

The Regional Municipality of York

Committee of the Whole
Environmental Services
June 11, 2020

Report of the Commissioner of Environmental Services

York Durham Sewage System Operating Agreement

1. Recommendations

1. Council authorize entering into a new agreement with Durham Region for the operation of the York Durham Sewage System for a term of twenty years, commencing on July 1, 2020, and expiring on June 30, 2040.
2. The Commissioner of Environmental Services be authorized to execute the agreement.

2. Summary

The current York Durham Sewage System Operating Agreement (Operating Agreement) expires on June 30, 2020. This report recommends execution of a new Operating Agreement for a term of twenty years commencing on July 1, 2020 to replace the previous agreement.

Key points:

- The current Operating Agreement with Durham Region has been in place since 1997 and was extended twice; once for two years from 2017 to 2019, to allow for continued negotiation of terms, and a second for six months in anticipation of the approval of the Duffin Creek Class Environmental Assessment for the Outfall
- Durham Region is a committed partner and successful operator of the Duffin Creek Plant
- A new Operating Agreement outlines the roles and responsibilities for York Region and Durham Region (the Co-owners) and Durham Region (the Operator) of the York Durham Sewage System Primary System to ensure regulatory requirements are met
- Regular monitoring, data sharing, and meeting requirements are identified in the agreement to ensure oversight and manage risk

3. Background

Province transferred ownership of York Durham Sewage System to York Region and Durham Region in 1997

The province originally planned and constructed the York Durham Sewage System to service the wastewater needs of both York Region and Durham Region. The York Durham Sewage System began operation in 1975.

The York Durham Sewage System consists of both Primary and Secondary Systems within each Region that collect and convey sewage flows. The Primary System includes infrastructure that the Regions jointly use and own such as sewers, Duffin Creek Plant, associated property, buildings, and the Regional Environmental Laboratory located within our Duffin Creek Plant. Secondary Systems include forcemains, pumping stations, and trunk sewers within each Region which collect and convey sewage flows to the Primary System.

To accommodate differing treatment capacity needs of the Regions, Duffin Creek Plant was constructed in two separate stages. The capacity of Stage 1 was shared evenly (50/50) between the Regions and capacity of Stage 2 was weighted more heavily to York Region (87.5%) than Durham Region (12.5%) due to different needs at the time. In 1997, ownership of the York Durham Sewage System assets was transferred from the province to both York Region and Durham Region (Attachment 1). Stages 1 and 2 were built before the ownership transfer from the province to the Regions.

Two agreements were executed simultaneously between York Region and Durham Region upon ownership transfer

On November 28, 1997, both the York Durham Sewage System Co-Owners Agreement (Co-Owners Agreement) and the York Durham Sewage System Operating Agreement were executed and came into force.

Under the Co-Owners Agreement, York Region and Durham Region share the cost of operating and maintaining existing co-owned assets and investment of new assets to service growth through the York Durham Sewage System Management Committee. The committee consists of equal representation of senior staff from York and Durham Regions and is supported by subcommittees, including the Finance and Administration Subcommittee, and Operating Subcommittee.

The initial term of the Co-Owners Agreement was 20 years with the current agreement set to renew for an additional 20 years on December 31, 2017. Amendments to the Co-Owners Agreement are now being completed according to the authority provided by Council on June 29, 2017.

Duffin Creek Plant currently services 1.2 million residents in York Region and Durham Region

Duffin Creek Plant was planned to be expanded in four stages to increase capacity to 727 megalitres per day. Other expansions and improvements have been undertaken at the plant since ownership was transferred and are described below. Today, Duffin Creek Plant serves approximately one million York Region residents across eight local municipalities (Town of Georgina is serviced independent of the York Durham Sewage System) and approximately 200,000 Durham Region residents in the Town of Ajax and City of Pickering.

Since 1997, York Region has initiated and completed major improvements and expansions to address capacity and regulatory needs including:

- In 2005, through optimization and rehabilitation of already existing infrastructure, the liquid capacity of Duffin Creek Plant was increased by 56 megalitres per day by investing approximately \$35 million
- In 2010, the Stage 3 expansion of Duffin Creek Plant was completed which increased liquid treatment capacity by 310 megalitres per day with complementary solids handling capacity, and enhanced phosphorus removal process by investing \$625 million. The Stage 3 expansion of Duffin Creek Plant increased liquid treatment capacity to 630 megalitres per day
- With the Minister of the Environment, Conservation and Parks approval of the Duffin Creek Plant Outfall Class Environmental Assessment in November 2019, the full 630 megalitres per day liquid treatment capacity of Duffin Creek Plant can now be accessed
- Duffin Creek Plant Stages 1 and 2 upgrades included critical work required to satisfy conditions of the Environmental Compliance Approval for Duffin Creek Plant Stage 3 expansion. Final demolition and restoration works were completed in 2018. This project is currently in the warranty phase

York Durham Sewage System Operating Agreement lays out responsibilities of the Co-owners and obligations of the Operator

The Operating Agreement outlines the role of ‘Operator’ of the Primary System assets such as requirements for plant operation, maintenance, budgeting, planning, and reporting. It also serves to coordinate and link the Operator role to the management and oversight role of the Co-Owners, through the York Durham Sewage System Management Committee and associated subcommittees.

Current Operating Agreement extensions approved by Council in June 2017, and December 2019

A two year extension to the current Operating Agreement, York Durham Sewage System Operating Agreement Extension, was authorized by [Council June 29, 2017](#), and linked to pending approval for the Duffin Creek Plant Outfall Class Environmental Assessment.

On December 19, 2019, York Durham Sewage System Operating Agreement Extension [Council report](#) authorized an extension of the Operating Agreement for six months, from January 1, 2020, to June 30, 2020, allowing the revised draft Operating Agreement to be finalized following approval of the Duffin Creek Plant Outfall Class Environmental Assessment in November 2019.

Durham Region has operated Duffin Creek Plant to outperform other large treatment plants on Lake Ontario

Duffin Creek Plant was expanded and upgraded over the last 15 years to install enhanced phosphorus removal technology removing over 94% of raw sewage phosphorus loading entering the plant. The Duffin Creek plant produces some of the highest quality effluent of all large wastewater plants discharging to open waters of Lake Ontario. It consistently achieves quality limits that meet or are below discharge parameters set out by the Ministry of the Environment, Conservation and Parks, and below discharge limits of comparable large plants discharging to Lake Ontario. Furthermore, unlike most comparable plants, the Duffin Creek Plant provides full treatment of all wastewater flows even during extreme high-flow rainfall events and has zero bypass discharges. It is one of the few wastewater treatment plants on Lake Ontario to follow this leading environmental practice.

The successful working partnership between both Regions in co-owning and operating the facility results in a high standard of wastewater treatment that meets strict effluent requirements demonstrating environmental leadership in the industry.

4. Analysis

New Operating Agreement terms take effect July 1, 2020, for twenty years

York Region and Durham Region staff have been working on a new Operating Agreement since 2015. The new Operating Agreement, upon execution, will be effective for twenty years starting July 1, 2020, ending July 1, 2040, and contains provisions including:

- Option to review terms every five years and incorporate amendments proposed by either party, subject to mutual agreement. This review process mirrors the York-Peel Water Supply Agreement
- Ten year extension available by mutual agreement

Durham Region will continue its role as Operator

In the new Operating Agreement, a clear delineation between responsibilities of Durham Region as an Operator and a Co-owner has been established.

Durham Region has successfully operated the Duffin Creek Plant to a high level of compliance since 1997. Responsibilities of Durham Region as Operator are set out in greater detail in the new Operating Agreement and include:

- Maintenance and operation of the facility, including preventative and corrective maintenance
- Testing, monitoring and sampling requirements
- Management of spills
- Preparation of draft operating budgets
- Preparation of business, operational and maintenance plans
- Development of standard operating procedures
- Reporting requirements, including compliance and performance reports

New Operating Agreement enhancement highlights

Table 1 provides highlights of additional enhancements within the new Operating Agreement over the previous version.

Table 1
Summary of Additional Enhancements of New Operating Agreement

Section	Enhancement Summary
Flow Metering Strategy	Clarity on calculation of Co-Owners flow contributions to Duffin Creek Plant and calibration requirements
Wastewater and Direct Discharge Agreements	Co-Owners responsible for negotiation of any wastewater and direct discharge agreements within their respective jurisdictions, revenue collection, and sharing of information
SCADA Infrastructure and Assets	Requirements for implementation and maintenance of SCADA system and access by Co-Owners
Hauled Wastewater	Clarifies fee setting and sharing of revenue
Joint review of regulatory submissions*	Co-Owners have joint responsibility outlined regarding review of submissions to regulators by Operator
Operating costs detail*	Various components of plant operating costs defined in greater detail
Associated committee roles and responsibilities*	Further delineation of Management Committee and linkages to subcommittees
Indemnification and Liability*	Clarity around indemnification of Co-Owners and liability of Operator regarding negligence

**see Analysis below for further details on these items*

Provision for joint review of submissions concerning regulatory requirements

Responsibilities of the Operator regarding compliance with regulatory requirements and protocol ensures the Co-Owners have joint responsibility for review of documentation before submission to regulatory authorities by the Operator as well as being informed of any compliance and regulatory inspections, incidents, contraventions, and investigations.

Individual components included in operating costs are set out in greater detail

To reflect current practice and reduce ambiguity, various components that make up plant operating costs were defined in greater detail within the Operating Agreement. These components now better reflect cost sharing principles agreed upon by Management Committee since the original agreement was signed in 1997. Costs are generally shared according to measured flows contributed from each region (approximately 80% York Region and 20% Durham Region), however, some exceptions are now clearly defined, such as:

- Management Committee expenses, excluding property taxes (shared equally)
- Property taxes (shared based on a method approved by Management Committee)
- Non-operating improvements to infrastructure within the solid and liquid treatment process not defined as Capital Improvements (shared based on the Co-Owners' 15 year average solid or liquid flows)
- Operating costs directly related to the Stage 3 Influent Pumping Station which shall be the sole responsibility of York Region

The annual budget and associated cost sharing for Duffin Creek Plant are still subject to review and approval at Management Committee.

Roles of Management Committee, and Operating and Finance Subcommittees are specified

Identification of decision making and roles of various committees concerning operation of the York Durham Sewage System Primary System has been clearly articulated in the new Operating Agreement and reflects a current practice that was not articulated in the 1997 version. The Operating Agreement identifies that Management Committee has the responsibility on behalf of the Co-Owners to monitor the operation, maintenance, control, and management of the Primary System. The Operator will report to Management Committee on any such matters, addressing concerns that may be raised by a Co-Owner through this forum.

The Operating, Finance and Administration, and Capital Subcommittees, along with the Asset Management Working Group will convene under their respective terms of reference.

Indemnification and liability terms revised with input from Risk Management of both York and Durham Regions

The Operating Agreement provides for Durham Region to maintain property and commercial liability insurance for the system with York Region a named insured, and costs shared proportionately as part of the operating costs. Risk management staff from both Regions reviewed insurance coverage and were satisfied that the quantum is adequate and the insurance will respond to potential claims arising from operation of the facility.

In the new Operating Agreement, Durham Region will indemnify York Region for any claims not covered by insurance, including regulatory fines and any incident of wilful default on the part of the Operator.

5. Financial

2020 Duffin Creek Plant capital and operation costs are included in the approved budget

The new Operating Agreement reflects current processes and conditions and does not impact or increase operating and capital cost to the Co-Owners. 2020 operating and capital budget for Duffin Creek Plant is \$37.2 million. York Region's share (\$29.6 million) has been captured in the Environmental Services approved 2020 budget.

Duffin Creek Plant and the Primary System are valued at \$2.2 billion

In 2019, York Region and Durham Region jointly completed the first Asset Management Plan for Duffin Creek Plant and the Primary System. This Asset Management Plan also contained the first comprehensive replacement cost estimation for Duffin Creek Plant and the Primary System. The current total replacement value of Duffin Creek Plant and the Primary System is \$2.2 billion. York Region's cost share is \$1.7 billion or 79%.

6. Local Impact

Duffin Creek Plant services approximately one million people across eight local municipalities in York Region (Town of Georgina is serviced by two Regional plants on Lake Simcoe) and approximately 200,000 people across two municipalities in Durham Region.

Executing a new Operating Agreement reflects the long-term partnership between York Region and Durham Region in co-owning and managing the York Durham Sewage System Primary System, including the Duffin Creek Plant, to serve their respective residents.

7. Conclusion

Implementation of a new York Durham Sewage System Operating Agreement with Durham Region for twenty years beginning July 1, 2020, builds on the principles of transparency, enhanced reporting, and achieving operational excellence, taking into account industry best practices, research and innovation.

The new Operating Agreement provides continuity in operations at Duffin Creek Plant with Durham Region as Operator and enhances the details for responsibilities of the Co-Owners in the Primary System operations.

This report authorizes the Commissioner of Environmental Services to execute the new Operating Agreement.

For more information on this report, please contact Roy Huetl, Director, Operations, Maintenance and Monitoring at 1-877-464-9675 ext. 75323. Accessible formats or communication supports are available upon request.

Recommended by: **Erin Mahoney, M. Eng.**
Commissioner of Environmental Services

Approved for Submission: **Bruce Macgregor**
Chief Administrative Officer

May 22, 2020
Attachments (1)
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