Water & Sewer Budgets
2006

The City of Kenora, Ontario, Canada

Budget Discussion

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Water & Sewer Operations

The City's water & sewer operations provide clean drinking water, and treatment of waste water, to the majority of the City's residents. Today, however, significant pockets of the City remain un-serviced by these operations. Provision of servicing to these areas has been too costly to implement without funding through senior levels of government.

The City, since its inception in 1 January 2000, has run its Water & Sanitary Sewer operations as a separate utility, funding operations fully through user fees. For 2005, the City's water operations treated and sent about 3.0 million cubic meters, or 660 million gallons, of clean water that year alone.

The City's operations are staffed by a complement of 18 full time employees. In addition, the City uses staff from its roads department to supplement water & sewer staffing as required. A City report evaluating staffing levels within the operations department recommended an increase in the water & sewer staffing complement by up to four full time positions. This report remains under review.

The water & sewer operations are currently running with insufficient staff to perform routine operations, such as flushing or regular system maintenance. Rather, repairs are done on an emergency basis. The department is operating in a reactive, rather than proactive manner. This has been compounded by both the continued increases in legislated standards, as well as a staff shortage within the department.

In an effort to further address these issues, staff have been directed to perform a service delivery review of the water & sewer operations, and bring back recommendations for implementation to Council in 2006.

Safe Drinking Water Act - What Does it Mean to the City?

The Safe Drinking Water Act came into effect in 2002. This Act was as a result of the Walkerton Inquiry, following the Walkerton tragedy in May 2000. As outlined in Section 1, the purposes of this Act are as follows:

1. To recognize that the people of Ontario are entitled to expect their drinking water to be safe.
2. To provide for the protection of human health and the prevention of drinking-water health hazards through the control and regulation of drinking-water systems and drinking-water testing.

The Ministry of the Environment (MOE) has contracted with the Canadian Standards Association (CSA) to develop a draft Drinking Water Quality Management Standard (DWQMS). According to information provided by the CSA, the DWQMS is being developed in accordance with a key recommendation of the Walkerton Inquiry, which was for *"municipal water systems to adopt quality management systems leading to improved operation, by adhering to a drinking water quality management standard"*.

All municipalities that own municipal residential drinking water systems will be required to have a Municipal Drinking Water License. There are two mandatory requirements for receiving this license. The first is the existence of an operational plan for the drinking water system developed in accordance with the guidelines provided within the DWQMS. The second is ensuring that an accredited operating authority is responsible for system operations.

System Information

Safe Drinking Water Act - What Does it Mean to the City? (Cont.)

The Safe Drinking Water Act places increased requirements, and related costs, as a result of the additional works / requirements / compliances contained within the Act. While the City already has some fairly stringent processes and monitoring in place in our existing systems, there are additional requirements under the Act that must be implemented, the costs of which must be paid through user fees. Major impacts include:

- Compliance / inspections and enforcement – The City is now required to perform increased levels of internal audit. In addition, there will be increased Ministry inspections to ensure City compliance with the new legislated requirements.
- Increased training requirements – There are increased training requirements for staff to meet the new license specifications for water production and distribution.
- Self-Supported through User Fees – The City is required to operate its water & sewer utility as a self-sufficient entity – one that cannot be reliant on the tax base of the municipality. The full cost of providing water services includes the source protection costs, operating costs, financing costs, renewal and replacement costs and improvement costs associated with extracting, treating and / or distributing water to the public. It is recognized that, for the most part, the City of Kenora has been operating its water & sewer system on a full user fee basis for a number of years. These fees, however, have not included a component related to the long-term viability of the system's infrastructure.

Ultimately, the new Act ensures that the liability related to operating a municipal water system is placed directly on the operating authority, which, for the City of Kenora, is ultimately the City itself, and its Council. Ensuring compliance with the legislation should be a key concern to each Member of Council, as well as every employee involved with the water system operations.

Existing Water & Sewer Infrastructure

Infrastructure related to the City's Water & Sewer operations includes over 143 km of water mains and services and 136 km of sanitary sewer mains, as well as both water and sewage treatment plants. Unique to Kenora from many other Northern municipalities, the City's topological layout requires 60 sewage pumping stations and 5 water booster stations, adding both to the complexity and costs related to maintaining the Kenora distribution systems.

The replacement of utility mains infrastructure is based on deteriorated piping, requiring replacement due to both age and capacity. Sanitary mains can be televised to determine remaining useful life. At present, the City has televised approximately 80% of these mains. Unfortunately, the City is unable to televise water mains – the replacement of which must be based on the age of the infrastructure and the number of repairs required.

The City currently has some mains infrastructure that is in excess of 100 years old. The estimated current expected lifespan of mains infrastructure is only 50 years. This represents a significant area of risk for the City. The failure of not repairing our municipal infrastructure will only lead to a complete failure of it.

A detailed analysis related to the existing City water & sewer infrastructure, excluding vehicles and equipment, as well as expected useful life and ongoing capital requirements to maintain the system has been included on the following page. This analysis does not account for the significant portion of the City that remains un-serviced by the City's water & sewer operations. Based on the analysis, it is evident that increased funding will be required to maintain the City infrastructure to a safe standard.

System Information

City of Kenora

Water & Sewer Operations

Estimated Future Annualized Capital Needs

(in thousands of dollars)

	Km / Quantity		Replacement Cost	Useful Life	**Annualized Cost**
Major Capital Assets - Water System					
Water Treatment Plant			$ 20,000	50	**$ 400**
Water Booster Stations	5		3,000	50	**60**
Water Storage Tanks	3		3,000	50	**60**
Water Mains - Includes:	131	km	52,400	50	**1,048**
Water Services	12.4	km	4,960	50	**99**
Water Valves	1,510				
Fire Hydrants	550				
Water Meters	6,150		1,845	25	**74**
			83,360		**1,667**
Major Capital Assets - Sewer System					
Sewage Treatment Plant			$ 15,000	50	**$ 300**
Sewage Pumping Stations	60		9,000	50	**180**
Sewer Mains - Includes:	136.5	km	40,950	50	**819**
Gravity Main				50	**-**
Force Main					
Low Pressure Main					
Services					
Sanitary Manholes	1,650				
			64,950		**1,299**
Combined System Requirements			$ 148,310		**$ 2,966**

Kenora's Water & Sewer System – How Does it Compare?

In 2000, Ontario municipalities began participating in a new program of performance measurement – the Municipal Performance Measurement Program (MPMP). Specifically, municipalities provided the Ministry of Municipal Affairs and Housing with performance measurement information. In 2001, the first results were published.

Kenora's ranking in the area of water and sewer provides some insight as to the efficiency of Kenora's system in comparison to other northern municipalities as follows:

	2004	2003	2002	2003 MPMP Reporting
Sewage				
Operating costs for the collection, treatment and disposal of wastewater / megalitre	$ 501.08	$ 489.21	$ 367.52	Upper 75th percentile 117 - 489 (Median 354) Highest cost
Number of wastewater main backups per 100 kilometers of wastewater main	5.86	5.19	-	Lower 50th percentile 0 - 322 (Median 6.6)
Water				
Operating costs for the treatment and distribution of drinking quality water / megalitre	$ 636.83	$ 566.90	$ 474.07	75th percentile 357 - 611 (Median 511) Higher costs
Number of Breaks in Water Mains per 100 kilometers of water main pipe	6.11	10.42	15.28	50th percentile 0 - 61 (Median 10)

In 2005, the City had either billed or accounted for 2.381 million cubic metres, or 524 million gallons, of water. Actual flows from the plant in 2005 were 2.978 million cubic metres, or 655 million gallons. The City currently has a total of 143.4 km of water mains and water services combined. The difference between water flows from the plant and the remaining water not accounted for, or "water loss" represents an average loss of 11,405 litres / km / day. The international benchmark for water loss is as follows:

- 10,000 litre loss / km / day is rated as "excellent"
- 20,000 litre loss / km / day is rated as "good"

Based on this information, it appears that the City is well within the acceptable standards for water loss given the City's existing water infrastructure. This is despite a significant upswing in water losses commencing in October 2005, resulting from a break in the marine water line.

2006 Budget Highlights

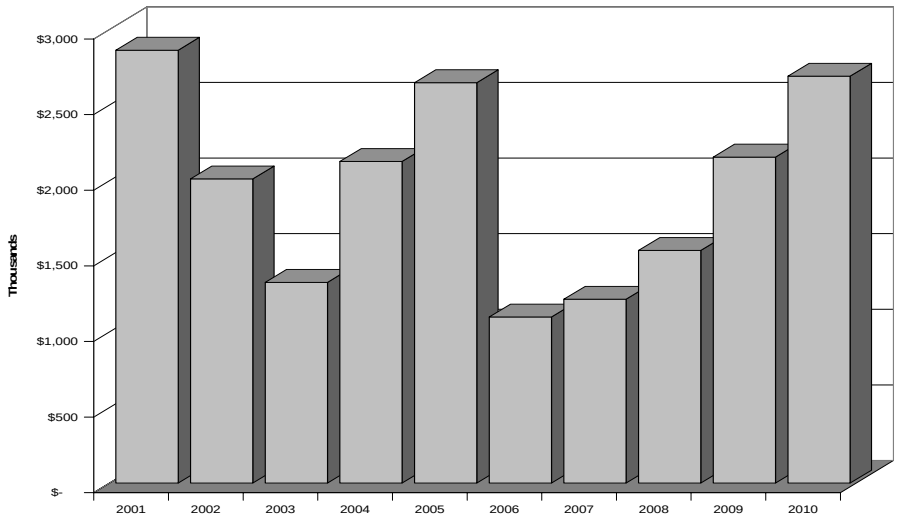
The 2006 operating budget projects total combined revenues of $5.0 million and expenditures of $4.0 million, resulting in a system operating surplus of approximately $1.0 million before local improvement revenues and capital expenditures. Proposed capital expenditures for 2006 are $3.9 million, with significant reductions in the proposed capital expenditures for the following four years. The 2006 capital expenditures are exaggerated primarily due to the Main St. Sewer Rehabilitation program, to be funded two thirds through COMRIF. A chart outlining proposed system capital expenditures over the next five years is shown to the right.

Actual and Projected System Funding Available

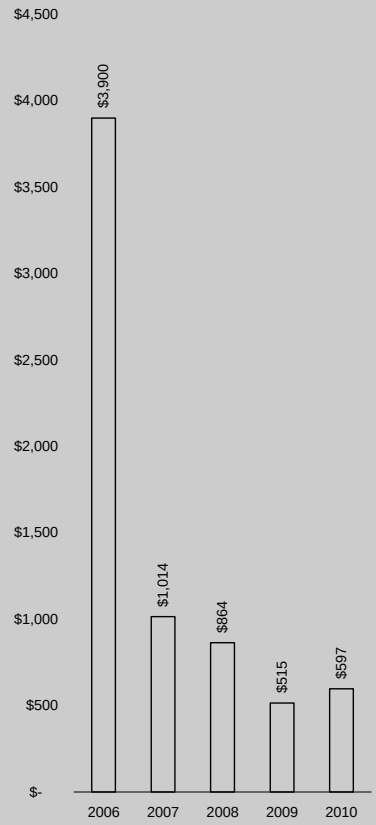
The accumulated water & sewer system surpluses have come under increased pressures during the post-amalgamation period. There has been a significant variance between the actual revenues received and the projected revenues following the metering of the City's water system. The estimate of metered rates included a non-billable water factor of 35% - partly due to conservation that would naturally occur due to the metering of water, and partly due to system losses, such as water line flushing, hydrant use, bleeders, water main breaks, etc. Unfortunately, the actual reduction in flows and non-billable water experienced combined have been significantly higher than originally anticipated. In 2005, the billed flows reflect the equivalent of a 33.9% non-billable water factor, before adjusting for reductions in consumption resulting from water metering. The City has already been required to adjust its water and sewer rates on more than one occasion to offset this.

In addition, this problem has been compounded by the new regulations and requirements related to water treatment in the Province, which have provided the City with significant, ongoing costs, as well as the allocation of costs, commencing in 2006, related to the long term debt payments on the new operations centre.

The following table outlines the actual water & sewer accumulated system funding available, for the past five years, as well as projected over the next five-year period. System funding is expected to bottom out at $1.1 million in 2006, with increases expected annually thereafter. This is primarily due to the elimination of all long term debt payments and reduction in capital spending projected during this period. It should be noted that the increases projected in 2007 through 2010 fall well short of the annualized major capital costs of over $2.97 million outlined previously.



Projected Capital Water & Sanitary Sewer Expenditures
(in thousands of dollars)



Budget Overview

Proposed Rate Structure

There is a shortfall in ongoing water & sewer system operations as a means of funding ongoing system capital requirements. This still holds true even if the City were able to secure 67% funding from senior levels of government on all major related projects. Options open to the city for this are few – reduce service levels and / or expenditures, or increase revenues.

A review of the City's existing infrastructure indicates a serious under spending with regards to the replacement of our aging water & sewer systems. The system is not currently generating sufficient net operating revenues to fund ongoing capital requirements. In addition, existing staffing shortages within the department have created further operational and maintenance deficiencies, prohibiting the implementation of any form of preventative maintenance program. To compound this problem, new legislated requirements dictate increased service requirements for the City. Based on current operations, the City cannot cut expenditures without compromising the safety and integrity of the water & sewer operations, or the quality of the water produced. It is evident that service level reductions or decreased water & sewer related expenditures are not viable options for the City.

Before considering a proposed rate increase, the City performed an analysis of water & sewer rates from other municipalities. This has been included in Appendix 4. Unfortunately, the City was unable to obtain a rate comparison from a municipality that faces the same type of challenges related to topography, with related costs, as Kenora must face in delivering these services. In addition, a number of the municipalities have not moved to metered rates, making the comparison difficult at best, and not necessarily reliable.

It was evident that Kenora water & sewer rates are high in comparison with other municipalities surveyed. In addition, Kenora has increased its water & sewer rates several times during the period since water meter implementation. These rate changes were done as follows:

- A two phase rate increase, representing a combined 39% increase in rates, implemented 20% effective 1 June 2003, and an additional 16% effective 1 January 2004.
- A further 6% increase effective 1 January 2005.

In addition, the City reviewed and updated water & sewer related charges for a number of miscellaneous type services such as water turn on / off and sewer rodding in the 2005 budget process. These charges, with the exception of water delivery charges, were adjusted to more accurately reflect the actual costs incurred for providing those services, also effective 1 January 2005.

Despite this, the water & sewer operations continue to reflect insufficient net annual revenues to fund the estimated ongoing annualized capital costs of the system. After careful consideration, and a review of all the options, Council has directed City management to review the water & sewer operations, and determine what efficiencies could be made within the department, if any, with a final report analyzing projected savings, together with a final recommendation for rate changes, to be provided back to Council in 2006. The final recommendation is to include a new rate structure for water delivery, which is currently provided at rate that does not adequately reflect the cost of providing that service.

Ongoing System Sustainability

Under the Safe Drinking Water Act, the municipality is required to ensure that its water & sewer operations function on a full user pay basis, one that is sufficient to fund not only ongoing operations but also current and future capital requirements to maintain the system in accordance with legislated standards. There is an evident funding shortfall for ongoing capital, as well as a staffing shortage within these operations. There is currently no long-range replacement plan for the existing treatment and distribution systems. The increased rates recommended within this budget address only a sufficient increase to fund ongoing major capital infrastructure, assuming the City is able to obtain 2/3's funding on all expenditures, before accounting for other capital items such as equipment.

It is anticipated that, as the final water & sewer related long term debt matures in 2006, funds previously diverted to this purpose will assist in increasing accumulated system funding available to offset for the noted deficiencies. It should be noted that, while this will not fully offset these problems, it will provide some relief from the current situation.

Potential Risks

The water and sewer treatment plants operate 24 hours per day, 365 days per year. The staffing complement for these facilities is only scheduled for 8 hours per day, 7 days a week. These plants are not manned outside of this 8-hour period. To provide effective cover off within these plants for a 24/7 operation would require an additional 7 staff per plant, representing a significant potential cost for the City. This is not currently a recommended option, although it may become required pending legislated developments.

The water and sanitary sewer distribution systems operate 24 hours per day. These systems are only manned 8 hours per day. Staff are on call to handle emergency repairs as required.

Other potential risks related to the City's water & sewer systems include:

- The Marine Water Line – the 16" marine line servicing Tunnel Island, Norman and Keewatin has failed on approximately twelve (12) occasions, jeopardizing service and fire protection to these areas. This line must be considered a priority for future reconstruction work.
- Water Shed Source Protection – the Ontario Government will be initiating the Source Protection Plan which will make the City responsible to identify and resolve any potential hazards within an outlined area of the City's drinking water intake. Some of the potential hazards will be the septic systems on Coney Island, Rat Portage sewage lagoons, Kenora Golf Club (pesticides), or any of the industrial locations located upsgream.

Discussion Items