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The Regional Municipality of Durham Report

To:	Finance and Administration Committee
From:	Commissioner of Finance
Report:	#2020-F-24
Date:	December 8, 2020

Subject:

2021 Business Plans and Budgets and Nine Year Capital Forecasts for the Consolidated Water Supply and Sanitary Sewerage Systems

Recommendations:

That the Finance and Administration Committee recommends to Regional Council:

- A) That the 2021 Business Plans and Budgets for the Water Supply System, with a total gross expenditure of \$153.6 million (net user rate supported expenditure of \$115.5 million) and related financing as set out below, be approved:

	2020 Gross Budget (\$ 000's)	2021 Gross Budget (\$ 000's)	Variance Incr/(Decr) (\$ 000's)
<u>EXPENDITURES</u>			
Operations:			
Watermain Cleaning and Repairs	3,493	3,691	198
Valves and Hydrants	2,991	3,042	51
Water Connections	4,186	4,281	95
Water Meters	542	562	20
Depot Operations	5,824	6,163	339
Plants East	3,151	3,368	217
Plants Central	14,131	14,226	95
Plants North	3,080	2,882	(198)
Sunvalley	29	29	-
Engineering and Staff Support	7,455	7,835	380
Facilities Management	7,615	7,514	(101)
Administration	319	335	16
Headquarters Shared Costs	1,100	1,125	25
Utility Finance	3,797	3,449	(348)
Share of Regional Corporate Costs	12,229	12,534	305
Subtotal Operations	69,942	71,036	1,094
Capital/Debt Charges:			
TCA Capital	4,732	4,905	173
Construction of Municipal Services	76,209	76,337	128
Debt Charges	1,694	1,311	(383)
Subtotal Capital/Debt Charges	82,635	82,553	(82)
TOTAL EXPENDITURES	152,577	153,589	1,012
<u>FINANCING</u>			
Contributions from Reserve Funds:			
Residential Development Charges - Growth Related Capital	20,823	26,536	5,713
Commercial Development Charges - Growth Related Capital	678	714	36
Industrial Development Charges - Growth Related Capital	-	1,460	1,460
Industrial Development Charges - Debt Charges	536	415	(121)
Institutional Development Charges - Debt Charges	28	22	(6)
Water Rate Stabilization Reserve Fund	952	-	(952)
Asset Management Reserve Fund	5,234	5,486	252
Servicing of Employment Lands	-	250	250
Equipment Replacement Reserve	35	-	(35)
Fees and Service Charges	2,910	3,185	275
Financing From Others:			
Region of York - Construction of Municipal Services	225	-	(225)
Oversizing Costs Related to Seaton/Federal Lands	7,540	-	(7,540)
Frontage Charges - Petition Recoverable	1,864	-	(1,864)
Financing From Non-User Revenue Sources	40,825	38,068	(2,757)
User Revenues Financing (including frontage charges)	111,752	115,521	3,769
TOTAL FINANCING	152,577	153,589	1,012

B) That the Nine Year Capital Forecast for 2022 to 2030 inclusive, in the amount of \$1.3 billion as detailed in the Water Supply System Capital Budget, be received for information;

- C) That the 2021 Current and Capital Business Plans and Budgets for the Sanitary Sewerage System with a total gross expenditure of \$223.7 million (net user rate supported expenditure of \$111.3 million) and related financing as set out below, be approved:

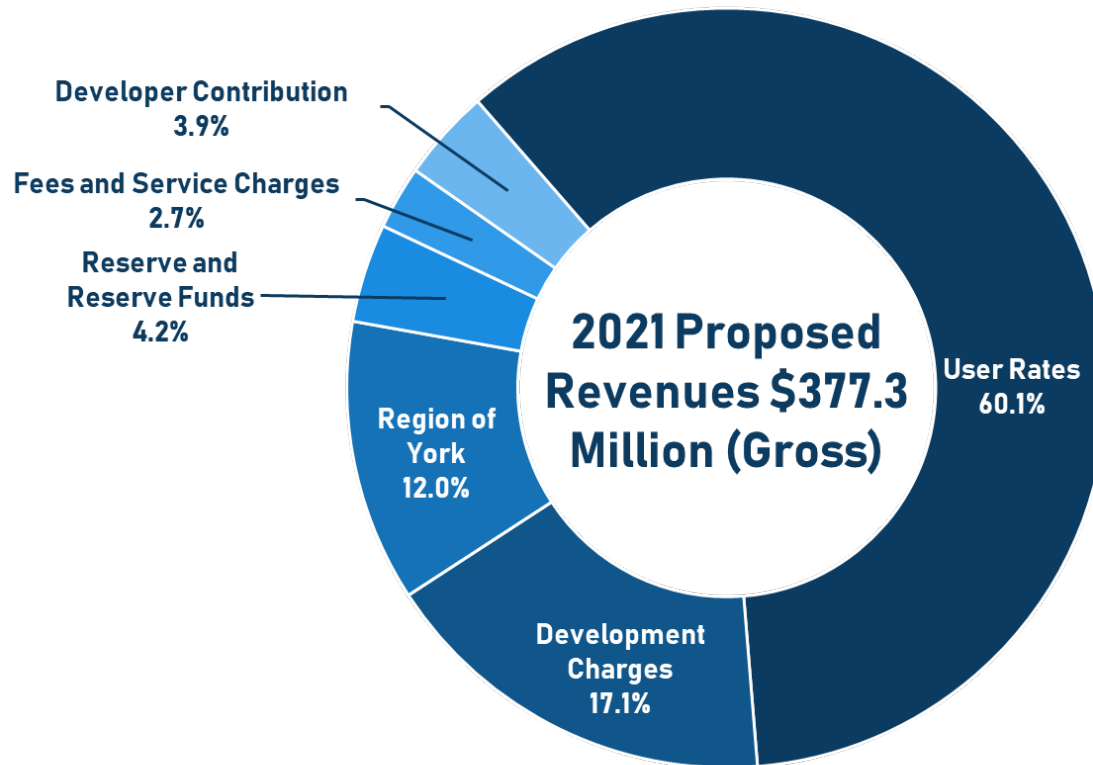
	2020 Gross Budget (\$ 000's)	2021 Gross Budget (\$ 000's)	Variance Incr/(Decr) (\$ 000's)
<u>EXPENDITURES</u>			
Operations:			
Cleaning, Repairs and Maintenance Holes	2,033	2,143	110
Sewer Connections	3,254	3,418	164
Depot Operations	3,228	3,407	179
WPCPs and Pumping Stations	23,999	25,496	1,497
Duffin Creek WPCP	37,197	38,043	846
Regional Environmental Laboratory	2,864	3,083	219
Engineering and Staff Support	6,886	7,461	575
Facilities Management	8,273	8,595	322
Administration	322	338	16
Headquarters Shared Costs	1,100	1,125	25
Utility Finance	3,796	3,450	(346)
Share of Regional Corporate Costs	15,346	15,783	437
Subtotal Operations	108,298	112,342	4,044
Capital/Debt Charges:			
Duffin Creek WPCP - TCA Capital	947	1,767	820
Regional Environmental Lab - TCA Capital	586	196	(390)
TCA Capital	5,673	2,536	(3,137)
Construction of Municipal Services	68,950	92,418	23,468
Debt Charges	21,011	14,482	(6,529)
Subtotal Capital/Debt Charges	97,167	111,399	14,232
TOTAL EXPENDITURES	205,465	223,741	18,276
<u>FINANCING</u>			
Contributions from Reserve Funds:			
Residential Development Charges - Growth Related Capital	20,013	22,581	2,568
Residential Development Charges - Debt Charges	11,521	8,103	(3,418)
Commercial Development Charges - Growth Related Capital	1,275	1,455	180
Commercial Development Charges - Debt Charges	1,552	873	(679)
Industrial Development Charges - Growth Related Capital	-	1,707	1,707
Industrial Development Charges - Debt Charges	532	532	-
Institutional Development Charges - Debt Charges	8	8	-
Sanitary Sewer Rate Stabilization Reserve Fund	2,702	-	(2,702)
Asset Management Reserve Fund	8,646	9,049	403
Servicing of Employment Lands	-	968	968
Equipment Replacement Reserve	35	-	(35)
Regional Environmental Lab Equipment Replacement Reserve	-	160	160
Fees and Service Charges	7,001	6,870	(131)
Financing From Others:			
Federal Grant	-	15	15
Region of York - TCA	16,566	1,387	(15,179)
Region of York - Construction of Municipal Services	1,040	14,285	13,245
Oversizing Costs Related to Seaton/Federal Lands	-	14,792	14,792
Region of York - Operating	28,444	29,142	698
Region of York Environmental Lab Operations	168	441	273
Financing From Non-User Revenue Sources	99,503	112,368	12,865
User Revenues Financing (including frontage charges)	105,962	111,373	5,411
TOTAL FINANCING	205,465	223,741	18,276

- D) That the Nine Year Capital Forecast for 2022 to 2030 inclusive, in the amount of \$1.7 billion as detailed in the Sanitary Sewerage System Capital Budget, be received for information;
 - E) That capital project approval be granted for expenditures and financing for the 2021 capital projects detailed in the Appendixes within the 2021 Consolidated Water Supply and Sanitary Sewerage Systems Business Plans and Budgets, where contract awards are consistent with the Regional Budget Management Policy; and
 - F) That the necessary By-laws with respect to the 2021 Current and Capital Business Plans and Budgets for the Consolidated Water Supply and Sanitary Sewerage Systems be presented to Regional Council.
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Report:**1. Overview of Recommended 2021 Water Supply and Sanitary Sewerage Systems Business Plans and Budgets**

- 1.1 The consolidated gross 2021 Water Supply and Sanitary Sewerage Systems Business Plans and Budgets at \$377.3 million (\$153.6 million water and \$223.7 million sewer) are included for approval and for recommendation to Regional Council on December 16, 2020. The recommended budgets require a total of \$226.8 million in user rate revenue (\$115.5 million water and \$111.3 million sewer), consistent with the proposed water and sewer user rate increase of 0.75 per cent overall (0.40 per cent for water and 1.06 per cent for sewer).
- 1.2 The 2021 Water Supply and Sanitary Sewerage Systems Business Plans and Budgets, with a proposed overall user rate increase of 0.75 per cent, provides for a number of base pressures and non-discretionary items. These are required for the continued operations of the water supply and sanitary sewerage systems in compliance with regulatory performance requirements. Strategic investments advance new infrastructure and operations to address growth and critical renewal and replacement of capital infrastructure to address state of good repair in alignment with asset management best practices.

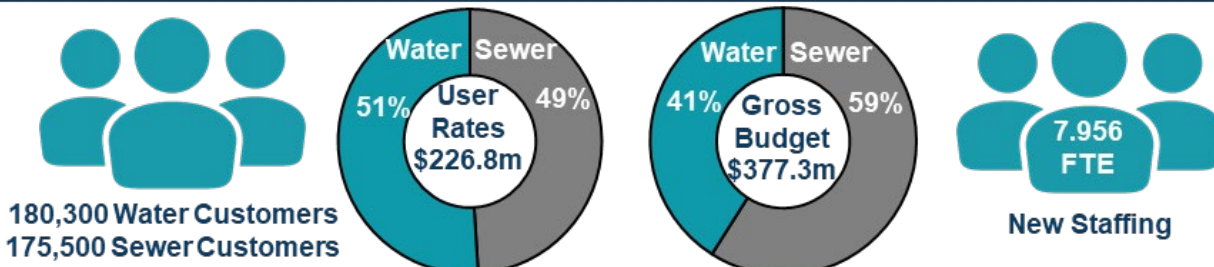
- 1.3 The following pie chart provides greater detail on the financing of the \$377.3 million Consolidated 2021 Water Supply and Sanitary Sewerage Systems Budget.



- 1.4 The 2021 Business Plans and Budgets for the Consolidated Water Supply and Sanitary Sewerage Systems, as recommended in this report, reflect the financial parameters of the proposed user rate increase (Report #2020-F-25).

2. Highlights of the 2021 Water Supply and Sanitary Sewerage Systems Business Plans and Budgets

Water Supply and Sanitary Sewerage Systems



Services:

Water Supply System

- Maintain and operate the Region's linear water distribution system in an efficient and cost effective manner for the Region's approximately 180,300 customers.
- Maintain all systems to meet regulations to ensure safe drinking water supply is delivered to the community.
- Plan, design, construct and operate water supply infrastructure.

Sanitary Sewerage System

- Maintain and operate the Region's Sewage Collection Systems to ensure safe and efficient treatment of effluent for the Region's approximately 175,500 customers.
- Maintain all systems to meet regulations to ensure the protection of the water environment.
- Plan, design, construct and operate sanitary sewerage infrastructure.

Utility Finance

- Set-up, maintain and issue billings for customer accounts related to water and sanitary sewerage. Receive, deposit and record approximately 787,000 water and sanitary sewer payments.
- Provide customer services to water and sanitary sewer customers, including responding to over 100,000 telephone inquiries, 24,000 emails and over 1,000 customer inquiries made in person.
- Obtain water meter readings associated with residential and non-residential customer accounts, as well as investigating and assisting customers to identify water consumption problems.

2020 Accomplishments:

Regional water supply and sanitary sewerage systems continue to provide safe drinking water and protect the water environment. Quality and environmental management systems support and integrate operations to meet regulatory performance requirements.

- 0 Boil Water Advisory days.
- 99.97 per cent compliance of drinking water test results.
- No sanitary sewage by-pass events.
- 100 per cent compliance of wastewater effluent results to protect water environment.
- Newcastle Water Supply Plant and Sanitary Sewage Pumping Station – construction commenced with completion target of 2023.
- Seaton Zone 4 Reservoir and Zone 5 Water Pumping Station (including Bulk Water Filling Station) – construction commenced with completion target of 2022.
- Restoration of Sludge Blending Tank at the Duffin Creek Water Pollution Control Plant
- Bayly Street Sanitary Sewage Pumping Station Mechanical Screen – construction commenced with completion target of April 2021.
- Regional Environmental Laboratory Upgrades – construction commenced with completion target of 2022.
- Data management modernization continues at Duffin Creek Water Pollution Control Plant with similar data management modernization efforts initiated in the Plant Operations Division for water supply and sanitary sewerage service areas.
- Launched the web-based customer portal, “My Durham Water”, enabling customers to have online access to their accounts to:
 - View billing information;
 - 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.
- Recognized by CS Week for the Best Customer Information System (CIS) Implementation (Mid-Size) for the Region’s new water billing system and customer portal. This North American award recognizes implementations of customer information systems based on budget and schedule adherence, operational efficiency after go-live, innovative solutions and improved service levels.

Operating and Staffing:

- The proposed 2021 Operating Business Plans and Budgets for Water Supply and Sanitary Sewerage is \$183.3 million (Water \$71.0 million, Sewer \$112.3 million).
- The following is a summary of the operating prioritizes and pressures:
 - Annualization of 6.601 FTE positions approved in 2020.
 - Additional temporary resources to deliver priority facility projects and support the eRIS project implementation for the modernization of data management at Corbett Creek WPCP.
 - Septic inspections to meet Source Water Protection regulatory requirements. These inspections are required once every five years.
 - Research and development of the “Durham Standard”, a guidance document for the construction and renovation of Regional facilities including measures to advance the Region’s climate change and energy conservation initiatives.
 - Modernization of the Region’s Business Planning and Budget process including system modernization.
 - Expand meter reading by continuing the transition to meter readers and the installation of fixed network radio frequency data collectors to improve the accuracy of readings and to assess water consumption trends.
- Priority staffing of 9 positions, shared with Works – General Tax and Solid Waste Management (5.047 FTE in Water Supply and 2.909 FTE in Sanitary Sewerage) at a combined 2021 cost of \$713k or \$1.123 million annualized for the Water Supply and Sanitary Sewerage Systems share. Details on the proposed positions are as follows:
 - Two Maintenance Operators to support the implementation of the new Integrated Water SCADA system, located at the central control system at the Ajax WSP from which all the water systems throughout the Region will be monitored and controlled 24/7/365. These two positions are solely for Water Supply (2.00 FTE) (Annualized cost of \$236k).
 - Project Manager responsible for the delivery of all employment lands servicing projects. This position received pre-budget approval in principle by Regional Council through Report 2020-COW-23. This position is shared between Water Supply (0.530 FTE) and Sanitary Sewer (0.470 FTE) (Annualized cost of \$166k).
 - Two Project Supervisors to support the review and coordination of development approvals. These two positions are shared between Water Supply (1.06 FTE) and Sanitary Sewer (0.940 FTE) (Annualized cost of \$303k).
 - Project Supervisor to support the design of environmental services. This position is shared between Water Supply (0.530 FTE) and Sanitary Sewer (0.470 FTE) (Annualized cost of \$151k).

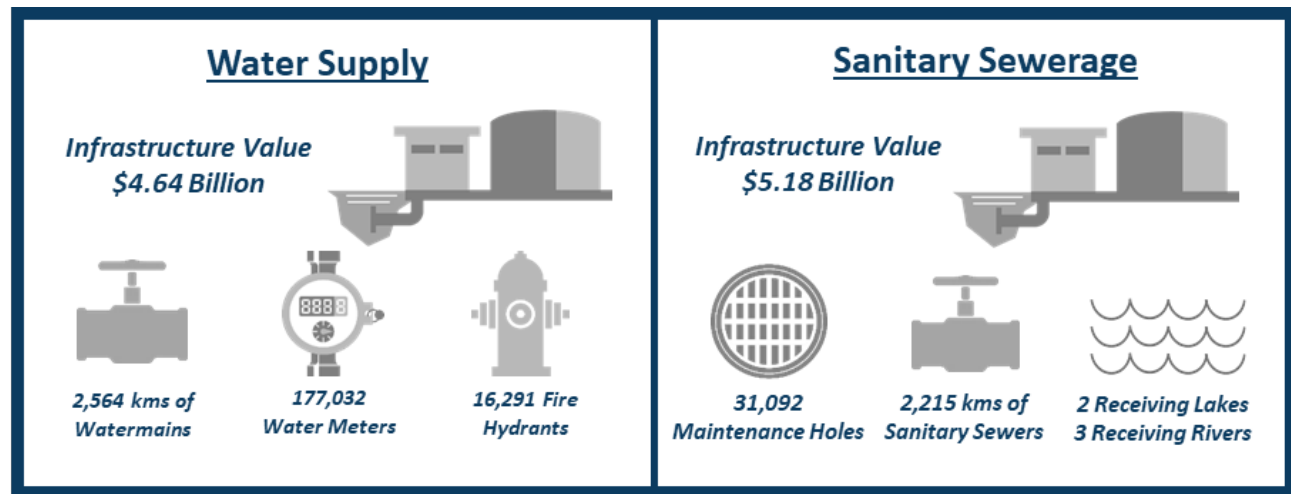
Operating and Staffing:

- Senior Project Coordinator to support design reviews, tenders and supervisor of capital construction budgets and deadlines. This position is shared with General Tax (0.358 FTE), Water Supply (0.385 FTE) and Sanitary Sewer (0.257 FTE) (Annualized cost of \$78k).
- Project Manager to provide leadership to capital facility projects including new builds, state of good repair, expansions and renovations. This position is shared with General Tax (0.288 FTE), Water Supply (0.271 FTE), Sanitary Sewer (0.386 FTE) and Solid Waste (0.055 FTE). (Annualized cost of \$109k).
- Works Technician 4 to support the delivery of capital facility projects including new builds, state of good repair, expansions and renovations. This position is shared with General Tax (0.288 FTE), Water Supply (0.271 FTE), Sanitary Sewer (0.386 FTE) and Solid Waste (0.055 FTE) (Annualized cost of \$80k).

Risks, Uncertainties and Future Pressures:

- 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*, and the *Lake Simcoe Protection Act*).
- Potential for further reduction in water usage resulting in lower revenue, without corresponding cost reductions.
- Market price impacts of volatility for input commodities including energy and chemicals.
- Growth across the Region, including development of several new communities in Seaton, West Whitby, North Oshawa, Bowmanville and Newcastle Village, that will increase the demand for services to support residents and businesses as well as the operational and maintenance requirements for Regional infrastructure.
- Asset management program investment requirements to replace aging and failing infrastructure which has reached or passed the end of its useful life.
- Impact of climate change on water and sanitary sewer systems infrastructure investment levels. Changing and unpredictable weather patterns impacting treatment operations as well as preventative and reactive maintenance activities for the regional water supply and sanitary sewerage linear infrastructure network.
- Annualization of new positions proposed in 2021 Water Supply and Sanitary Sewerage Systems Business Plans and Budgets will result in a \$410k increase (\$264k Water Supply and \$146k Sanitary Sewerage) in the 2022 Business Plans and Budgets.

3. 2021 – 2030 Total Capital and Financing Plan



3.1 The 2021 and nine year Water Supply and Sanitary Sewerage Capital Forecast (2022 – 2030) is approximately \$3.14 billion (approximately \$1.35 billion for water supply and \$1.79 billion for sanitary sewerage) as outlined in Table One.

Table One
Water Supply and Sanitary Sewerage Total Capital Forecast and Preliminary Financing Plan

Water Supply (in millions)

Expenditures

Total Capital

Expenditures Total

Proposed	Forecast					
2021	2022	2023	2024	2025	2026 to 2030	2021 to 2030 Total
\$ 81.2	\$ 235.4	\$ 166.8	\$ 326.9	\$ 124.9	\$ 413.9	\$ 1,349.2
\$ 81.2	\$ 235.4	\$ 166.8	\$ 326.9	\$ 124.9	\$ 413.9	\$ 1,349.2

Financing

Development Charges

Asset Management Reserve Fund

Treatment Plant / Rate Stabilization RF

Debt Proceeds

Servicing Of Employment Lands RF

Other Financing

User Revenues

Financing Total

2021	2022	2023	2024	2025	2026 to 2030	2021 to 2030 Total
\$ 28.7	\$ 143.1	\$ 65.9	\$ 34.8	\$ 25.7	\$ 92.0	\$ 390.1
\$ 5.5	\$ 5.6	\$ 10.7	\$ 5.9	\$ 6.1	\$ 32.6	\$ 66.4
\$ -	\$ -	\$ 13.6	\$ 53.0	\$ -	\$ 19.5	\$ 86.2
\$ -	\$ -	\$ 9.2	\$ 126.0	\$ 28.6	\$ 40.0	\$ 203.9
\$ 0.3						\$ 0.3
\$ -	\$ 7.0	\$ 0.0	\$ 57.1	\$ 0.2	\$ 4.1	\$ 68.5
\$ 46.8	\$ 79.7	\$ 67.4	\$ 50.1	\$ 64.4	\$ 225.7	\$ 534.0
\$ 81.2	\$ 235.4	\$ 166.8	\$ 326.9	\$ 124.9	\$ 413.9	\$ 1,349.2

Note: Totals in rows and columns may not add due to rounding

Sanitary Sewerage (in millions)		Proposed	Forecast					
		2021	2022	2023	2024	2025	2026 to 2030	2021 to 2030 Total
Expenditures								
Total Capital		\$ 96.9	\$ 288.6	\$ 220.0	\$ 162.9	\$ 122.8	\$ 904.7	\$ 1,796.0
Expenditures Total		\$ 96.9	\$ 288.6	\$ 220.0	\$ 162.9	\$ 122.8	\$ 904.7	\$ 1,796.0
Financing								
Development Charges		\$ 25.7	\$ 46.6	\$ 37.6	\$ 22.3	\$ 18.2	\$ 72.8	\$ 223.3
Servicing Of Employment Lands RF		\$ 1.0						\$ 1.0
Asset Management Reserve Fund		\$ 9.0	\$ 21.6	\$ 9.5	\$ 9.7	\$ 10.0	\$ 53.8	\$ 113.7
Treatment Plant / Rate Stabilization RF		\$ -	\$ 21.1	\$ 27.0	\$ 16.8	\$ -	\$ 65.2	\$ 130.0
Environmental Lab Reserve Fund		\$ 0.2					\$ -	\$ 0.2
Debt Proceeds		\$ -	\$ 48.8	\$ 53.9	\$ 32.8	\$ -	\$ 123.0	\$ 258.5
Other Financing		\$ 30.5	\$ 114.5	\$ 49.9	\$ 23.8	\$ 17.6	\$ 240.5	\$ 476.9
User Revenues		\$ 30.5	\$ 35.9	\$ 42.1	\$ 57.6	\$ 76.9	\$ 349.4	\$ 592.4
Financing Total		\$ 96.9	\$ 288.6	\$ 220.0	\$ 162.9	\$ 122.8	\$ 904.7	\$ 1,796.0

Note: Totals in rows and columns may not add due to rounding

4. Proposed 2021 Water Supply and Sanitary Sewerage Capital Budget and Financing

2021 Water Supply and Sanitary Sewerage Capital Budgets

4.1 The proposed 2021 Water Supply (\$81.2 million) and Sanitary Sewerage (\$96.9 million) Capital Budgets:

- invest in new infrastructure to address anticipated growth;
- reflect Council's pre-approved 2021 strategic investments in water supply and sanitary sewer infrastructure to pre-service designated employment areas (through approval of 2020-COW-23);
- address infrastructure rehabilitation, renewal and replacement requirements based on an asset management approach;
- ensure regulatory compliance;
- invest in infrastructure addressing climate change mitigation and adaptation; and
- allow all capital projects ready for construction to proceed.

4.2 A full listing of the proposed 2021 capital projects and associated financing are included in the proposed 2021 Consolidated Water Supply and Sanitary Sewerage Business Plans and Budgets.

Regional Investments in Pre-Servicing Designated Employment Areas and in New Expansion Infrastructure to Service Growth

4.3 The Region coordinated a study with area municipal staff to identify a priority list of employment lands requiring servicing. In September 2020, Regional Council approved a strategy to address the servicing of the priority list of employment lands (Report 2020-COW-23). The strategy approved advancing the EA and design work for four projects at an estimated cost of \$2.35 million to be funded by development charges (\$1.13 million) and the servicing of employment lands reserve fund (\$1.22 million). These projects and financing have been included in the proposed 2021 Water Supply and Sanitary Sewerage Capital Budget.

- 4.4 At the Committee of the Whole meeting on September 16, 2020, the following motions were referred to the 2021 Water Supply System and Sanitary Sewerage System Budget process:
- a) Detailed design and construction of an extension of the Zone 3 watermain and sanitary sewer north along Thornton Road from Conlin Road (conceptual estimate \$5.1 million) with the Northwood Employment Area in the City of Oshawa so that it occurs concurrently with the construction of the road;
 - b) Detailed design and construction of the following infrastructure to service the Port Perry Employment Area (conceptional estimate \$16.8 million);
 - A new sanitary sewage pumping station near Reach Street and north Port Road;
 - A forcemain from the new sanitary sewage pumping station to the Nonquon Water Pollution Control Plant;
 - A new gravity sanitary sewer along Reach Street draining into the new sanitary sewerage pumping station; and
 - A watermain from approximately 500 meters east of the future water storage facility connection, along Reach Street to the existing water supply system.
 - c) Detailed design and construction of sanitary sewer extension along the Hunt Street extension (conceptual estimate \$5.75 million), upon completion of the Central Ajax Intensification Servicing and Transportation Study and concurrent with the construction of the road extension by the Town of Ajax.
- 4.5 City of Oshawa staff have confirmed the potential of proceeding with the detailed design of the reconstruction of Thornton Road in 2021. The proposed 2021 Water Supply System and Sanitary Sewerage System Capital Budget includes an allowance to proceed with the detailed design for the extension of services on Thornton Road with project construction included in year 2023 of the nine year capital forecast and subject to future budget approval.
- 4.6 The servicing of employment lands in Port Perry requires the Environmental Assessment (EA) to determine the location of the proposed sanitary sewage pumping station to finalize the servicing strategy. Once the conceptual servicing strategy has been determined then the scope for the project can be better defined. The proposed 2021 Water Supply System and Sanitary Sewerage System Capital budget includes the initiation of the EA with detailed design and construction allowances in the capital forecast in 2024 and 2027 respectively which is subject to future budget approvals. Implementation would be contingent on the timing of end users within the employment lands.

- 4.7 Staff from the Town of Ajax have indicated that the extension of Hunt Street is likely beyond the five year timeframe or more. The Region has made an allowance for engineering related to the watermain and sanitary sewer extensions for Hunt Street. The proposed 2021 Water Supply and Sanitary Sewerage Capital Budget includes potential construction allowances in 2025 which are subject to future budget approval.
- 4.8 The approved strategy also included identifying a list of water and sewer infrastructure projects for consideration in future Regional Business Plans and Budgets, to service identified Employment Lands. This analysis considered servicing costs, potential Employment Areas jobs generated and potential service delivery timeframes. These projects are included in the 2022-2030 Capital Forecast. The Interdepartmental Regional staff working group will report back on an annual basis on the progress of the recommended work elements and new recommendations for next steps as detailed design and development proceeds.
- 4.9 In addition, the 2021 Water Supply and Sanitary Sewerage Capital Budget also includes infrastructure investments to service growth including:
- a) A total of \$16.8 million for watermains and feeder mains and \$14.6 million for buildings and plants (Water Supply); and
 - b) A total of \$42.0 million for trunk sanitary sewers and sanitary sewers and \$16.3 million for buildings and plants (Sanitary Sewerage).

Addressing Asset Management Renewal Needs and Climate Considerations

- 4.10 Based on the most recent asset management data, there are approximately \$16.7 million of water linear assets in very poor condition, and \$30.1 million in poor condition. The proposed 2021 Water Supply Capital Budget includes \$16.5 million in linear betterments and replacements (watermains, valves, connections), to address those assets in various conditions with differing risk profiles, and based on the ability to achieve access as part of Regional Road, Municipal Road, and MTO projects. In addition, there is also \$3.2 million included for other linear replacements such as water meters and hydrants.
- 4.11 For Water Supply buildings and plant equipment (vertical assets), there is approximately \$12.0 million included in the proposed 2021 Water Supply Capital Budget to address asset management needs.
- 4.12 Based on the most recent asset management data, there is approximately \$19.2 million in sanitary sewerage linear assets that are in very poor condition and \$53.8 million in poor condition. The proposed 2021 Sanitary Sewerage Capital Budget includes \$4.8 million to address the priority sewer linear assets.
- 4.13 For Sanitary Sewerage buildings and plant equipment (vertical assets), there is approximately \$23.0 million included in the proposed 2021 Sanitary Sewerage Capital Budget to address asset management needs.

4.14 In addition to above noted investments, the proposed 2021 capital budget also includes:

- a) The continued provision of funding for asset condition assessments (\$0.3 million for water and \$0.2 million for sewer);
- b) A new provision to develop climate change strategies in both water supply (\$0.15 million) and sanitary sewerage (\$0.3 million);
- c) Continued provision of \$0.5 million in funding for inflow and infiltration studies and work in the Sanitary Sewerage Capital Budget; and
- d) \$0.354 million in funding in the Water Supply Capital Budget for vulnerability assessments of water supply plants to climate related impacts.

Fuel Tanks and Generators (Regulatory Compliance)

4.15 The proposed 2021 Water Supply and Sanitary Sewerage Capital Budgets include \$8.4 million and \$1.8 million respectively, for upgrades to the diesel generators and tanks to meet regulatory requirements. The Ontario Technical Standards & Safety Authority (TSSA) regulates fuel tanks and other auxiliary systems for diesel generators in the province. The TSSA-administered regulations are continually evolving to ensure that these systems are safe. In addition, an inspection by a TSSA-certified inspector must be undertaken every 10 years and any deficiencies must be corrected. Currently, the Region's water and wastewater diesel generator systems are being inspected and work to correct any deficiencies is proceeding. This work includes replacement of fuel lines, replacement of fuel tanks, replacement of valves, installation of fire suppression, upgrades to SCADA, upgrading of exhaust piping, modification of containment systems, upgrades to filling systems and other various works. There are 68 water and wastewater facilities where diesel tanks are to be upgraded. The work commenced in 2020 and will be completed in two phases with final completion planned for 2022.

Proposed 2021 Water Supply and Sanitary Sewerage Capital Financing

4.16 The proposed 2021 water supply and sanitary sewerage capital financing is achievable and relies on:

- a) The proposed overall user rate increase of 0.75 per cent;
- b) The use of upfront Residential and Commercial DC's required to support the 2021 Water and Sanitary Sewerage Capital Programs;
- c) The use of \$1.5 million in Water Industrial DC's and \$1.7 million in Sanitary Sewerage Industrial DC's to reduce pressure on user rate financing;
- d) The use of \$5.5 million in water asset management reserve fund financing and \$9.0 million in sanitary sewerage asset management reserve fund financing which represents an increase of \$0.7 million from the approved 2020 budget;

- e) The inclusion of the pre-approved financing of servicing of the designated employment areas, including the use of Sanitary Sewerage Residential and Commercial DC's and funding from the Servicing of Employment Lands Reserve Fund (Report 2020-COW-23); and
- f) No proposed debenture financing.

5. Capital Forecast and Preliminary Financing Plan

- 5.1 The Water Supply and Sanitary Sewerage Capital Forecast program (2022-2030) is based on servicing forecasted growth, addressing ongoing renewal, replacement and repair needs of existing infrastructure based on an asset management approach, and ensuring continued compliance with regulatory requirements.
- 5.2 There are a number of development areas being planned and implemented within each municipality. The proposed Water Supply and Sanitary Sewerage Capital Budget and Forecast identifies the required servicing infrastructure for the designated urban areas. Regional staff will continue to monitor the utilization of major water supply and sanitary sewage infrastructure to plan major infrastructure expansions, system capacity and reliability to service growth.
- 5.3 The 2022-2030 capital program also includes major building expansions for both the water supply system (e.g. expansion of the Ajax, Whitby and Bowmanville Water Supply Plants) and the sanitary sewage system (e.g. expansion of the Corbett Creek and Courtice Water Pollution Control Plants and the Conlin Road Sanitary Sewage Pumping Station).
- 5.4 The Region's ongoing and continuous asset management process analyzes asset data and publishes an annual Asset Management Report. This informs the annual business plans and budgets of infrastructure requirements, 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 Region's 2020 Asset Management Update Report (Report 2020-COW-24) and supporting data informed the development of the water supply and sanitary sewerage capital forecast (see Section 6 for more details).
- 5.5 A robust long-term preliminary financing plan was developed for the nine year water supply and sanitary sewerage capital forecast that utilized:
 - a) Growth projections to forecast future DC receipts and revenues available to finance the growth-related capital projects in the forecast program;
 - b) Use of reserve funds (e.g. water and sewer rate stabilization and asset management reserve funds) to finance the major capital projects and those projects required for asset management reasons without unduly placing pressure on user rate revenues and potentially reducing the need for debt and saving the Region debt interest financing costs;
 - c) The use of debt where feasible for large plant expansions;

- d) Gradual and smooth annual increases in user rate revenues that are financially sustainable and affordable; and
- e) Financial planning policies as approved in the Region's Long-Term Financing Planning Framework.

5.6 The resultant long-term preliminary financing plan (sources and timing of funding) is summarized in Table One above.

Opportunities to Use Reserve Funds

5.7 As shown in Table One, there are years where expenditures are significant due to large plant expansion projects. In accordance with the Long-Term Financial Planning Framework, the preliminary financing plan incorporates the sustainable use of water supply and sanitary sewerage treatment plant / rate stabilization reserve funds and asset management reserve funds for these large projects. Application of funding from the treatment plant / rate stabilization reserve funds will allow these projects to proceed forward balancing debenture requirements.

5.8 The following provides a summary of the proposed use of reserve fund financing and DCs for 2021 and the forecasted requirements based on the 2020 to 2030 capital forecast and financing strategy.

a) Development Charges - Water

- Proposed 2021 – Capital Program - \$28.7 million
- Proposed 2021 – Debt Servicing Costs - \$0.4 million
- 2022 to 2030 Capital Forecast – Capital Program - \$361.5 million
- 2022 to 2030 Capital Forecast – Debt Servicing Costs - \$149.4 million

b) Development Charges - Sewer

- Proposed 2021 – Capital Program - \$25.7 million
- Proposed 2021 – Debt Servicing Costs - \$9.5 million
- 2022 to 2030 Capital Forecast – Capital Program - \$197.5 million
- 2022 to 2030 Capital Forecast – Debt Servicing Costs - \$222.1 million

c) Water Asset Management Reserve Fund

- Proposed 2021 – Capital Program - \$5.5 million
- 2022 to 2030 Capital Forecast – Capital Program - \$60.9 million

d) Sewer Asset Management Reserve Fund

- Proposed 2021 – Capital Program - \$9.0 million
- 2020 to 2030 Capital Forecast – Capital Program - \$104.6 million

e) Servicing of Employment Lands

- Proposed 2021 - \$1.2 million

f) Water Rate Stabilization Reserve Fund

- 2022 to 2030 Capital Forecast – Capital Program - \$86.2 million

g) Sewer Rate Stabilization Reserve Fund

- 2022 to 2030 Capital Forecast – Capital Program - \$130.0 million

5.9 The utilization of these reserve funds will be considered on an annual basis as part of the Region's long-term financial planning process with recommended draws presented to Regional Council through the annual Water Supply and Sanitary Sewerage Capital Budgets.

Potential Debt Financing Requirements and Considerations

5.10 Achieving the forecasted capital program and smoothing out the pressures on the user rate revenues as best as possible will also require the issuance of debt financing for large capital projects where there is an anticipated short fall in the Residential and Commercial DC receipts.

5.11 The 2022 to 2030 capital forecast outlined in Table One identifies the potential to issue approximately \$462.4 million in debenture financing (\$203.9 million for Water Supply and \$258.5 million for Sanitary Sewerage). Table Two details the debt servicing costs and associated financing based on the current outstanding debt and the projected new debt contemplated in the 2022 to 2030 capital forecast.

Table Two
Consolidated Water Supply and Sanitary Sewerage – Debt Servicing Costs

Water Supply (in millions)**Expenditures**

Existing Debenture Payments

Future Debt Payments

Expenditures Total

Proposed	Forecast					
2021	2022	2023	2024	2025	2026 to 2030	2021 to 2030 Total
\$ 1.3	\$ 1.3	\$ 1.3	\$ 1.3	\$ 1.3	\$ 6.6	\$ 13.1
\$ -	\$ -	\$ -	\$ 1.2	\$ 17.5	\$ 126.8	\$ 145.5
\$ 1.3	\$ 1.3	\$ 1.3	\$ 2.5	\$ 18.8	\$ 133.4	\$ 158.6

Financing

Development Charges

User Revenues

Financing Total

2021	2022	2023	2024	2025	2026 to 2030	2021 to 2030 Total
\$ 0.4	\$ 0.4	\$ 0.4	\$ 1.6	\$ 18.0	\$ 129.0	\$ 149.9
\$ 0.9	\$ 0.9	\$ 0.9	\$ 0.9	\$ 0.9	\$ 4.4	\$ 8.7
\$ 1.3	\$ 1.3	\$ 1.3	\$ 2.5	\$ 18.8	\$ 133.4	\$ 158.6

Note: Totals in rows and columns may not add due to rounding

Sanitary Sewerage (in millions)**Expenditures**

Existing Debenture Payments

Future Debt Payments

Expenditures Total

Proposed	Forecast					
2021	2022	2023	2024	2025	2026 to 2030	2021 to 2030 Total
\$ 14.5	\$ 13.0	\$ 12.2	\$ 11.5	\$ 11.4	\$ 32.2	\$ 94.8
\$ -	\$ -	\$ 6.3	\$ 13.3	\$ 17.6	\$ 124.0	\$ 161.2
\$ 14.5	\$ 13.0	\$ 18.5	\$ 24.9	\$ 28.9	\$ 156.2	\$ 256.0

Financing

Development Charges

User Revenues

Financing Total

2021	2022	2023	2024	2025	2026 to 2030	2021 to 2030 Total
\$ 9.5	\$ 9.2	\$ 15.5	\$ 22.4	\$ 26.6	\$ 148.4	\$ 231.7
\$ 5.0	\$ 3.8	\$ 3.0	\$ 2.5	\$ 2.3	\$ 7.8	\$ 24.4
\$ 14.5	\$ 13.0	\$ 18.5	\$ 24.9	\$ 28.9	\$ 156.2	\$ 256.0

Note: Totals in rows and columns may not add due to rounding

5.12 With the proposed issuance of debenture financing for the residential and commercial DC shares of the major projects over the forecast, the future debt servicing commitments will be funded from future residential and commercial DC's. The following graphs provide the number of residential development charge receipts required to fund future debt servicing costs as compared to the ten-year residential units planning forecast. It is estimated that the future residential DC debt requirements could require up to 57 per cent of future water residential DC receipts and up to 70 per cent of future sanitary sewerage residential DC receipts.

Table Three – Water Supply

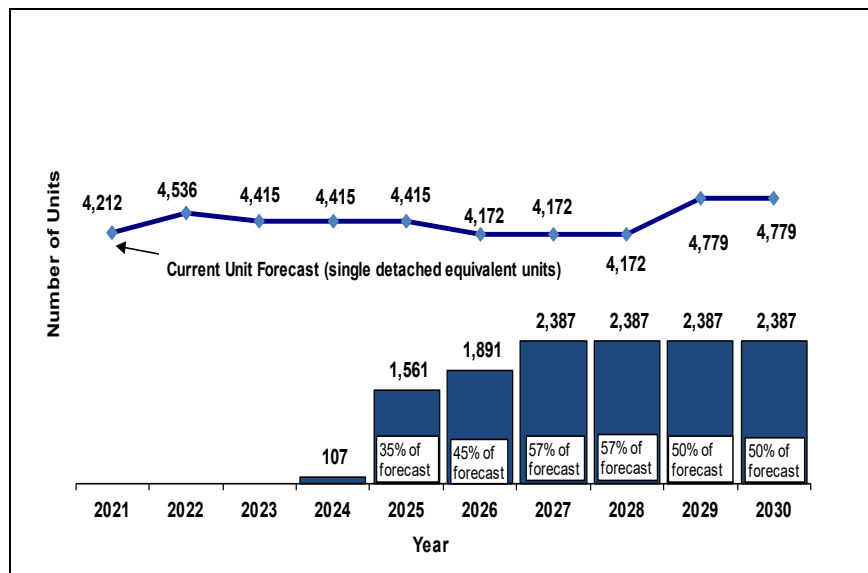
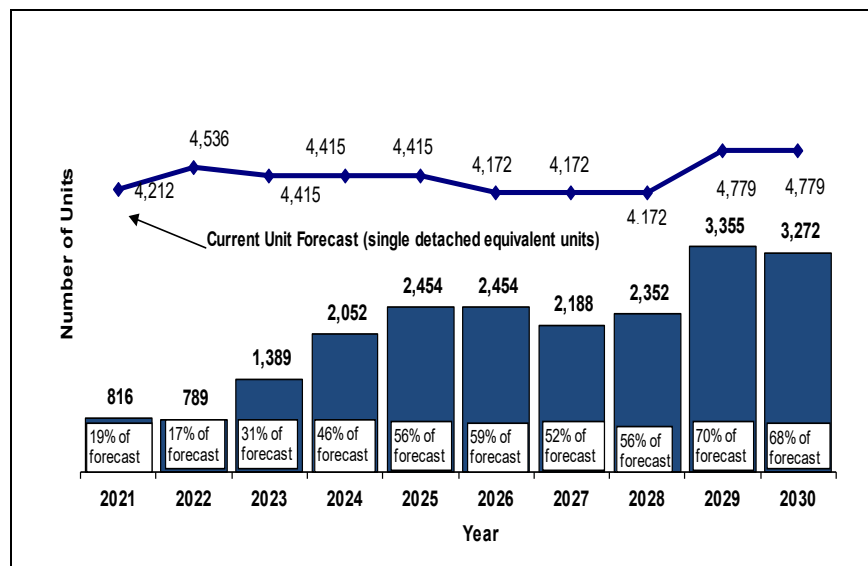


Table Four – Sanitary Sewerage



- 5.13 The risk to the Region with proceeding with large expansion projects that require debenture financing is that future development charge receipts are committed to pay future ongoing debt servicing costs. For example, if the Region experiences a significant housing market downturn, and receives less development charge receipts and revenues than forecasted, then there could be reduced DC funding available for future expansion projects as a significant share of DC receipts will be required to fund ongoing debt servicing costs.

User Rate Pressures

- 5.14 The pressures on future user rates over the forecast period as highlighted in the preliminary financing plan are the result of:

- a) future replacement / rehabilitation needs as identified in the annual asset management report; and
- b) significant growth-related capital projects that are required (i.e. plant expansions) where there is a potential development charge revenue shortfall that is projected to be funded by user rates.

- 5.15 Ongoing review of the capital forecast program, the timing of projects and use of financing strategies, including the use of reserve funds, debenture financing and pressures on user rate revenues, will be conducted as part of Region's annual business planning and budget process. Refinements will be based on rate of growth and new developments (impacting both growth related capital requirements and available DC receipts and revenues), evolving asset management needs to balance capital needs with availability of reserve funds, other financing strategies and affordable user rate increases.

6. Asset Management Considerations Over the Forecast Period

- 6.1 The Water Supply and Sanitary Sewerage Capital forecast identifies significant investment for the renewal of assets based on the results of the analysis of asset management needs as highlighted in the Region's most recent 2020 Asset Management Report. These include:

- a) Over \$199.4 million in water supply linear replacements / betterments;
- b) Approximately \$205.5 million in sanitary sewerage linear replacements/ betterments;
- c) \$63.0 million for various asset management programs, condition assessments, miscellaneous rehabilitation work, investigations, etc. for Water Supply;
- d) \$74.4 million for various asset management programs, condition assessments, miscellaneous rehabilitation work, investigations, etc. for Sanitary Sewerage;
- e) Approximately \$718.3 million for water supply buildings, plant and equipment expansions and renewal needs (repairs, replacements, rehabilitations, etc.); and

- f) Over \$953.2 million for sanitary sewerage buildings, plant and equipment expansions and renewal needs (repairs, replacements, rehabilitations, etc.).

6.2 As the water supply and sanitary sewerage asset infrastructure renewal needs get updated annually through the Region's continuous year-round asset management process and reported through the Asset Management Reports, these capital forecasts will be refined to include and prioritize the appropriate investments to address those updated asset management needs.

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. Climate change initiatives are underway within both water supply and sanitary sewer programs.

7.2 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:

- a) Replacement of deficient sanitary sewers to reduce infiltration of groundwater into the sanitary sewer collection system to mitigate flooding, inflow and infiltration;
- b) Upgrades to plants and pumping stations which include electrical upgrades and standby power to operate systems during communications and electrical power failures;
- c) Enhanced erosion protection at creek crossings to protect watermains and sanitary sewer systems;
- d) Energy conservation measures are incorporated into asset management and financial planning processes; and
- e) Investigation on 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).

7.3 Corporately, staff are working on a Climate Change Master Plan for the Region which will further inform future capital forecasts.

7.4 In addition, the proposed 2021 Consolidated Water Supply and Sanitary Sewerage Business Plans and Budgets propose the following additional climate change initiatives:

- a) Continued research and development of the “Durham Standard”, a guidance document for the construction and renovation of Regional facilities including measures to advance the Region’s climate change and energy conservation initiative.
- b) \$1.1 million for a climate change strategy for the Region’s water supply and sanitary sewerage assets; and
- c) \$1.8 million for vulnerability assessments of climate impacts on the Region’s water supply and sanitary sewerage assets.

8. Line-by-line Review

- 8.1 As part of the development of the proposed consolidated 2021 Water Supply and Sanitary Sewerage Systems Business Plans and Budget, departments completed a line-by-line review of historical actuals to identify 2021 base budget reductions that do not impact service levels.
- 8.2 The following base budget savings have been identified and are reflected in the proposed consolidated 2021 Water Supply and Sanitary Sewerage Systems Business Plans and Budget:
 - a) Works Water Supply System - \$400,000
 - b) Works Sanitary Sewerage System - \$86,000
 - c) Utility Finance - \$21,000
 - d) Corporate Non-Departmental Water - \$40,000
 - e) Corporate Non-Departmental Sewer - \$19,000
 - f) Total - \$566,000

9. Relationship to Strategic Plan

- 9.1 This report aligns with/addresses the following strategic goal and priorities in the Durham Region Strategic Plan.
 - a) Goal 5 Service Excellence – to provide exceptional value to Durham taxpayers through responsive, effective and fiscally sustainable services delivery. By responsibly managing the Region’s financial assets, the proposed 2021 Consolidate Water Supply and Sanitary Sewerage Business Plans and Budgets looks to optimize resources to deliver critical infrastructure and servicing for current and future generation.

10. Conclusion

- 10.1 The 2021 Water Supply and Sanitary Sewerage Systems Business Plans and Budgets can be financed within the proposed overall water supply and sanitary sewerage user rate increase of 0.75 per cent and other related funding including development charges and fees/charges.

10.2 Accordingly, the 2021 Business Plans and Budgets for Water Supply and Sanitary Sewerage Systems are recommended for approval.

11. Attachments

11.1 Detailed Consolidated 2021 Business Plans & Budgets for Water Supply and Sanitary Sewerage Systems are available on-line through the link provided on the December 8, 2020 Finance and Administration Committee agenda or in hard copy by contacting the Finance Department at (905) 668-7711 ext. 2305.

Respectfully submitted,

Original Signed By
Nancy Taylor, BBA, CPA, CA
Commissioner of Finance

Recommended for Presentation to Committee

Original Signed By
Elaine Baxter-Trahair
Chief Administrative Officer