The Corporation of the City of London
Environmental and Engineering Services

Water Service Area

Financial Plan

O. Reg. 453/07 under Safe Drinking Water Act, 2002

April 24, 2015

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Environmental and Engineering Services

This Financial Plan was prepared by:

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This Financial Plan is available at www.london.ca and is also available for pick up at the above address, 8th Floor of City Hall.

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1. Introduction and Summary

In 2007, the Ministry of the Environment (MOE) issued Ontario Regulation 453/07 *Financial Plans* under the *Safe Drinking Water Act, 2002 (SDWA)*. The regulation and accompanying guideline prescribes the requirements for Financial Plans to be prepared as part of the Municipal Drinking Water Licensing Program set out in Part V of the SDWA. This regulation was designed by the MOE in response to Justice Dennis O'Connor's Walkerton Inquiry recommendations. The intent is to ensure that municipalities plan for the long-term financial sustainability of their drinking water systems and ensure the safety of their drinking water systems into the future. This report has been created to comply with the requirements of O. Reg. 453/07 and covers the public portion of the City of London's water supply system which includes all pipes, valves, treatment systems, pumping stations and reservoirs. The financial statements included in this report project 6 years into the future. It should be noted however that the City of London bases infrastructure needs on a 20 year analysis and maintains a financial model that projects costs 20 years into the future. Long-term infrastructure needs have also been assessed using 75 and 100 year outlooks to determine if financial sustainability achieved in the near term will support future long-term needs. Assuming revenue and expenditure forecasts meet projections, it is the expectation of the Water Service Area that future needs can be met.

The Plan outlined in this document, and its associated appendices and reference reports, will maintain a safe, secure and reliable water supply for this and future generations of Londoners through sound financial planning. The Financial Plan represents a balanced approach to the installation of new infrastructure in conjunction with the City's Growth Management Implementation Strategy, and the investment and renewal required to sustain existing infrastructure. System/service improvements are also contemplated to improve the customer experience. Reliable infrastructure and performance of the water system are key elements to not only economic development but also quality-of-life and safety in the community. Efforts continue to further enhance and protect water quality and reliability. Utilities are continually faced with the renewal needs of aging

infrastructure and inflationary pressures. Re-thinking past practices and investing in new approaches, while ensuring the reliability of the service, have become fundamental to the daily delivery of clean water.

The Financial Plan is a summary of various capital and operational programs already approved by Council for the current budget year (2015) with an outlook of projected expenditures to 2020. The Plan is a concise description of those programs with electronic links embedded in the document to allow the reader to explore the detail if they wish by clicking on the link which is identified by underlined blue text. For hardcopy readers, the reference section at the back of the report provides a list of the links which can be found on the City of London website. Hardcopies of these reference documents can be provided on request.

Previous plans were approved by Council in 2010 and 2011. This plan was updated as part of the Water Operating Authority's licence renewal requirements. With increases in water rates charged to London customers in the past few years, the water utility is forecasted to reach financial sustainability[1] in the 2016 budget year. Smaller increases in water rates tied to inflation should be adequate to sustain the utility well into the future.

Following approval of the Financial Plan by Council, any requested changes will be made and the Plan will be published on the City website and submitted to the Ministry of Municipal Affairs and Housing, as required by the legislation. Hardcopies will be available to the public on request.

1.1. Service Context

The supply of drinking water is a very important service to the City of London. Residents and businesses expect to be able to turn on their tap at any time and be able to trust that the water coming out is safe to drink and of adequate pressure and volume to meet their

[1] 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 Consumer Price Index and the Construction Price Index with appropriate use of debt financing, adequate reserve funds and appropriate investment in capital.

needs. The City of London owes a duty of care to residents and businesses to ensure that water is available, clean and safe and it is this responsibility that guides staff in their day to day operations, long term planning and recommendations to Council. Below is a description of the objectives and financial principles of the Water Service Area as well as a description of the organizational structure of the three groups involved in supplying clean water within the Water Service Area.

1.1.1. Water Service Area Objectives and Financial Principles

Below are the broad objectives and financial principles for the Water Service Area that were adopted by the City of London Environment and Transportation Committee and Council in November 2008. These principles continue to apply as they did in 2008.

i. Growth pays for growth (with the exception of various development charges exemptions and Regional Water System expansions, which are currently funded by water ratepayers),

ii. Pay-as-you-go financing for operating and routine life cycle expenditures,

iii. Strive for inter-generational equity to avoid burdening future generations in order to benefit current ratepayers,

iv. Use debt to smooth out cash requirements for large, infrequent life cycle or system/service improvement projects,

v. Build reserve funds to provide cash for emergency repairs and/or moderate cash requirements for intermittent medium-sized projects,

vi. Use reserve funds to balance annual revenue fluctuations resulting from weather,

vii. Set rates to achieve financial sustainability in the “near” term *(target year is 2016),*

viii. Address cash requirements for new legislation-driven improvements at the time that they are known and use reserve funds or debt as appropriate,

ix. Commit to life cycle infrastructure renewal needs, irrespective of water usage trends, since pipe deterioration is generally insensitive to the amount of water consumed,

x. Commit to life cycle infrastructure renewal needs, since it is less expensive to renew infrastructure that is approaching failure than to attempt to maintain and repair it.

Since the first Financial Plan was prepared in 2010, the following rate increases were enacted to move the water utility towards financial sustainability by 2016.

Year	Water Rate Increase
2010	8%
2011	0%
2012	8%
2013	8%
2014	8%
2015	7%

From 2016 onwards, it is anticipated that the capital and operational needs of the Water Service Area can be achieved with annual water rate increases at or near inflation (presently estimated at approximately 3% based on a combination of Consumer Price Index and Construction Cost Index).

1.1.2. Water Operations

Water Operations provides continuing maintenance of the water supply system in the City of London to ensure that water can be conveyed to the residents of London. They are responsible for the treatment, operation and control of all valves, pumping stations, disinfection equipment, reservoirs and any other elements of the system that need control. They also are responsible for both preventative and unplanned maintenance on these

elements as well as watermains, hydrants and any other aspect of the system requiring maintenance. The emergency well water supply is also operated and maintained by Water Operations.

1.1.3. Water Engineering

Water Engineering is responsible for long range planning, design and construction of a large portion of the capital projects that fall under the Water Service Area. This division's work includes growth-related projects, life cycle renewal of watermains, expansion or refurbishment of pumping stations, and system/service improvements to enhance water quality or increase pressure. Water Engineering is also responsible for maintaining the city-wide distribution system hydraulic model, product approval and water efficiency/demand management/conservation programs.

1.1.4. Regional Water Supply

Regional Water Supply is an independent body that is responsible for operating and maintaining the water treatment plants located at Grand Bend on Lake Huron and east of Port Stanley on Lake Erie and the transmission of treated water to the City of London as well as to the other municipal customers they serve within the Regional system.

The respective Joint Boards of Management for the Lake Huron and Elgin Area Primary Water Supply Systems own and govern the area water systems using the City of London as the Administering Municipality. Accordingly, the City of London provides all associated administrative and management services on behalf of the Joint Boards.

Approximately 5,000 square kilometres of the greater London area of Southwestern Ontario is supplied by these two systems:

The Lake Huron Primary Water Supply System (LHPWSS) services the communities of London, Lambton Shores, North Middlesex, South Huron, Bluewater, Middlesex Centre, Lucan-Biddulph and Strathroy-Caradoc from a water treatment plant located north of the village of Grand Bend in South Huron. The water treatment plant has a rated supply capacity of 340 million litres per day and serves a population of approximately 400,000 people.

The Elgin Area Primary Water Supply System (EAPWSS) services the communities of St. Thomas, London, Aylmer, Bayham, Central Elgin, Malahide and Southwold from a water treatment plant located east of the village of Port Stanley in Central Elgin. The water treatment plant has a rated supply capacity of 91 million litres per day and serves a population of approximately 100,000 people.

The lake supplies are the source of all water the City of London uses during normal conditions and the City pays a volumetric water rate to each Board for this treated water. The City of London has seats on both regional Boards, giving the City an ownership stake in both systems. As an owner of these systems, the Board's debt is partially carried by the City of London, affecting the borrowing capacity of the City. This debt is reflected in the Financial Plans for Regional Water. Regional Water Supply's Financial Plans are stand-alone documents and are not included in this report, but can be accessed on the Regional Water Supply website.

1.2. Background Information

1.2.1. Historical Overview

The residents of the City of London first voted to establish a public water supply system in the 1870's. At that time the preferred source of water was the natural springs that exist in present day Springbank Park on the banks of the Thames River. The water was collected in ponds and then pumped by a water powered pump (at the river) up nearby Reservoir Hill where it was stored in a reservoir. The elevation of the reservoir was high enough to supply the entire city at the time. This hill is still the location of the City's distribution reservoirs. In 1910, the City had outgrown the Springbank Park source and started developing wells to augment the supply. In the following 50 years it became clear that it was not sustainable to continue to rely on drilling new wells to keep up with the demand of London's growing population. In 1967 the province connected London to a treated source of water from Lake Huron and the City quickly moved to using 100% Lake Huron water in that same year. In 1995, the City also connected to a source of water from Lake Erie that supplies water to the south end of the City. The current split in supply to the City is approximately 82% LHPWSS and 18% EAPWSS. The City also

maintains 7 standby wells, 6 at the Fanshawe well field and 1 at the Hyde Park well field. These wells are reserved for emergency purposes only and currently their ongoing use is being reviewed.

1.2.2. Water By-law

The City of London has a by-law that governs the water system, the responsibilities of the public, that of the City, and specifies the rates to be charged for Water Services. The aim of the by-law is to achieve full cost recovery through a user-pay approach. The water by-law can be found on the City's website and is called Water By-law W-8.

1.2.3. Infrastructure Gap

An infrastructure gap is the difference between monetary needs to maintain infrastructure at an appropriate level of service and the revenues received from customers to support that infrastructure in a full-cost user-pay system. Like many other municipalities in Ontario, Canada and the world, London has traditionally had a significant infrastructure gap. Administration is aware and has studied this deficit for many years and there are currently long-term plans being carried out to close that funding gap over time. The 2004 Water Distribution System Needs Study Update identified the water portion of this 20 year deficit as $220 million and budgets have been increased over a 20 year time frame in an effort to reduce the gap. City Council is also aware of this gap as a detailed report was presented to the Environment and Transportation Committee on January 28, 2008.

Updates of the 2004 report have been undertaken over the last 10 years and most recently in 2013. A Corporate Asset Management initiative utilizing this information, called the State of the Infrastructure Report, identified that the City's Water infrastructure has a replacement cost of over $2.7 billion and the 10 year infrastructure gap is now estimated to be $38 million at the current rate of funding.

The Water Service Area continues to investigate innovative technologies that can be used to narrow the gap in the future. It is anticipated that the gap can be maintained at manageable levels over the next 20 to 30 years as failing infrastructure is renewed. The

20 year capital plan presents an asset management plan that addresses the infrastructure gap.

A Corporate Asset Management Plan was formalized in 2014 which further describes existing programs and future funding requirements to meet infrastructure needs to 2022 based on the State of Infrastructure report noted above, which is consistent with this Financial Plan.

2. Water System Needs and Revenue Requirements

In 2014, the City of London's water distribution system was comprised of 8 pumping stations, 4 reservoirs, 7 standby wells, over 1,570 km of water mains, 12,800 valves, 9,000 hydrants, as well as approximately 115,000 water services and meters. The average age of water distribution system components is under 35 years old with some individual components over 100 years old.

The expenditure needs of the system evolve over time as infrastructure components have different life spans. Over 94% of the asset replacement value is related to buried pipe infrastructure which is expected to remain in service for 75 years. The City has actively replaced aging pipes for over 40 years. In the last two decades, it has become apparent that water pipes reach the end of their useful life at different ages. From field data, it has been demonstrated that the failure frequency of all cast iron watermains is continuing to increase, and generally 1950's and 1960's vintage pipes are breaking more rapidly than older pipes. Recently it has been identified that some copper water service pipes are failing in less than 10 years. This convergence of end-of-life for pipes of various vintages/materials has resulted in the rapid increase in the infrastructure gap in the past 20 years.

The Water Service Area reviews these infrastructure needs annually and establishes priorities for renewal of existing infrastructure or construction of new infrastructure.

This section of the plan provides a summary of some of the needs and requirements that constitute the priorities of Water Service Area programs and the 2015 Water Budget. These are Council approved programs which are ongoing in many cases or have a firm completion date. These programs form key components which drive the expenditures to maintain infrastructure at serviceable levels and meet the growth needs of the City.

2.1. Capital

Capital needs in the City of London are categorized as infrastructure life cycle renewal (asset management), system/service improvements and growth.

The 2004 Needs Study identified five capital activities to mitigate maintenance problems, health concerns, performance deficiencies and firefighting deficiencies, including:

1. Watermain replacement to address watermain breaks and corrosion degradation;
2. Watermain replacement to address undersized mains – inadequate system-wide capacity or local fire flows;
3. Watermain rehabilitation (i.e. clean and reline) to address excessive hydraulic roughness and/or structural weakness as an alternative to replacement;
4. Replacement of lead water services; and
5. Rehabilitation/replacement of watermains to address other performance deficiencies (i.e. excessive velocities and/or pressure loss)

2.1.1. Asset Management (Lifecycle Infrastructure Renewal)

Several capital programs are at the centre of renewal and the efforts to maintain the infrastructure at an appropriate level of service. These programs use different tools depending on the condition of an asset: either extending the life of the current asset or replacing it. London City Council directed in 2004 that the budgets for annual renewal programs, approximately $8.5 million at the time, be increased by approximately $500,000 per year (2004 dollars) for 20 years. Once financial sustainability is reached in 2016, these programs will be reassessed to determine long-term renewal budget requirements.

1. The Watermain Cleaning & Relining Program targets areas of the City where water quality (taste, colour) has deteriorated due to prolonged water detention time and internal corrosion of the watermain but the watermain's size and structural condition remain acceptable. The program is driven, in part, by water quality complaints. In circumstances where the structural condition of the watermain is not acceptable, structural liners can be implemented and have been increasingly used by the City as a significant cost saving alternative to full replacement. Approximately 6 to 8 km of watermains are structurally relined per year. Cleaning and relining restores water quality and improves fire flow, while extending the life of a watermain that would

otherwise have to be replaced at a much higher cost. This also reduces social impacts and disruption by utilizing trenchless technologies.

2. The Watermain Replacement Program ensures that the distribution system remains reliable and cost effective. This program is coordinated with Wastewater and Transportation to undertake complete City blocks of infrastructure renewal involving 15 to 20 construction contracts per year, resulting in 8 to 10 km of replaced watermain.

3. The large diameter Watermain Inspection Program - Since 2006 there has been a recognition that the watermain renewal programs (rehabilitation and replacement described above) have functioned well, but have not considered large diameter watermains because of their history of few problems. Several pilot projects were undertaken from 2007 to 2012, including the installation of over 15 km of fibre optic cable in the City's largest watermain to monitor the pipeline in real time for stress failures. A City-wide risk assessment was undertaken in 2013 and approximately 300 km of large diameter watermains were identified which would be inspected using innovative technologies to provide an accurate structural condition rating. Council endorsed two major pipeline inspections in 2014 and the budget has been increased in 2015 to continue the long-term program.

4. The Cathodic Protection Program is the installation and replacement of anodes on watermains around the City. This program has been particularly beneficial in extending the life of ductile iron and steel watermains. Approximately 20 km of watermain are protected each year.

Some anticipated outcomes of maintaining these programs are a reduction in water quality complaints, extended service life of watermains (before replacement is required), reduction in the number of watermain breaks, reduction in water losses and non-revenue water used for flushing, and a reduction in risk of private property damage and traffic disruption.

To prioritize the replacement and relining of watermains, Water Engineering uses a custom program called Water Condition Assessment Program (WCAP). This program

takes the information from all the watermains in the City and rates them based on several attributes determined by staff. The attributes include factors such as age, number of breaks, pipe material, presence of lead services, hydraulics and importance factors. Once the Water renewal priorities are established, consultations are held with Transportation and Wastewater staff so that the timing of the renewal work can be coordinated to save on construction costs and minimize social disruption.

The Water Service Area keeps abreast of the newest technological innovations in both watermain reconstruction and rehabilitation and is always looking for ways to apply these to reduce the costs of asset management of the distribution system in the long-term and reduce impacts on the environment and our customers. Below are some initiatives that have been introduced.

Trenchless Technologies

The Water Service Area has been utilizing trenchless technologies since 1995 and continues to expand their use. Compared to open cut excavation and surface restoration techniques, trenchless methods minimize the amount of excavation required to install watermains, minimize damage to surface structures, cause less disruption of traffic and other social inconveniences on and around job sites. This technology allows installations to be made in areas where open cut excavation is significantly more costly and disruptive. Trenchless procedures are also more environmentally friendly because they produce less construction pollutants and noise. The Water Service Area has been successfully implementing trenchless rehabilitation for 20 years and continues to evaluate and pilot test new methods and materials as they become available, including horizontal directional drilling, structural lining, spray-in-place lining, hydro vacuum excavation equipment, etc.

Meter Replacement Strategy

Water Operations developed a water meter replacement and meter reading strategy to be implemented in conjunction with London Hydro's compliance with government legislation requiring implementation of "Smart Metering" for electricity customers. London Hydro is contracted by the City of London to undertake water meter reading and billing, accounts collection, and customer service, making co-ordination desirable.

However, due to the completion of London Hydro's "Smart Meter" implementation, there is no longer any cost savings from economies of scale by sharing the meter reading costs between water and electricity meters. It would be advantageous for the Water Service Area to complete the Water Meter Replacement Program ahead of schedule and move towards the envisioned drive-by meter reading system, reducing meter reading costs by approximately 75%.

In 2008, review of the water meter records indicated that approximately 51,000 meters were beyond their optimum replacement age. These meters were in a deteriorating state of condition and were a source of non-revenue water resulting in a missed revenue opportunity for both Water and Wastewater Service Areas. The Water Meter Replacement and Meter Reading Strategy was developed as a 10-year program, designed to eliminate the meter replacement backlog, and to provide the lowest cost solution to obtain accurate monthly water meter readings for billing purposes. Over the past 6 years, the Water Service Area has been able to reduce the backlog of water meters due for replacement to 29,000, through the aggressive meter change-out program which targets 10,000 meters per year. Although slightly behind schedule, the program is on track to eliminate the backlog by 2020.

2.1.2. System/Service Improvements

While it is important to maintain the system in working condition, it also at times becomes necessary or desirable to improve the system. Some of these improvements are driven by senior government legislation while others are driven by customer needs at the local level.

Lead Mitigation Program

Many homes constructed in London before 1953 have lead water service pipes from the watermain to the home. As water travels through lead service pipes, it has the ability to pick up lead. Drinking water is just one of the exposure pathways for lead, which also include lead in air and lead in food. Total lead exposure from all sources may cause adverse health effects. It is because of this concern that the City of London developed a Lead Mitigation Program which includes education and awareness, water chemistry

changes, and lead service replacements. Through adjustments to the pH of London's water, lead uptake from lead service pipes has been significantly reduced. The lead service replacement program was expanded in the 2008 budget, and through 2014 an average of 480 public portion lead service replacements have been performed per year (from the watermain to the property line). The costs associated with lead services are outlined in Appendix B. The private portion of the water service from the property line into the home is the responsibility of the homeowner. Homeowners are encouraged to replace the private portion of the lead service as part of any City infrastructure renewal program. A lead loan program has also been instituted to assist homeowners in paying for their portion of the lead service replacement.

Copper Service Replacement Program

For the 2015 budget, the lead mitigation program was expanded to accommodate the replacement of copper services, allocating $2 million for service pipe replacement in total. Over the last several years there has been an increase in the failure of relatively new copper services, some less than 10 years old. In 2014 there were over 200 service leaks. Older copper services have been less of a concern.

The copper service replacement program is currently reactive, as historical information is being compiled and mapped to identify trends or geographic areas where a comprehensive program, by neighbourhoods for example, can be embarked upon. Until then, copper services will be replaced on a one-off basis.

Decommissioning of Abandoned Production Wells

The City of London has records of water wells from the former Public Utilities Commission (PUC) describing City owned wells dating back to the early 1900's. Abandoned wells, not decommissioned in accordance with current Ontario Regulation 903, pose a risk to groundwater quality, the safety of individuals (falling in), and/or buildings (gas hazard).

The Ontario Water Resources Act (OWRA) and the Clean Water Act require the proper decommissioning of abandoned wells to protect groundwater resources. The City of London established the Abandoned Well Decommissioning Program in 2006. Unused

wells are direct conduits into the aquifers which can become a pathway towards groundwater contamination. This program to properly decommission city-owned wells was implemented as a proactive measure recognizing the benefit to groundwater and the impending implementation of Source Water Protection Plans.

The program was designed to be phased over several years, ending in 2016. A risk-based prioritization strategy was developed for the location and proper decommissioning of abandoned wells including old production, monitoring, and test wells. The initial background work and well search identified at least 50 City owned abandoned production wells in various locations around the City which have subsequently been properly decommissioned.

Water Efficiency, Conservation and Outreach

The City of London has actively promoted water conservation since the late 1980's when water consumption approached the supply capacity of the water system. Since 2010, the City's Water Service Area has made a significant change to the water and wastewater rate structure, brought in a city-wide leak detection program, partnered with the Thames Valley District School Board to teach local environmental and engineering topics in the classroom, and continued to promote conservation and awareness "out and about" in the community. The Province has also continued to support conservation initiatives through frequent reviews and changes to the Ontario Building Code and the passing of the Water Opportunities (and Conservation) Act. In that time, the average household has reduced water use by 14 percent. Water conservation and efficiency improvements are important aspects of the long-term strategy for creating additional supply capacity to support growth and keeping future rate increases affordable by avoiding costly system expansion. The City's updated water efficiency strategy was recently reported to Council in April 2015.

Legislation which Impacts System/Service Improvements

The "Licensing of Municipal Drinking Water Systems" (O. Reg. 188/07) requires 5 components:

1. A Drinking Water Works Permit (DWWP)

2. An Accepted Operational Plan
3. Accreditation of the Operating Authority
4. A Financial Plan *(This Document)*
5. A Permit to Take Water (PTTW).

The requirement for a Drinking Water Quality Management System (DWQMS) and related implementation requirements are underway. The City of London's Operational Plan was submitted and approved in 2009. The Drinking Water Works Permit and the Municipal Drinking Water Licence (accreditation limited scope) were received December 17, 2010. The external audit of the Operational Plan was completed in 2013, at which time the Operating Authority received full accreditation.

The Ontario government passed the Clean Water Act in October 2006 to protect the province's source waters which are used for municipal drinking water. In support of measures required by the legislation, the Ministry of the Environment (MOE) established a grant program to fund work leading towards the development of Source Water Protection Plans (SWPP). The City benefited from the grant program, (report to ETC September 8, 2008) and participated in developing SWPP's as it relates to the emergency wells. The Joint Boards of Management have the responsibility of developing SWPP's for the two water plants. In 2014, the City contracted the Upper Thames River Conservation Authority to assist the City in undertaking the risk management activities required under the Clean Water Act and the SWPP's, which are expected to be approved in 2015. The Water Service Area is committed to maintaining a strong, healthy environment through protecting the sources of water that we share.

The Water Opportunities (and Conservation) Act was passed by the Ontario legislature in 2010. The City of London provided comments to the Environmental Bill of Rights Registry in July 2010. The Act contains several aspects and schedules that will affect the water utility, including a "municipal water sustainability plan". It is understood that regulations are in draft form, but have not been released for review and comments. It is anticipated that, as part of the conservation and sustainability requirements, the water utility may be required to establish targets for water efficiency and conservation. Success

in achieving these targets will further erode revenues in the short term, but hopefully reduce long-term capital expenditures as significant works such as treatment plants, pipelines and reservoirs are delayed. While some of these facilities are paid for by Development Charges, many of these works are within the Regional Water Systems and are paid for through wholesale purchase of water rates. By delaying debt repayment charges, the existing and future water customers will benefit further enabling sustainability of the Water Service Area.

2.1.3. Growth

The purpose of the Growth Management Implementation Strategy (GMIS) is to provide guidance for the co-ordination of the timing of City-initiated infrastructure works with the approval of development applications. The GMIS identifies priority areas for growth over the 0 to 5, and 6 to 10 year time periods. The costs of water projects related to growth are funded from various sources but divided into two main groups, growth and non-growth. Growth is generally the larger of the two and is funded primarily through Development Charges (DC). Non-growth implies that benefits accrue to existing customers and therefore is funded through the Water Service Area budget, meaning these costs are funded by the ratepayers. The costs of the 2014 Water Servicing Master Plan are reflected in the approved 2015 Water Budget and in this Financial Plan.

2.2. Operations and Maintenance

The budget for operations and maintenance is used to keep the system operating and safe as well as to perform the necessary testing, maintenance and repairs to keep the water distribution system functioning reliably. A major component of this budget is the bulk purchase of water from the Regional Water Supply Systems. Water Operations uses staff resources as well as other necessary expenditures; these can include power to operate pumps and equipment as well as chlorine to ensure that chlorine residual is kept at an acceptable and safe level. Maintenance is generally divided into two major categories, preventative maintenance and unplanned maintenance. These two categories are described in more detail below.

2.2.1. Preventative Maintenance

Preventative maintenance represents a proactive approach to maintaining the water distribution system. Preventative maintenance activities often address issues before they cause a major problem or breakdown and can result in significant cost savings. To ensure effectiveness, many preventative maintenance programs make use of GIS technology to track progress and reported problems. Below are some of the key programs that fall under this heading.

- Watermain flushing to maintain water quality in the distribution system (disinfection residual and aesthetic parameters).
- Hydrant maintenance is conducted and is comprised of two components: 1) annual maintenance, and 2) frost checks during freezing months.
- Valves are exercised to ensure functionality and identify deficiencies.
- Air release and vacuum valves, appurtenances, and chambers are inspected and maintained.
- The Supervisory Control and Data Acquisition (SCADA) system equipment and station pumps undergo life cycle maintenance based on manufacturers' specifications or as required by the regulations.
- Reservoir inspections are performed by contracted divers, at a minimum frequency of every 5 years. Reservoir cleaning is scheduled based on these inspections.
- Enhancement of the leak detection monitoring program is currently underway. Benefits will include increased detection of leaks and reduction of non-revenue water, increased reliability of infrastructure and avoidance of failures.

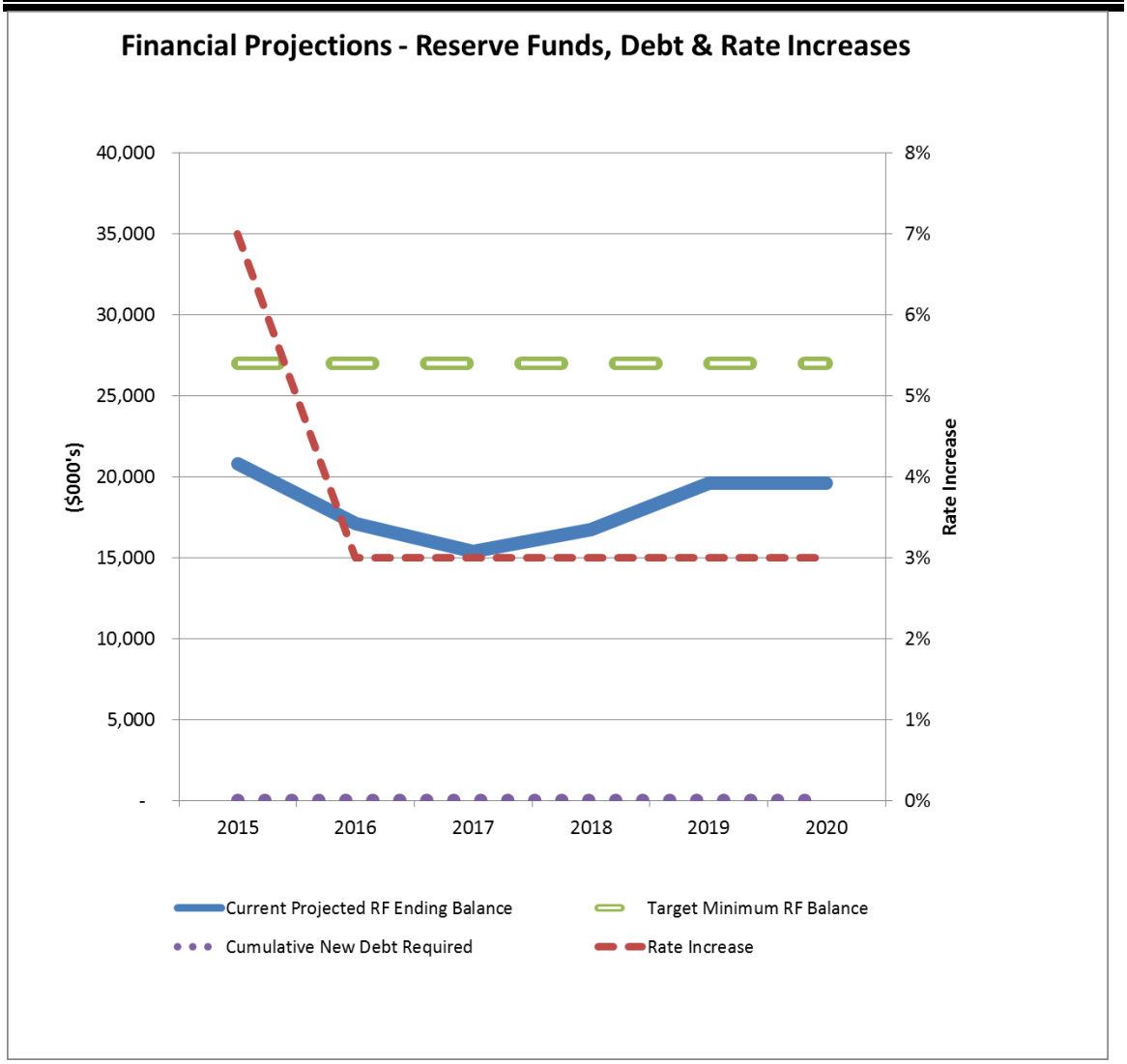
2.2.2. Unplanned Maintenance

Unplanned maintenance typically consists of repairing leaks or other deficiencies (e.g. damaged hydrants) that are reported by the public, other utilities, or London staff. For facilities, required maintenance work may be identified by Operators during regular visits to the facilities. Often unplanned maintenance can be costly and disruptive for the customers, which is why significant effort and focus is put on preventative maintenance.

3. Financial Planning

3.1. Financial Model

The Water Service Area maintains a financial model to aide in long-term forecasting and budget consultations, on which this Financial Plan is based. The model has been used in budget development and deliberations since 2009 and has proven to be a very useful tool in assessing the financial health of the water system. The chart below represents financial performance projections, which are based on the approved 2015 Water Budget. As illustrated, increases in water rates are forecasted to stabilize at an inflationary level (currently estimated at 3% per year) commencing in 2016, with no additional future debt anticipated in the near term. The New Capital Water Reserve Fund is expected to decline slightly in the short-term due to higher projected capital needs, but starts growing modestly beginning in 2017.



3.2. Budget Process

Water Service Area costs can be broken into two broad types of expenditures, Capital and Operating. In the budget process these expenditures are approved by Council (in conjunction with Water rates) as part of the comprehensive 2015 Water Budget.

3.2.1. Operating Budget Process

Operating costs are generally those costs that relate to the operational issues of supply, distribution, and purchase of water for the current year including the staff, supplies and other costs required for management and maintenance of meters, pumping stations, pipes, and reservoirs. These expenditures do not increase the value of the system or the life of

the system but are required to ensure the reliable delivery of safe clean water to the community and realize the anticipated life of the infrastructure components. It is generally accepted that due to the immediate benefit and short term impact of operating expenditures, they will be funded through the collection of user rates within the year the costs are incurred.

In addition to the expenses outlined in the Water Operating Budget, the Statement of Operations for Water Services includes amortization of Tangible Capital Assets (TCA) consistent with Public Sector Accounting Board (PSAB) Section 3150. Budgets do not currently include amortization as it is a relatively new consideration for municipalities. In past budgets, capital expenditures were fully expensed in the year they were incurred. This budget practice will change as TCA policies and procedures continue to develop and evolve. The Statement of Operations for Water Services also includes Water's capital expenditures on non-water assets (e.g. roads, curbs and gutters, sidewalks, etc.). In order to install, replace or rehabilitate water infrastructure, it is often necessary to excavate other infrastructure and then restore that infrastructure once the work on the water assets has been completed. These costs reflect capital expenditures for Water, but do not result in the creation of water tangible capital assets.

The operating budget is typically driven by inflation and in some cases changes in operations. Based on their long term plans, the water supply costs of the Lake Huron Primary Water Supply System and the Elgin Area Primary Water Supply System are charged to their customers, including the City of London, by way of a volumetric water rate on water purchases. Interest Expenses are driven by the planned borrowings to support the Capital Plan. An annual budget is developed through consultation with the various stakeholders. A public participation process is undertaken prior to approval by Council. It is generally the practice to undertake this approval in November of the year prior to the effective year of the budget in order to implement rate increases in the billing process by January 1st of the new year. However, this normal process is delayed in election years, which resulted in the approval of the 2015 Budget in late January 2015.

3.2.2. Capital Budget Process

Capital costs are those expenditures which increase the value of the system, expand the system, improve the system, replace existing assets and/or extend the lifespan of existing assets.

The Water Capital Plan is developed based on Engineering Studies such as the Water Distribution System Needs Study, the Water Master Plan, and the Growth Management Implementation Strategy. These studies are described in Section 2 and are updated occasionally but not necessarily annually. On an annual basis, projects are reviewed and adjusted to reflect changes in the background information, inflationary impacts, changing priorities within the City and coordination with construction plans of other Service Areas, primarily Transportation and Wastewater. The resulting annual Capital Budgets are approved by Council following the public participation process.

3.3. Revenues and Rates

Prior to 2013, the majority of the revenues for the Water Service Area were derived from consumption based billings, which utilized a user-pay approach to promote conservation. However, as water demand continues to decline, as it has over the past decade, securing adequate revenue to cover fixed costs has become a very challenging activity for the Water Service Area. After undertaking a rate structure review to improve revenue stabilization in the longer term, the City, with Council approval, implemented a new water and wastewater rate structure in 2013 that incorporated a greater proportion of revenues derived from fixed rate charges instead of consumption charges. This new funding model also addressed inconsistencies and inequalities of the previous rate structure. The approved 2015 Water, Wastewater and Stormwater rates were developed using this new rate structure.

Annual rate increases are based on the long term financial forecasts for the Water utility, which considers the funding needs for both Operating and Capital. The need to build adequate Reserve Funds and to maintain appropriate levels of debt are also built into the rate setting process.

4. Capital Financing

The expenditures required to renew, improve and expand the water supply and distribution system represent approximately 40-45% of the total revenues collected from water rates. Section 6 of the Corporate Asset Management Plan 2014 describes several financing strategies used by the Corporation. The discussion in the rest of this chapter describes how these strategies are applied specifically within the Water Service Area.

4.1. Financing Options

The Water Capital Plan has been divided into three categories described in Section 2.1:

- Lifecycle Infrastructure Renewal
- Growth
- System/Service Improvements

There are a number of available sources of financing for capital works as summarized in the table below.

Financing Options for Capital Expenditures					
Category	**Pay-As-You-Go**	**Water Service Area Reserve Fund**	**Debt**	**Development Charges**	**Sr. Government Funding**
Lifecycle	Yes - Preferred	Yes	No(1)	No	Yes, if eligible
Growth	No	Yes(2)	Yes	Yes	Yes, if eligible
System/Service Improvements	Yes	Yes	Yes	No	Yes, if eligible

Notes:
1. Could be considered if the asset to be renewed is a major expenditure with long life (e.g. reservoir).
2. Utilizes water reserve fund for non-eligible growth related works and/or non-growth component of project.

Financing decisions for capital works are based on a number of considerations including:

1. ***Is it an Asset Management (Lifecycle Renewal) project?***
   - The preferred funding source for Lifecycle Renewal works is pay-as-you-go. This funding is from the current year's revenues. This ensures that the taxpayers who are benefiting most are paying for the works.

2. ***Does this project create capacity necessary for growth in the City?***
   - When additional water supply capacity is created, allowing for future growth in the City, Development Charges should fund a corresponding portion of the works.

3. ***What is the life span of the project?***
   - When a project has a significant life span and funding is not otherwise available it may be appropriate to issue debt, thereby transferring costs to future benefitting generations.

4. ***Are there available funds from other levels of government?***
   - From time to time senior levels of government will invite applications for funding. These funding sources often have stringent criteria for eligibility and timing of works. Alternatively, ongoing funding is provided through some programs such as the Federal Gas Tax although given the relative good health of the water utility and low debt levels, Council has chosen to allocate very little Federal Gas Tax funds to water infrastructure.

5. ***Does the project benefit specific residents?***
   - Some works are undertaken which benefit residents of a particular street or neighbourhood. Examples of this type of work would be new sidewalks, water supply or sanitary sewer collection. In some cases the residents will contribute to the funding of those works through Local Improvement Charges or Area Rate Charges enacted through municipal by-laws.

4.2. Inter-Generational Equity

A guiding principle for financing decisions is the concept of inter-generational equity for municipal capital works intended to equitably distribute the costs across present and future taxpayers. This means that the generation which will receive the most benefit of the works should bear the majority of the cost of the works. Furthermore, the current benefitting generations have received the assets in relatively good condition and should pass them on to the next generations in similar condition. Some of the means to achieve this include:

- Paying for replacement and renewal works through pay-as-you-go financing,
- Issuing debt only for large scale projects with significant future years of benefit.

4.3. Reserve Funds Policy

Reserve Funds assist in smoothing out rates for water users by creating a funding source for future larger, intermittent projects and fluctuating revenue streams. Capital Budgets can vary significantly year over year and large non-recurring projects can create funding needs that are best funded over time. The Water Service Area has maintained Reserve Funds for over 40 years allowing the utility to remain essentially debt free. It is the intent to target a minimum reserve fund balance of $27 million for the New Capital Water Reserve Fund, which is the primary discretionary reserve fund of the Water Service Area. This represents approximately one percent of the $2.7 billion asset replacement value of the system. The following chart illustrates the rationale for the reserve fund target.

Minimum Reserve Fund Targets Rationale	Amount
Annual Weather Induced Revenue Fluctuations	$4M
Intermittent Funding Needs	
a) Catastrophic Failure (e.g. pipe river crossing, reservoir)	$6M
b) Planning for Future Capital Expenditures	$15M
c) Costs Associated with Legislative Changes	$2M
Total:	**$27M**

The Water Service Area also maintains a number of other reserves and reserve funds, which are held for specific purposes. These reserve funds include:

Reserve / Reserve Fund	Balance as of Dec. 31/14 ($000's)
City Services Water Levies Reserve Fund – Development Charges collected to fund growth works	$12,822
Industrial DC Incentive Program Water Reserve Fund (formerly Industrial Oversizing Reserve Fund) – To fund industrial Development Charge exemptions	$5,213
Lead Service Replacement Program Reserve Fund – To fund the Lead Service Replacement Program, assisting homeowners with the replacement of the private portion of lead services	$109
Water Customer Assistance Reserve Fund – Customer assistance charges collected in excess of customer assistance expenditures incurred, used to fund future customer assistance initiatives or reduce future customer assistance monthly charges	$244
Efficiency, Effectiveness & Economy Water Reserve – The equivalent of 90 days' savings on most Water position vacancies are contributed to this reserve, which is used to fund initiatives recommended by the Senior Leadership Team	$681

4.4. Growth Pays for Growth

The main guiding principle of the Development Charges (DC) By-law is that growth should pay for growth. As such, the 2014 Development Charges study identified all water growth related supply works within the City over the next twenty years, and identified all non-growth benefits and any post period amounts. Notwithstanding this concept, Council has directed a number of exemptions for industrial, institutional, residential and commercial growth in order to stimulate economic development within the City. These portions of water supply system growth are not paid for by DC's but are supported by the water rates.

4.5. Debt Management

The overall goal of the City's debt management strategy is to eliminate the use of debt financing to fund the "average" capital budget. Further debt financing will ultimately be used exclusively to fund large, extraordinary works, or to mitigate the impact of a larger than average total capital budget.

The Water Service has minimal debt and the Water system has largely been maintained using pay-as-you-go capital financing. As of December 31, 2014, the total net debt outstanding was approximately $2.4 million and a total of $0.5 million of authorized but unissued debt. Debt servicing costs in 2015 will be approximately $0.4 million. Future debt may be issued for projects that represent significant capital investments spanning several generations.

The Water budget also carries debt associated with the City's share of debt issued by the Joint Boards. This is approximately $14.7 million at the end of 2014 and is factored into the City's overall borrowing capacity. Debt payments tied to the City's share of the Joint Boards' debt are made indirectly as the part of the purchase of water charged to the City by the Joint Boards and are estimated to be approximately $1.4 million in 2015.

4.6. Senior Government Funding

Federal Gas Tax

The Water Service Area will receive approximately $2 million in Federal Gas Tax funding between 2015 and 2020, which will be used to fund several Water capital projects and assist in managing the infrastructure gap.

HELP Clean Water

After a lengthy process, the City received the approval for senior government funding through the Building Canada Fund in conjunction with the Lake Huron and Elgin Area Primary Water Supply Systems under the banner of HELP (Huron Elgin London Project) for Clean Water. The major City water project that benefits from this funding program is the Southeast Reservoir and Pumping Station, which will receive approximately $38 million in senior government funding. This project, though originally approved in 2005, was on hold until 2009 when the funding was confirmed. Additional benefit to the City occurs through the funding of capital works being undertaken by the Joint Boards, which is approximately $62 million. This benefit will be realized in future water rates paid to the Joint Boards for the purchase of water and minimizing future Joint Board debt which

impacts the City of London's overall borrowing capacity as noted above. The HELP initiative is anticipated to be complete by March 31, 2017.

5. Financial Statement Information

Financial Statements (See Appendix A)

The financial information in the Water Service Financial Plan has not been audited. The 2013 values for Water Services are derived from the audited City of London consolidated financial statements and the 2014 values are derived from the unaudited City of London consolidated financial statements. The future year assumptions originate from the Financial Model for Water, which includes elements from the 2015 Council-approved Water Capital Budget and Forecast, Water Operating Budget and Forecast, and 2014 Development Charges Background Study.

Format

In June 2006, the Public Sector Accounting Board (PSAB) approved PS3150, requiring municipalities to report Tangible Capital Assets (TCA) in their Statement of Financial Position, effective January 1, 2009. This change required the inclusion of tangible capital assets, related accumulated amortization, and the concept of accumulated surplus, while eliminating the capital and reserve and reserve fund statements. The attached forecasted financial statements have been prepared under these requirements. The "forward-looking" financial statements are for 6 years, from 2015 to 2020 as required by the Water Operating Authority licence renewal process *(Safe Drinking Water Act, O.Reg 453/07, section 3.2)*. It is important to note that the financial statements are based on PSAB accounting standards and reflect certain information not contained in the Council-approved Water Operating and Capital Budgets and Forecasts.

Glossary

Tangible Capital Assets

Tangible capital assets are non-financial assets having physical substance that:

a) *are held for use in the production or supply of goods and services, for rental to others, for administrative purposes or for the development, construction, maintenance or repair of other tangible capital assets;*
b) *have useful economic lives extending beyond an accounting period;*

c) are used on a continuing basis; and

d) are not for resale in the ordinary course of operations. (PS 3150.05)

Some examples of tangible capital assets for the Water Service Area include watermains, hydrants, and water meters.

Amortization

Amortization is the attribution of the historical cost of TCA across the useful life of the specific asset (Amortization = Historical Cost / Life of Asset). The amortized cost is an expense on the Statement of Operations and the historical cost of the TCA is reduced by the same amount on the Statement of Financial Position. This process roughly allocates the costs of the TCA into the years of benefit.

The amortization of the costs of tangible capital assets should be accounted for as expenses in the statement of operations. (PS 3150.23)

The amortization period of a water asset varies from 3 years to 60 years, depending on the categorization of the asset.

Annual Surplus (Deficit)

The Annual Surplus (Deficit) reflects the net of the revenues, operating expenditures, amortization and capital spending not resulting in water tangible capital assets for the year.

Accumulated Surplus (Deficit)

The Accumulated Surplus (Deficit) represents the accumulation of prior and current year surpluses and deficits and is made up primarily of the lifetime total cost of tangible capital assets minus the amortization that has occurred to date, in addition to the financial assets, net of financial liabilities, of the water system.

6. References

Links to Background Documents

Section 1.1.1 – Water Service Area Objectives and Principles

Environment and Transportation Committee Meeting on November 24, 2008 – Water 20 Year Financial Model
http://council.london.ca/meetings/Archives/Agendas/Environment%20and%20Transportation%20Committee%20Agendas/ETC%20Agendas%202008/2008-11-24%20Agenda/Item%2015.pdf

Section 1.1.4 – Regional Water Supply

Financial Plans of the Lake Huron Primary Water Supply System and the Elgin Area Primary Water Supply System
http://www.watersupply.london.ca/reports.html

Section 1.2.2 – Water By-laws

http://www.london.ca/city-hall/by-laws/Documents/water-W8.pdf

Section 1.2.3 – Infrastructure Gap

Environment and Transportation Committee Meeting on August 30, 2004 - Water Distribution System Needs Study Update Final Report
http://council.london.ca/meetings/Archives/Agendas/Environment%20and%20Transportation%20Committee%20Agendas/ETC%20Agendas%202004/2004-08-30%20Agenda/Item%204.pdf

Environment & Transportation Committee Meeting on January 28, 2008 - Infrastructure Deficit
http://council.london.ca/meetings/Archives/Agendas/Environment%20and%20Transporta

tion%20Committee%20Agendas/ETC%20Agendas%202008/2008-01-28%20Agenda/item%2011.pdf

State of the Infrastructure Report 2014
http://www.london.ca/city-hall/master-plans-reports/reports/Pages/State-of-Infrastructure-Report.aspx

Corporate Asset Management Plan 2014
http://www.london.ca/city-hall/master-plans-reports/reports/Pages/Corporate-Asset-Management-Plan-2014.aspx

Section 2.1.1 – Asset Management

Two Major Pipeline Inspections
Civic Works Committee Meeting on July 21, 2014 – Long Term Pipeline Inspection Strategy, Agenda Item #6
http://sire.london.ca/view.aspx?cabinet=published_meetings&fileid=145824

Trenchless Technologies
Environment & Transportation Committee Meeting on August 22, 2005 - The Use of "No Dig" Technology in the City of London
http://council.london.ca/meetings/Archives/Agendas/Environment%20and%20Transportation%20Committee%20Agendas/ETC%20Agendas%202005/2005-08-22%20Agenda/item%2017.pdf

Meter Replacement Strategy
Environment & Transportation Committee Meeting on August 24, 2009 - Water Meter And Meter Reading Strategy Update Report
http://council.london.ca/meetings/Archives/Agendas/Environment%20and%20Transportation%20Committee%20Agendas/ETC%20Agendas%202009/2009-08-24%20Agenda/Item%203.pdf

2.1.2. – System/Service Improvements

Lead Mitigation Program

Environment & Transportation Committee Meeting on Sept 22, 2008 - Lead Mitigation Program and Community Lead Testing
http://council.london.ca/meetings/Archives/Agendas/Environment%20and%20Transportation%20Committee%20Agendas/ETC%20Agendas%202008/2008-09-22%20Agenda/Item%202.pdf

Source Water Protection

Environment & Transportation Committee Meeting on October 27, 2008 - Abandoned Well Decommissioning Program – 2008 Update
http://council.london.ca/meetings/Archives/Agendas/Environment%20and%20Transportation%20Committee%20Agendas/ETC%20Agendas%202008/2008-10-27%20Agenda/Item%205.pdf

Water Efficiency, Conservation and Outreach

Civic Works Committee Meeting on April 8, 2015 – Water Efficiency Program Update – Proposed By-Law Revisions, Agenda #11
http://sire.london.ca/view.aspx?cabinet=published_meetings&fileid=181207

Other Related Legislation

Licensing of Municipal Drinking Water Systems Regulation
http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_070188_e.htm

Environment & Transportation Committee Meeting on Nov 24, 2008 - Ontario's New Municipal Drinking Water Licensing Program and Endorsement of Operational Plan
http://council.london.ca/meetings/Archives/Agendas/Environment%20and%20Transportation%20Committee%20Agendas/ETC%20Agendas%202008/2008-11-24%20Agenda/Item%2014.pdf

Environment & Transportation Committee Meeting on September 8, 2008 - Source Water Protection Update of Agreement for Grant Funding with Ministry of the Environment for Technical Studies
http://council.london.ca/meetings/Archives/Agendas/Environment%20and%20Transportation%20Committee%20Agendas/ETC%20Agendas%202008/2008-09-08%20Agenda/Item%201.pdf

Environment & Transportation Committee Meeting on August 23, 2010 – Comments Regarding the Proposed Water Opportunities Act, 2010
http://council.london.ca/meetings/Archives/Agendas/Environment%20and%20Transportation%20Committee%20Agendas/ETC%20Agendas%202010/2010-08-23%20Agenda/Item%209.pdf

Section 2.1.3 – Growth

Growth Management Implementation Strategy
http://www.london.ca/business/Resources/Development-Financing/Pages/Growth-Management-Implementation-Strategy.aspx

2014 Water Servicing Master Plan
http://www.london.ca/business/Resources/Development-Financing/Documents/2014%20Water%20Master%20Plan.pdf

Section 3.2 – Budget Process

2015 Water Budget
http://www.london.ca/city-hall/budget-business/budget/Documents/2015-Approved-Water-Budget-V3a-WaterAct.pdf

Section 3.3 – Revenues and Rates

New “Value Based” Funding Model for Water and Wastewater Services

http://www.london.ca/residents/Water/water-bill/Pages/Water-and-Wastewate-Rates.aspx

Section 4.4 – Growth Pays for Growth

Development Charges By-law and Growth Master Plan Studies
http://www.london.ca/business/Resources/Development-Financing/Pages/Development-Charges.aspx

Section 4.6 – Senior Government Funding

HELP Clean Water

Board of Control Meeting of May 13, 2009 - Execution of Contribution Agreement with the Government of Canada for the Help Clean Water Initiative
http://council.london.ca/meetings/Archives/Agendas/Board%20Of%20Control%20Agendas/Board%20of%20Control%20Agendas%202009/2009-05-13%20Agenda/Item%207.pdf

Environment & Transportation Committee Meeting of January 25, 2010 – Help Clean Water – Principles for Surplus Distribution
http://council.london.ca/meetings/Archives/Agendas/Environment%20and%20Transportation%20Committee%20Agendas/ETC%20Agendas%202010/2010-01-25%20Agenda/Item%201.pdf

Water Financial Plan

Appendix A – Financial Statements

City of London Water Service - Statement of Operations (Based on PSAB Accounting Standards)

	ACTUALS		FORECAST					
	Final[1]	Draft [2]						
	2013	2014	2015	2016	2017	2018	2019	2020
Revenues								
Projected Rate Increase			7.0%	3.0%	3.0%	3.0%	3.0%	3.0%
User Charges - Water Consumption	44,675,236	42,484,342	46,857,735	47,904,387	48,964,159	50,038,219	50,872,374	51,723,912
Capital Renewal	15,554,695	21,254,888	22,601,769	23,503,339	24,442,327	25,418,802	26,433,954	27,489,091
Fire Protection	1,990,718	2,648,881	2,740,742	2,851,040	2,965,672	3,084,952	3,209,043	3,338,025
Customer Assistance	256,896	312,884	307,755	310,833	313,941	317,080	320,251	323,454
Miscellaneous User Charges	1,295,131	1,261,710	996,011	1,084,902	1,110,279	1,136,418	1,163,341	1,198,241
Investment Income	498,564	625,412	600,000	615,000	537,000	519,000	556,000	576,000
Other Funding	773,675	1,001,364	370,000	260,000	-	420,000	-	547,500
Government Transfers								
Provincial	130,355	402,337	3,679,638	2,219,910	1,400,000	800,000	1,333,350	-
Federal	456,152	499,519	4,282,379	2,854,100	1,814,000	1,050,000	1,433,350	400,000
Development Charges (transfer from City Services Reserve Fund)	498,611	1,183,708	4,128,162	4,115,555	2,487,200	2,644,043	13,300,615	3,852,506
Developer Contributions of Tangible Capital Assets	5,527,572	6,325,549	5,926,561	6,104,357	6,287,488	6,476,113	6,670,396	6,870,508
Total Revenues	71,657,605	78,000,594	92,490,752	91,823,423	90,322,067	91,904,626	105,292,675	96,319,237
Expenses								
Purchase of Water	19,845,543	20,498,948	21,658,872	22,607,548	23,201,919	23,684,153	24,113,483	24,552,472
Personnel Costs	7,913,549	8,225,020	8,260,572	8,508,389	8,763,641	9,026,550	9,297,347	9,576,267
Administrative, Other & Recovered Expenses	2,966,937	2,939,753	3,360,158	3,460,963	3,564,792	3,671,735	3,781,887	3,895,344
Billing & Customer Service	2,110,266	2,120,721	2,107,267	2,170,485	2,235,600	2,302,668	2,371,748	2,442,900
Purchased Services	2,832,402	3,196,229	2,882,942	2,969,430	3,058,513	3,150,269	3,244,777	3,342,120
Material & Supplies	1,896,271	2,225,835	2,233,673	2,300,683	2,369,704	2,440,795	2,514,019	2,589,439
Equipment & Rentals	1,619,546	1,952,668	1,678,368	1,728,719	1,780,581	1,833,998	1,889,018	1,945,689
Customer Assistance	226,859	99,378	300,000	300,000	300,000	300,000	300,000	300,000
Interest Expenses	64,827	76,594	69,100	81,949	71,579	60,674	49,070	37,070
Loss on Disposal of Tangible Capital Assets	474,294	496,094	485,194	499,750	514,742	530,185	546,090	562,473
Non TCA Expenditures[3] and Net Non-Water Capital Expenditures[4]	8,778,956	2,906,115	9,622,709	13,297,961	13,107,798	11,169,742	11,982,306	11,469,095
Amortization	12,455,361	12,731,037	12,714,666	13,138,196	13,366,700	13,605,684	13,954,734	14,216,642
Total Expenses	61,184,811	57,468,392	65,373,521	71,064,072	72,335,567	71,776,452	74,044,477	74,929,511
Annual Surplus (Deficit) [5]	10,472,794	20,532,202	27,117,231	20,759,351	17,986,499	20,128,174	31,248,197	21,389,727
Annual Surplus (Deficit)	10,472,794	20,532,202	27,117,231	20,759,351	17,986,499	20,128,174	31,248,197	21,389,727
Accumulated Surplus - beginning of year	456,448,389	466,921,183	487,453,385	514,570,616	535,329,967	553,316,467	573,444,641	604,692,838
Accumulated Surplus - end of year[6]	466,921,183	487,453,385	514,570,616	535,329,967	553,316,467	573,444,641	604,692,838	626,082,565

[1] These values reflect water's proportionate allocation of the 2013 audited City of London consolidated financial statements. The Water Service Financial Plan has not been audited.

[2] These values reflect water's proportionate allocation of the 2014 unaudited City of London consolidated financial statements.

[3] These costs reflect capital expenditures for Water that will not result in the creation of a tangible asset having physical substance (e.g. engineering studies).

[4] These costs reflect capital expenditures for Water, but do not result in the creation of water tangible capital assets. It includes expenditures on non-water assets such as roads, curbs and gutters, sidewalks, etc.

[5] Annual Surplus (Deficit) reflects the net of the revenues, operating expenditures, amortization and capital spending not resulting in water tangible capital assets for the year.

[6] Accumulated Surplus represents the accumulation of prior and current year surpluses and deficits and is made up primarily of the lifetime total cost of tangible capital assets minus the amortization that has occurred to date, in addition to the financial assets, net of financial liabilities, of the water system.

City of London Water Service - Statement of Financial Position (Based on PSAB Accounting Standards)

	ACTUALS		FORECAST					
	FINAL [1]	DRAFT [2]						
	2013 Closing Balance	2014 Estimated Closing	2015	2016	2017	2018	2019	2020
Financial Assets								
Cash and Investments	42,166,615	48,155,921	58,266,498	61,799,558	68,513,827	77,862,241	78,173,335	87,952,142
Accounts Receivable and Other Receivables	6,313,416	7,174,708	8,507,552	8,446,169	8,308,070	8,453,639	9,685,108	8,859,706
Total Financial Assets	48,480,031	55,330,629	66,774,050	70,245,727	76,821,897	86,315,879	87,858,443	96,811,849
Financial Liabilities								
Accounts Payable and Accrued Liabilities	5,671,295	6,163,951	6,144,466	6,437,362	6,593,885	6,641,767	6,809,998	6,947,259
Deferred Revenue	15,732,591	16,922,062	8,020,910	6,637,000	8,018,000	9,023,000	1,609,000	2,783,000
Employee Benefits Payable	2,969,377	3,137,282	3,294,684	3,459,983	3,633,575	3,815,877	4,007,325	4,208,379
Long-term Liabilities	2,636,173	2,364,034	2,563,134	2,234,716	1,895,782	1,545,975	1,184,927	812,297
Total Financial Liabilities	27,009,436	28,587,329	20,023,193	18,769,060	20,141,243	21,026,620	13,611,250	14,750,935
Net Financial Assets	21,470,595	26,743,300	46,750,856	51,476,666	56,680,654	65,289,259	74,247,193	82,060,914
Non-Financial Assets								
Prepaid Expenses	21,774	7,585	7,479	7,704	7,935	8,173	8,418	8,671
Inventories	222,672	185,353	182,778	188,261	193,909	199,726	205,718	211,890
Tangible Capital Assets	639,263,621	664,891,771	681,704,556	707,862,047	730,996,842	753,107,501	786,337,724	811,115,409
Accumulated Amortization	(194,057,478)	(204,374,624)	(214,075,053)	(224,204,709)	(234,562,874)	(245,160,019)	(256,106,214)	(267,314,318)
Total Non-Financial Assets	445,450,588	460,710,085	467,819,760	483,853,303	496,635,812	508,155,382	530,445,645	544,021,651
Accumulated Surplus	466,921,183	487,453,385	514,570,616	535,329,967	553,316,467	573,444,641	604,692,838	626,082,565

[1] These values reflect water's proportionate allocation of the 2013 audited City of London consolidated financial statements. The Water Service Financial Plan has not been audited.

[2] These values reflect water's proportionate allocation of the 2014 unaudited City of London consolidated financial statements.

City of London Water Service - Statement of Cash Flow (Based on PSAB Accounting Standards)

	ACTUALS		FORECAST					
	FINAL [1]	DRAFT [2]						
	2013	2014	2015	2016	2017	2018	2019	2020
Cash provided by:								
Operating Activities								
Annual Surplus (Deficit)	10,472,794	20,532,202	27,117,231	20,759,351	17,986,499	20,128,174	31,248,197	21,389,727
Items not involving cash:								
Amortization	12,455,361	12,731,037	12,714,666	13,138,196	13,366,700	13,605,684	13,954,734	14,216,642
Loss on Disposal of Tangible Capital Assets	474,294	496,094	485,194	499,750	514,742	530,185	546,090	562,473
Employee Benefits Payable	72,088	167,905	157,402	165,299	173,592	182,302	191,448	201,053
Developer Contributions of Tangible Capital Assets	(5,527,572)	(6,325,549)	(5,926,561)	(6,104,357)	(6,287,488)	(6,476,113)	(6,670,396)	(6,870,508)
Changes in non-cash assets and liabilities								
Accounts Receivable and Other Receivables	724,384	(861,292)	(1,332,844)	61,383	138,099	(145,568)	(1,231,469)	825,401
Prepaid Expenses	(9,672)	14,189	105	(224)	(231)	(238)	(245)	(253)
Inventories	27,621	37,318	2,576	(5,483)	(5,648)	(5,817)	(5,992)	(6,172)
Accounts Payable and Accrued Liabilities	(1,231,340)	492,655	(19,485)	292,896	156,524	47,882	168,230	137,261
Deferred Revenue	4,884,950	1,189,472	(8,901,153)	(1,383,910)	1,381,000	1,005,000	(7,414,000)	1,174,000
Net change in cash from operating activities	22,342,909	28,474,032	24,297,132	27,422,900	27,423,789	28,871,490	30,786,597	31,629,625
Capital Activities								
Purchase of Tangible Capital Assets	(12,767,216)	(22,212,586)	(14,385,656)	(23,561,422)	(20,370,586)	(19,173,270)	(30,114,454)	(21,478,188)
Net change in cash from capital activities	(12,767,216)	(22,212,586)	(14,385,656)	(23,561,422)	(20,370,586)	(19,173,270)	(30,114,454)	(21,478,188)
Financing Activities								
Proceeds of Long-term Debt	954,008	-	479,548	-	-	-	-	-
Repayment of Long-term Debt	(191,899)	(272,139)	(280,448)	(328,418)	(338,933)	(349,807)	(361,048)	(372,630)
Net change in cash from financing activities	762,109	(272,139)	199,100	(328,418)	(338,933)	(349,807)	(361,048)	(372,630)
Net change in cash and investments	10,337,802	5,989,306	10,110,577	3,533,060	6,714,270	9,348,414	311,094	9,778,807
Cash and investments, beginning of year	31,828,813	42,166,615	48,155,921	58,266,498	61,799,558	68,513,827	77,862,241	78,173,335
Cash and investments, end of year	42,166,615	48,155,921	58,266,498	61,799,558	68,513,827	77,862,241	78,173,335	87,952,142

[1] These values reflect water's proportionate allocation of the 2013 audited City of London consolidated financial statements. The Water Service Financial Plan has not been audited.

[2] These values reflect water's proportionate allocation of the 2014 unaudited City of London consolidated financial statements.

Water Financial Plan

Appendix B – Costs Associated with Lead Replacement

City of London Water Service - Costs Associated with Lead Replacement

	ACTUALS		FORECAST					
	2013	2014	2015	2016	2017	2018	2019	2020
Services Replaced								
Replaced in Conjunction with a Capital Project	219	288	250	250	250	250	250	250
"One-offs" Replaced by Operations	149	73	100	100	100	100	100	100
Total	368	361	350	350	350	350	350	350
Cost Related to Lead Services								
Lead Testing	$ 5,400	$ 5,400	$ 5,562	$ 5,729	$ 5,901	$ 6,078	$ 6,260	$ 6,448
Replaced in Conjunction with a Capital Project[1]	$ 1,007,400	$ 1,324,800	$ 1,184,500	$ 1,220,035	$ 1,256,636	$ 1,294,335	$ 1,333,165	$ 1,373,160
"One-offs" Replaced by Operations[2]	$ 1,788,000	$ 876,000	$ 1,236,000	$ 1,273,080	$ 1,311,272	$ 1,350,611	$ 1,391,129	$ 1,432,863
Total	$ 2,800,800	$ 2,206,200	$ 2,426,062	$ 2,498,844	$ 2,573,809	$ 2,651,023	$ 2,730,554	$ 2,812,471

Notes: 1. Based on a blended unit cost of $4,600 each for open cut, directional drill or as part of watermain relining projects

2. From Operations average cost of $12,000/service

3. All projected costs are indexed at 3% per year commencing in 2015