

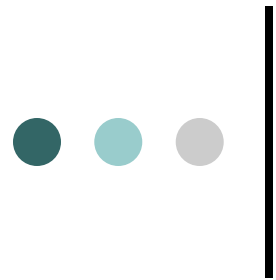


# Municipality of Port Hope Water and Wastewater Rate Study Update

Public Information Meeting

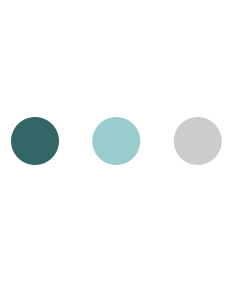
May 15, 2007

Watson & Associates Economists Ltd.



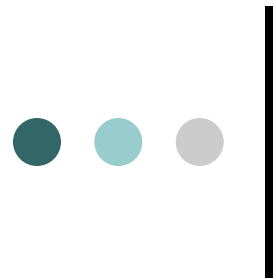
## Study Purpose

- Identify all current and future water and wastewater system capital needs
- Identify cost recovery options for capital
- Estimate future operating costs over the forecast period
- Recommend new rates to recover the cost of water and wastewater services



# Sustainable Water and Sewage Systems Act (SWSSA)

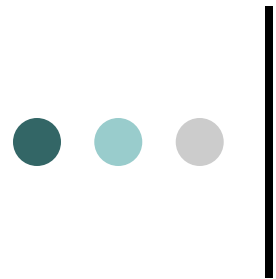
- Bill received third reading and passed on Dec. 13, 2002
- Expert Panel Report recommendations issued July 2005
- Water licensing program to include financial compliance
  - Safe Drinking Water Regulation posted
- SWSSA Regulations to follow



# Sustainable Water and Sewage Systems Act (SWSSA)

The Act requires the preparation of two reports for submission to the Ministry of the Environment

- First report - “full cost of services”
- Second report - “cost recovery plan”, implementation of which will be required within a specified time period, upon approval by the Ministry



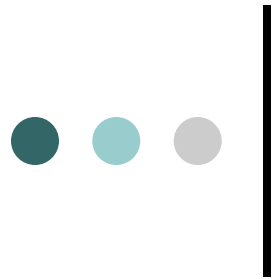
# Sustainable Water and Sewage Systems Act (SWSSA)

Full Cost defined as:

- “source protection costs, operating costs, financing costs, renewal and replacement costs and improvement costs”

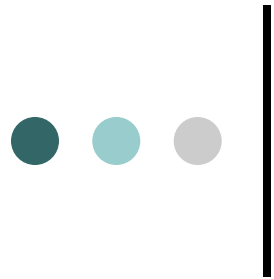
associated with

- Water – extracting, treating, distributing
- Wastewater – collecting, treating, discharging



# Growth and Consumption Forecast

- Growth forecast for the period 2007-2016 based on modified DC Background Study
- Growth assumptions
  - Phase-in residential development to 158/yr based on recent trends
  - Non-residential development approximately 1% annually



# Growth and Consumption Forecast

- Consumption assumptions
  - Water consumption estimates based on historic averages to reflect seasonality
  - Revised wastewater consumption forecast to reflect actuals



# Water System Growth and Consumption Forecast

Description	Actual 2006	WATER SYSTEM - Forecast of Water System Users and Total Water Consumption (in m3)									
		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
<b>System Users</b>											
Residential	4,070	4,095	4,158	4,245	4,358	4,499	4,657	4,815	4,973	5,131	5,289
Non-Residential	216	217	219	221	223	225	227	229	231	233	235
<b>Total System Users</b>	<b>4,286</b>	<b>4,312</b>	<b>4,377</b>	<b>4,466</b>	<b>4,581</b>	<b>4,724</b>	<b>4,884</b>	<b>5,044</b>	<b>5,204</b>	<b>5,364</b>	<b>5,524</b>
<b>Residential Equivalent Users</b>	<b>4,573</b>	<b>4,600</b>	<b>4,668</b>	<b>4,760</b>	<b>4,877</b>	<b>5,023</b>	<b>5,186</b>	<b>5,348</b>	<b>5,511</b>	<b>5,674</b>	<b>5,836</b>
<b>Annual Consumption</b>											
0-80	838,973	841,050	846,241	853,349	862,533	873,953	886,731	899,509	912,288	925,066	937,844
81-340	236,832	240,836	250,789	264,337	281,778	303,411	327,590	351,769	375,948	400,127	424,306
341-and greater	1,100,916	1,101,169	1,101,676	1,102,182	1,102,688	1,103,195	1,103,701	1,104,207	1,104,714	1,105,220	1,105,726
<b>Total Consumption</b>	<b>2,176,721</b>	<b>2,183,054</b>	<b>2,198,706</b>	<b>2,219,868</b>	<b>2,246,999</b>	<b>2,280,559</b>	<b>2,318,022</b>	<b>2,355,486</b>	<b>2,392,949</b>	<b>2,430,412</b>	<b>2,467,875</b>



# Wastewater System Growth and Consumption Forecast

Description	Actual 2006	WATER SYSTEM - Forecast of Water System Users and Total Water Consumption (in m3)									
		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
<b>System Users</b>											
Residential	3,862	3,887	3,950	4,037	4,150	4,291	4,449	4,607	4,765	4,923	5,081
Non-Residential	196	197	199	201	203	205	207	209	211	213	215
<b>Total System Users</b>	<b>4,058</b>	<b>4,084</b>	<b>4,149</b>	<b>4,238</b>	<b>4,353</b>	<b>4,496</b>	<b>4,656</b>	<b>4,816</b>	<b>4,976</b>	<b>5,136</b>	<b>5,296</b>
<b>Residential Equivalent Users</b>	<b>4,345</b>	<b>4,346</b>	<b>4,413</b>	<b>4,505</b>	<b>4,623</b>	<b>4,768</b>	<b>4,931</b>	<b>5,094</b>	<b>5,256</b>	<b>5,419</b>	<b>5,582</b>
<b>Annual Consumption</b>											
0-80	820,733	822,810	828,001	835,109	844,293	855,713	868,491	881,269	894,048	906,826	919,604
81-340	159,312	163,316	173,269	186,817	204,258	225,891	250,070	274,249	298,428	322,607	346,786
341-and greater	729,276	729,529	730,036	730,542	731,048	731,555	732,061	732,567	733,074	733,580	734,086
<b>Total Consumption</b>	<b>1,709,321</b>	<b>1,715,654</b>	<b>1,731,306</b>	<b>1,752,468</b>	<b>1,779,599</b>	<b>1,813,159</b>	<b>1,850,622</b>	<b>1,888,086</b>	<b>1,925,549</b>	<b>1,963,012</b>	<b>2,000,475</b>



# Capital Infrastructure Needs

- Reviewed 2001-2007 capital expenditures actuals and forecast with Municipal staff
  - Significant unfunded capital
- Incorporated updated DC Background Study assumptions for growth-related needs
- Updated asset inventory and capital benchmark assumptions with TSH to determine capital replacement needs based on lifecycle analysis



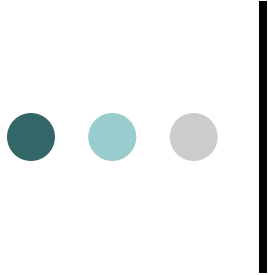
# Capital Financing Options

- Development Charges
  - AON Inc. Front-ending Agreement
- Grants
- Internal Sources (i.e. Reserves)
- Debt Financing
  - based on 6% for 10-year term for works other than Plants
  - WTP 3%, 15 year term
  - WPCP 6%, 15 year term



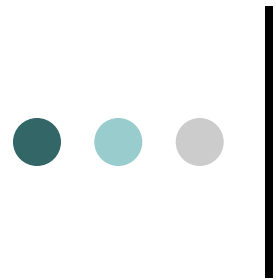
# 2007-2016 Capital Needs Water System

Project Description	Total	Year									
		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
<b>Capital Expenditures</b>											
Membrane Upgrades	281,263	134,400	-	-	146,863	-	-	-	-	-	-
Upgrade Pumps at Victoria Street Booster Station	265,000	265,000	-	-	-	-	-	-	-	-	-
Zone 2 Storage - Medium Term	2,495,608	750,000	1,745,608	-	-	-	-	-	-	-	-
Victoria St. - Victoria St. P.S. to Jocelyn Reservoir	1,000,000	1,000,000	-	-	-	-	-	-	-	-	-
Hope St. - Shuter St. to CPR Line	182,263	-	-	-	-	-	-	-	-	182,263	-
Croft St. Extension to Rose Glen Road	347,551	-	-	347,551	-	-	-	-	-	-	-
Cathodic Protection Program Annual	1,146,388	100,000	103,000	106,090	109,273	112,551	115,927	119,405	122,987	126,677	130,477
Other Miscellaneous	68,000	68,000	-	-	-	-	-	-	-	-	-
Watermain Replacement Program	6,542,462	327,500	1,001,675	638,662	568,218	596,520	649,193	620,907	756,372	684,056	699,358
<b>Total Capital Expenditures</b>	<b>12,328,534</b>	<b>2,644,900</b>	<b>2,850,283</b>	<b>1,092,303</b>	<b>824,353</b>	<b>709,071</b>	<b>765,121</b>	<b>740,312</b>	<b>879,360</b>	<b>992,996</b>	<b>829,836</b>
<b>Capital Financing</b>											
Provincial Grants	-										
Development Charges	4,571,684	2,149,400	1,745,608	347,551	146,863	-	-	-	-	182,263	-
Debenture Requirements	5,662,271	495,500	1,104,675	744,752	677,491	631,724	592,415	451,368	438,213	197,565	328,568
s.38 DCA Agreement	-	-	-	-	-	-	-	-	-	-	-
Operating Contributions	-	-	-	-	-	-	-	-	-	-	-
Water Reserves	2,094,579	-	-	-	-	77,347	172,706	288,944	441,147	613,167	501,268
<b>Total Capital Financing</b>	<b>12,328,534</b>	<b>2,644,900</b>	<b>2,850,283</b>	<b>1,092,303</b>	<b>824,353</b>	<b>709,071</b>	<b>765,121</b>	<b>740,312</b>	<b>879,360</b>	<b>992,996</b>	<b>829,836</b>



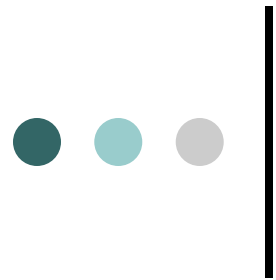
# 2007-2016 Capital Needs Wastewater System

Project Description	Total	Year									
		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
<b>Capital Expenditures</b>											
WPCP Upgrades & Expansion	28,553,000	28,553,000	-	-	-	-	-	-	-	-	-
West End Area Pumping Station Upgrades	251,547	-	47,380	48,801	50,265	51,773	53,327	-	-	-	-
Other Miscellaneous	79,500	79,500	-	-	-	-	-	-	-	-	-
Sewermain Replacement Program	12,805,272	351,500	1,605,255	1,686,831	1,147,363	1,136,764	1,379,536	1,314,176	1,353,601	1,394,209	1,436,036
<b>Total Capital Expenditures</b>	<b>41,689,319</b>	<b>28,984,000</b>	<b>1,652,635</b>	<b>1,735,632</b>	<b>1,197,629</b>	<b>1,188,537</b>	<b>1,432,863</b>	<b>1,314,176</b>	<b>1,353,601</b>	<b>1,394,209</b>	<b>1,436,036</b>
<b>Capital Financing</b>											
Provincial Grants	9,800,000	9,800,000	-	-	-	-	-	-	-	-	-
Development Charges	9,995,978	9,744,431	47,380	48,801	50,265	51,773	53,327	-	-	-	-
Debenture Requirements	19,361,511	9,008,569	1,425,691	1,686,831	1,147,363	1,136,764	1,379,536	1,196,264	1,040,258	819,665	520,570
s.38 DCA Agreement	-	-	-	-	-	-	-	-	-	-	-
Operating Contributions	-	-	-	-	-	-	-	-	-	-	-
Wastewater Reserves	2,531,830	431,000	179,564	-	-	-	-	117,912	313,344	574,545	915,465
<b>Total Capital Financing</b>	<b>41,689,319</b>	<b>28,984,000</b>	<b>1,652,635</b>	<b>1,735,632</b>	<b>1,197,629</b>	<b>1,188,537</b>	<b>1,432,863</b>	<b>1,314,176</b>	<b>1,353,601</b>	<b>1,394,209</b>	<b>1,436,036</b>



# Lifecycle Reserves

- An emerging trend in municipal finance is to establish long-term lifecycle reserves for replacement of the aging infrastructure
- Based on lifecycle assessment annual lifecycle reserve contributions for post-2016 replacement were determined



# Lifecycle Reserves

- 2007-2016 average annual replacement needs
  - Water - \$600,000
  - Wastewater - \$1,200,000
- Post-2016 lifecycle reserve contribution
  - Water - \$300,000
  - Wastewater - \$600,000

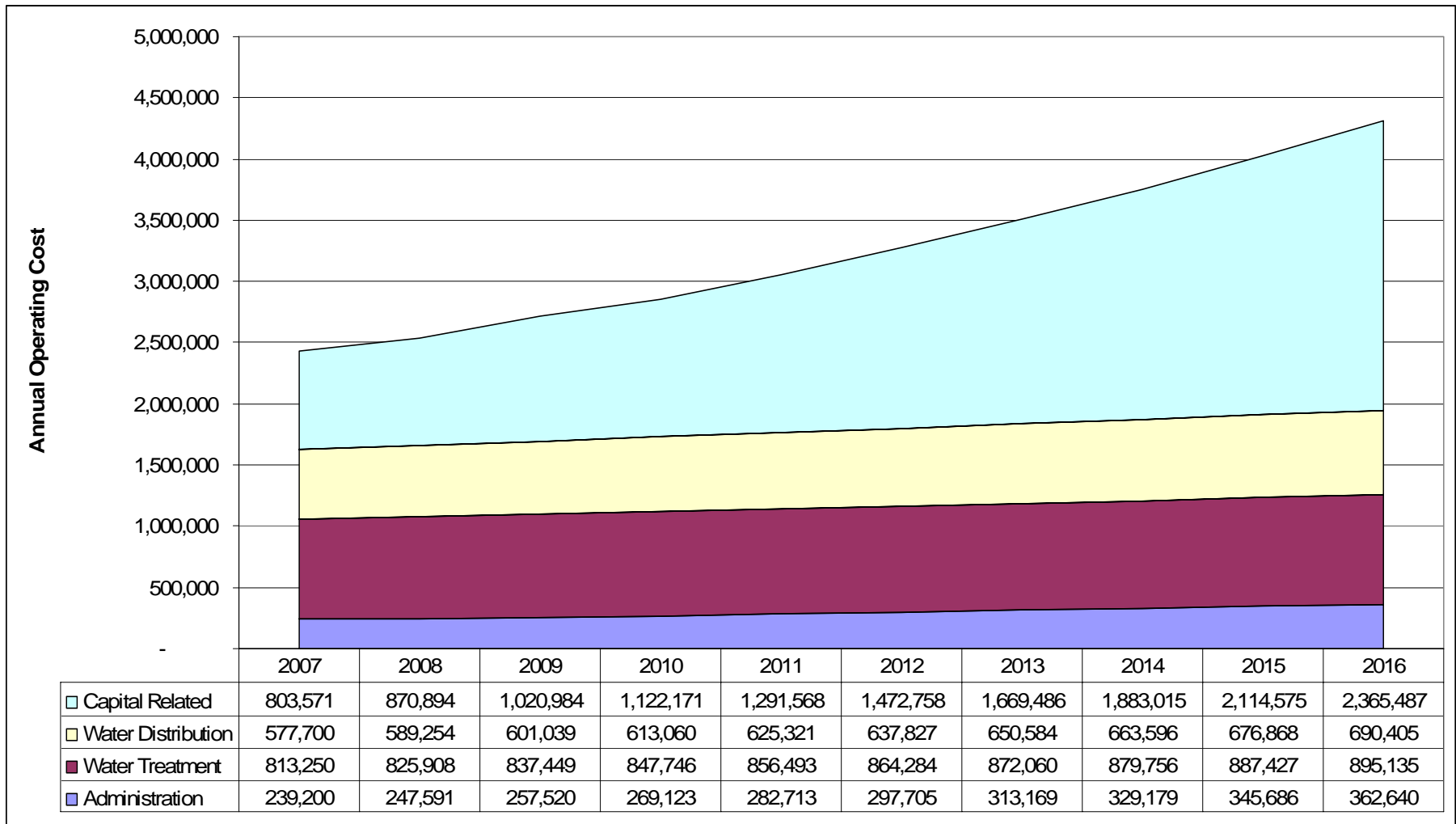


# Operating Expenditure Forecast

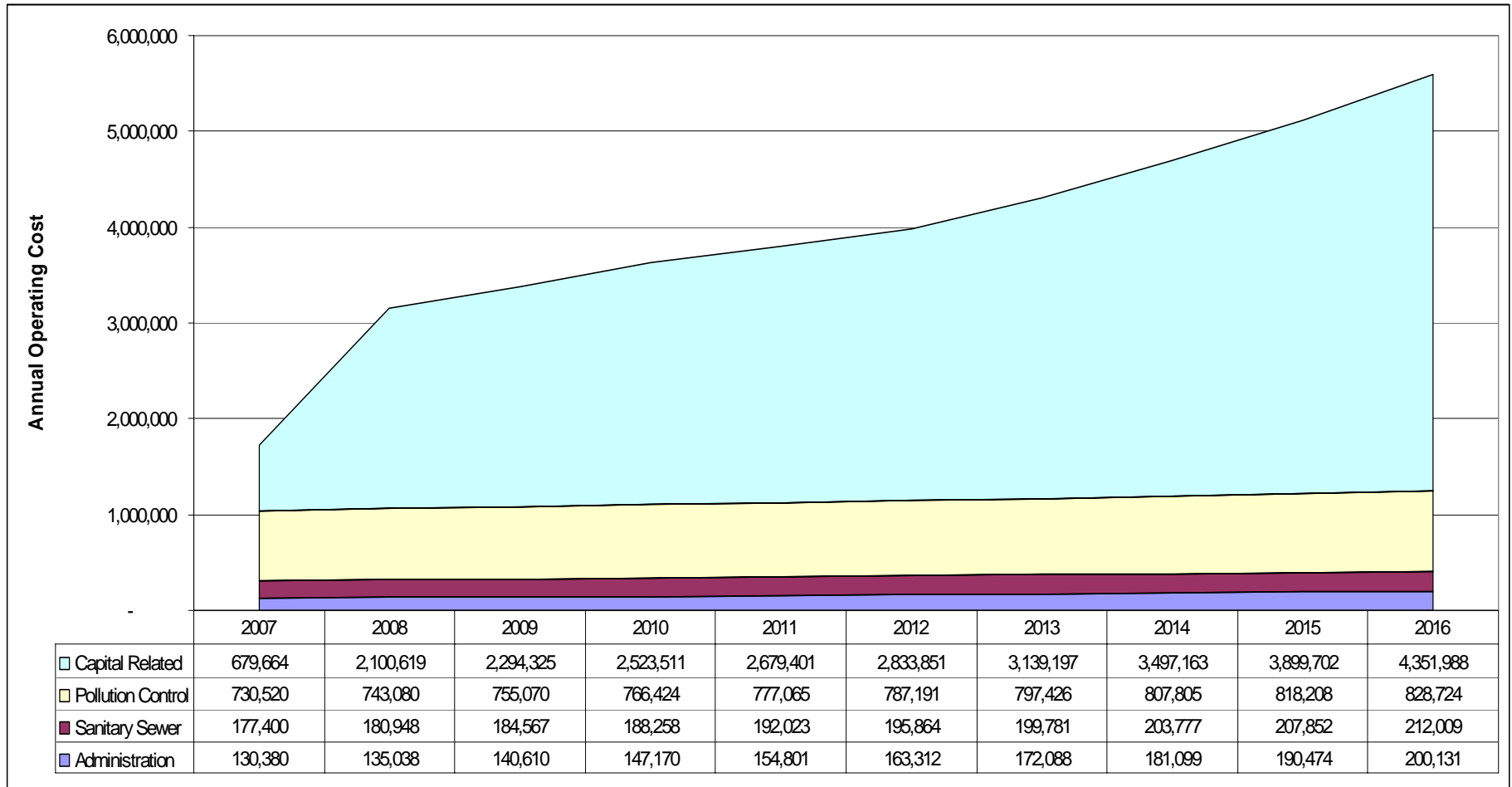
- Forecast operating budget expenditures and revenues over 2007-2016, with adjustments for inflation
- Identify projected capital-related funding based on financing plan (i.e. debt charges, reserve contributions)



# Water Operating Budget Forecast



# Wastewater Operating Budget Forecast





## Existing Charges

- The water and wastewater rate structure currently used by the Municipality consists of a base charge and increasing block consumptive rates



# Existing Charges

- Monthly base charge by meter size

Meter Size	Quarterly Base Charge by Meter Size		
	Water	Sewer	Total
5/8"	13.00	7.50	20.50
3/4"	15.60	8.00	23.60
1"	20.80	12.00	32.80
1 1/4"	26.00	15.00	41.00
1 1/2"	32.20	18.00	50.20
2"	41.60	24.00	65.60
3"	62.40	36.00	98.40
4"	83.20	48.00	131.20
6"	124.80	72.00	196.80

- Increasing block consumptive rates by system

Description	First Block (0-80m <sup>3</sup> ) \$/m <sup>3</sup>	Second Block (81m <sup>3</sup> -340m <sup>3</sup> ) \$/m <sup>3</sup>	Third Block (>340m <sup>3</sup> ) \$/m <sup>3</sup>
<u>Existing Rates</u>			
Water	0.69	0.77	0.86
Sewer	0.79	0.87	0.99
Total	1.48	1.64	1.85



# Rates for Council Consideration

- Address unfunded capital
- Achieve lifecycle based 2007-2016 capital replacement levels
- Increase rates gradually to achieve long-term replacement needs
  - Option requires debt funding in initial period
  - Inflationary increases to monthly base charges
- Lifecycle reserve funds to be established once rate based capital funding has stabilized



# Calculated Water Rates

Base Charge Forecast	Existing 2007	Forecast								
		2008	2009	2010	2011	2012	2013	2014	2015	2016
Annual Base Charge/Res. User	52.00	53.04	54.10	55.18	56.28	57.41	58.56	59.73	60.92	62.14
Quarterly Base Charge/Res. User	13.00	13.26	13.53	13.80	14.07	14.35	14.64	14.93	15.23	15.53
Monthly Base Charge/Res. User	4.33	4.42	4.51	4.60	4.69	4.78	4.88	4.98	5.08	5.18


Consumptive Charge Forecast	Existing 2007	Forecast								
		2008	2009	2010	2011	2012	2013	2014	2015	2016
First Block - 0-80m3 (\$/m3)	0.69	0.79	0.85	0.89	0.95	1.01	1.08	1.15	1.22	1.30
Second Block - 81m3-340m3 (\$/m3)	0.77	0.87	0.94	0.98	1.05	1.12	1.19	1.27	1.36	1.44
Third Block - Greater than 340 m3 (\$/m3)	0.86	0.98	1.06	1.11	1.18	1.26	1.34	1.43	1.53	1.63



# Calculated Wastewater Rates

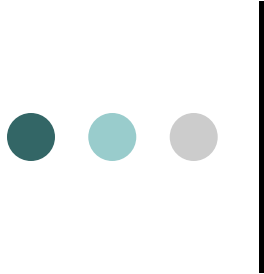
Base Charge Forecast	Existing 2007	Forecast								
		2008	2009	2010	2011	2012	2013	2014	2015	2016
Annual Base Charge/Res. User	30.00	30.60	31.21	31.83	32.47	33.12	33.78	34.46	35.15	35.85
Quarterly Base Charge/Res. User	7.50	7.65	7.80	7.96	8.12	8.28	8.45	8.61	8.79	8.96
Monthly Base Charge/Res. User	2.50	2.55	2.60	2.65	2.71	2.76	2.82	2.87	2.93	2.99

Consumptive Charge Forecast	Existing 2007	Forecast								
		2008	2009	2010	2011	2012	2013	2014	2015	2016
First Block - 0-80m3 (\$/m3)	0.79	0.98	1.07	1.18	1.24	1.30	1.42	1.57	1.73	1.91
Second Block - 81m3-340m3 (\$/m3)	0.87	1.07	1.18	1.30	1.36	1.43	1.57	1.73	1.91	2.10
Third Block - Greater than 340 m3 (\$/m3)	0.99	1.22	1.34	1.47	1.55	1.62	1.78	1.96	2.17	2.39



# Residential Water and Sewer Rate Comparison (250 m<sup>3</sup>/year)

Municipality	Water Charges	Wastewater Charges	Total Bill	Ranking
Municipality of Trent Hills (Hastings)	\$854.03	\$1,059.00	\$1,913.03	1
Municipality of Trent Hills (Warkworth)	\$828.53	\$306.56	\$1,135.09	2
Township of Alnwick / Haldimand (Outside of Grafton)	\$1,052.26	\$0.00	\$1,052.26	3
City of Kawartha Lakes	\$501.60	\$514.26	\$1,015.86	4
Municipality of Trent Hills (Campbellford)	\$418.03	\$560.16	\$978.19	5
Municipality of Port Hope (2016 calculated)	\$411.55	\$546.20	\$957.75	6
Township of Cramahe	\$420.00	\$360.00	\$780.00	7
City of Peterborough	\$388.32	\$388.32	\$776.64	8
City of Quinte West (Frankford)	\$500.00	\$260.00	\$760.00	9
City of Belleville	\$528.74	\$203.84	\$732.59	10
Township of Cavan-Millbrook-North Monaghan (Millbrook)	\$253.60	\$472.32	\$725.92	11
Municipality of Port Hope (2008 calculated)	\$264.57	\$291.29	\$555.86	12
Municipality of Brighton	\$283.70	\$226.46	\$510.16	13
Municipality of Port Hope (existing)	\$237.51	\$241.24	\$478.75	14
Town of Cobourg	\$232.90	\$189.42	\$422.32	15
City of Quinte West (Trenton)	\$197.30	\$157.50	\$354.80	16
Township of Hamilton (Creighton Heights)	\$310.42	\$0.00	\$310.42	17
City of Quinte West (Bayside)	\$285.00	\$0.00	\$285.00	18
City of Quinte West (Glen Miller)	\$197.30	\$0.00	\$197.30	19



# Non-Residential Water and Sewer Rate Comparison (4,034 m<sup>3</sup>/year)

Municipality	Water Charges	Wastewater Charges	Total Bill	Ranking
Municipality of Trent Hills (Hastings)	\$26,464.29	\$32,815.72	\$59,280.02	1
Municipality of Trent Hills (Campbellford)	\$19,429.00	\$26,034.86	\$45,463.86	2
Municipality of Trent Hills (Warkworth)	\$26,052.83	\$9,639.55	\$35,692.37	3
Township of Cavan-Millbrook-North Monaghan (Millbrook)	\$6,942.60	\$15,145.93	\$22,088.53	4
City of Kawartha Lakes	\$8,927.28	\$9,156.42	\$18,083.70	5
Municipality of Port Hope (2016 calculated)	\$7,080.41	\$9,869.66	\$16,950.07	6
City of Belleville	\$7,579.09	\$8,187.32	\$15,766.41	7
City of Peterborough	\$7,605.00	\$7,605.00	\$15,210.00	8
Township of Alnwick / Haldimand (Outside of Grafton)	\$12,683.46	\$0.00	\$12,683.46	9
Municipality of Port Hope (2008 calculated)	\$4,434.50	\$5,159.44	\$9,593.94	10
Town of Cobourg	\$5,134.14	\$4,337.24	\$9,471.39	11
Municipality of Port Hope (existing)	\$3,941.58	\$4,230.78	\$8,172.36	12
City of Quinte West (Frankford)	\$3,527.20	\$4,195.36	\$7,722.56	13
City of Quinte West (Trenton)	\$1,932.80	\$3,590.26	\$5,523.06	14
Township of Cramahe	\$3,067.60	\$2,454.08	\$5,521.67	15
Township of Hamilton (Creighton Heights)	\$5,254.14	\$0.00	\$5,254.14	16
Municipality of Brighton	\$2,014.66	\$1,603.66	\$3,618.32	17
City of Quinte West (Bayside)	\$2,782.44	\$0.00	\$2,782.44	18
City of Quinte West (Glen Miller)	\$1,975.78	\$0.00	\$1,975.78	19



## Next Steps

- Receive input on rate options from Council and the public
- Council direction on preferred rate options
- Draft final report
- Undertake bylaw passage for 2008