



Water & Sewer Budgets  
2009

The City of Kenora, Ontario, Canada

Budget Discussion

System Information

Budget Overview

Discussion Items

Detailed Budget  
Schedules

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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 on 1 January 2000, has run its Water & Sanitary Sewer operations as a separate utility, funding operations fully through user fees. For 2008, the City's water operations treated and distributed about 2.90 million cubic meters of clean water with a sewage treatment volume of 3.17 million cubic meters for the same period.

The City's operations are staffed by a complement of 19 full time employees. In addition, the City uses staff from its roads department to supplement water & sewer staffing as required for all excavations and water tank truck delivery.

With the City accepting the maintenance and replacement of grinder pumps a significant increase in workload has been experienced by the department in providing a 24/7 operation.

## Hiring and Certification of Employees

At the present time employees are replaced as required. With the regulations presently in place it takes a minimum of three (3) years to fully certify an employee to the same classification as the system on which he/she is working in. Water Treatment staff require four (4) years to become certified, and require post secondary education or 450 CEU's to obtain class 3 certification.

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

The Municipal Drinking Water Licensing Program is the result of Regulation 188/07 made under the Safe Drinking Water Act, 2002. This regulation was made in response to recommendations from Justice O'Connor's Part II Report of the Walkerton Inquiry.

Under this regulation, all municipalities that own municipal residential drinking water systems will be required to have a Municipal Drinking Water License. This will replace the current system that relies on Permits and Certificates of Approval issued by the Ministry of the Environment. There are two mandatory requirements for receiving a Drinking Water License. The first is the preparation of an Operational Plan for the drinking water system developed in accordance with the guidelines provided within the Drinking Water Quality Management Standard (DWQMS). The second is ensuring that an accredited Operating Authority is responsible for system operations. In order to become accredited an Operating Authority must establish and maintain a Quality Management System (QMS).

As both the Owner and the Operating Authority of our municipal drinking water system, the City of Kenora must complete an approved Operating Plan which will include an approved Quality Management Standard.

The application date for the City of Kenora to get our Drinking Water License is February of 2010. This means that we must have our QMS and approved Operating Plan completed prior to that date.

## System Information

Water & Sewer Operations

Hiring and Certification Of Employees

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

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

We currently have a team of 4 individuals working on our QMS and Operating Plan with a planned completion of August 2009. At that time we will contract a third party to come in and audit our QMS and Operating Plan. This will allow us sufficient time to address any deficiencies and apply for our license well before 2010.

### **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 5 water booster stations, 60 sewage pumping stations and maintenance of over 400 grinder pumps, adding both to the complexity and costs related to maintaining the Kenora distribution systems. In addition, the City is also responsible for the ongoing repair and maintenance, as well as eventual replacement, of about 6,400 water meters within its water system.

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 consequence 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**

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

Existing Water & Sewer Infrastructure

**City of Kenora**  
**Water & Sewer Operations**  
**Estimated Future Annualized Capital Needs**  
(in thousands of dollars)

	Km / Quantity	Replacement Cost	Useful Life	Annualized Cost
<b>Major Capital Assets - Water System</b>				
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	6,400	1,920	25	77
		85,280		1,744
<b>Major Capital Assets - Sewer System</b>				
Sewage Treatment Plant		\$ 15,000	50	\$ 300
Sewage Pumping Stations	60	9,000	50	180
Sewage Grinder Pumps	411	1,233	12	103
Sewer Mains - Includes:	136.5 km	40,950	50	819
Gravity Main			50	-
Force Main				
Low Pressure Main				
Services				
Sanitary Manholes	1,650			
		66,183		1,402
<b>Combined System Requirements</b>		\$ 151,463		\$ 3,146

### 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:

	2007	2006	2005	2005 MPMP * Reporting
<b>Sewage</b>				
Operating costs for the collection, treatment and disposal of wastewater / megalitre	\$ 686.34	\$ 747.25	\$ 521.14	Range = 195 - 524 Median = 405 Higher costs
Number of wastewater main backups per 100 kilometers of wastewater main	61.31	24.82	35.77	Range = 0 - 217 Median = 8.2
<b>Water</b>				
Operating costs for the treatment and distribution of drinking quality water / megalitre	\$ 653.66	\$ 702.17	\$ 636.13	Range = 278 - 931 Median = 664 Moderate costs
Number of Breaks in Water Mains per 100 kilometers of water main pipe	12.21	9.92	14.5	Range = 0 - 33 Median = 13

\* 2005 MPMP information is the most recent information available at time of printing this budget document.

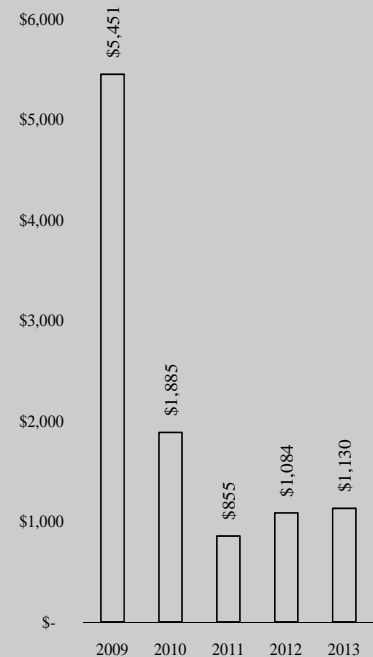
### 2009 Budget Highlights

The 2009 operating budget projects total combined revenues of \$4.76 million and expenditures of \$3.92 million, resulting in a system operating surplus of approximately \$0.84 million before local improvement revenues and capital expenditures. Proposed capital expenditures for 2009 are \$5.5 million, with significant reductions in the proposed capital expenditures for the following four years. Larger value projects included in the 2009 capital expenditures are as follows:

- ❑ Sanitary Sewer Rehabilitation (\$.5 million)
- ❑ Sultana Pump Replacement (\$.2 million)
- ❑ P2 De-chlorination (\$.5 million) – The federal government has passed legislation which requires chlorine residuals entering a watercourse be less than .05 mg/l. The only means the City has in achieving this level is to change the disinfection process from chlorination to an Ultra Violet system.
- ❑ Courthouse to Norman Main Waterworks Rehabilitation (\$3.0 million)
- ❑ Water Main Rehabilitation (\$.5 million)
- ❑ Repainting of Zone 1 Standpipe (\$.3 million)
- ❑ Media Removal & Replacement (\$.1 million) – The Filter Console Upgrade is the only project left to be done as part of the SCADA System Upgrade in 2000. This project has been deferred in the past due to funding shortfalls, however the age and availability of the components has made it necessary to upgrade the control panel.
- ❑ Filter Console Upgrade (\$.1 million) – In 2000, filter # 2 was repaired due to structural failure, new filter media was installed for that filter only. The remaining 3 filters still have the original media from when the plant was built.

A chart outlining proposed system capital expenditures over the next five years is shown to the right.

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



### Leak Detector Program

The leak detection program involves an electronic device that measures sound vibrations within the distribution system to determine where leakages may occur within certain points.

This program is intended to take a proactive approach in the location of water leaks within the distribution system. The City currently has 143.4 km of water mains, 1,500 plus valves and 6,400 plus water services. Each of these has the potential of causing leakage within the distribution system. Based on the City’s current water loss calculations, the City has experienced losses of over 40% at times. This high loss percentage was attributed to large mains leakages within the system. In general, the system should operate within a 12 – 15% loss factor on average, although the average 2008 water loss was closer to 30%. The City presently uses a reactive approach to the location of the leakage. The leak detection program would assist the City in confirming that the distribution system has as minimal loss as possible.

### 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 impacts have been significantly higher than originally anticipated. The City has already been required to adjust its water and sewer rates on more than one occasion to offset this.

## Budget Overview

2009 Budget Highlights

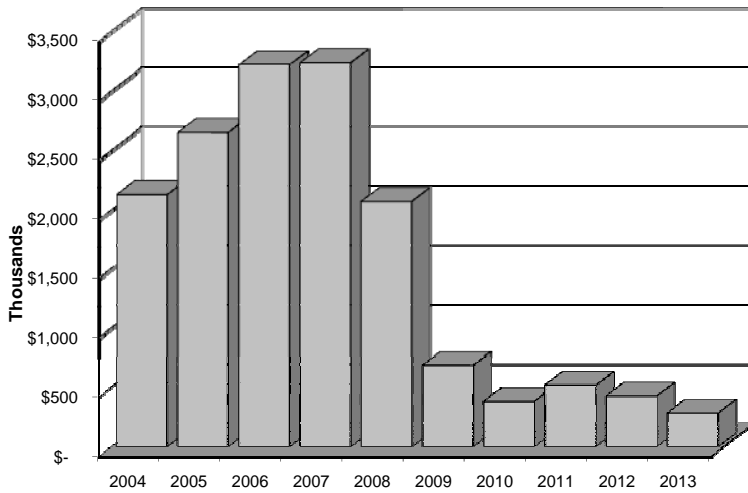
Leak Detector Program

Actual and Projected System Funding Available

**Actual and Projected System Funding Available (Cont.)**

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.

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. Available system funding is expected to continue to drop off significantly in 2009. This is primarily due to higher than average level capital expenditures being incurred in 2009. Following that, the balance of available system funding drops to at or below \$.5 million, with only \$.3 million projected by the end of 2013. At the same time, planned capital program continues to not adequately address the City’s annual capital spending requirement for water & sewer, currently estimated at over \$3.15 million annually as outlined previously.



**Budget Overview**

Actual and Projected System Funding Available (Cont.)



## Proposed Rate Structure

There continues to be 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.

In recent years, the City has performed analysis of water & sewer rates from other municipalities. 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, and therefore was not done again for 2009. Based on these past rate reviews, 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 in the three year period following water meter implementation.

These rate changes were done as follows:

- ❑ A two phase rate increase, representing a cumulative 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.

The City also 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. The water delivery charges continue to be an outstanding issue that needs to be addressed.

Under the new sustainability legislation, the City is required to develop an operational plan for the infrastructure deficit of its water distribution system. This plan is required to be in place by 2010. It is expected that resulting impacts to our ratepayers through user fee increases will be significant. In the interim, this budget reflects a rate increase of 2.1% effective 1 July 2009. This increase is based on the Consumer Price Index (CPI) for the City of Thunder Bay for 2008. Thunder Bay was chosen as it is the closest City in Ontario for which CPI information is available.

## Budget Overview

### Proposed Rate Structure

### Water Meter Program

Kenora Hydro is upgrading to smart meters in late spring / early summer 2009. Currently water meters are read by Kenora Hydro. While they have indicated a willingness to continue to provide this service over the next few years, the water & sewer department will be faced with the reading of water meters by January 2011, and possibly earlier, depending on billing system capabilities. The Department has basically 3 options, specifically hiring of meter reading staff, upgrading meters to radio frequency (licensed or unlicensed) so they can be read from a vehicle, (eg. garbage truck), or upgrade to licensed frequency to allow meters to be compatible with the new smart electric meter system. To date there has been no allocation of funds to the Capital Program for this project.

### 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.

In 2009, the City is mandated to be in compliance with the new Public Sector Accounting Board (PSAB) standards, which requires the tracking, capitalizing and amortizing of all major tangible capital assets. This change in accounting standards, combined with the new operational plan required commencing in 2010, will likely have a significant impact on the budgeting process for the City’s water & sewer department.

### 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 incremental 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 members are on call to handle emergency calls and repairs as required.

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

- ❑ 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 upstream.
- ❑ Reduction of Ammonia and Chlorine Residuals for Sewage Treatment Plant Effluent Outflows – the Federal Government will be requiring that the effluent discharge concentration amounts be significantly reduced from current levels (from .5 to .05 parts per million).

## Discussion Items

Water Meter Program

Ongoing System Sustainability

Potential Risks

### **After Hour Call Service**

With the disbandment of the Kenora Police Service the Sewer & Water Department will be required to enter into an agreement with a call centre to provide 24/7 coverage for emergency calls and alarms for the distribution/ collection systems as well as both water and wastewater treatment plants. The projected cost for this service will be approximately \$3,000 - \$5,000 per year.

## **Discussion Items**

After Hour  
Call Service