



Water and Wastewater & Treatment 2014 Budgets



Strategic Priorities & Policy Committee
November 18, 2013



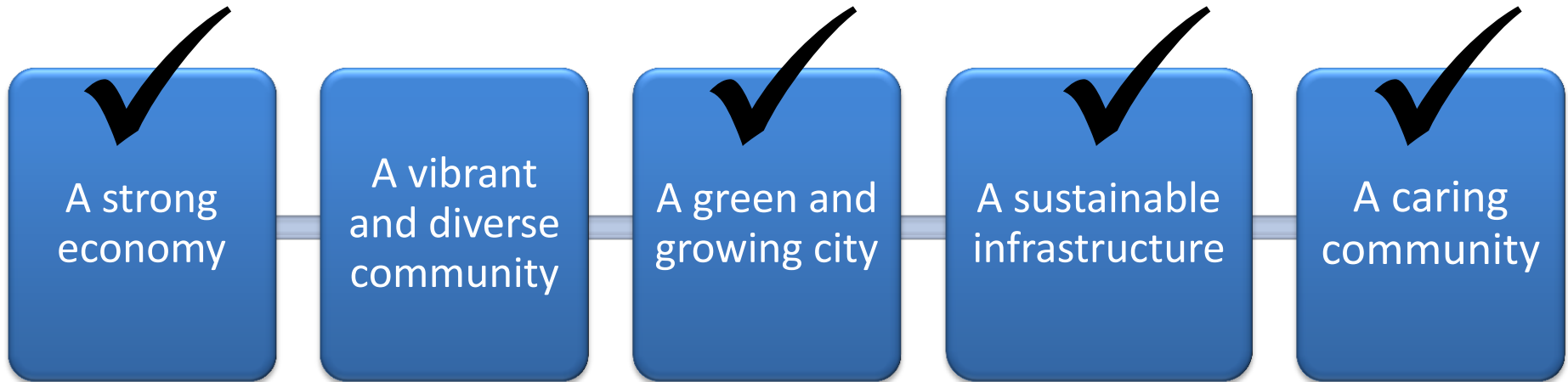
Agenda

1. Supporting London's Strategic Priorities
2. Core Business Objectives
3. Current Operating Environment & Recent Accomplishments
4. Future Direction & Priorities
5. Financing
6. Summary



Water & Wastewater Utilities

Key contributors to the City's strategic priorities





Core Business Objectives

Water & Wastewater business plans focus on 4 primary objectives



Accomplishments

Future Direction

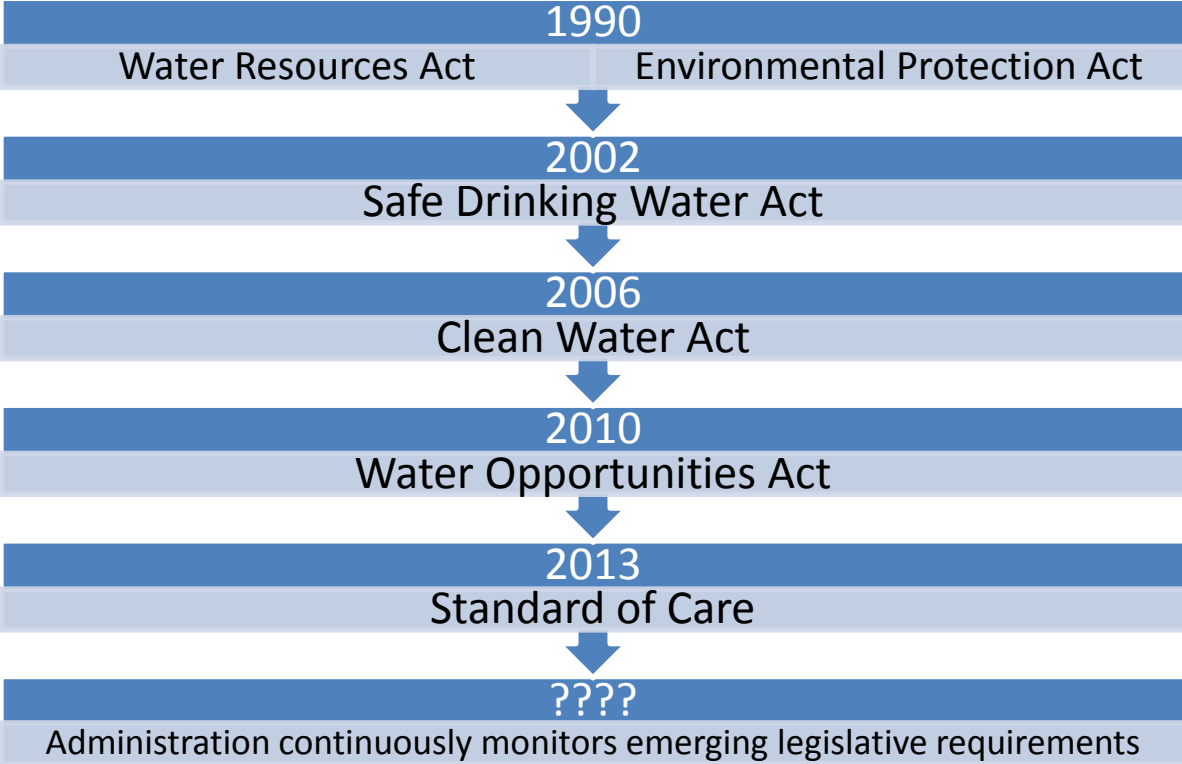
Financing

- “Must Do”
- “Should Do”
- “Want to Do”



Water Legislation

Various legislation dictates what we do and how we do it



Responses

- License
- Operating Plan
- Financial Plan
- Source Water Protection
- Due Diligence





Standard of Care

Shared responsibility for safe drinking water

*“Water is unique as a local service ... the consequences of a failure in the water system (are) most seriously felt by those who depend on it locally. **Municipal ownership**, and the ensuing responsibilities, should provide a high degree of **public accountability** in relation to the local water system.”*

- Justice Dennis O'Connor, 2002 Walkerton Inquiry

- Effective January 1, 2013
- **Legal obligation** to exercise a level of care, diligence and skill with regard to a municipal drinking water system that a reasonably prudent person would be expected to exercise in a similar situation



Recent Accomplishments

Ensuring our compliance with legislative requirements

- Full accreditation as Licensed Operating Authority in 2013
- Developed contamination risk reduction program – MOE inspection requirement
- Year 7 of 18 year lead reduction program – education, interim solution, service removal



Growth

Recent Accomplishments

Supporting a growing city

- Growth Master Plans / GMIS / DC – completion in 2014 – growth pays for growth
- Input into Industrial Land Development Strategy
- Sludge dewatering project at Greenway - capacity and \$33M in savings
- Greenway preliminary design



Efficiency

Recent Accomplishments

“Doing the right things, right”

- PDC relining
- Completed review of Wastewater biosolids management program
 - London’s method found to be 2-4 times more cost-effective than other alternatives
 - Opportunity for electricity generation from incinerator waste heat



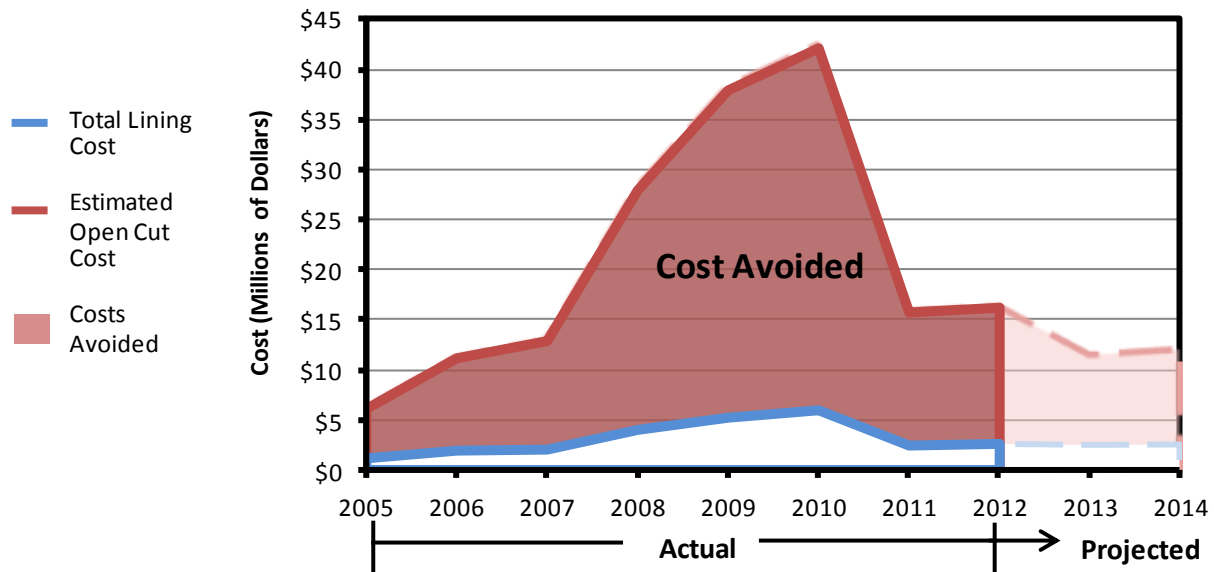


Efficiency

Trenchless Technologies – Sewer Example

Minimizing economic & social costs through the smart use of new technologies

Cost Avoidance of Relining Sewers vs. Open Cut Construction



Note: Theoretical costs are indexed to 2009 average costs. Lining costs are for the actual year.



Estimated total cost avoidance of \$135M from 2005-2012



Best
Management
Practices

Recent Accomplishments

Introducing the right supports to position the utilities for future success

- Computerized Maintenance Management System
- New rate structure was successfully implemented March 1, 2013
 - Fire Protection Charge as a result of an audit recommendation (PricewaterhouseCoopers)
 - Any surplus resulting from new charges will “pay back” the \$4.3M of Water deficits accumulated over the last 10 years
 - CWWA Community Outreach Award for “Julian” communication campaign
- [Water conservation education & outreach](#)





2014 Water Regulatory Needs

Addressed within an operating budget increase of 0.7%

Compliance

Issue	Remedy
Fire Code Order – hydrant flow rate	Colour coding – maintain
MOE Order – Air & vacuum valve chambers – risk of water contamination	Maintenance program – accelerate
Clean Water Act – Source Water Protection	Implementation plan
Accreditation challenges – Licensed Operating Authority	Improve Drinking Water Quality Management System
Mission critical support for Orders – reduce operating effort (costs) – system optimization	Technical resources – hydraulic modeling



Compliance

Future Wastewater Regulations

Expected to be as stringent as Water regulations

- Wastewater treatment legislation - expected to be like water system regulations
- Combined Sewer Overflows (CSO's)
 - Pollution Prevention & Control Plan - “road map” for further mitigating CSO's – to be completed in 2-3 years
 - Annual capital program (ES2464-14) currently in place



Any outputs from the Pollution Prevention & Control Plan will be incremental additions to future Wastewater budgets – prepare financially.



Growth

Greenway Expansion (ES2685)

Sewage treatment improvements to support the City's strategic direction

- **Priorities – southwest area, downtown intensification, future industrial land development, wet weather**
- **Anticipated expansions at Adelaide (\$12M), Vauxhall (\$3M) and Southside plant (\$95M) delayed**
- **Communication strategy**
- **Future flood proofing - 2017 through 2020**



Refer to Oct. 28, 2013 CWC report for further information.



Efficiency

District Metered Areas (EW1630)

Enhanced efforts to reduce purchase of water costs

- **Issue:** Purchased water not billed – lost due to leakage, construction, water meter inaccuracies, etc.

2006	2007	2008	2009	2010	2011	2012
7.4%	7.7%	7.4%	9.0%	10.2%	10.8%	11.2%

- **Remedy:** Distribution system divided into zones (50+) where pressure and flow is monitored to identify leaks requiring repair
- Opportunity for annual savings of \$1M+ relative to status quo



Refer to page 82 of the Water Budget for further information.



Efficiency

Wastewater Treatment Optimization

- Review underway: optimization plan to be completed late 2013/early 2014
- Objectives: combine latent capacity, life cycle needs, future effluent criteria, CSO's & climate change impacts
- Desired outcomes: Operational efficiencies & reduced energy costs; reduction and/or deferral of capital costs; meet compliance targets while under construction



Investments may be required to operationalize the optimization strategy. These investments are currently unknown and will be added to future Wastewater budgets if required – prepare financially.



Efficiency

Trenchless Technologies – Water Example

Minimizing economic & social costs through the smart use of new technologies

Method	Cost/m	Estimated Lifespan
Replacement	\$1,000-\$1,200	75-80 years
Anodes	\$70	15-20 years
Cement Mortar Relining	\$250	15-20 years
Structural Relining	\$600	50 years

- **Lining pipe a priority where feasible**
- **Will be prominent in the future to manage the infrastructure gap to an acceptable level**



Efficiency

Monitoring and Control

- Proactive response
- Risk reduction





Efficiency

Energy Efficiency Initiatives

Focus on minimizing the net cost of operations

- Biosolids disposal – electricity generation from incinerator heat (up to \$633,000/year)
- Energy conservation & cost savings – plants and pumping stations



Investments may be required to operationalize efficiencies. These investments are currently unknown and will be added to future Water/Wastewater budgets if required – prepare financially.



Best
Management
Practices

Computerized Maintenance Management System (CMMS)

Utilizing technology to enhance operating efficiency

- Implementation of CMMS for Water & Sewer Operations commenced in 2013, with the objectives of:
 - Improving responses: customers, legal/regulatory
 - Enhancing the efficiency of available resources
 - More comprehensive tracking of maintenance activities
 - More robust reporting capabilities
 - Optimizing costs



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Water System Modeling

Deriving maximum value from the Water hydraulic model

- Consultant manages the hydraulic model – long response times, additional review, premium hourly rates, +\$100k
- Additional resources in budget
- Mission critical to plans for:
 - Compliance – hydrants, A/V, water quality
 - Operational needs (e.g. DMA's, valve maintenance activities, etc.)
 - Efficiencies and cost savings (e.g. pump performance analysis)
- Expertise development



Refer to page 88 of the Water Budget for further information.



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Practices

Efficiency and New Technology Philosophy

- CMMS, trenchless technology, monitoring and control, energy, district metering, plant optimization, computer model, Centre of Excellence
- Efficiency and new technologies will be a priority to control costs to meet future inflationary-level rate increases
- Opportunistic to proactive



Estimated Impact on Expenditures

	Water (\$000's)	Wastewater (\$000's)
2013 Approved Budget	\$62,564	\$79,058
Additional resources necessary to satisfy integrated set of regulatory requirements	\$273	
Increased purchase of water costs	\$270	
Reduced customer service costs resulting from new London Hydro service agreement	(\$570)	(\$581)
Misc. increases/(decreases) in operating expenditures	\$326	\$355
Net change in operating expenditures	\$299	(\$226)
% change in operating expenditures	0.7%	(0.6%)
Increase in capital financing & debt servicing	\$6,781	\$5,697
2014 Proposed Budget	\$69,644	\$84,529



Estimated Impact on Revenues

	Water (\$'000's)	Wastewater (\$'000's)
2013 Approved Budget	\$62,564	\$79,058
Revenue impact of the new rate structure, offset by reduced consumption forecasts	\$1,574	(\$735)
Growth in the number of customer accounts	\$211	\$364
Change in other revenues	\$228	\$655
Additional revenue from proposed 2014 rate increases (8% Water; 7% Wastewater)	\$5,067	\$5,187
2014 Proposed Budget	\$69,644	\$84,529



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2014 Capital Program Overview

WATER (\$000's)	
Life Cycle Renewal	22,475
Growth	4,587
Service Improvement	630
TOTAL	27,692

Highlights	
EW3563-14 Main Rehabilitation	4,930
EW3765-14 Main Replacement	7,039
EW3551 Hyde Park-Sarnia Rd High Level Watermain Phase II	1,153
EW3595 Hyde Park Feeder Watermain	2,045
EW1630 District Metered Areas	500

WASTEWATER (\$000's)	
Life Cycle Renewal	19,192
Growth	34,956
Service Improvement	11,510
TOTAL	65,658

Highlights	
ES2693-14 Specialized Sewer Repairs	4,700
ES2414-14 Sewer Replacement Program	10,522
ES2685 Greenway Expansion	19,463
ESSWM-HP5 SWM Facility – Hyde Park No. 5	5,540
ES2464-14 Separation & CSO Program	5,590



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2014 Budgets Balance Current & Future Priorities





Water & Wastewater 2014 Budgets

FINANCING



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10 Year Capital Plans

Financing strategy supports infrastructure needs

Water – 10 Year Capital Plan	Wastewater – 10 Year Capital Plan
\$335 million	\$583 million

Key Financing Assumptions

- 1) Financing options should accommodate required capital investment needs
- 2) Capital plans submitted reflect the investment required to maintain safe Water & Wastewater systems
- 3) Financing strategy should provide flexibility to accommodate future needs such as:
 - Downtown Master Plan
 - Industrial Land Development Strategy
 - Pollution Prevention & Control Plan
 - Wastewater Treatment Optimization Strategy

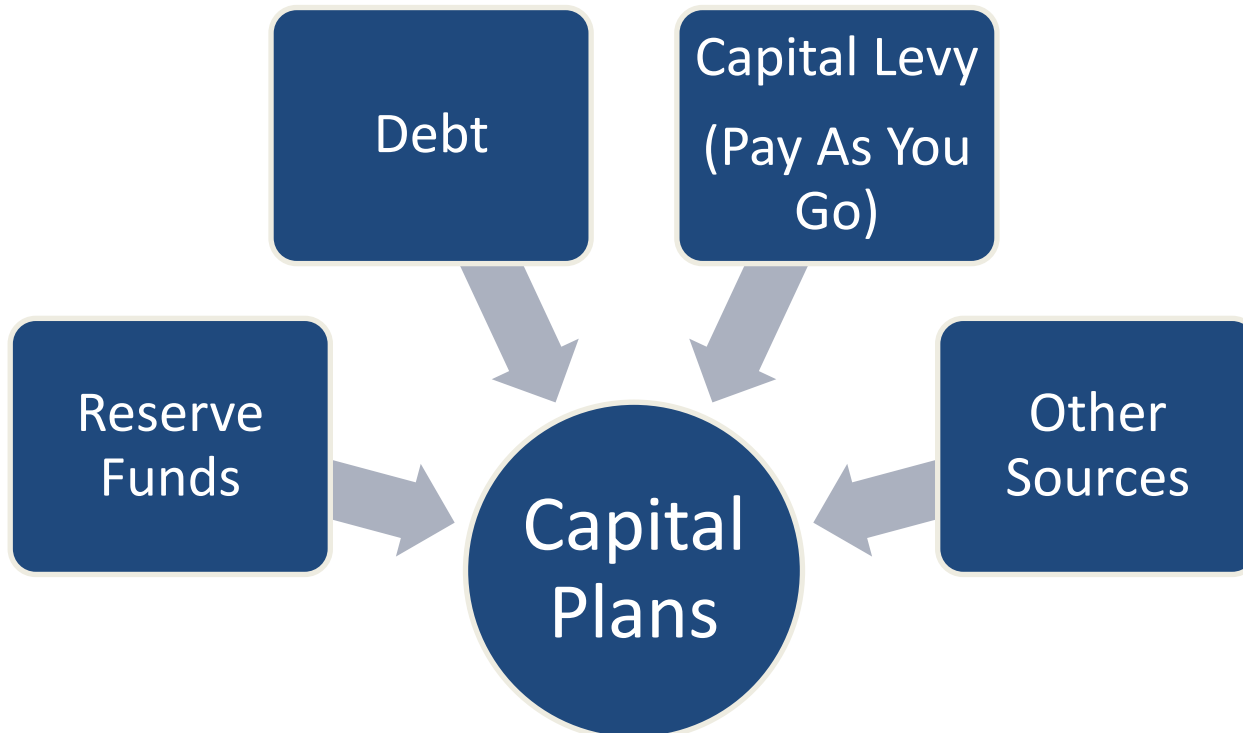




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Financial “Levers”

4 financing alternatives are available to support the capital plans





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Reserve Funds

**Corporate principles guide the management of
Water & Wastewater reserve funds**

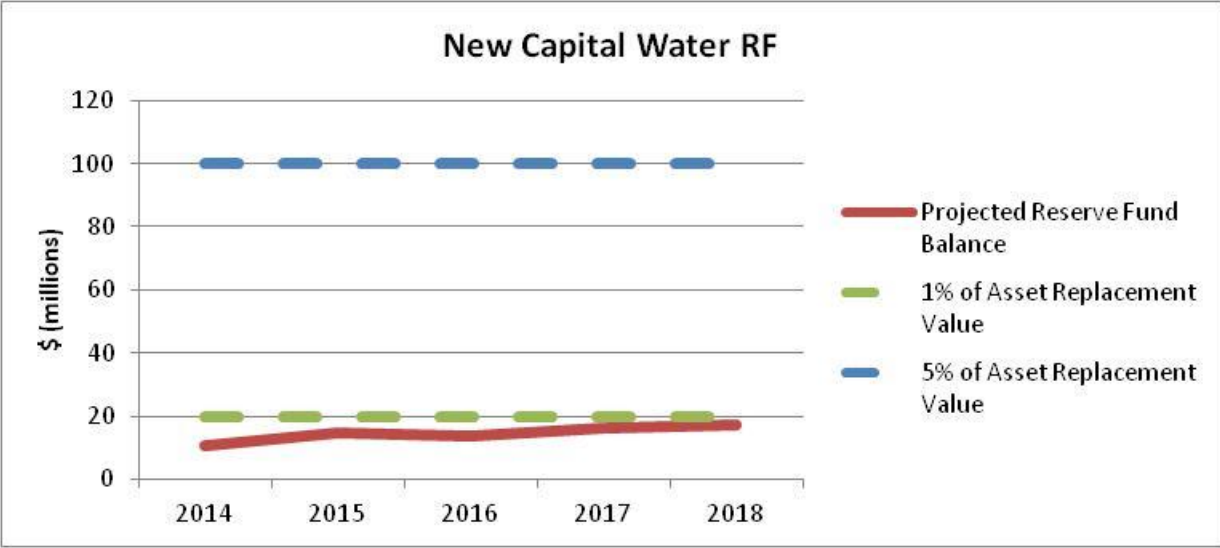
- Target reserve fund balances should be based on these key principles, consistent with the corporate reserve funds principles:
 - State of infrastructure that the balances support (the older the asset the sooner the money is needed to replace it)
 - Financial strategy under strategic financial plan (shift to more pay as you go financing)
 - Corporate asset management plan (the level of service and risk that is acceptable for the assets)
- Based on these principles, reserve fund balances in the range of 1% to 5% of the asset replacement values are targeted for Water & Wastewater reserve funds



Best Management Practices

Water Reserve Fund

Proposed 2014 budgets continue on the road to more adequate RF balances



New Capital Water RF (\$M)	2014	2015	2016	2017	2018
Ending Balance – Proposed 2014 Budget	\$10.7	\$14.9	\$13.9	\$16.4	\$17.2
Low End of Target Range (1% of Asset Replacement Value)			\$20.0		
High End of Target Range (5% of Asset Replacement Value)			\$100.0		

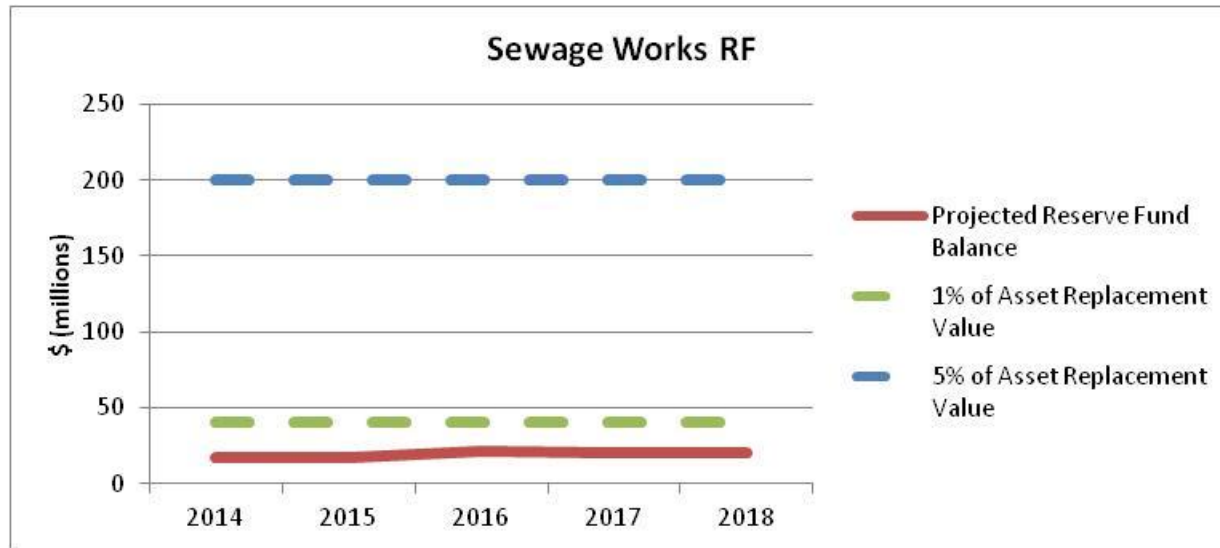
Estimated Replacement Value of Water Assets = \$2 billion



Best Management Practices

Wastewater Reserve Fund

Proposed 2014 budgets continue on the road to more adequate RF balances



Sewage Works RF (\$M)	2014	2015	2016	2017	2018
Ending Balance – Proposed 2014 Budget	\$16.9	\$17.0	\$21.6	\$20.4	\$20.1
Low End of Target Range (1% of Asset Replacement Value)			\$40.0		
High End of Target Range (5% of Asset Replacement Value)			\$200.0		

Estimated Replacement Value of Wastewater Assets = \$4 billion

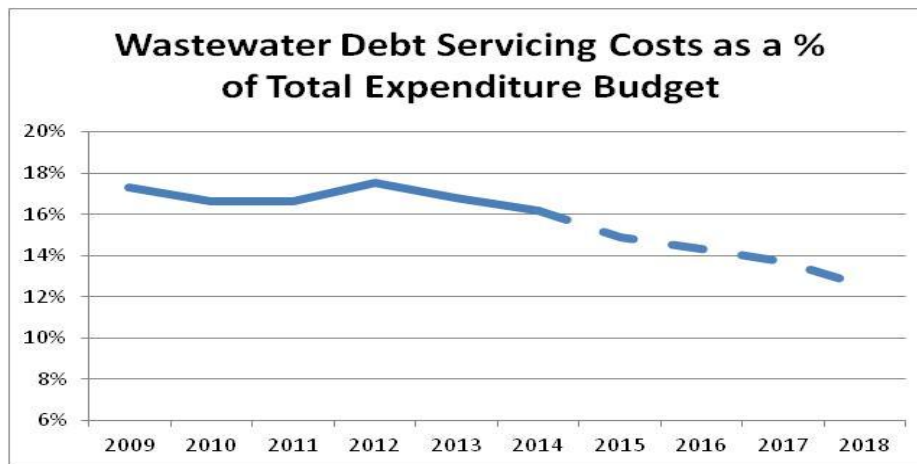


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Debt Profile

Reduced reliance on debt financing continues to be a priority

- ***No new future rate supported debt is forecasted for Water or Wastewater***
 - First time in Wastewater that no rate supported debt used for financing
 - Provides capacity to fund initiatives (e.g. DMP, ILDS, Wastewater Treatment Optimization Strategy, etc.) that are currently not included in the Water & Wastewater capital plans
- Wastewater debt servicing burden continues to decrease:



NOTE: Water debt servicing costs have historically been minimal (< 0.5%). This trend is forecasted to continue.



Forecasted Future Rate Increases

Recommended rate plan balances the need to limit debt and maintain adequate reserve funds while achieving rate increases at or near inflationary levels

Water	2014	2015	2016	2017	2018	Total
Old Rate Forecast (2013 Budget)	8.0%	8.0%	7.0%	6.5%	3.0%	32.5%
New Rate Forecast	8.0%	7.0%	3.0%	3.0%	3.0%	24.0%
Difference	0.0%	(1.0%)	(4.0%)	(3.5%)	0.0%	(8.5%)

Wastewater	2014	2015	2016	2017	2018	Total
Old Rate Forecast (2013 Budget)	7.0%	7.0%	7.0%	4.0%	3.0%	28.0%
New Rate Forecast	7.0%	7.0%	3.0%	3.0%	3.0%	23.0%
Difference	0.0%	0.0%	(4.0%)	(1.0%)	0.0%	(5.0%)



Rate Sensitivity – Water

	2014	2015	2016	2017	2018	Total
Recommended Rate Increases	8%	7%	3%	3%	3%	24%
Projected Reserve Fund Balance	\$10.7M	\$14.9M	\$13.9M	\$16.4M	\$17.2M	
Low End of Target RF Range	\$20.0M					
Rate Scenario	3%	3%	3%	3%	3%	15%
New Debt Required	\$3M/year for 5 years (\$15M total by 2018)					
Projected Reserve Fund Balance	\$10.5M	\$11.9M	\$7.7M	\$6.7M	\$3.6M	



Scenario presented above would reduce cost to average customer by \$17/year or approximately 5 cents/day for 2014



Limits financial flexibility to respond to future needs (e.g. future regulatory requirements, Industrial Land Development Strategy, etc.)



Rate Sensitivity – Wastewater

	2014	2015	2016	2017	2018	Total
Recommended Rate Increases	7%	7%	3%	3%	3%	23%
Projected Reserve Fund Balance	\$16.9M	\$17.0M	\$21.6M	\$20.4M	\$20.1M	
Low End of Target RF Range	\$40.0M					
Rate Scenario	3%	3%	3%	3%	3%	15%
New Debt Required	\$2.5M/year for 5 years (\$12.5M total by 2018)					
Projected Reserve Fund Balance	\$16.4M	\$12.9M	\$13.6M	\$8.1M	\$3.2M	



Scenario presented above would reduce cost to average customer by \$17/year or approximately 5 cents/day for 2014



Limits financial flexibility to respond to future needs (e.g. future regulatory requirements, Industrial Land Development Strategy, Pollution Prevention & Control Plan, Optimization, etc.)



Water & Wastewater 2014 Budgets

SUMMARY



2014 Impact on Average Customer

	2013 Budgeted Cost (188.1 m ³)	2013 Revised Cost (181.2 m ³)	Proposed Increase	2014 Annual Cost (181.2 m ³)
Water	\$336	\$336	\$27 (8%)	\$363
Wastewater	\$494	\$436	\$28 (7%)	\$464
Combined	\$830	\$772	\$55 (7.1%)	\$827
Daily Cost	\$2.27	\$2.12	\$0.15	\$2.27

- 👉 2013 budgeted cost was based on consumption of 188.1 m³
- 👉 2013 revised cost and 2014 annual cost is based on consumption of 181.2 m³





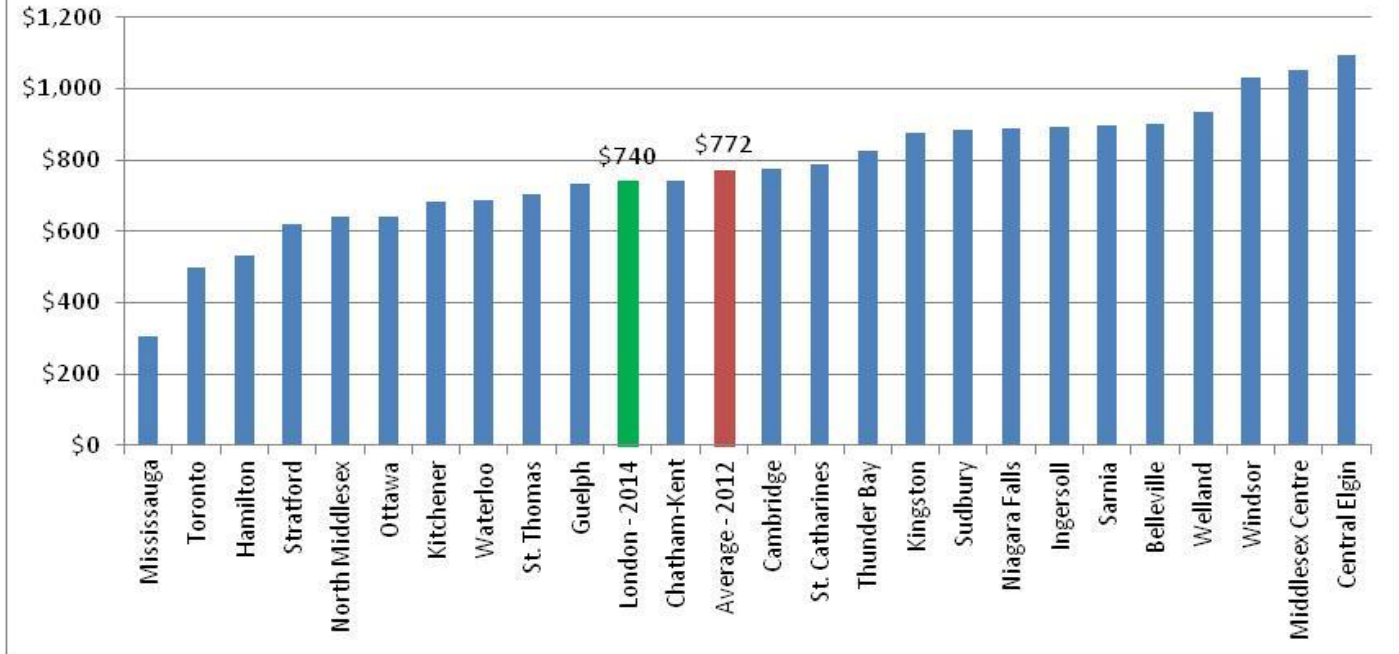
How Does London Compare?

Residential Customers



Annual Residential Water & Wastewater Costs

Based on 200 m³ consumed & 16mm water meter



NOTE:
 All amounts exclude stormwater charges. Amounts shown for other municipalities are 2012 amounts.

Source:
 2012 BMA Management Consulting Municipal Study



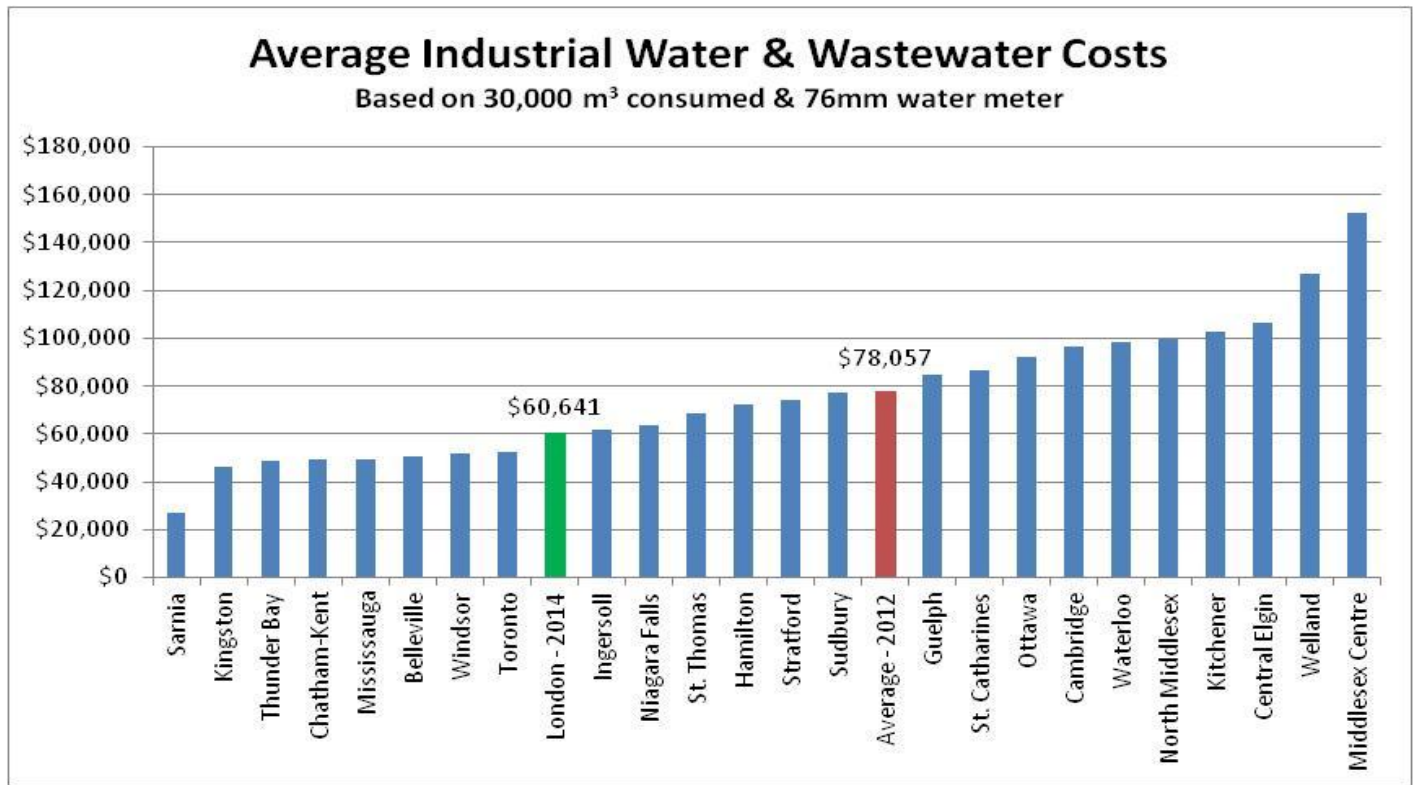
How Does London Compare?

Industrial Customers



NOTE:
All amounts exclude stormwater charges.
 Amounts shown for other municipalities are 2012 amounts.

Source:
 2012 BMA
 Management
 Consulting Municipal
 Study





How Does London Compare?

Achieving financial sustainability at or near inflationary level rate increases

Municipality	Financial Sustainability Forecasted
Toronto	2015
LONDON	2016
Peel	2016
Thunder Bay	2016
Ottawa	not before 2016 (extent of their forecast)
Hamilton	not before 2019 (extent of their forecast)

NOTE: In the utilities context, Financial Sustainability is defined as the movement toward annual rate increases that can be maintained at or near the annual rate of inflation based on a combination of CPI and the Construction Price Index with appropriate use of debt financing, adequate reserve funds and the appropriate investment in capital.





What Do the 2014 Budgets “Buy”?

Additional cost of \$0.15/day for the average residential customer

- **Compliance** with regulatory requirements
- Capital investments in existing and future **Growth** needs
- **Efficiency** measures, now and future
- Sound **Financial Management**
 - Achieving **financial sustainability** in 2016
 - Meet license requirements / Sustainable Infrastructure Plan
 - Reserve fund balances approaching more adequate levels
 - Financial flexibility to accommodate future needs



Water & Wastewater 2014 Budgets

QUESTIONS?