

1

WATER AND WASTEWATER DELIVERY IN YORK REGION

(Regional Council at its meeting on October 20, 2011 amended this Clause as follows:

Committee Recommendation 1 be amended to read as follows:

1a) The Region conduct a detailed water and wastewater service delivery analysis by September 2012 to fully assess the benefits, risks and financial outcomes associated with moving to single-tier service integration; and

b) the analysis be done in consultation with the nine local municipalities.)

The Finance and Administration Committee recommends the adoption of the recommendation contained in the following report dated September 22, 2011, from the Commissioner of Finance and Commissioner of Environmental Services, with the inclusion of the following additional recommendations:

1. The Region conduct a detailed water and wastewater service delivery analysis by September 2012 to fully assess the benefits, risks and financial outcomes associated with moving to single-tier service integration, and
2. Staff develop terms of reference for this comprehensive analysis and report back to the Committee by January 2012.

1. RECOMMENDATION

It is recommended that this report be received for information.

2. PURPOSE

At the May 2011 Finance and Administration Committee meeting, staff were directed to review the feasibility of moving toward a single-tier model for delivery of water and wastewater services within the Regional Municipality of York. The Chief Administrative Officer indicated staff would provide a report on the legislative framework and current local municipal practices, including costs of service delivery in each of the local municipalities. This report assesses current legislation governing municipal structures and provides a high-level overview of current water and wastewater practices and service delivery costs.

3. BACKGROUND

Water and wastewater service delivery framework has been examined twice in the last two decades

In 1995, the Governance Review Committee and Legislation and Intergovernmental Affairs Committee considered alternative delivery options for selected services in York Region and recommended further study on the feasibility of moving water and wastewater services to the Region. This initiated the Water and Wastewater Task Force and a series of reports in 1996 and 1997. In 1998 it was indicated to Council that accounting records were not adequate to conduct a cost comparison of delivery options and there was little duplication in services between the Region and local municipalities. Infrastructure and service delivery responsibilities were revisited again in September 2006. The outcome of the most recent review proved to further delineate responsibilities between the Region and local municipalities.

Current delivery structure is a partnership approach through two-tiered municipal services

Presently water and wastewater delivery in York Region is a multi-jurisdictional undertaking. Water and wastewater servicing in the Region relies on operating contracts with large municipalities along Lake Ontario for treatment processes and collaborative partnerships with local municipalities to connect services with end-users.

Sources for York Region's drinking water include both surface water, namely Lakes Ontario and Simcoe, and groundwater from Regional aquifers. Approximately 85% of York Region's drinking water is sourced from Lake Ontario, 3% from Lake Simcoe and 12% from groundwater. The drinking water system consists of the York Water System, which serves the larger urban communities, and a number of smaller individual systems serving the smaller communities of York Region.

To provide residents and businesses with drinking water, York Region purchases water from the City of Toronto and Peel Region, operates and maintains two water treatment facilities, 17 pumping stations, 37 storage facilities (elevated tanks and reservoirs), 39 production wells, and almost 230 km of transmission mains. The Region acts as a water "wholesaler" supporting water treatment, supply, storage, pumping and transmission through large diameter mains. In turn, local municipalities distribute drinking water to local customers. *Attachment 1* illustrates the drinking water delivery system.

Responsibility for wastewater servicing in York Region is divided between the local municipalities, which are responsible for local wastewater collection and local pumping, and the Region, which is responsible for major pumping stations, trunk sewers and treatment facilities. The Region's wastewater system is also divided into distinct service areas. The York-Durham Sewage System (YDSS) serves the Region's larger urban

communities and carries 95% of the total wastewater generated in the Region to the Duffin Creek and Lakeview water pollution control plants on Lake Ontario for treatment. The Woodbridge sewage system collects and transports sewage flows to Peel Region's Lakeview Water Pollution Control Plant. Smaller water pollution control plants provide treatment for wastewater to the following communities: Keswick, Sutton, Kleinburg, Mount Albert, Holland Landing and Nobleton. *Attachment 2* illustrates York Region's wastewater collection system.

Most water and wastewater delivery structures in Ontario are single-tier

There are 444 municipalities in Ontario of which 30 are upper-tier municipalities. Most municipal water and wastewater delivery services are the responsibility of a single-tier of government. In fact, the only exceptions are Niagara, Waterloo and York Regions. In these Regions, water and wastewater service responsibilities are shared between the upper and lower-tier municipalities. However, Waterloo operates a hybrid model where the Region provides full service to two of its seven lower-tier municipalities. Waterloo Region assumed full responsibility for providing water and wastewater services to Wellesley and North Dumfries Townships at the request of each local council. No transferring of staff occurred with the change in service delivery model.

Table 1 shows the governance and water and wastewater delivery structures of the 12 most populous municipalities in Ontario. There has been a progression over time where larger municipalities have moved towards single-tier delivery of water and wastewater services. Two service integration trends are evident when reviewing recent changes in municipal service delivery in Ontario: full municipal service amalgamation and partial service integration. Toronto, Ottawa, and Hamilton are examples of full service amalgamations where all municipal services delivered by upper and lower-tier municipalities are amalgamated into a single municipal entity. Peel, Halton and Durham are examples where upper-tier municipalities assume full responsibility for delivering specific municipal services such as water and wastewater. Presently, nine of the most populous municipalities in Ontario deliver water and wastewater services through a single-tier municipal government model. York has nearly twice the population of the next largest municipality that has a two-tier delivery system.

Table 1
Municipal Structures and Water and Wastewater Delivery for the 12 Most
Populous Ontario Municipalities

Municipality	Governance Structure	W&WW Delivery Structure	Population (2008)
Toronto	City – single-tier	Single-tier	2,738,600
Peel	Regional – two-tier	Single-tier	1,263,000
York	Regional – two-tier	Two-tier	1,011,360
Ottawa	City – single-tier	Single-tier	898,150
Durham	Regional – two-tier	Single-tier	611,900
Waterloo	Regional – two-tier	Single and Two-tier	533,700
Hamilton	City – single-tier	Single-tier	519,109
Halton	Regional – two-tier	Single-tier	467,200
Niagara	Regional – two-tier	Two-tier	442,121
London	City – single-tier	Single-tier	358,838
Windsor	City – single-tier	Single-tier	205,343
Sudbury	City – single-tier	Single-tier	160,700

Niagara Region currently conducting high-level single-tier service delivery review

In April 2011, Niagara Regional Council approved a \$100,000 study to review water and wastewater service delivery. The terms of reference for the study includes a review of the “direct, indirect, tangible and intangible inputs, outputs and outcomes associated with providing water and wastewater services within Niagara”. The scope of the terms of reference specifically indicates a governance model will not be included as a recommendation; the purpose of the review is primarily to obtain staffing and financial information from the lower-tier municipalities.

4. ANALYSIS AND OPTIONS

Transferring services between tiers requires “triple majority”

The legislative framework that governs the transfer of water and wastewater services from the local municipalities to the Region is governed under section 189 of the *Municipal Act, 2001*. There are specific procedural requirements, known as the “triple majority”, that need to be followed. Subsection 189(2) provides that the Region may only assume a local service if the following three conditions are met:

1. A majority of all votes on Regional Council are cast in its favour (i.e., not just a majority in attendance at the meeting); and
2. A majority (i.e., 5) local councils have consented by resolution; and
3. The total number of electors in the consenting municipalities form a majority of the eligible Regional electorate.

If Regional Council were to move forward and assume responsibility for integrated service delivery from only selected municipalities these rules would also apply. This same legal procedure was followed when the Region of Waterloo accepted responsibility for full water and wastewater service in the Townships of Wellesley and North Dumfries.

When the transfer process is complete, the decision cannot be reversed merely by repealing the assumption by-law. Transferring the service delivery back to a local municipality could again require initiation of the “triple majority” process.

Several pieces of legislation guide water and wastewater delivery and affect the current co-operative service delivery model

Municipal drinking water systems are heavily regulated and subjected to rigorous oversight by the Ministry of the Environment.

The *Clean Water Act, 2006* and the *Safe Drinking Water Act, 2002* were established as a result of the Walkerton Inquiry and respectively address drinking water source protection and drinking water regulation.

The *Safe Drinking Water Act, 2002* has the most significant impact on the operation of municipal drinking water systems. The *Safe Drinking Water Act, 2002* is the repository of drinking water requirements previously contained under the *Ontario Water Resources Act*. It establishes additional obligations that regulate the operation of drinking water systems, drinking water monitoring and testing, the reporting of adverse test results and imposes duties on owners and operators of municipal drinking water systems. Operator qualification and certification, drinking water standards, the frequency and type of testing, treatment requirements, corrective actions and annual reporting requirements are all part of the *Act* and its regulations.

The *Clean Water Act, 2006* is intended to implement measures to protect sources of drinking water from contamination as part of a source-to-tap approach. As this legislation is implemented, municipalities will be required to manage or limit significant threats to drinking water sources. For the Region, this will require oversight of existing identified threats situated within York Region and require regulation of activities and land uses through the imposition, monitoring and enforcement of risk management measures and conditions meant to manage the associated risk.

There are several environmental laws that govern the collection, transport and treatment of sewage. Pursuant to the *Municipal Act, 2001*, the Region’s Sewer Use By-law establishes concentration limits for pollutants and also regulates the types of substances that are discharged into the sewer system. Local municipalities also have their own by-laws that regulate discharges into sewer systems.

The *Ontario Water Resources Act* regulates water quality and the discharge of substances into water. In particular, this *Act* governs the construction, alteration, operation, and maintenance of sewers and treatment facilities and establishes requirements for the approval of sewage works.

Role of Medical Officer of Health

Under *Regulation 170/03* of the *Safe Drinking Water Act* the Medical Officer of Health must be notified of any adverse drinking water incidents. Within the present delivery framework there can be confusion as to which municipality is obliged to notify the Medical Officer of Health. Further, the Medical Officer of Health may prescribe corrective actions to mitigate any health risks to users. Under the *Health Protection and Promotion Act 1990* the Board of Health has the duty to ensure the provision of safe drinking water by small drinking water systems, ensure community sanitation and prevent or eliminate health hazards.

Achieving compliance is becoming more complicated and rigorous

The approval process has become increasingly complicated and protracted, with greater regulatory oversight and the imposition of stringent requirements that require increased staff time, resources and expenditures for capital and operating programs. This trend is even more pronounced in the Lake Simcoe watershed with the introduction of polices under the Lake Simcoe Protection Plan that target protection of water quality and water quantity.

Moving to a single-tier delivery model could reduce the current number of required approvals and result in the Region being the only entity required to respond to annual regulatory inspections and compliance requirements administered by the Ministry of the Environment. However, transferring local operational responsibility to a single municipal entity, such as the Region, would also transfer the legal responsibilities and statutory duties applicable to local municipal systems from local municipal councillors, officers and directors to all Regional Councillors and staff. Under the present system liabilities for local infrastructure reside solely with local municipalities and their elected Councils. For example, presently Regional Councillors from the Town of Markham are not responsible for local infrastructure owned and operated by the Township of King, but with transfer of ownership of local systems to the Region this would change under a single-tier delivery model.

Water and wastewater rates for York Region and other regional jurisdictions reveal cost constraints

Table 2 shows annual average rates charged to residents for water and wastewater services for comparable municipalities in the Greater Toronto Area. Rates within York Region can vary by as much as \$122.34 a year (or \$1.33/m³). Variation in local municipal retail rates is beyond the scope of this report and would require considerable analysis to

determine how each retail rate is calculated. The average amount a York Region household pays for water and wastewater services is \$755.19 annually (\$2.49/m³ calculated as a straight average). This rate is higher than Toronto, Durham, Peel or Hamilton.

With no direct access to the Great Lakes for drinking water and a large population straddling the Oak Ridges Moraine, York Region has unique servicing challenges that directly impact the cost of water and wastewater services, including water purchasing costs from Toronto and Peel and pumping costs to deliver services throughout the Region. York Region's rapid growth in recent years has also been met with increased capital costs as a direct result of new Provincial legislation and stringent infrastructure approval conditions. Despite geographical constraints and water purchasing costs from Toronto and Peel, the Region's wholesale rate of \$1.49/m³ is comparable to wholesale rates charged by Niagara Region (\$1.44/m³) and Waterloo Region (\$1.47/m³).

Table 2
Water and wastewater rates at comparable municipalities

Municipality	Total (\$/m3)	Total (\$/year)*	Water (\$/year)*	Wastewater (\$/year)*
King	1.77	537.26	273.18	264.07
Vaughan	2.41	731.03	352.89	378.14
Markham	2.42	733.46	366.73	366.73
Richmond Hill	2.45	743.14	405.31	337.80
Whitchurch-Stouffville	2.50	758.74	385.79	372.95
Newmarket	2.53	768.24	396.11	372.13
Aurora	2.56	776.62	435.84	340.78
Georgina	2.66	807.40	379.42	427.98
East Gwillimbury	3.10	940.96	503.87	437.09
York Region Average	2.49	755.19	388.79	366.41
Peel	1.53	693.15	346.58	346.58
Durham	1.98	600.39	222.49	377.90
Toronto	2.28	462.94	N/A	N/A
Hamilton	2.30	693.33	346.67	346.67

* Assumes 0.252 m³ consumed per person per day and a household of 3.3 people, N/A = not available

Approximately 83% of York Region's water and wastewater operating budget is fixed costs that do not fluctuate with water and wastewater flows. The majority of fixed costs are attributable to capital and related financing costs. Other fixed costs include fleet, insurance, building lease costs, utilities, equipment rental, salaries and benefits.

Table 3 compares the costs of basic services that an average York Region household might have. The average cost of water and wastewater is lower than typical electricity and natural gas costs and comparable to phone and cable television costs. Further, according to data reported in the 2010 Municipal Study conducted by BMA Management Consulting Inc., local municipal retail water and wastewater rates account for only 0.49%

of the average annual household income in York Region, well below the average of 0.9% for the 82 Ontario municipalities that were assessed in the study.

Table 3

Typical Yearly Cost of Services for Households in York Region

Service	Yearly Cost (\$)
Average Water and Wastewater	750
Basic Cable TV	490
Basic Phone with Long Distance Plan	650
Electricity	1200
Natural Gas	1000

Several successful resource sharing initiatives are underway to continuously improve service delivery across York Region

The Region and local municipalities have a long history of working together to provide excellent water and wastewater services to residents and businesses in our communities. The following is a summary of recent examples of partnership and collaboration between Regional and local municipal staff:

- Quarterly Liaison Meetings – operational best practices, priority construction projects, system maintenance and planning are discussed at these meetings
- Operator Training – York Region offers training courses in coordination with local municipal staff to save training costs and encourage better working relationships
- SCADA Information Portal – the portal enables local municipal staff to access the Region’s water and wastewater system information such as water tower and reservoir levels for daily work planning and emergency response
- Georgina Water System Water Quality Study – integrated study of water system to produce a model and operating practises ensuring high water quality given new disinfection by-product regulation and expected Georgina growth
- Newmarket-East Gwillimbury Joint Water System Initiative – biweekly meetings to discuss water quality challenges and to resolve common issues
- Water and Wastewater Steering Committee – quarterly to bi-weekly meetings to discuss current issues and to exchange information
- Complaint and Inquiry Response – for questions or problems beyond the scope of the local area municipalities, Region staff assist in providing answers and maintaining good customer service
- GIS Agreements – agreements to share mapping data and to ensure compatible mapping systems
- King City and Schomberg conversion to chloramination – technical help, as well as help with communications and public queries
- Inflow and Infiltration Reduction Strategy and Program – the Region and local municipalities are collaborating to reduce inflow and infiltration to the local and Regional sanitary sewer systems

- Water Standards Committee – the Region and local area municipalities developed standardized operating procedures (this has since been replaced with Provincial guidance)
- Commissioner Meetings – annual one-on-one meetings between the Commissioner of Environmental Services and the respective Commissioner and/or Director of each local municipality
- Water Billing Audit – collaborating to review the water billing process from lake to tap to help local municipalities identify causes of increased percentages of unbillable water to residents. Increased percentage of unbillable water is a recent trend across Ontario and can be influenced by water conservation programs.

Regional and local municipal staff interact on a daily basis and proactively work together to achieve operational efficiencies and improve service delivery to residents and businesses in York Region.

Further research and investigation required to accurately assess current local municipal asset management practices

Asset management is an integral component of responsible water and wastewater delivery. The Region has invested significant resources into asset management, but further detailed investigation into local municipalities' practices and current state of assets would have to be conducted to achieve a complete understanding of opportunities and liabilities. Therefore, it is not currently possible to determine the scope of the asset risk involved with integrating service delivery.

Local municipalities closely connected to system users

Local municipalities are closely connected to their water and wastewater users through local municipal billing, complaint response and inspection programs. Some also handle the bulk of the billing concerns or other water or wastewater inquiries. Similarly residents and businesses are more aware and supportive of local capital programs and funding as the benefits to themselves are more tangible.

Local water and wastewater infrastructure is quite often constructed and approved during the subdivision process. Therefore, local municipal planners and public works staff are inherently directly involved with each project. Local planners can achieve efficiencies by co-locating water and wastewater facilities or equipment on parkland or other local municipal property. This improves security and access. Local public works staff can plan water infrastructure maintenance with local road maintenance. Furthermore, each local fire department can facilitate fire protection by ensuring local infrastructure has the proper placement and number of fire hydrants and appropriate water pressure.

Water and wastewater infrastructure are an important part of any community and the local knowledge and expertise provided by local municipal staff helps to ensure that it is

well planned, built properly, maintained, properly metered and fits the needs of the local community.

Detailed study required to determine organizational, financial and service delivery benefits of integrating water and wastewater services

An in-depth analysis, examining current Regional and local municipal water and wastewater service delivery programs, would be necessary to assess service integration opportunities, risks, efficiencies and financial outcomes. The following information would need to be gathered from each local municipality to better understand service delivery and cost impacts:

- Asset management practices and the state of infrastructure
- Service responsibilities and scope of services
- Capital expenditures and reserves
- Inter-municipal agreements and costs
- Staffing levels and cross-functionality to tasks other than water or wastewater delivery
- Salaries and collective bargaining details
- Billing cycles and collection policies
- Business continuity and emergency planning
- Regulatory compliance record, legal liabilities and plans to meet new legislation

This type of information would be necessary to properly contextualize and compare the issues in moving towards a single-tier service delivery model. Niagara Region has found obtaining this data can be difficult. Obtaining the data would be the first step; a comprehensive analysis of the opportunities and challenges associated with single-tier water and wastewater delivery would require a significant resource commitment.

Relationship to Vision 2026

Vision 2026 sets out goals to “provide safe and dependable water supply to systems and facilities in area municipalities” and to “ensure stable, cost-effective wastewater treatment”. Vision 2026 also establishes the goals of “meeting service needs at the right time, place and price”, “enhancing service by co-ordinating governments in area municipalities and neighbouring municipalities” and “investigating service delivery options and funding for them” and “providing cost-effective service”. Thus, it would be in keeping with Vision 2026 to explore water and wastewater delivery. These goals should be kept in mind when exploring the optimal organizational structure for water and wastewater delivery to York Region residents and businesses.

5. FINANCIAL IMPLICATIONS

There are no financial impacts as a result of this report. Should Regional Council wish to examine next steps staff could develop a work plan that details the scope and financial implications of conducting a more detailed study.

6. LOCAL MUNICIPAL IMPACT

Decisions made by Council as a result of this report could have a significant impact on local municipalities. A high-degree of collaboration will be necessary to facilitate any change to the existing service delivery model.

7. CONCLUSION

York Region has an excellent regulatory compliance track record and provides efficient water and wastewater services in partnership with the nine local municipalities. Continuous improvement opportunities are regularly incorporated into the existing service delivery model through liaison meetings, the ISO Certification Program and the Drinking Water Quality Management Standard. The Region and its local municipal partners collaborate extensively to improve water and wastewater delivery to maximize efficiencies where possible.

Legislative mechanisms exist within the *Municipal Act, 2001* to initiate transfer of responsibility for water and wastewater service delivery. There may be benefits associated with further service integration, but a detailed water and wastewater service delivery analysis would be required to fully assess the benefits, risks and financial outcomes associated with moving to single-tier service integration.

For more information on this report, please contact David Szeptycki, Head, Strategy, Liaison and Policy Implementation at 905-830-4444 Ext. 5723 or Lucas Cugalj, Director, Strategy and Business Planning at Ext. 5041. or Kelly Strueby, Director, Business Planning and Budget at Ext. 1611.

The Senior Management Group has reviewed this report.

(The two attachments referred to in this clause are attached to this report.)



