RATE-SUPPORTED PROGRAMS (WATER AND SEWER)

The City's water and sewer operations are funded through a cost-recovery charge paid by residents and businesses who receive the services from the City. The charge pays for water consumed and discharged into the city's sewer systems. Rural residents who do not have access to municipal water or sewer services are not charged.

This section identifies the financial challenges the City faces in its water and sewer programs. It provides a 10-year forecast of capital requirements, along with a four-year forecast of additional funding requirements to operate the system.

The additional revenues generated from the rate increases outlined in LRFP II are insufficient to fund the operating and capital funding requirements over the 2006 to 2017 time period and to allow for the maintenance of a yearly $20 million reserve fund balance per Council direction. Strategies to address the funding gap are presented in this section.

OVERALL CAPITAL AND OPERATIONAL NEEDS

The City operates one of the largest and most intricate water and wastewater systems in the province. The City relies on a complex, interconnected network of two water purification plants (WPPs), 14 pumping stations, seven reservoirs, and approximately 2,650 kilometres of water distribution pipes to deliver drinking water to 700,000 customers.

In addition, the City operates and maintains approximately 2,450 kilometres of sewage collection pipes, 81 lift stations and one wastewater treatment facility. On average, 420 million litres of wastewater are treated on a daily basis.

The City has approximately 2,000 kilometres of storm sewers, 14 storm water pumping stations, and 175 storm water management facilities.

The costs associated with operating and maintaining the existing infrastructure are funded primarily from revenues generated from the water and sewer utility bill. The following table provides a summary of 2005 revenues and expenditures.

	Water ($ millions)	Sewer ($ millions)
Revenues		
• Water and sewer billing	62.6	98.9
• Fire supply/service connection charges	10.8	–
• Investments and operating revenue	6.7	9.7
	80.1	108.6
Expenditures		
• Operating programs	33.2	32.6
• Contributions to capital	31.1	36.9
• Fiscal charges/debt	1.1	13.5
• Cost allocation	14.7	25.6
	80.1	108.6

FUNDING SOURCES

Funding sources for capital, operating, and maintenance costs for water and sewer systems include:

- Water bill revenues – per cubic meter rate charged on water consumption
- Sewer surcharge revenues – percentage rate charged on the amount of water consumed and billed
- Water service charge (replaces former fire hydrant charge) – based on the size of the water meter, this charge contributes to the funding of the infrastructure costs needed to ensure adequate water supply to properties in the event of a fire
- Development charges – revenues generated from the rates applied to new residential/commercial units. These charges provide funding for the growth portion of associated capital projects as identified in the Development Charges By-law and Development Charges Background Study.
- Water and sewer reserves – funds transferred from operations to reserves that enable capital requirements to be funded on a cash basis
- Debt financing – financing source to fund major capital infrastructure

FOUR-YEAR OPERATING FORECAST

The 2007-2010 operating forecast for rate-supported programs provides Council and rate payers with a high-level overview of estimated expenditures and anticipated revenues over the next four years, based on the best available information. These estimates will be further refined and adjusted during the upcoming weeks as staff develops detailed budget requirements.

Budget pressure categories

Each year, there are increased cost pressures to deliver water and sewer services to residents. The cost pressures fall into four categories:

Maintain existing services – these are the additional resource requirements to continue delivering water and sewer programs and services at the current level of service. In 2005 and 2006, the cost of maintaining services added $5.8 million and $7.3 million respectively to the water and wastewater budgets. Increased user fees have partially offset some cost increases.

Provincial/legislated – these are the additional resource requirements resulting from provincial legislation or regulations that:

- Increase the cost of providing existing programs and services at current service levels
- Result in the implementation of a new program, or
- Enhance the service level of an existing program or services

In 2005 and 2006, budget pressures were $150,000 and $439,000 respectively for provincially mandated changes. In 2005, a Ministry of the Environment review required two new laboratory employees to perform additional water and wastewater tests. In 2006, a winter crew was added to comply with new Ontario regulations for disinfection of watermains and the implementation of new licensing requirements for testing and inspection of the water system.

Growth – these are the additional resources required to address annual population growth and to service new infrastructure and equipment in new developments. In the last two years, growth-related costs have added $357,000 and $1.53 million respectively to the water and wastewater programs.

Enhancements – these are the additional resources required to provide new programs and services to rate payers or to provide a higher level of service for existing Council-approved programs and services. In 2006, $123,000 was added to rate-supported programs, including $35,000 for a Watertrax Water Quality Database, and $85,000 to fund one staff in Infrastructure Services for flood control.

The following table summarizes the annual estimated operating budget pressures identified for the period of 2007 to 2010.

	2007 $ thousands	2008 $ thousands	2009 $ thousands	2010 $ thousands
Water Services				
Maintain existing services	2,740	2,607	2,295	2,467
Provincial/legislated	112	3,164	0	960
Growth	374	530	1,812	364
Enhancements	425	170	0	0
Fees and charges	(338)	(39)	(40)	(41)
TOTAL WATER	**3,313**	**6,432**	**4,067**	**3,750**
Sewer Services				
Maintain existing services	1,116	1,493	1,621	1,695
Provincial/legislated	0	0	200	0
Growth	440	992	2,015	227
Enhancements	551	0	0	0
Fees and charges	(120)	(2,820)	(201)	(203)
TOTAL SEWER	**1,987**	**(335)**	**3,635**	**1,719**
TOTAL COMBINED	**5,300**	**6,097**	**7,702**	**5,469**

Assumptions

The estimates above were prepared using the following assumptions:

- The maintain existing services category includes costs to provide all programs and services at current levels
- Compensation increases were based on bargaining mandates in addition to forecasted cost-of-salary increments and corresponding cost increases to employee benefits
- Inflation on energy costs was assumed to be approximately 7% per year
- Inflation on other materials, supplies and contracted services for 2007 was based on available information, and 2% increases for the subsequent 2008-2010 time period
- User fee increases were set to maintain the cost-to-revenue relationship, along with an increase to the sewer discharge/disposal fees as per the Hauled Liquid Waste Strategy approved by Council
- Impact of commissioning the new waste management facilities at Lemieux and Britannia WPPs (cost to water operations and offsetting recovery of costs in the sewer operations) for:
  - Discharge of water production waste to be treated at the Robert O. Pickard Environmental Centre (ROPEC)
  - Additional disposal costs due to the increased volume of biosolids at ROPEC
- City's participation in the Ontario One-call Consortium was included due to anticipated provincial legislation in 2010
- The commissioning of a new biosolids processing facility at the Robert O. Pickard Environmental Centre in 2009 is included, pending Council approval of a proposed new processing technology
- System growth as new infrastructure is added to water and wastewater systems

Cost allocation policy review

The City has a cost allocation policy whereby program costs incurred by other City departments in support of the water and sewer function are charged to the water and sewer bill. The policy is intended to allocate an equitable portion of program costs that would otherwise be paid for by property taxes, to the utility rate payer. The allocation of costs to the water and sewer operations is a legacy policy from the former regional government. It was designed to recover the portion of service costs that support the utility operations, in either a direct or indirect fashion.

The cost allocation policy is based on a principle of tax fairness; rural residents who do not benefit from City water and sewer services would pay for these services through their property tax bill in the absence of an allocation. The city-wide tax rate — the primary tax rate levied in the rural areas — would be higher in the absence of this cost allocation.

As part of the 2007 budget process, the current cost allocation will be reviewed to determine if it is at an appropriate level. An analysis will be conducted to examine the types of costs paid through the current cost allocation and will be provided for Council consideration when setting the 2007 budget.

RATE-SUPPORTED 10-YEAR CAPITAL FORECAST

LRFP III identifies the City's estimated capital requirements for rate-supported projects from 2007 to 2016. Similar to LRFP II, capital requirements have been grouped into three distinct categories that allow Council to prioritize funding as they did in LRFP II. Each category has different funding available for different kinds of projects. Strategies to address funding gaps may vary between categories. The categories are:

1) **Renewal of City assets –** This category reflects the funding required to maintain and/or replace existing capital assets throughout the full life of those assets. Assets include buildings, plants, pumping stations, underground pipes, vehicles, and equipment.

2) **Growth –** This category includes projects that have been identified in the Development Charges Background Study and that align with the goals contained in the City's Official Plan. More specifically, growth projects must have a development charge component that is greater than 30% of the total authority requested. This means developers must pay at least 30% of the cost of the project for it to be considered a capital growth project. Projects where the development charge component is 30% or less are usually categorized as renewal of City assets or strategic initiatives.

3) **Strategic initiatives –** This category includes Council-directed initiatives identified in the City Corporate Plan. Strategic initiatives include projects that:

- Implement the various City master plans and the Ottawa 20/20 plan
- Acquire environmental areas, or
- Enhance services currently being provided to residents

Also included in this category are management initiatives to enhance organizational effectiveness, implement new legislative requirements, and respond to changes in demand for service.

A summary of the capital needs for the 10-year period (2007-2016) is presented in the table below:

Category	**Gross ($ millions)**		**Net ($ millions)**		**Total net requirements ($ millions)**
	Water	**Sewer**	**Water**	**Sewer**	
Renewal of water and sewer assets	608	652	607	648	1,255
Regulatory requirements	48	6	48	2	50
Growth	93	215	32	15	47
Strategic initiatives	73	169	71	158	229
Total capital requirements	**822**	**1,042**	**758**	**823**	**1,581**

LRFP II had identified a total net requirement of $1,420 million for the next 10 years, which is less than the net requirement in LRFP III.

Total increases in the capital need between LRFP II and III are $161 million. Changes within each category of capital are shown in the table and are followed by explanations.

Category	**10-year net requirements ($ millions)**		
	LRFP II	**LRFP III**	**Change**
Renewal of water and sewer assets	1,004	1,255	251
Regulatory requirements	159	50	(109)
Growth	101	47	(54)
Strategic initiatives	156	219	73
TOTAL	**1,420**	**1,581**	**161**

Inflation in the construction industry

LRFP II cost projections were prepared in early 2004 and reflected prices known at that time. LRFP III has projected costs in 2006 dollars. As outlined in the previous section of this document, the City's construction industry has been subjected to significant price increases. Most rehabilitation projects have increased from between 5% and 10% as a result of significant inflationary cost increases for energy and construction materials such as steel, asphalt, and concrete.

NEW INITIATIVES AND INFORMATION ON INFRASTRUCTURE CONDITION

Reductions in the provincial/legislated and growth budget pressure categories are due mainly to significant projects included in LRFP II that have been either reduced, or are not included in LRFP III, such as the Combined Sewer Area Management Program for $79 million. Projects that have been completed, or are near completion and as a result do not have additional funding requirements in the 2007-2010 time period, include:

- Water Purification Plant Waste Management Project ($27 million)
- ROPEC Plant Expansion ($24.5 million)
- North Kanata Sewer and Pumping Stations ($19 million)

Programs such as the Service Connection Rehabilitation Program for sewer repairs have increased to $55 million in the renewal of City assets category. Other projects such as Sandy Hill flood relief ($16.5 million) and ROPEC major plant upgrades ($9.5 million) have moved from the strategic initiatives category to the renewal category to reflect the ongoing nature of the programs.

Advanced lead service replacement program

On July 11, 2006, Council approved a proactive Lead Service Replacement Program with an annual cost of $1 million. Staff has been directed by Council, through Motion Number 62/25, to "provide, for the 2007 budget a strategy to replace the City's portion of lead water services by 2012."

No estimates have been provided or included in the forecasts for this project in LRFP III. Staff is currently preparing a detailed plan on the impact this enhancement will have on taxes and rates. As per Council's direction, this plan will be brought forward as part of 2007 budget deliberations.

New provincial regulations – Clean Water Act and Sustainable Water and Sewage Systems Act

The water and wastewater industries are in the midst of an unprecedented period of regulatory change. The Province is developing regulations based on their established conceptual framework. The impact of these two acts on operations and associated costs are unknown at this time. Staff has anticipated that the regulations would be made public in late 2006. As of print time, no information had been released by the Province. Once this information is known, staff will evaluate the regulations and report to Council with a detailed plan to identify potential incremental costs, changes to operations, and impacts on the rate structure.

CURRENT RATE-SUPPORTED FUNDING GAP

When current capital funds are applied to the 10-year capital requirements, there are funding gaps in both the water and sewer capital programs. Available funding contributions to water and sewer capital programs and gaps over the next four years are summarized as follows:

	2007 ($ million)	2008 ($ million)	2009 ($ million)	2010 ($ million)	10-year totals ($ million)
Combined net capital needs	(183.5)	(187.3)	(176.8)	(137.5)	(1,581.3)
New debt	1.6	1.6	43.6	2.4	64.2
Combined capital contribution	69.4	78.7	82.6	89.8	1,086.1
Annual combined gap	(112.5)	(107.0)	(50.6)	(45.3)	(431.0)
Cumulative gap	(112.5)	(219.5)	(270.1)	(315.4)	(431.0)

Assumptions

The above funding was forecasted using the following assumptions:

- A combined water and sewer surcharge rate increase of 9% in 2007, and 5% annual increases from 2008 to 2016. The increases reflect a water rate increase of 12% for 2007, and 5% in 2008 and beyond, and a sewer surcharge decrease of 4% for 2007 (rate to be maintained to 2016). Use of debt financing for the City's share of growth projects, significant and unique regulatory capital requirements, process modifications, or strategic initiatives.
- A minimum combined water and sewer reserve fund balance of $20 million each year

LRFP II recommended net rate increases that, at the time, were believed to be sufficient to meet the long-term requirements of the operating and capital programs for rate-supported programs. Included in that analysis were assumptions about the volume of water that would be consumed. Revenues generated from rate-supported programs are in direct proportion to the volume of water consumed and billed.

Actual quantities of water billed in 2004 and 2005 were significantly less than the volume estimates prepared for LRFP II. As a result, water and sewer revenues have been lower than projected. The volume differences were previously identified in Unaccounted for Water reports and the more recent Water Tight Report to Committee and Council. Investigations are underway to identify the causes for these volume differences.

The following table identifies variances between LRFP II volume estimates and actual use, and the impact of revenue reductions.

	2004			2005		
	LRFP II	Actual	Variance	LRFP II	Actual	Variance
Volume of water billed ('000 m3)	99,700	96,691	(3,009)	99,949	93,809	(6,149)
Water revenues ($ thousands)	61,824	59,036	(2,788)	69,021	62,612	(6,409)
Sewer surcharge revenues ($ thousands)	102,628	94,108	(8,520)	109,657	98,872	(10,785)
Total revenues ($ thousands)			(11,308)			(17,194)

As consumption volumes are not reaching LRFP II estimates and capital needs have not reduced significantly, rates will need to be adjusted for revenues to cover costs.

The cumulative funding gap of $431 million identified during the 2007-2016 period is highest in the first four years representing $315.4 million. The proposed strategy to address the gap in the first four years and for the remaining years six years is as follows:

Options to close funding gap

- Increase the water rate and decrease the sewer surcharge for a combined net increase of 9% in each year from 2007 to 2010; 5% combined rate increase for 2011 to 2013; and, 2% combined rate increase for 2014 to 2016.
- Defer any strategic initiatives that are not regulatory in nature. Strategic initiatives projects can be considered in future years should additional funding capacity exist.
- Increase the amount of capital work funded by debt.
- Maintain an average balance of $20 million in the reserve funds over the 10-year period rather than the Council policy of a yearly $20 million balance.

The following table details changes to each of the rates and the debt required to be authorized to ensure that 2007 and 2008 capital renewal and growth needs can be met.

	2007	2008	2009	2010
Water rate increase	12%	16%	15%	9%
Proposed water rate	$0.868	$1.007	$1.158	$1.263
Sewer surcharge decrease	(4.6%)	(10.3%)	(9.2%)	0
Proposed surcharge rate	145%	130%	118%	118%
Net impact on water bill	9%	9%	9%	9%
	$ million	$ million	$ million	$ million
Forecast funding gap	(112.5)	(107.0)	(50.6)	(45.3)
Increase in contribution to capital reserve funds	-	7.7	6.9	7.0
Additional debt	69.6	72.3	-	-
Deferral of strategic initiatives	31.5	59.6	25.6	15.3
Draw from reserves (Contribution to reserves)	11.4	(32.6)	18.1	23.0

The proposed rate increases would generate an additional $51.2 million over the next four years and $188.9 million over the 10-year period to offset the shortfall mentioned previously.

Reducing the strategic initiatives capital requirements in the next four years decreases the gap by $132 million. Maximizing debt financing for the renewal portion of the capital program in 2007 and 2008 increases debt by $141.9 million, with the principal and interest repayments to be funded from future revenues. Rate increases will allow for an additional $21.6 million to be contributed to the capital reserve funds with a net drawdown over the four years of $19.9 million. The balance in the capital reserve fund will average approximately $24 million over the 2007 to 2010 period and $29 million over the 10-year period.