Water and Wastewater & Treatment 2015 Budgets

Strategic Priorities & Policy Committee

January 15, 2015
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 & WWT – Key contributors to the City’s draft strategic priorities

- Strengthening our Community
- Building a Sustainable City
- Growing our Economy
- Leading in Public Service
Water & Wastewater priorities focus on 4 primary objectives:

- Growth
- Efficiency
- Best Management Practices
- Compliance (Health & Environment)

Accomplishments

Future Direction

Financing

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

Budget 2015
Various legislation dictates what we do and how we do it:

- **1990**
  - Water Resources Act
  - Environmental Protection Act

- **2002**
  - Safe Drinking Water Act

- **2006**
  - Clean Water Act

- **2010**
  - Water Opportunities Act

- **2013**
  - Standard of Care

- **????**
  - Administration continuously monitors emerging legislative requirements

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

*Budget 2015*
“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

- Full accreditation as Licensed Operating Authority in 2013. Received 100% score on Ministry of Environment 2013 audit.

- Began implementation of contamination risk reduction program – MOE inspection requirement

- Continued lead reduction – free testing, education, pH adjustment, service replacement

- Continued to advance Pollution Prevention & Control Plan to mitigate combined sewer overflows (CSO’s) and bypasses to Thames River
Recent Accomplishments

- 2014 Development Charges Background Study and related Master Plans completed – growth pays for growth
- Council adopted the Industrial Land Development Strategy (ILDS) in March 2014
- Started Greenway Pollution Control Plant expansion project detailed design – service growth from central London intensification and southwest area development
Recent Accomplishments

- Initiated District Meter Program – optimization (non-revenue water) of water system & provide mechanism to charge for construction water
  - Consistent with PwC audit recommendation

- Develop a strategy & multi-year roadmap to optimize wastewater treatment plants – capacity, wet weather flows, asset management, floodproofing

- Installed new turbo blowers at Adelaide, Vauxhall and Oxford WWTP’s – electricity savings of $170,000/year
Recent Accomplishments

$165M cost avoidance by Lining Sewers vs. Open Cut in last 10 yrs

Notes: Data produced by Construction Administration. Theoretical costs are indexed to 2009 average costs. Lining costs are for the actual year.
Recent Accomplishments

- Completed construction of the Wastewater Research Centre at Greenway PCP – wastewater treatment technological innovation

- City-wide campaign on how customers can save on their water bill

- Partnered with Thames Valley District School Board to create “Teaching Toolkit” for educating students about water & wastewater treatment and water distribution & conservation

- Awards: OPWA Innovation for Greenway Dewatering; OWWA for Rate Structure Implementation
The new Water and Wastewater rate structure (implemented in March 2013) aims to strike a more appropriate balance between our cost structure (largely fixed) and our previous rate structure (primarily variable):
Costs Avoided by Conservation

- Decline in water consumption of 32% since 2001 – rate increases to cover fixed costs
- Conservation a powerful tool to accommodate growth
- Postpone works that would otherwise be required and would have required higher rates, including:

<table>
<thead>
<tr>
<th>Project</th>
<th>Timeframe</th>
<th>Estimated Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elgin Area Water Treatment Plant Expansion</td>
<td>Deferred from 2013 to at least 2023 based on current volume forecasts</td>
<td>$60 million</td>
</tr>
<tr>
<td>Southside Wastewater Treatment Plant</td>
<td>Deferred &gt;20 years</td>
<td>$95 million</td>
</tr>
</tbody>
</table>
Future Direction/Priorities

**WATER**

- Maintain 100% MOE report card score
- Continue lead replacement program
- Finish colour coding of fire hydrants – Fire Code
- Complete contamination risk reduction program
- Drinking Water Quality Management System – continuous improvement

The cost of these initiatives is contained within the proposed Water budget.
Future Direction/Priorities

WASTEWATER

- 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 currently in place

Any outputs from the Pollution Prevention & Control Plan may require incremental additions to future Wastewater budgets – prepare financially.
GROWTH SERVICING

- Water and Wastewater servicing capital projects included in 2015 Budgets – ILDS and community
  - ILDS: $79.5M from 2015-2024
- Service southwest London
Future Direction/Priorities

TRENCHLESS TECHNOLOGIES

- Lining pipe a priority where feasible – to manage the infrastructure gap
- Environmentally friendly, less socially disruptive, less costly and extends the service life of the asset:

<table>
<thead>
<tr>
<th>Method (Water Example)</th>
<th>Cost/m</th>
<th>Estimated Lifespan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replacement</td>
<td>$1,000-$1,200</td>
<td>75-80 years</td>
</tr>
<tr>
<td>Anodes</td>
<td>$70</td>
<td>15-20 years</td>
</tr>
<tr>
<td>Cement Mortar Relining</td>
<td>$250</td>
<td>15-20 years</td>
</tr>
<tr>
<td>Structural Relining</td>
<td>$600</td>
<td>50 years</td>
</tr>
</tbody>
</table>
WASTEWATER TREATMENT OPTIMIZATION

- **Objectives**: combine latent capacity, lifecycle needs, future effluent criteria, overflows & climate change impacts

- **Desired outcomes**: Operational efficiencies & reduced energy costs; reduction/deferral of capital costs; meet compliance targets while under construction

While some flood proofing works at Greenway PCP & Vauxhall PCP are included in the 2015 Budget, further investments may be required to operationalize the optimization strategy – prepare financially.
ENERGY EFFICIENCY INITIATIVES

- Biosolids – electricity generation from incinerator heat (up to $675,000/year)

- Energy conservation & cost savings – plants and pumping stations -- proactive

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

- **Computerized Maintenance Management System (CMMS):**
  - Improving responses: customers, legal/regulatory
  - Enhancing the efficiency of available resources
  - Comprehensive tracking of maintenance activities
  - More robust reporting capabilities
  - Optimizing costs

- Rate Structure phase in: drainage charge vacant land – credits for large sites -- fairness

The cost of this initiative is contained within the proposed Water and Wastewater budgets.
Future Direction/Priorities

EFFICIENCY, NEW TECHNOLOGIES, INNOVATION & OPERATING PHILOSOPHIES

- CMMS, trenchless technology, energy efficiency, district metering, plant optimization, Wastewater Research Centre, etc.

- Target future inflationary-level rate increase target

- Opportunistic to proactive

- Risk based maintenance
### Operating Budget Overview

<table>
<thead>
<tr>
<th></th>
<th>Water ($000’s)</th>
<th>Wastewater ($000’s)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2014 Approved Budget (A)</strong></td>
<td>$69,705</td>
<td>$84,529</td>
</tr>
<tr>
<td>Additional resources necessary to manage the increase in stormwater management facilities to be constructed in the next 10 years in accordance with the 2014 DC Study.</td>
<td></td>
<td>$180</td>
</tr>
<tr>
<td>Increased purchase of water costs</td>
<td></td>
<td>$837</td>
</tr>
<tr>
<td>Misc. increases/(decreases) in operating expenditures</td>
<td>$136</td>
<td>$202</td>
</tr>
<tr>
<td>Change in operating expenditures (B)</td>
<td>$973</td>
<td>$382</td>
</tr>
<tr>
<td>% change in operating expenditures</td>
<td>2.4%</td>
<td>1.1%</td>
</tr>
<tr>
<td>Increase in capital financing (C)</td>
<td>$2,890</td>
<td>$4,273</td>
</tr>
<tr>
<td><strong>2015 Proposed Budget (A+B+C)</strong></td>
<td>$73,568</td>
<td>$89,184</td>
</tr>
</tbody>
</table>
## Capital Budget Overview

### WATER ($000’s)

<table>
<thead>
<tr>
<th>Category</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lifecycle Renewal</td>
<td>22,766</td>
</tr>
<tr>
<td>Growth</td>
<td>5,885</td>
</tr>
<tr>
<td>Service Improvement</td>
<td>1,270</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>29,921</strong></td>
</tr>
</tbody>
</table>

### WASTEWATER ($000’s)

<table>
<thead>
<tr>
<th>Category</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lifecycle Renewal</td>
<td>25,627</td>
</tr>
<tr>
<td>Growth</td>
<td>42,130</td>
</tr>
<tr>
<td>Service Improvement</td>
<td>9,805</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>77,562</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Highlights</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Rehabilitation</td>
<td>5,143</td>
</tr>
<tr>
<td>Main Replacement</td>
<td>9,824</td>
</tr>
<tr>
<td>Replace Water Services</td>
<td>2,000</td>
</tr>
<tr>
<td>ILDS Water Servicing</td>
<td>1,200</td>
</tr>
<tr>
<td>District Metered Areas</td>
<td>500</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Highlights</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specialized Sewer Repairs</td>
<td>3,700</td>
</tr>
<tr>
<td>Sewer Replacement Program</td>
<td>11,422</td>
</tr>
<tr>
<td>Wonderland/Wharncliffe Trunk Sewer</td>
<td>4,057</td>
</tr>
<tr>
<td>Lambeth Servicing Solution</td>
<td>6,741</td>
</tr>
<tr>
<td>Sanitary/Storm/SWM ILDS Servicing</td>
<td>8,102</td>
</tr>
</tbody>
</table>

Funding in accordance with Financing Principles
## Revenue Overview

<table>
<thead>
<tr>
<th></th>
<th>Water ($000’s)</th>
<th>Wastewater ($000’s)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2014 Approved Budget</strong></td>
<td>$69,705</td>
<td>$84,529</td>
</tr>
<tr>
<td><strong>Impact of reduced water consumption</strong>*</td>
<td>($918)</td>
<td>($900)</td>
</tr>
<tr>
<td><strong>Year 3 of the phase-in of the Storm Drainage charges, partially offset by revised categorization of customer accounts</strong></td>
<td></td>
<td>$15</td>
</tr>
<tr>
<td><strong>Change in other revenues</strong></td>
<td>$58</td>
<td>$25</td>
</tr>
<tr>
<td><strong>Additional revenue from 7% rate increase for 2015</strong></td>
<td>$4,723</td>
<td>$5,515</td>
</tr>
<tr>
<td><strong>2015 Proposed Budget</strong></td>
<td>$73,568</td>
<td>$89,184</td>
</tr>
</tbody>
</table>

* Consumption forecasts have been reduced from 41.0 million m³ in 2014 to 40.1 million m³ for 2015 (2% reduction).
Striking the Balance

2015 Budgets Balance Current & Future Priorities

- Current Business Needs
- 2015 Budgets
- Future Infrastructure Sustainability
- Achieving Rate Stability
- Adequate Reserve Fund Balances

Compliance | Growth
Best Management Practices | Efficiency
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:
   • Pollution Prevention & Control Plan
   • Wastewater Treatment Optimization Strategy
   • Energy Efficiency Projects
   • Other Emerging Strategic Initiatives
4 financing alternatives are available to support the capital plans:
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.
Water Reserve Fund

Best Management Practices

New Capital Water RF

$ (millions)

<table>
<thead>
<tr>
<th>New Capital Water RF ($M)</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ending Balance – Proposed 2015 Budget</td>
<td>$20.8</td>
<td>$17.4</td>
<td>$16.0</td>
<td>$17.4</td>
<td>$20.1</td>
</tr>
<tr>
<td>Low End of Target Range (1% of Asset Replacement Value)</td>
<td></td>
<td></td>
<td></td>
<td>$27.0</td>
<td></td>
</tr>
<tr>
<td>High End of Target Range (5% of Asset Replacement Value)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$135.0</td>
</tr>
</tbody>
</table>

Estimated Replacement Value of Water Assets = $2.7 billion

Budget 2015
Wastewater Reserve Fund

Best Management Practices

Sewage Works RF ($M)

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ending Balance – Proposed 2015 Budget</td>
<td>$24.4</td>
<td>$26.7</td>
<td>$17.5</td>
<td>$20.9</td>
<td>$21.5</td>
</tr>
<tr>
<td>Low End of Target Range (1% of Asset Replacement Value)</td>
<td></td>
<td></td>
<td></td>
<td>$40.0</td>
<td></td>
</tr>
<tr>
<td>High End of Target Range (5% of Asset Replacement Value)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$200.0</td>
</tr>
</tbody>
</table>

Estimated Replacement Value of Wastewater Assets = $4 billion
No new future rate supported debt is forecasted for Wastewater; only limited use of future debt for Water

- Provides capacity to fund initiatives (e.g. PPCP, Wastewater Optimization Strategy, etc.) that are currently not included in the capital plans – “preparing financially”

- Debt servicing burden (for previously issued debt) continues to decrease:
Forecasted Future Rate Increases

Positioned to achieve inflationary-level rate increases starting in 2016:

![Past and Projected Future Rate Increases](image)

- Water
- Wastewater

Budget 2015
Summary
## Impact to the Average Residential Customer

<table>
<thead>
<tr>
<th></th>
<th>2014 Budgeted Cost (181.2 m³)</th>
<th>2014 Revised Cost (171.9 m³)</th>
<th>2015 Increase</th>
<th>2015 Annual Cost (171.9 m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>$363</td>
<td>$343</td>
<td>$24 (7%)</td>
<td>$367</td>
</tr>
<tr>
<td>Wastewater</td>
<td>$464</td>
<td>$446</td>
<td>$29 (6.5%*)</td>
<td>$475</td>
</tr>
<tr>
<td>Combined</td>
<td>$827</td>
<td>$789</td>
<td>$53</td>
<td>$842</td>
</tr>
<tr>
<td>Monthly Cost</td>
<td>$68.92</td>
<td>$65.75</td>
<td>$4.42</td>
<td>$70.17</td>
</tr>
<tr>
<td>Daily Cost</td>
<td>$2.27</td>
<td>$2.16</td>
<td>$0.15</td>
<td>$2.31</td>
</tr>
</tbody>
</table>

* The increase in Wastewater charges is 7%, but the increase to the average residential customer is only 6.5% due to the phase-in of the new Storm Drainage charges.
How Does London Compare?

Note:
All amounts exclude stormwater charges.
Amounts shown for other municipalities are 2014 amounts.

Source:
2014 BMA Management Consulting Municipal Study

London was ranked 27th of the 94 municipalities surveyed in 2014 for lowest residential Water & Wastewater costs. (2013: London ranked 25th of 97 municipalities surveyed)
How Does London Compare?

Average Industrial Water & Wastewater Costs
Based on 30,000 m$^3$ consumed & 76mm water meter

NOTE:
All amounts exclude stormwater charges.
Amounts shown for other municipalities are 2014 amounts.

Source:
2014 BMA Management Consulting Municipal Study

London was ranked 19th of the 92 municipalities surveyed in 2014 for lowest industrial Water & Wastewater costs. (2013: London ranked 14th of 95 municipalities surveyed)
How Does London Compare?

ACHIEVING FINANCIAL SUSTAINABILITY¹

<table>
<thead>
<tr>
<th>Municipality</th>
<th>Financial Sustainability Forecasted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toronto</td>
<td>2015</td>
</tr>
<tr>
<td>Ottawa, Peel, Thunder Bay</td>
<td>Next 2-3 years</td>
</tr>
</tbody>
</table>

**NOTE 1:** In the utilities context, Financial Sustainability is defined as the achievement of 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.
At an additional cost of $0.15/day for the average residence, the 2015 Budgets ensure:

- **Compliance** with regulatory requirements
- Capital investments in existing and future **Growth** needs
- **Efficiency** initiatives, now and future
- Sound **Financial Management**
  - Financial sustainability
  - Meet license requirements / Sustainable Infrastructure Plan
  - Building toward more adequate reserve fund levels
  - Financial flexibility to accommodate future needs