



City of Cornwall 2020 Water and Wastewater Rate Study

Council Presentation - Draft Findings

October 13, 2020



Introduction

Background

- The City is undertaking a Water Conservation and Servicing Master Plan to assess the financial implications of implementing City-wide water metering to achieve improved water demand management
- Master Plan will include:
 - Development of status quo and volume-based rate structures and financing models;
 - Community outreach to raise awareness and gain support for water demand management initiatives (i.e. City-wide water metering);
 - Consultation with the public and stakeholders on proposed rate structures;
 - Development of an implementation plan; and
 - Assessment of conservation incentives and rebates



Introduction

Background

- The City's water license renewal application is due in 2020 requiring the preparation of a Water Financial Plan in accordance with O.Reg. 453/07
- Watson & Associates Economists Ltd. has been retained to undertake a Water and Wastewater Rate Study (Rate Study) and Water Financial Plan
 - In response to the water license renewal requirements
 - As required for the Water Conservation and Servicing Master Plan

Meeting Purpose



- Provide Council with an update on:
 - The study process; and
 - Draft findings, including preliminary rate forecasts for alternative rate structures
- Receive direction from Council to:
 - Prepare the O.Reg 453/07 Water Financial Plan based on the current rate structure and funding model, identifying that City-wide metering may be undertaken
 - Consult with stakeholders and the general public regarding the implementation of water meters and alternative rate structures; and
 - Report back to Council on the public consultation process and results, and a recommended rate structure

2020 Water and Wastewater Rate Study

Introduction



- Alternative rate structure and sustainable funding plans have been developed with regard for the long-term operating and capital costs of providing water and wastewater services and have included:
 - Forecast of water and wastewater service demands;
 - Capital needs assessment and funding plan;
 - Operating costs assessment and revenue analysis; and
 - Alternative rate structures assessment



Rate Structures

Assessment of Alternatives

- Rate structures generally consist of a combination of monthly base charges and volume-based rates (\$ per volume of water consumption)
- Rate structure alternatives commonly utilized in Ontario were reviewed with staff and assessed with regard for:
 - Ability to recover full cost of service and provide revenue stability;
 - Administration and ease of implementation;
 - Equity;
 - Water demand management objectives;
 - Industry best practices;
- Selection of rate structure must consider individual circumstances and goals of each municipality



Rate Structures

Current Rate Structure

- Residential customers charged a flat rate per fixture
- Non-residential customers charged a flat rate per fixture or a constant volume-based rate
 - *Provides stable revenue source but does not respond to changes in demand or promote water conservation initiatives*
 - *Inequities exist between flat rate and volume-based rate customers and residential and non-residential customers*



Rate Structures

Volume Based Rate Structure – City-Wide Water Metering

- All customers would be charged a fixed monthly base charge (differentiated by meter size) to recognize the fixed costs of service (i.e. City's asset management plan needs) and the capacity of service available to each user, plus a volume-based rate
 - *Base charge allows for a stable revenue source reflective of the fixed costs of service*
 - *Volume-based metered rate provides for customer control over bills, responds to changes in demand and provides incentives for water conservation*
 - *Equitable attribution of costs to the beneficiaries of service (i.e. residential vs. non-residential users)*
 - *Operational benefits of water metering such as improved leak detection*



Rate Structures

Water Meter Installation Cost Recovery Methods

- Alternative rate and funding scenarios have been considered for the recovery of City-wide water meter installation costs
- Associated debt financing costs to be recovered through
 1. Annual charge imposed on existing water customers; or
 2. Future water rates paid by all water customers

Water and Wastewater Service Demands



- Residential
 - Forecast growth based on City's 2017 D.C. Background Study (144 new connections per year)
 - Average annual consumption to decrease from 326 m³ per home to 203 m³ per home with installation of water meters (Based on Provincial average)
- Non-Residential
 - Forecast growth based on historical growth (23 connections per year)

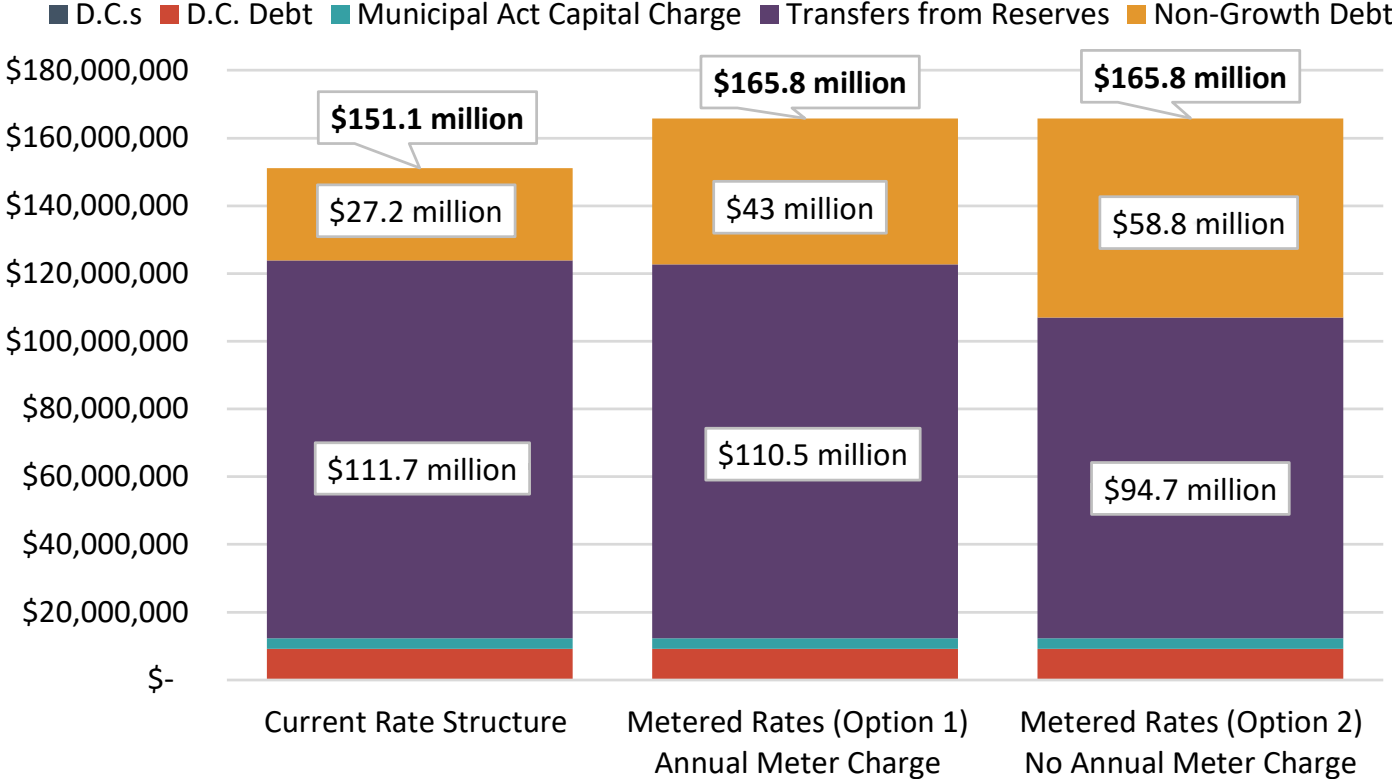
Total (Residential & Non-Residential)		
Description	2020	2030
Customers	19,775	21,445
<u>Consumption (m³)</u>		
Current Rate Structure	9,118,754	9,692,986
City-Wide Metering	9,118,754	7,227,952

Capital Needs Forecast & Funding Plan



- Capital needs forecast prepared based on:
 - 2020 capital budget;
 - City-wide and Brookdale Avenue North D.C. Background Study;
 - City-wide metering costs (estimated at \$14 million); and
 - Additional projects identified by staff
- Capital Needs to be funded through transfers from reserves, debt, D.C.s., and MA Capital Charges
- Anticipated debt assessed against Provincial and City borrowing limits (25% and 10% of own-source revenues, respectively)
 - Assessment includes \$50 million in additional debt for tax-based services

Capital Needs Forecast & Funding Plan

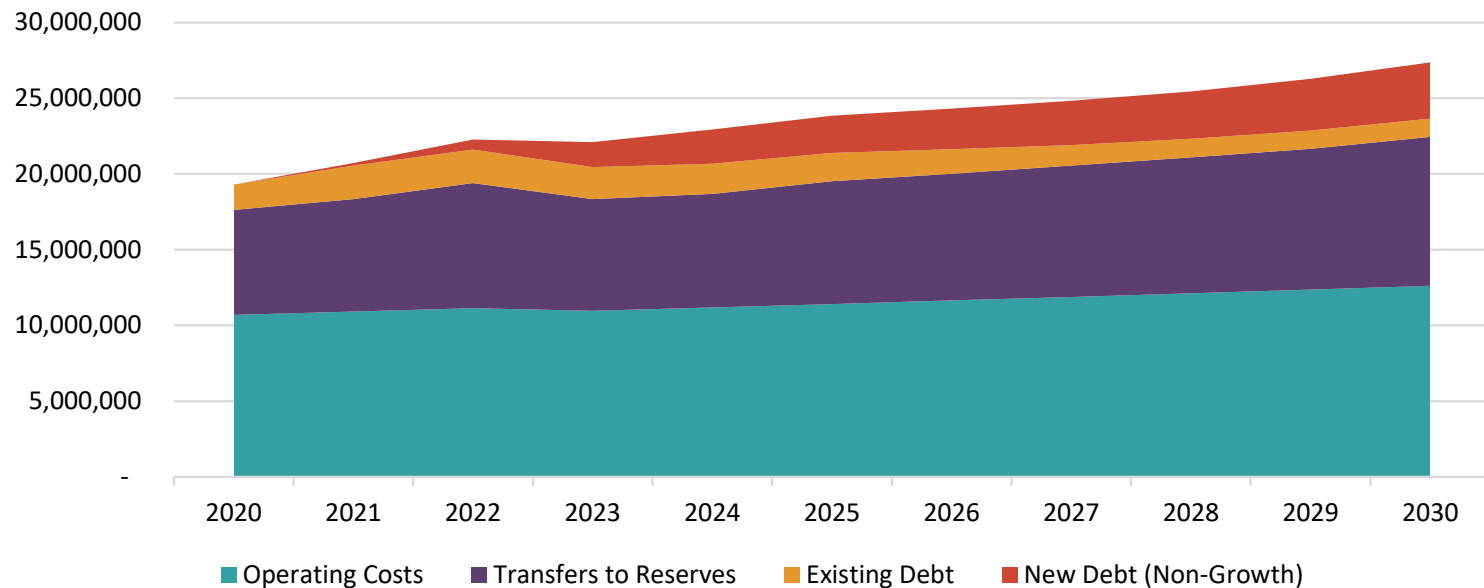


Debt Capacity Utilization (% of Own Source Revenues)			
	Current Rate Structure	Metered Rates (Option 1) Annual Meter Charge	Metered Rates (Option 2) No Annual Meter Charge
2020 Estimate	5.6%	5.6%	5.6%
Peak (2024)	8.1%	8.9%	9.1%
2030	6.2%	7.0%	7.7%

Water and Wastewater Operating Budget Forecast 2020-2030



- Operating budget forecast based on two components
 - Operating expenditures plus inflation (2% per year)
 - Capital-related expenditures (based on capital funding plan)
 - City-Wide metering incorporates cost savings due to reduced water use and improved leakage identification (\$435,000 at 2030)





Rate Forecasts

1. Current Rate Structure
2. Metered Rate Structure (Option 1)
 - Includes an annual water meter charge of \$85 for seven years beginning in 2023
3. Metered Rate Structure (Option 2)
 - Meter installation costs funded through water rates
 - Current non-residential customers consume 1/3 of total water use but contribute only 18% of annual revenue
 - Proposed metered rate structures result in greater relative rate impacts on non-residential customers vs. residential customers
 - Impacts on non-residential customers have been phased in over forecast period to mitigate impacts of proposed rate structure
 - By 2030 non-residential revenues will represent 34% of total revenue¹²



Rate Forecasts

Water and Wastewater Bills Impacts for Existing Customers

Residential	Scenario & Rate Structure	Annual % Increase	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Small usage - Up to ¾" meter Annual Consumption (m ³) 120	Current Rate Structure- Fixture Rate	3.0%	859	907	958	1,011	1,067	1,127	1,158	1,158	1,158	1,158	1,158
	Metered Rate Structure (Option 1)	-1.1%				833	844	856	859	860	862	864	769
	Metered Rate Structure (Option 2)	-1.1%				748	758	768	769	769	769	769	769
	Metered (Option 1) vs. Current Structure					(178)	(223)	(271)	(299)	(297)	(295)	(294)	(389)
	Metered Rate Structure (Option1) - annual % increase			5.6%	5.6%	-13.0%	1.4%	1.4%	0.3%	0.2%	0.2%	0.2%	-11.0%
Average Consumption (Target) - Up to ¾" meter Annual Consumption (m ³) 203	Current Rate Structure- Fixture Rate	3.0%	859	907	958	1,011	1,067	1,127	1,158	1,158	1,158	1,158	1,158
	Metered Rate Structure (Option 1)	0.7%				967	985	1,004	1,007	1,009	1,010	1,012	917
	Metered Rate Structure (Option 2)	0.7%				882	898	916	917	917	917	917	917
	Metered (Option 1) vs. Current Structure					(44)	(83)	(123)	(151)	(149)	(147)	(145)	(241)
	Metered Rate Structure (Option1) - annual % increase			5.6%	5.6%	0.9%	1.9%	1.9%	0.3%	0.2%	0.2%	0.2%	-9.4%
Average Consumption (Current) - Up to ¾" meter Annual Consumption (m ³) 326	Current Rate Structure- Fixture Rate	3.0%	859	907	958	1,011	1,067	1,127	1,158	1,158	1,158	1,158	1,158
	Metered Rate Structure (Option 1)	2.9%				1,166	1,194	1,224	1,228	1,230	1,232	1,233	1,138
	Metered Rate Structure (Option 2)	2.9%				1,082	1,108	1,136	1,138	1,138	1,138	1,138	1,138
	Metered (Option 1) vs. Current Structure					155	127	97	70	72	74	76	(19)
	Metered Rate Structure (Option1) - annual % increase			5.6%	5.6%	21.8%	2.4%	2.5%	0.3%	0.1%	0.1%	0.2%	-7.7%

**New Connections would not pay \$85 per year water meter charge.
Water meters would be purchased at building permit stage.**

Water and Wastewater Bills Impacts

Existing Non-Residential Customers



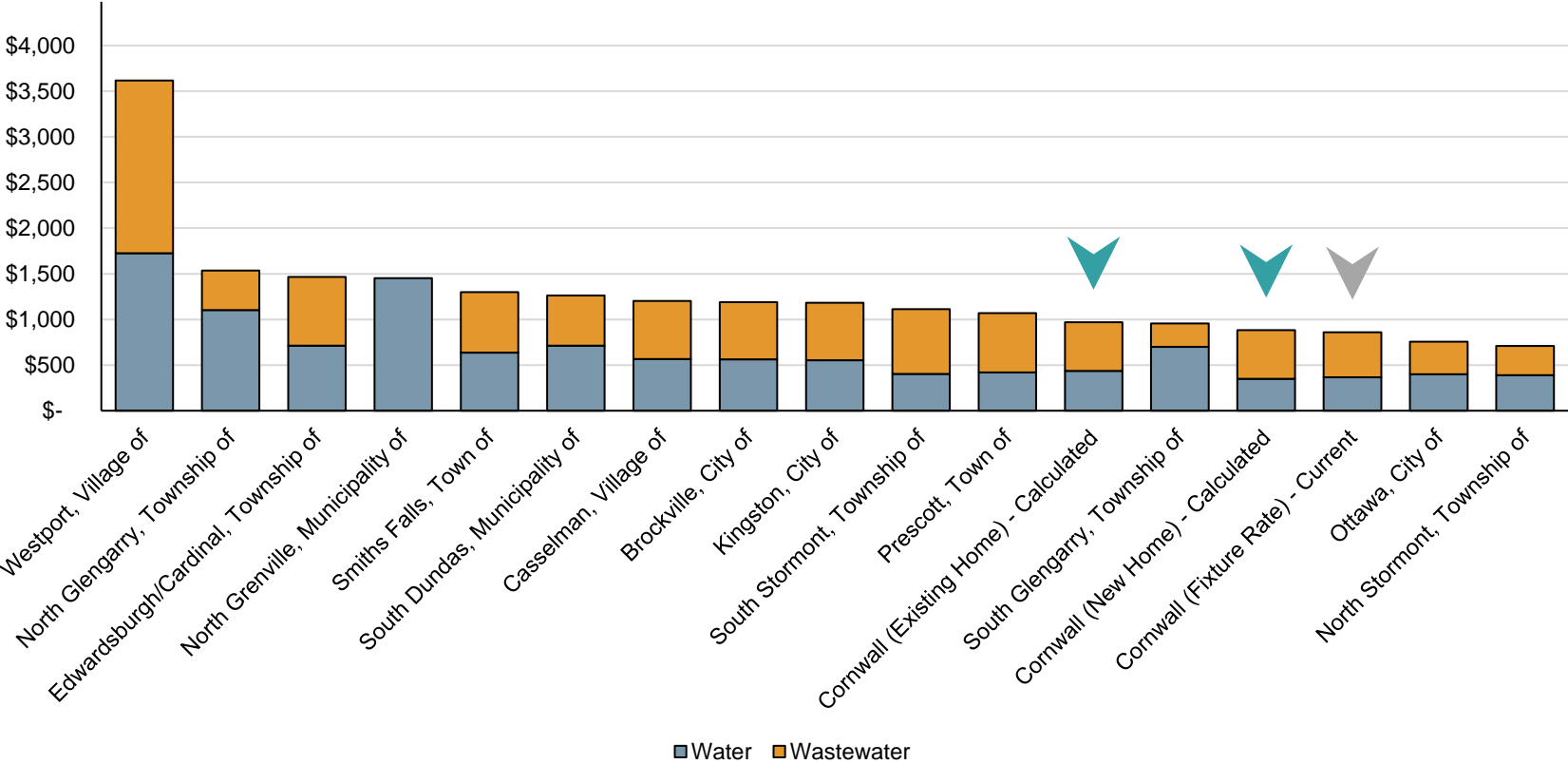
Non-Residential	Scenario & Rate Structure	Annual % Increase	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Small Usage - Up to ¾" meter Annual Consumption (m ³) 200	Current Rate Structure- Fixture Rate	3.0%	979	1,034	1,091	1,152	1,217	1,285	1,320	1,320	1,320	1,320	1,320
	Current Rate Structure - Metered Rate	3.0%	234	247	260	275	290	307	315	315	315	315	315
	Metered Rate Structure (Option 1)	14.6%				962	980	999	1,002	1,004	1,006	1,008	912
	Metered Rate Structure (Option 2)	14.6%				878	894	911	912	912	912	912	912
	Metered (Option 1) vs. Current Structure (Fixture Rate)					(190)	(236)	(286)	(318)	(316)	(314)	(312)	(407)
	Metered (Option 1) vs. Current Structure (Metered Rate)					687	690	692	687	689	691	693	597
	Compared to Fixture Rate	Metered Rate Structure (Option1) - annual % increase			5.6%	5.6%	-11.8%	1.9%	1.9%	0.3%	0.2%	0.2%	0.2%
Compared to Metered Rate	Metered Rate Structure (Option1) - annual % increase			5.6%	5.6%	269.6%	1.9%	1.9%	0.3%	0.2%	0.2%	0.2%	-9.5%
Average Usage - 2" meter Annual Consumption (m ³) 456	Current Rate Structure- Fixture Rate	3.0%	979	1,034	1,091	1,152	1,217	1,285	1,320	1,320	1,320	1,320	1,320
	Current Rate Structure - Metered Rate	3.0%	533	563	594	628	663	700	719	719	719	719	719
	Metered Rate Structure (Option 1)	21.6%				1,378	1,566	1,795	2,040	2,346	2,734	3,226	3,753
	Metered Rate Structure (Option 2)	21.6%				1,293	1,479	1,707	1,950	2,254	2,641	3,131	3,753
	Metered (Option 1) vs. Current Structure (Fixture Rate)					226	349	510	720	1,026	1,414	1,906	2,433
	Metered (Option 1) vs. Current Structure (Metered Rate)					750	903	1,095	1,321	1,627	2,015	2,507	3,034
	Compared to Fixture Rate	Metered Rate Structure (Option1) - annual % increase			5.6%	5.6%	26.3%	13.6%	14.7%	13.6%	15.0%	16.5%	18.0%
Compared to Metered Rate	Metered Rate Structure (Option1) - annual % increase			5.6%	5.6%	131.9%	13.6%	14.7%	13.6%	15.0%	16.5%	18.0%	16.3%
Large Usage - 4" meter Annual Consumption (m ³) 5,000	Current Rate Structure - Metered Rate	3.0%	5,839	6,165	6,510	6,875	7,260	7,665	7,875	7,875	7,875	7,875	7,875
	Metered Rate Structure (Option 1)	12.0%				8,743	9,424	10,260	10,910	11,828	13,199	15,248	18,215
	Metered Rate Structure (Option 2)	12.0%				8,659	9,338	10,172	10,820	11,736	13,106	15,153	18,215
	Metered (Option 1) vs. Current Structure (Metered Rate)					1,868	2,164	2,595	3,035	3,953	5,324	7,373	10,340
	Compared to Metered Rate	Metered Rate Structure (Option1) - annual % increase			5.6%	5.6%	34.3%	7.8%	8.9%	6.3%	8.4%	11.6%	15.5%
Very Large Usage - 6" meter Annual Consumption (m ³) 30,000	Current Rate Structure - Metered Rate	3.0%	35,031	36,990	39,060	41,250	43,560	45,990	47,250	47,250	47,250	47,250	47,250
	Metered Rate Structure (Option 1)	7.5%				49,268	52,060	55,205	56,397	58,015	60,684	65,087	72,254
	Metered Rate Structure (Option 2)	7.5%				49,184	51,973	55,117	56,307	57,923	60,591	64,992	72,254
	Metered (Option 1) vs. Current Structure (Metered Rate)					8,018	8,500	9,215	9,147	10,765	13,434	17,837	25,004
	Compared to Metered Rate	Metered Rate Structure (Option1) - annual % increase			5.6%	5.6%	26.1%	5.7%	6.0%	2.2%	2.9%	4.6%	7.3%

Municipal Comparison

Residential Water and Wastewater Bills



Survey of Annual Residential Water & Wastewater Bill - 203 m³ of Annual Consumption on 3/4" Meter

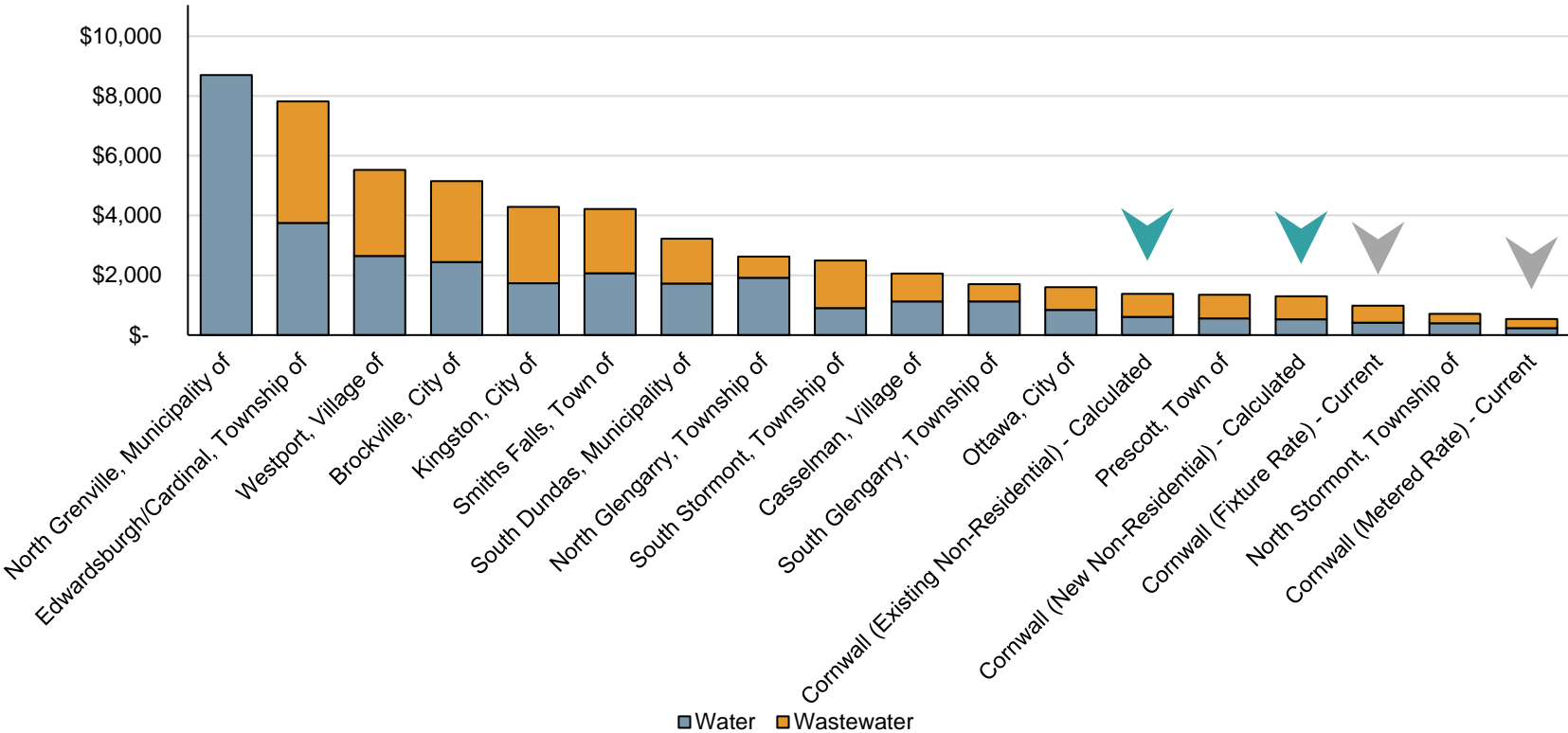


Municipal Comparison

Non-Residential Water and Wastewater Bills



Survey of Annual Non-Residential Water & Wastewater Bill - 456 m³ of Annual Consumption on 2" Meter



Next Steps



- Prepare O.Reg. 453/07 Water Financial Plan
- Complete Water Conservation and Servicing Master Plan, including consultation with public and stakeholders
- Report back to Council on final recommendations