, Cl, Br, NO2, NO3, PO4, SO4		\$79.60	\$95.90	\$79.60	\$95.90
F, Cl, Br, NO2, NO3, PO4, SO4		\$52.00	\$62.20	\$52.00	\$62.20
Hardness*, Ca, Mg, Na, K, Ammonia		\$52.00	\$62.20	\$52.00	\$62.20
Any One of the Above Single Elements by IC		\$34.70	\$40.80	\$34.70	\$40.80
<u>Nutrients by Segmented Flow Analyzer</u>					
NH3+NH4, PO4, NO2, NO2+NO3, TKN, TP		\$98.90	\$118.30	\$98.90	\$118.30
NH3+NH4, PO4, NO2, NO2+NO3		\$59.20	\$70.40	\$59.20	\$70.40
TKN, TP		\$59.20	\$70.40	\$59.20	\$70.40
Any One of the Above Single Nutrients by SFA		\$38.80	\$46.90	\$38.80	\$46.90
Ultra Low Dissolved PO4 (clean water only)		\$66.30	N/A	\$66.30	N/A
<u>Metals</u>					
Mercury (Hg) by Cold Vapour AA		\$35.70	\$42.80	\$35.70	\$42.80
Acid Soluble Metals by ICP (Al, Fe, Mn, Pb, Zn)		\$40.80	N/A	\$40.80	N/A
Cation Scan by ICP (B, Ba, Be, Ca, K, Li, Mg, Na, SiO3, Sr, U)		\$40.80	N/A	\$40.80	N/A
Heavy Metals Scan by ICP: Al, As, Cd, Co, Cr, Cu, Fe, Mn, Mo, Ni, Pb, Se, Sb, Zn		\$54.10	\$64.30	\$54.10	\$64.30
Heavy Metals Scan by ICP: As, Cd, Co, Cr, Cu, Mo, Ni, Pb, Se, Zn		N/A	\$64.30	N/A	\$64.30
Regulation 170 Metals: Al, As, B, Ba, Cd, Co, Cr, Cu, Fe, Mn, Mo, Ni, Pb, Sb, Se, U, Zn		\$76.50	N/A	\$76.50	N/A
Any One of the Above Single Metals by ICP-OES or ICP-MS		\$35.70	\$42.80	\$35.70	\$42.80
(Lead testing as required under O.Regulation 170)		\$35.70	N/A	\$35.70	N/A
(Lead testing as required under O.Regulation 243)		\$75.00	N/A	\$75.00	N/A
Other elements such as (Ag, Ti, V, Tl, etc.) are available as single element requests.					
S/S/S = Sewage, Sludge and Soil					
* = Calculation Included (no charge)					

THE REGIONAL MUNICIPALITY OF DURHAM				
2020 FEES AND CHARGES				
WORKS DEPARTMENT - ENVIRONMENTAL LABORATORY				
		2020 Changed Bold		
Description		2019 Rate (before appl. Taxes)	2020 Rate (before appl. Taxes)	
Laboratory Fees Page 5 of 9		\$	\$	
<u>INORGANIC MONITORING PACKAGES</u>				
<u>Drinking Water</u>				
Drinking Water Package #1		\$96.90	\$96.90	
(pH, conductivity, alkalinity, chloride, fluoride, bromide, nitrite, nitrate, phosphate, sulphate, calcium, magnesium, sodium, potassium, ammonia, hardness*, ionic balance*, total anions*, total cations*, calculated dissolved solids*, calculated conductivity*, langelier index*)				
Drinking Water Package #2		\$149.90	\$149.90	
(colour, turbidity, Al, Fe, Mn, Pb, Zn)				
(pH, conductivity, alkalinity, chloride, fluoride, bromide, nitrite, nitrate, phosphate, sulphate, calcium, magnesium, sodium, potassium, ammonia, hardness*, ionic balance*, total anions*, total cations*, calculated dissolved solids*, calculated conductivity*, langelier index*)				
Drinking Water Package #2 with expanded metals		\$174.40	\$174.40	
(colour, turbidity, Al, As, Cd, Co, Cr, Cu, Fe, Mn, Mo, Ni, Pb, Sb, Se, Zn)				
(pH, conductivity, alkalinity, chloride, fluoride, bromide, nitrite, nitrate, phosphate, sulphate, calcium, magnesium, sodium, potassium, ammonia, hardness*, ionic balance*, total anions*, total cations*, calculated dissolved solids*, calculated conductivity*, langelier index*)				
Drinking Water Package #3		\$262.20	\$262.20	
Colour, (Al, Sb, As, Ba, B, Cd, Cr, Co, Cu, Fe, Pb, Mn, Mo, Ni, Se, U, Zn), Hg				
pH, Conductivity, Alkalinity, (Ca, Mg, K, Na, NH3, Hardness*)				
(Br, Cl, F, NO2, NO3, [NO2+NO3]*, SO4, PO4), DOC, TKN				
<u>Landfill Monitoring</u>				
Surface Water		\$370.30	\$370.30	
(BOD, COD, colour, phenol, total solids, suspended solids, dissolved solids*, pH, conductivity, alkalinity, fluoride, chloride, bromide, nitrite, nitrate, sulphate, phosphate, calcium, magnesium, sodium, potassium, ammonia, hardness*, total cations*, total anions*, ionic balance*, calculated dissolved solids*, calculated conductivity*, langelier index*, dissolved organic carbon, total kjeldahl nitrogen, total phosphorus, Al, As, Cd, Co, Cr, Cu, Fe, Mn, Mo, Ni, Pb, Sb, Se, Zn)				
(Filtration of Raw Landfill samples)		\$35.70	\$35.70	
*Calculation included (no charge).				

THE REGIONAL MUNICIPALITY OF DURHAM				
2020 FEES AND CHARGES				
WORKS DEPARTMENT - ENVIRONMENTAL LABORATORY				
		2020 Changed Bold		
Description		2019 Rate (before appl. Taxes)	2020 Rate (before appl. Taxes)	
Laboratory Fees Page 6 of 9		\$	\$	
<u>INORGANIC MONITORING PACKAGES</u>				
<u>Sewer Use By-law</u>		\$475.00	\$475.00	
Complete Inorganic Package				
sulphate, phenol, cyanide, Total/Mineral/Animal & Vegetable Oil & Grease				
Hg, Ag, Al, As, Cd, Co, Cr, Cu, Fe, Mn, Mo, Ni, Pb, Sb, Se, Sn, Ti, Zn				
<u>Sewage and Industrial Waste</u>				
Monitoring Package #1		\$42.80	\$42.80	
(BOD5, suspended solids)				
Monitoring Package #2		\$100.00	\$100.00	
(BOD5, susp. solids, total kjeldahl nitrogen, total phosphorus)				
Monitoring Package #2 plus Metals		\$161.20	\$161.20	
(BOD5, susp. solids, total kjeldahl nitrogen, total phosphorus				
Al, As, Cd, Co, Cr, Cu, Fe, Mn, Mo, Ni, Pb, Sb, Se, Zn)				
Monitoring Package #3		\$149.90	\$149.90	
(BOD5, susp. solids, total kjeldahl nitrogen, total phosphorus				
ammonia+ammonium, nitrite, nitrite+nitrate, diss. phosphate)				
Monitoring Package #3 plus Metals		\$211.10	\$211.10	
(BOD5, susp. solids, total kjeldahl nitrogen, total phosphorus				
ammonia+ammonium, nitrite, nitrite+nitrate, diss. phosphate				
Al, As, Cd, Co, Cr, Cu, Fe, Mn, Mo, Ni, Pb, Sb, Se, Zn)				
Monitoring Package #4		\$197.90	\$197.90	
(BOD5, CBOD5, susp. solids, total kjeldahl nitrogen, total phosphorus				
ammonia+ammonium, nitrite, nitrite+nitrate, diss. phosphate, pH				
Al, As, Cd, Co, Cr, Cu, Fe, Mn, Mo, Ni, Pb, Sb, Se, Zn)				
Monitoring Package #4 plus Metals		\$262.10	\$262.10	
(BOD5, CBOD5, susp. solids, total kjeldahl nitrogen, total phosphorus				
ammonia+ammonium, nitrite, nitrite+nitrate, diss. phosphate, pH				
Al, As, Cd, Co, Cr, Cu, Fe, Mn, Mo, Ni, Pb, Sb, Se, Zn)				
<u>Sludge</u>				
Sludge Monitoring Package #1		\$116.30	\$116.30	
(total solids, total kjeldahl nitrogen, total phosphorus,				
ammonia+ammonium, nitrite, nitrite+nitrate, diss. phosphate)				
Sludge Monitoring Package #1 plus Metals		\$177.50	\$177.50	
(total solids, total kjeldahl nitrogen, total phosphorus,				
ammonia+ammonium, nitrite, nitrite+nitrate, diss. phosphate				
Hg, As, Cd, Co, Cr, Cu, Mo, Ni, Pb, Se, Zn)				
Sludge Monitoring Package #2 (Agrisluage)		\$204.00	\$204.00	
(total solids, ashed total solids, volatile total solids*,				
total kjeldahl nitrogen, total phosphorus, ammonia+ammonium				
nitrite + nitrate, Hg, As, Cd, Co, Cr, Cu, K, Mo, Ni, Pb, Se, Zn)				
*Calculation included (no charge).				

THE REGIONAL MUNICIPALITY OF DURHAM					
2020 FEES AND CHARGES					
WORKS DEPARTMENT - ENVIRONMENTAL LABORATORY					
				2020 Changed Bold	
Description		2019 Rate (before appl. Taxes)		2020 Rate (before appl. Taxes)	
Laboratory Fees Page 7 of 9		\$		\$	
ORGANIC MONITORING PACKAGES					
Drinking / Surface / Ground Water and Wastewater					
THMs (Trihalomethanes)		\$102.00		\$102.00	
bromodichloromethane	bromoform				
dibromochloromethane	chloroform				
THM (Total)					
BTEX by Purge & Trap GC/MS		\$80.60		\$80.60	
benzene	ethylbenzene				
m,p-xylene	o-xylene				
toluene	Xylene (Total)				
Taste & Odour		\$250.00		\$250.00	
geosmin	2-methylisoborneol (MIB)				
2-isobutyl-3-methoxypyrazine	2-isopropyl-3-methoxypyrazine				
2,3,6-trichloroanisole	2,4,6-trichloroanisole				
Haloacetic Acids (Disinfection By-Products)		\$198.90		\$300.00	
bromochloroacetic acid	dibromoacetic acid				
dichloroacetic acid	monobromoacetic acid				
monochloroacetic acid	trichloroacetic acid				
Volatile Organic Compounds		\$128.50		\$128.50	
benzene	cis-1,2-dichloroethylene				
bromodichloromethane	trans-1,2-dichloroethylene				
bromoform	dichloromethane				
bromomethane	1,2-dichloropropane				
carbon tetrachloride	cis-1,3-dichloropropylene				
chlorobenzene	trans-1,3-dichloropropylene				
chlorodibromomethane	ethylbenzene				
chloroethane	styrene				
chloroform	1,1,2,2-tetrachloroethane				
chloromethane	toluene				
tetrachloroethylene (perchloroethylene)	1,1,1-trichloroethane				
1,2-dibromoethane(ethylene dibromide)	1,1,2-trichloroethane				
1,2-dichlorobenzene	trichloroethylene				
1,3-dichlorobenzene	trichlorofluoromethane				
1,4-dichlorobenzene	vinyl chloride				
1,1-dichloroethane	o-xylene				
1,2-dichloroethane	m,p-xylene				
1,1-dichloroethylene	THM (Total)				
methyl tert-butyl ether (MTBE)	xylene (Total)				
methyl ethyl ketone (MEK)	2-hexanone				
methyl isobutyl ketone (MIBK)	acetone				
1,1,1,2-tetrachloroethane	1,2,4-trichlorobenzene				
Pesticide/Herbicide Analysis					
Organochlorine Pesticides		\$123.40		\$123.40	
aldrin	endosulphan I				
a-BHC	endosulphan II				
b-BHC	endosulphan sulphate				
g-BHC (Lindane)	endrin				
a-chlordane	heptachlor				
g-chlordane	heptachlor epoxide				
p,p'-DDD	methoxychlor				
p,p'-DDE	mirex				
p,p'-DDT	oxychlordane				
o,p'-DDT	trifluralin				
dieldrin	toxaphene				

THE REGIONAL MUNICIPALITY OF DURHAM				
2020 FEES AND CHARGES				
WORKS DEPARTMENT - ENVIRONMENTAL LABORATORY				
				2020 Changed Bold
Description		2019 Rate (before appl. Taxes)	2020 Rate (before appl. Taxes)	
Laboratory Fees Page 8 of 9		\$	\$	
ORGANIC MONITORING PACKAGES				
Pesticide/Herbicide Analysis				
Triazine Herbicides				
alachlor (Lasso)	metolachlor	\$107.10	\$107.10	
ametryn	metribuzin (Sencor)			
atraton	prometon			
atrazine	prometryn			
cyanazine (Bladex)	propazine			
desethyl atrazine	simazine			
Organophosphorus Pesticides		\$107.10	\$107.10	
chlorpyrifos (Dursban)	malathion			
chlorpyrifos-methyl (Reldan)	methyl parathion			
diazinon	mevinphos (Phosdrin)			
dichlorvos	parathion			
dimethoate	phorate (Thimet)			
ethion				
fenchlorphos (Ronnell)	terbufos			
guthion (Azinphos-methyl)				
benzo(a)pyrene				
Phenoxy Acid Herbicides				
2,4-dichlorophenoxyacetic acid (2,4-D)	MCPA	\$161.20	\$161.20	
bromoxynil				
dicamba	picloram			
diclofop-methyl				
Chlorophenols				
2,4-dichlorophenol	2,3,4,6-tetrachlorophenol	\$161.20	\$161.20	
2,4,6-trichlorophenol				
Carbamate & Phenyl Urea Pesticides/Herbicides				
Carbaryl	Carbofuran	\$239.70	\$239.70	
Diuron	Triallate			
Glyphosate		\$198.90	\$198.90	
Diquat	Paraquat	\$198.90	\$198.90	
PCB Analysis				
Polychlorinated Biphenyls		\$80.60	\$80.60	
PAHs (Polynuclear Aromatic Hydrocarbons) by GC/MSD		\$229.50	Subcontractor's Rate	
Open Characterization (Semi-quantitative)				
Volatiles (Scans for Volatile Organic Compounds)		\$250.00	\$250.00	
Extractables (Scans for Extractable Organic Compounds)		\$300.00	\$300.00	

THE REGIONAL MUNICIPALITY OF DURHAM				
2020 FEES AND CHARGES				
WORKS DEPARTMENT - ENVIRONMENTAL LABORATORY				
		2020 Changed Bold		
Description		2019 Rate (before appl. Taxes)	2020 Rate (before appl. Taxes)	
Laboratory Fees Page 9 of 9		\$	\$	
ORGANIC MONITORING PACKAGES				
Industrial Sewer Use By-law Acid/Base/Neutral Compounds		\$214.20	\$214.20	
di-n-butylphthalate	bis(2-ethylhexyl)phthalate			
Polychlorinated Biphenyls		\$80.60	\$80.60	
Industrial Sewer Use By-law Volatile Organic Compounds		\$134.60	\$134.60	
1,1,2,2,-tetrachloroethane	m/p-xylene			
1,2-dichlorobenzene	o-xylene			
1,4-dichlorobenzene	styrene			
benzene	tetrachloroethylene			
chloroform	toluene			
cis-1,2-dichloroethylene	trans-1,3-dichloropropylene			
dichloromethane	trichloroethylene			
ethylbenzene	xylene (Total)			
methyl ethyl ketone (MEK)				
Industrial Sewer Use By-law Nonylphenols & Ethoxylates (Subcontracted)		Subcontractor's Rate	Subcontractor's Rate	
nonylphenol	nonylphenol ethoxylates			
Durham/York/Peel Sewer Use By-law Organic Package*		\$727.50	\$727.50	
1,1,2,2,-tetrachloroethane	m/p-xylene			
1,2-dichlorobenzene	o-xylene			
1,4-dichlorobenzene	styrene			
benzene	tetrachloroethylene			
chloroform	toluene			
cis-1,2-dichloroethylene	trans-1,3-dichloropropylene			
dichloromethane	trichloroethylene			
ethylbenzene	xylene (Total)			
methyl ethyl ketone (MEK)				
di-n-butyl phthalate	bis (2-ethylhexyl) phthalate			
PCB (Total)				
* If nonyl phenol/nonyl phenol ethoxylates req'd, please request as add-on to package				
Total Petroleum Hydrocarbons (TPH) in Water (Subcontracted)		Subcontractor's Rate	Subcontractor's Rate	
This CCME method includes:				
a). BTEX-Purgeables by P&T GC/MS or HS GC/FID - gasoline range				
b). Extractables by GC/FID - diesel range				
c). Total Oil & Grease by Gravimetric - heavy oil range				
Legal Sample Fees and Legal Storage Fees				
Samples submitted under legal chain of custody	per sample	\$255.00	\$255.00	
(To maintain an unbroken chain of custody for samples that may be used for litigation)				
Extended storage for legal samples (longer than 30 days)	per container per month	\$3.10	\$3.10	
(Samples will be stored free of charge for 30 days from the date of final report)				
Court testimony by Regional Environmental Laboratory staff	per hour (including travel and wait time)	To be determined case-by-case	To be determined case-by-case	
Mileage for appearance	per kilometre (actual)	\$0.55	\$0.55	
Miscellaneous				
Sub-contractor Fee			Subcontractor's Rate	
Report re-issue Fee:				
- Current Year			\$10.00	
- Previous 2 years			\$25.00	
- Prior Archives			\$100.00	
Sample treatment (if required):				
Chlorine quenching			\$25.00	
Oil & Grease additional extraction			\$25.00	
Crypto/Giardia Additional Filter Processing			\$400.00	
Shipping (Sample Containers)			Actual cost	

Regional Municipality of Durham
2020 Water and Sanitary Sewer
User Rates
Detailed Report

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1 Background

1.1 Water and Sanitary Sewer User Rates Are Reviewed Annually

The Region's water and sanitary sewer user rates are reviewed annually and recommendations are made to Council in December, prior to a January 1st implementation of approved user rates.

The existing water and sanitary sewer user rates follow the same basic format as the uniform rates adopted in 1976. Since that time, user rates have been calculated in a consistent manner using a standard waterworks industry technique, the Base-Extra Capacity method and reflect the actual costs of supplying customers. Rates are based on metered consumption with three declining rate blocks, a service charge (by meter size for water), and an unmetered fire line charge (water only).

The following report is related to this User Rates Report and was previously considered and approved by Council:

- **Report #2019-COW-16: 2019 Asset Management Plan** – This report provides an update on Durham's asset management initiatives, including those related to the water and sanitary sewerage systems. It provides important information regarding existing asset replacement values, condition and needs for existing asset rehabilitation and replacement. Findings of that report are used to formulate asset management strategies and replacement and rehabilitation capital investment plans.

The following report is being considered concurrently by Council:

- **Report #2019-COW-32: 2020 Water Supply and Sanitary Sewerage Strategic Issues and Financial Forecast** – The implications of recommendations included in this report have been considered in developing the proposed 2020 water and sanitary sewer user rates.

Although the reports are separate, together they form the basis for planning and funding water and sewage system investments in a sustainable manner.

1.2 User Rates Implemented on January 1st of each year.

It is imperative that the proposed 2020 user rates be approved in 2019 in order that they can be implemented with the first customer billings commencing early January 2020. Any delay in implementation may mean that any required rate increase would have to be larger to generate sufficient revenue during the Region's fiscal year. In addition, it is considered preferable to adjust the rates during the low winter consumption period rather than have a rate increase occur at the same time as the spring/summer seasonal usage increase.

1.3 Public Notification Provided

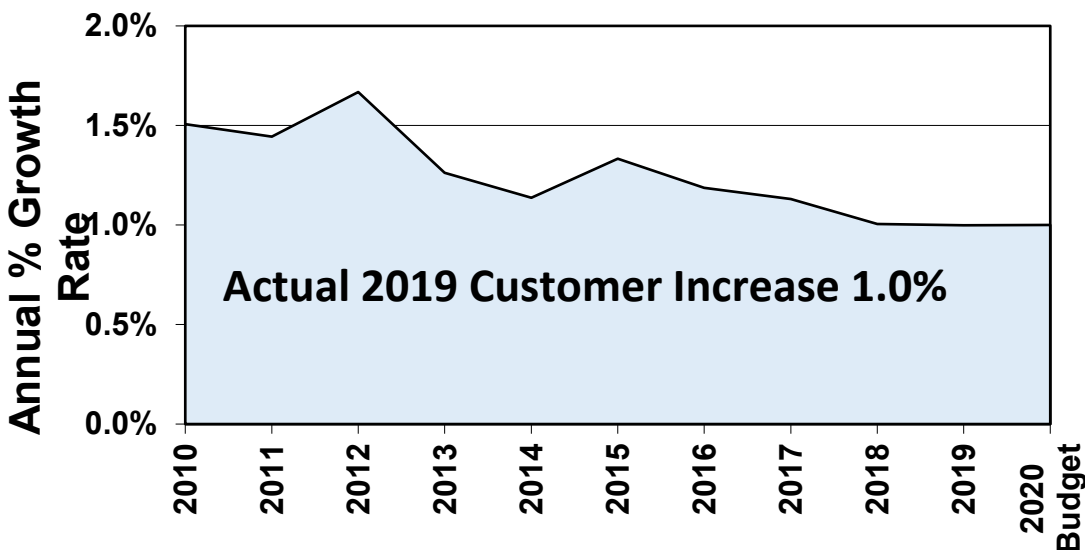
The proposed 2020 water and sanitary sewer user rates, fees and related charges will be considered by the Committee of the Whole on December 11th and by Regional Council on December 18th, 2019. Public notification of this schedule was provided in local newspapers throughout the Region on November 7th and 14th, 2019 and was posted on the Region's website. This affords the public an opportunity to make representation to Committee of the Whole and Regional

Council regarding proposed changes to the user rates prior to adoption. Printed copies of this user rate report are available to the public free of charge upon request or by accessing the Regional website.

2 Customer Growth - Flat

Actual water customer growth from 2010 to 2019 and 2020 Budget (end of June data) is graphed in Exhibit 1 below. Mid-year figures are used for rate calculation purposes as they represent the "average" number of customers for the year.

Exhibit 1 Annual % Growth in Water Customers (June data) – Actual 2010 to 2019 & 2020 Budget



Annual customer growth peaked at about 4.0% in 2004. Since then, growth decreased to 1.0% in 2018 and has levelled off since.

There were totals of 177,518 water customers and 173,431 sewage customers in June 2019. Some customers have multiple units (such as apartment buildings) but only one meter. There were over 218,000 units served by Regional water. There are fewer sewer customers than water customers because there are communities with Regional water supply services, but no Regional sanitary sewer services provided including Orono, Newtonville, Blackstock, Greenbank, Uxville and most of Prince Albert. In addition, there are some individual customers in communities with sanitary sewers who are currently served only by the Regional water system.

Each year sewer customer growth is slightly higher than water customer growth as some customers who were only connected to the Regional water system, but with Regional service available, connect to the Region's sewage system.

For 2020 rate setting purposes, annual customer growth is projected at 1.00% for water and 1.05% for sewage (the same as projected last year for 2019).

The actual water, sewage and fire line customer data from 2010 to 2019 and projected 2020 budget are tabulated in Exhibit 2.

**Exhibit 2 Water & Sewage Customers - Actual 2010 to 2019 &
2020 Budget (June to June)**

Year	Water			Sewage			Fire Lines
	Increase Over Previous June			Increase Over Previous June			Total
	Total	Number	Percent	Total	Number	Percent	
2010	158,877	2,357	1.5%	154,598	2,379	1.6%	1,706
2011	161,172	2,295	1.4%	156,907	2,309	1.5%	1,730
2012	163,860	2,688	1.7%	159,605	2,698	1.7%	1,749
2013	165,927	2,067	1.3%	161,683	2,078	1.3%	1,775
2014	167,813	1,886	1.1%	163,575	1,892	1.2%	1,802
2015	170,051	2,238	1.3%	165,844	2,269	1.4%	1,783
2016	172,068	2,017	1.2%	167,894	2,050	1.2%	1,835
2017	174,014	1,946	1.1%	169,861	1,967	1.2%	1,863
2018	175,763	1,749	1.0%	171,658	1,797	1.1%	1,877
2019	177,518	1,755	1.0%	173,431	1,773	1.0%	1,899
2020 Budget	179,293	1,775	1.00%	175,252	1,821	1.05%	1,918

Note: As illustrated in Exhibit 2, the annual increase in the number of sewage customers is greater than the increase in number water customers. This is due to the gradual servicing with sewage of existing water-only customers.

The projected 2020 increase in the number of water customers is 1,775 including residential and ICI (industrial, commercial and institutional).

The projected customer growth for 2020 is:

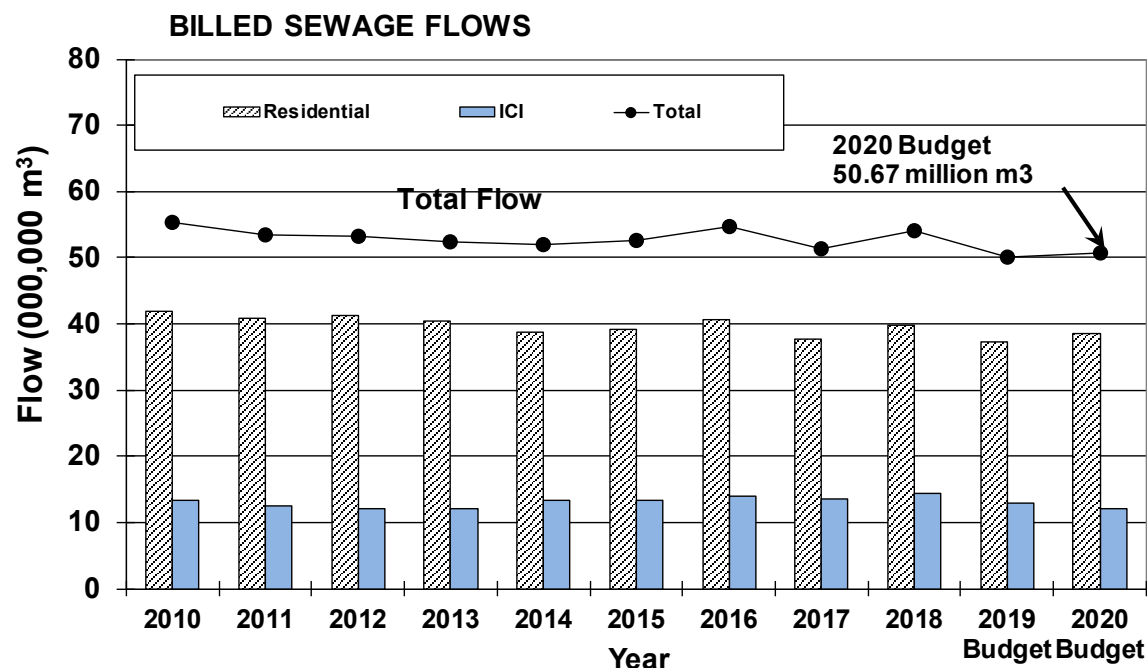
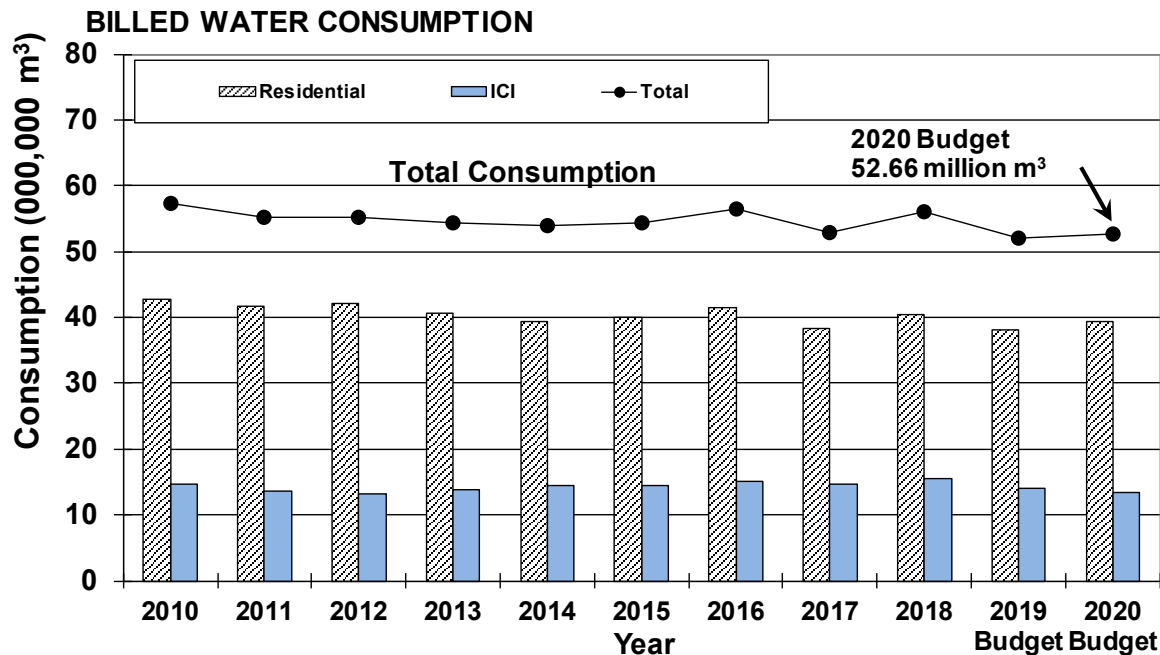
- **Water increase by +1,775 (+1.00%) to a total of 179,293**
- **Sewage increase by +1,821 (+1.05%) to a total of 175,252**

3 Water Demand – Stable

3.1 Historical Consumption

Residential, ICI and total volumes billed to customers for water and sewage - actuals from 2010 to 2018 and budgeted for 2019 and 2020 (discussed further following) - are graphed in Exhibit 3. There has been a gradual decreasing trend in consumption.

Exhibit 3 Billed Water & Sewage Volumes - Actual 2010 to 2018 & 2019/2020 Budget

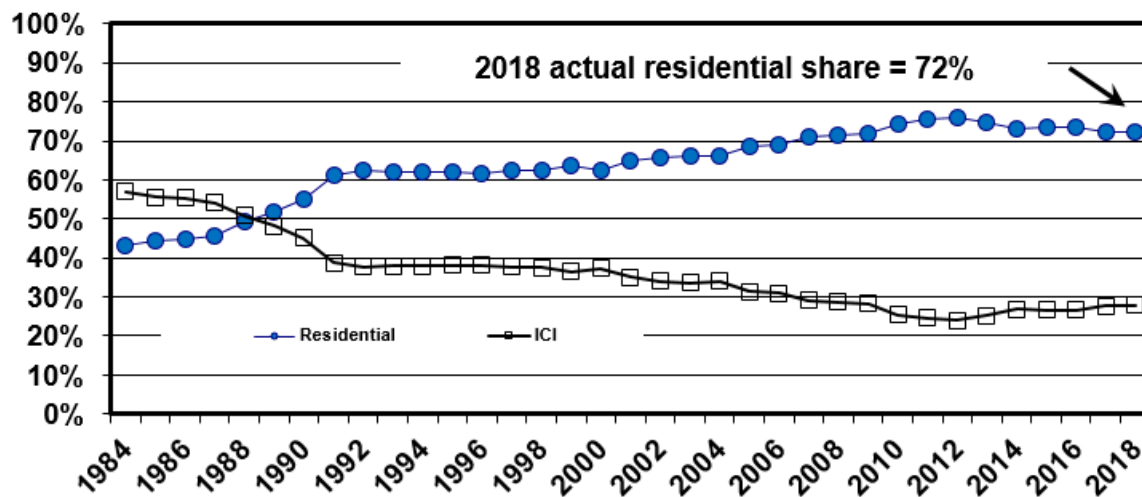


3.2 Residential versus ICI Consumption Share

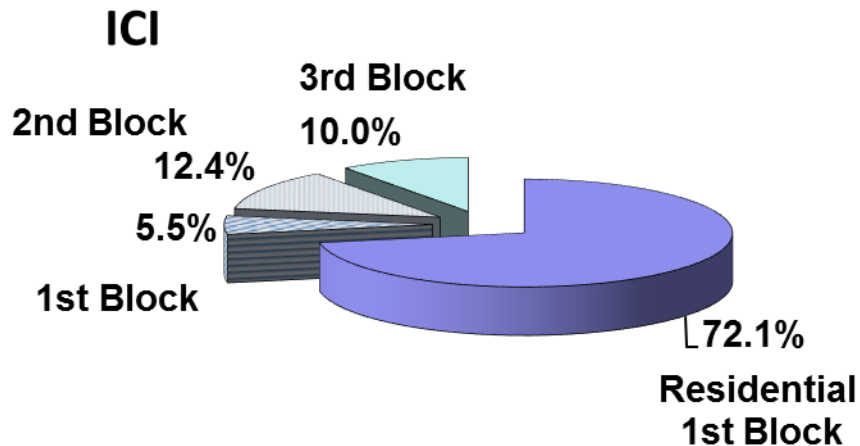
Up until 2012 there was a steady increase in the share of consumption by residential customers and a corresponding decreased share by ICI customers. Residential usage had grown from about a 43% share in 1984 to a 76% share in 2012. The change was due to a combination of strong residential growth, and, for a number of years, decreases in large ICI customer consumption. The trend reversed in 2013 with the reopening of one of the largest ICI customers, a paper production facility that was shut down in 2010. Facilities were upgraded using a different recycling process with a resulting increase in industrial water usage share.

Annual consumption share is illustrated in [Exhibit 4](#). The residential share is currently about 72%.

Exhibit 4 Billed Water & Sewage Volume Share – Residential versus ICI - Actual 1984 to 2018



The distribution of actual 2018 consumption by block and customer class is illustrated in [Exhibit 5](#).

Exhibit 5 Water Consumption Share by Block – Actual 2018

All residential consumption is billed at 1st block rates. ICI water users enter the 2nd and 3rd rate blocks. Consumption by block is broken down as follows:

- **1st block** (including all residential and ICI up to 10,000 gallons/month or 45 m³/month) - All residential usage is billed at 1st block rates and these customers represent the majority of usage. Total 1st block consumption for all customers represented 77.6% of all usage in 2018 (ICI 5.5% + Residential 72.1%).
- **2nd block** (ICI 10,001 to 1,000,000 gallons/month or 46 to 4,500 m³/month) – This segment’s consumption has decreased slightly and currently is about 12.4% of the total.
- **3rd block** (ICI over 1,000,000 gallons/month or 4,500 m³/month) – Large user consumption increased from about 9.6% of total usage in 2017 to about 10.0% in 2018.

3.3 Residential Consumption – Some Growth Projected

Although Durham continues to see residential customer growth, until recently usage per customer has been trending downwards for some time - the combined impact was a steady decrease in total residential usage. This trend appears to have levelled off with some growth projected for 2020.

Total residential consumption is made up of “Basic” day-to-day usage plus extra “Seasonal” usage in the summer. The two components are discussed in more detail as follows:

- **Basic Usage** - Basic usage is due to day-to-day activities that occur year-

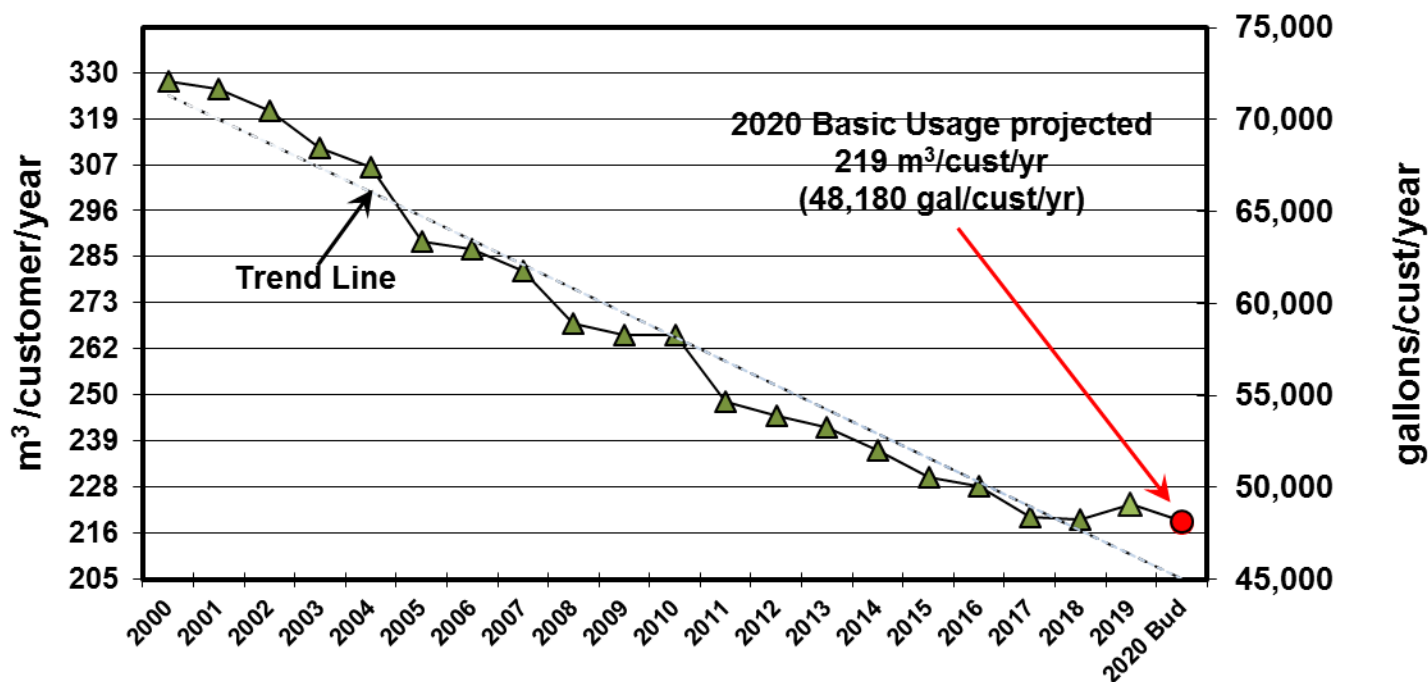
round such as kitchen, bathroom and laundry usage.

- **Seasonal Usage** – Seasonal usage is mostly outdoors during the summer months (May to September) and varies from year-to-year. During dry summers the level increases and in wet summers it is less.

Basic Usage – Although the number of residential customers continues to grow, **basic (day-to-day) usage per customer had been decreasing from about 2000 until 2017.** This steady drop in usage by residential customers tended to more than offset the impact on total residential consumption from the addition of new customers. However, basic usage appears to have levelled off.

Basic per customer residential billed usage is illustrated in **Exhibit 6**.

Exhibit 6 Basic Annual Residential Water Usage per Customer (excludes seasonal usage) - Actual 2000 to 2019 & 2020 Budget



Actual 2019 **basic usage** is 223 m³/customer/year (49,060 gal/cust/yr). This is a blend of all residential customers including single family dwellings, duplexes, apartment buildings and townhouses. Basic usage has trending downward over time. Projected 2020 basic usage is 219 m³/cust/yr (48,180 gal/cust/yr). This is based on the long-term trend towards decreasing consumption but factoring the recent experience of a possible levelling off.

The downward trend in residential **basic usage** (day-to-day consumption) is a result of a number of initiatives which began in the 1990's:

- The Province revised the Ontario Building Code in 1996 to require low flush toilets (6.0 litres per flush) and low flow showerheads (9.85 litres per minute) in new construction. This started the trend towards more efficient household

usage in new homes. The Province again revised the Ontario Building Code in 2012. The new Code has measures requiring high-efficiency (6.0 litre/flush) toilets in new single family residential construction or renovation (while still permitting the roughly equivalent 3/6 litre dual flush), and installation of low flow (7.6 litres/min) showerheads in all residential construction.

- New appliances, especially washing machines, are designed to use significantly less water.

Examples	Older	Newer
Toilets	10 to 20 litres per flush	Single Family Dwellings - 6.0 litres per flush (1)
Showerheads	Up to 30 litres per minute	Low Flow 7.6 litres per minute
Dishwashers	36 to 63 litres per load	31 to 45 litres per load
Washing Machines	Top loading 175 litres per load	Front loading 50 to 100 litres per load
Note 1) Ontario Building Code		

- The cost of water efficient appliances such as efficient toilets and front-loading washers has continued to decline to the point where many families find them affordable. The availability of widely available and affordable water efficient plumbing fixtures and appliances has resulted in ongoing decreases in consumption without the need to subsidize replacement of fixtures.
- There is a changing housing development format which results in smaller lot size, requiring lower seasonal usage.

The Region participated in the Priority Green Clarington Demonstration Project. Six new homes were built in Bowmanville and Courtice in 2014, with features that go beyond water conservation standards required by the Ontario Building Code. The features include greywater reuse as well as ultra low flow toilets, faucets and showers.

Priority Green Clarington Demonstration Project						
Annual Consumption vs Regional SFD Average						
	2015		2016		2017	
	m3	gallons	m3	gallons	m3	gallons
Region SFD Average	205	45,100	210	46,200	190	41,800
Green Demonstration Project	161	35,420	155	34,100	143	31,460
GDP% versus Region Average	79%		74%		75%	
Summer Precipitation	Wet		Very Dry		Average	

Annual 2015 to 2018 consumption data for the homes in the Demonstration Project have been compared with the average Regional consumption in

detached single family dwellings (SFD). Consumption in the Demonstration Project homes in recent years averaged about 25% less than the Regional SFD average. The Demonstration Project indicates that there is still potential for future reduction in residential per customer water use as conservation measures continue to be adopted.

Logically, the steady decrease in **basic usage** per capita must eventually level off.

Basic residential usage represents the majority of residential usage and is the most important element in projecting residential use.

Seasonal Usage - Seasonal volumes are mostly due to outside usage such as lawn/garden irrigation. Year-to-year weather variations can result in very little seasonal usage in wet years (examples 2008, 2013 and 2017) to significant **seasonal usage** in dry years (examples 2005, 2007 and 2016). It can vary on average from about 5 m³/customer/yr (1,000 gal/cust/yr) up to about 32 m³/cust/yr (7,000 gal/cust/yr), depending on summer weather conditions. The budget level used is 6.5 m³/customer/year, which is based on a wet summer, is conservatively set at about 85% of historical annual seasonal usage levels (see table below).

Total Usage – Total usage per residential customer (including basic usage plus a minimal allowance for seasonal usage) was budgeted at 220.5 m³ per year for 2019. For 2020 budgeting purposes, due to the increase in basic usage per customer, total residential usage is budgeted at 225.5 m³ (49,610 gallons) per residential customer.

Residential Consumption per Year				
		Per Customer		Total Annual
		2019 Budget	2020 Budget	2019 Budget
Type of Usage				2020 Budget
Cubic Metres				
Basic		214.0	219.0	
Seasonal Allowance		6.5	6.5	
Total		220.5	225.5	38,072,000
Gallons				(000)
Basic		47,080	48,180	
Seasonal Allowance		1,430	1,430	
Total		48,510	49,610	8,376,000
				8,650,000

Based on the projected number of residential customers this is equivalent to total budgeted 2020 residential consumption of 39,318,000 m³ (8,650,000,000 gallons).

3.4 ICI Consumption – Decrease

3.4.1 ICI Overview

A review has been carried out of the potential impact on water and wastewater billings of GM ceasing assembly operations at its Oshawa plant at the end of 2019. Automotive manufacturing related industries have been identified:

- The largest of course is GM itself which has 16 water/sewer accounts. Their 2018 water and sewer billings were about \$2.3 million which represented about 1.0% of total 2018 of combined Regional water and sewage billings (\$215 million).
- There are seven (7) other companies with operations on the GM property (such as parts sequencing) which are covered by the GM billings.
- There are three (3) companies which are feeder plants for GM and are closing. They are relatively small water users.
- There are two (2) companies which are feeder plants for GM but also do work for others which are expected to cut back but remain operational.
- There are seven (7) companies which appear to be independent of GM work and are expected to continue operations.
- All of the feeder plants combined only represent about 0.3% of Regional water and sewage revenues and are thus not material in revenue projections.

GM water and sewage billings have gradually decreased in relative importance over the years compared to total Regional billings.

The following is a tabulation of projected 2020 ICI water consumption by block (Column 4).

2020 ICI Consumption with Automotive Sector Adjustment				
Block	Pre GM Impact	GM	Feeder Plants	Net (rounded)
(000 gal)	Column 1	Column 2	Column 3	Column 4
1st	660,000	(2,164)	(594)	657,000
2nd	1,470,000	(62,553)	(9,264)	1,398,000
3rd	1,000,000	(115,869)	(3,251)	881,000
Total	3,130,000	(180,586)	(13,109)	2,936,000
(m3)				
1st	3,000,000	(9,835)	(2,702)	2,987,000
2nd	6,681,818	(284,331)	(42,108)	6,355,000
3rd	4,545,455	(526,679)	(14,777)	4,004,000
Total	14,227,273	(820,845)	(59,587)	13,346,000

Column 1 is a pre-GM closing (base case) projection. Column 2 is the impact of GM shutting down and Column 3 is the impact of the feeder plants. The projections are based on the very conservative assumption that there is a complete loss of GM and feeder plant billings.

3.4.2 ICI Small to Medium Customer Consumption (1st & 2nd blocks) – Fairly Stable

Water usage in the 1st and 2nd blocks by ICI customers has been fairly consistent over the years. For 2020 the 1st and 2nd block ICI consumption have received minor adjustments compared to 2019 budget based on 2019 consumption trends with the 1st block increased and the 2nd block decreased.

3.4.3 ICI Large Industry Consumption (3rd block) – Decrease

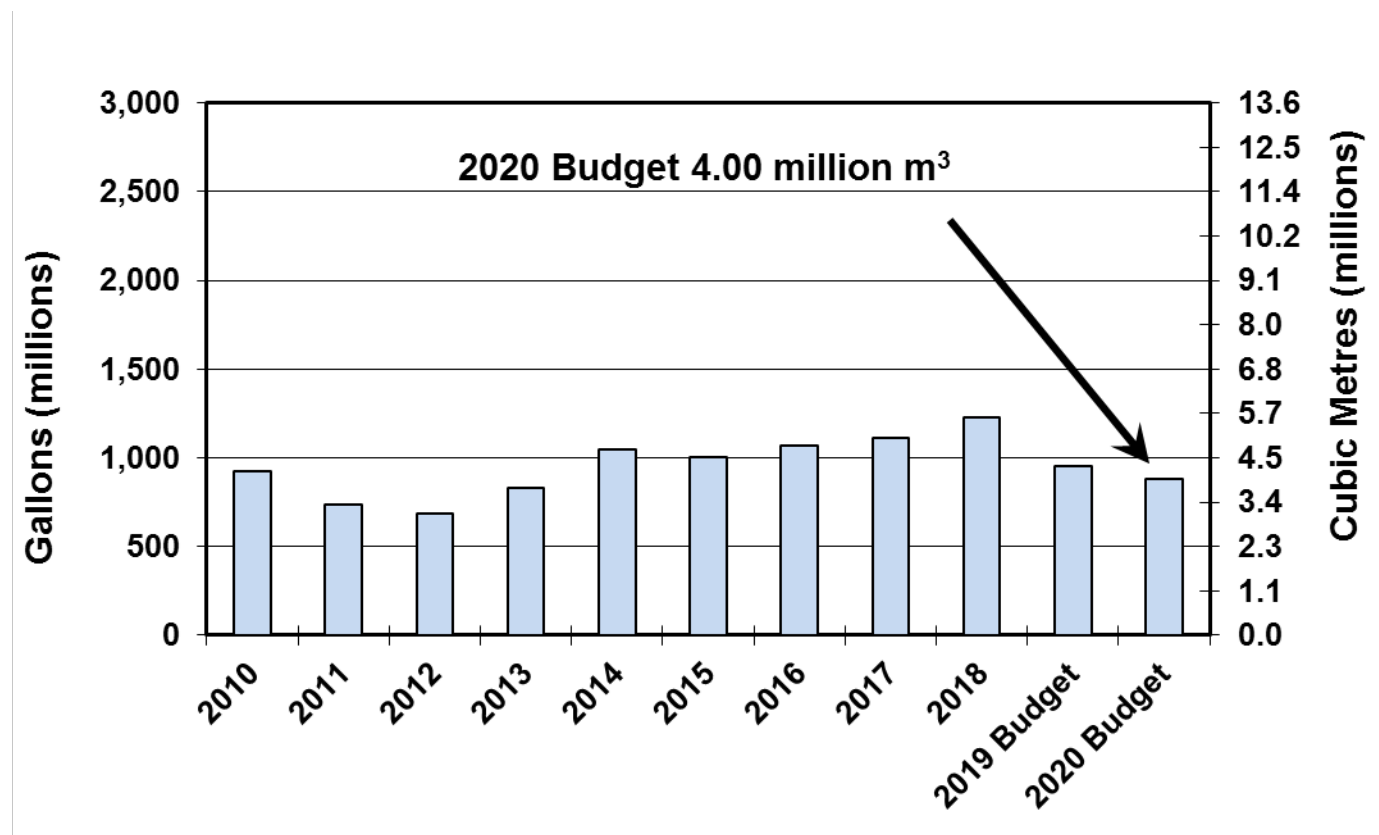
Until 2012, third (3rd) block water consumption was in decline, having decreased 61% from 2006 – an average of about 8% per year. Plant closures and cutbacks as well as conservation efforts all contributed. This trend reversed when a former large water user that had curtailed operations in 2010, with full impact on water consumption in 2011, returned to full operations in the second half of 2013.

There are 29 customer accounts representing 23 industrial users that have reached the 3rd block so far this year. GM represents 4 of these accounts (GM has 16 accounts in total).

Consumption to September of this year was down by 5% compared to 2018.

Actual 3rd block consumption is graphed for 2010 to 2018 in [Exhibit 7](#), as well as 2019 and 2020 Budget. The large industry sector is responsible for 3rd block consumption and represented about 10.0% of total consumption in 2018.

Exhibit 7 3rd Block Water Consumption - Actual 2010 to 2018 & 2019/2020 Budgets



3.4.4 ICI Consumption Summary – Decrease

Total ICI water consumption is projected to decrease in 2020 by 4.7% compared to the 2019 Budget.

ICI Consumption Summary				
Blocks	Water	Sewage	Water	Sewage
	Cubic metres		Gallons (000)	
1st block	2,986,000	2,895,000	657,000	637,000
2nd block	6,355,000	5,627,000	1,398,000	1,238,000
3rd block	4,005,000	3,641,000	881,000	801,000
Total	13,346,000	12,163,000	2,936,000	2,676,000

3.5 Total Consumption – Some Increase

Actual Consumption/Flow for 2014 to 2018 and budget levels for 2019 and 2020 are shown in Exhibit 8.

Exhibit 8 Water Consumption & Sewage Flows - Actual 2014 to 2018 & 2019/2020 Budget

Year	Water			Sewage		
	Residential	ICI	Total	Residential	ICI	Total
Cubic Metres*						
2014 Actual	39,414,691	14,529,182	53,943,873	38,703,464	13,282,205	51,985,668
Change	1.3%	-0.5%	0.9%	1.4%	0.8%	1.3%
2015 Actual	39,942,818	14,462,622	54,405,440	39,262,916	13,382,187	52,645,103
Change	3.8%	4.3%	3.9%	3.6%	4.2%	3.8%
2016 Actual	41,458,386	15,091,423	56,549,809	40,686,995	13,942,277	54,629,273
Change	-7.6%	-3.1%	-6.4%	-7.3%	-2.2%	-6.0%
2017 Actual	38,290,805	14,627,364	52,918,168	37,696,582	13,641,905	51,338,486
Change	5.5%	6.8%	5.8%	5.4%	5.2%	5.4%
2018 Actual	40,397,273	15,616,555	56,013,827	39,746,800	14,347,014	54,093,814
2019 Budget	38,072,000	14,000,000	52,072,000	37,277,000	12,819,000	50,096,000
Change	3.3%	-4.7%	1.1%	3.3%	-5.1%	1.1%
2020 Budget	39,318,000	13,346,000	52,664,000	38,509,000	12,163,000	50,672,000
Gallons (000)*						
2019 Budget	8,376,000	3,080,000	11,456,000	8,201,000	2,820,000	11,021,000
Change	3.3%	-4.7%	1.1%	3.3%	-5.1%	1.1%
2020 Budget	8,650,000	2,936,000	11,586,000	8,472,000	2,676,000	11,148,000

* Note: 1 cubic metre = 220 Imperial gallons OR 1,000 gallons = 4.54 cubic metres

Total 2020 Budget water consumption and sewage flows are both projected to increase by +1.1% compared to 2019 budget levels.

The 2020 water consumption and sanitary sewage flow projections are based on and take into account the following:

- A leveling off in basic usage per residential customer.
- Assumed low levels of summer seasonal usage by residential customers.
- Usage by ICI customers decreasing.
- Number of customers increasing.

Taking the foregoing into account, 2020 consumption is budgeted as follows:

- **Water consumption projected at 52,664,000 cubic metres (52,664 ML)**
- **Sewage flow billed projected at 50,672,000 cubic metres (50,672 ML)**

4 The Recommended 2.3% Water User Rate Increase (Schedule 1) & 4.0% Sanitary Sewer User Rate Increase (Schedule 2) are Needed to Finance the Proposed Preliminary 2020 Expenditure Budgets

The recommended user rates are based on the proposed expenditure and revenue budgets, customer growth and projected consumption levels. Details of projected customers are provided above in Section 2 and consumption in Section 3. Details of the proposed budget data used in the rate calculations are provided below.

Proposed 2020	
User Rate Increases	
Water	2.3%
Sewage	4.0%
Combined Average Residential Impact	3.2%

4.1 Full Cost Recovery

The water and sewage user rates are an important part of a full cost recovery strategy for Regional water and sanitary sewage systems. User rates and miscellaneous fees and charges recover operating costs. Capital costs are paid through a combination of user rate revenues, miscellaneous charges, reserve funds, development charges and grants (where available). The user rate share of capital costs includes the capital cost for system replacements, upgrades related to meeting regulatory requirements and growth-related costs not covered by development charge revenues. The water and sanitary sewage systems are “User Pay” - property taxes are not used to fund water and sanitary sewage system costs.

4.2 User Rate Revenue Requirements

The proposed preliminary 2020 water and sanitary sewerage net expenditure budgets require a water rate increase of 2.3% and a sewer rate increase of 4.0% (average residential customer combined increase 3.2%).

A breakdown of the proposed preliminary 2020 Budget expenditures and revenue sources, including user rate revenue requirements, is summarized in Exhibit 9 for water and Exhibit 10 for sanitary sewerage.

Additional information on the capital program is available from Report #2019-COW-32: 2020 Water Supply and Sanitary Sewerage Strategic Issues and Financial Forecast. Additional information on the 2020 Business Plans and Budgets is available in Report 2019-F-52: 2020 Current and Capital Business Plans and Budgets and Nine-Year Capital Forecasts for the Water Supply and Sanitary Sewerage System.

4.2.1 Water Supply System

Approximately \$3.80 million in additional user rate revenues is required to support increased expenditures as set out in Exhibit 9. This is generated by a combination of:

User Rate Increase - The proposed 2.3% water rate increase generates \$2.51 million in additional revenues;

Customer Growth - Customer growth adds \$0.49 million, offsetting a rate increase by 0.5%; and

Consumption – Consumption is projected to increase which is projected to contribute and additional \$0.80 million which offsets a rate increase by 0.7%.

The proposed preliminary 2020 user rate supported water system net expenditures of \$111.72 million represents an increase of \$3.80 million over 2019 budget levels.

4.2.2 Sanitary Sewerage System

Approximately \$5.59 million in additional user rate revenues is required to support increased sanitary sewerage system expenditures as set out in Exhibit 10. This is generated by a combination of:

User Rate Increase - The proposed 4.0% sewage rate increase generates an additional \$4.14 million in revenue;

Customer Growth - Customer growth adds \$0.15 million, offsetting the rate increase by 0.2%; and,

Consumption - Projected increased consumption (compared with 2019 Budget) will increase budgeted revenues by \$1.30 million. The sewage user rate increase is offset by 1.3% due to modest projected consumption growth.

The proposed preliminary 2020 user rate supported sanitary sewerage system net expenditures of \$107.68 million represents an increase of \$5.59 million compared to 2019 budget.

4.2.3 Billings Now on Daily Basis

The user rates are expressed as monthly charges in Schedule 1. With the implementation of an updated billing system in 2019, service charges for each bill are based on the actual number of days each bill covers between meter reading dates. As customers' billing periods may vary from the standard quarterly or bimonthly periods used in the previous billing system, daily service charge

Monthly Water Service Charge	\$18.68	per month
Months per Year	12	
Annual Equivalent SC	\$224.16	per year
Days in Year	365	
Daily Equivalent Service Charge	\$0.6141	per day

rates are required. The daily rates, which are equivalent to the approved monthly rates, are calculated as shown in the adjacent table (using the 2019 standard meter service charge as an example). The service charge may now vary on individual bills, but over time the charges will be the same as the former monthly charge approach.

Exhibit 9 Revenues Required from 2020 Water Rates

Budget Category	2019 Approved Budget (\$)	2020 Proposed Preliminary Budget (\$)	Increase/(Decrease)	
			(\$)	(%)
A) Operations (net costs)				
Operations, Maintenance & Administration	59,160,000	61,297,500	**	
Contribution to Asset Management Reserve Fund	5,234,000	5,485,600		
Less Other Revenues	10,000	31,000		
Operations from Current User Rates	64,384,000	66,752,100	2,368,100	3.7%
B) Tangible Capital Assets (gross costs)				
Construction of Municipal Services	109,972,000	76,209,000		
Operations Capital	3,361,000	4,732,000		
Total Capital Program	113,333,000	80,941,000		
Less Financing & Recoveries Applied				
- Development Charge Reserve Fund - Residential	57,358,000	20,823,500		
- Development Charge Reserve Fund - Commercial	1,769,000	678,200		
- Development Charge Reserve Fund - Industrial	0	0		
- Development Charge Debenture	0	0		
- Other Financing	4,813,000	9,629,000		
Total Non User Rate Financing	63,940,000	31,130,700		
Capital Program from User Rates Revenue Sources	49,393,000	49,810,300		
Less User Rate Financing (Debt/Reserves)				
- User Rate Debenture	0	0		
- Asset Management Reserve Fund	4,985,000	5,234,000		
- Equipment Replacement Reserve		35,000		
- Treatment Plant/Rate Stabilization Reserve Fund	2,000,000	702,000		
Total User Rate Financing	6,985,000	5,971,000		
Current User Rates Capital Program/Contributions	42,408,000	43,839,300	1,431,300	3.4%
C) Debt				
Expenditure	1,694,000	1,693,700		
Less Development Charge Reserve Funds Applied	564,000	564,300		
Debt from User Rates	1,130,000	1,129,400	(600)	
D) Current User Rate Revenue Requirements				
Total Expenditures	174,187,000	143,932,200	(30,254,800)	
Total Reserve Fund Contributions	5,234,000	5,485,600	251,600	
Less Total Revenues & Recoveries	(71,499,000)	(37,697,000)	33,802,000	
Total Current User Rate Revenues Required	107,922,000	111,720,800	3,798,800	3.5%
Equivalent Water User Rate Increase		2.3%		
E) Impact of Changes in Customers & Consumption on Rate Increase				
Component		Revenue Change (\$)	Rate Increase	
Increased revenue needed for expenditures		3,798,800	3.5%	
Residential consumption increases more than ICI decrease		(794,300)	-0.7%	
Reduced revenue needed due to customer growth		(492,900)	-0.5%	
Added Revenue From Rate Increase		2,511,600	2.3%	

** Note: 2020 Net amount includes \$250,000 contribution from the Water Treatment Plant/Rate Stabilization Reserve Fund

Exhibit 10 Revenues Required from 2020 Sewage Rates

Budget Category	2019 Approved Budget (\$)	2020 Proposed Preliminary Budget (\$)	Increase/(Decrease)	
			(\$)	(%)
A) Operations (net cosst)				
Operations, Maintenance & Administration	60,271,000	63,384,500	**	
Contribution to Asset Management Reserve Fund	8,646,000	9,049,000		
Less Other Revenues	29,000	34,000		
Operations from Current User Rates	68,888,000	72,399,500	3,511,500	5.1%
B) Tangible Capital Assets (gross cost)				
Construction of Municipal Services	106,437,000	68,949,700		
Operations Capital	2,409,000	5,673,000		
York Durham Capital	1,652,000	1,533,000		
Total Capital Program	110,498,000	76,155,700		
Less Financing & Recoveries Applied				
- Development Charge Reserve Fund - Residential	11,859,000	20,012,600		
- Development Charge Reserve Fund - Commercial	1,266,000	1,275,000		
- Development Charge Reserve Fund - Industrial	1,000,000	0		
- Other Financing	37,726,000	17,605,800		
Total Non User Rate Financing	51,851,000	38,893,400		
Capital Program from User Rates Revenue Sources	58,647,000	37,262,300		
Less User Rate Financing				
- User Rate Debenture	25,900,000	0		
- Asset Management Reserve Fund	8,234,000	8,646,000		
- Equipment Replacement Reserve	0	35,000		
- York Durham Reserve Fund	135,000	0		
- Treatment Plant/Rate Stabilization Reserve Fund	0	702,000		
Total User Rate Financing	34,269,000	9,383,000		
Current User Rates Capital Program/Contributions	24,378,000	27,879,300	3,501,300	14.4%
C) Debt				
Expenditures	21,761,000	21,011,300		
Less Development Charge Reserve Fund	12,938,000	13,612,200		
Net Debt from User Rates	8,823,000	7,399,100	(1,423,900)	-16.1%
D) Current User Rate Revenue Requirements				
Total Expenditures	192,530,000	160,551,500	(31,978,500)	
Total Reserve Fund Contributions	8,646,000	9,049,000	403,000	
Less Total Revenues & Recoveries	(99,087,000)	(61,922,600)	37,164,400	
Total Current User Rate Revenues Required	102,089,000	107,677,900	5,588,900	5.5%
Equivalent Sewer User Rate Increase		4.0%		
E) Impact of Changes in Customers & Consumption on Rate Increase				
Component		Revenue Change (\$)	Rate Increase	
Increased revenue needed for expenditures		5,588,900	5.5%	
Residential consumption increases more than ICI decrease		(1,298,500)	-1.3%	
Reduced revenue needed due to customer growth		(150,200)	-0.2%	
Added Revenue From Rate Increase		4,140,200	4.0%	

** Note: 2020 Net amount includes \$250,000 contribution from the Sewer Treatment Plant/Rate Stabilization Reserve Fund

5 Rate Schedule Recommendations

5.1 Recommended 5.0% Raw Water Rate Increase (Schedule 1)

The Region supplies untreated raw water from the Whitby Water Supply Plant (WSP) to water customers located within the South Whitby Industrial Area. Raw water customers are also supplied with potable water.

The raw water system shares the Whitby WSP water intake and wet well with the potable water treatment carried out at the WSP. After the wet well, there are two separate pumping stations and raw water distribution systems. The raw water is treated with chlorine at the intake to deal with zebra mussels, but otherwise receives no further treatment.

There are currently two raw water customers and two raw water delivery systems which consist of raw water pumping stations followed by distribution mains:

- One raw water delivery system is located on South Blair Street and is serviced by one of the raw water pumping stations and a repurposed (formerly potable) watermain that was installed in 1912. This system is basically at end of life due to age. There is currently just one relatively small customer on this system. This customer is converting to potable water only. With this conversion, the the South Blair Street raw water main can be decommissioned.
- The remaining large-volume raw water customer is located to the east of South Blair Street and is served by raw water facilities built in 1977. This system includes a second raw water pumping station located at the Whitby WSP and a raw watermain from the WSP to the customer. This customer plans to continue utilizing raw water.

The result of these shifts in customer raw water consumption is that the raw water volume will be approximately half what it was in 2017.

Year	Industry			Total
	A	B	C	
2016	499,010	62,730	732,264	1,294,004
	39%	5%	56%	100%
2017	406,044	36,950	608,206	1,051,200
	39%	3%	58%	100%
2018	16,580	60,195	563,105	639,880
	3%	9%	88%	100%
2019	0	38,115	586,064	624,179
Projected	0%	6%	94%	100%
2020	0	0	560,000	560,000
Budget	0%	0%	100%	100%

Industries “A” and “B” no longer use raw water. Only industry “C” will remain on raw water in the future.

Operating costs related to the raw water system are fully recovered by means of a raw water volumetric rate, updated annually and included in Schedule 1. The volume of raw water supplied to each customer is metered and they are charged for this volume based on the approved raw water rate. On an ongoing basis the raw water rate fully recovers the costs associated with operating the raw water system, including pumping and main maintenance.

Capital costs related to construction, modifications or upgrades to the raw water supply are 100% recovered directly from the raw water customers. There are no capital costs in the raw water rate included in Schedule 1. In the case of the 1977 system serving the customer to the east of South Blair Street, the works were constructed by the customer and turned over to the Region. The cost of raw water system capital improvements which occur from time to time and carried out by the Region have been recovered using separate capital charges that were set up when capital work was carried out.

Raw Water System Components Reaching End of Life - An expansion of the Whitby WSP is projected for 2022. The need for upgrades have been identified as part of ongoing asset management reviews. In particular, the raw water pumping capacity at the Whitby WSP has reached end of life. This has led to a review of the raw water systems as part of the upgrade to the Whitby WSP.

The raw watermain running from the WSP to the property to the east is relatively new and does not need any work at this time.

Upgrades and an expansion to the Whitby WSP, where the remaining raw water pumping station is located, are planned. Capital investments will be required to replace the remaining raw water pumping facilities. For logistical reasons the raw water pumping station will need to be replaced before work can start on the upgrades and expansion at the Whitby WSP.

Due to the Whitby WSP upgrades and expansion and the work required on the raw water system, a review of raw water system related costs is necessary. The project consultant for the Whitby WSP expansion will review the engineering involved in the replacement of the raw water pumping station.

The recommended 2020 raw water rate has been increased relative to the current 2019 rate based on the impact of both reduced raw water consumption and operating costs. An increase in the raw water rate by 5.0% from \$0.323/m³ in 2019 to \$0.339/m³ in 2020 is recommended. It is planned to review the raw water rate in 2020 once the full impact on costs of the loss of two of the three raw water customers can be established.

The recommended raw water rate is shown in Schedule 1 – Recommended 2020 Water User Rates.

5.2 Recommended Sun Valley Heights Homeowners Co-operative Water System Charges (Schedule 3)

The recommended charges for the Sun Valley Heights Homeowners Co-operative Water System are provided in Schedule 3 – Recommended 2020 Water Rate for the Sun Valley Heights Homeowners Co-operative Water System.

- The charge is based on actual Sun Valley Heights system costs;
- The costs are projected to increase about 1.4% due to a small increase in property taxes and labour costs; and
- This results in the recommended increase from \$1,692 annually in 2019 to \$1,716 annually in 2020 (\$141 to \$143 monthly).

The following provides background information on Sun Valley:

- The Sun Valley Heights Homeowners Co-operative water supply system is a privately-owned water supply system servicing 17 individual residential properties in the City of Oshawa, north of Conlin Road and west of Thornton Road.
- On August 3, 2000, the Region of Durham was issued a Minister's order pursuant to Section 62 of the Ontario Water Resources Act to maintain and operate the existing private water system owned by Sun Valley Heights Homeowners Co-operative.
- The Region is currently operating the Sun Valley system in compliance with the order and requirements of Ontario Drinking Water Protection Regulation 170/03 (formerly Regulation 459/00). The costs incurred to operate and maintain the system are billed to each property owner on a quarterly basis.

5.3 Recommended Miscellaneous Fees & Charges (Schedule 4)

Water System By-law #89-2003 (as amended) and Sewer System By-law #90-2003 (as amended) establish a variety of fees and charges that the Region can use to recover the cost of providing day-to-day and individual services related to the Region's water and sanitary sewage systems.

Water and sewage systems rates, fees and charges for 2019 (current) and 2020 (recommended) are set out in Schedule 4 – Recommended 2020 Water & Sanitary Sewer Systems Miscellaneous Fees & Charges of this report. All fees and charges where changes are recommended are **bolded**.

The recommended 2020 fees and charges are based on tracking actual costs over time. Some fees remain unchanged from 2019 (these charges are not bolded) and others have been increased by 2% in line with the combined water/sewage rate increase.

Specific considerations and circumstances warrant changes beyond 2% to the following fees and charges:

- **Items 9) to 16) Water & Sanitary Sewer Frontage Charges** – The recommended frontage charges represent the second year of a 2-year phase-in of increased charges based on an analysis of actual costs. The repayment terms over time have also been revised. Historically the Region has offered property owners the option of commuting frontage charges from an upfront payment to one over 10-years with annual payments at 6% interest. At their June 26, 2019 meeting, Council directed that for extensions in the Greenbelt resulting from successful

petitions, customers be offered optional 10 or 15-year repayment at the prime rate of the Region's financial institution plus 1.5%, with the prime rate based on the date of the final letter outlining fees owing. Staff was also directed to review frontage charge repayment terms in general as part of the 2020 User Rate Study.

The following is recommended for all frontage charges both inside and outside the Greenbelt, for both water and sanitary sewerage systems and both petition and non-petition projects:

- Repayment Period - Terms of 10 or 15-years be offered to the customer
- Interest Rate – Set at the prime rate of the Region's financial institution plus 1.5%, with the prime rate based on the date of the final letter outlining fees owing.
- Payments Calculated on an Individual Basis – Repayment is billed on the water and sewer bills (residential are quarterly) and the amount in each instance will be established in accordance with the above parameters.
- Applies to All Cases – These terms be applied to both petition and non-petition as well as both the water and sanitary sewerage systems
- **Item 20) Unmetered Water used for construction (building purposes) per service** – The volume of water used during home or building construction up until completion and meters are installed, typically during subdivision construction, is charged to builders by means of the building purposes charge. The 2017 User Rate report set out a staged increase in the Building Purposes charge over the period 2017 to 2020. Accordingly, the recommended 2020 Building Purposes Charge based on 2019 rates and 200 m³ per unit is \$222.00, an increase from \$187.00 in 2019 (see also Section 7.3.1).
- **Item 36) - Water from Water Supply Plants, Water Pollution Control Plants, Works Depots & Bulk Filling Stations** – Customers can sign up for keys which allow them to purchase water from bulk water filling stations which are located at five (5) of the Region's water supply plants. It is recommended that three of the current charges, a Minimum Volume Charge, a Flat Rate and an Annual Account Administration Fee be eliminated and replaced with a simpler approach of charging a one-time new account fee (\$42.00) plus a monthly service charge (\$21.00). The recommended charges are based on a cost analysis of operating the program and aligns the charges with the approach used for the potable water system (see also Section 7.3.2).

5.4 Recommended Regional Environmental Laboratory Charges (Schedule 5)

The Regional Environmental Laboratory is located at the Duffin Creek WPCP. The lab

ownership is shared with the Region of York. The lab is operated by Durham Region with costs and revenues part of the Region's Duffin Creek WPCP operating budget.

There have been several fees eliminated since they are either no longer offered, or the test has been amalgamated with another existing test. The fees for a couple of tests have been increased (bolded in table). Also, some tests have been added.

The recommended charges for laboratory services are set in Schedule 5 – Recommended 2020 Fee Schedule for Laboratory Services at the Regional Environmental Laboratory Located at the Duffin Creek WPCP.

6.2 User Rate Impact on Average Residential Customer

The impact on a typical residential customer of the proposed 2020 water and sewage user rate charges are shown below in Exhibit 12.

Exhibit 12 Rates Impact on Average Residential Customer

	Water Rate Increase = 2.3%			
	Sewer Rate Increase = 4.0%			
	Combined Increase = 3.2%			
	Billings		Increase	
	2019	2020		
	(\$)	Proposed (\$)		
			(\$)	(%)
Based on 49,610 gal/year (225.5 m³/yr) Consumption				
Water	118.72	121.45	2.73	2.3%
Sewage	123.05	127.96	4.91	4.0%
Total (\$/quarter)	241.77	249.41	7.64	3.2%
Annual Billing (\$/year)	967.08	997.64	30.56	3.2%

- A residential customer who used the same projected annual average residential per customer consumption of 225.5 m³ (49,610 gallons) in both 2019 and 2020 would have a bill increase of 3.2%.

6.3 Residential Customer Affordability

As noted above, the 2019 annual water and sewer bill for an average customer using 225.5 m³ per year is \$967.08. Later in this report, the cost of water and sewer services for a typical residential customer is compared with water/sewer charges in other municipalities and with other utilities:

- Other Large Municipalities – A total of 13 Ontario municipalities were surveyed to determine what they would charge for water and sewer services (2019 Rates). Durham was 5th lowest compared to the average of \$1,027 (see Exhibit 15).
- Neighbouring Municipalities – Durham's water and sewer charges are 2nd lowest of eight (8) local municipalities (see Exhibit 16).
- Other Utilities – Durham's 2019 annual average water (\$475) and sewer (\$492) charges (combined total \$967) have been compared to typical utility charges for cable, internet, cell phone, gas and hydro based on local rates and assumptions of average service levels. Durham's water and sewer combined are less than any of the other utilities (see Exhibit 20 and Exhibit 21).

Although in comparative terms, Durham's average residential water and sewer charges compare favorably with other municipalities and utilities, they could still be challenging for some customers. Affordability metrics are also discussed in Report #2019-COW-32: 2020 Water Supply and Sanitary Sewerage Strategic Issues and Financial Forecast. Regional staff are investigating various affordability metrics related to income to gauge the relative affordability of Durham's water and sewer rate costs and will report on findings at a future time.

6.4 User Rate Impact on 25 Largest Customers

Using actual 2018 consumption levels, the impacts on the Region's 25 largest customers of the recommended 2020 user rates, compared with existing 2019 rates, are provided in Exhibit 13.

Exhibit 13 Rates Impact on 25 Largest Users (Using 2018 Actual Consumption Data - \$/year)

									Water Rate Increase =		2.3%
									Sewer Rate Increase =		4.0%
Rank	2018 Consumption		2019 Rates			2020 Rates			Combined Increase		
	(m ³)	(000 gal)	Water	Sewage	TOTAL	Water	Sewage	TOTAL	\$	%	
			(\$)	(\$)	(\$)	(\$)	(\$)	(\$)			
1	2,526,680	555,870	2,205,100	3,388,730	5,593,830	2,255,950	3,524,360	5,780,310	186,480	3.3%	
2	536,710	118,080	477,580	730,900	1,208,480	488,590	760,160	1,248,750	40,270	3.3%	
3	475,670	104,650	424,590	649,370	1,073,960	434,370	675,360	1,109,730	35,770	3.3%	
4	371,390	81,710	334,060	510,100	844,160	341,770	530,520	872,290	28,130	3.3%	
5	343,510	75,570	309,840	462,140	771,980	316,980	480,640	797,620	25,640	3.3%	
6	329,080	72,400	297,330	462,770	760,100	304,180	481,290	785,470	25,370	3.3%	
7	282,260	62,100	256,680	391,050	647,730	262,600	406,700	669,300	21,570	3.3%	
8	226,810	49,900	208,540	316,980	525,520	213,350	329,670	543,020	17,500	3.3%	
9	220,310	48,470	202,900	308,300	511,200	207,580	320,640	528,220	17,020	3.3%	
10	144,170	31,720	136,800	206,610	343,410	139,960	214,880	354,840	11,430	3.3%	
11	139,190	30,620	132,460	199,930	332,390	135,520	207,930	343,450	11,060	3.3%	
12	136,270	29,980	129,940	196,050	325,990	132,930	203,890	336,820	10,830	3.3%	
13	135,020	29,700	128,830	116,610	245,440	131,800	121,280	253,080	7,640	3.1%	
14	126,990	27,940	121,890	183,660	305,550	124,700	191,010	315,710	10,160	3.3%	
15	99,010	21,780	97,580	146,270	243,850	99,830	152,120	251,950	8,100	3.3%	
16	98,300	21,630	96,990	440	97,430	99,220	460	99,680	2,250	2.3%	
17	96,350	21,200	95,290	142,740	238,030	97,490	148,460	245,950	7,920	3.3%	
18	91,040	20,030	90,670	135,640	226,310	92,760	141,070	233,830	7,520	3.3%	
19	83,550	18,380	84,160	125,620	209,780	86,100	130,650	216,750	6,970	3.3%	
20	72,180	15,880	74,300	6,630	80,930	76,010	6,890	82,900	1,970	2.4%	
21	65,280	14,360	68,300	101,220	169,520	69,870	105,270	175,140	5,620	3.3%	
22	64,710	14,240	67,830	100,490	168,320	69,390	104,510	173,900	5,580	3.3%	
23	60,530	13,320	64,200	94,900	159,100	65,680	98,700	164,380	5,280	3.3%	
24	58,080	12,780	62,070	91,630	153,700	63,500	95,290	158,790	5,090	3.3%	
25	56,950	12,530	61,080	1,080	62,160	62,490	1,130	63,620	1,460	2.3%	
Total	6,840,040	1,504,840	6,229,010	9,069,860	15,298,870	6,372,620	9,432,880	15,805,500	506,630	3.3%	
Note: Green shaded accounts have reduced sewage charges (sewer appeals).											
Peach shaded accounts are GM-related											

Note that most large customers will have a combined water/sewage bill increase 3.3%. This percentage is higher than the average residential increase of 3.2% because large customer bills are more influenced by the higher sewage rate increase (the volumetric rate is more dominant for sewage than for water).

There are five (5) customers among the top 25 users that have reduced sewage charges. These customers have significant water usage that does not discharge to the sanitary sewer. They are billed for sewage based on this lower volume. For these, the sewage rate is less of a factor since their sewage volume billed is less than the water volume billed.

6.5 Durham's User Rates Compared with Other Ontario Municipalities

6.5.1 Background on User Rate Formats

A water and sewage rates survey was conducted for 20 municipalities (including Durham) across Ontario. The 2019 rate information, the most recent available for all municipalities, is used for this comparison.

Durham owns and operates water and sanitary sewer systems that range from large urban areas in the south to smaller urban areas in the rural north. The survey includes 12 other larger municipalities (see Exhibit 15) that offer a comparison for Durham's southern tier systems as well as 7 nearby smaller municipalities (see Exhibit 16) which might be of more interest to customers in Durham's smaller systems.

Water and sewage rate structures typically include a service charge and a volumetric charge. The rate structures used in each municipality are designed and approved locally. There are no Provincial regulations related to municipal water and sewage rate structures. The survey found very little consistency across the province in terms of rate structures used in the various municipalities.

Service charges fall into three categories:

- **Single Rate** - All customers pay the same service charge.
- **Rate Based on Meter Size** - Service charge based on customer meter size. A higher rate is applied for larger meters.
- **No Service Charge** – Charges are based solely on volume of water used.

Volumetric charges fall into four categories. Customer meter readings are used to calculate the volumetric charges. All municipalities surveyed have volumetric rates. The volumetric rate formats are mostly the same for all customers in a municipality, but vary in some municipalities between residential and non-residential customers:

- **Single Block Rate (SBR)** – The same rate is charged for all usage.
- **Increasing Block Rate (IBR)** – Rates increase in steps as usage increases (normally targets higher residential usage).
- **Declining Block Rates (DBR)** – Rates decrease in steps as usage increases (normally for non-residential only).
- **Humpback Rates (HBR)** – Consumption blocks initially increase and then decrease as consumption increases.

The following is a summary of how often the different rate structures were encountered in the survey:

Exhibit 14 Summary of Rate Structures Used in 20 Surveyed Municipalities

Description	Residential		ICI	
	Number	%	Number	%
Service Charges				
Based on Meter Size	15	75%	18	90%
Single Charge	3	15%	0	0%
No Service Charge	2	10%	2	10%
Total	20	25%	20	10%
Volumetric Rates				
Single Block Rate	12	60%	10	50%
Declining Block Rate	1	5%	6	30%
Increasing Block Rate	6	30%	4	20%
Humpback Rate	1	5%	0	0%
Total	20	100%	20	100%

- **Service Charges** – Most municipalities (90%) include a service charge (either a single rate or one based on meter size) as part of their water rates. Only Toronto and Peel have consumption-only rates. No differentiation is made by them between residential and ICI customers.
- **Residential Volumetric Rates** – The majority (60%), including Durham, charge single block rates to residential customers. Another 35% essentially charge increasing block rates (including the 5% using humpback rates). One charges declining block rates.
- **ICI Volumetric Rates** – The largest category is single block rates at 50% of municipalities. Declining block rates is the next most prevalent at 30%. Increasing block rates are used in 20% of the municipalities. Although London has humpback rates, they are essentially declining block rates for ICI since the rates decline compared to the first block after 35 m³/month. They initially increase for small usage volumes.

Other features:

- **Sewer Charged Based on Water Usage** – All surveyed municipalities base sewage charges on water consumption.
- **Allowance for Seasonal Usage on Sewage Bill** – The majority bill sewage year-round based on water consumption. For residential only, Peel deducts 15% from water usage when calculating the sewage bill. Windsor bills for sewage in the summer based on a customer's winter usage. This is feasible because Windsor bills residential customers monthly based on actual meter readings. Barrie caps the sewage charge at 45 m³ monthly which would only benefit large water users.

➤ **Universal Metering** - All surveyed municipalities are metered.

Note that Durham does not recover water and sewage costs from the property tax levy. Some municipalities may use property taxes to recover a portion of water and sewage costs with the result that the user charge comparison may not pick up all of the water and sewer costs paid by customers in the other municipalities.

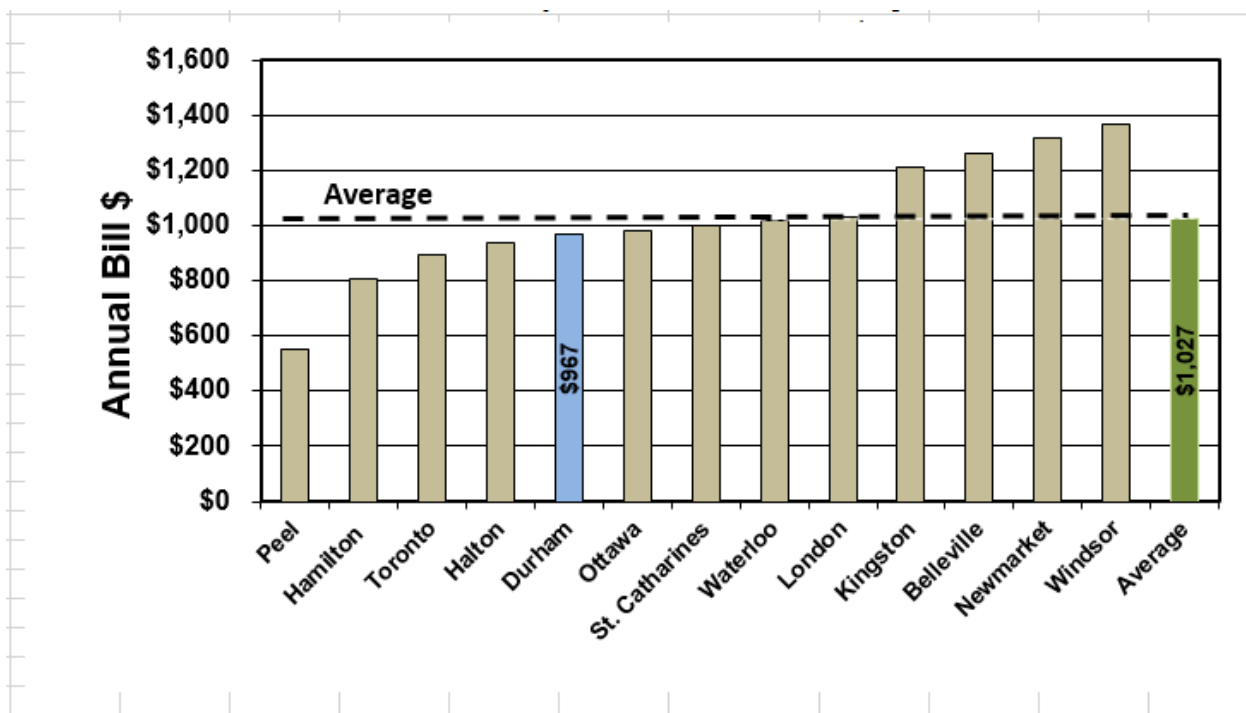
6.5.2 Residential Customer Impact

The analysis is based on a customer using 225.5 m³/year (49,610 gallons/yr). This represents the projected usage by a typical 2020 Durham residential customer. It is about 19 m³/month/customer (4,100 gal/month/cust).

Large Municipalities - Most of the municipalities, like Durham, have sole responsibility for water and sewage. Three, the City of Waterloo (in Waterloo Region), the Town of Newmarket (in York Region) and St. Catharines (in Niagara Region), are part of two-tier utilities. In these three municipalities the upper tier regions are responsible for major facilities such as treatment, water storage and trunk mains. The lower tier local municipalities are responsible for local facilities, such as distribution mains and local sanitary sewers as well as the customer billings.

Comparative charges are graphed in Exhibit 15.

**Exhibit 15 Comparative 2019 Residential Water/Sewage Charges
(225.5 m³/year) – Large Municipalities**

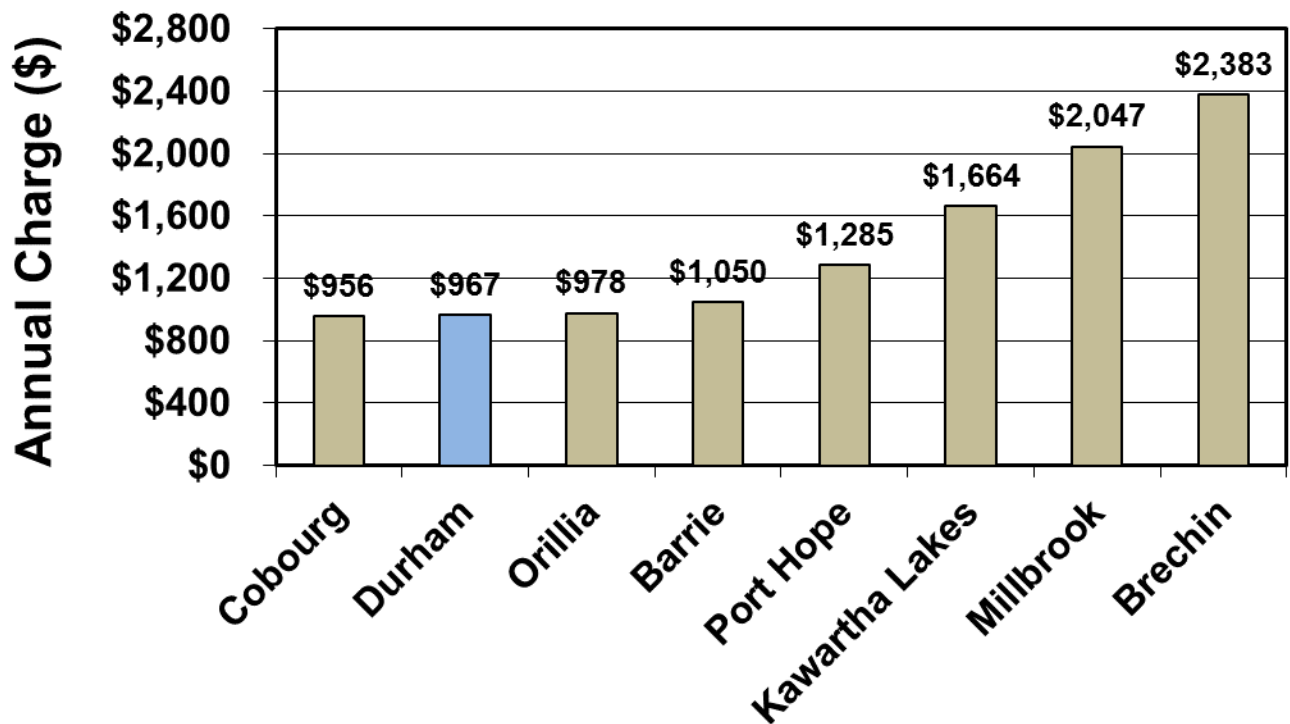


Durham is the fifth lowest out of the 13 in the survey.

The overall average 2019 combined water and sewage bill for 225.5 m³ (49,610 gallons) annual consumption is \$1,026 per year compared to \$967 in Durham.

Neighbouring Municipalities - Typical 2019 charges to a residential customer have also been calculated for seven neighbouring communities - see [Exhibit 16](#).

**Exhibit 16 Comparative 2019 Residential Water/Sewage Charges
(225.5 m³/yr) – Neighbouring Municipalities**

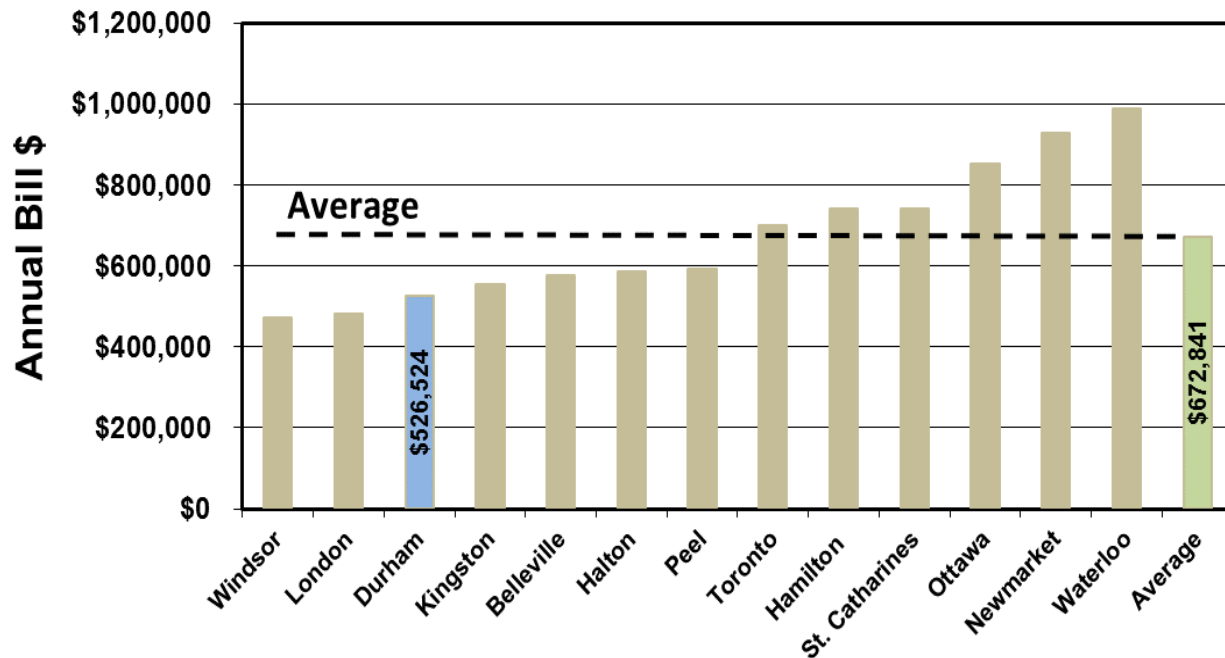


Durham is at the low end of user rate charges. Comparisons are sometimes made difficult because of the use of the property tax to recover some costs in other municipalities. For example, Cobourg recovers some sewage costs from property taxes.

6.5.3 Large Customer Impact

The analysis is based on 227,272 m³/year (50 million gallons). This is a large water user and may not exist in some of the municipalities in the comparison. In Durham it would represent the 8th largest customer. Comparative charges are graphed in [Exhibit 17](#).

**Exhibit 17 Comparative 2019 Large Industry Water & Sewage
Charges (227,272 m³/yr) – Large Municipalities**



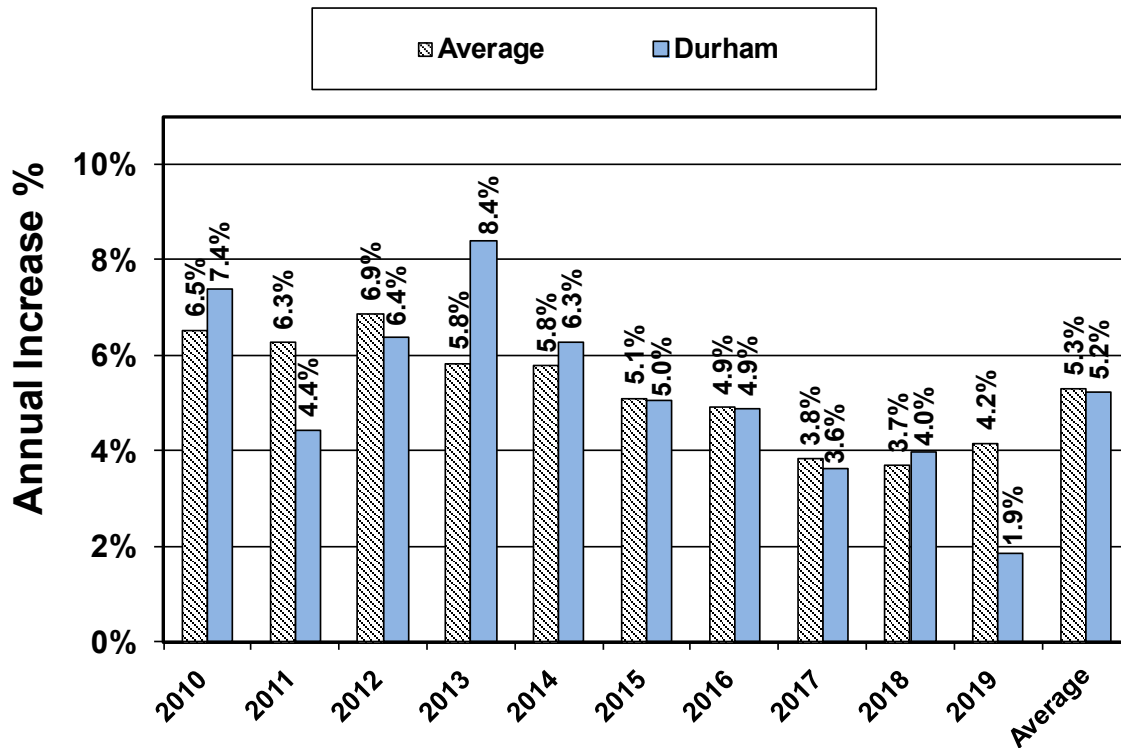
Durham was the third lowest out of the 13 in the survey. The overall average combined water and sewage bill for all the municipalities surveyed was \$672,841 per year compared to \$526,524 in Durham.

No comparative analysis was done for small local municipalities since most, if not all, would not have customers with this level of consumption.

6.5.4 Historical Rate Increases

Province Wide - Average water and sewage rate increases faced by customers using 225.5 m³/year (49,610 gallons) in the 13 larger municipalities surveyed are graphed in [Exhibit 18](#). Note that since average consumption per customer is generally falling over time, the actual impact on customer bills would be less than shown since decreasing usage would offset some of the increase due to higher rates.

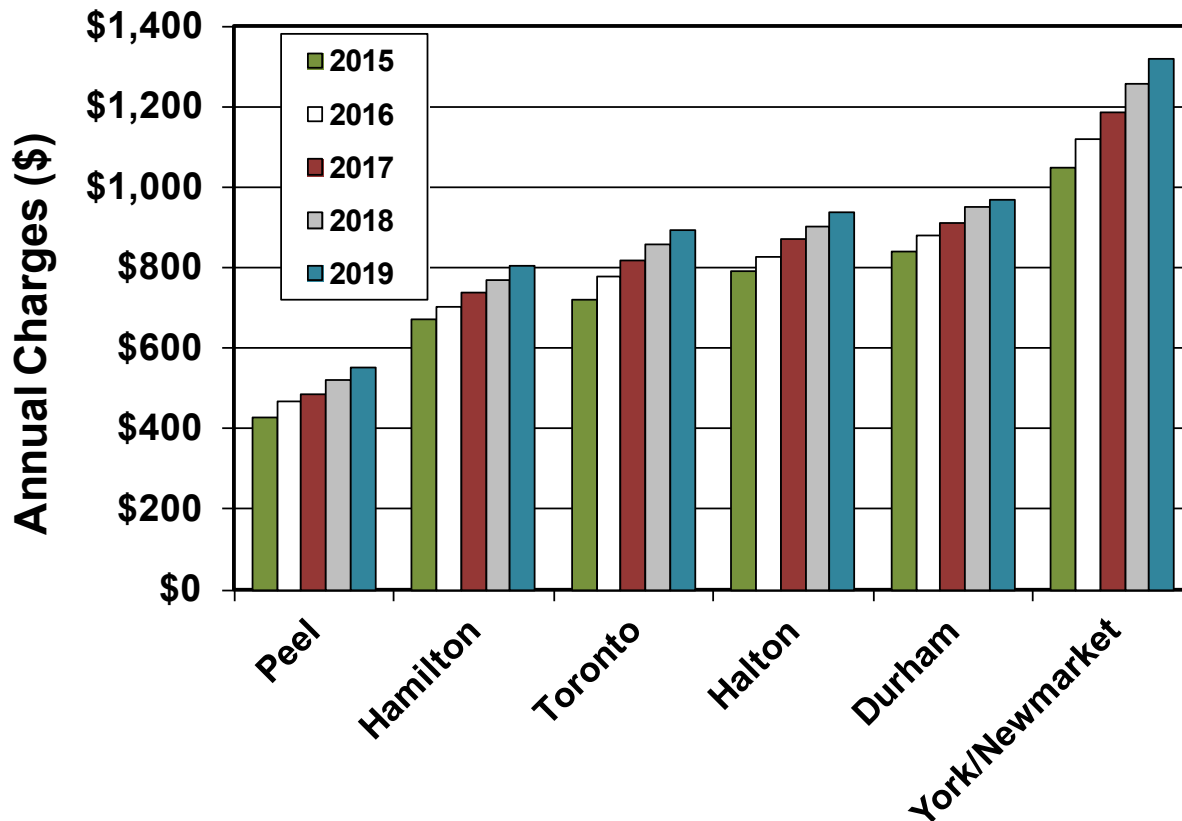
**Exhibit 18 Comparative 2010 to 2019 Residential Water/Sewage
Rate Increases (225.5 m³/yr) — Large Municipalities**



The average annual combined water and sewage rate increase for all the municipalities was 5.3% for the 10-year period. Durham's average was approximately 5.2% annually.

GTA - Combined water and sewage user rate increases over the past five years in nearby Regions are graphed in Exhibit 19. The analysis is based on a customer using 225.5 m³/year.

**Exhibit 19 Comparative 2015 to 2019 Residential Water/Sewage
Charges (225.5 m³/yr) – GTA**



Durham is above average in terms of level of charges in this group.

The following observations are made:

- Peel is dominated by a single, very large municipality with major Lake Ontario treatment plants and as a result has lower rates than the other nearby regions (including Durham which has many local small systems).
- Peel, Toronto and Hamilton have either a single large metropolitan area or are anchored by one. This leads to economies of scale that Durham cannot match with its many diverse systems which service a large geographic area (the largest in the GTA).
- Halton is perhaps closest to Durham in that it has multiple water and sewage systems (although less than half of Durham's) and has adopted rate increases lower than the norm in recent years.
- Newmarket is responsible for distribution of water and collection of sanitary sewage from its customers. Water supply and wastewater treatment are provided by York Region.

6.5.5 Summary

The adoption of declining block rates by Durham was based on an analysis of the actual cost of supplying these customers and due to Durham's sole jurisdiction over the complete water and sanitary sewer systems. As a result, Durham's stepped metered rate blocks result in lower rates for large volume ICI consumption, which is advantageous to industrial customers while being fair in terms of cost recovery. Municipalities which only have jurisdiction over local systems must purchase water at one wholesale rate, leaving less scope for passing on cost savings related to large volume supply to the customers. As a result, the charges in these municipalities are amongst the highest for large customers. Conversely, these municipalities have lower charges for the smaller volume customers.

Water and sanitary sewage systems have faced rapid growth for years. When infrastructure is new, maintenance and replacement costs are relatively low. However, over time, increasing investment is needed to refurbish and replace aging infrastructure. In addition, upgrades are needed to meet more stringent regulations. The end result is that most systems must increase investments to reach sustainable levels. Since 2002, Durham and most other municipalities has found it necessary to implement higher annual rate increases than were previously needed.

Annual rate increases for the 13 other municipalities discussed in Subsection 6.5.4 have been provided covering 2010 to 2019. The average annual water and sewage rate increase of the 14 municipalities over the 10-year period has been 5.3% per year compared with Durham at 5.2% (see Exhibit 18).

Although Durham's rates are established based on Durham's systems investment needs, and not in reference to others, it is noted that the other municipalities have been facing the same challenges of funding of water and sewage systems to sustainable levels while experiencing decreased consumption and have been increasing rates in a similar manner.

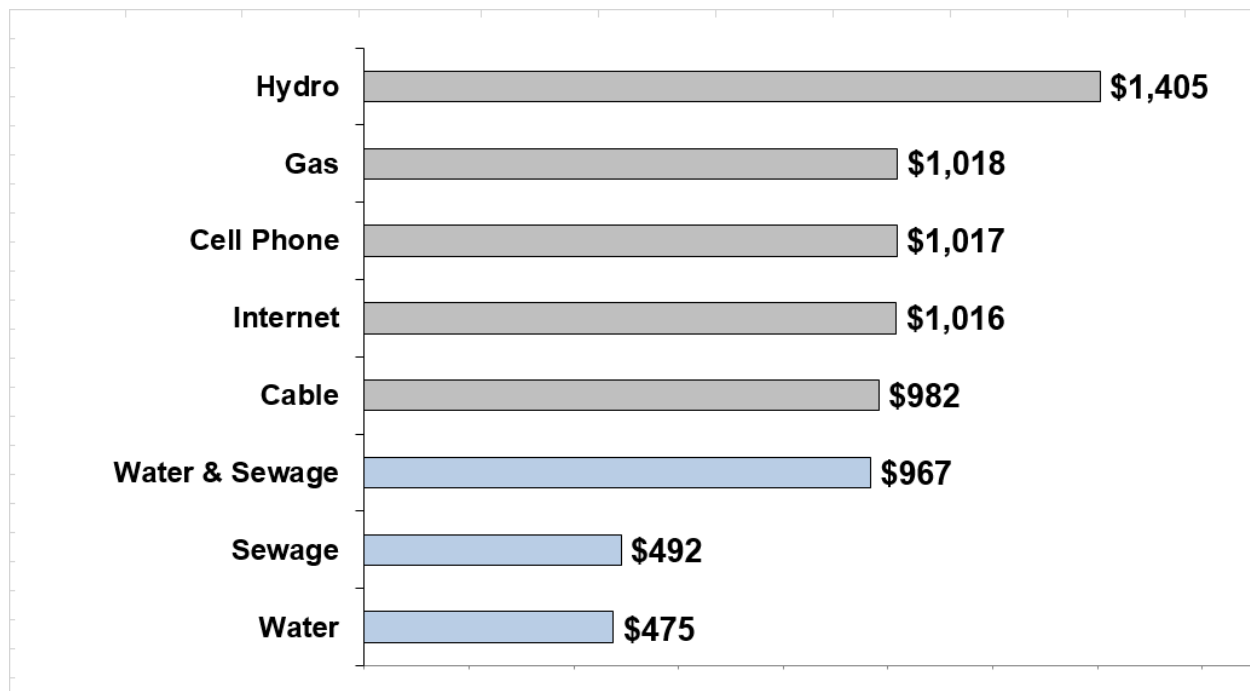
6.6 Durham's Average Residential Water & Sanitary Sewer Charges are Much Less Than Typical Hydro, Gas, Telephone or Cable Television Services

Information was gathered on local residential electricity, natural gas, cable television, high speed internet, cellular phone and home telephone rates and compared with the Region's water and sewer rates. Note that the survey provides typical bills for each service. Individual customers will often have a different mix of services (such as no home land line phone). The survey is meant to give a general idea of utility costs.

The "most popular" option has been priced in Exhibit 20 where that option is indicated by the supplier. There is a wide range of prices for some services.

Representative 2019 annual residential utility charges in Durham (Oshawa rates used) are graphed in Exhibit 20.

Exhibit 20 Typical Durham Residential Utility Charges 2019
(graph)



The components of a total annual bill for a representative residential customer are as shown in [Exhibit 21](#).

Exhibit 21 Typical Durham Residential Utility Charges 2019
(table)

Utility	Basis of Comparison	Annual Bill (\$)	% of Annual Utility Bills
Hydro	Cooling, appliances, lighting, etc.	\$1,405	21.9%
Natural Gas	Home & hot water heating	\$1,018	15.9%
Cell Phone	Basic service with long distance package	\$1,017	15.9%
Internet	One level above basic - 50 Mbps download	\$1,016	15.9%
Cable	Basic package – no movies	\$982	15.3%
Sewage	Average residential use - 225.5 m3/year	\$492	7.7%
Water	Average residential use - 225.5 m3/year	\$475	7.4%
Total		\$6,405	100.0%

The **total combined water and sewage billing** for this residential customer represents only about 15.1% of the total utility charges incurred in a typical home. Water and sewage charges combined are less than most other individual utility services.

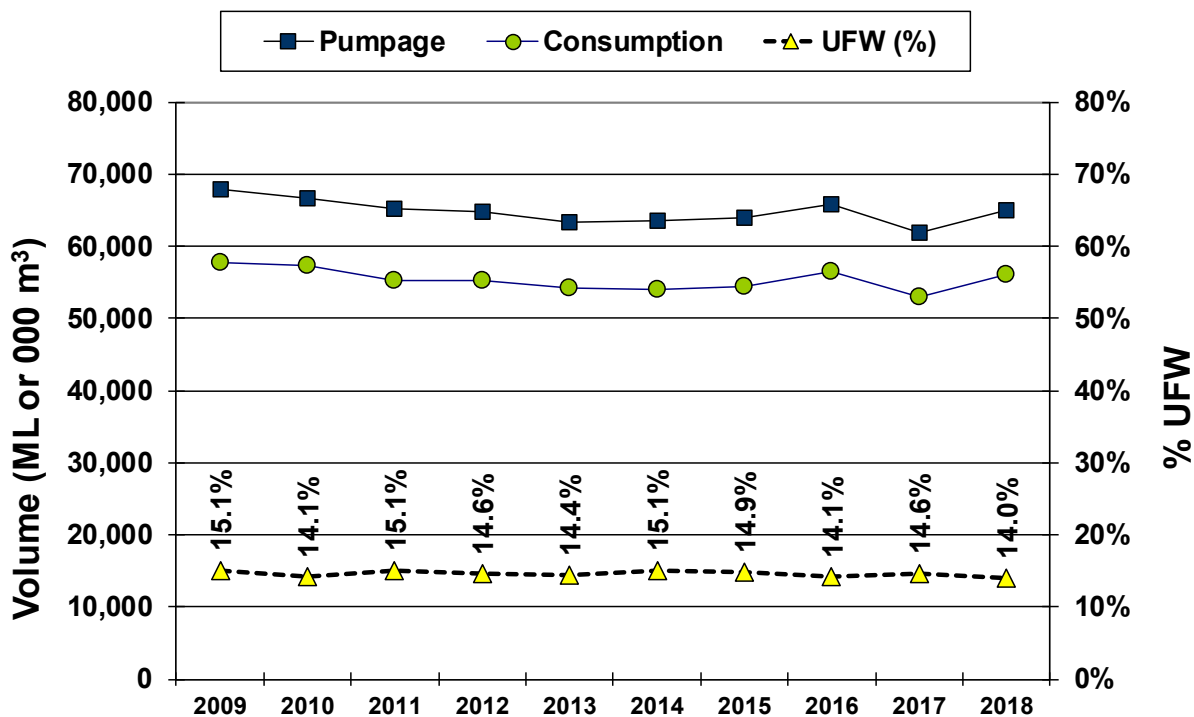
7 Other Issues

7.1 Water System Losses Update (Billed Consumption vs. Supply)

Some water is lost from the water system between water supply plants and customers. The traditional terminology used in expressing water system losses is “unaccounted for water” (UFW). A more recent term is “non-revenue water” (NRW) which highlights the fact that water loss is not sold and does not produce revenue. The two terms are synonymous. While some of these losses are actually unmetered usage such as water used for main flushing and firefighting, the biggest component is loss due to watermain leakage.

Durham's NRW from 2009 to 2018 is graphed below in [Exhibit 22](#).

Exhibit 22 Water Pumpage, Consumption & Unaccounted for Water – Actual 2009 to 2018



Note: 1,000 cubic metres = 1 megalitre (ML)
1 cubic metre = 220 Imperial gallons

UFW in recent years has been in a range of about 14% to 15%. This is considered to be fairly normal, but efforts are continually made to limit or reduce UFW losses through various programs such as cathodic protection and cement lining of cast/ductile iron mains and replacement of old infrastructure including mains, water meters and polybutylene water services.

The water meter replacement program results in a reduction in unbilled water due to timely replacement of old meters which can under-record flows later in their lifecycle. This improves revenues due to higher billed usage and hence lowers losses represented by UFW.

The use of NRW as a measure of water system performance, although common, is of limited use as it does not take in account the diversity of infrastructure in each municipality. The International Water Association (IWA) has developed and the American Water Works Association (AWWA) recommends a more comprehensive approach which takes into account individual system characteristics. The IWA recommends a process be followed which they refer to as the Standard Water Balance. It breaks water losses into a number of categories in order to better understand the nature of the losses – see [Exhibit 23](#).

Exhibit 23 IWA Standard Water Balance Terminology

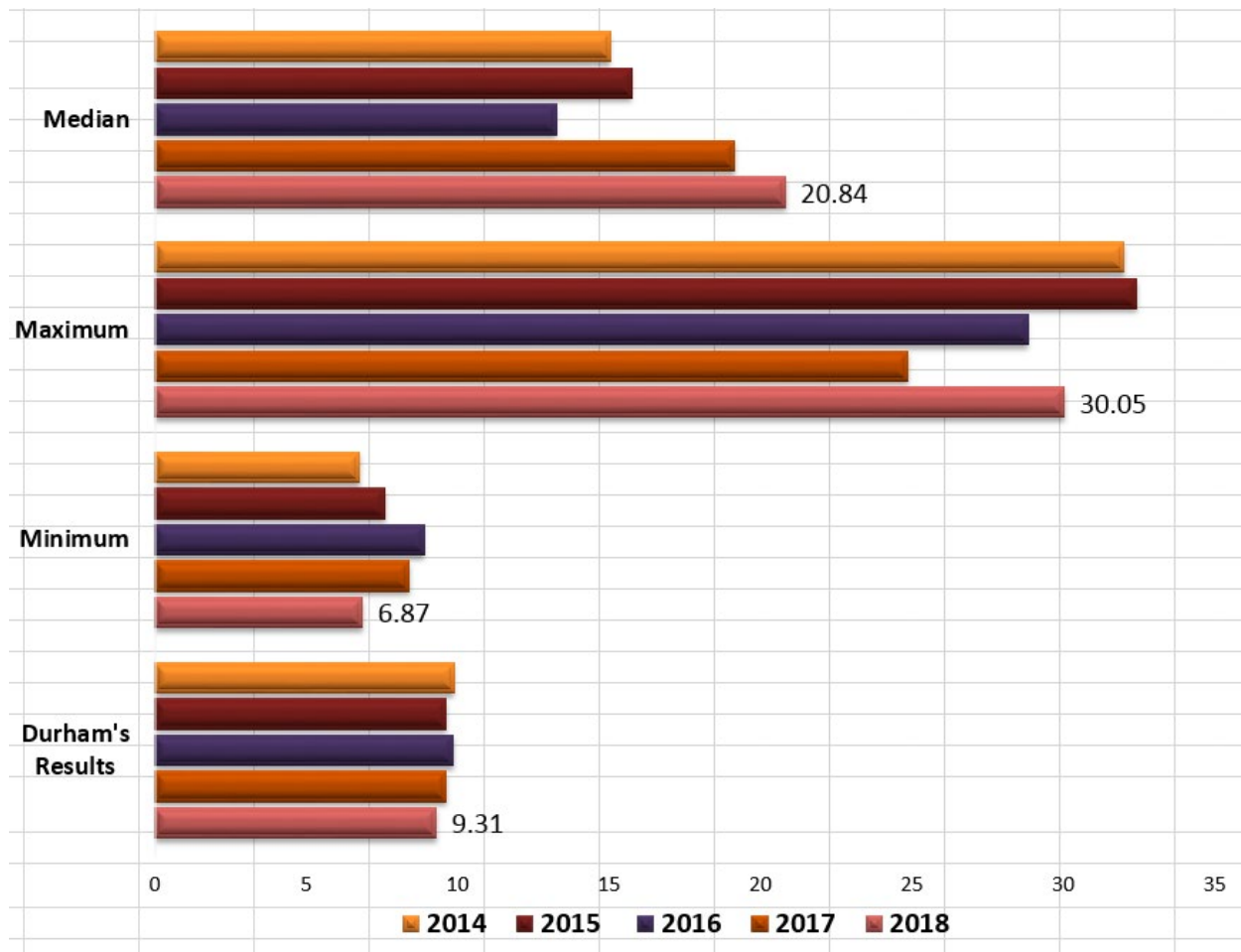
System Input Volume	Authorized Consumption	Billed Authorized consumption	Billed Metered Consumption	Revenue water
			Billed Unmetered Consumption	
		Unbilled Authorized Consumption	Unbilled Metered Consumption	Non Revenue Water (NRW)
			Unbilled Unmetered Consumption	
	Water Losses	Apparent Losses	Unauthorized Consumption	
			Metering Inaccuracies	
		Real Losses	Leakage on Transmission and/or Distribution Mains	
			Leakage and Overflows at Utility's Storage Tanks	
			Leakage on Service Connections up to point of Customer Metering	

The IWA/AWWA methodology is now an industry recognized standard approach and has been utilized to assess water losses in Durham Region. Water Loss performance measures such as the Infrastructure Leakage Index (ILI) and NRW per kilometre of mains were calculated first during the Water Loss Control Strategy Report based on 2006 data and have been repeated annually by Regional staff.

Durham Region is a long term participant in the Municipal Benchmarking Network Canada (MBN) which facilitates comparison of statistical data with other municipal jurisdictions in Ontario.

One performance measure used by MBN is NRW per kilometre of main. This is a measure which expresses total water losses, but takes into account density or spread of the water service in a municipality. For example NRW for systems in similar condition would be higher for a spread-out municipality than for one more densely developed. Taking the length of mains into account makes the comparison more meaningful. The lower the performance measure the better.

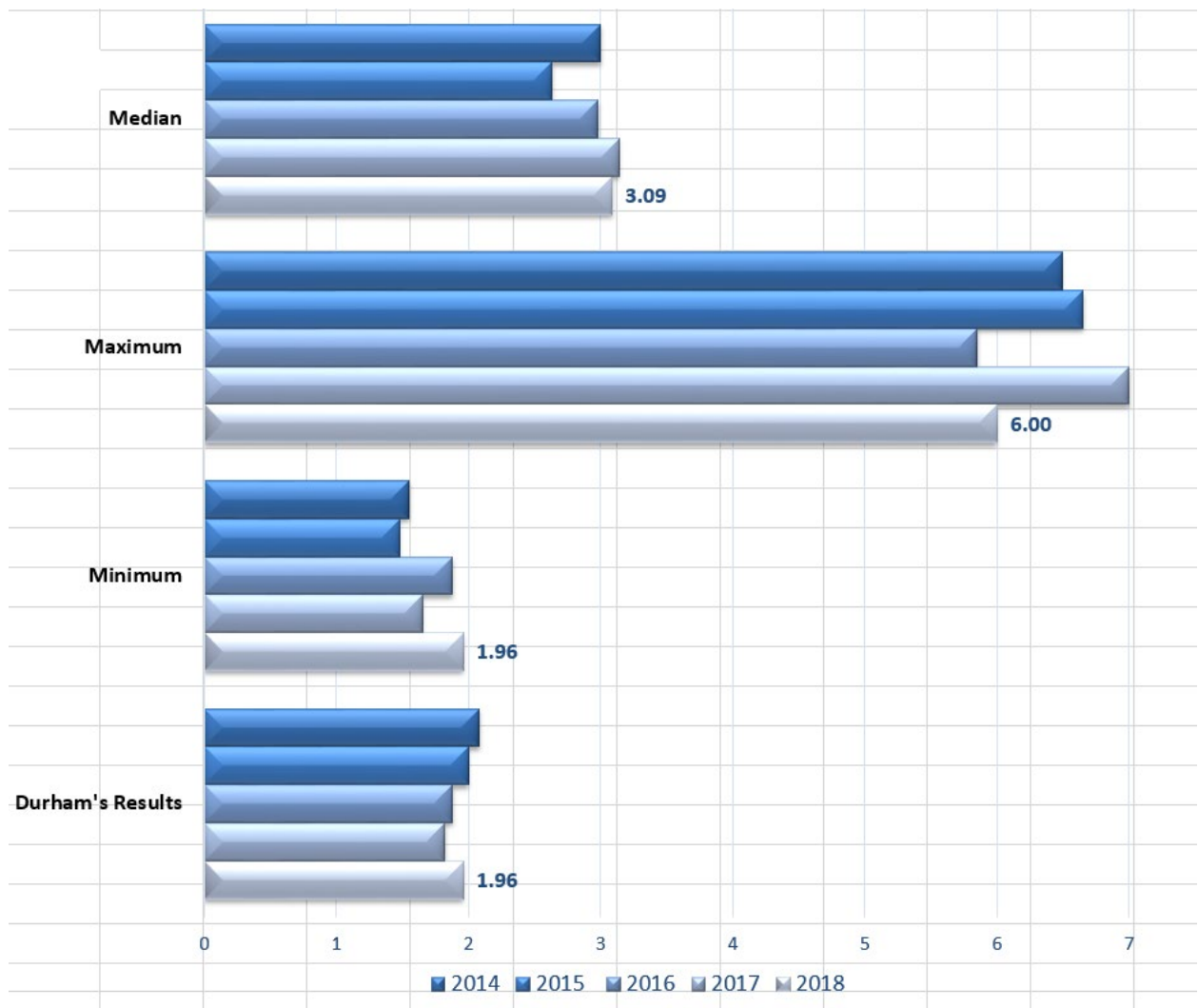
A graph of NRW per kilometre of main from the MBN survey for 2014 to 2018 is provided in [Exhibit 24](#).

Exhibit 24 NRW in m³/km of Main per Day (MBN data)

Durham's 2018 NRW versus main length of 9.31 m³/km of mains is much lower than the median level of 20.84, putting the Region in the bottom third of the survey.

Another performance indicator which takes a number of factors into account is the Infrastructure Leakage Index (ILI). A lower number indicates better performance. See [Exhibit 25](#) for the 2014 to 2018 survey results.

Exhibit 25 Infrastructure Leakage Index ILI (MBN data)



The 2018 Infrastructure Leakage Index (ILI) for Durham was calculated to be 1.96, lower and thus better than the median of 3.09.

These performance measures indicate that system investment and operational practices are resulting in generally improved results. Given that infrastructure continues to age, investments and operational efforts will have to be continuing on an ongoing basis.

7.2 Bulk Water

In addition to the potable water supplied through meters installed in premises, water is also supplied from bulk water supply locations, hydrants and unmetered services in new subdivisions. The water is put to various uses such as building construction, landscape watering and pool filling from tanker trucks. There are three charges in [Schedule 4: Water and Sanitary Sewer Systems Miscellaneous Fees and Charges](#) which are intended to recover bulk water costs:

- Item 20) Unmetered water used for construction (building purposes)
- Item 21) Drawing water from hydrants for purposes other than fire protection
- Item 35) Water from Water Supply Plants, Water Pollution Control Plants, Works Depots & Bulk Filling Stations

Strategies related to Items 21) and 35) are discussed in detail in Report #2019-COW-32: 2020 Water Supply and Sanitary Sewerage Strategic Issues and Financial Forecast. The following sections outline conclusions related to cost recovery for Items 20) and 35).

7.2.1 Building Purposes Charge

Regional water from local watermains is used during the construction of subdivisions by builders prior to the installation of water meters in homes. Since the water is not metered, in order to recover the cost of providing the water, the Region levies a lump sum Building Purposes (BP) Charge for each water service. The charge is Item (20) of Schedule 4: Water and Sanitary Sewer Systems Miscellaneous Fees and Charges.

In order to more closely recover the cost of unmetered water used in residential construction the 2017 User Rate Report recommended a phase-in plan of a higher charge starting in 2017 with the target of a charge based on 200 m³ water usage reached in 2020 based on the consumption levels shown in the adjacent table.

Building Purposes Charge Phase-In Plan				
Year	m³	gal	\$/m³	Charge \$
2017	110	24,200	\$0.997	\$110
2018	140	30,800	\$1.045	\$146
2019	170	37,400	\$1.100	\$187
2020	200	44,000	\$1.112	\$222

The recommended 2020 BP Charge of \$222.00 per water service is equivalent to 200 m³.

The recommended 2020 Building Purposes Charge is discussed as part of the 2020 Miscellaneous Charges in Section 5.3.

Where feasible, further monitoring of new subdivision construction water volumes will be carried out as the opportunity arises.

7.2.2 Bulk Water Filling Stations

There are currently five (5) bulk water filling stations all located at water treatment plants. In 2018 there were 122 registered bulk water customers. This service is separate from water drawn from hydrants which has its own rules and fee schedule.

In the water and sewage systems Miscellaneous Fees & Charges Schedule, Item (36) sets out charges related to water purchased at bulk water filling stations. The 2019 Water and Sewer User Rate Report included an increase in the minimum monthly volume charge from \$52.30 to \$150.00 at the Region's Bulk Water Filling Stations. Regional Council approved the following motion in April 2019:

"That whereas the new minimum monthly volume charge per month has

increased from \$52.30 to \$150.00, which reflects an approximately 188% increase from 2018;

Be it resolved that the minimum monthly volume charge for end users be phased in on an adjusted annual total volume limit to reduce impacts on services contractors.”

Staff have reviewed the cost structure for the bulk water filling stations and concluded that a bulk water fare structure in the same format as the normal potable water rates would be a fairer and more acceptable approach. Staff are recommending that

- the annual Account Administration Fee and the monthly Minimum Bill be combined into a single monthly fixed charge,
- The minimum bill and annual administration fee be eliminated.
- New customers pay an account setup charge.

Basically, the current minimum charge plus annual administration fee would no longer apply and would be covered by the per bill service charge plus a one-time account setup charge. The recommended revised fee schedule closely parallels the normal user rate approach.

These changes are included as Item 36) of Schedule 4 - Recommended 2020 Miscellaneous Fees & Charges – see also Section 5.3 of this report.

8 Future Considerations (2021 To 2029)

8.1 Future Customer & Consumption Trends

Elements expected to affect future customer and consumption levels are as follows:

- **Residential Consumption** – Basic (non-seasonal) consumption per residential customer is expected to continue to decrease for the foreseeable future. New housing being equipped with water efficient fixtures and appliances, and ongoing retrofitting of existing homes are all factors placing downward pressure on residential consumption. When combined with a low customer growth rate, residential consumption is projected to continue to decrease.
- **Small to Medium Commercial** – This sector historically has been fairly constant, but recently has also shown decline. It is expected that this will stabilize in the future.
- **Large Industrial** – The impact of the closing of vehicle assembly operations in Oshawa by GM and related feeder industries has been incorporated into projections. At this time projections assume little further impact by large industrial related to the water and sewer user rates.
- **Total Consumption** – Consumption has been decreasing gradually. For planning purposes it is projected that total consumption will continue to decrease at 0.5% annually. Previously, consumption growth generated additional water and sewage system funding on an annual basis. But this has not been occurring for some time. Static or lower usage means revenues will not increase in step with increased customer growth.
- **Regulatory** - This has been occurring during a period when both provincial and federal water and sewer regulations have been becoming stricter.
- **Asset Management** - Durham's Report #2019-COW-16 2019 Asset Management Plan forms a basis for prioritizing future water and sewage systems infrastructure replacement investments. The annual user rate revenue requirements include contributions to Asset Management Reserve Funds to address the most critical asset management needs.

Staff will continue to monitor consumption trends, regulatory requirements, asset management priorities and determine the impact on future user revenues over the longer term and on capital plans for growth related projects.

8.2 Future Cost Trends

The possibility of continued consumption level decreases will affect future budget levels and consequently rate increases over time. However, over the short term the expenditure budget impact is relatively small, since savings are limited to variable operating costs such as energy and treatment chemicals.

The closure of the GM assembly plant and its feeder plants has been fully incorporated into 2020 projections based on a worst-case scenario. Should replacement manufacturing activities occur this provide a positive impact on future water and sewer revenue projections.

Over the long-term, permanent trends in consumption can affect water supply and sanitary sewer system capacity requirements and design criteria. This in turn would

impact the growth capital program, particularly treatment plant expansions. Decreased demand by existing customers frees up capacity for development, which may result in short term deferral of specific water and sanitary sewerage projects if decreasing consumption trends continue.

Capital costs related to rehabilitation, replacement and regulatory upgrades are not expected to be affected by changes in consumption patterns.

8.3 Projected User Rates

Since user rates are set on a year-to-year basis, change in water consumption in the near-term is the most important factor in user rates revenues. About 68% of combined water and sewer user revenues are based on consumption. Consumption in recent years has trended downwards.

Capital investments are rising due to pressures to invest in aging infrastructure in order to maintain levels of service and address critical priorities. Currently at about 43% of water and sewage user rate supported budget expenditures, increased capital investments would have a significant impact on future user rate revenue requirements and as a consequence on future user rate levels.

In order to fund the forecasted operating and capital costs based on the customer and expenditure growth assumptions, water and sewage rates will expected to require annual increases of 4-6%.

The water and sewage user rate forecasts are based on a capital program of known asset management needs. However, there are potentially other factors that will have cost implications that are unknown at this time and as a result cannot be quantified. Risks include:

- Future customer trends, including reduced residential customer consumption due to conservation and water efficient appliances, reduced water sales to large customers and slower customer growth trends;
- Financial impact of works needed to comply with Provincial and Federal Regulatory requirements associated with the Region's water supply and water pollution control plants (i.e. the *Clean Water Act*, the *Lake Simcoe Protection Act* and *Water Opportunities and Water Conservation Act*);
- Market price impacts or volatility for input commodities, including energy and chemicals;
- Increase in construction costs;
- Low non-residential development resulting in shortfall in non-residential DC's to be funded by user rates;
- Asset management program investment requirements to replace aging and failing infrastructure which has reached or passed the end of its useful life. Although repairs can often extend the life of aged facilities, at some point this is not feasible and from an operational, regulatory and financial perspective replacement is required; and
- The impact of climate change on water and sanitary sewer systems infrastructure on investment levels must also be considered and factored into future capital planning and its impact on user rates.

8.4 Future Actions

Staff will continue to undertake the following initiatives to ensure efficient on-going water and sewage programs:

- i) Incorporate in the user rate revenue requirements the funding of the following water supply and sanitary sewerage systems investment needs:
 - a. Rehabilitation and replacement needs related to asset management; and
 - b. Adaptions required to address climate change.
- ii) As remote meter reading capability reaches sufficient penetration, transition to meter readings by meter readers for all billings in order to reduce the cost of meter readings while increasing their accuracy;
- iii) Assessment of emerging trends within residential and non-residential water consumption to project future usage for user rate purposes and monitoring usage trends that might influence future capital programs for treatment plant expansions;
- iv) Assessment of water losses and reduction of unaccounted for losses, where possible. This would include investment in bulk water filling stations and modifications of the metering and use of hydrants for bulk water users in order to ensure that such use is controlled and costs adequately recovered by the Region; and
- v) Focus attention on the opportunities for intensification to maximize the use of existing infrastructure.



The Regional Municipality of Durham Report

To: Committee of the Whole
From: Commissioner & Medical Officer of Health, Commissioner of Finance and
Commissioner of Works
Report: [#2019-COW-34](#)
Date: December 11, 2019

Subject:

Oral Health Clinic Relocation and Expansion to Meet the Needs of the Ontario Seniors
Dental Care Program

Recommendations:

That the Committee of the Whole recommends to Regional Council:

- A) That authorization be granted to proceed with a competitive process and award a contract to retain a consultant in accordance with Purchasing By-Law #68-2000, as amended, to determine detailed capital costs to relocate and expand the current Oral Health Clinic from the Whitby Mall at 1615 Dundas St. E. in the Town of Whitby to the Midtown Centre at 200 John St. W. in the City of Oshawa to accommodate up to 4,000 new low-income senior clients;
- B) That financing for the cost of the consultant be funded from within the 2019 approved 100 per cent Provincial operating funding for the Ontario Seniors Dental Care Program as articulated in the 2019 Public Health Funding and Accountability Agreement;
- C) That authorization be granted to negotiate a lease agreement with 2381502 Ontario Inc., o/a Midtown Centre to relocate the Oral Health Clinic, conditional upon funding approval from the Province for capital costs related to the Ontario Seniors Dental Care Program and Council approval;
- D) That the pre-consultant estimated cost of \$2.3 million to relocate and expand the Oral Health Clinic be included for consideration in the 2020 Health Department Business Plans and Budget to be funded from anticipated Provincial capital funding;
- E) That beginning the work to relocate and expand the Oral Health Clinic be subject to Provincial funding and Council approval;

- F) That the Commissioner of Finance be authorized to execute any necessary agreements.
-

Report:**1. Purpose**

- 1.1 To seek approval to proceed with a competitive process to retain a consultant to determine the detailed capital costs to relocate and expand the current Oral Health Clinic from the Whitby Mall at 1615 Dundas St. E., to the Midtown Centre at 200 John St. W. in Oshawa to meet the pending service demands of the Ontario Seniors Dental Care Program (OSDCP).
- 1.2 To seek approval to negotiate a lease agreement with 2381502 Ontario Inc., o/a Midtown Centre, the owners of 200 John St. W in Oshawa, to meet the pending service demands of the OSDCP which is conditional upon receipt of Provincial capital funding for the leasehold improvements and Council approval.

2. Background

- 2.1 On April 11, 2019, the Province announced the creation of the OSDCP to provide oral health services to eligible low-income seniors. The OSDCP will be delivered through public health units, local Community Health Centres (CHCs) and Aboriginal Health Access Centres (AHACs). It should be noted that there are no AHACs in Durham Region.
- 2.2 Seniors 65 years of age or older with an annual income of \$19,300 (for a single person), or family income of \$32,300 (for a couple), or less are eligible to receive oral health services provided by public health units.
- 2.3 The Ministry of Health (MOH) communicated that the OSDCP will be rolled out in two stages: Stage I was launched on November 20, 2019 and leverages existing infrastructure; Stage II implementation will expand the program through capital investments that will ensure adequate infrastructure to provide care for eligible seniors in each public health unit.
- 2.4 Seniors are now able to get an application form from the MOH website or Durham Region Health Department (DRHD). Following assessment of applications, eligible clients will be enrolled in the program and provided with proof of enrolment in the form of a dental card.
- 2.5 The MOH will provide \$1.6 million in additional base funding for the 2019-20 funding year to support the OSDCP (pro-rated at \$1.2 million for the period of April 1, 2019 to December 31, 2019) as articulated in the 2019 Public Health Funding and Accountability Agreement.
- 2.6 On June 21, 2019, the MOH announced the launch of a capital funding application process to support the staged implementation of the OSDCP. DRHD submitted an

initial assessment of current infrastructure and projected future needs as a component of this process on July 30, 2019.

- 2.7 The projects proposed in the capital applications will be assessed using criteria including whether they demonstrate: ability to provide the required dental services to OSDCP clients in their catchment area; ability to address access issues in underserved areas; and value for money as well as factors such as stakeholder engagement and local considerations.
- 2.8 The MOH communicated that projects that build on existing infrastructure will be considered first. Capital projects may also include those that expand into unoccupied space at public health units or CHCs as an alternative space solution, as well as relocation to new space or entering into a new lease.

3. Current Status

- 3.1 In September 2019, Regional Council approved an increase in the public health staffing complement, to be financed from the annual 100 per cent Provincial funding allocation, as follows:

Two full-time (2.0 FTE) dentists
Two full-time dental hygienists (2.0 FTE)
Three full-time dental assistants (3.0 FTE)
One full-time Clerk 2 (1.0 FTE)
One full-time Administrative Assistant (1.0 FTE)
- 3.2 Annual provincial funding of \$1.6 million will be used for new staff positions as noted above, advertising and promotion, education and training, program materials and supplies, professional services, facilities lease costs, equipment maintenance and repairs and other eligible costs.
- 3.3 The Oral Health Clinic currently offers a full range of dental care for children 17 years of age or under who are eligible for the Healthy Smiles Ontario program (HSO).
- 3.4 There are currently four operatories and 24 employees providing clinical services, HSO programming, school dental screening and case follow-up. Two operatories are used for preventive services and two are fully equipped for dental treatment, including extractions and fillings.
- 3.5 In 2018, the clinic had 3,578 clinic visits by 2,121 clients.
- 3.6 It is expected that DRHD will see an additional 4,000 clients per year as part of the OSDCP. This means that clinical capacity will need to be doubled to provide service to OSDCP clients and treat the anticipated 4,000 seniors who will be eligible and access the program.
- 3.7 The significant increase in the number of clients will be managed by hiring the

additional staff as noted above, increasing the Oral Health Division staff complement to 33, and establishing additional office and clinic space.

- 3.8 DRHD is working with Brock and Carea CHCs to identify partnership opportunities to provide services to eligible seniors. The Brock CHC is planning on establishing two dental operatories which would support provision of oral health services to low-income seniors living in North Durham.
- 3.9 Now that DRHD is required to begin to provide services to seniors, existing space in the Oral Health Clinic at 1615 Dundas St. E. will be used to assess and treat clients. New staff will share existing office space and workstations temporarily.
- 3.10 Since the Provincial Budget announcement in April 2019, the Oral Health Division has amassed a waiting list of approximately 200 seniors who require care and who believe they will be eligible under the OSDCP. Therefore, there is an urgency for DRHD to determine how it will expand to meet pending service demands.

4. Relocating the Oral Health Clinic

- 4.1 The current clinic space cannot accommodate the anticipated increase in number of clients. The Oral Health Clinic must expand to accommodate the new low-income seniors population.
- 4.2 The Oral Health Clinic requires three additional operatories, one of which will be used as a general anaesthesia/sedation suite, additional space in the waiting area, and additional office space.
- 4.3 The current location of the Oral Health Clinic on the second floor at 1615 Dundas St. E. has a number of ongoing challenges including: issues related to plumbing and flooding; mechanical issues with the elevator often breaking down; issues with the HVAC system; and safety concerns due to only one exit/entry point.
- 4.4 The current lease expires in August 2020. It is anticipated that the lease costs will increase from \$11.50/sq. ft. to \$13/sq. ft. Building management will not guarantee that it will renew the lease after another five-year period as other uses for the land are being considered.
- 4.5 The preliminary cost of expanding the current clinic space to meet the needs of the OSDCP is estimated at \$1.6 million.
- 4.6 While expanding the current space to accommodate the low-income seniors population has been considered, it is not the ideal solution due to the ongoing facilities issues, the likelihood that the lease will not be extended beyond five years, the second floor location and restrictions with respect to available space to expand.
- 4.7 It is recommended that the entire Oral Health Clinic be moved to the Midtown Centre at 200 John St. W. in central Oshawa. The space is just under 9,000 square feet and can be designed to accommodate all staff, with ample clinic space for

seven operatories, consult rooms, meeting space and an expanded client waiting area. The space is on the ground floor of the building, there is ample free parking and there is plenty of natural light with many windows and two large sky lights. The new space is also at ground level, improving accessibility for both seniors and families with young children. The new space also has multiple entry ways and exits, addressing some of the safety concerns of the current Oral Health Clinic location.

- 4.8 Oshawa is the neighbourhood with the greatest proportion of seniors aged 65 and older living in low-income households in Durham Region. As such, the clinic may be located in the neighbourhood with the most OSDCP clients.
- 4.9 The proposed new space will be located in the same mall as the Income Support Division of Social Services, making it easier to provide oral health screening and health promotion services to Ontario Works clients. Carea, in collaboration with Lakeridge Health will also be establishing a facility at this location, improving opportunities for its clients to access oral health services.
- 4.10 There will be minimal disruption in services to HSO and OSDCP clients as services will continue to be provided at the current Oral Health Clinic at 1615 Dundas St. E. while renovations are underway at the new location. Once the construction is complete at the new location, all staff can move and service provision can begin in the new space.
- 4.11 Designing a new location will allow DRHD to ensure the Oral Health Clinic incorporates: exemplary infection prevention and control (IPAC) considerations; adequate mechanical equipment and capacity, such as sufficient vacuum suction draw and compressed air pressure to operate dental drills; efficient flow of clients and staff; and patient and staff privacy, comfort and safety. The new space also has multiple entry ways and exits, addressing some of the safety concerns of the current Oral Health Clinic location.
- 4.12 As appropriate space to meet the needs of the Oral Health Clinic is very limited within the region, there is an urgency to secure the lease with 2381502 Ontario Inc., o/a Midtown Centre for the new space.

5. Financial Implications

- 5.1 The preliminary capital cost estimate to move from the current location and re-design the new location to accommodate the HSO program and OSDCP is \$2.3 million. This estimate includes demolition costs of the current Oral Health Clinic space at the Whitby Mall to return the space back to its original state. The preliminary estimated cost of \$2.3 million to relocate and expand the Oral Health Clinic will be included for consideration in the 2020 Health Department Business Plans and Budget to be funded from anticipated Provincial capital funding.
- 5.2 The services of a consultant are required to determine accurate cost estimates to relocate and expand the Oral Health Clinic. The MOH has communicated that approved operating funding may be used to hire consultant services to assess

needs for the OSDCP. It is recommended that authorization be granted to proceed with a competitive process and award a contract to retain a consultant in accordance with Purchasing By-Law #68-2000, as amended, to determine detailed capital costs to relocate and expand the current Oral Health Clinic from the Whitby Mall at 1615 Dundas St. E in the Town of Whitby to the Midtown Centre at 200 John St. W. in the City of Oshawa to accommodate up to 4,000 new low-income senior clients.

- 5.3 The lease cost in the new space is estimated to be \$14/sq. ft. Other annual operational costs will likely be consistent with the operating costs at 1615 Dundas St. E.
- 5.4 The current lease covers DRHD's Breastfeeding Clinic and Oral Health Clinic. There is a risk that Whitby Mall Management is either not willing to separate the lease or significantly increases the lease costs for the Breastfeeding Clinic, which would result in a situation where the Breastfeeding Clinic would need to relocate at which time the Breastfeeding Clinic will consider its options. It is recommended that authorization be granted to negotiate a lease agreement with 2381502 Ontario Inc., o/a Midtown Centre to relocate the Oral Health Clinic, conditional upon funding approval from the Province for capital costs related to the Ontario Seniors Dental Care Program and Council approval.
- 5.5 The MOH has not provided any feedback regarding DRHD's initial capital application, any information regarding the potential amount of capital funding available, or eligible capital costs. DRHD is awaiting information about next steps with respect to capital funding requests.
- 5.6 DRHD will use the detailed costs as determined by the consultant as supplemental information to support additional capital applications required by the MOH.
- 5.7 There is a risk that the MOH does not provide 100 per cent of the capital costs for relocating and expanding the Oral Health Clinic. Should the MOH provide a portion of the capital costs, DRHD will report back to Council and seek approval for the financing shortfall.
- 5.8 It is recommended that the Commissioner of Finance be authorized to execute any necessary agreements.

6. Conclusion

- 6.1 In conclusion, it is recommended that the Oral Health Clinic continue to investigate the relocation of its current Clinic at 1615 Dundas St. E. to the Midtown Centre at 200 John St. W. in Oshawa and that a consultant be retained to determine the costs to relocate and expand the clinic space.
- 6.2 It is recommended that the cost of the consultant be funded from within the 2019 approved 100 per cent Provincial operating funding for the Ontario Seniors Dental Care Program.

- 6.3 Further it is recommended that a lease agreement be negotiated with 2381502 Ontario Inc., o/a Midtown Centre at 200 John St. W in Oshawa to meet the pending service demands of the OSDCP which is conditional upon receipt of Provincial capital funding and Council approval.
- 6.4 It is recommended that no work related to relocation or expanding proceed prior to receiving Provincial capital funding and Council approval.
- 6.5 Lastly, it is recommended that the pre-consultant estimated cost to relocate and expand the Oral Health Clinic of \$2.3 million be included for consideration in the 2020 Health Department Business Plans and Budget, to be funded from anticipated Provincial capital funding.

Respectfully submitted,

Original signed by

R.J. Kyle, BSc, MD, MHSc, CCFP, FRCPC, FACPM
Commissioner & Medical Officer of Health

Original signed by

Nancy Taylor, BBA, CPA, CA
Commissioner of Finance

Original signed by

Susan Siopis, P.Eng.
Commissioner of Works

Recommended for Presentation to Committee

Original signed by

Elaine C. Baxter-Trahair
Chief Administrative Officer



The Regional Municipality of Durham Report

To: Committee of the Whole
From: Commissioner of Finance and the Commissioner of Planning and
Economic Development
Report: [#2019-COW-35](#)
Date: December 11, 2019

Subject:

Authorization to Initiate a Comprehensive Review for the Design of a Proposed
Community Improvement Plan for Durham Region

Recommendation:

That the Committee of the Whole recommends to Regional Council:

- A) That funding in the amount of \$125,000 for consulting services in support of a comprehensive review for the design of a proposed Regional Community Improvement Plan be included for consideration as part of the Region's 2020 Business Planning and Budgeting process;
 - B) That subject to budget approval, that Regional staff be authorized to commence the process for developing a Regional Community Improvement Plan, as authorized under Section 28 of the Planning Act;
 - C) That this report be circulated to Durham Region's local area municipalities for information.
-

Report:

1. Purpose

- 1.1 The purpose of this report is to:

- a. Respond to Regional Council's April 24, 2019 direction that staff review current policies and research additional potential relief mechanisms to promote the development of affordable rental housing in the Region, including defining the criteria for projects to be eligible for the potential relief mechanisms, and report back with the results of the review and any recommended policy amendments or additions required to implement those mechanisms; and
- b. Present information and recommend that staff be provided with authorization to commence the process for developing a Community Improvement Plan (CIP) for Durham Region.

2. Background

- 2.1 Durham has a housing system that generally offers a variety of housing options to residents at prices and rents below that of surrounding areas. However, Durham is dealing with a continually growing affordability gap and a lack of purpose built affordable rental housing stock.
- 2.2 A rental household would need \$48,920 in annual income to afford the average market rent at 30 per cent of income, however less than half of rental households in Durham can afford the average market rent.
- 2.3 Rental housing represented only 8.6 per cent of all housing starts and only 16.4 per cent of all housing completions in 2017. Rental vacancy rates in Durham have remained below 2.5 per cent since 2011 (3 per cent is considered healthy).
- 2.4 Without significant financial incentives, the supply of new privately-developed, affordable purpose-built rental accommodation will continue to lag.

3. Overview of Current Mechanisms

- 3.1 The most recent Regional Development Charge (DC) By-law implemented changes to encourage the development of social and government assisted affordable housing by:
 - a. Introducing a new Regional Residential DC service category for Housing Services to fund the development of new, growth-related social and government assisted affordable housing projects/units;
 - b. Deferring the payment of Regional DCs by social and government assisted affordable housing projects;

- c. Broadening the statutory DC Exemption for secondary units for up to two new units in existing residential units on the same property, if not attached to existing residential units;
 - d. Expanding the definition of apartment to include a single storey dwelling unit located within a garage or commercial use, to address affordability of infill apartment developments that would otherwise be charged at a higher medium density multiple rate.
- 3.2 Other mechanisms that are currently available in the Region's DC By-law that can promote the development of affordable housing include:
- a. Development charge exemptions for "the creation of one or two additional dwelling units within an single detached dwelling or on the same lot as the existing single detached dwelling" and for "the creation of one additional dwelling unit within a semi-detached dwelling, a row dwelling, or any other residential building, or on the same lot as an existing semi-detached dwelling, row dwelling or any other residential building".
 - b. Redevelopment credits where there was a building on the property in the prior 10 years, which has been or will be removed, Regional DCs are reduced by an amount equal to the DCs that would have been chargeable on the structure being demolished or that was demolished.
 - c. The Intensification Servicing Policy which provides funding for unanticipated sanitary sewage DC projects caused by intensification within the built-up area. Since it would require a very large affordable housing project to trigger this policy, it is unlikely to be applicable.
- 3.3 Established in 2008, the Regional Revitalization Program (RRP) allows the Region to assist in private redevelopment projects that advance certain goals of the Regional Official Plan (ROP) and achieve positive economic and community objectives. The RRP relies on area municipalities to sponsor projects within their respective CIP areas and recognizes higher risk associated with development in downtown areas. The RRP outlines criteria to be satisfied for consideration of Regional participation and financial support, including:
- a. The project must be located within an area municipal CIP and be recommended by the area municipality;
 - b. The project must conform with and support ROP policies (e.g. encouraging the development of people-oriented places that are accessible by public transit and active transportation);

- c. The project should encourage both residential and employment growth in the Region's key urban locations, including Urban Growth Centres, Regional Centres and Regional Corridors. Brownfield sites are given preference; and
 - d. The project should entail significant and substantial revitalization and/or development.
- 3.4 Under the RRP, proposed projects are evaluated on a case-by-case basis to ensure any Regional investment is targeted towards projects that demonstrate the need for Regional financial assistance. In order to ascertain this outcome, the program utilizes a business case approach to provide a fact-based foundation for Regional Council's decision to provide any Regional financial assistance to CIP projects, and the RRP is not intended to provide municipal financial assistance to projects that would otherwise be financially viable. The RRP relies on area municipalities to sponsor projects within their respective CIP areas, and a business case to demonstrate that the project would fall short of being economically viable after all private and area municipal assistance (i.e. CIP) is considered.
- 3.5 The RRP is a grant-based program that complements an array of incentives provided at the area municipal level. Regional funding for approved projects is flowed at specific construction milestones to ensure project completion, value for taxpayer dollars, and effective use of Regional resources.
- 3.6 Under the RRP, Regional financial assistance has been provided to eight projects within area municipal CIP areas. There may be an opportunity to evaluate the current RRP to respond to a broader suite of Regional priorities and locations as authorized by provincial regulation and ROP policies. The RRP could also remain as a partner to local CIPs but coordinated with a Regional CIP program.

4. More Homes, More Choices Act, 2019

- 4.1 On June 6, 2019 the More Homes, More Choice Act, 2019 (formerly Bill 108) received Royal Assent. Sections of the Act that amend the Development Charges Act will not come into force until they are proclaimed by the Lieutenant Governor.
- 4.2 The Act provides five potential Development Charge (DC) relief mechanisms that promote the development of affordable housing, as follows:
- a. For purpose-built rental projects, DCs would be payable over a five-year term in equal installments rather than one up-front payment.
 - b. For non-profit housing projects, DCs would be payable over a twenty-year term in equal installments rather than one up-front payment.

- c. The first DC payment for purpose built rental and non-profit housing would be deferred to the first occupancy, rather than 100 percent of DCs being paid at building permit issuance.
- d. DC rates for all development, including affordable housing projects, would be frozen to the date at which either the site plan or zoning by-law amendment application is received. The DC would be frozen up to a maximum of two years from the date a site plan application or zoning by-law amendment application is approved.
- e. DCs would be exempt for secondary dwelling units ancillary to existing homes, which is already allowed under the Region's current DC By-law. In addition, secondary dwelling units within or ancillary to new homes, for single detached, semi-detached and row dwellings would be exempt from development charges.

5. Approaching a Community Improvement Plan (CIP)

- 5.1 A CIP is a tool that allows municipalities to direct funds, or apply financial or other incentives, to implement policy objectives within a defined project area.
- 5.2 Section 28 of the Planning Act gives municipalities the ability to prepare CIPs, provided they have enabling policies in their official plans. Development incentives offered under the Community Improvement provisions of the Planning Act enable municipalities to achieve policy objectives that may not have otherwise been possible through the standard negotiation and plan review processes.
- 5.3 CIPs are intended to encourage rehabilitation initiatives and/or stimulate development. Once implemented, a CIP allows municipalities to develop and administer programs that may include tax assistance, providing grants or loans, or other measures to assist in the rehabilitation of lands and/or buildings within the defined Community Improvement Project Area.
- 5.4 Upper-tier municipalities (i.e. the Region) may adopt CIPs, provided they only deal with provincially prescribed matters of:
 - a. Affordable housing;
 - b. Infrastructure that is within the Region's jurisdiction; and/or
 - c. Land and buildings within and adjacent to existing or planned transit corridors that have the potential to provide a focus for higher density mixed use development and redevelopment.

- 5.5 Section 14.4.1 of the Regional Official Plan (ROP) includes policies that enable the establishment of Regional CIPs for provincially prescribed matters.
- 5.6 Within Durham, CIPs have been adopted by the local area municipalities in specified geographic areas, including in Ajax, Whitby, Oshawa, Clarington, Brock and Uxbridge, with a CIP being considered in Scugog.

6. Regional Plans and Policies

- 6.1 The Region's affordable housing policies are found in "At Home in Durham – Durham Housing Plan 2014-2024", which supports increasing privately funded affordable rental housing supply and innovative financial arrangements to support the development of new affordable housing. It promotes the RRP to strategically target Regional investment to area municipally-led CIP projects, including affordable rental housing and supports exploring innovative financing models to support the renovation and rehabilitation of existing rental housing.
- 6.2 In 2020, the Region will be undertaking a Comprehensive Master Housing Strategy to operationalize and support the goals of At Home in Durham. It will include a review of the current housing system that will include:
- a. Revitalization of the Regionally owned Durham Regional Local Housing Corporation (DRLHC) portfolio to develop an evidence-based strategy that addresses maintenance, revitalization, regeneration (redevelopment) and disposal.
 - b. A review of public surplus lands and the potential social and community benefits that these properties can provide.
 - c. The provision of affordable, community, supportive and transitional housing, as well as emergency shelters and other Regional housing programs.
 - d. Other opportunities to support the delivery of affordable housing.
- 6.3 Over the next 15-20 years, as the Region grows and intensifies, transit will take on a much greater role in meeting travel demands. Key elements of the planned future transit system will be key in supporting appropriate development that is oriented to transit. Major Transit Station Areas (MTSAs), Centres and Regional Corridors, represent significant opportunities for new Transit Oriented Development (TOD) and intensification. There is an opportunity to investigate the use of a CIP as a financial tool for enabling appropriate or specified development around MTSAs.
- 6.4 The Durham Community Energy Plan (DCEP) and Durham Community Climate Adaptation Plan (DCCAP) include a wide range of programs supporting a

sustainable built environment that reduces GHG emissions, and addresses risks related to extreme weather events through design, technology, education and stewardship. An integrated strategy is guiding the implementation of these plans, some of which could be addressed through a CIP including:

- a. Retrofits to existing buildings, including the Region's social housing portfolio, to encourage deep energy and emissions reductions while building resilience to known and projected extreme weather impacts, including flooding and heatwaves.
- b. Standards for new development to provide higher levels of energy efficiency and climate resilience.

7. Other Upper-Tier Municipalities

7.1 Other GGH upper tier municipalities have either developed or are in the process of developing CIPs to encourage new developments that advance specified priorities.

7.2 Within the Region of Waterloo, a Reurbanization CIP applies to approximately 7,500 hectares of land along the Region's new LRT line. In passing its CIP, Waterloo saw its role as:

- a. promoting and facilitating transit oriented reurbanization, by making sites more attractive to reinvestment to achieve the required densities and by managing growth in the Region;
- b. promoting a sustainable community by providing a focus for transit-supportive densities adjacent and along the rapid transit alignment by stimulating private investment activity;
- c. providing for an appropriate range of housing choices, including affordable housing;
- d. implementing rapid transit and providing opportunities to develop transportation facilities; and
- e. allowing the Region to acquire and prepare lands for development.

7.3 In the Region of York, a Draft Rental Housing Incentives Guideline was endorsed in June 2018, and staff were authorized to prepare a CIP to implement a tax increment equivalent grant (TIEG) program. A TIEG is an annual grant equal to all or a portion of the Regional property tax increase (increment) following the completion of a project that results in an increase in the assessed value of the property.

8. Potential Tools and Considerations

- 8.1 Various forms of incentives may be offered under a CIP that are tailored to local needs. Typically, clear, specific and transparent criteria are established to evaluate development projects for program eligibility. For example, such programs can include:
- a. As noted above, TEIG can provide financial relief in the form of tax reductions to property owners who undertake rehabilitation or improvement to properties that result in a re-valuation and tax increase. This type of program encourages development by not immediately “penalizing” property owners who undertake improvements by increasing property taxes.
 - b. Development charges can be reduced at the time of building permit, or by collecting development charges up front, and then issuing a grant equivalent to the eligible exemption to the owner upon final inspection of a completed building.
 - c. Development application fees can be reduced at the time of a planning application, or as a reimbursement at the time of final inspection of an eligible building.
 - d. A program of property acquisition, investment and involvement in public/private partnerships to clean-up and/or rehabilitate properties can be part of a CIP.
- 8.2 If the Region chooses to implement a CIP to address provincially prescribed matters, eligibility criteria for development incentives could include:
- a. Achieving of minimum number (or percentage) of affordable purpose-built rental housing units in a building, expressed in rent dollars per unit or as a percentage of median rents in a market area;
 - b. Providing high-density mixed-use development at a minimum specified density within a delineated boundary of an identified MTSA;
 - c. Developing a specified amount of office or other employment floor space;
 - d. Implementing green/sustainable development practices or technologies within a CIP eligible project building or site.
- 8.3 The scope of work for this project would involve measures such as identifying and evaluating affordability levels for targeted incentives, identifying potential programs, determining feasibility, assessing financial impacts of potential programs, sensitivity testing, community and stakeholder engagement and program development.

9. Financial Implications

- 9.1 It is recommended that funding in the amount of \$125,000 for consulting services in support of a comprehensive review for the design of a proposed Regional Community Improvement Plan be included for consideration, as part of the Region's 2020 Business Planning and Budgeting process.
- 9.2 Further, subject to budget approval, it is recommended that Regional staff be authorized to commence the process for developing a proposed Regional Community Improvement Plan, as authorized under Section 28 of the Planning Act.
- 9.3 Financial implications and risks will be considered and assessed as part of the future recommendations related to the outcomes of the consultant's work for a potential Regional CIP, including plan design, implementation and deliverables.

10. Conclusion

- 10.1 CIPs can be an important tool to incent targeted forms of development to achieve broad community policy and planning objectives. Approval of this report would be the first step in determining potential opportunities and risks of a potential Regional CIP and would provide options to inform the design of a proposed plan to ensure that focussed outcomes are achieved. This would include interrelations with other Regional incentives.
- 10.2 The More Homes, More Choices Act, 2019 also provides new relief mechanisms for affordable housing. Once proclaimed, these mechanisms should be tested for their success.
- 10.3 It is recommended that funding in the amount of \$125,000 for consulting services in support of a comprehensive review for the design of a proposed Regional Community Improvement Plan be included for consideration as part of the Region's 2020 Business Planning and Budgeting process.
- 10.4 It is also recommended that Regional staff be authorized to commence the process for developing a Regional Community Improvement Plan as authorized under Section 28 of the Planning Act. Once developed, staff will report back with recommendations on proposed plan design and deliverables.
- 10.5 This report was prepared in consultation with the Regional Works and Social Services Departments.

Respectfully submitted,

Original signed by

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Commissioner of Finance

Original signed by

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Recommended for Presentation to Committee

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