TO:	**CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON APRIL 2, 2012**
FROM:	**JOHN BRAAM, P. ENG. ACTING EXECUTIVE DIRECTOR, PLANNING, ENVIRONMENTAL & ENGINEERING SERVICES & CITY ENGINEER**
SUBJECT:	**WATER CONSERVATION AND THE FUTURE OF WATER AND WASTEWATER RATES**

RECOMMENDATION

That, on the recommendation of the Acting Executive Director, Planning, Environmental & Engineering Services and City Engineer, the following report **BE RECIEVED** for information with respect to the future of water and wastewater system and rates in London.

PREVIOUS REPORTS PERTINENT TO THIS MATTER

- Water and Sewer Audit Staff Response, December 19, 2011, Civic Works Committee, Agenda Item #11
- Water, Sanitary and Storm Rate Structure Review - Fixed Rate for Water and Sanitary Charges, August 15, 2011, Built and Natural Environment Committee, Agenda Item # 7;
- Update to the Water Efficiency Program, July 19, 2010, Environment and Transportation Committee, Agenda Item #14

BACKGROUND

Purpose:

The infrastructure maintenance and renewal costs increase as the systems age and expand, irrespective of how much water flows through the water supply and sewage collection systems,. This report provides some insight on the balancing of affordable water and sewer rates with the need to maintain a reliable and safe drinking water and sanitary wastewater system now and into the future – balancing affordability with rate stability and infrastructure sustainability.

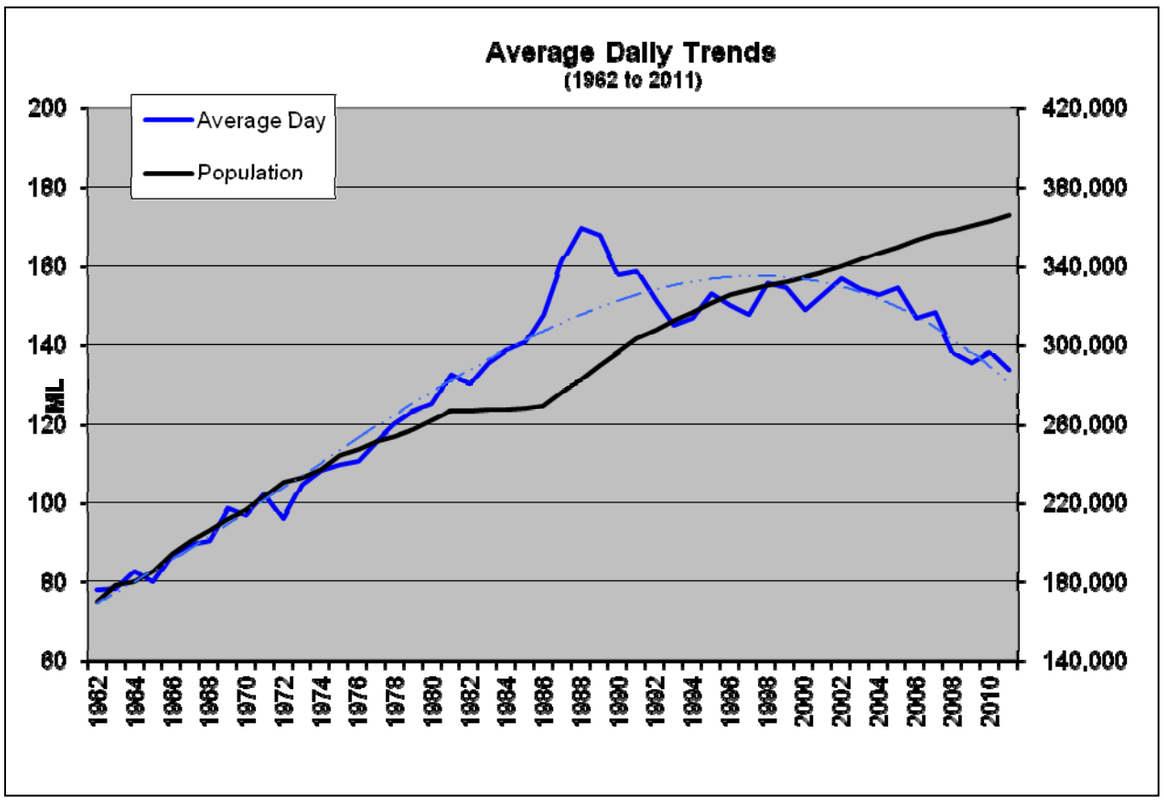
Background:

Through a reduction in overall water demand, the City has been able to save money on operational costs such as the purchase of water, electricity for pumping, and water meter renewal costs. An additional benefit of our customer's conservation practices has been the freeing up of capacity in the wastewater and drinking water system which facilitates growth and intensification while avoiding debt. The water and wastewater systems have seen a shortfall in revenue caused by the reduction in water consumption in individual homes, businesses, and industries. Our average customer Water/Wastewater Revenue Shortfall in 2011 was ($8.50) based on approximately 110,000 customers.

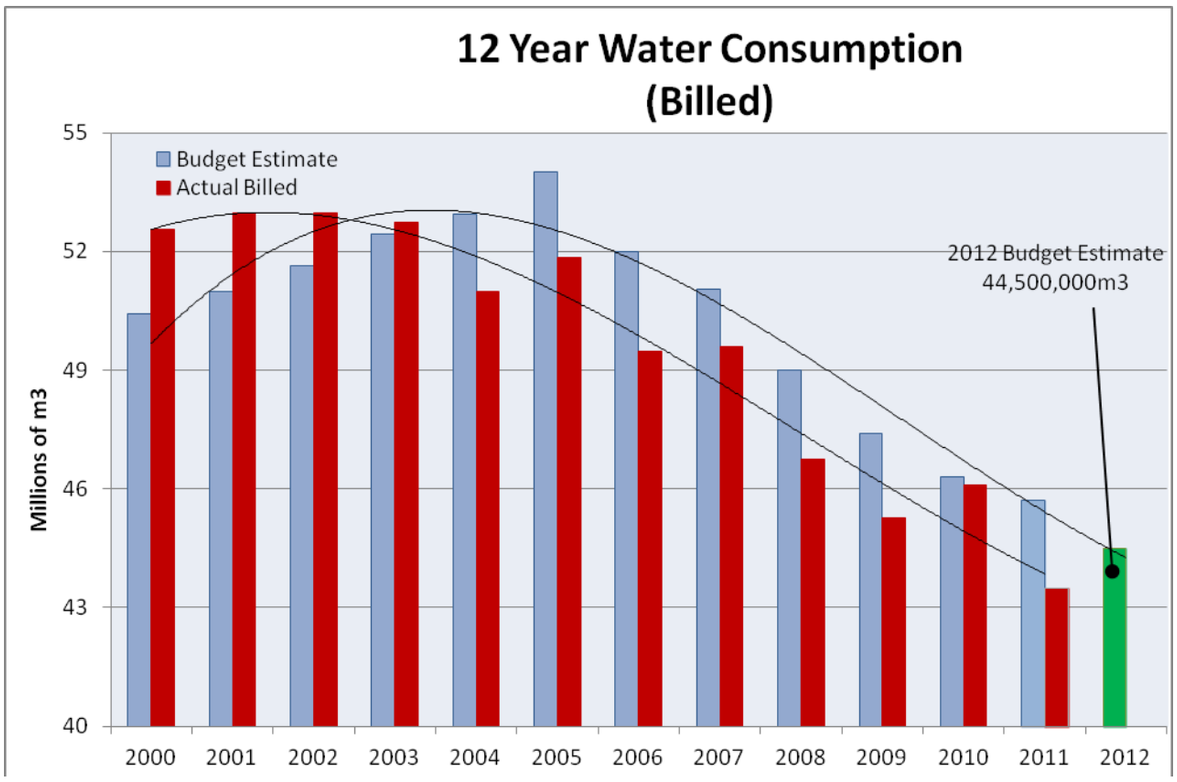
2011 Water Revenue Shortfall:	**($810,976)**
2011 Wastewater Revenue Shortfall:	**($121,784)**
Average Revenue Shortfall per customer	**($8.50)**

Discussion:

Water Use Decline:
The graph below shows the City's population growth compared with the volume of water pumped into London on the average day of the year since 1962. Although the City has grown steadily, water consumption in 2011 has fallen off to 1982/1983 levels.

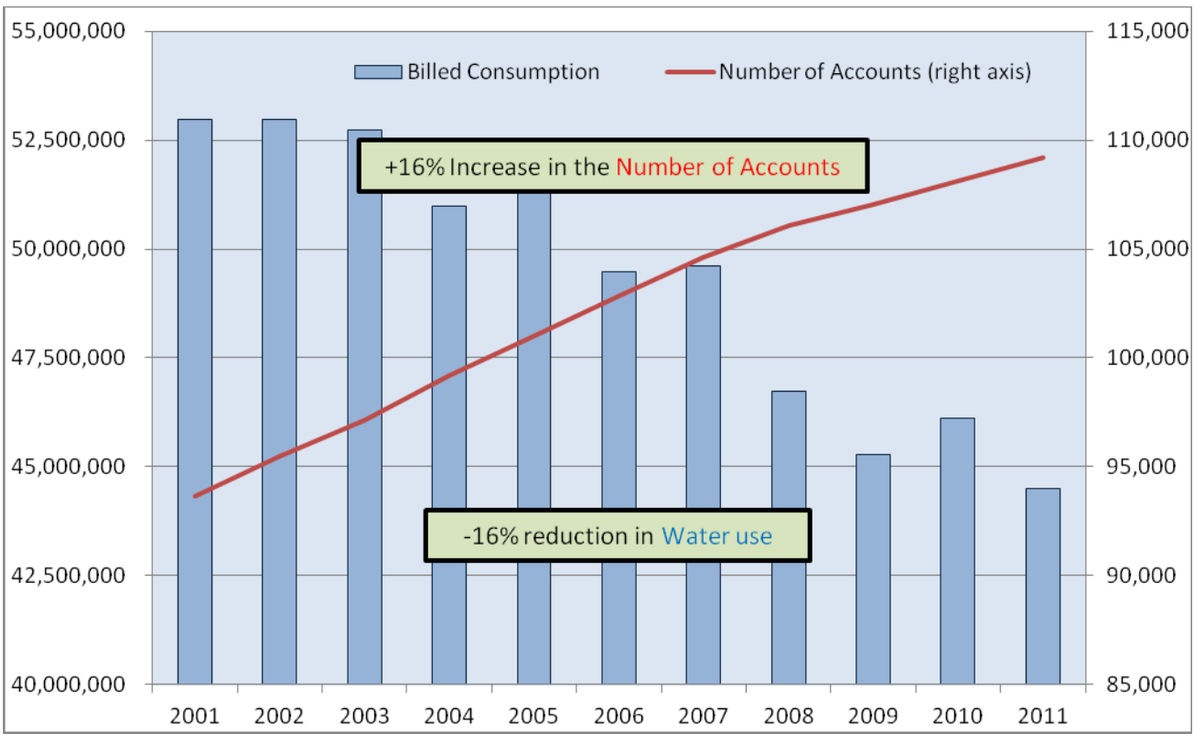


Prior to 2004, the amount of actual water consumption typically exceeded the budgeted consumption. The decline in water sales has been so severe; it has been difficult to reduce the budgeted amount quickly enough to keep pace with the change, recognizing budgets are set 18 months ahead of actual.



As depicted in the graph below the City has experienced a 16% growth in the number of water accounts (red line) since 2001 which should have resulted in additional revenue, but has been offset by an absolute loss in water sales of 16%. This represents a decline of approximately 32 per cent from consumption levels if customers had not conserved or 2.8% per year. The average residential consumer has dropped their annual consumption by over 70m^3 in that time period or an equivalent of around $200 in 2012 water and sewer charges. Water and sewer rates have been increased by 2.8% per year to offset the decline in consumption plus an additional allowance to fund capital investment to help reduce the infrastructure gap. The total water budget has increased by $15 million over the 10 year period or approximately 3.2% per year.

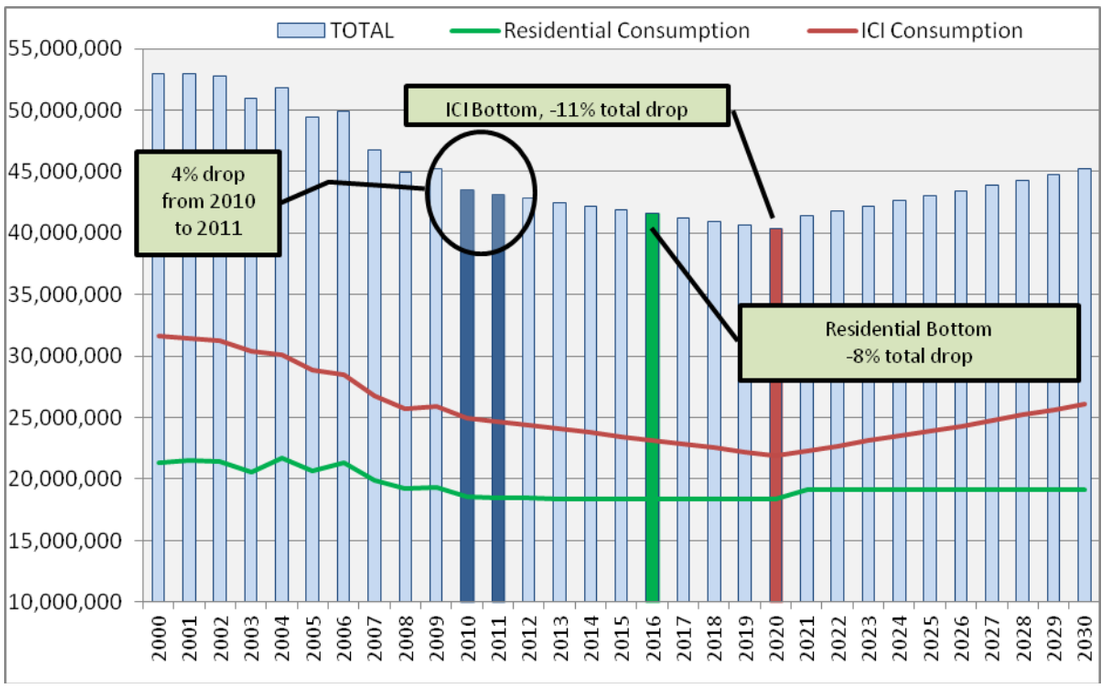
By comparison, In the same timeframe, the property tax levy has increased by $189 million as a result of assessment growth and tax rate increases, or approximately 5.4% per year.



Growth Forecast:

Since 2001 the major growth experienced in London has been in the residential housing sector with over 17,000 new accounts. Through Ontario Building Code changes and additional demand for environmentally conscientious business practices, housing builders have taken positive steps towards green energy and green construction practices. The net effect to water use has been a reduction of the household water consumption in new homes. Many of the homes built in the mid 1980's still use over 230m^3 of water per year; whereas, a typical new home built since 2006 is using around 170m^3 per annum and many of the newer homes are approaching the provincial target (150 Litres per capita per day).

In the graph below, the water consumption volume has been forecasted to 2030 to attempt to estimate future revenue projections in the financial model. While we have assumed continued growth in both housing and businesses, this does not translate into a consumption increase until around 2021.



Industrial, Commercial and Institutional (ICI) water use is slightly different in that its use will be "bottom line" driven by businesses, recognizing that any reduction in water consumption will lead to additional profit. The drivers for ICI water use reduction are typically all financial and involve making changes to process and fixtures by progressive companies.

What is Sustainability?

Sustainability in the water and sewer systems requires that funds collected offset the current and forecast expenditures of the system (pay-as-you-go) as well as planning for the future generation needs for a safe, reliable, and secure system. See Appendix A – Financial Principles.

As a result of the recent decline in consumption, the City's annual revenues do not meet the sustainability requirements of the utilities. Financial forecasting has shown that the current revenue model will result in reserve fund shortfalls as early as 2014. This implies taking on additional debt or falling farther behind on closing he infrastructure gap. It is important to note that the rate structure funding model that was implemented in the 1990's provided appropriate funding for water and sewer through primarily a volumetric based rate structure. It was very effective in providing a balance between system needs and the need for conservation. In our current reality, the rate structure strongly promotes conservation; but does not balance the collection of appropriate revenues to pay for fixed costs.

Future Revenue Opportunities

Staff are examining opportunities to develop new revenue streams that provide a service and meet the needs of London customers:

- Residential budget billing – provides each customer with a water budget for a particular time period. Usage over the individual budget would result in a water and sewer rate 2 or 3 times their normal charge. This type of rate structure is heavy on administration oversight but typically leads to higher satisfaction by the customer as their individual needs for water are met. It also rewards conservation and maintains a steady revenue stream for the utility
- Leak insurance fund – this could be an additional charge that customers have the option of applying to their bill and could be generated as a flat rate or volumetric charge. If the subscribing had a leak, then their water bill extra charge would be off-set from the fund.
- As suggested by the internal audit of the water and sewer revenue in 2011, a fire service or fire protection charge could be applied to both residential and ICI customers. The charge would assume that there are some customers that require additional fire protection but do not contribute to the overall revenue through their own water

consumption – specifically warehousing and storage facilities that have low monthly water use but require larger watermains into their properties to satisfy fire protection and insurance requirements.

- Another opportunity for additional revenue is to develop a more representative construction water charge. The current model does not take into account the method by which many home builders use water. There have been instances where a customer has moved into a new home and found their pool filled, but the water meter has not yet been installed.

Conclusions:

Recent water conservation efforts by both residential and ICI customers have proven to be significantly more effective than originally anticipated. The current water and sewer rates do not provide the funding resources required to operate and maintain a sustainable system – consistent with one of the results of the City's Strategic Plan. Without changes to the current funding model, the City could continue to be in a deficit position with respect to annual revenues collected resulting in the need to take on greater debt or increase the risk of failure.

Acknowledgements:

This report was prepared by Matt Feldberg, Water Demand Manager.

SUBMITTED BY:	RECOMMENDED BY:
ROLAND WELKER, P.ENG. **MANAGER,** **WATER ENGINEERING**	**JOHN BRAAM, P.ENG.** **ACTING EXECUTIVE DIRECTOR, PLANNING, ENVIRONMENTAL & ENGINEERING SERVICES & CITY ENGINEER**

March 27, 2012
MF/ag

Attachments: Appendix A – Excerpt for Financial Plan 2011

c.c. Tom Copeland, Wastewater and Drainage Division Manager
John Simon, Water Operations Division Manager
Rick Pedlow, Sewer Operations Division Manager
Geordie Gauld, Pollution Control Operations Division Manager

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APPENDIX A

Excerpt from
Financial Plan 2011

The supply of fresh, clean water is a very important service to the City of London and is part of *London's Advantage*. Residents 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. 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 principles of the waterworks area as well as a description of the organizational make up of the three groups involved in supplying clean water within the Water Service Area.

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 Environmental and Transportation Committee and Council in November 2008.

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

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

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

iv. Use debt to smooth out cash requirements for large infrequent life cycle or system 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 2015)*,

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.