

WATER WASTEWATER



Kalmo Beach



WATER/WASTEWATER BUDGET

Unlike the municipal tax levy, which is applied to all properties in the City to support a variety of services provided broadly to the community, Water and Wastewater Services are paid for by roughly 48,000 residential and non-residential customers.

In 2011, a 10-year water and wastewater financial plan was approved by Council and recommended an annual rate increase of 7.4 % to achieve financial sustainability. Council approved the 7.4 % rate increase for 2016, 2017, and 2018. This 7.4 % increase is also being recommended for 2019.

The current Water/Wastewater Long-Term Financial Plan covers the period 2012 to 2020. In accordance with legislation, the plan must be updated prior to the City applying for renewals to its drinking water licences in the fall of 2019. The plan is currently being updated and will be presented to Council during the spring of 2019. The plan includes updated capital requirements based on the recently completed water/wastewater master and asset management plans. The plan also includes a provision to phase out the current fire protection levy of \$3,785,000 over the next three years starting in 2019, and will account for declining water consumption trends.

The City has three main components to the water/wastewater billing structure that fund expenditures:

Variable Water Rate

The City establishes a rate per cubic metre of water used. All water customers pay the same amount for every cubic metre (1,000 litres of water). Since a customer only pays for the volume of water they use, this portion of the rate is referred to as the variable water rate.

Fixed Water Charge

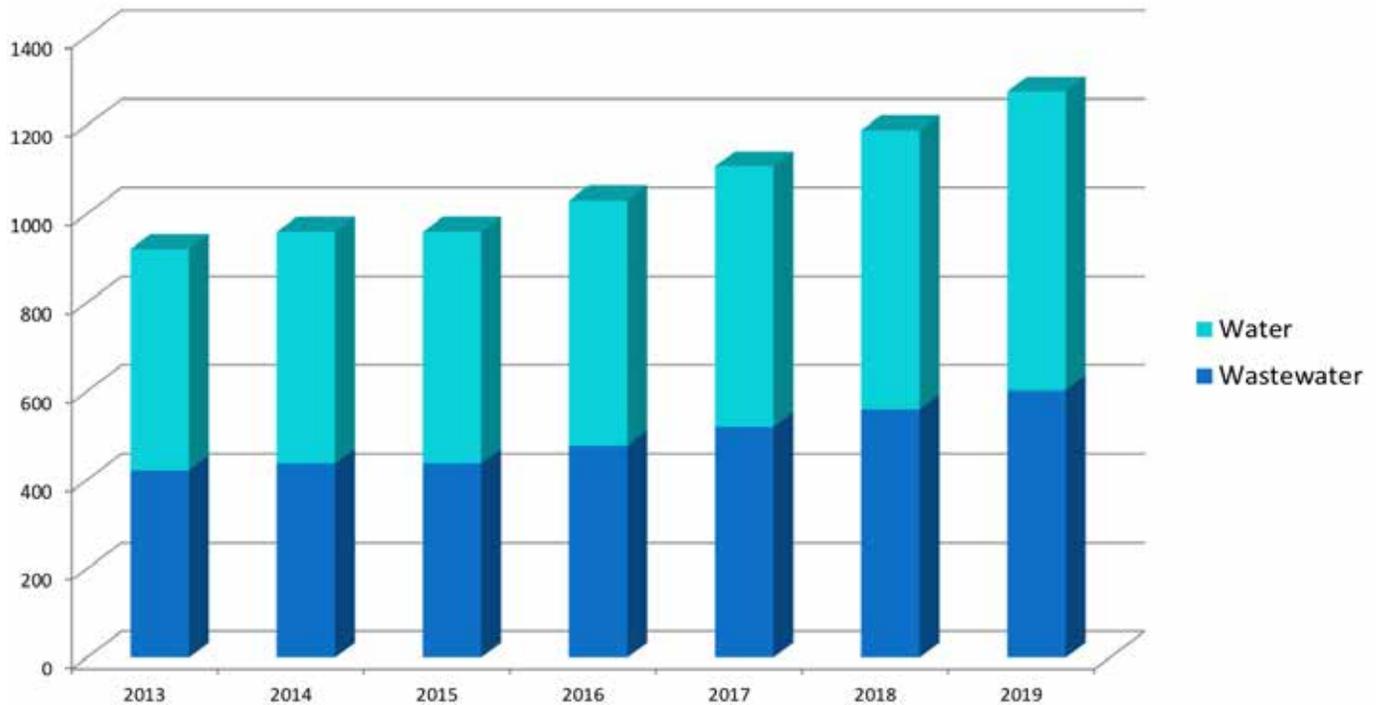
Water budgets contain fixed costs that do not change in direct proportion to water consumption. The cost to treat and distribute municipal water remains relatively constant, regardless of the volume actually consumed by residents. The fixed water charge provides the City with a stable source of annual funding to offset these fixed costs. The fixed water charge is set for a residential meter (5/8 and 3/4 inch meter) and is increased for each larger size meter in accordance with the ratios established by the American Water Works Association.



Wastewater Surcharge

The wastewater surcharge is a charge applied to offset the cost associated with the water discharged as it leaves your home or business. Costs include the operation and maintenance of wastewater infrastructure such as the sewer system and treatment plants that handle wastewater outflow from properties. Wastewater outflow is directly related to the amount of water discharged into the sewer system and treatment plants, which is why the surcharge is calculated as a percentage of the total water rate charged. This rate structure is consistent with most Ontario municipalities.

Typical Water/Wastewater Charges (200 Cu M/year) (\$)



WATER/WASTEWATER RATES

The City of Greater Sudbury is dedicated to the supply and delivery of high quality potable water and the effective collection and treatment of wastewater to meet the current and future needs of our community. As one of our most precious resources, the City is committed to working with our residents and partners to protect water in all of its forms.

Water/wastewater operates in a highly regulated framework of federal, provincial and municipal regulations, standards and policies. The operation is guided by financial and tactical strategic plans, with an updated asset management and master plan currently in development.

A significant component of water and wastewater rates in any municipality are directed to long term asset management considerations. The City of Greater Sudbury is responsible for 1,800 kilometres of water and wastewater mains otherwise known as linear infrastructure. That's more than the distance to Winnipeg. The City's 12 wastewater treatment facilities, 69 sewage lift stations, one biosolids facility, 23 wells, two water treatment facilities, eight metering stations, 12 pumping (booster stations) and 9 water storage facilities were constructed to meet the needs of individual communities prior to amalgamation. This level and scope of assets is several times the size of municipalities of our population and rate base and significantly overbuilt from the perspective of the number of customer serviced. Rates contribute to operations as well as to the core asset management objectives described in the Capital Budget section of this budget.

The Province of Ontario requires that all municipalities collect the full cost of water and wastewater services directly from end users. City Council adopted a user pay system in 2001, which resulted in charges being billed directly to customers rather than being rolled into municipal property taxes, as was previously done.

The City understands the effect of rate increases on households. Water/wastewater operations are under constant review to improve efficiencies wherever possible.



The following are sections and the applicable areas of service for the Water/Wastewater Division:

Water/Wastewater Treatment and Compliance

- Water Treatment
- Wastewater Treatment
- Compliance and Operational Support

Linear Infrastructure Services

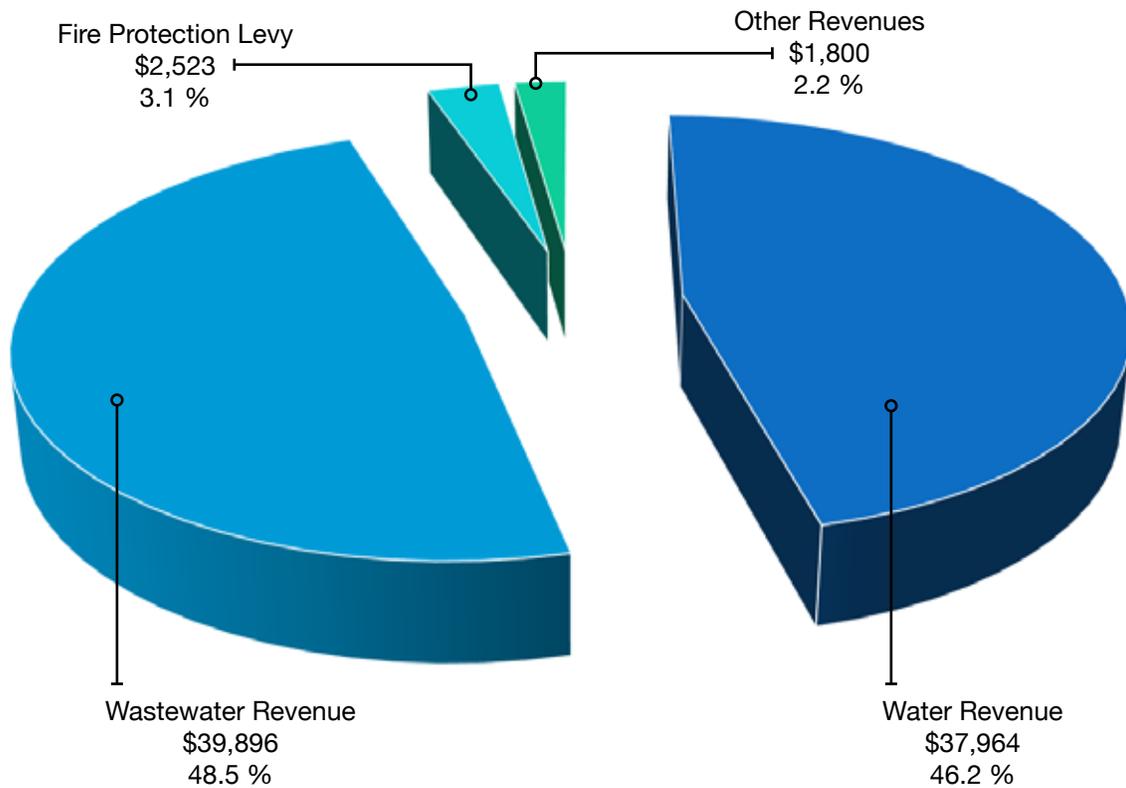
- Water Distribution
- Wastewater Collection

Infrastructure Capital Planning

- Capital Engineering

A more complete description of these services can be found in their respective sections of the budget document.

Water/Wastewater Revenues (000's)



WATER/WASTEWATER | 2019 BUDGET SUMMARY

	Actuals			Budget		Budget Change	
	2016 Actuals	2017 Actuals	2018 Projected Actuals	2018 Budget	2019 Budget	Dollar Change	% Change
Revenues							
Levies	(229,162)	(59,490)	(41,647)	(41,647)	(41,647)	-	0.0%
User Fees	(64,408,361)	(67,033,069)	(73,320,081)	(73,782,129)	(78,579,002)	(4,796,873)	6.5%
Contr from Reserve and Capital	(233,267)	(1,600,930)	(912,214)	(299,717)	(413,527)	(113,810)	38.0%
Other Revenues	(975,680)	(956,781)	(800,000)	(625,000)	(625,000)	-	0.0%
Total Revenues	(65,846,)	(69,650,270)	(75,073,942)	(74,748,493)	(79,659,176)	(4,910,683)	6.6%
Expenses							
Salaries and Benefits	12,382,619	13,116,722	3,030,000	3,131,629	3,163,820	32,191	1.0%
Materials - Operating Expenses	4,280,036	5,276,900	-	-	-	-	0.0%
Energy Costs	4,740,702	4,653,187	268,937	268,937	324,097	55,160	20.5%
Rent and Financial Expenses	11,462	52,551				-	0.0%
Purchased/Contract Services	10,323,711	10,150,336				-	0.0%
Debt Repayment	4,010,792	4,177,465	299,717	299,717	413,527	113,810	38.0%
Grants - Transfer Payments	1,600	950	5,000	5,000	5,000	-	0.0%
Contr to Reserve and Capital	26,703,404	28,593,113	32,133,495	31,135,330	33,431,662	2,296,332	7.4%
Internal Recoveries	6,851,144	7,248,046	43,121,793	43,692,880	44,844,403	1,151,523	2.6%
Total Expenses	69,305,470	73,269,270	78,858,942	78,533,493	82,182,509	3,649,016	4.6%
Net Budget	3,459,000	3,619,000	3,785,000	3,785,000	2,523,333	(1,261,667)	-33.3%

Staffing Complement

	2018 Budget	2019 Budget
Full-Time Positions	95	95

Rate Structure

The rate structure for water includes a monthly service charge that varies according to the size of the water meter. The variation in the service charge is based on ratios recommended by the American Water Works Association (AWWA).

The rate structure for water also includes a uniform rate for each cubic meter of water consumed. For water, the uniform rate is applied to all consumption. The impact of the proposed rate increase on the monthly service charge and consumption water rate is shown in the following table.

2019 Water Rates	
Monthly Service Charge	
Meter Size	2019
5/8"	\$21.46
3/4"	\$21.46
1"	\$53.60
1.5"	\$107.20
2"	\$171.51
3"	\$343.03
4"	\$535.98
6"	\$1,071.96
8"	\$1,715.13
10"	\$2,465.50
Volume Charge per Cubic metre	\$1.728
Wastewater Surcharge	111.80%

The wastewater surcharge is a percentage applied to total water charges (volume and fixed) as there are no meters to measure the outflows of wastewater. For 2019 the wastewater surcharge is 111.8 % of water charges.

Average Homeowner

The chart below illustrates the impact of the 2019 rates on a homeowner who uses 200 cubic metres of water per year. The cost increase for 2019 is approximately \$7.35 per month for the average homeowner.

2019 Water/Wastewater Rate Impact				
	2018	2019	\$ Change	% Change
Water				
Annual Usage Charge	320.40	345.60	25.20	
Annual Fixed Service Charge	238.68	257.52	18.84	
Total Annual Water	\$559.08	\$603.12	\$44.04	7.9
Wastewater				
Annual Usage Surcharge	361.09	386.38	25.29	
Annual Fixed Service Surcharge	268.99	287.91	18.92	
Total Annual Wastewater	\$630.08	\$674.29	\$44.21	7.0
Total Annual Water/Wastewater Charges	\$1,189.16	\$1,277.41	\$88.25	7.4

Rate Consumption: Sample Residential Customers

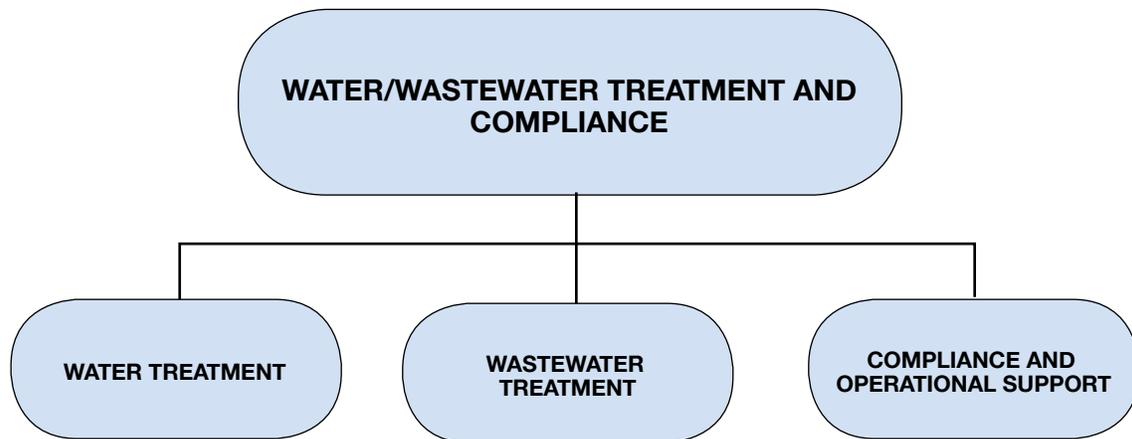
The following chart compares Greater Sudbury’s 2018 rates to those of other northern Ontario municipalities. The chart uses rates for 2018, as other cities have not yet determined their rates for 2019.

Sample Residential Customer - 2018 Rates

	Sudbury	North Bay	Timmins	Sault Ste. Marie	Thunder Bay
Water					
Annual Volume Charge	\$320	\$272	\$0	\$150	\$330
Annual Service Charge	\$239	\$329	\$418	\$330	\$276
Total Annual Water	\$559	\$601	\$418	\$481	\$606
Wastewater					
Annual Volume Charge	\$361	\$221	\$0	\$93	\$297
Annual Service Charge	\$269	\$240	\$458	\$205	\$248
Total Annual Wastewater	\$630	\$461	\$458	\$298	\$546
Total Water/Wastewater	\$1,189	\$1,062	\$876	\$779	\$1,152

Source: 2018 BMA Study

WATER/WASTEWATER TREATMENT AND COMPLIANCE



OVERVIEW

Water/Wastewater is responsible for the treatment of all water and wastewater in the City of Greater Sudbury. This includes ensuring the quantity and quality of both potable water and treated wastewater effluent meets the stringent requirements of all applicable federal, provincial and municipal regulations, standards and policies while maintaining the highest level of treatment efficiency possible.

Water/Wastewater works collaboratively with Linear Infrastructure Services to distribute potable water and collect wastewater, Infrastructure Capital Planning Services to inform them of any capital requirements in facilities as well as Engineering Services to ensure delivery of capital projects meet the needs of the department.

SERVICES

Water Treatment

- Provides safe, clean drinking water to approximately 130,000 citizens, or 80 %, of the City’s population.
- Effectively maintains and operates two surface water treatment plants which supply the Sudbury municipal water system.
- Oversees the maintenance and operation of 23 drinking water supply wells which supply five municipal water systems across the City of Greater Sudbury.
- Maintains and operates related 12 booster stations, eight metering stations, five bulk filling stations and nine water storage facilities.
- Treats and distributes an average of 1,200,000 cubic metres of water annually from the Vale Vermillion

River Treatment Plan to provide water to the communities of Copper Cliff, Walden and Lively.

Wastewater Treatment

- Approximately 57 % of the division’s resources are allocated to wastewater treatment services
- Maintains and operates 12 wastewater treatment facilities, including the Kelly Lake Wastewater Treatment Plant which treats 72 % of all wastewater collected in Greater Sudbury.
- Maintains and operates 69 sewage lift stations, a hauled liquid waste station (septage) and a biosolids facility which collectively treat an average of 32,700,000 cubic metres of wastewater annually.

Compliance and Operational Support

- In 2018, section staff completed approximately 1,600 site visits and 2,600 inspections throughout Greater Sudbury to ensure regulatory compliance with all applicable Water and Wastewater regulations.
- Manages 48,000 residential water meters which enables the City to monitor water usage.
- Maintains the computer monitoring and control systems of all treatment facilities across Greater Sudbury.
- Manages the Drinking Water Source Protection Program through the review of building permits and conducting onsite inspections within the designated source protection areas.
- Oversees and controls industrial, commercial and institutional sewer discharges into the wastewater system.

2018 ACCOMPLISHMENTS

- Achieved significant gains in energy savings through partnerships with the Independent Electricity System Operator of Ontario (IESO).
- Established the Business Improvement and Data Integration Section.
- Established real-time metering of water received from Vale.

KEY PERFORMANCE INDICATORS

Measure Name	Measure Category	CGS results		Median 2017
		2016	2017	
Total Cost of Wastewater Collection/Conveyance and Treatment/Disposal per Megalitre Treated	Efficiency	\$1,084	\$1,062	\$851
Number of Water Main Breaks per 100 km (excluding connections) of Water Distribution Pipe	Customer Service	8.3	8.6	8.2

STRATEGIC ISSUES AND OPPORTUNITIES

- Implementation of automated water meter infrastructure which accurately tracks water usage and eliminates the need for manual meter reading to the benefit of residents.
- Implementation of the recommendations of the Water/Wastewater Master Plan which prioritizes operations to the benefit of the customers, improves system performance and efficiencies, and supports community growth.
- Continued utilization of technology and automation which allows for integration of established performance metrics into annual reports and real time access by the public through citizen portals.
- The reduction of Infiltration and Inflow into the sanitary sewer system which will optimize use of existing infrastructure and reduces the need for major new capital investment.
- Improvements to stormwater management facilities which has a direct connection to improved water quality.

KEY DELIVERABLES IN 2019

- Implement a strategy for Automated Meter Infrastructure (AMI).

2019 WATER AND WASTEWATER CAPITAL PROJECT LIST

R - Recommended, P - Previous Council Approvals - in thousands

Page	Capital Project	Capital Project Cost							Total Recommended Funding					Index	
		Total Project	2019	2020	2021	2022	2023	Beyond	Total Funding	User Fees	Capital Reserves	Federal Grant	Provincial Grant		Recoveries
	WATER														
	WATER DISTRIBUTION														
	Watermain Priority Projects														
375	Coniston Industrial Park Watermain Upgrades	2,028	2,028	-	-	-	-	-	2,028	380	380	-	507	761	R
375	Preliminary Design for Future Projects - Water	25	25	-	-	-	-	-	25	25	-	-	-	-	R
376	Contingency - Water	260	260	-	-	-	-	-	260	260	-	-	-	-	R
377	Cost Sharing Policy Applications - Water	500	500	-	-	-	-	-	500	500	-	-	-	-	R
378	Watermain Priority Replacement & Rehabilitation	6,710	6,710	-	-	-	-	-	6,710	5,790	920	-	-	-	R
379	Watermain with Sewer & Roads	1,400	1,400	-	-	-	-	-	1,400	1,400	-	-	-	-	R
	TOTAL - Watermain Priority Projects	10,923	10,923	-	-	-	-	-	10,923	8,355	1,300	-	507	761	
	Watermain Replacement & Rehabilitation														
379	Water Service Replacement	100	100	-	-	-	-	-	100	100	-	-	-	-	R
380	Watermain Rehabilitation	1,550	1,550	-	-	-	-	-	1,550	1,550	-	-	-	-	R
380	Watermain Valve Replacement	100	100	-	-	-	-	-	100	100	-	-	-	-	R
	TOTAL - Watermain Replacement & Rehabilitation	1,750	1,750	-	-	-	-	-	1,750	1,750	-	-	-	-	
	Distribution Support														
381	Distribution Health & Safety Equipment	100	100	-	-	-	-	-	100	100	-	-	-	-	R
381	Distribution Support	40	40	-	-	-	-	-	40	40	-	-	-	-	R
382	Large Water Meter Replacement	100	100	-	-	-	-	-	100	100	-	-	-	-	R
382	Leak Detection Program	75	75	-	-	-	-	-	75	75	-	-	-	-	R
383	Valve Inspection & Maintenance	200	200	-	-	-	-	-	200	200	-	-	-	-	R
	TOTAL - Distribution Support	515	515	-	-	-	-	-	515	515	-	-	-	-	
	Condition Assessment - Watermains														
383	Watermain Condition Assessment	100	100	-	-	-	-	-	100	100	-	-	-	-	R
	TOTAL - Condition Assessment - Watermains	100	100	-	-	-	-	-	100	100	-	-	-	-	
	TOTAL - WATER DISTRIBUTION	13,288	13,288	-	-	-	-	-	13,288	10,720	1,300	-	507	761	
	WATER PLANTS														
	Water Treatment Plants														
384	David Street Water Treatment Plant Various Repairs	50	50	-	-	-	-	-	50	50	-	-	-	-	R
384	Wanapitei Water Treatment Plant Upgrades	600	600	-	-	-	-	-	600	600	-	-	-	-	R
385	Wanapitei Water Treatment Plant Transformer Upgrades	1,000	1,000	-	-	-	-	-	1,000	-	-	-	-	1,000	R
	TOTAL - Water Treatment Plants	1,650	1,650	-	-	-	-	-	1,650	650	-	-	-	1,000	
	Wells														
385	Well Building Repairs & Upgrades	3,305	3,305	-	-	-	-	-	3,305	3,305	-	-	-	-	R
386	Well Inspection & Rehabilitation	310	310	-	-	-	-	-	310	310	-	-	-	-	R
386	Well Process Upgrades	500	500	-	-	-	-	-	500	500	-	-	-	-	R
	TOTAL - Wells	4,115	4,115	-	-	-	-	-	4,115	4,115	-	-	-	-	
	WATER WORKS GENERAL														
	Reservoirs, Tanks & Booster Stations														
393	Booster Station Condition Assessment	300	300	-	-	-	-	-	300	300	-	-	-	-	R
394	Storage Tank Inspection & Rehabilitation	200	200	-	-	-	-	-	200	200	-	-	-	-	R
	TOTAL - Reservoirs, Tanks & Booster Stations	500	500	-	-	-	-	-	500	500	-	-	-	-	
	System Wide														
394	Operating Manuals & As-Builts	50	50	-	-	-	-	-	50	50	-	-	-	-	R
395	Water Facilities Repairs & Equipment Upgrades	100	100	-	-	-	-	-	100	100	-	-	-	-	R
395	Water Facilities Condition Assessments	250	250	-	-	-	-	-	250	250	-	-	-	-	R
396	Water Facilities Health & Safety Upgrades	50	50	-	-	-	-	-	50	50	-	-	-	-	R
396	Water Facilities Security Improvements	75	75	-	-	-	-	-	75	75	-	-	-	-	R
	TOTAL - System Wide	525	525	-	-	-	-	-	525	525	-	-	-	-	
	TOTAL - WATER PLANTS	6,790	6,790	-	-	-	-	-	6,790	5,790	-	-	-	1,000	
	Strategic Initiatives														
387	Automatic Meter Reading Water Meters	500	500	-	-	-	-	-	500	500	-	-	-	-	R
388	Depot & Public Work Upgrades - Water	100	100	-	-	-	-	-	100	100	-	-	-	-	R
389	GIS Various Equipment & Software - Water	30	30	-	-	-	-	-	30	30	-	-	-	-	R
390	Hydraulic Model License - Water	8	8	-	-	-	-	-	8	8	-	-	-	-	R
391	Master Plan & Asset Management Plan	500	500	-	-	-	-	-	500	500	-	-	-	-	R
391	Sentinel Well System	50	50	-	-	-	-	-	50	50	-	-	-	-	R
392	Source Protection Plan	50	50	-	-	-	-	-	50	50	-	-	-	-	R
392	Strategic Planning	25	25	-	-	-	-	-	25	25	-	-	-	-	R
393	Various Contributions to Operating - Water	187	187	-	-	-	-	-	187	187	-	-	-	-	R
	TOTAL - WATER WORKS GENERAL	1,450	1,450	-	-	-	-	-	1,450	1,450	-	-	-	-	
	TOTAL - WATER	21,528	21,528	-	-	-	-	-	21,528	17,960	1,300	-	507	1,761	

2019 WATER AND WASTEWATER CAPITAL PROJECT LIST

R - Recommended, P - Previous Council Approvals - in thousands

Page	Capital Project	Capital Project Cost							Total Recommended Funding					Index	
		Total Project	2019	2020	2021	2022	2023	Beyond	Total Funding	User Fees	Capital Reserves	Federal Grant	Provincial Grant		Recoveries
	WASTEWATER														
	WASTEWATER COLLECTION														
	Sewer Priority Projects														
397	Sewer Priority Replacement & Rehabilitation	2,045	2,045	-	-	-	-	-	2,045	2,045	-	-	-	-	R
397	Sewer with Watermain & Roads	50	50	-	-	-	-	-	50	50	-	-	-	-	R
398	Preliminary Design for Future Projects - Wastewater	175	175	-	-	-	-	-	175	175	-	-	-	-	R
398	Contingency - Wastewater	71	71	-	-	-	-	-	71	71	-	-	-	-	R
399	Cost Sharing Policy Applications - Wastewater	200	200	-	-	-	-	-	200	200	-	-	-	-	R
399	Gatchell Outfall Sewer	3,350	-	1,000	2,350	-	-	-	3,350	3,350	-	-	-	-	P
400	Lively Sanitary Sewer - Jacob Street	1,785	1,785	-	-	-	-	-	1,785	1,785	-	-	-	-	P
	TOTAL - Sewer Priority Projects	7,676	4,326	1,000	2,350	-	-	-	7,676	7,676	-	-	-	-	
	Sewer System Rehabilitation														
400	Rock Tunnel Maintenance & Repair	100	100	-	-	-	-	-	100	100	-	-	-	-	R
401	Sanitary Sewer Laterals Rehabilitation	100	100	-	-	-	-	-	100	100	-	-	-	-	R
401	Sanitary Sewer System Rehabilitation & Repair	1,625	1,625	-	-	-	-	-	1,625	665	-	960	-	-	R
	TOTAL - Sewer System Rehabilitation	1,825	1,825	-	-	-	-	-	1,825	865	-	960	-	-	
	Collection System														
402	Collection Contract Support	50	50	-	-	-	-	-	50	50	-	-	-	-	R
402	Collection Health & Safety Equipment	100	100	-	-	-	-	-	100	100	-	-	-	-	R
	TOTAL - Collection System	150	150	-	-	-	-	-	150	150	-	-	-	-	
	TOTAL - WASTEWATER COLLECTION	9,651	6,301	1,000	2,350	-	-	-	9,651	8,691	-	960	-	-	
	WASTEWATER PLANTS														
	Lift Stations														
403	Lift Station Upgrades	5,500	5,500	-	-	-	-	-	5,500	3,500	2,000	-	-	-	R
404	St Charles Lift Station Upgrades	6,741	963	963	963	963	963	1,926	6,741	6,741	-	-	-	-	P
	TOTAL - Lift Stations	12,241	6,463	963	963	963	963	1,926	12,241	10,241	2,000	-	-	-	
	System Wide														
404	Lagoon Upgrades	250	250	-	-	-	-	-	250	250	-	-	-	-	R
405	Wastewater Facilities Condition Assessment	125	125	-	-	-	-	-	125	125	-	-	-	-	R
405	Wastewater Facilities Health & Safety Upgrades	50	50	-	-	-	-	-	50	50	-	-	-	-	R
406	Wastewater Facilities Security Improvements	80	80	-	-	-	-	-	80	80	-	-	-	-	R
	TOTAL - System Wide	505	505	-	-	-	-	-	505	505	-	-	-	-	
	Wastewater Treatment Plants														
406	Copper Cliff Wastewater System Upgrades	5,838	1,168	1,168	1,168	1,168	1,168	-	5,838	5,838	-	-	-	-	P
407	Sudbury WWTP Upgrades	1,950	1,950	-	-	-	-	-	1,950	1,950	-	-	-	-	P
407	Sudbury WWTP Headhouse	2,313	463	463	463	463	463	-	2,313	2,313	-	-	-	-	P
408	Wastewater Treatment Plant Equipment Upgrades	700	700	-	-	-	-	-	700	700	-	-	-	-	R
	TOTAL - Wastewater Treatment Plants	10,801	4,280	1,630	1,630	1,630	1,630	-	10,801	10,801	-	-	-	-	
	TOTAL - WASTEWATER PLANTS	23,548	11,248	2,593	2,593	2,593	2,593	1,926	23,548	21,548	2,000	-	-	-	
	WASTEWATER GENERAL														
	Strategic Initiatives														
408	Community Spills Management Fund	15	15	-	-	-	-	-	15	15	-	-	-	-	R
409	Depot & Public Work Upgrades - Wastewater	100	100	-	-	-	-	-	100	100	-	-	-	-	R
410	GIS Various Equipment & Software - Wastewater	25	25	-	-	-	-	-	25	25	-	-	-	-	R
410	Hydraulic Model License - Wastewater	8	8	-	-	-	-	-	8	8	-	-	-	-	R
411	Sewer Inspection & Maintenance Program	600	600	-	-	-	-	-	600	600	-	-	-	-	R
411	Various Contributions to Operating - Wastewater	135	135	-	-	-	-	-	135	135	-	-	-	-	R
	TOTAL - WASTEWATER GENERAL	882	882	-	-	-	-	-	882	882	-	-	-	-	
	TOTAL - WASTEWATER	34,081	18,432	3,593	4,943	2,593	2,593	1,926	34,081	31,121	2,000	960	-	-	

2019 CAPITAL PROJECT DETAILS

Project Title: Coniston Industrial Park Watermain Upgrades
Asset Class: Water Infrastructure

Project Type: Recommended
Department: Water

Summary: There is a proposed development project in Coniston Industrial area by a private developer. In order for this project to proceed, there is a need to upsize the existing 150 mm diameter watermain from Allen Road to Smelter Road to a 250 mm diameter. This project is cost shared with the developer as there is existing deficiencies within the water system. This project has also obtained external funding.

		2019	2020	2021	2022	2023	Total
Expenses		\$ 2,028,313	\$ -	\$ -	\$ -	\$ -	\$ 2,028,313
Funding							
User Fees		\$ 380,309	\$ -	\$ -	\$ -	\$ -	\$ 380,309
Capital Reserves	Industrial Park	\$ 380,309	\$ -	\$ -	\$ -	\$ -	\$ 380,309
Provincial Grant	NOHFC	\$ 507,078	\$ -	\$ -	\$ -	\$ -	\$ 507,078
Recoveries	Developer	\$ 760,617	\$ -	\$ -	\$ -	\$ -	\$ 760,617
Total		\$ 2,028,313	\$ -	\$ -	\$ -	\$ -	\$ 2,028,313
Operating Impact of Capital		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Project Title: Preliminary Design for Future Projects - Water
Asset Class: Water Infrastructure

Project Type: Recommended
Department: Water

Summary: Consulting fees for preliminary design for future projects, including engineering (preliminary and detailed design), geotechnical investigations, surveys, etc. Geotechnical investigations and surveys are often required prior to the design commencing, so this account allows the designer to obtain critical information well enough in advance to not negatively impact the project schedule. When the capital outlook is developed, it is unknown if the design will be completed by CGS staff or an external consultant. Once the workplan is developed, some of the designs may be more appropriately completed by external consultants. This account allows the flexibility to retain consultants to complete some or all of the design work, as required.

		2019	2020	2021	2022	2023	Total
Expenses		\$ 25,000	\$ -	\$ -	\$ -	\$ -	\$ 25,000
Funding							
User Fees		\$ 25,000	\$ -	\$ -	\$ -	\$ -	\$ 25,000
Total		\$ 25,000	\$ -	\$ -	\$ -	\$ -	\$ 25,000
Operating Impact of Capital		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

2019 CAPITAL PROJECT DETAILS

Project Title: Contingency - Water
Asset Class: Water Infrastructure

Project Type: Recommended
Department: Water

Summary: This account provides additional funding for a variety of purposes in relation to the watermain and watermain with roads priority projects. During design, this account can be utilized to fund engineering consultants' fees in circumstances when it is determined part way through the year that there is not enough appropriate/specifically qualified city design or contract administration staff to complete the project. During construction, this account typically provides funds for additional costs related to unanticipated field conditions (i.e. soils/rock/groundwater elevations or new condition assessment information) which result in a change of scope of the work. This account also provides funding for watermain work that is determined to be required during the construction of a roads priority project, based on actual field conditions. This work would not have been anticipated during the capital budget planning process, based on the information available at that time.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 259,907	\$ -	\$ -	\$ -	\$ -	\$ 259,907

	2019	2020	2021	2022	2023	Total
Funding						
User Fees	\$ 259,907	\$ -	\$ -	\$ -	\$ -	\$ 259,907
Total	\$ 259,907	\$ -	\$ -	\$ -	\$ -	\$ 259,907

	2019	2020	2021	2022	2023	Total
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

2019 CAPITAL PROJECT DETAILS

Project Title: Cost Sharing Policy Applications - Water
Asset Class: Water Infrastructure

Project Type: Recommended
Department: Water

Summary: This project is to allocate funds that may be required to fund water related costs for cost sharing applications received by Water/Wastewater Services from developers/land owners in accordance with the Development Cost Sharing Policy (2016) previously approved by Council. Development cost sharing applications will be considered on a case by case basis and subject to Council approval, based on the following principles:

- a) The City recognizes that development represents an opportunity to rehabilitate, upgrade and or replace infrastructure that would otherwise fall under the City’s capital programs. Since there are limited resources to apply to infrastructure upgrades in a given year, the City has an interest in cost sharing in situations where there are demonstrated gains in closing the infrastructure renewal requirement, and/or
- b) Cost sharing is an option in situations where there are off site deficiencies or enhanced work is desired by the City.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 500,000	\$ -	\$ -	\$ -	\$ -	\$ 500,000
Funding						
User Fees	\$ 500,000	\$ -	\$ -	\$ -	\$ -	\$ 500,000
Total	\$ 500,000	\$ -	\$ -	\$ -	\$ -	\$ 500,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

2019 CAPITAL PROJECT DETAILS

Project Title: Watermain Priority Replacement and Rehabilitation **Project Type:** Recommended
Asset Class: Water Infrastructure **Department:** Water

Summary: Detailed design and construction of various watermain replacement or rehabilitation (lining) projects based on recommendations and framework contained in the Water/Wastewater Infrastructure Master Plan and Asset Management Plan, both recently received by Council. The risk assessment incorporated within the Asset Management Plan utilizes condition and age data, service criticality, socioeconomic, environmental and traffic impacts among others, to determine the priority projects.

The following locations are recommended for completion in 2019:

- Dean Avenue - Lorne to Landsend (construction)
- Jane Street - Dean to Easement (construction)
- Tudor Court - Windsor to End (construction)
- St Brendan Street - Homewood to Marion (construction)
- Municipal Road 24 - Trunk Watermain (construction - lining)
- Whissel Avenue - Perrault to Dell (construction with St. Charles Lift Station project)
- Ash Street (Lively) (construction)
- Hyland Drive - Regent to Winchester (design)
- St. Nicholas Street - St. Brendan (construction)
- Henry Street (Garson) - MacDougall to East End (construction)
- O’Neil Drive East - Penman to Margaret South (construction)
- Roy Avenue - Leon to Rinfret (construction)
- Fairburn Street (construction)
- Laberge Lane (construction - lining)
- Allan Street Bridge watermain (construction)
- 10th Avenue Lively (design with Lively Sanitary Sewer Improvements Phase 2)
- Anderson Drive Lively (design with Lively Sanitary Sewer Improvements Phase 2)
- Maple Street (Sudbury - various sections) (design)

	2019	2020	2021	2022	2023	Total
Expenses	\$ 6,710,000	\$ -	\$ -	\$ -	\$ -	\$ 6,710,000

	2019	2020	2021	2022	2023	Total
Funding						
User Fees	\$ 5,790,000	\$ -	\$ -	\$ -	\$ -	\$ 5,790,000
Capital Reserves Water	\$ 920,000	\$ -	\$ -	\$ -	\$ -	\$ 920,000
Total	\$ 6,710,000	\$ -	\$ -	\$ -	\$ -	\$ 6,710,000

	2019	2020	2021	2022	2023	Total
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

2019 CAPITAL PROJECT DETAILS

Project Title: Watermain with Sewer and Roads
Asset Class: Water Infrastructure

Project Type: Recommended
Department: Water

Summary: This project will be used to complete the watermain replacement under the Vermilion River Bridge, in conjunction with the bridge construction in 2019. In addition, this project will be used to complete watermain replacement under bridges and culverts or to accommodate sanitary sewer projects in various priority locations in 2019, which are unknown at this time and may develop as new condition assessment information becomes available.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 1,400,000	\$ -	\$ -	\$ -	\$ -	\$ 1,400,000

	2019	2020	2021	2022	2023	Total
Funding						
User Fees	\$ 1,400,000	\$ -	\$ -	\$ -	\$ -	\$ 1,400,000
Total	\$ 1,400,000	\$ -	\$ -	\$ -	\$ -	\$ 1,400,000

	2019	2020	2021	2022	2023	Total
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Project Title: Water Service Replacement
Asset Class: Water Infrastructure

Project Type: Recommended
Department: Water

Summary: The City of Greater Sudbury maintains records of service calls to residences and commercial properties with frozen water lines. If the water service freezes on the City's side of the property line three years in a row, the property owners are advised to run their water to prevent them from freezing over the winter months. However, running the water to prevent freezing also costs money and is wasteful. This project is used to insulate or lower water services that are on the annual list to run water to prevent freezing on City property.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ 100,000

	2019	2020	2021	2022	2023	Total
Funding						
User Fees	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ 100,000
Total	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ 100,000

	2019	2020	2021	2022	2023	Total
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

2019 CAPITAL PROJECT DETAILS

Project Title: Watermain Rehabilitation
Asset Class: Water Infrastructure

Project Type: Recommended
Department: Water

Summary: This project is used for the rehabilitation (lining) of existing watermains using trenchless technologies to extend the service life (by approximately 50 years) and reduce the risk of watermain breaks. It is also used to pay for the contract administration and inspection of the work, by external consultants. The locations are prioritized by operational concerns (i.e. high break frequency) and this technique is typically used to minimize traffic disruption on arterial roadways or when the watermain needs to be rehabilitated, but no funding is available to rehabilitate the roadway.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 1,550,000	\$ -	\$ -	\$ -	\$ -	\$ 1,550,000
Funding						
User Fees	\$ 1,550,000	\$ -	\$ -	\$ -	\$ -	\$ 1,550,000
Total	\$ 1,550,000	\$ -	\$ -	\$ -	\$ -	\$ 1,550,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Project Title: Watermain Valve Replacement
Asset Class: Water Infrastructure

Project Type: Recommended
Department: Water

Summary: The City's Municipal Water Systems consist of approximately 900km of watermain and approximately 9,000 system valves. The valves allow for appropriate operations and maintenance of the systems as well as isolation of sections of main during connections or repairs. The Water/Wastewater Asset Management Plan, 2018 and American Water Works Association (AWWA) Standards provide recommendations for valve exercising (turning) programs which are completed by the City's operations staff. This project is used for the repair or replacement of various inoperable large diameter valves throughout the City, which are detected by the valve turning program or by other means.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ 100,000
Funding						
User Fees	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ 100,000
Total	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ 100,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

2019 CAPITAL PROJECT DETAILS

Project Title: Distribution Health and Safety Equipment
Asset Class: Water Infrastructure

Project Type: Recommended
Department: Water

Summary: The operations of the municipal water distribution and sanitary collection systems are regulated by the Ontario Health and Safety Act, and require that high risk/potentially dangerous work is undertaken. The regulations are constantly being improved/updated, and City staff are required to update their equipment accordingly. This project is for the purchase of various health and safety equipment required by operations.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ 100,000

	2019	2020	2021	2022	2023	Total
Funding						
User Fees	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ 100,000
Total	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ 100,000

	2019	2020	2021	2022	2023	Total
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Project Title: Distribution Support
Asset Class: Water Infrastructure

Project Type: Recommended
Department: Water

Summary: This project provides funding for unforeseen, emergency operational requirements, such as equipment purchase or emergency/urgent system components that exceed the operational budgetary capabilities.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 40,000	\$ -	\$ -	\$ -	\$ -	\$ 40,000

	2019	2020	2021	2022	2023	Total
Funding						
User Fees	\$ 40,000	\$ -	\$ -	\$ -	\$ -	\$ 40,000
Total	\$ 40,000	\$ -	\$ -	\$ -	\$ -	\$ 40,000

	2019	2020	2021	2022	2023	Total
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

2019 CAPITAL PROJECT DETAILS

Project Title: Large Water Meter Replacement
Asset Class: Water Infrastructure

Project Type: Recommended
Department: Water

Summary: A water meter maintenance and replacement program is recommended by the American Water Works Association (AWWA) standards and the City completes its maintenance and replacement accordingly. This project will be used for the maintenance and replacement of aging large diameter water meters.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ 100,000
Funding						
User Fees	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ 100,000
Total	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ 100,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Project Title: Leak Detection Program
Asset Class: Water Infrastructure

Project Type: Recommended
Department: Water

Summary: Council has recently received/endorsed the first iteration of the City’s Water/Wastewater (W/WW) Master Plan and W/WW Asset Management Plan. The recommendations of these plans provide guidance for both operational programs and capital projects that will reduce operating and possibly defer capital costs associated with the City’s water and wastewater systems. The recommendations include reducing leakage (non-revenue water) from the water distribution systems and reducing inflow and infiltration from the wastewater systems. This project will be used to purchase various leak detection equipment and/or contract services for leak detection in alignment with the plans.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 75,000	\$ -	\$ -	\$ -	\$ -	\$ 75,000
Funding						
User Fees	\$ 75,000	\$ -	\$ -	\$ -	\$ -	\$ 75,000
Total	\$ 75,000	\$ -	\$ -	\$ -	\$ -	\$ 75,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

2019 CAPITAL PROJECT DETAILS

Project Title: Valve Inspection and Maintenance
Asset Class: Water Infrastructure

Project Type: Recommended
Department: Water

Summary: The City’s municipal water systems consist of approximately 900km of watermain and approximately 9,000 system valves. The valves allow for appropriate operations and maintenance of the systems as well as isolation of sections of main during connections or repairs. The W/WW Asset Management Plan, 2018 provides recommendations for valve inspection and maintenance programs which are completed by the City’s operations staff. This project will be utilized to purchase various valve turning equipment and/or contract services for valve inspection and maintenance in alignment with the City’s W/WW Asset Management Plan.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 200,000	\$ -	\$ -	\$ -	\$ -	\$ 200,000
Funding						
User Fees	\$ 200,000	\$ -	\$ -	\$ -	\$ -	\$ 200,000
Total	\$ 200,000	\$ -	\$ -	\$ -	\$ -	\$ 200,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Project Title: Watermain Condition Assessment
Asset Class: Water Infrastructure

Project Type: Recommended
Department: Water

Summary: The City’s Water/Wastewater Asset Management Plan, 2018 recommends that all watermains within the City undergo a condition assessment to inform the asset management capital project prioritization and the updated W/WW Asset Management Plan.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ 100,000
Funding						
User Fees	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ 100,000
Total	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ 100,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

2019 CAPITAL PROJECT DETAILS

Project Title: David Street Water Treatment Plant Various Repairs **Project Type:** Recommended
Asset Class: Water Plants and Facilities **Department:** Water

Summary: The David Street Water Treatment Plant is a membrane filtration plant that uses chlorine for water disinfection and the building needs a proper working heating ventilation and air conditioning (HVAC) system to keep the building at acceptable chlorine concentration level in the air (atmosphere). Higher chlorine concentration level in the air causes major corrosion of equipment and causes premature equipment failure. The project objective is upgrading the existing HVAC system including upgrades to electrical system for better operation control and to remedy the existing situation.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ 50,000
Funding						
User Fees	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ 50,000
Total	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ 50,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Project Title: Wanapitei Water Treatment Plant Upgrades **Project Type:** Recommended
Asset Class: Water Plants and Facilities **Department:** Water

Summary: The Wanapitei Water Treatment Plant is the main source supply of potable water for Sudbury, Coniston and partially Garson. It has several valves and controls in the pumping station that are old and in need of replacement with new controls for safer operations. Additionally, upgrading communication and operating controls through the supervisory control and data acquisition system (SCADA) will provide better access to control valves operation for flow/pressure regulation for safer and more flexible operation of the facility.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 600,000	\$ -	\$ -	\$ -	\$ -	\$ 600,000
Funding						
User Fees	\$ 600,000	\$ -	\$ -	\$ -	\$ -	\$ 600,000
Total	\$ 600,000	\$ -	\$ -	\$ -	\$ -	\$ 600,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

2019 CAPITAL PROJECT DETAILS

Project Title: Wanapitei Water Treatment Plant Transformer Upgrades
Asset Class: Water Plants and Facilities

Project Type: Recommended
Department: Water

Summary: Hydro One is upgrading its electrical distribution system in Coniston. Part of their scope of work is to upgrade the existing hydro transformers at Wanapitei Water Treatment Plant and at the water intake facility. The project is initiated and financed by Hydro One and is working in collaboration with the City.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 1,000,000	\$ -	\$ -	\$ -	\$ -	\$ 1,000,000

Funding		2019	2020	2021	2022	2023	Total
Recoveries	Hydro One	\$ 1,000,000					\$ 1,000,000
Total		\$ 1,000,000	\$ -	\$ -	\$ -	\$ -	\$ 1,000,000

	2019	2020	2021	2022	2023	Total
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Project Title: Well Building Repairs and Upgrades
Asset Class: Water Plants and Facilities

Project Type: Recommended
Department: Water

Summary: Garson is primarily supplied by three ground water wells. Recently, the water quality coming from these wells has deteriorated. The City is working with WSP Global to diligently find a solution to remedy the existing situation and find an alternate water supply. Many water supply alternatives are considered at this stage and will require decommissioning existing Wells 1 and 3 as they are the source of water quality issue. Upgrades to Well 2 and some upgrades to the existing water distribution system are also needed. This project is to implement the recommended solution by WSP Global for water infrastructure upgrades for water supply and distribution system.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 3,305,000	\$ -	\$ -	\$ -	\$ -	\$ 3,305,000

Funding		2019	2020	2021	2022	2023	Total
User Fees		\$ 3,305,000	\$ -	\$ -	\$ -	\$ -	\$ 3,305,000
Total		\$ 3,305,000	\$ -	\$ -	\$ -	\$ -	\$ 3,305,000

	2019	2020	2021	2022	2023	Total
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

2019 CAPITAL PROJECT DETAILS

Project Title: Well Inspection and Rehabilitation
Asset Class: Water Plants and Facilities

Project Type: Recommended
Department: Water

Summary: Many of our communities rely on ground water as a potable water source. A series of wells provide potable water to these populations. The operating wells overtime are subject to performance issues due to a number of factors that limit or restrict their pumping capacity which has a direct impact on safety of water quantities supplied to residents. This project is to implement a continuous assessment and rehabilitation of wells to sustain wells pumping performance in terms of water quantities and quality and sustain the existing underground infrastructures for safety of water supply.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 310,000	\$ -	\$ -	\$ -	\$ -	\$ 310,000
Funding						
User Fees	\$ 310,000	\$ -	\$ -	\$ -	\$ -	\$ 310,000
Total	\$ 310,000	\$ -	\$ -	\$ -	\$ -	\$ 310,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Project Title: Well Process Upgrades
Asset Class: Water Plants and Facilities

Project Type: Recommended
Department: Water

Summary: M, J, and Kenneth Wells supply water to the population in Valley East. These wells suffer from a water quality perspective. Concentration of iron and manganese in water are at limits that require a special consideration for treatment. A study was conducted recently by WSP Global and provided a recommendation to resolve the iron and manganese concentration limit issue. This project is to implement the recommended solution using best available treatment technology.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 500,000	\$ -	\$ -	\$ -	\$ -	\$ 500,000
Funding						
User Fees	\$ 500,000	\$ -	\$ -	\$ -	\$ -	\$ 500,000
Total	\$ 500,000	\$ -	\$ -	\$ -	\$ -	\$ 500,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

2019 CAPITAL PROJECT DETAILS

Project Title: Automatic Meter Reading Water Meters
Asset Class: Water Infrastructure

Project Type: Recommended
Department: Water

Summary: The City of Greater Sudbury provides drinking water services to over 48,000 customers. Funding to provide these services is primarily generated through user fees based largely on consumption through water meters measuring usage for each account.

The City’s current metering technology is outdated when compared to industry norms and relies on touch pad technology requiring manual readings to determine consumption. A recent feasibility study was concluded that a fixed based AMR/AMI (automatic meter reading/advanced metering infrastructure) water meter system should be used to replace the City’s existing manual water reading system.

This project will be used to purchase, install and manage the AMR/AMI water meter system.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 500,000	\$ -	\$ -	\$ -	\$ -	\$ 500,000
Funding						
User Fees	\$ 500,000	\$ -	\$ -	\$ -	\$ -	\$ 500,000
Total	\$ 500,000	\$ -	\$ -	\$ -	\$ -	\$ 500,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

2019 CAPITAL PROJECT DETAILS

Project Title: Depot and Public Work Upgrades - Water
Asset Class: Water Plants and Facilities

Project Type: Recommended
Department: Water

Summary: In 2015, the City of Greater Sudbury conducted a Facility Rationalization Study. The study recommended closing several public works depots and renovating or modifying numerous other existing facilities. This report carries forward the Facility Rationalization Study and related building condition reviews and identify opportunities to develop efficient and long-term site planning and building infrastructure solutions to support Linear Infrastructure Services, Environmental Services, Water/Wastewater Services, Infrastructure Capital Planning Services and Engineering Services.

The Frobisher site has been determined to be a viable location for a centralized facility to meet the requirements of Linear Infrastructure Services, Water/Wastewater Services, Infrastructure Capital Planning Services and Engineering Services. The St. Clair, Suez, Walden, and Whitefish depots will be utilized for road maintenance crews and salt/sand storage only.

The upgrades to the depot facilities will provide best practices in order to meet the requirements of our Source Water Protection Plan, improve worker health and safety, and make deployment and management of the operations more efficient.

The detailed design for the project is the next step. This account represents Water/Wastewater commitments for any funds required at shared facilities that emanate from the facility rationalization process.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ 100,000

	2019	2020	2021	2022	2023	Total
Funding						
User Fees	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ 100,000
Total	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ 100,000

	2019	2020	2021	2022	2023	Total
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

2019 CAPITAL PROJECT DETAILS

Project Title: GIS Various Equipment and Software - Water
Asset Class: Water Infrastructure

Project Type: Recommended
Department: Water

Summary: Equipment and software required to support the water/wastewater component of the Growth and Infrastructure Business Improvement and Innovation projects, including streamlining and automation of several business processes and incorporating GIS based asset data into business processes. Some examples of projects include the completed Hauled Liquid Waste Records/Billing Process, the in-progress inclusion of CCTV information within the GIS database for sanitary sewers and the proposed Capital Prioritization Risk Tool (condition assessment information etc. included in GIS database and analyzed within geospatial environment).

	2019	2020	2021	2022	2023	Total
Expenses	\$ 30,000	\$ -	\$ -	\$ -	\$ -	\$ 30,000
Funding						
User Fees	\$ 30,000	\$ -	\$ -	\$ -	\$ -	\$ 30,000
Total	\$ 30,000	\$ -	\$ -	\$ -	\$ -	\$ 30,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

2019 CAPITAL PROJECT DETAILS

Project Title: Hydraulic Model Licence - Water
Asset Class: Water Infrastructure

Project Type: Recommended
Department: Water

Summary: The City of Greater Sudbury has over 900 km of watermains and approximately 800 km of sanitary sewers. The hydraulic operations and planning for these linear systems requires in-depth analysis utilizing computer models. Historically the hydraulic modeling data and analysis was maintained by City staff. There were two full-time modellers (one for water and one for wastewater), who moved on to other roles. Over the past two years, as a temporary solution, the models have been maintained and utilized for analysis by WSP Global, the engineering consulting firm that was retained to complete the W/WW Master Plan. Now that the master plan is complete, the City is going to complete the calibration and maintenance of the hydraulic models, as well as complete the hydraulic analyses in-house, as approved by Council in accordance with the 2018 business case for a Hydraulic Modeller position.

This project includes for the annual license fees for the water system hydraulic model.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 7,500	\$ -	\$ -	\$ -	\$ -	\$ 7,500
Funding						
User Fees	\$ 7,500	\$ -	\$ -	\$ -	\$ -	\$ 7,500
Total	\$ 7,500	\$ -	\$ -	\$ -	\$ -	\$ 7,500
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

2019 CAPITAL PROJECT DETAILS

Project Title: Master Plan and Asset Management Plan
Asset Class: Water Infrastructure

Project Type: Recommended
Department: Water

Summary: Council has recently received/endorsed the first iteration of the City’s Water/Wastewater (W/WW) Master Plan (MP) and W/WW Asset Management Plan (AMP). The recommendations of these Plans provide guidance for both operational programs and capital projects that will reduce operating and possibly defer capital costs associated with the City’s water and wastewater systems. They will also facilitate the City’s alignment with the proposed Asset Management Planning Regulation, by the Ministry of Infrastructure. The recommendations include reducing leakage (non-revenue water) from the water distribution systems and reducing inflow and infiltration from the wastewater systems. The specific programs related to these recommendations require funding (approximately \$8.5 million over 5 years for the MP and \$5.5 million for the AMP) as well as resources to accommodate the work.

This project provides funds for the development and implementation of the various programs and studies related to water system leakage identified by the plans.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 500,000	\$ -	\$ -	\$ -	\$ -	\$ 500,000
Funding						
User Fees	\$ 500,000	\$ -	\$ -	\$ -	\$ -	\$ 500,000
Total	\$ 500,000	\$ -	\$ -	\$ -	\$ -	\$ 500,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Project Title: Sentinel Well System
Asset Class: Water Plants and Facilities

Project Type: Recommended
Department: Water

Summary: A sentinel well is a groundwater-monitoring well located between a known area of groundwater contamination and drinking-water supply wells. The purpose of a sentinel well is to provide advanced warning of movement of groundwater contamination toward the drinking water supply wells.

This project will provide funds for the operational costs associated with sampling/testing of the sentinel groundwater monitoring wells within the Valley Water System.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ 50,000
Funding						
User Fees	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ 50,000
Total	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ 50,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

2019 CAPITAL PROJECT DETAILS

Project Title: Source Protection Plan
Asset Class: Water Infrastructure

Project Type: Recommended
Department: Water

Summary: The Greater Sudbury Source Water Protection Plan was developed to protect our current and future sources of municipal drinking water. It identifies potential risks to our drinking water supply and contains policies to ensure that our drinking water remains safe. Policies within this plan are enforced by the City. The Source Water Protection Plan also includes provisions for site specific Risk Management Plans (RMP).

This project includes funds for monitoring/modelling/studies for the required annual update of the Source Protection Plan. In addition, if a land developer/proponent objects to their specific Risk Management Plan, the City is required to provide a third party review of RMP. Those review costs are covered by this project.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ 50,000
Funding						
User Fees	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ 50,000
Total	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ 50,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Project Title: Strategic Planning
Asset Class: Water Infrastructure

Project Type: Recommended
Department: Water

Summary: Customers within the community served by the City of Greater Sudbury’s Water/Wastewater Services Division expect access to safe, reliable and environmentally responsible municipal W/WW services. In providing these services, the City is expected to do so through a sustainable, cost effective approach. Embedding these expectations within our mission guides our decisions and each member of our team, in continuing to provide excellent services.

Delivering services in a dynamic municipal environment requires a core management tool that defines the key elements from which work plans can be successfully carried out.

This project provides funds for consultants to assist with workshops to develop the tactical and strategic plans for the W/WW related divisions within Growth and Infrastructure Services.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 25,000	\$ -	\$ -	\$ -	\$ -	\$ 25,000
Funding						
User Fees	\$ 25,000	\$ -	\$ -	\$ -	\$ -	\$ 25,000
Total	\$ 25,000	\$ -	\$ -	\$ -	\$ -	\$ 25,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

2019 CAPITAL PROJECT DETAILS

Project Title: Various Contributions to Operating - Water
Asset Class: Water Infrastructure

Project Type: Recommended
Department: Water

Summary: This project provides funds to support the operational costs associated with the Capital Program and Water/Wastewater Education Initiatives in the Community including:

- Capital Project Delivery Resources (staffing) within Engineering Services
- Locates Program Administration (staffing)
- Benchmarking
- Annual Children’s Water Festival
- Public Awareness/Education Initiatives

	2019	2020	2021	2022	2023	Total
Expenses	\$ 187,100	\$ -	\$ -	\$ -	\$ -	\$ 187,100
Funding						
User Fees	\$ 187,100	\$ -	\$ -	\$ -	\$ -	\$ 187,100
Total	\$ 187,100	\$ -	\$ -	\$ -	\$ -	\$ 187,100
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Project Title: Booster Station Condition Assessment
Asset Class: Water Plants and Facilities

Project Type: Recommended
Department: Water

Summary: The City has a number of Booster Stations within the water distribution system that pump water to residents to keep the required pressure and flow. The areas without them will suffer from lack of water pressure and quantities (flows). These facilities are an integral part of safety for water supply and distribution system and must continuously operate with minimum downtime. The project is to implement a condition assessment as part of the asset management strategy and implement recommended solutions on a phased approach without impact on water supply and distribution.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 300,000	\$ -	\$ -	\$ -	\$ -	\$ 300,000
Funding						
User Fees	\$ 300,000	\$ -	\$ -	\$ -	\$ -	\$ 300,000
Total	\$ 300,000	\$ -	\$ -	\$ -	\$ -	\$ 300,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

2019 CAPITAL PROJECT DETAILS

Project Title: Storage Tank Inspection and Rehabilitation
Asset Class: Water Plants and Facilities

Project Type: Recommended
Department: Water

Summary: Water tanks and storage facilities inspection and rehabilitation are mandated by legislation to be completed on annual basis. This project is to assess each water storage facility, provide a condition assessment and implement the recommended solution.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 200,000	\$ -	\$ -	\$ -	\$ -	\$ 200,000
Funding						
User Fees	\$ 200,000	\$ -	\$ -	\$ -	\$ -	\$ 200,000
Total	\$ 200,000	\$ -	\$ -	\$ -	\$ -	\$ 200,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Project Title: Operating Manuals and As-Builts
Asset Class: Water Plants and Facilities

Project Type: Recommended
Department: Water

Summary: Water facilities should have operating and maintenance manuals from a health and safety and process perspectives. The operating and maintenance manuals form the basis of facility operation as operators rely on them and use them as a reference to carry out their duties. Manuals should be available at each facility and be updated on regular basis. Over time, changes are introduced either by installing new equipment or modifying or improving an existing operating process. These changes need to be documented in operating and maintenance manuals. The project objective is to keep up to date the operating and maintenance manuals and update the as-built drawings for facilities.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ 50,000
Funding						
User Fees	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ 50,000
Total	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ 50,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

2019 CAPITAL PROJECT DETAILS

Project Title: Water Facilities Repairs and Equipment Upgrades
Asset Class: Water Plants and Facilities

Project Type: Recommended
Department: Water

Summary: The City has many water facilities which are required to operate on a continuous basis to provide safe and reliable water to the community. These facilities are old and many parts or equipment installed within these facilities are at the end or beyond their life cycle. The project objective is required to replace or repair existing assets/equipment to avoid any catastrophic shutdown or major equipment failure so to keep the existing infrastructure running to support facility operations and handle emergency situations.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ 100,000
Funding						
User Fees	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ 100,000
Total	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ 100,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Project Title: Water Facilities Condition Assessments
Asset Class: Water Plants and Facilities

Project Type: Recommended
Department: Water

Summary: The City has many water facilities that are in need of many upgrades. There is a need to implement asset management best practices and methodologies in order to efficiently manage the life cycle of the facilities. As a first step, a detailed knowledge of the asset condition is vital to proactively manage the asset life cycle. The project is to implement condition assessment for facilities as part of the Asset Management Plan implementation.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 250,000	\$ -	\$ -	\$ -	\$ -	\$ 250,000
Funding						
User Fees	\$ 250,000	\$ -	\$ -	\$ -	\$ -	\$ 250,000
Total	\$ 250,000	\$ -	\$ -	\$ -	\$ -	\$ 250,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

2019 CAPITAL PROJECT DETAILS

Project Title: Water Facilities Health and Safety Upgrades
Asset Class: Water Plants and Facilities

Project Type: Recommended
Department: Water

Summary: As per health and safety regulations, there is a need to have a recently completed designated substance survey in many of the water facilities and the report has provided a number of recommendations for remedial actions. This project is to implement those recommendations to comply with health and safety regulations.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ 50,000
Funding						
User Fees	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ 50,000
Total	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ 50,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Project Title: Water Facilities Security Improvements
Asset Class: Water Plants and Facilities

Project Type: Recommended
Department: Water

Summary: WSP Global has completed a security/safety assessment of water facilities and provided recommendations to improve and enhance safety at the water facilities to protect staff, infrastructure and public. This project is to implement the security and safety study recommendations.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 75,000	\$ -	\$ -	\$ -	\$ -	\$ 75,000
Funding						
User Fees	\$ 75,000	\$ -	\$ -	\$ -	\$ -	\$ 75,000
Total	\$ 75,000	\$ -	\$ -	\$ -	\$ -	\$ 75,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

2019 CAPITAL PROJECT DETAILS

Project Title: Sewer Priority Replacement and Rehabilitation
Asset Class: Sewer Infrastructure

Project Type: Recommended
Department: Wastewater

Summary: Detailed design and construction of various sanitary sewer replacement projects based on recommendations and framework contained in the Water/Wastewater Infrastructure Master Plan and Asset Management Plan, both recently received by Council. The risk assessment incorporated within the Asset Management Plan utilizes condition and age data, service criticality, socioeconomic, environmental and traffic impacts among others, to determine the priority projects.

The following locations will be completed in 2019:

- Cobalt Street (construction)
- Dean Avenue - Lorne to Landsend (construction)
- Jane Street - Dean to Easement (construction)
- Douglas Street Bridge (construction)
- Tudor Court - Windsor to End (construction)
- Hyland Drive - Regent to Winchester (design)
- St. Brendan Street - Homewood to Marion (construction)
- Henry Street (Garson) - MacDougall to East End (construction - lining)
- Ash Street (Lively) (construction - lining)
- Notre Dame Avenue (Hanmer) - Dominion to Oscar (design)

	2019	2020	2021	2022	2023	Total
Expenses	\$ 2,045,000	\$ -	\$ -	\$ -	\$ -	\$ 2,045,000
Funding						
User Fees	\$ 2,045,000	\$ -	\$ -	\$ -	\$ -	\$ 2,045,000
Total	\$ 2,045,000	\$ -	\$ -	\$ -	\$ -	\$ 2,045,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Project Title: Sewer with Watermain and Roads
Asset Class: Sewer Infrastructure

Project Type: Recommended
Department: Wastewater

Summary: This project will be used to complete watermain replacement under bridges and culverts or to accommodate sanitary sewer projects in various priority locations in 2019, which are unknown at this time and may develop as new condition assessment information becomes available. It will also be used for the design of watermain replacement under future priority bridge and culvert locations.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ 50,000
Funding						
User Fees	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ 50,000
Total	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ 50,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

2019 CAPITAL PROJECT DETAILS

Project Title: Preliminary Design for Future Projects - Wastewater **Project Type:** Recommended
Asset Class: Sewer Infrastructure **Department:** Wastewater

Summary: Consulting fees for preliminary design for future projects, including engineering (preliminary and detailed design), CCTV inspections, geotechnical investigations, surveys, etc. Geotechnical investigations, CCTV inspections and surveys are often required prior to the design commencing, so this project allows the designer to obtain critical information well enough in advance to not negatively impact the project schedule. When the capital outlook is developed, it is unknown if the design will be completed by City staff or an external consultant. Once the workplan is developed, some of the designs may be more appropriately completed by external consultants. This project allows the flexibility to retain consultants to complete some or all of the design work, as required.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 175,000	\$ -	\$ -	\$ -	\$ -	\$ 175,000
Funding						
User Fees	\$ 175,000	\$ -	\$ -	\$ -	\$ -	\$ 175,000
Total	\$ 175,000	\$ -	\$ -	\$ -	\$ -	\$ 175,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Project Title: Contingency - Wastewater **Project Type:** Recommended
Asset Class: Sewer Infrastructure **Department:** Wastewater

Summary: This project provides additional funding for a variety of purposes in relation to the sanitary sewer and sewers with watermain/roads priority projects. During design, this project can be utilized to fund engineering consultants' fees in circumstances when it is determined part way through the year that there is not enough appropriate/specifically qualified CGS design or contract administration staff to complete the project. During construction, this project typically provides funds for additional costs related to unanticipated field conditions (i.e. soils/rock/groundwater elevations or new condition assessment information) which result in a change of scope of the work. This project also provides funding for sanitary sewer work that is determined to be required during the construction of a roads priority project, based on actual field conditions. This work would not have been anticipated during the capital budget planning process, based on the information available at that time.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 71,233	\$ -	\$ -	\$ -	\$ -	\$ 71,233
Funding						
User Fees	\$ 71,233	\$ -	\$ -	\$ -	\$ -	\$ 71,233
Total	\$ 71,233	\$ -	\$ -	\$ -	\$ -	\$ 71,233
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

2019 CAPITAL PROJECT DETAILS

Project Title: Cost Sharing Policy Applications - Wastewater
Asset Class: Sewer Infrastructure

Project Type: Recommended
Department: Wastewater

Summary: This project is to allocate required funds to wastewater related costs for cost sharing applications received by Water/Wastewater Services from developers/land owners in accordance with the Development Cost Sharing Policy (2016) previously approved by Council. Development cost sharing applications will be considered on a case by case basis and subject to Council approval, based on the following principles:

- a) The City recognizes that development represents an opportunity to rehabilitate, upgrade and or replace infrastructure that would otherwise fall under the City’s capital programs. Since there are limited resources to apply to infrastructure upgrades in a given year, the City has an interest in cost sharing in situations where there are demonstrated gains in closing the infrastructure, and/or
- b) Cost sharing is an option in situations where there are off site deficiencies or enhanced work is desired by the City.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 200,000	\$ -	\$ -	\$ -	\$ -	\$ 200,000

	2019	2020	2021	2022	2023	Total
Funding						
User Fees	\$ 200,000	\$ -	\$ -	\$ -	\$ -	\$ 200,000
Total	\$ 200,000	\$ -	\$ -	\$ -	\$ -	\$ 200,000

	2019	2020	2021	2022	2023	Total
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Project Title: Gatchell Outfall Sewer
Asset Class: Sewer Infrastructure

Project Type: Previously Approved
Department: Wastewater

Summary: Represents funds previously approved by Council toward the Gatchell Outfall Sewer project which is in progress. The environmental assessment study is complete, and detailed design is underway (2018/2019) with construction anticipated in 2020/2021. The term of this funding commitment is 2020 to 2021. The funding commitment has changed from 2019 and 2020 as shown in the prior capital budgets match to expected cash flow as existing budgeted funds will be spent in 2019.

	2019	2020	2021	2022	2023	Total
Expenses	\$ -	\$ 1,000,000	\$ 2,350,000	\$ -	\$ -	\$ 3,350,000

	2019	2020	2021	2022	2023	Total
Funding						
User Fees	\$ -	\$ 1,000,000	\$ 2,350,000	\$ -	\$ -	\$ 3,350,000
Total	\$ -	\$ 1,000,000	\$ 2,350,000	\$ -	\$ -	\$ 3,350,000

	2019	2020	2021	2022	2023	Total
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

2019 CAPITAL PROJECT DETAILS

Project Title: Lively Sanitary Sewer - Jacob Street
Asset Class: Sewer Infrastructure

Project Type: Previously Approved
Department: Wastewater

Summary: Represents funds previously approved by Council toward the Lively Sanitary Sewer project on Jacob Street. The term of the funding commitment is 2018 and 2019.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 1,785,000	\$ -	\$ -	\$ -	\$ -	\$ 1,785,000
Funding						
User Fees	\$ 1,785,000	\$ -	\$ -	\$ -	\$ -	\$ 1,785,000
Total	\$ 1,785,000	\$ -	\$ -	\$ -	\$ -	\$ 1,785,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Project Title: Rock Tunnel Maintenance and Repair
Asset Class: Wastewater Plants and Facilities

Project Type: Recommended
Department: Wastewater

Summary: Blasted from solid bedrock, the Sanitary Sewer Rock Tunnel is approximately 1.5 metres (5 feet) wide x 2.1 metres (7 feet) high. Its average depth below ground is approximately 23 metres (75 feet), running 21 kilometres beneath the City of Greater Sudbury. This sanitary sewer rock tunnel conveys wastewater from Garson, New Sudbury, Minnow Lake, the West End, Flour Mill, Gatchell, Downtown, and the South End to the Sudbury Wastewater Treatment Plant on Kelly Lake Road. It is a critical part of the City's Infrastructure.

Sanitary Sewer Rock Tunnel surveys are being completed on short sections of the Rock Tunnel. This project is an annual contribution to the reserve fund to accommodate the costs for maintenance and repair on the Sanitary Sewer Rock Tunnel, as identified by the Sanitary Sewer Rock Tunnel surveys.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ 100,000
Funding						
User Fees	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ 100,000
Total	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ 100,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

2019 CAPITAL PROJECT DETAILS

Project Title: Sanitary Sewer Laterals Rehabilitation
Asset Class: Sewer Infrastructure

Project Type: Recommended
Department: Wastewater

Summary: Council has recently received/endorsed the first iteration of the City’s Water/Wastewater (W/WW) Master Plan and W/WW Asset Management Plan. The recommendations included in these plans provide guidance for both operational programs and capital projects that will reduce operating and possibly defer capital costs associated with the City’s water and wastewater systems. They will also facilitate the City’s alignment with the proposed Asset Management Planning Regulation, by the Ministry of Infrastructure. The recommendations include reducing leakage (non-revenue water) from the water distribution systems and reducing inflow and infiltration from the wastewater systems.

This project provides funds for sanitary sewer lateral repair and/or lining to align with operational priorities or in conjunction with inflow and infiltration reduction efforts.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ 100,000
Funding						
User Fees	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ 100,000
Total	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ 100,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Project Title: Sanitary Sewer System Rehabilitation and Repair
Asset Class: Sewer Infrastructure

Project Type: Recommended
Department: Wastewater

Summary: This project is used for the repair and/or rehabilitation (lining) of existing sanitary sewers using trenchless technologies (where appropriate) to extend the service life, repair deficiencies, and reduce inflow and infiltration. It is also used to pay for the contract administration and inspection of the work, by external consultants. The locations are prioritized based on the City’s sanitary sewer condition assessment program and operational concerns. Sanitary sewer lining is a cost effective way to rehabilitate sanitary sewer mains with little impact to traffic when the watermain has previously been lined on the street and/or no other infrastructure work is planned in the area.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 1,625,000	\$ -	\$ -	\$ -	\$ -	\$ 1,625,000
Funding						
User Fees	\$ 665,000	\$ -	\$ -	\$ -	\$ -	\$ 665,000
Federal Grant	\$ 960,000					\$ 960,000
Gas Tax						
Total	\$ 1,625,000	\$ -	\$ -	\$ -	\$ -	\$ 1,625,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

2019 CAPITAL PROJECT DETAILS

Project Title: Collection Contract Support
Asset Class: Sewer Infrastructure

Project Type: Recommended
Department: Wastewater

Summary: This project provides funding for unforeseen, emergency operational requirements, such as equipment purchase or emergency/urgent system components that exceed the operational budgetary capabilities.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ 50,000
Funding						
User Fees	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ 50,000
Total	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ 50,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Project Title: Collection Health and Safety Equipment
Asset Class: Sewer Infrastructure

Project Type: Recommended
Department: Wastewater

Summary: The operations of the municipal water distribution and sanitary collection systems are regulated by the Ontario Health and Safety Act, and require that high risk/potentially dangerous work is undertaken. The regulations are constantly being improved/updated, and City staff are required to update their equipment accordingly. This project is for the purchase of various health and safety equipment required by operations.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ 100,000
Funding						
User Fees	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ 100,000
Total	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ 100,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

2019 CAPITAL PROJECT DETAILS

Project Title: Lift Station Upgrades
Asset Class: Wastewater Plants and Facilities

Project Type: Recommended
Department: Wastewater

Summary: The project objectives are to complete the required upgrades at St. Charles Lift Station, Levesque Lift Station, Walford Lift Station and various lift stations.

As identified in the detail design, the upgrades for the St. Charles Lift Station include the new lift station, forcemain, tunnel connection and the museum relocation. The detail design is underway and costs are more refined, therefore additional funds are required to complete the project.

Levesque Lift Station is in major need for upgrades to the existing infrastructures and equipment and allow for capacity to receive additional sanitary sewer flows. This will require new mechanical, structural, electrical and controls upgrades.

Walford Lift Station is in the same need for upgrades. A detailed design was done and a tender was issued and did not proceed due to lack of funding.

The project objectives are to upgrade these three lift stations and sustain the safety level at other lift stations as required by upgrading equipment and improve the sustainability of their asset condition to keep them running safely with no impact on the environment or public safety.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 5,500,000	\$ -	\$ -	\$ -	\$ -	\$ 5,500,000
Funding						
User Fees	\$ 3,500,000	\$ -	\$ -	\$ -	\$ -	\$ 3,500,000
Capital Reserves Wastewater	\$ 2,000,000	\$ -	\$ -	\$ -	\$ -	\$ 2,000,000
Total	\$ 5,500,000	\$ -	\$ -	\$ -	\$ -	\$ 5,500,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

2019 CAPITAL PROJECT DETAILS

Project Title: St. Charles Lift Station Upgrades
Asset Class: Wastewater Plants and Facilities

Project Type: Previously Approved
Department: Wastewater

Summary: Represents funds previously approved by Council toward the upgrades at the St. Charles Lift Station. The term of the funding commitment is from 2019 to 2025.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 963,068	\$ 963,068	\$ 963,068	\$ 963,068	\$ 963,068	\$ 6,741,476
Funding						
User Fees	\$ 963,068	\$ 963,068	\$ 963,068	\$ 963,068	\$ 963,068	\$ 6,741,476
Total	\$ 963,068	\$ 963,068	\$ 963,068	\$ 963,068	\$ 963,068	\$ 6,741,476
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Project Title: Lagoon Upgrades
Asset Class: Wastewater Plants and Facilities

Project Type: Recommended
Department: Wastewater

Summary: The Ministry of the Environment, Conservation and Parks has raised concerns about effluent phosphorous concentration limits at the Capreol lagoon, as it failed to comply with existing Environmental Compliance Act effluent limits. In order to comply with regulations, the City has engaged an outside consultant and completed effluent assessment with various options for treatment and/or remediation. This project is to do a detail design and contract administration to implement the preferred solution as identified in the study. Once completed, the construction will be implemented in next phase. The project objectives are to comply with existing regulations.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 250,000	\$ -	\$ -	\$ -	\$ -	\$ 250,000
Funding						
User Fees	\$ 250,000	\$ -	\$ -	\$ -	\$ -	\$ 250,000
Total	\$ 250,000	\$ -	\$ -	\$ -	\$ -	\$ 250,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

2019 CAPITAL PROJECT DETAILS

Project Title: Wastewater Facilities Condition Assessment
Asset Class: Wastewater Plants and Facilities

Project Type: Recommended
Department: Wastewater

Summary: The City has many wastewater facilities that are old and in need of various upgrades. The project objectives are to do condition assessment for facilities as part of the Asset Management Plan. Coniston Wastewater Treatment Plant was identified as a priority project because of its age and most of its equipment are beyond its life cycle. Once the condition assessment is complete ,the next phase is to implement the recommendations as part of asset management.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 125,000	\$ -	\$ -	\$ -	\$ -	\$ 125,000
Funding						
User Fees	\$ 125,000	\$ -	\$ -	\$ -	\$ -	\$ 125,000
Total	\$ 125,000	\$ -	\$ -	\$ -	\$ -	\$ 125,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Project Title: Wastewater Facilities Health and Safety Upgrades
Asset Class: Wastewater Plants and Facilities

Project Type: Recommended
Department: Wastewater

Summary: As per health and safety regulations, the City has completed various designated substance survey at many of the wastewater facilities and still have many remaining to complete. The project objectives are to implement remedial solutions as identified in the assessment reports, continue assessment of remaining facilities to protect workers health and safety and comply with regulations.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ 50,000
Funding						
User Fees	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ 50,000
Total	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ 50,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

2019 CAPITAL PROJECT DETAILS

Project Title: Wastewater Facilities Security Improvements
Asset Class: Wastewater Plants and Facilities

Project Type: Recommended
Department: Wastewater

Summary: WSP Global has completed a security/safety assessment of wastewater facilities and provided recommendations to improve and enhance safety at these facilities to protect staff, infrastructure and public. This project is to implement the security and safety study recommendations at wastewater facilities as recommended by the safety and security study.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 80,000	\$ -	\$ -	\$ -	\$ -	\$ 80,000

	2019	2020	2021	2022	2023	Total
Funding						
User Fees	\$ 80,000	\$ -	\$ -	\$ -	\$ -	\$ 80,000
Total	\$ 80,000	\$ -	\$ -	\$ -	\$ -	\$ 80,000

	2019	2020	2021	2022	2023	Total
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Project Title: Copper Cliff Wastewater System Upgrades
Asset Class: Sewer Infrastructure

Project Type: Previously Approved
Department: Wastewater

Summary: Represents funds previously approved by Council toward the upgrades for the Copper Cliff Wastewater System. The term of the funding commitment is from 2017 to 2023.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 1,167,684	\$ 1,167,684	\$ 1,167,684	\$ 1,167,684	\$ 1,167,684	\$ 5,838,420

	2019	2020	2021	2022	2023	Total
Funding						
User Fees	\$ 1,167,684	\$ 1,167,684	\$ 1,167,684	\$ 1,167,684	\$ 1,167,684	\$ 5,838,420
Total	\$ 1,167,684	\$ 1,167,684	\$ 1,167,684	\$ 1,167,684	\$ 1,167,684	\$ 5,838,420

	2019	2020	2021	2022	2023	Total
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

2019 CAPITAL PROJECT DETAILS

Project Title: Sudbury WWTP Upgrades
Asset Class: Wastewater Plants and Facilities

Project Type: Previously Approved
Department: Wastewater

Summary: Represents funds previously approved by Council toward upgrades (i.e. standby power, parking lot and an RV dumping station) at the Sudbury Wastewater Treatment Plant. The term of the funding commitment is 2018 and 2019.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 1,950,000	\$ -	\$ -	\$ -	\$ -	\$ 1,950,000
Funding						
User Fees	\$ 1,950,000	\$ -	\$ -	\$ -	\$ -	\$ 1,950,000
Total	\$ 1,950,000	\$ -	\$ -	\$ -	\$ -	\$ 1,950,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Project Title: Sudbury WWTP Headhouse
Asset Class: Wastewater Plants and Facilities

Project Type: Previously Approved
Department: Wastewater

Summary: Represents funds previously approved by Council toward the construction of the headhouse at the Sudbury Wastewater Treatment Plant. The term of the funding commitment is from 2015 to 2023.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 462,563	\$ 462,563	\$ 462,563	\$ 462,563	\$ 462,563	\$ 2,312,815
Funding						
User Fees	\$ 462,563	\$ 462,563	\$ 462,563	\$ 462,563	\$ 462,563	\$ 2,312,815
Total	\$ 462,563	\$ 462,563	\$ 462,563	\$ 462,563	\$ 462,563	\$ 2,312,815
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

2019 CAPITAL PROJECT DETAILS

Project Title: Wastewater Treatment Plant Equipment Upgrades **Project Type:** Recommended
Asset Class: Wastewater Plants and Facilities **Department:** Wastewater

Summary: The City has a number of wastewater facilities that need to be kept in good working order and will require equipment repair and replacement at any given moment to protect public health and safety and the environment from spills and pollution. It was also identified that there is a need to protect from cold weather our mobile equipment and generators that are needed and used to respond to crisis and major equipment failures at our facilities. A storage unit is identified where these mobile gen-sets can be stored safely and be ready to use at any given notice without fear of malfunctioning because of cold weather. The project objectives is to design/construct storage unit, upgrade equipment at wastewater facilities and sustain the existing assets to extend their life cycle and respond to emergency equipment failure so there is no impact on facility operations.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 700,000	\$ -	\$ -	\$ -	\$ -	\$ 700,000
Funding						
User Fees	\$ 700,000	\$ -	\$ -	\$ -	\$ -	\$ 700,000
Total	\$ 700,000	\$ -	\$ -	\$ -	\$ -	\$ 700,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Project Title: Community Spills Management Fund **Project Type:** Recommended
Asset Class: Sewer Infrastructure **Department:** Wastewater

Summary: The City’s Water/Wastewater Environmental Compliance Officers are often first responders to environmental spill emergencies. In situations where the proponent of the spill is not available or unable to cleanup the spill, these funds are used to support the Environmental Compliance Officers in their efforts to assist the first response to environmental spills, by providing oversight of mitigation and proper cleanup efforts in emergency situations when the spiller is unavailable.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 15,000	\$ -	\$ -	\$ -	\$ -	\$ 15,000
Funding						
User Fees	\$ 15,000	\$ -	\$ -	\$ -	\$ -	\$ 15,000
Total	\$ 15,000	\$ -	\$ -	\$ -	\$ -	\$ 15,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

2019 CAPITAL PROJECT DETAILS

Project Title: Depot and Public Work Upgrades - Wastewater
Asset Class: Wastewater Plants and Facilities

Project Type: Recommended
Department: Wastewater

Summary: In 2015, the City of Greater Sudbury conducted a Facility Rationalization Study. The study recommended closing several public works depots and renovating or modifying numerous other existing facilities. This report carries forward the Facility Rationalization Study and related building condition reviews and identify opportunities to develop efficient and long-term site planning and building infrastructure solutions to support Linear Infrastructure Services, Environmental Services, Water/Wastewater Services, Infrastructure Capital Planning Services and Engineering Services.

The Frobisher site has been determined to be a viable location for a centralized facility to meet the requirements of Linear Infrastructure Services, Water/Wastewater Services, Infrastructure Capital Planning Services and Engineering Services. The St. Clair, Suez, Walden, and Whitefish depots will be utilized for road maintenance crews and salt/sand storage only.

The upgrades to the depot facilities will provide best practices in order to meet the requirements of our Source Water Protection Plan, improve worker health and safety, and make deployment and management of the operations more efficient.

The detailed design for the project is the next step. This project represents Water/Wastewater commitments for any funds required at shared facilities that emanate from the facility rationalization process.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ 100,000
Funding						
User Fees	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ 100,000
Total	\$ 100,000	\$ -	\$ -	\$ -	\$ -	\$ 100,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

2019 CAPITAL PROJECT DETAILS

Project Title: GIS Various Equipment and Software - Wastewater
Asset Class: Sewer Infrastructure

Project Type: Recommended
Department: Wastewater

Summary: Equipment and software required to support the W/WW component of the Growth and Infrastructure Business Improvement and Innovation projects, including streamlining and automation of several business processes and incorporating Geographic Information System (GIS) based asset data into business processes. Some examples of projects include the completed hauled liquid waste records/billing process, the in-progress inclusion of CCTV information within the GIS database for sanitary sewers and the proposed Capital Prioritization Risk Tool (condition assessment information etc. included in GIS database and analyzed within geospatial environment).

	2019	2020	2021	2022	2023	Total
Expenses	\$ 25,000	\$ -	\$ -	\$ -	\$ -	\$ 25,000
Funding						
User Fees	\$ 25,000	\$ -	\$ -	\$ -	\$ -	\$ 25,000
Total	\$ 25,000	\$ -	\$ -	\$ -	\$ -	\$ 25,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Project Title: Hydraulic Model Licence - Wastewater
Asset Class: Sewer Infrastructure

Project Type: Recommended
Department: Wastewater

Summary: The City of Greater Sudbury has over 900 km of watermains and approximately 800 km of sanitary sewers. The hydraulic operations and planning for these linear systems requires in-depth analysis utilizing computer models. Historically the hydraulic modeling data and analysis was maintained by City staff. There were two full-time modellers (one for water and one for wastewater), who moved on to other roles. During the past two years, as a temporary solution, the models have been maintained and utilized for analysis by WSP Global, the engineering consulting firm that was retained to complete the W/WW Master Plan. Now that the master plan is complete, the City is going to complete the calibration and maintenance of the hydraulic models, as well as complete the hydraulic analyses in-house, as approved by Council in accordance with the 2018 business case for a Hydraulic Modeller position.

This project includes the annual licence fees for the sanitary sewer system hydraulic model.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 7,500	\$ -	\$ -	\$ -	\$ -	\$ 7,500
Funding						
User Fees	\$ 7,500	\$ -	\$ -	\$ -	\$ -	\$ 7,500
Total	\$ 7,500	\$ -	\$ -	\$ -	\$ -	\$ 7,500
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

2019 CAPITAL PROJECT DETAILS

Project Title: Sewer Inspection and Maintenance Program
Asset Class: Sewer Infrastructure

Project Type: Recommended
Department: Wastewater

Summary: Council has recently received/endorsed the first iteration of the City's W/WW Master Plan and W/WW Asset Management Plan (AMP). The recommendations of these plans provide guidance for both operational programs and capital projects that will reduce operating and possibly defer capital costs associated with the City's water and wastewater systems. They will also facilitate the City's alignment with the proposed Asset Management Planning Regulation, by the Ministry of Infrastructure. The recommendations include reducing leakage (non-revenue water) from the water distribution systems and reducing inflow and infiltration from the wastewater systems. The specific programs related to these recommendations require funding (approximately \$8.5 million over 5 years for the MP and \$5.5 million for the AMP) as well as resources to accommodate the work.

This project provides funding for the City's on going sanitary sewer condition assessment program which includes flushing and CCTV of mains and camera inspections of manholes throughout the city to align with the City's W/WW Asset Management Plan.

	2019	2020	2021	2022	2023	Total
Expenses	\$ 600,000	\$ -	\$ -	\$ -	\$ -	\$ 600,000
Funding						
User Fees	\$ 600,000	\$ -	\$ -	\$ -	\$ -	\$ 600,000
Total	\$ 600,000	\$ -	\$ -	\$ -	\$ -	\$ 600,000
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Project Title: Various Contributions to Operating - Wastewater
Asset Class: Sewer Infrastructure

Project Type: Recommended
Department: Wastewater

Summary: This project provides funding to support the capital program and Water/Wastewater education initiatives in the community including:

- Capital Project Delivery Resources (staffing) within Engineering Services
- Locates Program Administration (staffing)
- Benchmarking
- Public Awareness/Education Initiatives

	2019	2020	2021	2022	2023	Total
Expenses	\$ 134,799	\$ -	\$ -	\$ -	\$ -	\$ 134,799
Funding						
User Fees	\$ 134,799	\$ -	\$ -	\$ -	\$ -	\$ 134,799
Total	\$ 134,799	\$ -	\$ -	\$ -	\$ -	\$ 134,799
Operating Impact of Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

2020-2023 Capital Outlook - Water & Wastewater

in thousands

Capital Project	Capital Outlook			
	2020	2021	2022	2023
WATER				
WATER DISTRIBUTION				
Watermain Priority Projects				
As-Built Drawings Updates	100	100	100	100
Preliminary Design for Future Projects - Water	275	25	275	25
Replacement / Relocation of Backyard Watermains	-	-	500	500
Small Diameter Watermain Replacement	-	-	200	200
Water Contingency	136	203	249	215
Water Cost Sharing Policy Applications	200	200	200	200
Watermain Priority Replacement & Rehabilitation	8,885	6,460	1,750	2,000
Watermain with Sewer & Roads	200	200	500	1,450
TOTAL - Watermain Priority Projects	9,796	7,188	3,774	4,690
Watermain Replacement & Rehabilitation				
Corrosion Protection Renewal - Wanapitei Plant to Coniston	-	-	-	150
Water Service Replacement	100	100	100	100
Watermain Air Release Valve Installation & Replacement	100	100	100	100
Watermain Rehabilitation	1,600	1,600	1,750	1,750
Watermain Valve Replacement	100	100	100	100
TOTAL - Watermain Replacement & Rehabilitation	1,900	1,900	2,050	2,200
Distribution Support				
Distribution Health & Safety Equipment	40	40	40	40
Distribution Support	100	100	100	100
Large Water Meter Replacement	100	100	100	100
Leak Detection Program	75	75	75	75
Valve Inspection & Maintenance	200	200	200	200
TOTAL - Distribution Support	515	515	515	515
Condition Assessment - Watermains				
Watermain Condition Assessment	100	100	100	100
TOTAL - Condition Assessment - Watermains	100	100	100	100
Network Looping				
Burton Avenue Loop	-	-	-	500
Valley Water System Looping	1,000	1,500	-	-
Water System Looping	100	100	100	-
TOTAL - Network Looping	1,100	1,600	100	500
TOTAL - WATER DISTRIBUTION	13,411	11,303	6,539	8,005
WATER PLANTS				
Water Treatment Plants				
David Street Water Treatment Plant Membrane Filter	400	400	400	400
David Street Water Treatment Plant Various Repairs	50	50	50	50
Vermilion WTP - Capital Contribution to Vale	325	200	325	325
Wanapitei Water Reactivator Upgrades	-	750	5,050	3,550
Wanapitei Water Treatment Plant Upgrades	175	175	175	175
TOTAL - Water Treatment Plants	950	1,575	6,000	4,500
Wells				
Groundwater Monitoring Program - Annual	175	175	175	175
Well Building Repairs & Upgrades	4,850	4,350	4,650	5,535
Well Inspection & Rehabilitation	310	310	-	-
TOTAL - Wells	5,335	4,835	4,825	5,710
Reservoirs, Tanks & Booster Stations				
Storage Tank Inspection & Rehabilitation	-	80	80	80
TOTAL - Reservoirs, Tanks & Booster Stations	-	80	80	80
System Wide				
Annual SCADA / Communications Upgrades	200	200	200	200
Operating Manuals & As-Built to Operating	50	50	50	50
Water Facilities Condition Assessments	75	75	75	75
Water Facilities Health & Safety Upgrades	50	50	50	50

2020-2023 Capital Outlook - Water & Wastewater

in thousands

Capital Project	Capital Outlook			
	2020	2021	2022	2023
Water Facilities Security Improvements	25	25	25	25
TOTAL - System Wide	400	400	400	400
TOTAL - WATER PLANTS	6,685	6,890	11,305	10,690
WATER WORKS GENERAL				
Strategic Initiatives				
Automatic Meter Reading Water Meters	6,550	6,550	-	-
Break / Corrosion Protection Study	-	-	25	-
Depot & Public Work Upgrades - Water	100	100	100	100
GIS Various Equipment & Software - Water	30	30	30	30
Hydraulic Model License - Water	8	8	8	8
Master Plan & Asset Management Plan Program	500	500	500	-
Sentinel Well System - Operational Costs	50	50	50	50
Source Protection Plan	50	50	50	50
Strategic Planning	50	25	25	25
Valve Criticality Study	-	-	50	-
Various Contributions to Operating - Water	189	191	193	98
TOTAL - WATER WORKS GENERAL	7,526	7,503	1,030	360
TOTAL - WATER	27,623	25,696	18,874	19,055
WASTEWATER				
WASTEWATER COLLECTION				
Sewer Priority Projects				
As-Built Drawings Updates	100	100	100	100
Preliminary Design for Future Projects	425	175	425	175
Sewer Priority Replacement & Rehabilitation	4,860	5,500	1,810	1,075
Wastewater Cost Sharing Policy Applications	200	200	200	200
Sewer with Watermain & Roads	50	50	3,400	4,800
Wastewater Contingency	130	49	135	71
TOTAL - Sewer Priority Projects	5,765	6,074	6,070	6,421
Sewer System Rehabilitation				
Sanitary Sewer System Rehabilitation & Repair	1,725	1,825	1,850	1,875
Sanitary Sewer Laterals Rehabilitation	100	100	100	100
Rock Tunnel Maintenance & Repair	100	100	100	100
TOTAL - Sewer System Rehabilitation	1,925	2,025	2,050	2,075
Collection System				
Collection Contract Support	150	150	150	150
Collection Health & Safety Equipment	25	25	25	25
TOTAL - Collection System	175	175	175	175
Condition Assessment - Sewer System				
Sanitary Rock Tunnel Inspections	100	100	100	100
TOTAL - Condition Assessment - Sewer System	100	100	100	100
TOTAL - WASTEWATER COLLECTION	7,965	8,374	8,395	8,771
WASTEWATER PLANTS				
Lift Stations				
Lift Station Upgrades	2,500	1,400	4,000	4,000
TOTAL - Lift Stations	2,500	1,400	4,000	4,000
System Wide				
Annual SCADA/Communication Upgrades	250	250	250	250
Lagoon Upgrades	1,100	100	100	100
Operating Manuals & Facility As-Built Updates	50	50	50	50
Wastewater Facilities Condition Assessment	125	125	125	125
Wastewater Facilities Health & Safety Upgrades	50	50	50	50
Wastewater Facilities Security Improvements	80	80	80	80
TOTAL - System Wide	1,655	655	655	655
Wastewater Treatment Plants				

2020-2023 Capital Outlook - Water & Wastewater

in thousands

Capital Project	Capital Outlook			
	2020	2021	2022	2023
Coniston Plant Audit & Condition Assessment & Recommendations Implementation	500	-	-	-
Levack WWTP - Upgrades	500	-	-	-
Plant Effluent Compliance with Regulation	-	100	100	100
Wastewater Treatment Plant Equipment Upgrades	700	700	750	750
TOTAL - Wastewater Treatment Plants	1,700	800	850	850
TOTAL - WASTEWATER PLANTS	5,855	2,855	5,505	5,505
WASTEWATER WORKS GENERAL				
Strategic Initiatives				
Sewer Inspection & Maintenance Program	600	600	600	600
Various Contributions to Operating - Wastewater	136	137	138	90
Depot & Public Work Upgrades - Wastewater	100	100	100	100
Hydraulic Model License - Wastewater	8	8	8	8
GIS Various Equipment & Software - Wastewater	25	25	25	25
Community Spills Management Fund	15	15	15	15
TOTAL - WASTEWATER WORKS GENERAL	883	884	885	838
TOTAL - WASTEWATER	14,704	12,114	14,786	15,114