INFORMATION REPORT TO CITY COUNCIL  
1425445 ONTARIO LIMITED  
UTILITIES KINGSTON  

Report 04-223

Subject: Watering Restrictions – Technical Issues
Date of Meeting: June 15, 2004
From: J.A. Keech, President & C.E.O., Utilities Kingston
Prepared By: J.A. Keech, President & C.E.O., Utilities Kingston
Kevin Riley, Manager, Treatment, Utilities Kingston

Recommendation

Information only

Purpose

The purpose of this report is to advise Council regarding the rationale for imposing restrictions on the outdoor use of water.

Discussion

There are two water treatment plants in the City of Kingston. The Central plant located on King Street provides water for Kingston East and Kingston Central. The Kingston West Water plant located on Sunnyside Road provides water to the west. In 2003 the plants treated an average of 83,585 m³ per day of water, 57,863 m³ per day from the central and 25,722 m³ per day from the west plant. Each plant operates under a “Permit to take water” issued by Ontario Ministry of Environment that sets limits on the amount of water that can be withdrawn each day. The limits for the plants are 118,000 m³ per day (central) and 39,500 m³ per day (west).

Each plant also operates under a Certificate of Approval also issued by the Ontario Ministry of Environment that sets limits on the amount of water that can be treated and pumped into our distribution systems. These limits are 118,000 m³ per day for City Central and 45,455 m³ per day for City West.

Water consumption at both plants generally peaks in the summer months due to increased use of water for outdoor purposes (e.g. filling swimming pools, lawn and garden watering etc). In 2003 the peaks were 68,498 m³ per day (central) and 41,500 m³ per day (west) compared to minimum flows of 47,392 m³ per day (central) and 20,800 m³ (west). For each peak day, both the consumption and the quantity of water pumped varies each hour. It should also be noted that peak instantaneous flows can be even higher. All flow information is summarized for easy reference in Appendix A.
The peak usage period normally occurs between 6 pm and 10 pm as shown in the graph attached as Appendix B. The graph shows the peak day consumption pattern that occurred in June 2003 before imposing watering restrictions. Under conditions where the demand exceeds the ability of the plants to properly treat water, water levels at the water towers and the reservoirs will be drawn upon. Where these reserves are drawn too low the water storage in the distribution systems will drop, in some cases below what is required for fire protection. When this occurs it is necessary to impose watering restrictions to reduce the overall consumption and in particular to reduce the use at the times when the plant is approaching its capacity.

To ensure that we maintain essential reservoir levels for fire protection section 10 of By-law 2000-264 permits the following:

10.0 Imposition of Watering Restrictions

10.1 The Utilities General Manager may impose such restrictions on the consumption of water for the purpose of lawn and garden watering as he or she in his or absolute discretion determines reasonable and necessary for the purpose of ensuring a continuous supply of potable water.

Over the past few years staff at Utilities Kingston have tried to limit watering restrictions to only those times when it is absolutely necessary. When the restrictions were imposed, advertisements were placed in the paper and on the radio to communicate the message. The feedback we have received is that this has created confusion for our customers and city staff. Additionally, our review of the data shows that generally some restriction has been required the majority of the time between mid June to October.

Therefore, for 2004, and future years we will be imposing water restrictions under By-Law No. 2000-264 A BY-LAW RELATING TO GENERAL WATER & WASTEWATER SERVICES in a consistent manner across the entire City of Kingston between June 15, 2004 and September 30, 2004.

The watering restrictions are as follows:

Effective June 15, 2004 until September 30 2004

- Odd civic addresses may water from 5 am until 9 am on odd calendar days
- Even civic addresses may water from 5 am until 9 am on even calendar days
- Hand watering (hand held garden hose or watering can) is permitted for flower gardens, sod and car washing at any time on your scheduled watering day
- Sprinklers are restricted to between 5 am until 9 am on your scheduled watering day

As a further measure to promote conservation during the 2004 budget process, Council approved a Water Conservation Rate which applies a 25% surcharge to all water consumption greater than 25 m³ used in a month. It is hoped that this additional charge will also promote conservation of this very valuable and increasingly expensive resource.
The response of the community to conserve will help to address the capacity issue; however the West Water treatment plant’s summer peaks are beginning to meet the maximum capacity of the plant.

There remains a possibility that the watering restrictions outlined above may still not achieve the required reduction in consumption so that adequate fire pressure may be maintained if there is a very dry summer. In this case, it is possible that there may be a period where there is a complete ban on outdoor watering.

In addition, without a significant reduction of the peak demand, the need to expand the West water treatment plant will occur very soon. If the community can reduce the peak consumption, time will be available to perform the work that is necessary and planned to implement mitigating measures such as construction of the water tower in Kingston west, inter-connection of the central and west systems (as there is surplus capacity at the central plant) and other technical solutions.

Appendices

Appendix A – Summary of Key Data
Appendix B – Typical daily flows

J.A. Keetch
President and C.E.O.
Utilities Kingston

B. Meunier
Chief Administrative Officer
## Summary of Key Data

<table>
<thead>
<tr>
<th></th>
<th>Central Water Plant</th>
<th>West Water Plant</th>
<th>City East</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>m$^3$/day</td>
<td>m$^3$/day</td>
<td>m$^3$/day</td>
</tr>
<tr>
<td>2003 Minimum Day Flow</td>
<td>47,392</td>
<td>20,800</td>
<td>4,869</td>
</tr>
<tr>
<td>2003 Average Day Flow</td>
<td>57,863</td>
<td>25,722</td>
<td>7,408</td>
</tr>
<tr>
<td>2003 Maximum Day Flow</td>
<td>68,498</td>
<td>41,500</td>
<td>11,708</td>
</tr>
<tr>
<td>2003 Peak Instantaneous Flow Rate</td>
<td>90,800</td>
<td>58,400</td>
<td>12,000</td>
</tr>
<tr>
<td>Certificate of Approval Daily Maximum</td>
<td>118,000</td>
<td>45,455</td>
<td>n/a</td>
</tr>
<tr>
<td>Permit To Take Water Daily Maximum</td>
<td>118,000</td>
<td>39,560</td>
<td>n/a</td>
</tr>
<tr>
<td>Permit To Take Water Short Term Maximum</td>
<td>82 cu. m. per minute</td>
<td>56 cu. m. per minute</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Note: The City East Data is recorded at the Pumping Station on the East Shore of the Cataraqui River and is included in the Central Water Plant Data.
West WTP Flows Jun 30, 2003

Flow Rate m3/d

- Treated Flow

Time of Day
Information Report To City Council
1425445 Ontario Limited
Utilities Kingston

Report 04-224

Subject: Cataraqui Crossing Sewer and Water Construction
Noise By-law – Hours of Activity

Date of Meeting: June 15, 2004

From: J.A. Keech, President & CEO, Utilities Kingston

Prepared By: J. Miller, Manager Utilities Technical Services

Recommendation:

Information Report.

Purpose:

The purpose of this report is to advise Council of the reinstatement of construction activity and the intended hours of operation to ensure completion of the work.

Discussion:

McNally Construction has requested that they be permitted to undertake construction activity 24 hours per day Monday to Saturday in order to dredge and install water and sewers mains under the Cataraqui River.

The Crossing project involves the construction of new water main and twin sanitary sewer mains crossing the Great Cataraqui River from the River Street Sewage Pumping Station on the west shore to Green Point on the east shore. The works will parallel the existing water and sewer pipes north of their current location. Earlier this year the first section of sewer and water main pipes were installed from the east shore westerly across the navigation channel. Construction has been halted due to environmental concerns related to the annual fish spawning season.

Recommencement of dredging work for the final sections of sewer and water main is planned to start by the first week in July 2004. This will be for the area between the navigation channel and the west shore of the river near the River Street Pumping Station. In order to minimize environmental impacts, costs and ensure timely completion, there has been a request to permit dredging 24 hours a day.

The activities which may be of concern are similar in nature to the previous request to permit 24 hour operations granted by Council last year. They include the crane dredge operation, tug boats ferrying barges, generators for lighting and transport trucks coming and going from the site. The nature of the operations will be similar to that which
occurred last fall. No issues arose during the previous exemption which enabled 7 days a week, 24 Hour operations.

Similar to the last request for 24 hour operations Utilities Kingston has undertaken a communications plan to advise area residents of the intended hours of operation, contact personnel in the event of any concerns being raised. McNally Construction and Utilities Kingston will investigate and respond to concerns of noise and will be available to resolve any complaints that may arise from the work. The last period of 24 hour operations was from October to December 2003 and went smoothly with no concerns being raised during the operations. We recognize that this request particularly during July to September may cause greater levels of impact or concern. However we will monitor the situation and levels of activity by the contractor in order to address issues as they arise.

Existing Policy:

The Noise By-law (2004-52) provides under Schedule C specific exemptions from the noise prohibitions which includes the operation of utility vehicles and equipment and includes agents or contractors operating on behalf of Utilities Kingston or the City of Kingston. Although the provisions for exemption are provided in the By-law, the significance of this project warrants informing Council of the intention to permit 24 hour operations and communicating this to area residents.

Contacts/Other Departments Consulted:

Ms. Kim Leonard, Acting Manager, Building and Licensing, (613) 384-1770 ext. 3222
Mr. Allen Lucas, Utilities Engineer, (613) 546-1181 ext. 2250
Mr. Jim Miller, Manager Utilities Technical Services (613) 546-1181 ext 2475

Appendices:

Copy of notice to residents issued by Utilities Kingston.

J.A. Keach
President and C.E.O.
Utilities Kingston

Bert Meunier
Chief Administrative Officer
June 1, 2004

**NOTICE**

Regarding Reconstruction of:

The Great Cataraqui River Utilities Crossing

The Utilities Crossing project involves the construction of new water main and twin sanitary sewer mains crossing the Great Cataraqui River from the River Street Sewage Pumping Station on the west shore to Green Point on the east shore. The works will parallel the existing water and sewer pipes north of their current location. Earlier this year the first section of sewer and water main pipes were installed from the east shore westerly across the navigation channel. Construction has been halted due to environmental concerns related to the annual fish spawning season.

Recommencement of dredging work for the final sections of sewer and water main is planned to start by the first week in July 2004. This will be for the area between the navigation channel and the west shore of the river near the River Street Pumping Station. In order to minimize environmental impacts, costs and ensure timely completion of the construction work, McNally Construction, the contractor has submitted a request to permit dredging 24 hours a day Monday to Saturday.

The activities which may be of concern include the crane dredge operations, tug boats ferrying barges, generators for lighting and transport trucks coming and going from the site. In order to minimize your inconvenience, the contractor and Utilities Kingston will investigate and respond to concerns of noise. We ask your cooperation in this matter and request any concerns with the construction activities be directed to:

- Allen Lucas, Utilities Engineer, Utilities Kingston - 546-1181 extension 2250,
- Tom Hickey, Engineering Assistant, Utilities Kingston - 546-1181 extension 2463,
- Steve Ouellette, McNally Construction 531-0620
- Utilities Kingston Customer Technical Staff - 546-1181 extension 2285, or after hours to the 24 hour emergency line at 546-1181

Please feel free to contact the individuals listed above for any additional information or questions.

Thank you,
Utilities Kingston