

8.

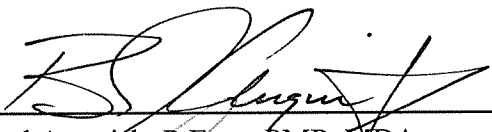


PO Box 1749
Halifax, Nova Scotia
B3J 3A5 Canada

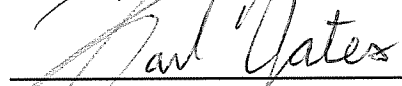
Halifax Regional Council
November 22, 2005

TO: Mayor Kelly and Members of Halifax Regional Council

SUBMITTED BY:



Brad Anguish, P.Eng., PMP, MBA,
Director, Environmental Management Services



Carl Yates, M.A.Sc., P.Eng.
General Manager, Halifax Regional Water Commission

DATE: November 10, 2005

SUBJECT: Status of Various Small Water/Sewer Systems- District 2

INFORMATION REPORT

ORIGIN

Councillor Krista Snow requested staff prepare an information report on the following water and sewer systems: Miller Lake water system, Collins Park water system, Lockview (Fall River) sewer system, Thompson Drive (Wellington Subdivision) sewer system. It was requested that the staff report address the following issues:

- What is the condition and/or performance of all four systems?
- Are these systems adequately serving the residents and at a reasonable cost?
- When will these systems be at capacity or outdated by environmental standards?
- What steps is HRM taking to be proactive in upgrading these systems?

BACKGROUND

Miller Lake Water System

The Miller Lake water system serves 44 residential customers on Oakes Road and Miller Lake Road in the Miller Lake subdivision. This system was constructed as a private utility in the 1960's by the subdivision developer. This is a groundwater system served by three drilled wells in the subdivision. The system was operated initially by the subdivision developer and later by the Miller Lake Homeowners Association.

Over the years of private operation the system owners faced concerns about lack of water supply and high levels of arsenic in some of the wells. In 2000, the Nova Scotia Utility and Review Board, responding to inquiries from system customers, had the system studied and requested the Halifax Regional Water Commission to consider ownership of the system. HRWC operated the system for a period of time for the home owners association and assumed ownership of the system on April 1, 2002. Canada-Nova Scotia Infrastructure funding was obtained and necessary upgrades were made to enable HRWC to take over the system, including the installation of water meters and construction of a water treatment plant for arsenic removal.

Collins Park Water System

The Collins Park water system serves approximately 75 customers in the Collins Park and Kendalmark subdivisions. Collins Park was developed with on-site services in the early 1970's. In response to high levels of arsenic in private wells, Halifax County Municipality constructed a water supply and distribution system in 1984/85. Collins Park is a surface water system taking water from Lake Fletcher, across Highway 2 from the Wellington Fire Department.

In 1996, with municipal amalgamation, this water utility was transferred to the Halifax Regional Water Commission.

Lockview (Fall River) Sewer System

This system was constructed in 1994 by the Halifax County Municipality in response to a public health risk in the community associated with failing on-site sewage systems. There are approximately 146 properties connected to this system. The majority are residential but the customer base includes three schools as well as commercial development including a retail complex. Future demand on the system is expected to increase as vacant properties develop within the serviced area.

The system consists of approximately 2.9 km of gravity wastewater main, four pumping stations and a wastewater treatment plant. The wastewater treatment plant provides a tertiary treatment level and the treated effluent is discharged into Fletchers Run, which flows northward into Lake Fletcher.

Thompson Drive (Wellington Subdivision) Sewer System

This system was constructed as a private utility in 1976 by the developer of the subdivision. There are approximately 29 properties connected to this system. All of these properties are residential except for two which are commercial developments. The entire area tributary to the Wastewater Treatment Plant is developed and thus little future change is expected in the domestic flow rate into the wastewater system.

The system consists of approximately 0.5 km of gravity wastewater main, one pumping station and a wastewater treatment plant. The wastewater treatment plant provides a secondary treatment level and the treated effluent is discharged into the watercourse which flows from Lake Fletcher to Shubenacadie Grand Lake.

DISCUSSION

Miller Lake Water System

- What is the condition and/or performance of the system?

This system provides the Miller Lake customers with a reliable supply of water that meets all of the Guidelines for Canadian Drinking Water Quality. The treatment system is quite new and operates well.

Quantity of water available has always been a challenge in this system. Since assuming operation, HRWC staff has observed a decline in groundwater levels and available water from the well system. This is possibly due to an increased number of withdrawals in the area. HRWC had a preliminary hydrogeological study done which determined that the prospect of locating additional wells capable of meeting the system's needs was not good. When the system's water supply is not capable of meeting the system demands, HRWC supplements the supply by trucking in water from the Pockwock system.

- Is this system adequately serving the residents and at a reasonable cost?

This system is adequately serving the residents by providing a reliable supply that meets the Guidelines for Canadian Drinking Water Quality. Lawn watering restrictions are typically imposed to help with supply management. Under the current regulatory framework that sees each separate water utility operate on its own rate base, the cost charged to residents is on average \$752 per year, which is the highest of all systems owned by HRWC. Costs to HRWC are somewhat higher due to the difficulty in maintaining a reliable supply.

- When will this system be at capacity or outdated by environmental standards?

This system is at capacity due to the lack of adequate supply.

In 2002, the Province of Nova Scotia released a new Groundwater Treatment Standard with full compliance mandated for April 1, 2008. Because the treatment facility is relatively new, the current areas of non-compliance are minor and are expected to be addressed by April 1, 2008.

- What steps is HRWC taking to be proactive in upgrading this system?

HRWC has been developing a strategy for management of the 2008 requirements for all of its water systems and provision has been made in the 5 year capital budgeting process.

Collins Park Water System

- What is the condition and/or performance of the system?

This system provides the Collins Park customers with a reliable supply of water that meets all of the Guidelines for Canadian Drinking Water Quality. The system performs very reliably. A precautionary boil water advisory was briefly imposed in 2001. Treated water can have high colour in periods of high run off, however bacteriological safety remains high.

- Is this system adequately serving the residents and at a reasonable cost?

This system is adequately serving the residents by providing a reliable supply that meets the Guidelines for Canadian Drinking Water Quality. Lawn watering restrictions are occasionally imposed in summer to help with supply management. While the quantity of supply from Lake Fletcher is not an issue, the ability to treat and pump it in periods of extensive lawn watering can be an issue. Under the current regulatory framework, that sees each separate water utility operate on its own rate base, the cost charged to residents is on average \$411 per year.

- When will this system be at capacity or outdated by environmental standards?

This system is at capacity due to the limited treatment and distribution system. Occasional water shortages are experienced due to high summertime flows. Service is maintained by trucked-in water from the Pockwock system. Permission to connect to the system is granted only to infill customers.

In 2002, the Province of Nova Scotia released a new Surface Water Treatment Standard with full compliance mandated for April 1, 2008. While the system meets current guidelines it is not capable of meeting the requirements without extensive capital upgrades.

- What steps is HRWC taking to be proactive in upgrading this system?

Because of the current regulatory requirement that each utility operate on its own rate base, and the limited number of customers, HRWC has been working with the province to explore

alternative means of achieving the same intent of the guidelines with less costs.

These discussions to date have had some moderate results. An upgrade to the Collins Park water treatment plant has been placed on the application list for the Municipal Rural Infrastructure Fund (MRIF).

HRWC has been developing a strategy for management of the 2008 requirements for all of its water systems and provision has been made in its 5 year capital budgeting process.

Lockview (Fall River) Sewer System

- What is the condition and/or performance of the system?

This system is in good condition and provides acceptable performance.

In 2000 an inflow/infiltration study was undertaken for this sewershed. It indicated that flows were within typical guidelines. The study made some minor recommendations to minimize inflow/infiltration. This work was subsequently undertaken by HRM. The plant does experience some challenges with providing tertiary treatment during periods of high wet weather flow.

- Is this system adequately serving the residents and at a reasonable cost?

This system is adequately serving the service area and at a reasonable cost.

All HRM properties which are provided wastewater service but not water service are charged for wastewater services based on the average water consumption of similar metered customers within HRM. The properties connected to this wastewater system are in this category as they are not provided with central water service. Currently the charge for residential customers with wastewater service only is approximately \$264 per year for the Environmental Protection and Wastewater/Stormwater Management charges.

- When will this system be at capacity or outdated by environmental standards?

The Fall River Wastewater Treatment Plant was designed to service a specific service area. It has been determined that based on the current flows at the plant, the amount of vacant land within the service boundary and current zoning, that there is no further capacity available to service lands outside the existing service boundary. Also, additional pressure may be placed on the wastewater system if residents are provided with central water in this area as residents may tend to use more water, and thus generate more wastewater, when connected to a central water system.

At this time there are no known pending changes to environmental standards which would impact this facility. The system is presently designed to a high standard (i.e. tertiary) and complies with its operating permit.

- What steps is HRM taking to be proactive in upgrading this system?

At this time there are two planned upgrades to the Fall River Wastewater Treatment Plant. These are an odour control system and an additional sand filter. Both of these upgrades are being considered as part of the capital budget process for 2006/07. The odour control system is to mitigate the potential issue of complaints from residents who have constructed in proximity to the Plant. The additional sand filter will provide redundancy in the system and provide additional tertiary treatment capacity during periods of high wet weather flow.

HRM has no plans to expand the flow capacity of the plant so as to permit the connection of properties located outside the existing service boundary or to permit a higher density of development than that presently permitted by zoning within the service boundary. If additional flow capacity was an objective, it would probably require an entire new treatment facility at a new site. The existing treatment plant is such a type/configuration that it would not be economical to expand and, as well, there is very limited land to accommodate a new facility at the existing site. Expansion would also require detailed consideration of the assimilative capacity in the receiving environment including Fletchers Run and Lake Fletcher to determine if it would be appropriate to add loading to this fresh water body.

Thompson Drive (Wellington Subdivision) Sewer System

- What is the condition and/or performance of the system?

The system is in poor physical condition. The system provides acceptable treatment performance during dry weather but the high flow resulting from some wet weather events overload the system capacity.

A 2003 study identified that the Wellington Subdivision Wastewater Treatment Plant should be replaced within three years primarily due to its poor physical condition.

In 2005 an inflow/infiltration study was undertaken for this sewershed. It indicated that significant work was required to reduce inflow/infiltration into the wastewater collection system and/or provide storage so as to reduce the impact of high wet weather flow on the Wastewater Treatment Plant.

- Is this system adequately serving the residents and at a reasonable cost?

The system performs adequately during dry weather but it is impacted by wet weather events and major work is required on this system in the near future. It is expected that the cost of these upgrades could be substantial (i.e. in the order of \$1.4M).

All HRM properties which are provided wastewater service but not water service are charged for wastewater services based on the average water consumption of similar metered customers within HRM.

The properties connected to this wastewater system are in this category as they are not provided with central water service. Currently the charge for residential customers with wastewater service only is approximately \$264 per year for the Environmental Protection and Wastewater/Stormwater Management charges.

- When will this system be at capacity or outdated by environmental standards?

The Wellington Subdivision Wastewater Treatment Plant is at capacity. It presently provides secondary treatment as required by the current permit but it should be upgraded to a tertiary treatment level so as to comply with current regulations.

- What steps is HRM taking to be proactive in upgrading this system?

This project ranks as a Priority No. 1 Project relative to the Stormwater and Wastewater Priority Rating Process approved by Council on February 1, 2005. Staff is planning for major upgrades to this system which will include the replacement of the Wastewater Treatment Plant. The anticipated timing for this work, pending Council approval, is within the next two years.

BUDGET IMPLICATIONS

None.

FINANCIAL MANAGEMENT POLICIES / BUSINESS PLAN

This report complies with the Municipality's Multi-Year Financial Strategy, the approved Operating, Capital and Reserve budgets, policies and procedures regarding withdrawals from the utilization of Capital and Operating reserves, as well as any relevant legislation.


ALTERNATIVES


None.

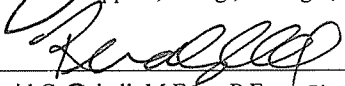
ATTACHMENTS

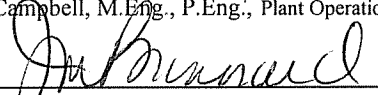
None.

A copy of this report can be obtained online at <http://www.halifax.ca/council/agendasc/agenda.html> then choose the appropriate meeting date, or by contacting the Office of the Municipal Clerk at 490-4210, or Fax 490-4208.

Report Prepared by :  David Ellis, P.Eng., Sr. Environmental Engineer, 490-6716

Report Approved by: 
John P. Sheppard, P.Eng., Manager, Environmental Engineering Services, 490-6958


Reid Campbell, M.Eng., P.Eng., Plant Operations Manager, Halifax Regional Water Commission, 490-4877

Financial Review : 
Joan Broussard, MBA, Financial Consultant, 490-6267