



CITY OF HAMILTON
CORPORATE SERVICES DEPARTMENT
Financial Planning and Policy Division

TO:	Mayor and Members General Issues Committee
COMMITTEE DATE:	November 18, 2016
SUBJECT/REPORT NO:	2017 Recommended Water, Wastewater and Stormwater Budget (FCS16079) (City Wide)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	John Savoia (905) 546-2424 Ext. 7298 Marcel Cerminara (905) 546-2424 Ext. 4363 Ashley Bono (905) 546-2424 Ext. 4169
SUBMITTED BY:	Mike Zegarac General Manager Finance and Corporate Services
SIGNATURE:	

RECOMMENDATIONS

- (a) That the metered water consumption charges for residential properties in the City of Hamilton be imposed at the following rates, as of January 1, 2017:

Monthly Water Consumption (m3)	Rate (\$/m3)
0 – 10	0.72
10 +	1.43

- (b) That the metered water consumption charge for commercial, industrial, institutional, and multi-residential (bulk meter) properties in the City of Hamilton be imposed at the rate of \$1.43 per cubic metre, as of January 1, 2017;
- (c) That daily water fixed charges for all properties in the City of Hamilton be imposed at the following rates, as of January 1, 2017:

Meter Size	Daily Water Rate
15 mm	\$ 0.33
16 mm	\$ 0.33
20 mm	\$ 0.33
25 mm	\$ 0.83

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38 mm	\$ 1.65
50 mm	\$ 2.64
75 mm	\$ 5.28
100 mm	\$ 8.25
150 mm	\$ 16.50
200 mm	\$ 26.40
250 mm	\$ 37.95
300 mm	\$ 56.10

- (d) That the wastewater / storm treatment charges for residential properties in the City of Hamilton be imposed at the following rates, effective January 1, 2017:

Monthly Water Consumption (m3)	Rate (\$/m3)
0 – 10	0.77
10 +	1.54

- (e) That the wastewater / storm treatment charge for all commercial, industrial, institutional, and multi-residential (bulk meter) properties in the City of Hamilton be imposed at the rate of \$1.54 per cubic metre, effective January 1, 2017;
- (f) That daily wastewater / storm fixed charges for all properties in the City of Hamilton be imposed at the following rates, effective January 1, 2017:

Meter Size	Daily Wastewater / Storm Rate
15 mm	\$ 0.34
16 mm	\$ 0.34
20 mm	\$ 0.34
25 mm	\$ 0.85
38 mm	\$ 1.70
50 mm	\$ 2.72
75 mm	\$ 5.44
100 mm	\$ 8.50
150 mm	\$ 17.00
200 mm	\$ 27.20
250 mm	\$ 39.10
300 mm	\$ 57.80

- (g) That the residential non-metered annual water rate be imposed at the flat rate of \$521.95 per annum, effective January 1, 2017;

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- (h) That the residential non-metered annual wastewater / storm rate be imposed at the flat rate of \$562.10 per annum, effective January 1, 2017;
- (i) That the residential combined non-metered annual water and wastewater / storm rate be imposed at the flat rate of \$1,084.05 per annum, effective January 1, 2017;
- (j) That the Private Fire Line rates be imposed at the following rates, effective January 1, 2017:

Connection Size		Monthly Rate
mm	inches	
25	1.0	\$ 3.15
38	1.5	\$ 7.25
50	2.0	\$ 12.60
75	3.0	\$ 28.35
100	4.0	\$ 50.40
150	6.0	\$ 113.40
200	8.0	\$ 201.60
250	10.0	\$ 201.60
300	12.0	\$ 201.60

- (k) That the 2017 Water, Wastewater & Storm Proposed User Fees and Charges be imposed as per Appendix "G" to Report FCS16079, effective January 1, 2017;
- (l) That the 2017 Water, Wastewater and Stormwater Rate Supported Operating Budget in the amount of \$200,669,620 be approved as per Appendix "A" to Report FCS16079;
- (m) That the long-term financing plan for the Water, Wastewater and Stormwater programs and related rate increases required to meet sustainable financing, as identified in the 2017-2026 Water, Wastewater and Stormwater Rate Supported Operating Budget forecast (Appendix "A" to Report FCS16079) be approved in principle;
- (n) That the 2017 Water, Wastewater and Stormwater Rate Supported Capital Budget and Financing Plan in the amount of \$186,700,000 be approved as per Appendices "K", "N", "Q" and "S" to Report FCS16079;
- (o) That the 2017-2026 Water, Wastewater and Stormwater Rate Supported Capital Budget forecast and financing plan (Appendix "I" to Report FCS16079) be approved in principle;

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- (p) That the additional 6.0 Full Time Equivalent Rate Supported Staffing be approved as per Appendix “F” to Report FCS16079;
- (q) That, subject to final audit, the Disposition of 2016 Year-End Rate Supported Operating Budget Surplus, if realized, be approved for transfer to the Wastewater Reserve (108005);
- (r) That the City Solicitor be authorized and directed to prepare, for Council approval, all necessary by-laws respecting the 2017 water and wastewater / storm user fees, charges and rates set out in recommendations (a) through (k) of Report FCS16079.

EXECUTIVE SUMMARY

The 2017 Rate Budget is submitted for Council’s consideration. The 2017 Rate Budget balances the need to invest in environmental infrastructure upgrades and changing trends in demand for water and growth in users relative to “Places to Grow.” Over the period 2017 to 2026, water, wastewater and stormwater capital investment is forecast at \$1.75 B which represents an increase of \$0.05 B from last year’s 10-year forecast. This budget continues to focus on growing our economy, environmental stewardship, financial sustainability and effective inter-governmental relations.

The 2017 Requested Water, Wastewater and Stormwater Budget of approximately \$200.6 M represents an increase over the 2016 Budget of \$8.3 M or 4.3%.

2017 Operating expenditures in the 2017 Requested Budget of \$90.3 M reflect an increase of \$5.9 M or 7.0% over the 2016 budget with the following major cost drivers:

- Employee related expenditures with an increase of \$1.9 M with salaries / wages up \$1.4 M, OMERS costs up \$179 K and the addition of 6.0 full time equivalent employees incorporated into the 2017 budget at a gross cost of \$500 K
- Operating Supplies increases of \$1.3 M with Plant maintenance / operations up \$1.0 M and Water Distribution and Wastewater Collection up \$245 K
- Contractual services increases of \$227 K and computer maintenance contracts for \$217 K
- Increased Sewer Lateral Management grants of \$500K
- \$915K in electricity increase with estimated electric rate increases of 8% in 2017

Capital financing costs in the 2017 Requested Budget of \$110.3 M reflect an increase of \$2.4 M over the 2016 Budget. With non-rate revenues remaining at \$2.5M, rate

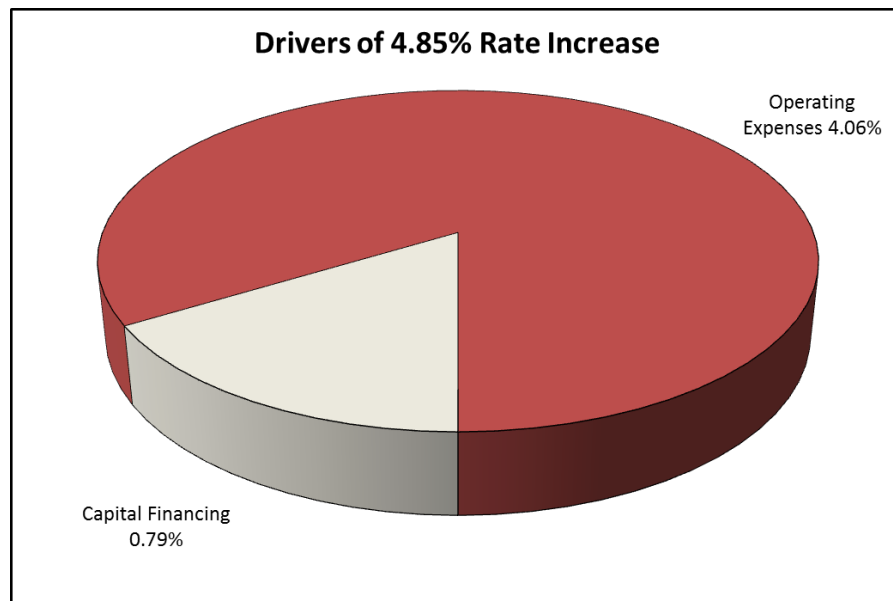
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revenues of \$198.1 M are required to meet operating (program and capital) expenditures.

The following table summarizes the budget changes for the 2017 Requested Budget:

Summary of the 2017 Operating Budget				
(\$ millions)	2016 Restated Budget	2017 Requested Budget	2017 Requested /2016 Restated Change	
			\$	%
Expenditures				
Program Expenditures	\$ 84.4	\$ 90.3	\$ 5.9	7.0%
Capital / Debt Financing	\$ 107.9	\$ 110.3	\$ 2.4	2.2%
Total Expenditures	\$ 192.3	\$ 200.6	\$ 8.3	4.3%
Revenues				
Rate Revenue	\$ 189.8	\$ 198.1	\$ 8.3	4.4%
Non-Rate Revenue	\$ 2.5	\$ 2.5	\$ -	0%
Total Revenue	\$ 192.3	\$ 200.6	\$ 8.3	4.3%
Average Residential Water / Wastewater / Storm Bill	\$ 630.35	\$ 660.95	\$ 30.60	4.85%

The following chart highlights that the proposed combined 4.85% rate increase is driven largely by increased operating and capital expenditures and to a much lower extent by lowered forecast consumption in 2017.



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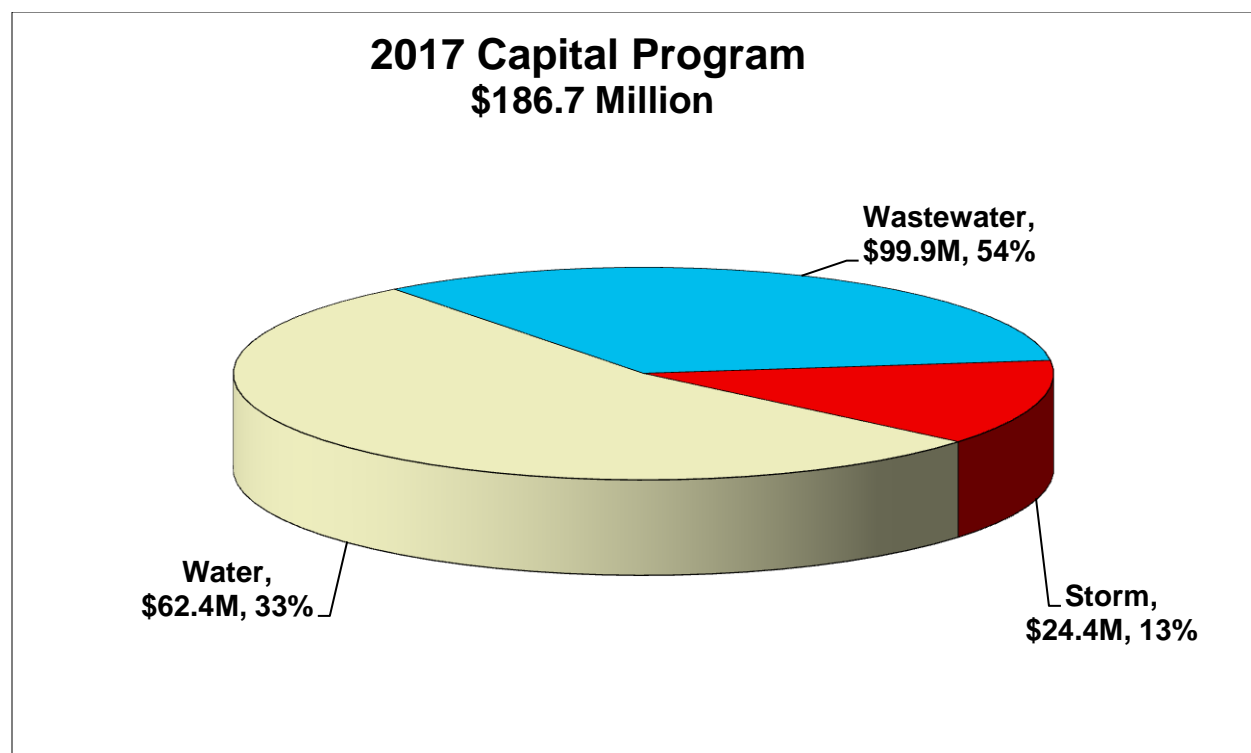
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Other water and wastewater service user fees have been reviewed in accordance with the Water / Wastewater User Service Fee and Charges Policy. The Policy requires identification of both the cost of the service and the fees / charges to recover such cost with the intent that full cost recovery is achieved. Many service fees have remained unchanged with full cost recovery currently being achieved with others undergoing varying fee increases to achieve full cost recovery.

Water Distribution has identified a number of new service fees reflecting specific elements of service that previously had been bundled with existing service fees. Additionally, a new service fee to recover incremental material costs has been included where as part of substandard water service line replacement a customer requests a one inch new water service line larger than the three quarter inch standard size for the public portion of the water service line. A miscellaneous water distribution system repair fee has been proposed to recover costs associated to repair damage caused by a third party.

The following chart provides a breakdown of the 2017 Rate Capital Program totalling \$186.7 M, by the three major program areas: Water, Wastewater and Storm.

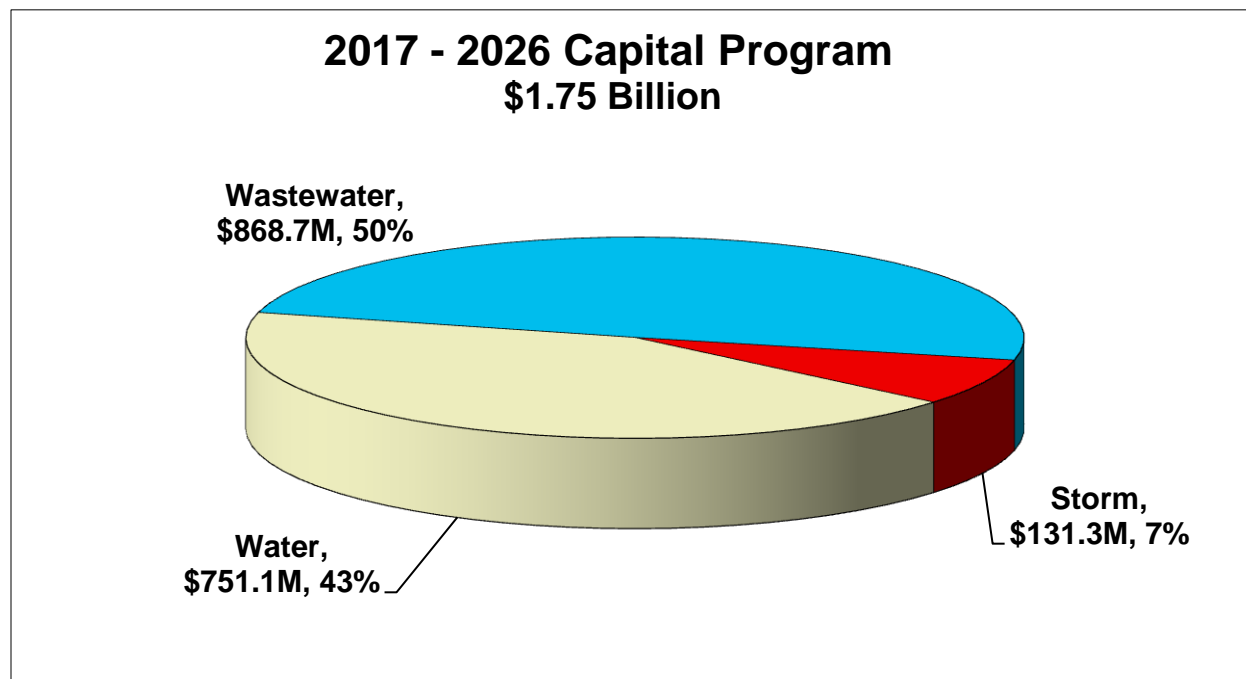


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The chart below illustrates the \$1.75 B capital program for the 2017 – 2026 water, wastewater and storm capital budget. Of this amount, \$868.7 M or 50% is for wastewater, \$751.1 M or 43% is for water and \$131.3 M or 7% is for the storm program. A total of \$774 M or 44% of the 10 year capital program is required in the first three years (2017 – 2019).



The 10 year capital program relies on a significant amount of debt financing, with the associated debt charges funded from both rates and development charges (DCs). The rate supported debt is projected to peak at \$301 M in 2020, compared with the 2016 budget forecasted debt peak of \$298 M in 2020. The debt funded from DC's is projected to peak at \$332 M in 2026, whereas the 2016 forecast was \$317 M in 2021.

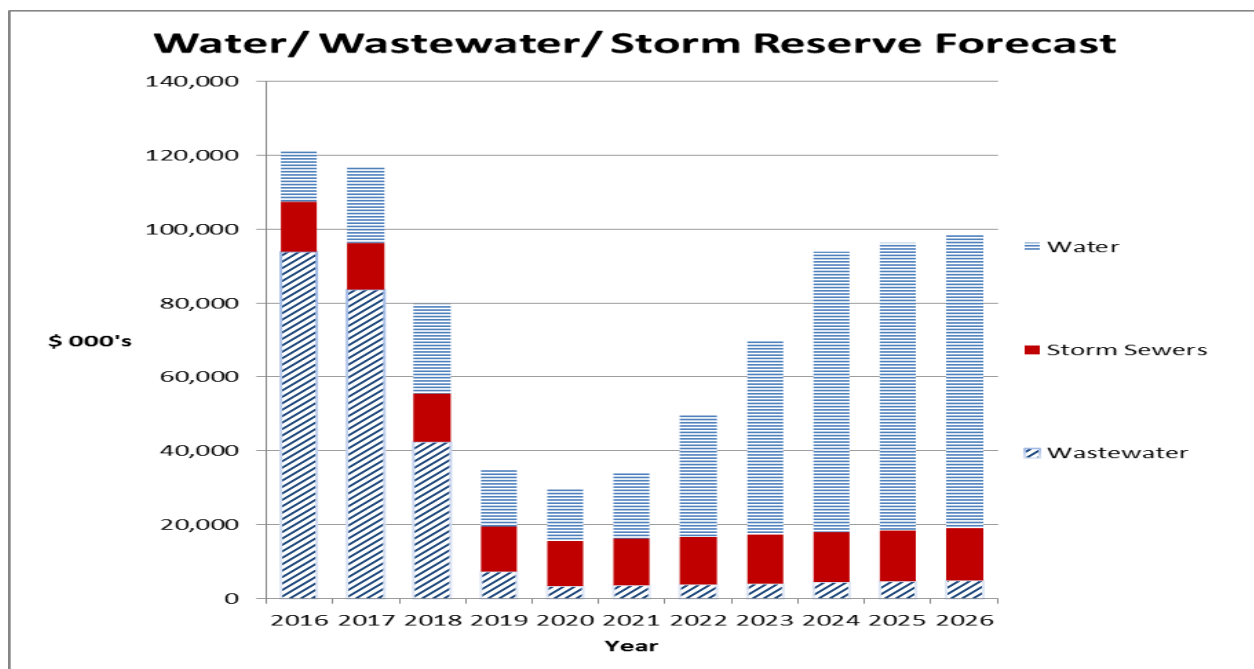
The levels of debt supported by development charges represent a significant risk if future growth does not materialize as planned; however, relative to forecasts prior to 2014, the risk has been deferred as a significant portion of the growth component of the Wastewater Plant Expansion is now planned in the years beyond the next 10 years until after 2026. This will allow an opportunity to monitor growth and DC Revenues over the next 10 years (2017 – 2026) and make adjustments to the plant expansion project and associated financing plan to align with growth requirements.

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The table below provides the 10 year debt forecast compared to the 2016 Budget.

Projected Rate & DC Supported Outstanding Debt (\$ Millions)											
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
2016 Rate Budget											
Funded from Rates	142	209	274	282	298	275	252	228	203	178	151
Funded from DC's	93	179	283	300	314	317	308	308	308	316	298
Total	235	388	557	582	612	592	560	536	511	494	449
2017 Rate Budget											
Funded from Rates	72	183	230	275	301	284	260	236	211	186	160
Funded from DC's	1	87	185	307	324	327	321	317	320	329	332
Total	73	270	415	582	625	611	581	553	531	515	492
Increase (Decrease)	(162)	(118)	(142)	0	13	19	21	17	20	21	43

The following graph provides the projected reserve balances for the Water, Wastewater and Storm programs. The 2017 Budget Forecast reflects utilizing \$45 M in reserve funds to fund the Clean Harbour project, a \$15 M decrease from the \$60 M utilized in the 2016 Rate Budget Forecast. The 2017 - 2026 Rate Financing Plan assumes funding from reserves in years 2018 (\$25 M), 2019 (\$15 M) and 2020 (\$5 M) in order to reduce the reliance on debt to fund this project. It should be noted, the reserve forecast below does not include the Provincial Wastewater Improvement Subsidy reserve (\$100 M Provincial subsidy which is dedicated funding for the Clean Harbour project) or the Meter Replacement Reserve.



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Reserves are essential to assist the City in mitigating unanticipated events such as consumption fluctuations, unforeseen increase in capital costs and potentially to provide rate stability or to decrease future debt needs. The current reserve forecast indicates the combined reserve balance will decrease from \$121 M at the end of 2016, to \$30 M in 2020 and then increase over the years to \$99 M in 2026. The Water and Storm Reserves are in a healthy position relative to the Rate Reserve Policy approved by Council in June 2016. A strategy has been identified to replenish the Wastewater Reserve as this reserve is forecast to fall below the defined lower reserve balance target largely due to an unforeseen drawdown of \$20M to finance a portion of the Biosolids Project. Recommendation (q) to Report FCS16079 directs a 2016 operating budget surplus, if realized; to the Wastewater Reserve as one aspect of the strategy to ensure the wastewater reserve balance is replenished in the near term.

The 2017 recommended water and wastewater / storm rate increases will result in an annual cost impact of approximately \$31 per typical household. The impact of the recommended rate increases on the water and wastewater / storm fixed charges as well as the water consumption and wastewater / storm treatment charges are identified below.

Impact of Recommended Rate Increases on Water and Wastewater/Storm Rates			
	2016	2017	Increase
Water Fixed Charge (daily) ¹	\$0.31	\$0.33	\$0.02
Consumption Charge Block 1 (0-10 cubic metres/month)	\$0.69	\$0.72	\$0.03
Consumption Charge Block 2 (>10 cubic metres/month)	\$1.38	\$1.43	\$0.05
Wastewater/Storm Fixed Charge (daily) ¹	\$0.32	\$0.34	\$0.02
Treatment Charge Block 1 (0-10 cubic metres/month)	\$0.74	\$0.77	\$0.03
Treatment Charge Block 2 (>10 cubic metres/month)	\$1.48	\$1.54	\$0.06
¹ Rate is for a 15-20 mm meter which most residential homes have installed.			

The following identifies the proposed rate increase impact on a residential customer:

Impact of Recommended 2017 Water and Wastewater/Storm Rate Increases on a Typical Residential Bill	
(based on annual water consumption of 200m ³)	
2016 Residential Bill	\$630.35
2017 Residential Bill	\$660.95
<i>Recommended Change (\$)</i>	\$30.60
<i>Recommended Change (%)</i>	4.85%

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This report identifies the steps staff have incorporated in the current 10-year forecast related to significant risks that have been identified related to a variety of conditions which may impact ratepayers, and more significantly, in combination may place significant financial pressures on ratepayers. These risk factors detailed in later sections of this report include:

- Consumption fluctuations
- Sustainability of grant / subsidy programs funded by water / wastewater rates
- Increased operating and capital investment requirements

Staff pursued a variety of measures in an effort to control the impact of the above risks in order to maintain a safe and reliable service at a reasonable cost.

The recommended 2017 Rate Supported Strategy endeavours to achieve a balance between capital investment, rate of growth and rate stability. The 2017 Rate Supported Strategy links the change in demand for water with a staged approach to necessary capital investments at the Woodward wastewater treatment plant.

While the Rate Supported Strategy has changed from time to time, the overall goal, of achieving a sustainable level of funding to support the necessary infrastructure investments, has not. The Strategy has been in place since 1997, which at that time, called for water rates to increase by three to seven percent after adjusting for inflation over a 15-year period. The 2017 – 2026 Strategy is a continuation of the Strategy which assumes combined annual rate increases ranging from 3.3 – 4.9% over the 10-year period.

In general, the goal of the Strategy has been to support the water, wastewater and storm programs through a sustainable level of funding. While revenue forecasts have been adjusted from time to time, for a variety of reasons, so too have expenditure forecasts, and the need for additional financial resources. The current Strategy calls for capital funding in 2017 of approximately \$186.7 M (2016\$) and \$1.75 B (2016\$) for the 2017 – 2026 timeframe.

The 2017 Strategy includes financing from the Federal and Provincial Governments with respect to the WWTP rehabilitation and upgrades, specifically in support of the Hamilton Harbour Remedial Action Plan. Additionally, grant funding of approximately \$32.9 M has been incorporated into the 2017 Strategy from the Clean Water and Wastewater Fund (CWWF) to support immediate improvements to water distribution and treatment infrastructure.

Alternatives for Consideration – See Page 28

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FINANCIAL – STAFFING – LEGAL IMPLICATIONS

Financial: As per Recommendation (l) of Report FCS16079, approval of the 2017 Water, Wastewater and Stormwater Supported Operating Budget will support operating and capital financing expenditures of \$200,669,620 for 2017.

Staffing: The 2017 Rate Supported staffing complement reflects a requested increase of 6.0 in total FTE headcount as reflected in Appendix “F” to Report FCS16079.

Legal: Recommendation (r) of Report FCS16079 relates to By-laws requiring Council approval, respecting the implementation of 2017 water and wastewater user fees and charges set out in the recommendations (a) through (k) of Report FCS16079.

HISTORICAL BACKGROUND

The 2017 Rate Budget continues to support the priority of investing in infrastructure as evidenced by the 2017 to 2026 forecast investment of approximately \$1.75 B in water, wastewater and stormwater capital infrastructure.

Report FCS16079 outlines the various aspects and components that the recommended 2017 Rate Supported strategy incorporates:

- Sustainable Rate Strategy;
- Proposed 2017 Water and Wastewater/Storm Rates;
- Operating Budget Highlights;
- Capital Budget Highlights; and,
- Water Consumption Review and Forecast.

POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS

The recommended options support the principle of a user-pay water and wastewater/storm system. The Rate Reserve Policy has guided staff’s recommended use of rate reserves as a funding source in the 2017-2026 financing plan.

RELEVANT CONSULTATION

Public Works – Hamilton Water Division provided operating / capital expenditure and non-rate revenue forecasts as reflected in this report.

ANALYSIS AND RATIONALE FOR RECOMMENDATION

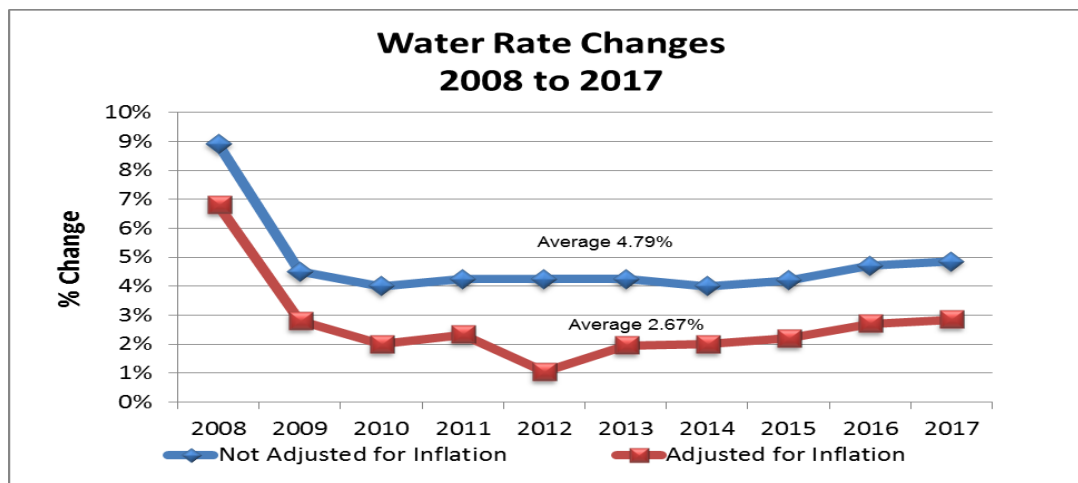
Appendix “A” to Report FCS16079 summarizes the 2017 operating budget expenditures (program and capital) and revenues of \$201 M compared to the 2016 projected actual and 2016 restated budget. The Executive Summary section of Report FCS16079 provides an overview of main drivers of the 2017 Requested Operating Budget, 2017 Capital Budget and the proposed rate increase for the average residential water, wastewater and storm annual bill of \$30.60 (4.85%).

Water and wastewater service user fees have been reviewed in accordance with the User Service Fee and Charges Policy which requires identification of both the cost of the service and the fees / charges to recover such cost with the intent that full cost recovery is achieved. Many service fees are unchanged with full cost recovery currently being achieved with others undergoing varying fee increases to achieve full cost recovery.

Water Distribution has identified a number of new service fees reflecting specific elements of service that previously had been bundled with existing service fees. Additionally, a new service fee to recover incremental material costs has been included where as part of substandard water service line replacement a customer requests a one inch new water service line larger than the three quarter inch standard size for the public portion of the water service line. A miscellaneous water distribution system repair fee has been proposed to recover costs associated to repair damage caused by a third party.

Trends in Water Rate Charges 2008-2017

Hamilton’s overall average annual water rate increase is 4.79% before adjusting for inflation during the 10 year period from 2008 to 2017. Accounting for inflation results in the overall average, the annual rate increase over the same period would be 2.67%. The following chart shows the trend in Hamilton’s water rates for the period 2008 to 2017.



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Comparative Rates

In recent years, staff reported that Hamilton's water and wastewater / storm rates have remained competitive, inclusive of the fact that annual rate increases over the past decade have averaged 4.79% before adjusting for inflation.

Over the past decade, Hamilton's ability to maintain competitive water and wastewater / storm rates, given the magnitude of the rate increases approved over this same period, is a reflection of the fact that similar to Hamilton, other municipalities are addressing many of the same investment requirements identified above.

Over the period 2003 to 2016, Hamilton's residential annual water and wastewater/storm bill has ranged from 8th to the current ranking of 14th. Though Hamilton is one of the few listed in the comparator group that largely funds its stormwater management program through its wastewater / storm fee, it still has been able to maintain competitive rates.

2016 COMBINED METERED WATER/WASTEWATER CHARGE COMPARISON WITH OTHER MUNICIPALITIES				
MUNICIPALITY	AVERAGE RESIDENTIAL 200 M³		SMALL COMM/IND 325 M³	
	Annual Charge	Ranking	Annual Charge	Ranking
Kitchener**	\$1,173	1	\$1,461	3
Norfolk	\$1,094	2	\$1,452	4
Haldimand	\$1,040	3	\$1,351	5
Waterloo**	\$1,012	4	\$1,294	7
Cambridge	\$1,000	5	\$1,509	2
London**	\$991	6	\$1,712	1
West Lincoln	\$961	7	\$1,294	8
Guelph	\$876	8	\$1,291	9
Brantford	\$857	9	\$1,324	6
St. Catharines	\$842	10	\$1,220	10
Durham	\$814	11	\$1,148	12
Halton	\$772	12	\$1,055	13
Toronto*	\$726	13	\$1,180	11
Hamilton*	\$630	14	\$988	14
Peel**	\$516	15	\$774	15
* Include stormwater management in their rates. ** Have dedicated stormwater management user fee that is included within residential rates in above table. Note: All other municipalities fund stormwater from property taxes.				

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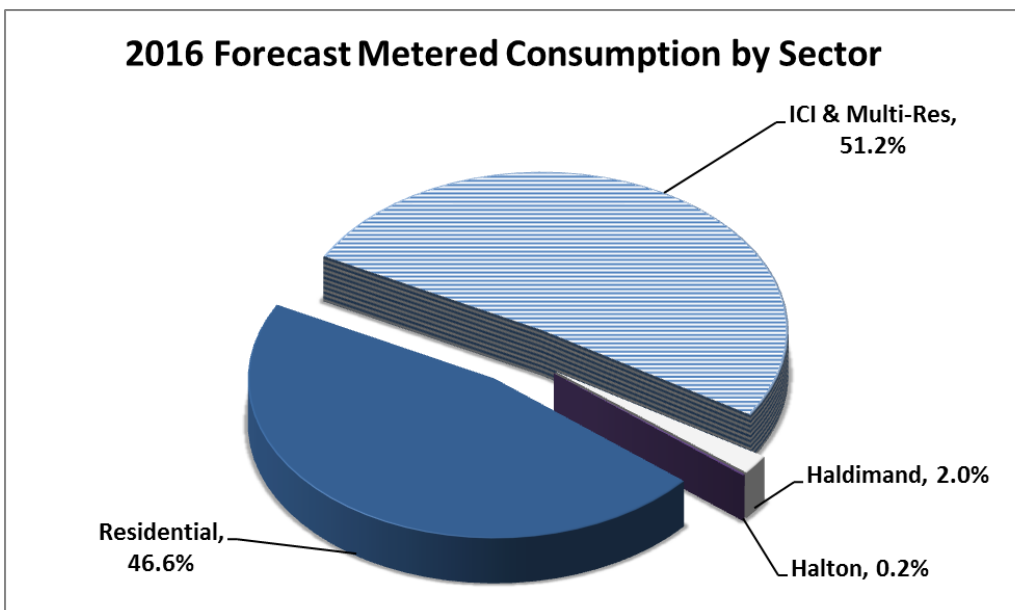
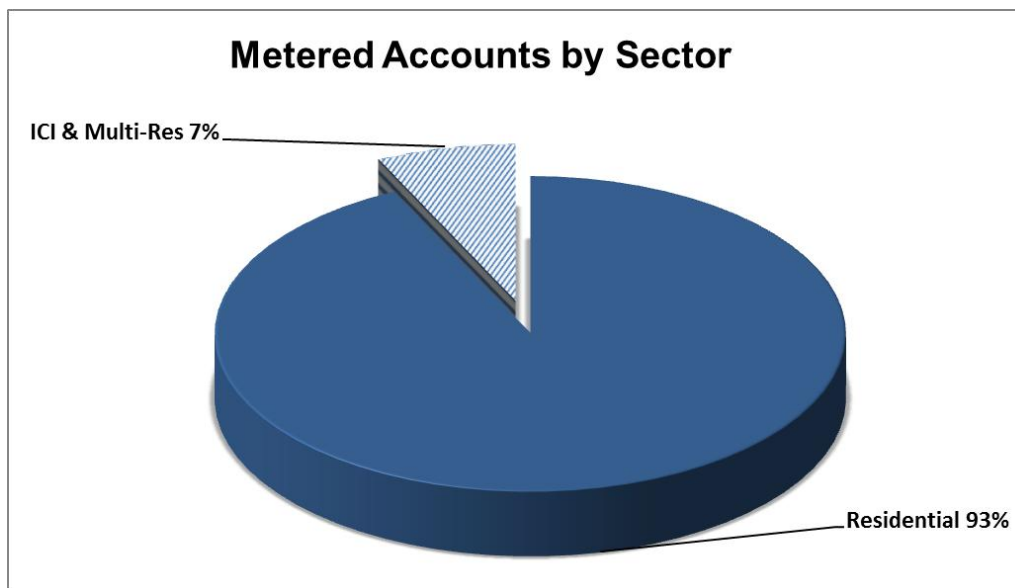
In the case of commercial and industrial ratepayers, the comparison of average annual charges indicates that Hamilton ranks in the mid-range which is consistent with last year.

2016 COMBINED METERED WATER/WASTEWATER CHARGE COMPARISON WITH OTHER MUNICIPALITIES				
MUNICIPALITY	MID-SIZE COMM/IND 2,272 M³		LARGE COMM/IND 22,727 M³	
	Annual Charge	Ranking	Annual Charge	Ranking
Kitchener**	\$10,211	1	\$102,140	1
Cambridge	\$9,709	2	\$94,015	2
Waterloo**	\$8,865	3	\$88,375	3
Brantford	\$8,590	4	\$84,908	4
Toronto*	\$8,251	5	\$82,535	6
Guelph	\$7,861	6	\$77,308	5
Norfolk	\$7,371	7	\$68,741	8
St. Catharines	\$7,205	8	\$69,436	7
West Lincoln	\$7,117	9	\$63,889	10
Halton	\$6,582	10	\$55,702	12
Hamilton*	\$6,560	11	\$66,324	9
London**	\$6,472	12	\$49,239	14
Haldimand	\$6,193	13	\$63,188	11
Durham	\$5,948	14	\$54,872	13
Peel	\$4,701	15	\$47,022	15
* Include stormwater management in their rates. ** Have dedicated stormwater management user fee that is excluded in above table. Note: All other municipalities fund stormwater from property taxes.				

CONSUMPTION AND RATE-GENERATED REVENUES

Metered Water Consumption

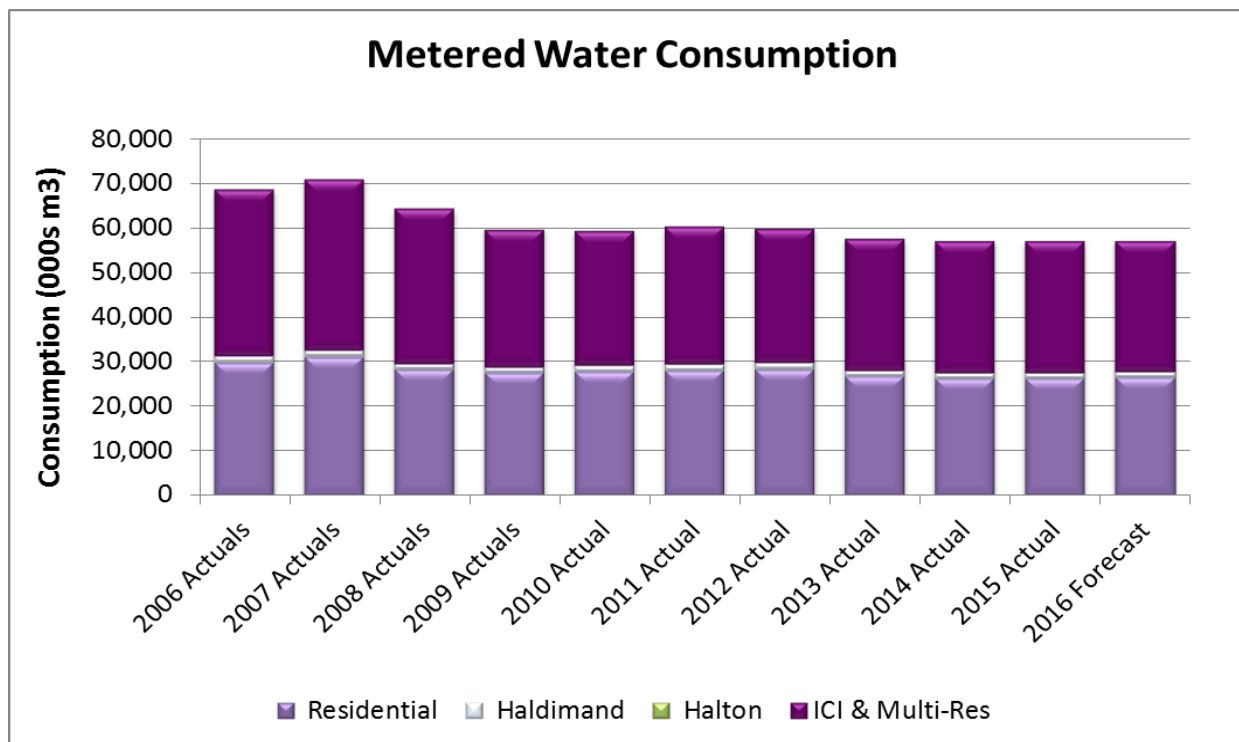
Currently, the City of Hamilton has approximately 149,000 metered water accounts. Residential users account for 93% of total metered accounts and approximately 46.6% of total water consumption. While industrial, commercial, institutional and multi-residential accounts only make up 7% of total metered accounts, ICI and multi-res water consumption accounts for 51.2% of total consumption.



2016 Consumption Forecast

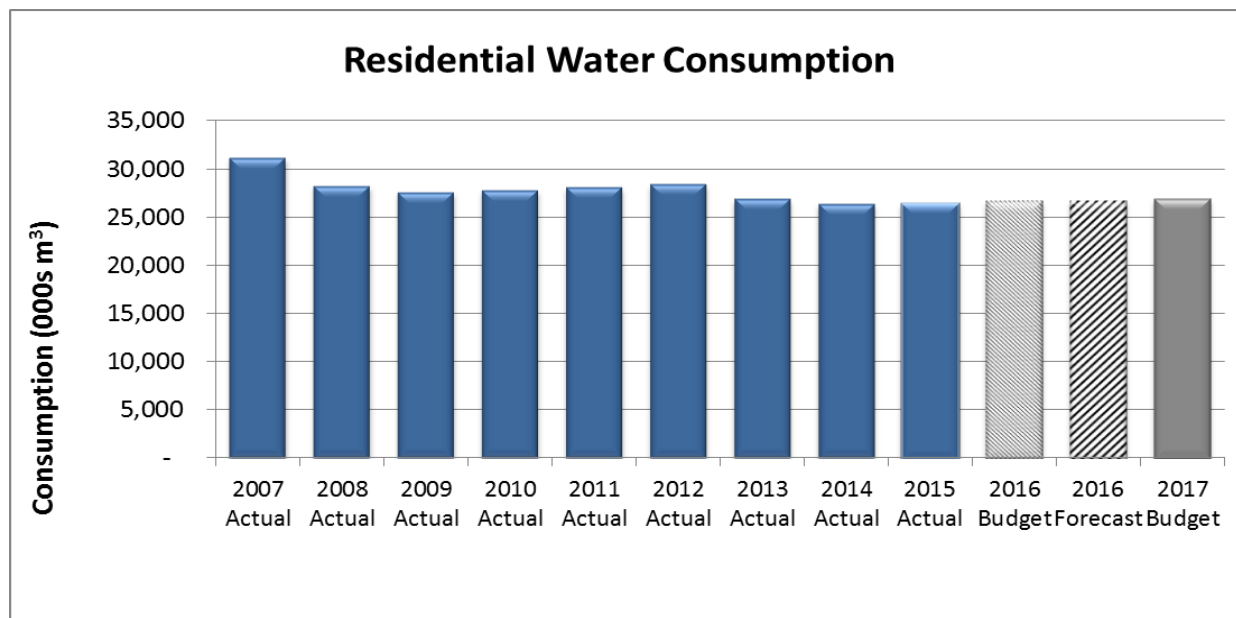
Environment Canada tracks municipal water usage and has observed a downward trend on water consumption across the country over the last decade.

For 2016, total water and wastewater / storm revenues are projected to be on budget amounting to approximately \$180 M, based on metered sales of approximately 57.3 million cubic metres.



The following graph highlights consumption trends in the residential sector.

The average water consumption, per household, during the last three years was approximately 196m³, and for the purpose of the 2016 forecast 200m³ was assumed.

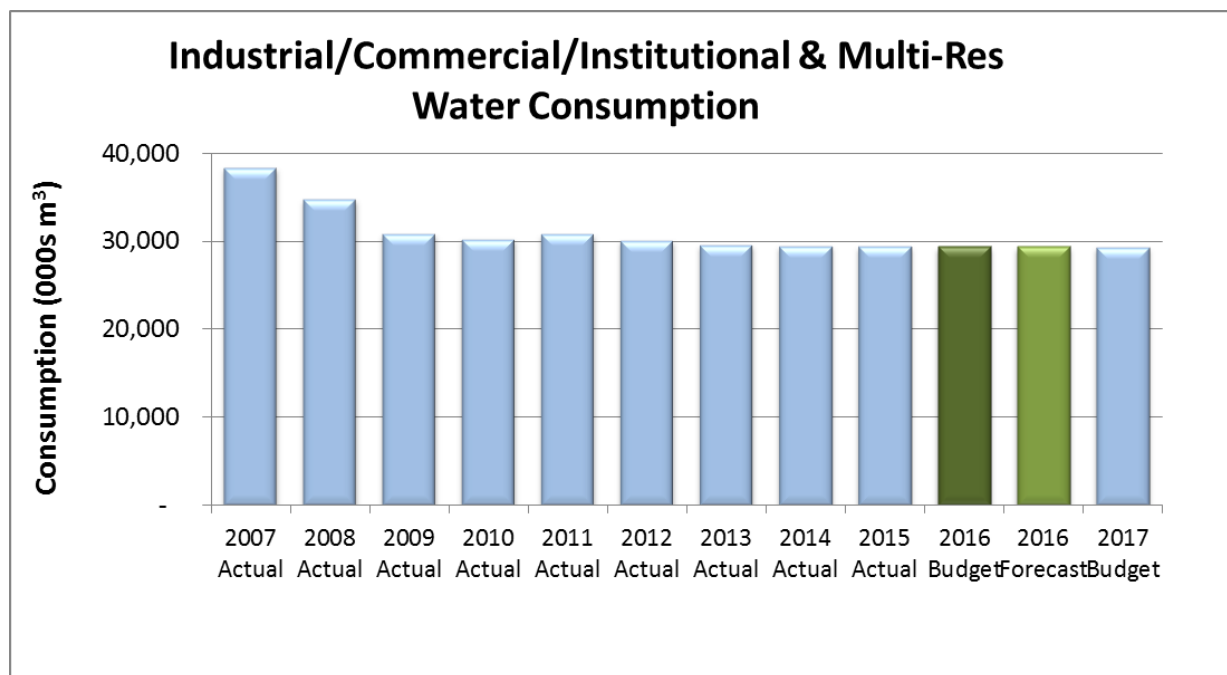


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The residential sector is forecasted to align to budget for 2016, in part due to the drought like conditions experienced during summer 2016.



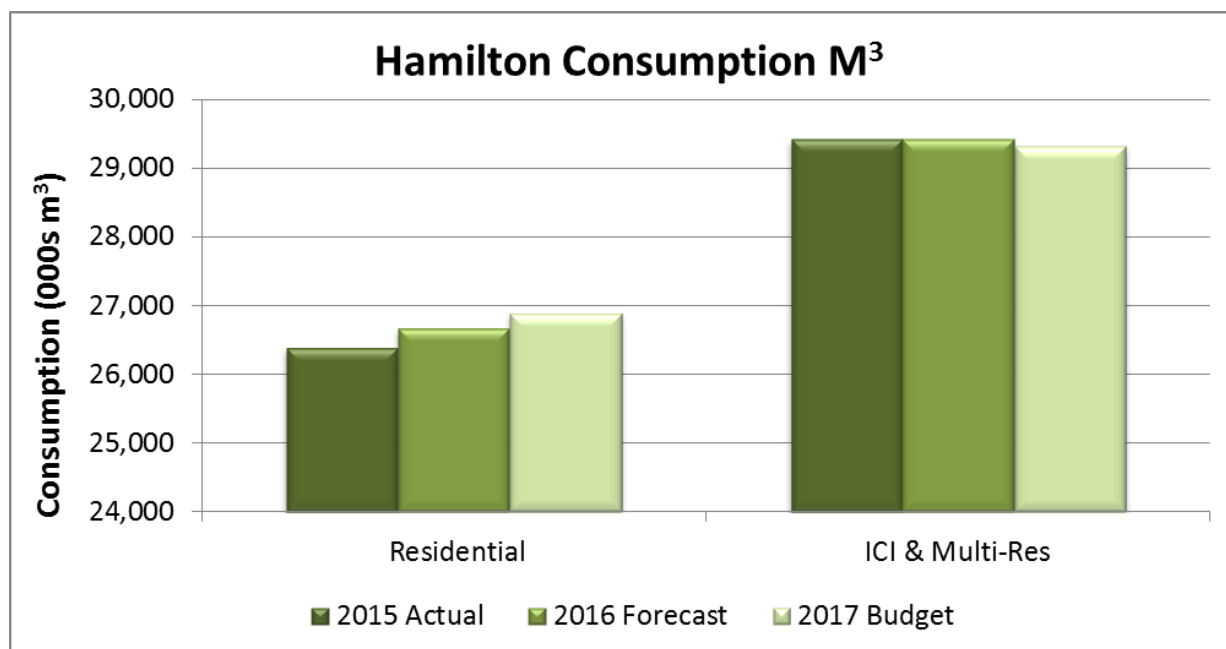
The graph above highlights consumption trends in the ICI & Multi-Res sector. For 2016, the ICI & Multi-Res sector is expected to come in on budget, reflecting consistent consumption levels seen in the ICI & Multi-Res sector since 2013.

Staff will continue to monitor consumption across all sectors and take efforts to ensure that the City is maximizing its full revenue potential with respect to metered water and wastewater / storm. Similarly, staff will be monitoring changes in consumption on an ongoing basis identifying trends and related financial impacts through the Budget Variance Reports provided to Council.

2017 Consumption Budget

Over the past number of years, staff recommended varying degrees of adjustment to the consumption assumptions in recognition of changing demand for water across all sectors.

For 2017, total metered water consumption is forecast at approximately 57.4 million cubic metres, a slight increase of approximately 0.20% relative to 2016 budget at 57.3 million cubic metres. The following chart compares the 2017 budgeted consumption to the 2016 forecasted and 2015 actual consumption.



Based on the review of residential consumption patterns, residential consumption, on average, has been declining over the past decade. The declining consumption reflects ongoing conservation efforts associated with fixture / appliance obsolescence such as the installation of water efficient toilets and washer machines. However, since 2013, consumption levels have been fairly consistent ranging from 26.8 to 26.4 million cubic metres, for a three year average of 26.5 million cubic metres. For 2017, staff is recommending that the forecast for average residential consumption remain at 200m³ to reflect the past several years of consumption.

It is not clear how much further average residential consumption can decline, but there exists the potential for further declines, principally due to conservation efforts and the associated regulations. For example, in 2012, the Ontario Building Code changed requirements related to the installation of high-efficiency toilets (4.8L) and expanding the end uses of rainwater and other non-potable water.

The ICI & Multi-Res sector has experienced significant revenue shortfalls during the last recession levels and consumption levels have stabilized since 2013. As such, for the 2017 ICI & Multi-Res sector consumption forecast, staff is recommending basing consumption on prior year actuals.

It should be noted that the 2017 ICI & Multi-Res sector consumption forecast reflects US Steel Canada at current consumption levels. Depending on the outcome of the creditor protection proceedings related to US Steel Canada's Hamilton operations, there is a risk of the loss of consumption and related revenues. The Hamilton operations are forecast in 2016 to utilize upwards of 700,000 m³ of City water which would equate to

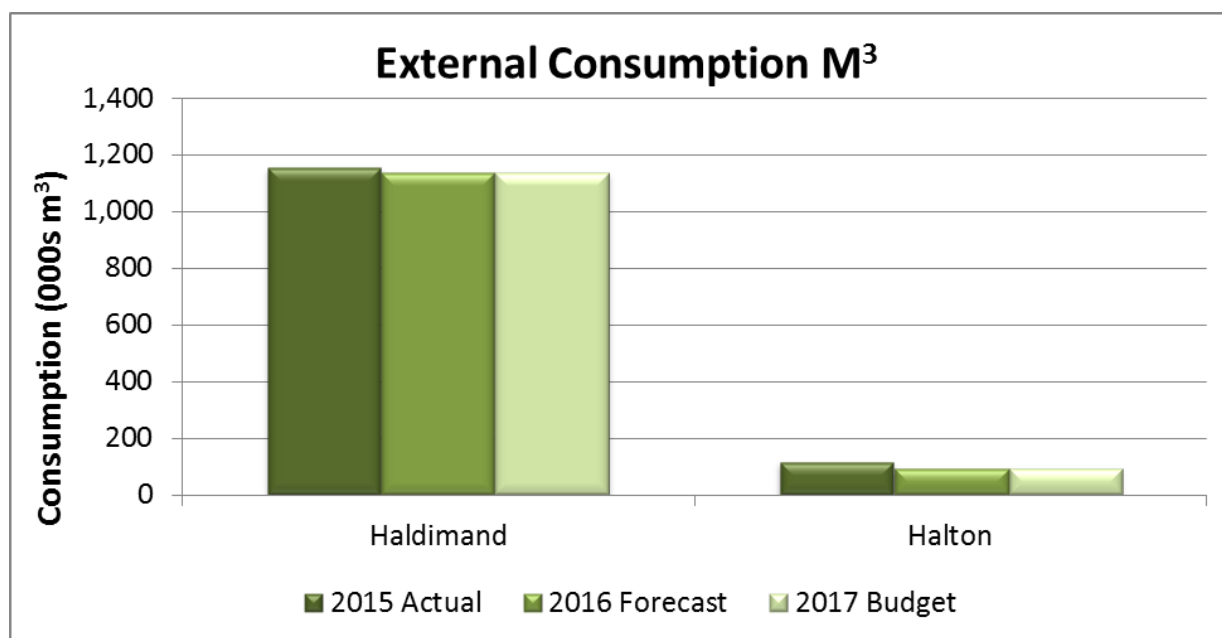
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approximately \$1.6 M in water and wastewater / storm revenues. Additionally, US Steel Hamilton is subject to Sewer Discharge Permit fees related to water sourced directly from Lake Ontario utilized in US Steel's operations that is discharged into the City's sewer system amounting to approximately \$200 K annually. Therefore, the total Rate related revenues provided by US Steel's Hamilton's operations amount to nearly \$1.8 M annually.

Under long-term arrangements, Hamilton supplies Haldimand County and Halton Region potable water but does not provide wastewater / storm services to either community. The following chart compares the 2017 budgeted consumption to the 2016 forecasted and 2015 actual consumption.



10-Year Consumption Budget

Total water consumption over the 10-year budget (2017 to 2026) is projected to slightly increase. This relatively conservative forecast reflects the following:

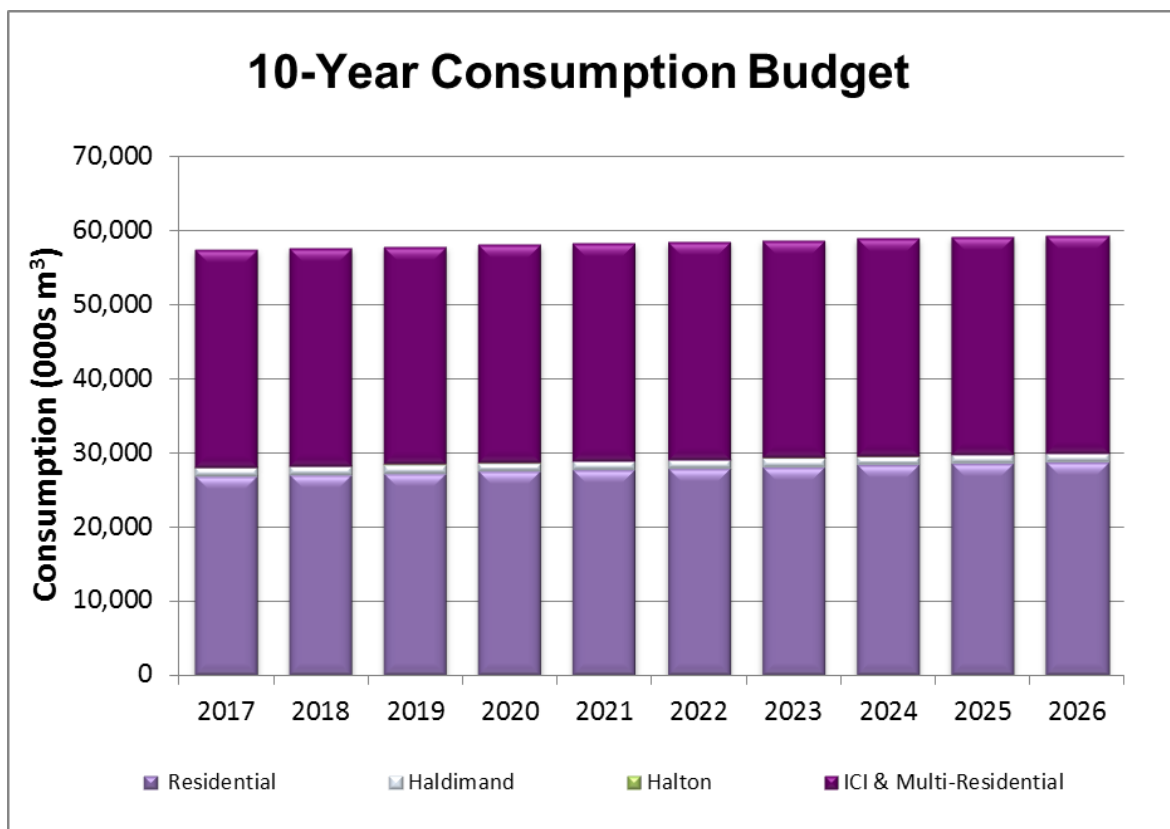
- Lack of recovery from 2009-10 Recession and continued uncertainty surrounding growth / decline of consumption in the ICI & Multi-Res sector
- Price elasticity in the ICI & Multi-Res sector
- Conservation impacts
 - residential toilet consumption = 30% of indoor consumption
 - newer high-efficiency toilets
 - 5% reduction in residential use = reduction of 1.6M m³

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- energy conservation initiatives in the ICI & Multi-Res sector usually include water impacts
- Renewed Haldimand water agreement executed in 2014
- Renewed Halton water agreement executed in 2011



2017-2026 Rate Capital Budget

The following table summarizes the \$1.75 B capital program and the financing requirements for the 2017 – 2026 water, wastewater and storm capital budget. Of this amount, \$868.7 M (50%) is for wastewater, \$751.1 M (43%) is for water and \$131.1 M (7%) is for the storm program. A total of \$774 M (44%) of the 10 year capital program is required in the first three years (2017 – 2019). The capital program also includes \$320 M for growth infrastructure related to GRIDS which will be funded from Development Charges, except for \$70 M in Development Charge exemptions which the City is legislatively required to fund from rate revenues if Council chooses to discount its DC's or recover less than 100% of growth-related capital costs.

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SOURCE OF CAPITAL FINANCING 2017 to 2026 RATE PROGRAM CAPITAL BUDGET \$(000'S)					
	2017	2018	2019	2020 to 2026	Total 2017 to 2026
WATERWORKS					
Capital Program	99,850	89,245	89,153	472,851	751,099
<u>Source of Funding</u>					
Subsidy/Other Revenue	12,248	1,631	-	1,734	15,613
Development Charges	26,280	19,804	26,449	66,092	138,625
Reserves & Other Internal Sources	2,551	13,500	13,300	12,700	42,051
Contribution from Operating	58,771	45,195	38,091	371,588	513,645
External Debt	-	9,115	11,313	20,737	41,165
Total	99,850	89,245	89,153	472,851	751,099
WASTEWATER					
Capital Program	62,452	174,786	204,827	426,594	868,659
<u>Source of Funding</u>					
Subsidy/Other Revenue	9,463	67,632	98,334	32,376	207,805
Development Charges	7,458	29,967	22,269	31,225	90,919
Reserves & Other Internal Sources	17,334	35,150	33,435	8,000	93,919
Contribution from Operating	13,325	31,037	40,761	324,952	410,075
External Debt	14,872	11,000	10,028	30,041	65,941
Total	62,452	174,786	204,827	426,594	868,659
STORM SEWERS					
Capital Program	24,380	16,280	13,470	77,190	131,320
<u>Source of Funding</u>					
Subsidy/Other Revenue	5,981	2,044	75	525	8,625
Development Charges	5,220	5,100	4,000	28,660	42,980
Reserves & Other Internal Sources	2,220	-	1,000	-	3,220
Contribution from Operating	10,959	9,136	8,395	45,955	74,445
External Debt	-	-	-	2,050	2,050
Total	24,380	16,280	13,470	77,190	131,320
TOTAL RATE PROGRAM					
Capital Program	186,682	280,311	307,450	976,635	1,751,078
<u>Source of Funding</u>					
Subsidy/Other Revenue	27,692	71,307	98,409	34,635	232,043
Development Charges	38,958	54,871	52,718	125,977	272,524
Reserves & Other Internal Sources	22,105	48,650	47,735	20,700	139,190
Contribution from Operating	83,055	85,368	87,247	742,495	998,165
External Debt	14,872	20,115	21,341	52,828	109,156
Total	186,682	280,311	307,450	976,635	1,751,078

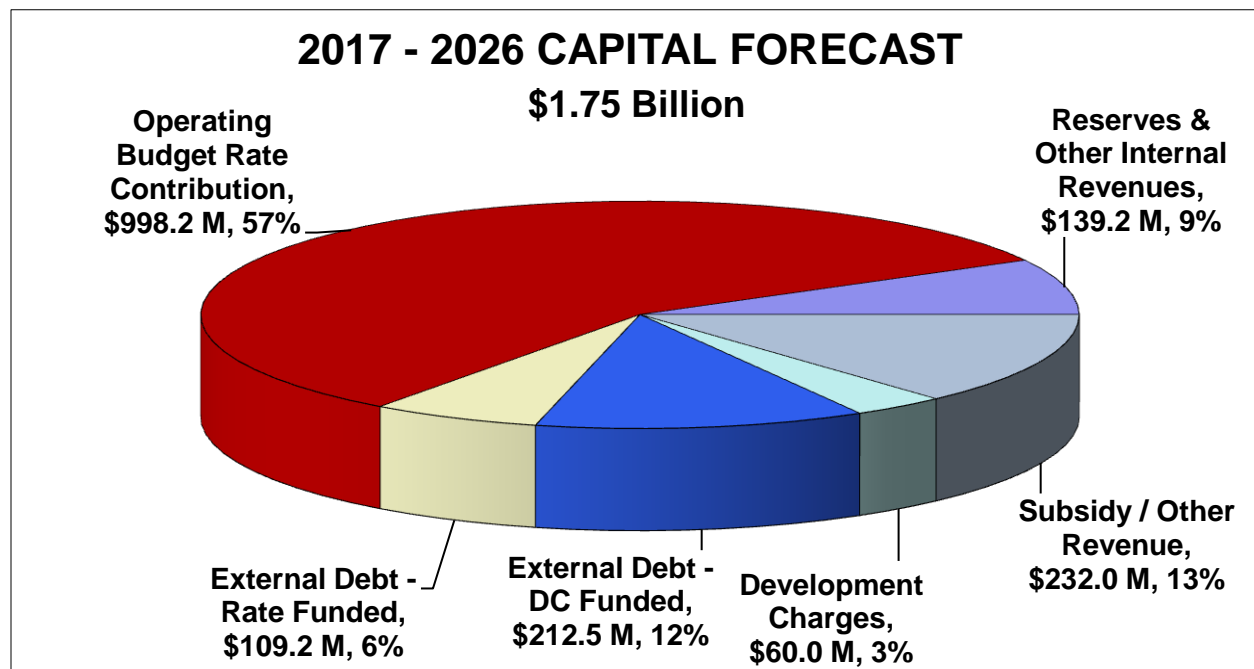
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The chart below provides the sources of capital financing for the 2017 – 2026 forecast period. The growth related infrastructure investment included in the 2017 – 2026 forecast to accommodate for growth is \$320 M, of which all but \$60 M will be funded from debt with the associated debt charges recovered from development charges over the next 20 years. It is assumed that DC collections of \$30 M each year in 2017 and 2018 will be utilized to fund growth capital in those years, reducing the amount of debt required to fund growth capital.

The 2017 – 2026 Capital Forecast includes \$32.2 M in funding from capital work-in-progress (WIP's) in 2017. Capital funding from reserves in years 2017 through 2022 totals \$107.8 M, which helps to mitigate debt financing.



Wastewater Treatment Upgrade & Expansion Project

The implementation plan for the Upgrade and Expansion of the Woodward Avenue Wastewater Treatment Plant is consistent with the 2016 Rate Budget, in that the plant improvements are forecast using a phased approach. Phase 1 is for effluent quality improvements and Phase 2 is for expansion of the treatment plant to accommodate growth. The majority of the growth component costs (\$222.5 M) are forecast beyond the 10 year period (2017 – 2026) in the 2017 Budget.

The total budget for the Wastewater Treatment Plant upgrade and expansion has increased by \$23.7 M in the 2017 budget forecast compared to the 2016 budget forecast, as reflected in the following table. The budget increase is attributable to a \$20.0 M increase in the Phase 2 – Plant Expansion component, as well as a \$3.7 M

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increase in Phase 1. Additionally, some of the costs forecast in the 2016 budget for 2017 have been deferred to 2018 - 2021 in the 2017 budget. The following table provides a comparison of the budgeted costs in the 2016 and 2017 Rate Budgets for the Wastewater Treatment Plant upgrade and expansion.

Woodward Wastewater Treatment Plant Project - Gross Capital Forecasts													
(\$ Millions)													
		pre										post	
	Total	2017	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2026
2017 Budget													
Phase 1 - Clean Harbour	414.9	68.4	8.5	106.0	119.2	95.0	17.8	-	-	-	-	-	-
Phase 2 - Expansion	237.5	-	-	-	-	-	-	-	-	5.0	5.0	5.0	222.5
Total WWTP	652.4	68.4	8.5	106.0	119.2	95.0	17.8	-	-	5.0	5.0	5.0	222.5
2016 Budget													
Phase 1 - Clean Harbour	411.2	68.4	49.7	94.3	119.5	72.6	6.7	-	-	-	-	-	-
Phase 2 - Expansion	217.5	-	-	-	-	-	-	-	5.0	5.0	5.0	5.0	197.5
Total WWTP	628.7	68.4	49.7	94.3	119.5	72.6	6.7	-	5.0	5.0	5.0	5.0	197.5
Increase (Decrease)	23.7	-	(41.2)	11.7	(0.3)	22.4	11.1	-	(5.0)	-	-	-	25.0

Provincial / Federal Subsidy Programs

In 2010 the City received \$100 M of Provincial infrastructure funding related to the Wastewater Treatment Plant (WWTP) water quality improvement project and in 2013 a \$100 M commitment for Federal funding for the WWTP project from the Green Infrastructure Fund (GIF) on a claim reimbursement basis.

The 2017 – 2026 Rate Capital Financing Plan incorporates both the Federal and Provincial Subsidies to fund the Clean Harbour project. Although none of the \$200 M in total subsidies from the Province and Federal governments has actually been spent to date, \$25.874 M has been committed as a funding source in previous years' budgets, leaving \$174.126 M in funding for the Clean Harbour project to be applied in years 2017 – 2020.

The 2016 Federal Budget announced the establishment of a Clean Water and Wastewater Fund (CWWF) that proposes to invest up to \$569.6 M in the province of Ontario for immediate improvements to water distribution and treatment infrastructure, starting in 2016-17.

The CWWF is designed to accelerate short-term community investments, while supporting the rehabilitation and modernization of drinking water, wastewater and

stormwater infrastructure, and the planning and design of future facilities and upgrades to existing systems.

The federal government will contribute 50% of the eligible project costs, up to the maximum federal allocation to Hamilton of \$21,945,381. In addition, the Province will contribute 25% of eligible project costs, up to the maximum provincial allocation for the City of \$10,972,691. The total CWWF funding allocation to Hamilton amounts to \$32,918,072 for projects totaling \$43,890,763.

Projects must be complete with eligible costs being incurred between April 1, 2016 and March 31, 2018. Where need is demonstrated, up to 25% of costs can extend beyond March 31, 2018. Extensions beyond March 31, 2018 require pre-approval by the Province and the Federal Governments.

Applications to access CWWF funding to the Ontario Ministry of Infrastructure who is responsible for the administration of CWWF, was completed by the October 31, 2016 deadline. As the City awaits formal approval of the CWWF proposed projects, the 2017-2026 Rate Capital Financing Plan has incorporated Hamilton's CWWF allocation. The 2017 Rate Capital Budget reflects CWWF funding of \$27.6 M in 2017 and \$5.3 M in 2018.

Projected Water / Wastewater / Storm Debt

The 2017 Water, Wastewater and Storm Budget incorporates a significant reliance on both rate supported debt and growth related debt supported from development charges over the 10-year forecast period. The forecasted rate supported debt financing for the 10 year period 2017 – 2026 has increased by \$25.9 M from the 2016 Rate Budget. \$14.9 M of this increase can be attributed to previously approved debt for WIP projects which did not need the debt capacity. The forecasted DC supported debt financing has decreased by approximately \$49.1 M over the same period, resulting in an overall net decrease in forecasted debt financing of \$23.2 M from the forecast in the 2016 Rate Budget. The decreased reliance on DC supported debt is attributable to a decrease in the Growth Capital forecast in the 2017 Rate Budget compared to the 2016 Rate Budget of approximately \$19 M. The increased reliance on Rate supported debt is attributable to an increase in the Rate Capital forecast of approximately \$41 M. The Growth Capital is partially offset with a \$30 M contribution from DC reserves in 2018 in the 2017 Rate Budget.

The 10 year capital program relies on a significant amount of debt financing, with the associated debt charges funded from both rates and development charges. The rate supported debt is projected to peak at \$301 M in 2020, compared with the 2016 budget forecasted debt peak of \$298 M in 2020. The debt funded from DC's is projected to peak at \$332 M in 2026, whereas the 2016 forecast was \$317 M in 2021. The levels of debt supported by development charges represent a significant risk if future growth

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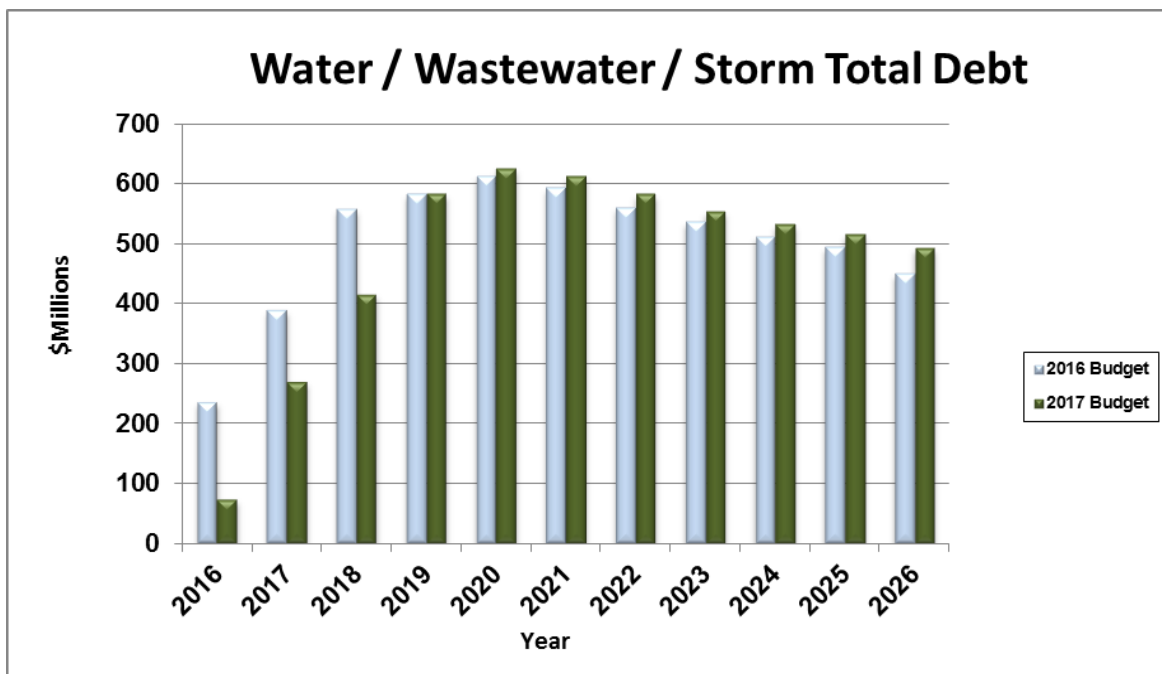
does not materialize as planned; however, relative to forecasts prior to 2014, the risk has been deferred as a significant portion of the growth component of the Wastewater Plant Expansion is now planned in the years beyond the next 10 years until after 2026. This will allow an opportunity to monitor growth and DC Revenues over the next 10 years (2017 – 2026) and make adjustments to the plant expansion project and associated financing plan to align with growth requirements.

The table below provides the ten year debt forecast compared to the 2016 Budget forecast.

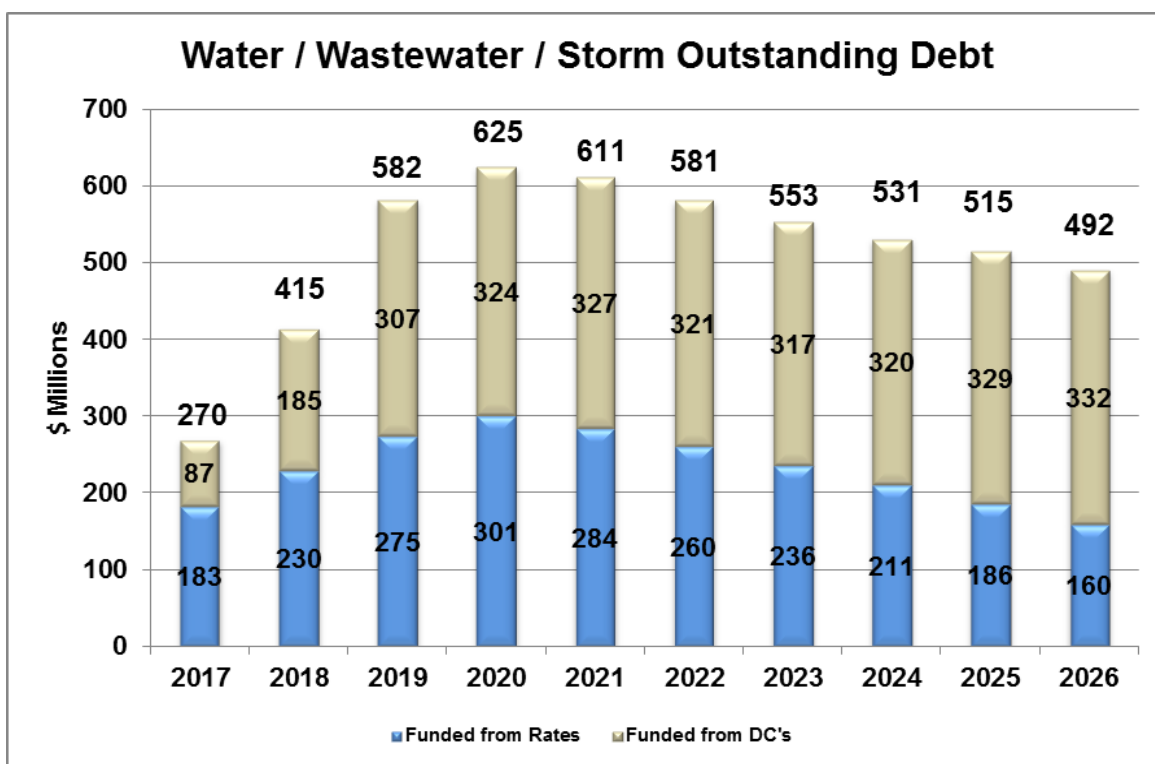
Projected Rate & DC Supported Outstanding Debt (\$ Millions)											
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
2016 Rate Budget											
Funded from Rates	142	209	274	282	298	275	252	228	203	178	151
Funded from DC's	93	179	283	300	314	317	308	308	308	316	298
Total	235	388	557	582	612	592	560	536	511	494	449
2017 Rate Budget											
Funded from Rates	72	183	230	275	301	284	260	236	211	186	160
Funded from DC's	1	87	185	307	324	327	321	317	320	329	332
Total	73	270	415	582	625	611	581	553	531	515	492
Increase (Decrease)	(162)	(118)	(142)	0	13	19	21	17	20	21	43

Consistent with the 2016 Rate Budget, and in an effort to more accurately forecast debt levels and the associated debt charges, the major multi-year Wastewater Treatment Plant projects are budgeted based on the projected cash flow of expenditures for the 2017 Rate Capital Budget, versus full commitment based budgeting.

The following graph compares the total outstanding debt (Rate & DC Funded) from the 2016 Budget forecast to the 2017 Budget forecast. The graph illustrates the lower debt requirements in 2017 and 2018 and higher debt levels in 2019 – 2026 from the 2016 forecast for the 10 year period 2017 - 2026.



The following graph illustrates the projected outstanding debt for the 10 year period (2017 – 2026) and the funding source of the associated debt charges.



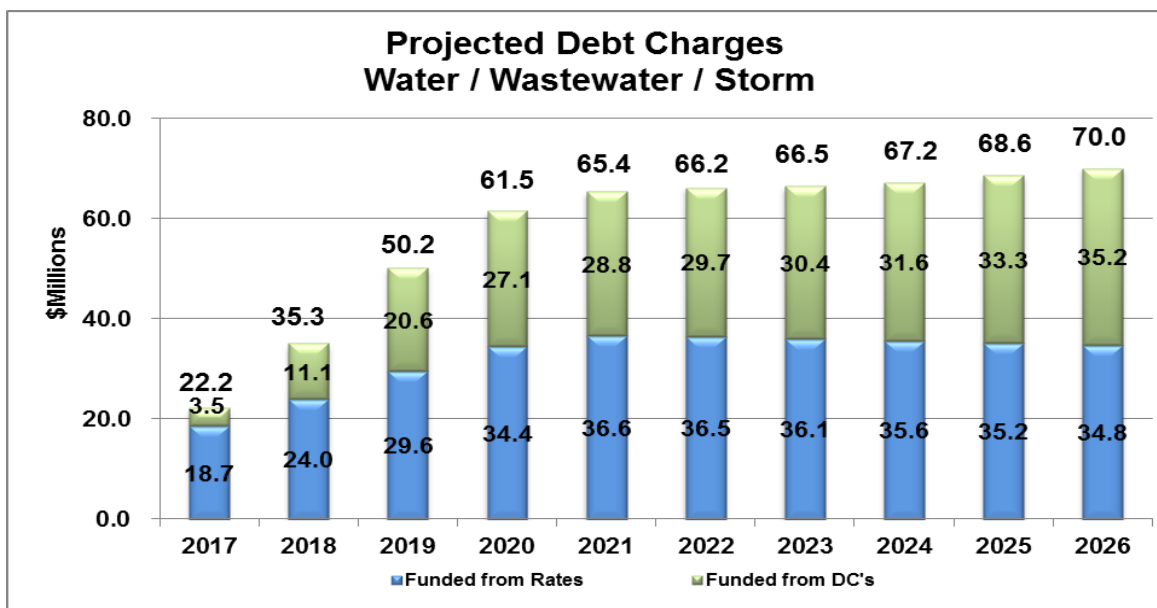
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The following graph shows the forecasted debt charges funded by water / sewer rates and by Development Charges.



Impact of Capital Budget on Operating Budget

As summarized below, the 2017 Rate Budget incorporates \$109.1 M capital financing costs which is an increase of \$1.5 M from the 2016 Rate budget. The 2017 budgeted debt charges increase of \$6.496 M is offset by a decrease in contribution to capital of \$4.752 M and decrease in DC exemption funding of \$0.24 M compared to the 2016 budget.

WATER, WASTEWATER & STORM					
IMPACT OF CAPITAL ON OPERATING BUDGET					
(000's)					
	<u>2016 APPROVED</u>	<u>2017 PROPOSED</u>	<u>CHANGE</u>		<u>2017 - 2026 FORECAST</u>
			\$	%	
Debt to be Issued	3,074	14,872	11,798	383.8%	109,156
Debt Charges (Net)	12,184	18,680	6,496	53.3%	321,451
Contribution to Capital	87,807	83,055	(4,752)	-5.4%	998,165
DC Exemption Funding	7,640	7,400	(240)	-3.1%	68,930
Impact on Operating Budget	107,631	109,135	1,504	1.4%	1,388,546

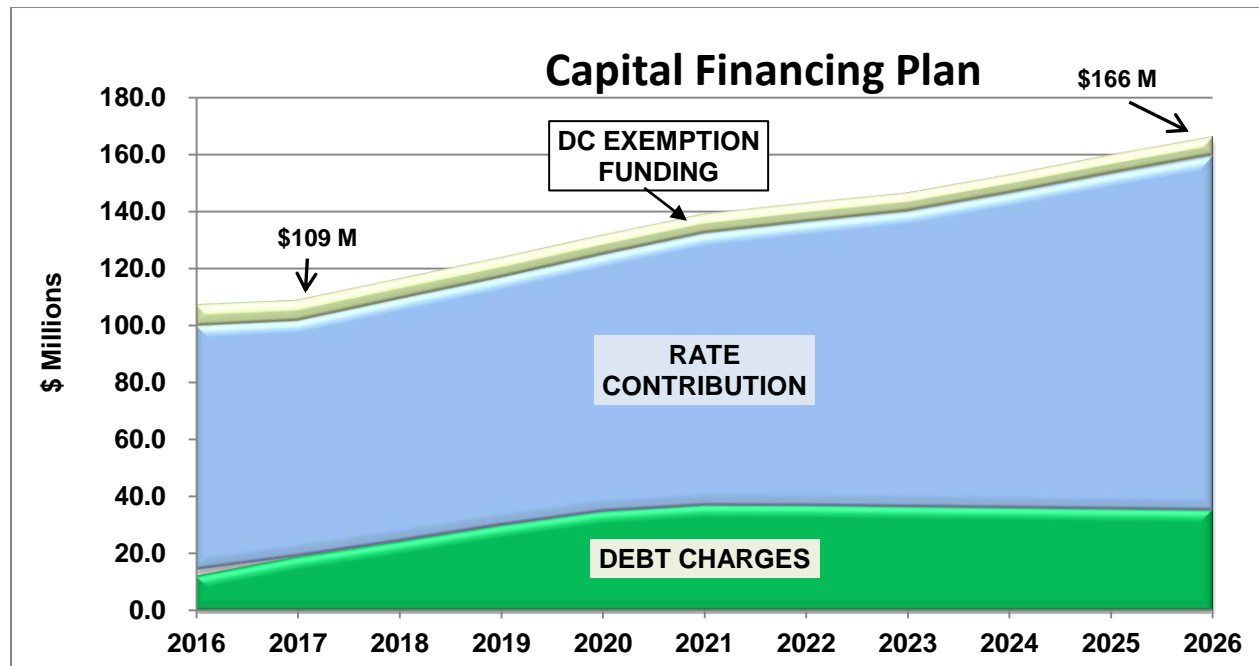
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The following graph highlights the annual debt servicing requirement for the Rate Supported Capital program. Financing costs are projected to increase from \$109 M in 2017 to \$166 M in 2026. Rate supported debt charges are expected to increase from 9.3% of total revenues in 2016 to 15.2% in 2021, and then decline to 11.8% in 2026.



ALTERNATIVES FOR CONSIDERATION

Beyond the recommended rate increase, staff can direct changes to this budget submission albeit any changes, in all likelihood, would require a review of the 2017 Capital Budget submissions

ALIGNMENT TO THE 2016 – 2025 STRATEGIC PLAN

Community Engagement & Participation

Hamilton has an open, transparent and accessible approach to City government that engages with and empowers all citizens to be involved in their community.

Economic Prosperity and Growth

Hamilton has a prosperous and diverse local economy where people have opportunities to grow and develop.

Healthy and Safe Communities

Hamilton is a safe and supportive city where people are active, healthy, and have a high quality of life.

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Clean and Green

Hamilton is environmentally sustainable with a healthy balance of natural and urban spaces.

Built Environment and Infrastructure

Hamilton is supported by state of the art infrastructure, transportation options, buildings and public spaces that create a dynamic City.

Our People and Performance

Hamiltonians have a high level of trust and confidence in their City government.

APPENDICES AND SCHEDULES ATTACHED

Appendix “A” to Report FCS16079 - Total Combined Water, Wastewater & Storm 1, 3, & 10 Year Operating Budget Forecast

Appendix “B” to Report FCS16079 - Water 1, 3 & 10 Year Operating Budget Forecast

Appendix “C” to Report FCS16079 – Wastewater and Storm 1, 3 & 10 Year Operating Budget Forecast

Appendix “D” to Report FCS16079 - Wastewater 1, 3, & 10 Year Expenditure Forecast

Appendix “E” to Report FCS16079 - Storm 1, 3, & 10 Year Expenditure Forecast

Appendix “F” to Report FCS16079 - Water, Wastewater & Storm 2017 Rate Supported Staff Complement and 2017 FTE Program Enhancements

Appendix “G” to Report FCS16079 - Water, Wastewater & Storm 2017 Proposed User Fees & Charges Rate Supported

Appendix “H” to Report FCS16079 - Water, Wastewater & Storm 2017-2026 Source of Capital Financing

Appendix “I” to Report FCS16079 - Water, Wastewater & Storm 2017-2026 Capital Financing Plan

Appendix “J” to Report FCS16079 - Water System 2017-2026 Source of Capital Financing

Appendix “K” to Report FCS16079 - Water System 2017 Capital Project List

Appendix “L” to Report FCS16079 - Water System 2017-2026 Capital Project List

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Appendix “M” to Report FCS16079 - Wastewater System 2017-2026 Source of Capital Financing

Appendix “N” to Report FCS16079 - Wastewater System 2017 Capital Project List

Appendix “O” to Report FCS16079 - Wastewater System 2017-2026 Capital Project List

Appendix “P” to Report FCS16079 - Storm Water 2017-2026 Source of Capital Financing

Appendix “Q” to Report FCS16079 - Storm Water 2017 Capital Project List

Appendix “R” to Report FCS16079 - Storm Water 2017-2026 Capital Project List

Appendix “S” to Report FCS16079 – 2017 Rate Program Capital Budget Summary

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