The Regional Municipality of Durham

Works Committee Agenda

Council Chambers
Regional Headquarters Building
605 Rossland Road East, Whitby

Wednesday, March 4, 2020 **9:30 AM**

1. Declarations of Interest

2. Adoption of Minutes

A) Works Committee meeting – February 5, 2020 Pages 4 - 11

3. Statutory Public Meetings

There are no statutory public meetings

4. Delegations

There are no delegations

5. Presentations

5.1 Mirka Januszkiewicz, Director of Waste Management, re: Innovation in Landfill Management – Landfill Mining, Leachate Recirculation, and Biocovers

6. Waste

6.1 Correspondence

6.2 Reports

There are no Waste Reports to consider

7. Works

7.1 Correspondence

7.2 Reports

8. Advisory Committee Resolutions

There are no advisory committee resolutions to be considered

9. Confidential Matters

9.1 Reports

A) Confidential Report of the Commissioner of Works – Proposed or Pending Acquisition or Disposition of Land for Regional Corporation Purposes as it Relates to the Purchase of Lands Required for the Bus Rapid Transit Project, in the City of Pickering (2020-W-17) Under Separate Cover

B) Confidential Report of the Commissioner of Works – Litigation or Potential Litigation, Including Matters Before Administrative Tribunals, Affecting the Regional Corporation, with Respect to Settlement Agreement for a Claim Under Section 13(1) of the Expropriations Act, R.S.O. 1990, c. E.26, Related to the Expropriation of Lands in the Clarington Energy Business Park, in the Municipality of Clarington (2020-W-25) Under Separate Cover

10. Other Business

11. Date of Next Meeting

Wednesday, April 8, 2020 at 9:30 AM

12. Adjournment

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The Regional Municipality of Durham

MINUTES

WORKS COMMITTEE

Wednesday, February 5, 2020

A regular meeting of the Works Committee was held on Wednesday, February 5, 2020 in the Council Chambers, Regional Headquarters Building, 605 Rossland Road East, Whitby, Ontario at 9:30 AM

Present: Councillor Mitchell, Chair
Councillor Marimpietri, Vice-Chair
Councillor Barton
Councillor Crawford
Councillor McLean
Councillor John Neal
Councillor Smith
Regional Chair Henry

Also Present: Councillor Wotten

Staff Present: E. Baxter-Trahair, Chief Administrative Officer
J. Demanuele, Director of Business Services
J. Hunt, Director of Legal Services, Corporate Services – Legal Services
R. Inacio, Systems Support Specialist, Corporate Services – IT
R. Jagannathan, Director of Transportation and Field Services
M. Januszkiewicz, Director of Waste Management
J. Paquette, Manager (Works), Corporate Communications
N. Pincombe, Director, Business Planning, Economic Studies & Risk Management
J. Presta, Director of Environmental Services
S. Siopis, Commissioner of Works
N. Taylor, Commissioner of Finance, Finance Department
S. Penak, Committee Clerk, Corporate Services – Legislative Services

1. Declarations of Interest

Councillor Barton made a declaration of interest under the Municipal Conflict of Interest Act with respect to Report #2020-W-15: 2020 Works Department Business Plans and Budgets, Section 4.1 H) that highlighted the Scott Landfill in the Township of Uxbridge. He indicated that he has a family member that owns property near the Scott Landfill site.

2. Adoption of Minutes

Moved by Councillor Smith, Seconded by Regional Chair Henry,
(14) That the minutes of the regular Works Committee meeting held on Wednesday, January 8, 2020, be adopted.

CARRIED

3. Statutory Public Meetings

There were no statutory public meetings.

4. Delegations

There were no delegations to be heard.

5. Presentations

5.1 Ramesh Jagannathan, Director, Transportation & Field Services, re: Works Department – 2020 Business Plans and Budgets (2020-W-15) [Item 7.2 H)]

Ramesh Jagannathan, Director, Transportation & Field Services, and Mirka Januszkiewicz, Director of Waste Management, presented a PowerPoint presentation regarding the Works Department – Business Plans and Budgets.

Highlights from the presentation included:

- 2020 Budget – Strategic Priorities
- Budget Overview
- 2019 Accomplishments
  - Customer Service
  - Awards/Recognition
  - Service Improvements
- 2020 Priorities and Highlights
  - Capital
  - Operating
  - Staffing
- 2020 Proposed Expenditures and Financing General Tax Programs
- 2020 Proposed Capital Road Program
- Roads Capital Planning Framework

- Proposed 2020 Growth-Related Projects
- Proposed 2020 Road Rehabilitation Projects
- Proposed 2020 Structures Rehabilitation/Replacement Projects
- Proposed 2020 Traffic Programs
- 2020 Proposed Expenditures and Financing Solid Waste Programs
- 2020 Risks and Uncertainties
  - Risks related to legislative changes, regulations, provincial reviews
  - Revenue/Funding pressures (e.g. provincial/federal investment, revenue, etc.)
  - Operating Pressures (e.g. weather impacts, demand impacts, etc.)
- Climate Change Considerations
- Future Budget Pressures
- Questions

R. Jagannathan responded to questions from the Committee regarding the allotment of four new staff members for the Vision Zero project; the start of the red-light camera and automated speed enforcement programs; changes to traffic light brackets to strengthen them against strong winds; wider paved shoulders as the new standard; and various road projects in the City of Pickering.

N. Taylor responded to a question from the Committee regarding how the development charges would factor into the departmental 2020 business plans and budgets.

M. Januszkiewicz responded to questions from the Committee regarding future waste policies from the Province and concerns regarding privatization of organic waste disposal; cost of the reclamation of the Blackstock Landfill Site; and the state of the recycling lids project; excess soil sites within the Region; succession planning within the Works Department; and concerns with the Ritson Road Waste Transfer Site in the City of Oshawa.

6. Waste

6.1 Correspondence

There were no items of correspondence to be considered.

6.2 Reports

There were no Waste Reports to be considered.

7. Works

7.1 Correspondence

There were no items of correspondence to be considered.

7.2 Reports

A) Award of Request for Proposal #1132-2019 for Feedermain Condition Assessment on Pickering Beach Road from Lake Driveway East to Bayly Street East, in the Town of Ajax (2020-W-8)

Report #2020-W-8 from S. Siopis, Commissioner of Works, was received.

Moved by Councillor Marimpietri, Seconded by Regional Chair Henry,
(15) That we recommend to Council:

A) That Request for Proposal #1132-2019 be awarded to Pure Technologies Ltd. to provide a condition assessment for the feedermain on Pickering Beach Road from Lake Driveway East to Bayly Street East, in the Town of Ajax, at a total upset limit not to exceed $282,050*; and

B) That the Commissioner of Finance be authorized to execute the professional services agreement.
(*) includes disbursements and are before applicable taxes

CARRIED

B) Award of Request for Proposal #1007-2019 for Engineering Services for Capacity Re-rating and Upgrades at the Newcastle Water Pollution Control Plant, in the Municipality of Clarington (2020-W-9)

Report #2020-W-9 from S. Siopis, Commissioner of Works, was received.

In response to a question, staff explained what upgrades were happening at the Newcastle Water Pollution Control Plant to increase capacity by roughly 50% without expanding the facility.

Moved by Councillor Marimpietri, Seconded by Regional Chair Henry,
(16) That we recommend to Council:

A) That Request for Proposal #1007-2019 be awarded to R.V. Anderson Associates Limited (RVA) to provide engineering services for capacity re-rating and upgrades at the Newcastle Water Pollution Control Plant, in the Municipality of Clarington, with a total upset limit not to exceed $2,103,378* funded from the approved project allowance of $4,914,000; and

B) That the Commissioner of Finance be authorized to execute the Agreement for Consulting/Professional Services and any required amendments to the Agreement.
(*) includes disbursements and are before applicable taxes

CARRIED

C) Detailed Design Engineering and Construction Administration for the Digester Mixing and Motor Control Centre Upgrades Project at the York-Durham Duffin Creek Water Pollution Control Plant, in the City of Pickering (2020-W-10)

Report #2020-W-10 from S. Siopis, Commissioner of Works, was received.

Moved by Councillor Marimpietri, Seconded by Regional Chair Henry,
(17) That we recommend to Council:

That the selection of Jacobs Canada Incorporated by the Regional Municipalities of York and Durham be confirmed to carry out the detailed design and construction administration services for the Digester Mixing and Motor Control Centre upgrades project at the Duffin Creek Water Pollution Control Plant at an upset limit of $2,845,340 with the Regional Municipality of Durham's share of the cost identified as $745,479 which is to be funded from the approved project budget.

CARRIED

D) Sole Source Engineering Assignment for the York Durham Duffin Creek Water Pollution Control Plant in the City of Pickering – Supervisory Control and Data Acquisition Hardware Refurbishment for Blower Buildings 1 and 2 (2020-W-11)

Report #2020-W-11 from S. Siopis, Commissioner of Works, was received.

Moved by Councillor Marimpietri, Seconded by Regional Chair Henry,
(18) That we recommend to Council:

A) That Eramosa Engineering Ltd. be retained to provide pre-design, detailed design and construction administration services for the York Durham Duffin Creek Water Pollution Control Plant Stage 1 and 2 Blower Building Control System Hardware Replacement at an upset limit not to exceed $160,000*;

B) That the gross cost of this assignment will be funded from the approved 2020 Sanitary Sewage System Budget, cost shared with the Regional Municipality of York as follows:

Durham Region Share (20%) User Rate	$32,000
York Region Share (80%)	$128,000
Total Upset Limit	$160,000

C) That the Commissioner of Finance be authorized to execute the necessary engineering services agreement.
(*) includes disbursements and are before applicable taxes

CARRIED

E) Road Rationalization: Transfer of Roads Between the Regional Municipality of Durham and the Town of Whitby (2020-W-12) (WITHDRAWN)

Report #2020-W-12 from S. Siopis, Commissioner of Works was withdrawn.

F) Agreement with the Ministry of Transportation Ontario (MTO) for Road Rehabilitation on Taunton Road (Regional Road 4) at Highway 35/115 and Ganaraska Road (Regional Road 9) at Highway 35/115 in the Municipality of Clarington (2020-W-13)

Report #2020-W-13 from S. Siopis, Commissioner of Works, was received.

Moved by Councillor Marimpietri, Seconded by Regional Chair Henry,
(19) That we recommend to Council:

A) That subject to approval of financing from the 2020 Business Plans and Budgets, that a cost sharing agreement with the Ministry of Transportation Ontario (MTO) for road rehabilitation on Taunton Road (Regional Road 4) at Highway 35/115, and Ganaraska Road (Regional Road 9) at Highway 35/115, in the Municipality of Clarington be approved with an estimated total cost of $209,160*; and

B) That the Regional Chair and Clerk be authorized to execute the above cost sharing agreement.
(*) before applicable taxes

CARRIED

G) Expropriation of Land Required for Construction of a Multi-Use Path on Victoria Street East (Regional Road 22), in the Town of Whitby (2020-W-14)

Report #2020-W-14 from S. Siopis, Commissioner of Works, was received.

Moved by Councillor Marimpietri, Seconded by Regional Chair Henry,
(20) That we recommend to Council:

A) That authority be granted to Regional Municipality of Durham staff to initiate Expropriation proceedings, if necessary, where negotiations are unsuccessful with respect to the property requirements for 505 Victoria Street East (Regional Road 22) in the Town of Whitby as are depicted in Attachment #1 to Report #2020-W-14 of the Commissioner of Works, and for such other property requirements as may be determined and identified by Regional Municipality of Durham staff required for the project;

B) That authority be granted to Regional Municipality of Durham staff to serve and publish Notices of Application for Approval to Expropriate the property requirement as described in Recommendation A) of Report #2020-W-14, and to forward to the Chief Inquiry Officer any requests for hearing that are

received, to attend the hearings to present the Regional Municipality of Durham's position, and to report the Inquiry Officer's recommendations to Regional Council for its consideration; and

C) That authority be granted to the Regional Clerk and Regional Chair to execute any notices and forms as may be statutorily mandated by the Expropriations Act R.S.O. 1990, c. E. 26 to give effect to Recommendation B) in Report #2020-W-14, including the Notices of Application of Approval to Expropriate.

CARRIED

H) 2020 Works Department Business Plans and Budgets (2020-W-15)

Report #2020-W-15 from S. Siopis, Commissioner of Works, was received.

Moved by Councillor Marimpietri, Seconded by Councillor Smith,
(21) That we recommend to the Finance and Administration Committee for subsequent recommendation to Regional Council:

That the 2020 Property Tax Supported Business Plans and Budgets for the Works Department's General Tax and Solid Waste Management operations be approved.

CARRIED

8. Advisory Committee Resolutions

There were no advisory committee resolutions to be considered.

9. Confidential Matters

There were no confidential matters to be considered.

10. Other Business

10.1 Flood Preparedness Public Forum

Councillor Smith advised the Committee of an upcoming event hosted by Kawartha Conservation on Flood Preparedness on March 7, 2020 at Fenelon Falls Community Centre. He advised that the forum includes a tradeshow and presentations on flood emergency management, flood preparedness and flood protection.

10.2 Recycling and Waste Collection on Unassumed Roads in New Subdivisions

In response to a question, staff advised that only if it is an assumed road by the Municipality does the Region collect any recyclable or household waste, otherwise collection is the responsibility of the developer/owner.

11. Date of Next Meeting

The next regularly scheduled Works Committee meeting will be held on March 4, 2020 in Council Chambers, Regional Headquarters Building, 605 Rossland Road East, Whitby.

12. Adjournment

Moved by Regional Chair Henry, Seconded by Councillor McLean,
(22) That the meeting be adjourned.
CARRIED

The meeting adjourned at 10:48 AM

Respectfully submitted,

D. Mitchell, Chair

S. Penak, Committee Clerk

If this information is required in an accessible format, please contact 1-800-372-1102 ext. 3540

The Regional Municipality of Durham Report

To:	The Works Committee
From:	Commissioner of Works
Report:	#2020-W-16
Date:	March 4, 2020

Subject:

The Regional Municipality of Durham's Drinking Water Systems 2019 Summary Report

Recommendation:

That the Works Committee recommends to Regional Council:

A) That the 2019 Summary Report for the Regional Municipality of Durham Drinking Water Systems be received for information;

B) That receipt of this report be confirmed by resolution of Regional Council; and

C) That a copy of this resolution be forwarded to the Ontario Ministry of the Environment, Conservation and Parks' York-Durham District Office to indicate the conditions of Schedule 22 of Ontario Regulation 170/03 have been fulfilled.

Report:

1. Purpose

1.1 The Regional Municipality of Durham (Region) is required to prepare a Summary Report for each of the municipal drinking water systems under Ontario Regulation (O.Reg.) 170/03 of the Safe Drinking Water Act (SDWA). The Summary Report is to be completed and submitted to Regional Council prior to March 31 of each year.

2. Summary Report

2.1 Schedule 22 of O.Reg. 170/03 requires that a Summary Report provide the following information:

22-2. (1) The owner of a drinking water system shall ensure that, not later than March 31 of each year after 2003, a report is prepared in accordance with subsections (2) and (3) for the preceding calendar year and is given to,

(a) In the case of a drinking water system owned by a municipality, the members of the municipal council;

(b) In the case of a drinking water system owned by a municipal service board established under section 195 of the Municipal Act 2001, the members of the municipal service board; or

(c) In the case of a drinking water system owned by a corporation, the board of directors of the corporation.

22-2. (2) The report must,

(a) List the requirements of the Act, the regulations, the system's approval, drinking water works permit, municipal drinking water licence, and any orders applicable to the system that were not met at any time during the period covered by the report; and

(b) For each requirement referred to in clause (a) that was not met, specify the duration of the failure and the measures that were taken to correct the failure.

22-2. (3) The report must also include the following information for the purpose of enabling the owner of the system to assess the capability of the system to meet existing and planned uses of the system:

1. A summary of the quantities and flow rates of the water supplied during the period covered by report, including monthly average and maximum daily flows.

2. A comparison of the summary referred to in paragraph 1 to the rated capacity and flow rates approved in the system's approval, drinking water works permit or municipal drinking water licence, or if the system is receiving all of its water from another system under an agreement pursuant to subsection 5 (4), to the flow rates specified in the written agreement.

22-2. (4) If a report is prepared under subsection (1) for a system that supplies water to a municipality under the terms of a contract, the owner of the system shall give a copy of the report to the municipality by March 31.

2.2 Table 1 below provides a list of all Drinking Water Systems (DWS) and their Municipal Drinking Water Licences for the period from January 1, 2019 to November 15, 2019.

Table 1

Drinking Water System	Municipal Drinking Water Licence #	Issue Number	Issue Date
Oshawa *	**003-111**	**5**	**October 16, 2017**
Whitby *	**003-111**	**5**	**October 16, 2017**
Ajax *	**003-111**	**5**	**October 16, 2017**
Beaverton	**003-107**	**3**	**October 16, 2017**
Blackstock	**003-101**	**3**	**October 16, 2017**
Bowmanville	**003-103**	**3**	**October 16, 2017**
Cannington	**003-106**	**3**	**October 16, 2017**
Greenbank	**003-104**	**3**	**October 16, 2017**
Newcastle	**003-109**	**5**	**October 16, 2017**
Orono	**003-108**	**4**	**October 16, 2017**
Port Perry	**003-102**	**3**	**October 16, 2017**
Sunderland	**003-110**	**3**	**October 16, 2017**
Uxbridge	**003-105**	**6**	**December 12, 2017**

* Oshawa, Whitby and Ajax are licenced as one system. For the purpose of this report the Drinking Water Systems (DWS) are listed individually.

2.3 Table 2 below provides a list of all Drinking Water Systems (DWS) and their Municipal Drinking Water Licences for the period from November 15, 2019 to December 31, 2019.

Table 2

Drinking Water System	**Municipal Drinking Water Licence #**	**Issue Number**	**Issue Date**
Oshawa *	**003-111**	**6**	**November 15, 2019**
Whitby *	**003-111**	**6**	**November 15, 2019**
Ajax *	**003-111**	**6**	**November 15, 2019**
Beaverton	**003-107**	**4**	**November 15, 2019**
Blackstock	**003-101**	**4**	**November 15, 2019**
Bowmanville	**003-103**	**4**	**November 15, 2019**
Cannington	**003-106**	**4**	**November 15, 2019**
Greenbank	**003-104**	**4**	**November 15, 2019**
Newcastle	**003-109**	**6**	**November 15, 2019**
Orono	**003-108**	**5**	**November 15, 2019**
Port Perry	**003-102**	**4**	**November 15, 2019**
Sunderland	**003-110**	**4**	**November 15, 2019**
Uxbridge	**003-105**	**7**	**November 15, 2019**

*Oshawa, Whitby and Ajax are licenced as one system. For the purpose of this report the Drinking Water Systems (DWS) are listed individually.

2.4 Table 3 below provides the Water Compliance Requirements and Water Taking Conditions.

Table 3

Drinking Water System	Compliance Requirements	Water Taking Conditions
Oshawa *	Non-Compliant	Did Not Exceed
Whitby *	Compliant	Did Not Exceed
Ajax *	Compliant	Did Not Exceed
Beaverton	Compliant	Did Not Exceed
Blackstock	Compliant	Did Not Exceed
Bowmanville	Compliant	Did Not Exceed
Cannington	Compliant	Did Not Exceed
Greenbank	Compliant	Did Not Exceed
Newcastle	Compliant	Did Not Exceed
Orono	Compliant	Did Not Exceed
Port Perry	Compliant	Did Not Exceed
Sunderland	Compliant	Did Not Exceed
Uxbridge	Compliant	Did Not Exceed

*Oshawa, Whitby and Ajax are licenced as one system. For the purpose of this report the Drinking Water Systems (DWS) are listed individually.

2.5 The drinking water system supplying water to the Uxbridge Industrial Park (Uxville) is not required to be covered by this report as it is regulated by the Ministry of Health and Long-Term Care, under O. Reg. 319/08.

3. General Overview of Compliance Status

3.1 The Summary Report requires a review of each DWS with respect to the SDWA, Permits to Take Water (PTTW), Municipal Drinking Water Licence (MDWL), Drinking Water Works Permit (DWWP), Ministry of the Environment, Conservation and Parks (MECP) inspections and orders including to provide an explanation of any non-compliance issues that were identified during the reporting period.

3.1 Water quality monitoring data is available in the Annual Water Quality Report. Hard copies of this report are available at the Regional Municipality of Durham Headquarters building located at 605 Rossland Road East, Whitby on level five or on the Region of Durham's website at www.durham.ca.

3.2 A requirement of the Drinking Water Quality Management Standard (DWQMS) Element 20, is that the results of the annual management review meeting, the identified deficiencies, decisions and action items are reported to the Owner. The annual DWQMS Management Review meeting was held on May 21, 2019. Attending the meeting were staff that are identified in the Operational Plan as being part of the top management team. The meeting reviewed the agenda items that are listed in the DWQMS 2.0, Element 20. There were some action items identified during the meeting including to ensure follow up on the well inspection reports and training for the Standard of Care and Emergency Management. There were two internal audits completed in 2019 (June 19-20 and September 30-October 4). The results were satisfactory.

3.3 Durham Region is also required, as part of accreditation to the DWQMS, to have an external audit of the management system done by an approved registrar. The 2019 audit was completed on December 9, 2019. This audit found no non-conformances to the DWQMS and nine opportunities for improvement which will be responded to by the drinking water system staff.

3.4 The full minutes of the management review meeting and the final audit reports for both the internal and external audits are available.

4. Specific Compliance Items

4.1 A review indicated that all of the DWS met all compliance requirements of O. Reg. 170/03 with the following exceptions:

(a) O. Reg. 128/04 Section 27. (4) Record-keeping re operation of subsystem

Oshawa DWS

- The Orono Depot is responsible for maintaining the Courtice service area portion of the Oshawa DWS distribution system. During the Oshawa DWS inspection it was found that entries made in the Orono Depot logbook by a relieving supervisor were ambiguous as to the author. This does not comply with Section 27(4) of O.Reg 128/04 which states that any person who makes an entry in a log must be able to be unambiguously identified as the maker of the entry.

- On September 11, 2019 the requirements for logbook entries was reinforced with all Supervisors of the Orono Depot.

(b) O. Reg. 170/03 Schedule 16-7 – Reporting Adverse Test Results and Other Problems: Manner of making immediate report

Oshawa DWS

- On November 29, 2019 a low chorine Adverse Water Quality Incident (AWQI) occurred in the distribution system. Operators applied appropriate corrective actions and provided verbal notification of the incident to the MECP's Spills Action Centre (SAC), and the Region's Health Department as per Schedule 16-6 of O.Reg 170/03. Form 4444e was completed the same to be used for initial written notification as per Schedule 16-7 of O.Reg 170/03, and faxed to the MECP's SAC, the Region's Health Department and the operating facility.

- On December 3rd, 2019 an email was received from the MECP stating that the initial written notice of the AWQI had not yet been received. It was determined that the original fax was not successfully transmitted to any of the parties listed above. The original written notice of AWQI was then emailed to the MECP and operator of the facility on December 3rd and faxed to the Region's Health Department on December 4th. The written notice did not meet the requirements of Schedule 16-7 of O.Reg 170/03, which requires a written notice be provided within 24 hours of the verbal notification.

- A review of procedures was undertaken and as a result updates are currently being made to include email delivery of written notifications.

5. Summary of Water Flows

5.1 Drinking Water System Capacity and Water Flow Data are provided in Attachment #1 as summary charts. Each summary chart provides monthly average and maximum daily flow for the reporting period. Some of the flow data in Attachment #1 has been pro-rated. Pro-rating is used to determine the volume of water pumped over a 24 hour period. Pro-rated data will be indicated in the chart headings.

6. Public Notification and Information

6.1 The Summary Report is available to the public through the Region's Works Department, located at 605 Rossland Road East, Level 5, in Whitby and on the Region's website at www.durham.ca.

7. Conclusion

7.1 As required under Ontario Regulation 170/03, this Summary Report for the Regional Municipality of Durham's Drinking Water Systems is provided to Regional Council. It is recommended that receipt of this report be confirmed by resolution of Regional Council to meet this condition and that a copy of the resolution is forwarded to the Ministry of the Environment, Conservation and Parks.

7.2 For additional information, please contact Greg Lymer. Manager, Technical Support Division, at 905-668-7711, extension 3500.

8. Attachments

Attachment #1: Drinking Water System Capacity and Water Flow Data

Respectfully submitted,

Original signed by:

Susan Siopis
Commissioner of Works

Recommended for Presentation to Committee

Original signed by:

Elaine C. Baxter-Trahair
Chief Administrative Officer

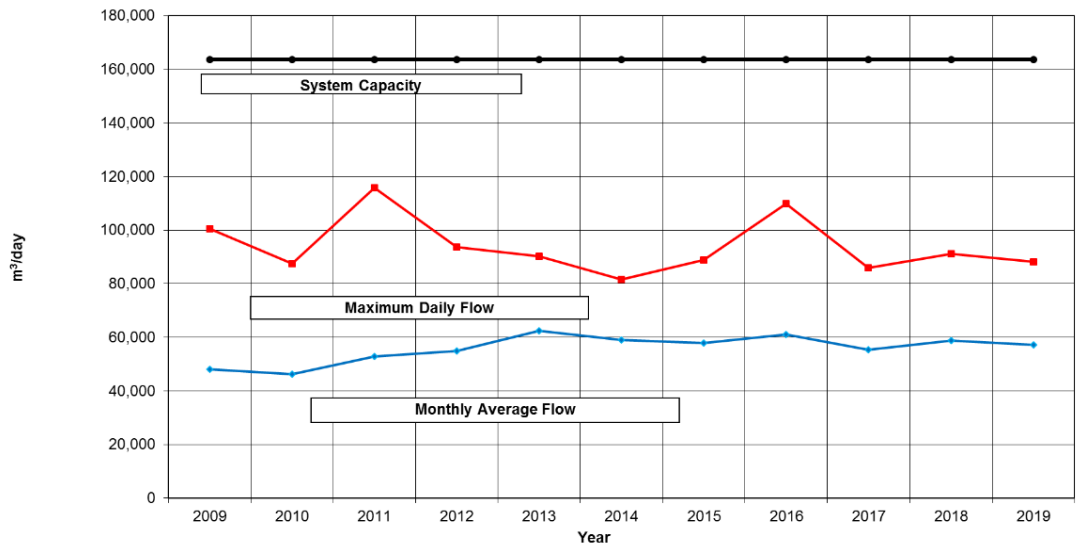
The Regional Municipality of Durham
Ajax Drinking Water System
2019 Flow Data – Raw and Treated Water

Month	Raw Water Monthly Average Flow Cubic metres per day (m^3/day)	Raw Water Maximum Daily Flow (m^3/day)	Total Raw Water Flow (m^3)	Treated Water Monthly Average Flow (m^3/day)	Treated Water Maximum Daily Flow (m^3/day)	Total Treated Water Flow (m^3)
January	57,130	65,451	1,771,016	55,585	62,918	1,723,124
February	57,686	81,198	1,615,197	56,203	80,578	1,573,686
March	56,561	77,395	1,753,386	54,784	74,710	1,698,293
April	57,213	68,220	1,716,397	55,497	64,887	1,664,910
May	57,149	70,180	1,771,616	55,142	68,189	1,709,408
June	62,964	80,177	1,888,930	60,805	77,718	1,824,149
July	70,852	89,621	2,196,425	68,103	88,253	2,111,191
August	66,914	88,980	2,074,322	63,128	83,179	1,956,962
September	66,805	82,651	2,004,163	62,501	74,265	1,875,037
October	54,918	71,807	1,702,445	52,275	65,714	1,620,538
November	53,981	77,483	1,619,417	51,419	73,310	1,542,569
December	52,681	70,387	1,633,120	50,653	67,478	1,570,248
Annual Total	Not Required (NR)	NR	21,746,434	NR	NR	20,870,115
Maximum		89,621			88,253	
Average	59,571	NR	NR	57,175	NR	NR
% Capacity		53			54	
Permit to Take Water Limit	NR	170,000	NR	NR	NR	NR
Municipal Drinking Water Licence Limit					163,500	

The Regional Municipality of Durham
Ajax Drinking Water System Capacity and Treated Water Flow Data

Year	Monthly Average Flow cubic metres per day (m^3/day)	Maximum Daily Flow (m^3/day)	System Capacity (m^3/day)
2009	48,046	100,470	163,500
2010	46,113	87,458	163,500
2011	52,931	115,690	163,500
2012	54,910	93,551	163,500
2013	62,300	90,229	163,500
2014	58,867	81,640	163,500
2015	57,883	88,945	163,500
2016	60,997	109,869	163,500
2017	55,247	85,808	163,500
2018	58,808	91,039	163,500
2019	57,175	88,253	163,500

Ajax Drinking Water System Capacity and Treated Water Flow Graph



The Regional Municipality of Durham
Whitby Drinking Water System
2019 Flow Data - Raw Process Water and Raw Industrial Water

Month	Raw Process Water Monthly Average Flow Cubic metres per day (m^3/day)	Raw Process Water Maximum Daily Flow (m^3/day)	Total Raw Process Water Flow (m^3)	Raw Industrial Water Monthly Average Flow (m^3/day)	Raw Industrial Water Maximum Daily Flow (m^3/day)	Total Raw Industrial Water Flow (m^3)
January	54,192	58,281	1,679,950	5,102	6,569	158,157
February	54,082	57,405	1,514,294	6,050	7,865	169,388
March	53,589	59,175	1,661,270	5,290	6,607	163,989
April	53,678	54,823	1,610,348	6,139	8,150	184,167
May	55,430	83,052	1,718,317	5,210	9,711	161,513
June	56,090	65,736	1,682,696	4,686	7,312	140,589
July	59,773	75,376	1,852,972	5,061	9,057	156,899
August	58,245	67,895	1,805,591	3,711	9,741	115,053
September	58,443	68,177	1,753,276	4,570	6,457	137,110
October	54,028	58,992	1,674,876	5,623	8,041	174,320
November	53,896	55,888	1,616,884	5,405	8,411	162,155
December	53,212	58,901	1,649,571	4,898	6,311	151,838
Annual Total	Not Required	NR	20,220,045	NR	NR	1,875,178
Maximum		83,052			9,741	
Average	55,388	NR	NR	5,145	NR	NR

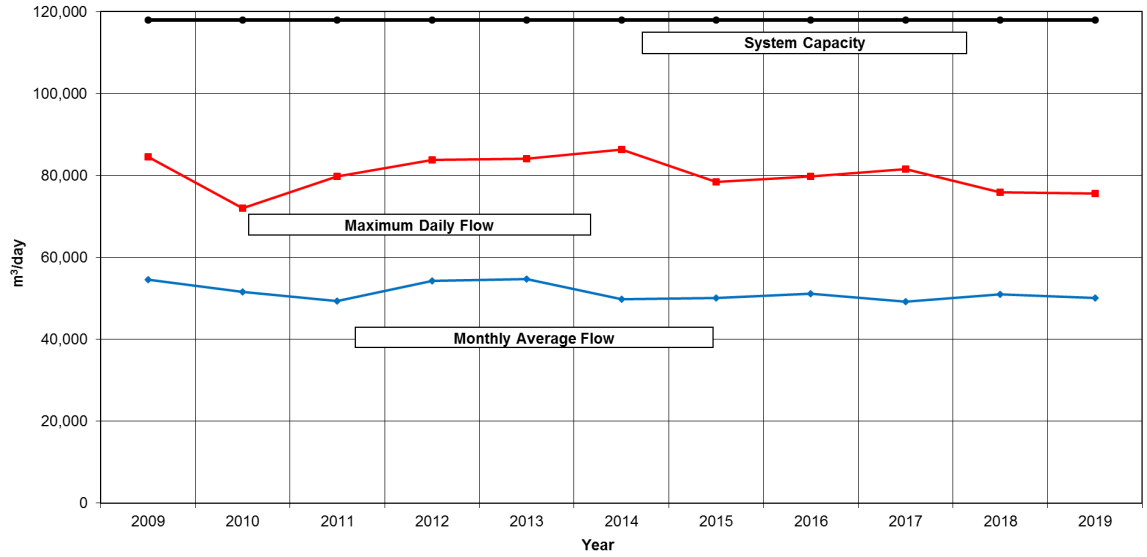
The Regional Municipality of Durham
Whitby Drinking Water System
2019 Flow Data - Total Raw Water and Treated Water

Month	Raw Water Monthly Average Flow Cubic metres per day (m^3/day)	Raw Water Maximum Daily Flow (m^3/day)	Total Raw Water Flow (m^3)	Treated Water Monthly Average Flow (m^3/day)	Treated Water Maximum Daily Flow (m^3/day)	Total Treated Water Flow (m^3)
January	59,621	63,150	1,848,245	49,011	50,956	1,519,336
February	60,439	64,513	1,692,302	47,928	50,563	1,341,994
March	59,174	65,471	1,834,392	48,853	53,585	1,514,440
April	60,149	62,273	1,804,485	48,604	50,359	1,458,116
May	60,915	91,387	1,888,363	50,371	75,591	1,561,502
June	61,082	71,713	1,832,474	51,097	62,285	1,532,903
July	65,161	80,342	2,020,004	54,418	70,329	1,686,960
August	62,227	78,112	1,929,042	51,272	60,729	1,589,424
September	63,303	73,171	1,899,089	52,352	60,406	1,570,568
October	59,955	64,702	1,858,594	48,908	53,182	1,516,145
November	59,610	63,108	1,788,287	49,921	51,970	1,497,618
December	58,387	65,075	1,810,004	49,298	54,960	1,528,244
Annual Total	Not Required (NR)	NR	22,205,281	NR	NR	18,317,250
Maximum		91,387			75,591	
Average	60,835	NR	NR	50,169	NR	NR
% Capacity		63			64	
Permit to Take Water Limit	NR	144,000	NR	NR	NR	NR
Municipal Drinking Water Licence Limit					118,000	

The Regional Municipality of Durham
Whitby Drinking Water System Capacity and Treated Water Flow Data

Year	Monthly Average Flow cubic metres per day (m^3/day)	Maximum Daily Flow (m^3/day)	System Capacity (m^3/day)
2009	54,582	84,604	118,000
2010	51,587	72,013	118,000
2011	49,316	79,712	118,000
2012	54,348	83,824	118,000
2013	54,657	84,127	118,000
2014	49,822	86,351	118,000
2015	50,101	78,362	118,000
2016	51,136	79,744	118,000
2017	49,246	81,622	118,000
2018	50,954	75,943	118,000
2019	50,169	75,591	118,000

Whitby Drinking Water System Capacity and Treated Water Flow Graph



The Regional Municipality of Durham
Oshawa Drinking Water System
2019 Flow Data - Plant Number (#) 1 Raw Water and Plant # 2 Raw Water

Month	Plant # 1 Raw Water Monthly Average Flow Cubic metres per day (m^3/day)	Plant # 1 Raw Water Maximum Daily Flow (m^3/day)	Plant # 1 Total Raw Water Flow (m^3)	Plant # 2 Raw Water Monthly Average Flow (m^3/day)	Plant # 2 Raw Water Maximum Daily Flow (m^3/day)	Plant # 2 Total Raw Water Flow (m^3)
January	0	0	0	47,003	56,562	1,457,086
February	0	0	0	49,101	56,424	1,374,826
March	0	0	0	47,334	56,692	1,467,362
April	0	0	0	44,953	48,016	1,348,590
May	0	0	0	47,854	71,629	1,483,486
June	0	0	0	51,230	56,481	1,536,915
July	0	0	0	58,238	70,195	1,805,388
August	0	0	0	57,360	74,661	1,778,163
September	0	0	0	44,256	56,621	1,327,665
October	0	0	0	47,839	54,072	1,483,007
November	0	0	0	46,418	56,836	1,392,536
December	0	0	0	46,708	51,317	1,447,948
Annual Total	Not Required (NR)	NR	NR	NR	NR	17,902,972
Maximum					74,661	
Average	NR	NR	NR	49,025	NR	NR
% Capacity					70*	
Permit to Take Water Limit	NR		NR	NR	134,000*	NR
Municipal Drinking Water Licence Limit		27,000			107,000	

Plant # 1 was not operational in 2019.
*PTTW Limit is a system total of 134,000 m^3/day. As Plant # 1 was not operational, the system capacity was limited to Plant # 2 capacity of 107,000 m^3/day.

The Regional Municipality of Durham
Oshawa Drinking Water System
2019 Flow Data - Total Raw Water and Treated Water

Month	Total Raw Water Monthly Average Flow Cubic metres per day (m^3/day)	Total Raw Water Maximum Daily Flow (m^3/day)	Total Raw Water Flow (m^3)	Total Treated Water Monthly Average Flow (m^3/day)	Total Treated Water Maximum Daily Flow (m^3/day)	Total Treated Water Flow (m^3)
January	47,003	56,562	1,457,086	44,346	54,833	1,374,731
February	49,101	56,424	1,374,826	45,956	53,121	1,286,758
March	47,334	56,692	1,467,362	44,645	52,039	1,383,997
April	44,953	48,016	1,348,590	42,502	45,393	1,275,060
May	47,854	71,629	1,483,486	45,235	68,374	1,402,295
June	51,230	56,481	1,536,915	48,527	53,230	1,455,808
July	58,238	70,195	1,805,388	53,784	63,754	1,667,295
August	57,360	74,661	1,778,163	52,668	64,843	1,632,706
September	44,256	56,621	1,327,665	39,528	50,860	1,185,830
October	47,839	54,072	1,483,007	44,017	50,222	1,364,538
November	46,418	56,836	1,392,536	43,340	53,269	1,300,201
December	46,708	51,317	1,447,948	43,905	48,074	1,361,050
Annual Total	Not Required (NR)	NR	17,902,972	NR	NR	16,690,269
Maximum		74,661			68,374	
Average	49,025	NR	NR	45,704	NR	NR
% Capacity		56			64	
Permit to Take Water Limit	NR	134,000*	NR	NR	NR	NR
Municipal Drinking Water Licence Limit					107,000	

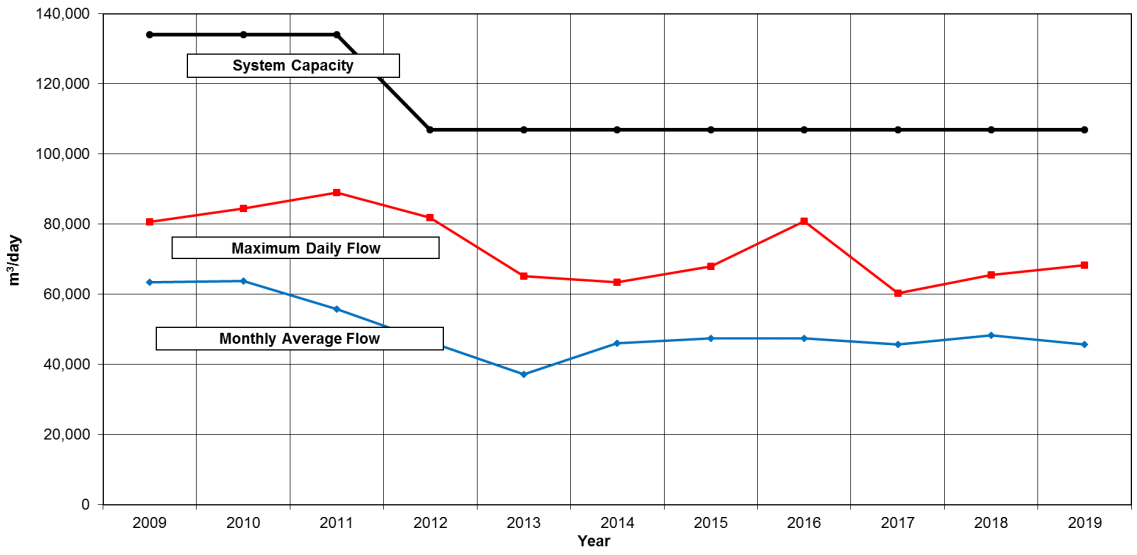
*PTTW Limit is a system total of 134,000 m^3/day. As Plant # 1 was not operational, the system capacity was limited to Plant # 2 capacity of 107,000 m^3/day.

The Regional Municipality of Durham
Oshawa Drinking Water System Capacity and Treated Water Flow Data

Year	Monthly Average Flow cubic metres per day (m^3/day)	Maximum Daily Flow (m^3/day)	System Capacity (m^3/day)
2009	63,474	80,714	134,000
2010	63,857	84,568	134,000
2011	55,790	89,049	107,000
2012	46,366	81,828	107,000
2013	37,155	65,193	107,000
2014	46,124	63,427	107,000
2015	47,429	67,944	107,000
2016	47,443	80,756	107,000
2017	45,763	60,306	107,000
2018	48,334	65,556	107,000
2019	45,704	68,374	107,000

Oshawa Plant #1 has a capacity of 27,000 m^3/day. Plant # 2 has a capacity of 107,000 m^3/day. Only Plant # 2 was operational during the reporting period.

Oshawa Drinking Water System Capacity and Treated Water Flow Graph



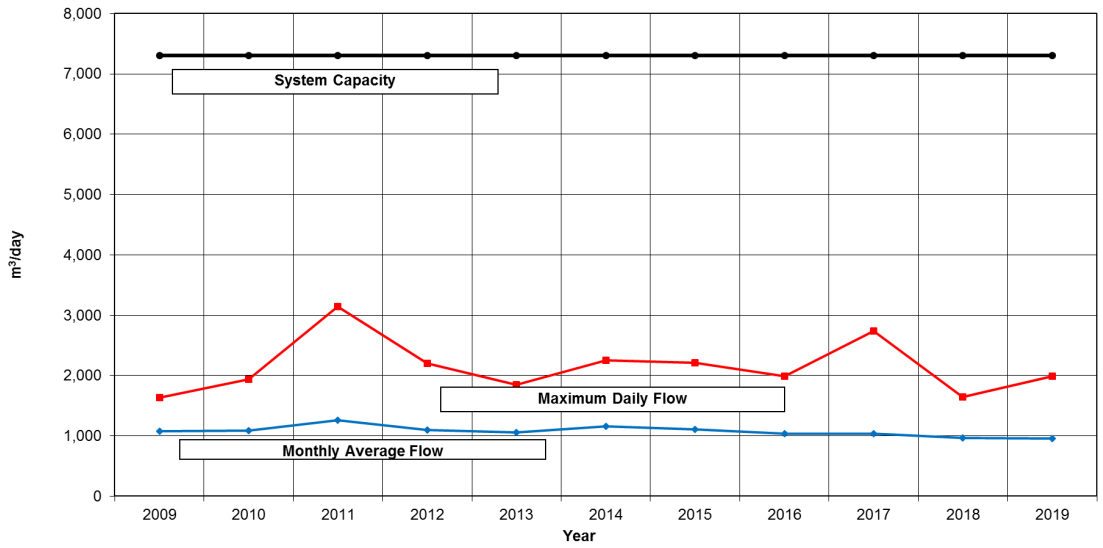
The Regional Municipality of Durham
Beaverton Drinking Water System
2019 Flow Data – Raw and Treated Water

Month	Raw Water Monthly Average Flow Cubic metres per day (m^3/day) Pro-rated	Raw Water Maximum Daily Flow (m^3/day) Pro-rated	Total Raw Water Flow (m^3)	Treated Water Monthly Average Flow (m^3/day) Pro-rated	Treated Water Maximum Daily Flow (m^3/day) Pro-rated	Total Treated Water Flow (m^3)
January	984	1,408	30,703	867	1,105	26,964
February	1,055	1,269	29,442	955	1,070	26,597
March	1,069	1,385	33,316	943	1,118	29,294
April	1,030	1,377	30,934	904	1,166	27,096
May	1,084	1,417	33,743	895	1,125	27,851
June	1,114	1,496	33,671	952	1,155	28,689
July	1,365	1,747	42,548	1,192	1,379	36,964
August	1,250	1,719	38,863	1,091	1,420	33,819
September	1,120	1,990	33,798	983	1,990	29,671
October	950	1,369	29,734	823	1,063	25,640
November	1,027	1,198	30,811	899	1,052	26,880
December	1,028	1,350	31,891	930	1,150	28,754
Annual Total	Not Required (NR)	NR	399,454	NR	NR	348,219
Maximum		1,990			1,990	
Average	1,090	NR	NR	953	NR	NR
% Capacity		27			27	
Permit to Take Water Limit	NR	7,300	NR	NR	NR	NR
Municipal Drinking Water Licence Limit					7,300	

The Regional Municipality of Durham
Beaverton Drinking Water System Capacity and Treated Water Flow Data

Year	Monthly Average Flow cubic metres per day (m^3/day) Pro-rated	Maximum Daily Flow (m^3/day) Pro-rated	System Capacity (m^3/day)
2009	1,076	1,636	7,300
2010	1,085	1,939	7,300
2011	1,259	3,143	7,300
2012	1,101	2,202	7,300
2013	1,057	1,850	7,300
2014	1,161	2,251	7,300
2015	1,112	2,208	7,300
2016	1,034	1,989	7,300
2017	1,039	2,740	7,300
2018	964	1,643	7,300
2019	953	1,990	7,300

Beaverton Drinking Water System Capacity and Treated Water Flow Graph



The Regional Municipality of Durham
Blackstock Drinking Water System
2019 Flow Data - Well Number (#) 7* and Well # 8 Raw Water

Month	Well # 7 Raw Water Maximum Taken per Minute (litres)	Well # 7 Raw Water Monthly Average Flow cubic metres per day (m^3/day) Pro-rated	Well # 7 Raw Water Maximum Daily Flow (m^3/day) Pro-rated	Well # 7 Total Raw Water Flow (m^3)	Well # 8 Raw Water Maximum Taken per Minute (litres)	Well # 8 Raw Water Monthly Average Flow (m^3/day) Pro-rated	Well # 8 Raw Water Maximum Daily Flow (m^3/day) Pro-rated	Well # 8 Total Raw Water Flow (m^3)
January	0	0	0	0	630	116	296	3,544
February	0	0	0	0	630	123	158	3,407
March	0	0	0	0	621	113	159	3,460
April	0	0	0	0	630	101	140	2,992
May	0	0	0	0	621	117	186	3,615
June	0	0	0	0	618	121	155	3,565
July	0	0	0	0	600	124	186	3,849
August	0	0	0	0	621	118	174	3,637
September	0	0	0	0	612	114	154	3,401
October	0	0	0	0	549	111	184	3,388
November	0	0	0	0	570	107	143	3,177
December	0	0	0	0	558	112	144	3,438
Annual Total	Not Required (NR)	NR	NR	NR	NR	NR	NR	41,473
Maximum					630		296	
Average	NR	NR	NR	NR	NR	115	NR	NR
% Capacity					92		30	
Permit to Take Water Limit	NR	NR	985	NR	684	NR	985	NR

*Well # 7 not in service in 2019.

The Regional Municipality of Durham
Blackstock Drinking Water System
2019 Flow Data - Reservoir/System Total Treated Water

Month	Treated Water Monthly Average Flow cubic metres per day (m^3/day) Pro-rated	Treated Water Maximum Daily Flow (m^3/day) Pro-rated	Total Treated Water Flow (m^3)
January	100	227	3,072
February	110	131	3,061
March	97	142	2,966
April	81	114	2,403
May	100	164	3,107
June	106	152	3,117
July	109	139	3,362
August	101	133	3,101
September	100	161	2,973
October	90	144	2,767
November	58	100	1,742
December	61	88	1,803
Total	Not Required (NR)	NR	33,474
Maximum		227	
Average	93	NR	NR
% Capacity		23	
Municipal Drinking Water Licence Limit	NR	994	NR

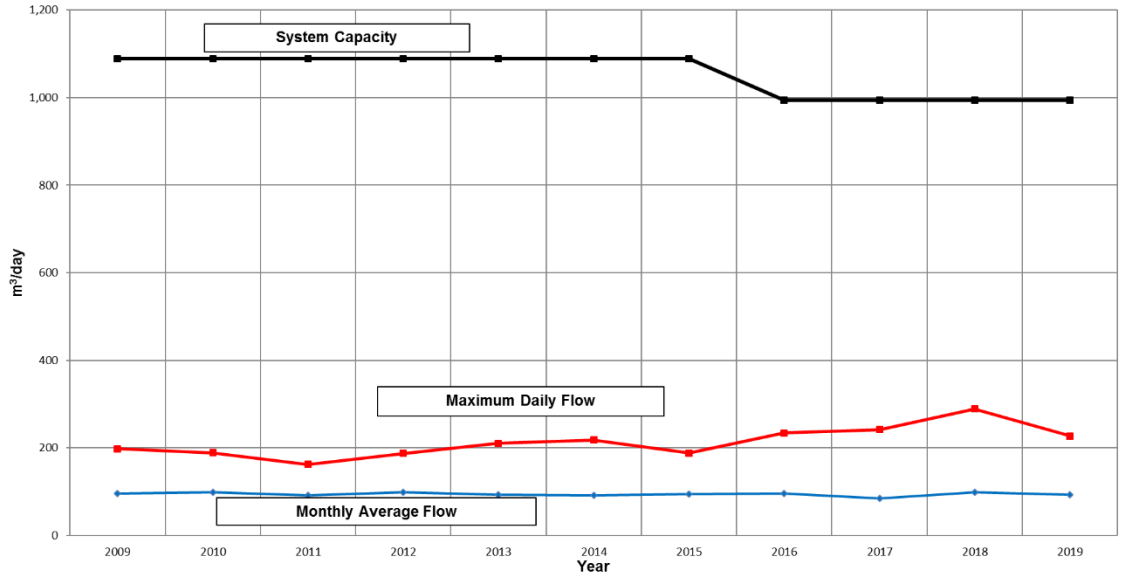
The Regional Municipality of Durham

Blackstock Drinking Water System Capacity and Treated Water Flow Data

Year	Monthly Average Flow cubic metres per day (m^3/day) Pro-rated	Maximum Daily Flow (m^3/day) Pro-rated	System Capacity (m^3/day)
2009	96	198	1,089
2010	98	189	1,089
2011	92	162	1,089
2012	99	187	1,089
2013	93	210	1,089
2014	91	218	1,089
2015	94	188	1,089
2016	95	234	994*
2017	84	242	994*
2018	98	289	994*
2019	93	227	994*

*Well # 7 not in service.

Blackstock Drinking Water System Capacity and Treated Water Flow Graph



The Regional Municipality of Durham
Bowmanville Drinking Water System
2019 Flow Data – Raw and Treated Water Raw Water

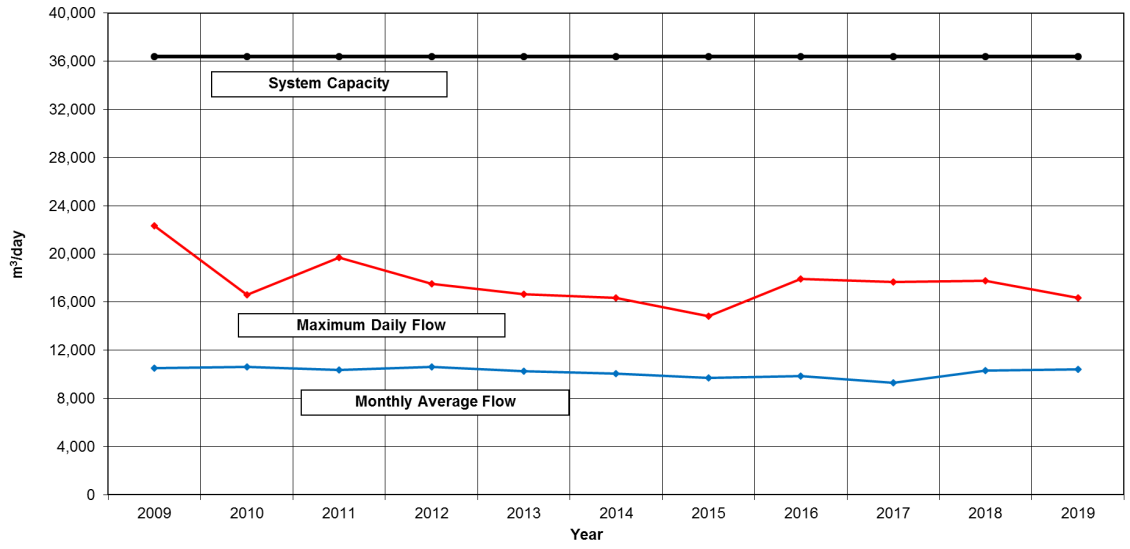
Month	Raw Water Monthly Average Flow Cubic metres per day (m^3/day)	Raw Water Maximum Daily Flow (m^3/day)	Total Raw Water Flow (m^3)	Treated Water Monthly Average Flow (m^3/day)	Treated Water Maximum Daily Flow (m^3/day)	Total Treated Water Flow (m^3)
January	10,725	13,435	332,488	10,017	12,803	310,520
February	10,628	13,353	297,582	9,843	11,999	275,597
March	10,872	12,225	337,022	10,096	11,630	312,982
April	10,988	14,457	329,626	10,196	13,371	305,891
May	11,445	13,896	354,801	10,737	16,354	332,835
June	12,171	15,002	365,119	11,469	14,231	344,068
July	13,214	15,730	409,647	12,493	15,259	387,278
August	11,870	13,798	367,965	11,130	13,499	345,035
September	10,881	13,060	326,444	10,186	12,427	305,565
October	10,480	12,918	324,871	9,822	12,286	304,478
November	10,350	12,389	310,510	9,579	11,889	287,371
December	10,208	13,699	316,433	9,506	13,120	294,691
Annual Total	NR	NR	4,072,508	NR	NR	3,806,311
Maximum		15,730			16,354	
Average	11,153	NR	NR	10,423	NR	NR
% Capacity		33			45	
Permit to Take Water Limit	NR	47,700	NR	NR	NR	NR
Municipal Drinking Water Licence Limit					36,368	

The Regional Municipality of Durham

Bowmanville Drinking Water System Capacity and Treated Water Flow Data

Year	Monthly Average Flow cubic metres per day (m^3/day)	Maximum Daily Flow (m^3/day)	System Capacity (m^3/day)
2009	10,511	22,348	36,368
2010	10,631	16,607	36,368
2011	10,394	19,710	36,368
2012	10,611	17,518	36,368
2013	10,280	16,633	36,368
2014	10,051	16,333	36,368
2015	9,722	14,815	36,368
2016	9,858	17,935	36,368
2017	9,321	17,659	36,368
2018	10,340	17,750	36,368
2019	10,423	16,354	36,368

Bowmanville Drinking Water System Capacity and Treated Water Flow Graph



The Regional Municipality of Durham
Cannington Drinking Water System
2019 Flow Data - Well Number (#) 2 Raw Water and *Treated Water

Month	Well # 2 Raw Water Maximum Taken per Minute (litres)	Well # 2 Raw Water Monthly Average Flow Cubic metres per day (m^3/day) Pro-rated	Well # 2 Raw Water Maximum Daily Flow (m^3/day) Pro-rated	Well # 2 Total Raw Water Flow (m^3)	Well # 2 Treated Water Monthly Average Flow (m^3/day) Pro-rated	Well # 2 Treated Water Maximum Daily Flow (m^3/day) Pro-rated	Well # 2 Total Treated Water Flow (m^3) Pro-rated
January	80	57	64	1,776	57	64	1,765
February	80	62	72	1,739	62	72	1,736
March	80	63	86	1,927	63	86	1,941
April	80	63	70	1,911	63	70	1,890
May	80	65	73	2,024	65	73	2,014
June	80	61	78	1,833	61	78	1,825
July	80	44	52	1,371	44	52	1,377
August	80	49	60	1,512	49	60	1,514
September	80	43	62	1,308	43	62	1,304
October	80	38	55	1,167	38	55	1,170
November	75	33	41	1,006	33	41	998
December	75	33	38	1,014	33	38	1,019
Annual Total	Not Required (NR)	NR	NR	18,587	NR	NR	NR
Maximum	80		86			86	
Average	NR	51	NR	NR	51	NR	NR
% Capacity	95		71			17	
Permit to Take Water Limit	84	NR	121	NR	NR	NR	NR
Municipal Drinking Water Licence Limit						510**	

*Treated water volumes calculated by subtracting waste from raw water volumes.
**Limit is combined for Wells 2 & 7.

The Regional Municipality of Durham
Cannington Drinking Water System
2019 Flow Data - Well Number (#) 7 Raw Water and *Treated Water

Month	Well # 7 Raw Water Maximum Taken per Minute (litres)	Well # 7 Raw Water Monthly Average Flow Cubic metres per day (m^3/day) Pro-rated	Well # 7 Raw Water Maximum Daily Flow (m^3/day) Pro-rated	Well # 7 Total Raw Water Flow (m^3)	Well # 7 Treated Water Monthly Average Flow (m^3/day) Pro-rated	Well # 7 Treated Water Maximum Daily Flow (m^3/day) Pro-rated	Well # 7 Total Treated Water Flow (m^3) Pro-rated
January	260	203	224	6,312	203	224	6,278
February	260	222	253	6,211	222	253	6,203
March	260	222	296	6,827	222	296	6,880
April	265	222	243	6,735	222	243	6,664
May	265	227	250	7,073	227	250	7,041
June	265	216	270	6,520	216	270	6,490
July	260	176	225	5,414	176	225	5,441
August	260	175	214	5,423	175	214	5,435
September	260	158	216	4,761	158	216	4,747
October	260	145	194	4,473	145	194	4,485
November	260	130	157	3,936	130	157	3,905
December	265	131	154	4,047	131	154	4,070
Annual Total	Not Required (NR)	NR	NR	67,732	NR	NR	
Maximum	265		296			296	
Average	NR	186	NR	NR	186	NR	NR
% Capacity	98		76			58	
Permit to Take Water Limit	270	NR	389	NR	NR	NR	NR
Municipal Drinking Water Licence Limit						510**	

*Treated water volumes calculated by subtracting waste from raw water volumes.
**Limit is combined for Wells 2 & 7.

The Regional Municipality of Durham
Cannington Drinking Water System
2019 Flow Data - * Well Numbers (#) 2 and 7 *Treated Water

Month	Well # 2 and 7 Treated Water Monthly Average Flow Cubic metres per day (m^3/day) Pro-rated	Well # 2 and 7 Treated Water Maximum Daily Flow (m^3/day) Pro-rated	Well # 2 and 7 Total Treated Water Flow (m^3) Pro-rated
January	259	288	8,043
February	284	324	7,939
March	285	381	8,821
April	285	313	8,553
May	292	323	9,055
June	277	348	8,315
July	220	277	6,818
August	224	273	6,950
September	202	278	6,051
October	182	249	5,655
November	163	199	4,903
December	164	192	5,090
Maximum	Not Required (NR)	381	NR
Average	236		
% Capacity	NR	75	NR
Municipal Drinking Water Licence Limit		510	

*Treated water volumes calculated by subtracting waste from raw water volumes.

The Regional Municipality of Durham
Cannington Drinking Water System
2019 Flow Data - Well Number (#) 3 Raw Water and *Treated Water

Month	Well # 3 Raw Water Maximum Taken per Minute (litres)	Well # 3 Raw Water Monthly Average Flow Cubic metres per day (m^3/day) Pro-rated	Well # 3 Raw Water Maximum Daily Flow (m^3/day) Pro-rated	Well # 3 Total Raw Water Flow (m^3)	Well # 3 Treated Water Monthly Average Flow (m^3/day) Pro-rated	Well # 3 Treated Water Maximum Daily Flow (m^3/day) Pro-rated	Well # 3 Total Treated Water Flow (m^3) Pro-rated
January	170	128	142	3,983	128	142	3,973
February	170	138	158	3,876	138	158	3,863
March	170	140	188	4,296	140	188	4,325
April	170	140	155	4,208	140	155	4,185
May	170	143	188	4,419	143	188	4,418
June	170	140	170	4,219	140	170	4,197
July	170	114	140	3,505	114	140	3,526
August	170	113	132	3,495	113	132	3,497
September	175	106	139	3,178	106	139	3,176
October	175	94	142	2,944	94	142	2,926
November	175	85	108	2,541	85	108	2,534
December	175	83	96	2,557	83	96	2,571
Annual Total	Not Required (NR)	NR	NR	43,220	NR	NR	NR
Maximum	175		188			188	
Average	NR	118	NR	NR	118	NR	NR
% Capacity	97		73			73	
Permit to Take Water Limit	180	NR	259	NR	NR	NR	NR
Municipal Drinking Water Licence Limit						259	

*Treated water volumes calculated by subtracting waste from raw water volumes.

The Regional Municipality of Durham
Cannington Drinking Water System
2019 Flow Data - **Well Number (#) 4 Raw Water and *Treated Water

Month	Well # 4 Raw Water Maximum Taken per Minute (litres)	Well # 4 Raw Water Monthly Average Flow Cubic metres per day (m^3/day) Pro-rated	Well # 4 Raw Water Maximum Daily Flow (m^3/day) Pro-rated	Well # 4 Total Raw Water Flow (m^3)	Well # 4 Treated Water Monthly Average Flow (m^3/day) Pro-rated	Well # 4 Treated Water Maximum Daily Flow (m^3/day) Pro-rated	Well # 4 Total Treated Water Flow (m^3) Pro-rated
January	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0
March	0	0	0	0	0	0	0
April	190	6	12	29	5	7	20
May	190	4	7	17	2	6	10
June	180	75	135	778	75	135	746
July	190	121	157	3,716	121	157	3,742
August	185	121	145	3,770	121	145	3,764
September	185	108	128	3,255	108	128	3,244
October	185	102	142	3,180	102	142	3,163
November	185	92	103	2,742	92	103	2,747
December	190	91	104	2,796	91	104	2,805
Annual Total	Not Required (NR)	NR	NR	20,283	NR	NR	NR
Maximum	190		157			157	
Average	NR	80		NR	80	NR	NR
% Capacity	99		57			57	
Permit to Take Water Limit	192	NR	277	NR	NR	NR	NR
Municipal Drinking Water Licence Limit						276	

*Treated water volumes calculated by subtracting waste from raw water volumes.
**Well # 4 offline January – March 2019

The Regional Municipality of Durham
Cannington Drinking Water System
2019 Flow Data - Well Number (#) 8 Raw Water and *Treated Water

Month	Well # 8 Raw Water Maximum Taken per Minute (litres)	Well # 8 Raw Water Monthly Average Flow Cubic metres per day (m^3/day) Pro-rated	Well # 8 Raw Water Maximum Daily Flow (m^3/day) Pro-rated	Well # 8 Total Raw Water Flow (m^3)	Well # 8 Treated Water Monthly Average Flow (m^3/day) Pro-rated	Well # 8 Treated Water Maximum Daily Flow (m^3/day) Pro-rated	Well # 8 Total Treated Water Flow (m^3) Pro-rated
January	330	216	239	6,732	216	239	6,708
February	330	229	246	6,417	229	246	6,415
March	330	235	306	7,270	235	306	7,271
April	330	236	260	7,079	236	260	7,084
May	330	243	267	7,585	243	267	7,541
June	350	237	286	7,151	237	286	7,122
July	350	196	231	6,021	196	231	6,077
August	340	193	228	5,996	193	228	5,968
September	330	173	195	5,188	173	195	5,186
October	350	162	201	4,861	166	201	4,813
November	360	164	188	4,905	164	188	4,928
December	360	170	196	5,237	170	196	5,257
Annual Total	Not Required (NR)	NR	NR	74,442	NR	NR	NR
Maximum	360		306			306	
Average	NR	204	NR	NR	205	NR	NR
% Capacity	63		37			37	
Permit to Take Water Limit	568	NR	818	NR	NR	NR	NR
Municipal Drinking Water Licence Limit						818	

*Treated water volumes calculated by subtracting waste from raw water volumes.

The Regional Municipality of Durham
Cannington Drinking Water System
2019 Flow Data – Total System Raw and *Treated Water

Month	Raw Water Monthly Average Flow Cubic metres per day (m^3/day) Pro-rated	Raw Water Maximum Daily Flow (m^3/day) Pro-rated	Total Raw Water Flow (m^3)	Treated Water Monthly Average Flow (m^3/day) Pro-rated	Treated Water Maximum Daily Flow (m^3/day) Pro-rated	Total Treated Water Flow (m^3) Pro-rated
January	604	657	18,814	604	655	18,724
February	651	694	18,246	651	692	18,217
March	659	876	20,325	659	876	20,417
April	662	724	19,963	661	723	19,842
May	678	753	21,118	678	753	21,024
June	680	796	20,500	679	796	20,380
July	650	730	20,028	650	730	20,163
August	651	762	20,195	651	762	20,178
September	589	736	17,689	589	736	17,657
October	535	606	16,625	534	606	16,557
November	504	575	15,130	504	575	15,111
December	507	588	15,652	507	588	15,722
Annual Total	Not Required (NR)	NR	224,284	NR	NR	NR
Maximum		876			876	
Average	614	NR	NR	614	NR	NR
% Capacity		47			47	
Permit to Take Water Limit		1863				
Municipal Drinking Water Licence Limit					1863	

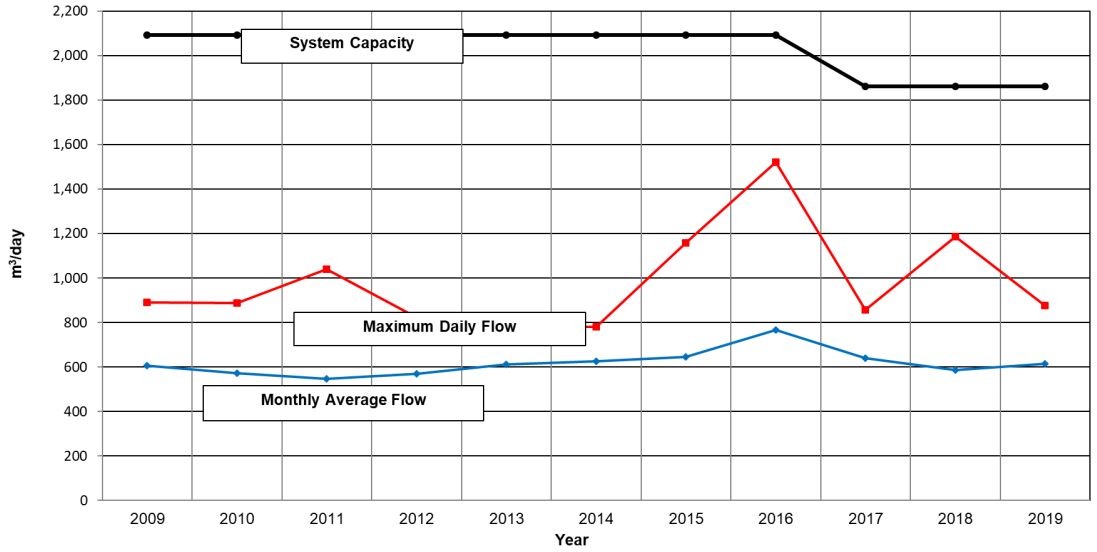
*Treated water volumes calculated by subtracting waste from raw water volumes.

The Regional Municipality of Durham
Cannington Drinking Water System Capacity and Treated Water Flow Data

Year	Monthly Average Flow cubic metres per day (m^3/day) Pro-rated	Maximum Daily Flow (m^3/day) Pro-rated	System Capacity (m^3/day)
2009	605	890	2,093
2010	572	887	2,092
2011	546	1,041	2,092
2012	570	824	2,092
2013	611	781	2,092
2014	625	782	2,092
2015	645	1,157	2,092
2016	765	1,523	2,092
2017	641	857	1,863*
2018	586	1,186	1,863
2019	614	876	1,863

*Capacity changed due to decommissioning of Well 6.

Cannington Drinking Water System Capacity and Treated Water Flow Graph



The Regional Municipality of Durham
Greenbank Drinking Water System
2019 Flow Data - Well Number (#) 1 Raw Water and Well # 3 Raw Water

Month	Well # 1 Raw Water Maximum Taken per Minute (litres)	Well # 1 Raw Water Monthly Average Flow cubic metres per (day m^3/day) Pro-rated	Well # 1 Raw Water Maximum Daily Flow (m^3/day) Pro-rated	Well # 1 Total Raw Water Flow (m^3)	Well # 3 Raw Water Maximum Taken per Minute (litres)	Well # 3 Raw Water Monthly Average Flow (m^3/day) Pro-rated	Well # 3 Raw Water Maximum Daily Flow (m^3/day) Pro-rated	Well # 3 Total Raw Water Flow (m^3)
January	60	17	20	524	80	30	36	925
February	60	18	22	509	80	32	39	908
March	60	19	23	587	80	33	41	1,039
April	60	24	31	713	83	33	42	1,000
May	65	24	36	766	82	33	49	1,045
June	60	24	37	707	82	32	50	971
July	60	26	38	812	82	35	52	1,113
August	60	24	39	766	80	34	54	1,085
September	60	22	28	669	80	31	39	930
October	60	22	31	678	80	31	49	953
November	60	21	26	638	80	30	37	883
December	60	24	40	732	77	33	58	1,021
Annual Total	Not Required (NR)	NR	NR	8,100	NR	NR	NR	11,873
Maximum	65		40		83		58	
Average	NR	22	NR	NR	NR	32	NR	NR
% Capacity	93		39		91		45	
Permit to Take Water Limit	70	NR	101	NR	91	NR	130	NR

The Regional Municipality of Durham
Greenbank Drinking Water System
2019 Flow Data - Well Number (#) 4 Raw Water and Well # 5 Raw Water

Month	Well # 4 Raw Water Maximum Taken per Minute (litres)	Well # 4 Raw Water Monthly Average Flow cubic metres per day (m^3/day) Pro-rated	Well # 4 Raw Water Maximum Daily Flow (m^3/day) Pro-rated	Well # 4 Total Raw Water Flow (m^3)	Well # 5 Raw Water Maximum Taken per Minute (litres)	Well # 5 Raw Water Monthly Average Flow (m^3/day) Pro-rated	Well # 5 Raw Water Maximum Daily Flow (m^3/day) Pro-rated	Well # 5 Total Raw Water Flow (m^3)
January	67	22	27	683	62	19	24	588
February	67	23	29	655	62	20	26	572
March	60	24	30	751	58	20	25	633
April	64	25	37	734	65	23	30	685
May	63	25	36	776	66	23	34	734
June	63	24	36	719	60	23	34	684
July	63	26	38	831	65	25	37	798
August	62	25	40	801	65	25	38	781
September	60	23	29	693	65	23	28	672
October	60	23	40	708	65	22	40	692
November	60	21	27	639	63	21	28	642
December	58	24	40	740	63	24	41	740
Annual Total	Not Required (NR)	NR	NR	8,729	NR	NR	NR	8,219
Maximum	67		40		66		41	
Average	NR	24	NR	NR	NR	22	NR	NR
% Capacity	99		41		97		42	
Permit to Take Water Limit	68	NR	99	NR	68	NR	99	NR

The Regional Municipality of Durham
Greenbank Drinking Water System
2019 Flow Data - Well Number (#) 6 Raw Water

Month	Well # 6 Raw Water Maximum Taken per Minute (litres)	Well # 6 Raw Water Monthly Average Flow cubic metres per day (m^3/day) Pro-rated	Well # 6 Raw Water Maximum Daily Flow (m^3/day) Pro-rated	Well # 6 Total Raw Water Flow (m^3)
January	83	31	37	946
February	82	32	40	907
March	82	33	41	1,036
April	88	34	44	1,018
May	87	35	52	1,113
June	84	34	52	1,027
July	85	37	53	1,166
August	83	35	55	1,092
September	83	31	38	923
October	83	32	55	982
November	80	30	39	892
December	80	34	59	1,045
Annual Total	Not Required (NR)	12,147	NR	NR
Maximum	88		59	
Average	NR	33	NR	NR
% Capacity	97		46	
Permit to Take Water Limit	91	NR	130	NR

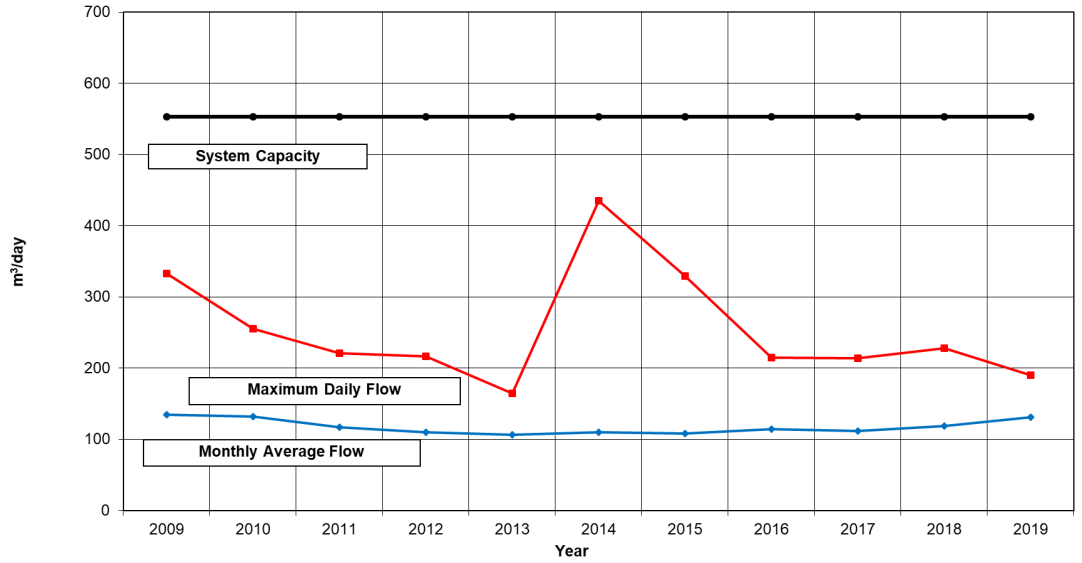
The Regional Municipality of Durham
Greenbank Drinking Water System
2019 Flow Data - Reservoir/System Total Treated Water

Month	Treated Water Monthly Average Flow cubic metres per day (m^3/day) Pro-rated	Treated Water Maximum Daily Flow (m^3/day) Pro-rated	Total Treated Water Flow (m^3)
January	117	127	3,618
February	121	132	3,401
March	131	147	4,056
April	137	152	4,089
May	139	157	4,310
June	136	167	4,056
July	146	178	4,578
August	144	190	4,476
September	129	172	3,821
October	124	132	3,821
November	121	130	3,632
December	123	139	3,818
Annual Total	Not Required (NR)	NR	47,676
Maximum		190	
Average	131	NR	NR
% Capacity		34	
Municipal Drinking Water Licence Limit	NR	553	NR

The Regional Municipality of Durham
Greenbank Drinking Water System Capacity and Treated Water Flow Data

Year	Monthly Average Flow cubic metres per day (m^3/day) Pro-rated	Maximum Daily Flow (m^3/day) Pro-rated	System Capacity (m^3/day)
2009	135	332	553
2010	132	255	553
2011	117	221	553
2012	110	216	553
2013	106	164	553
2014	110	435	553
2015	108	329	553
2016	114	215	553
2017	112	214	553
2018	119	228	553
2019	131	190	553

Greenbank Drinking Water System Capacity and Treated Water Flow Graph



The Regional Municipality of Durham
Newcastle Drinking Water System
2019 Flow Data - Raw Water and Treated Water

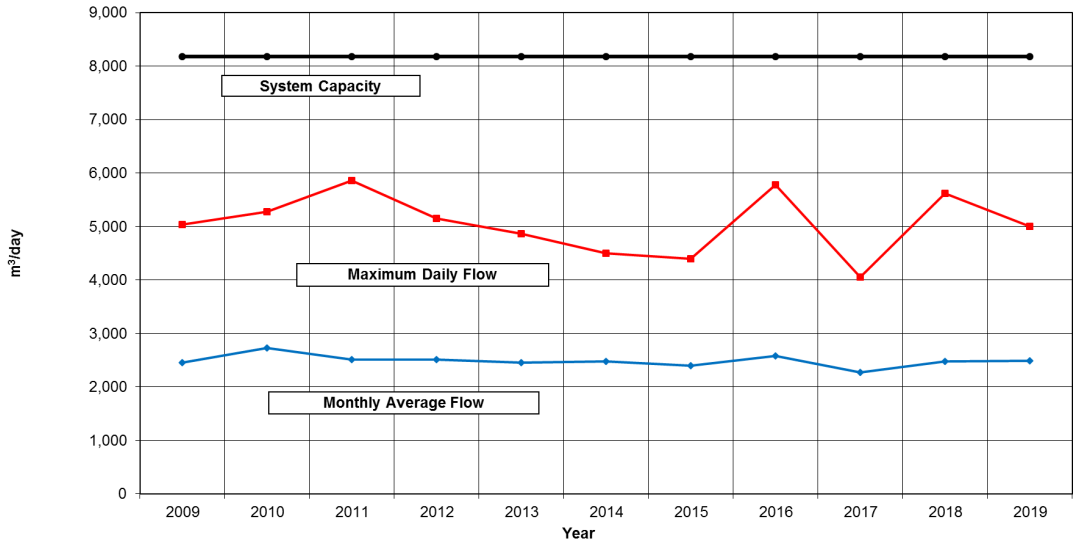
Month	Raw Water Monthly Average Flow Cubic metres per day (m^3/day)	Raw Water Maximum Daily Flow (m^3/day)	Total Raw Water Flow (m^3)	Treated Water Monthly Average Flow (m^3/day)	Treated Water Maximum Daily Flow (m^3/day)	Total Treated Water Flow (m^3)
January	2,367	3,233	73,362	2,223	3,087	68,924
February	2,446	3,364	68,474	2,309	3,183	64,645
March	2,419	3,210	74,995	2,271	3,082	70,399
April	2,500	3,397	74,993	2,345	3,224	70,362
May	2,591	3,564	80,308	2,443	3,324	75,724
June	2,869	4,553	86,068	2,718	4,318	81,542
July	3,597	5,175	115,097	3,401	5,004	108,820
August	3,015	4,292	93,463	2,812	4,070	87,179
September	2,736	3,765	82,092	2,534	3,457	76,030
October	2,492	3,282	77,263	2,299	3,072	71,269
November	2,419	3,492	72,569	2,215	3,290	66,438
December	2,430	3,591	75,336	2,299	3,508	71,282
Annual Total	NR	NR	974,020	NR	NR	912,614
Maximum		5,175			5,004	
Average	2,657	NR	NR	2,489	NR	NR
% Capacity		63			61	
Permit to Take Water Limit	NR	8,180	NR	NR	NR	NR
Municipal Drinking Water Licence Limit					8,173	

The Regional Municipality of Durham

Newcastle Drinking Water System Capacity and Treated Water Flow Data

Year	Monthly Average Flow cubic metres per day (m^3/day)	Maximum Daily Flow (m^3/day)	System Capacity (m^3/day)
2009	2,458	5,040	8,173
2010	2,734	5,276	8,173
2011	2,515	5,862	8,173
2012	2,508	5,149	8,173
2013	2,457	4,868	8,173
2014	2,480	4,504	8,173
2015	2,398	4,398	8,173
2016	2,579	5,777	8,173
2017	2,272	4,056	8,173
2018	2,476	5,623	8,173
2019	2,489	5,004	8,173

Newcastle Drinking Water System Capacity and Treated Water Flow Graph



The Regional Municipality of Durham
Orono Drinking Water System
2019 Flow Data - Well Number (#) 3* Raw Water and Well # 4* Raw Water

Month	Well # 3 Raw Water Maximum Taken per Minute (litres)	Well # 3 Raw Water Monthly Average Flow cubic metres per day (m^3/day) Pro-rated	Well # 3 Raw Water Maximum Daily Flow (m^3/day) Pro-rated	Well # 3 Total Raw Water Flow (m^3)	Well # 4 Raw Water Maximum Taken per Minute (litres)	Well # 4 Raw Water Monthly Average Flow (m^3/day) Pro-rated	Well # 4 Raw Water Maximum Daily Flow (m^3/day) Pro-rated	Well # 4 Total Raw Water Flow (m^3)
January	732	400	666	9,084	702	376	517	3,389
February	732	512	567	10,716	708	503	518	3,534
March	732	408	596	9,392	708	386	417	3,081
April	732	227	297	5,139	708	196	273	1,588
May	738	267	358	5,915	708	292	538	2,662
June	732	374	490	8,072	696	316	452	2,866
July	756	432	583	9,835	708	394	546	3,631
August	768	337	474	8,039	720	325	445	2,908
September	720	290	389	7,158	708	249	318	1,523
October	720	202	344	5,178	708	174	342	2,276
November	732	230	462	5,468	708	163	285	1,589
December	762	244	347	6,695	708	153	278	1,557
Annual Total	Not Required (NR)	NR	NR	90,690	NR	NR	NR	30,604
Maximum	768		666		720		546	
Average	NR	327	NR	NR	NR	294	NR	NR
% Capacity	84		76		79		63	
Permit to Take Water Limit	909	NR	873	NR	909	NR	873	NR

*Well cannot be run for more than sixteen hours per day as indicated in the Permit to Take Water.

The Regional Municipality of Durham
Orono Drinking Water System
2019 Flow Data - Well Number (#) 5* Raw Water and System Total Treated Water**

Month	Well # 5 Raw Water Monthly Average Flow cubic metres per day (m^3/day) Pro-rated	Well # 5 Raw Water Maximum Daily Flow (m^3/day) Pro-rated	Well # 5 Total Raw Water Flow (m^3)	System Total Treated Water Monthly Average Flow (m^3/day) Pro-rated	System Total Treated Water Maximum Daily Flow (m^3/day) Pro-rated	System Total Treated Water Flow (m^3)
January	0	0	0	401	666	12,293
February	0	0	0	506	567	14,107
March	0	0	0	396	596	12,255
April	0	0	0	221	297	6,566
May	0	0	0	268	538	8,373
June	0	0	0	364	481	10,778
July	0	0	0	429	583	13,286
August	0	0	0	350	474	10,760
September	0	0	0	288	389	8,541
October	0	0	0	241	344	7,273
November	0	0	0	234	542	6,893
December	0	0	0	265	347	8,080
Annual Total	NR	NR	NR	NR	NR	119,204
Maximum					666	
Average	NR	NR	NR	330	NR	NR
% Capacity					76/38	
Permit to Take Water Limit	NR	873	NR	NR	NR	NR
Municipal Drinking Water Licence Limit					873/1,745***	

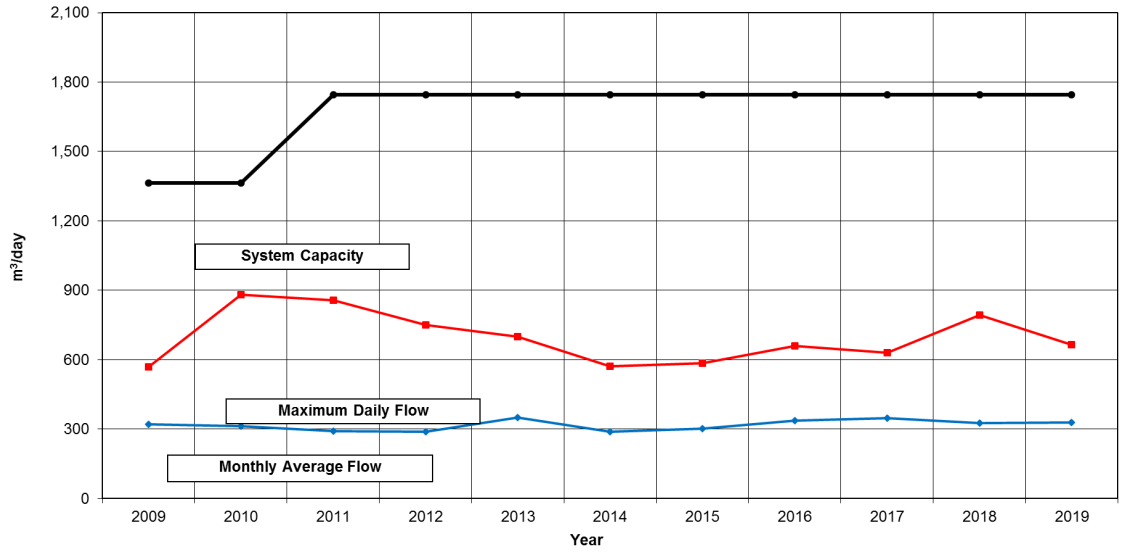
*Well not in service
**Treated water volumes calculated by subtracting waste from raw water volumes
***The rated capacity can be increased to 1,745 m^3/day for up to 90 days per calendar year

The Regional Municipality of Durham
Orono Drinking Water System Capacity and Treated Water Flow Data

Year	Monthly Average Flow cubic metres per day (m^3/day) Pro-rated	Maximum Daily Flow (m^3/day) Pro-rated	System Capacity (m^3/day)
2009	322	568	1,364
2010	314	882	1,364
2011	292	858	1,745*
2012	289	751	1,745*
2013	350	699	1,745*
2014	288	572	1,745*
2015	301	584	1,745*
2016	336	661	1,745*
2017	348	631	1,745*
2018	325	794	1,745*
2019	330	666	1,745*

*The rated capacity can be increased to 1,745 m^3/day not exceeding 90 days per calendar year.

Orono Drinking Water System Capacity and Treated Water Flow Graph



The Regional Municipality of Durham
Port Perry Drinking Water System
2019 Flow Data - Well Number (#) 3 Raw and Treated Water and Well # 5 Raw and Treated Water

Month	Well # 3 Maximum Taken per Minute (litres)	Well # 3 Monthly Average Flow cubic metres per day (m^3/day) Pro-rated	Well # 3 Maximum Daily Flow (m^3/day) Pro-rated	Well # 3 Total Water Flow (m^3)	Well # 5 Maximum Taken per Minute (litres)	Well # 5 Monthly Average Flow (m^3/day) Pro-rated	Well # 5 Maximum Daily Flow (m^3/day) Pro-rated	Well # 5 Total Water Flow (days)
January	1,700	214	563	6,672	1,700	219	588	6,815
February	1,700	209	294	5,838	1,700	214	309	5,965
March	1,700	195	350	6,007	1,700	200	357	6,140
April	1,700	155	254	4,665	1,700	158	265	4,768
May	1,700	131	265	3,941	1,700	134	271	4,037
June	1,700	187	289	5,621	1,700	192	303	5,752
July	1,700	204	316	6,237	1,700	207	313	6,332
August	1,700	208	658	6,549	1,700	213	670	6,726
September	1,700	183	274	5,419	1,700	187	280	5,561
October	1,700	195	689	6,048	1,750	199	682	6,091
November	1,700	189	299	5,469	1,700	194	307	5,612
December	1,700	196	320	6,001	1,700	201	330	6,180
Annual Total	Not Required (NR)	NR	NR	68,467	NR	NR	NR	69,979
Maximum	1,700		689		1,750		682	
Average	NR	189	NR	NR	NR	193	NR	NR
% Capacity	94		26		96		26	
Permit to Take Water Limit	1,817	NR	2,617	NR	1,817	NR	2,617	NR
Municipal Drinking Water Licence Limit			2,618				2,618	

The Regional Municipality of Durham
Port Perry Drinking Water System
2019 Flow Data - Well Number (#) 6 Raw and Treated Water and System Total Treated Water

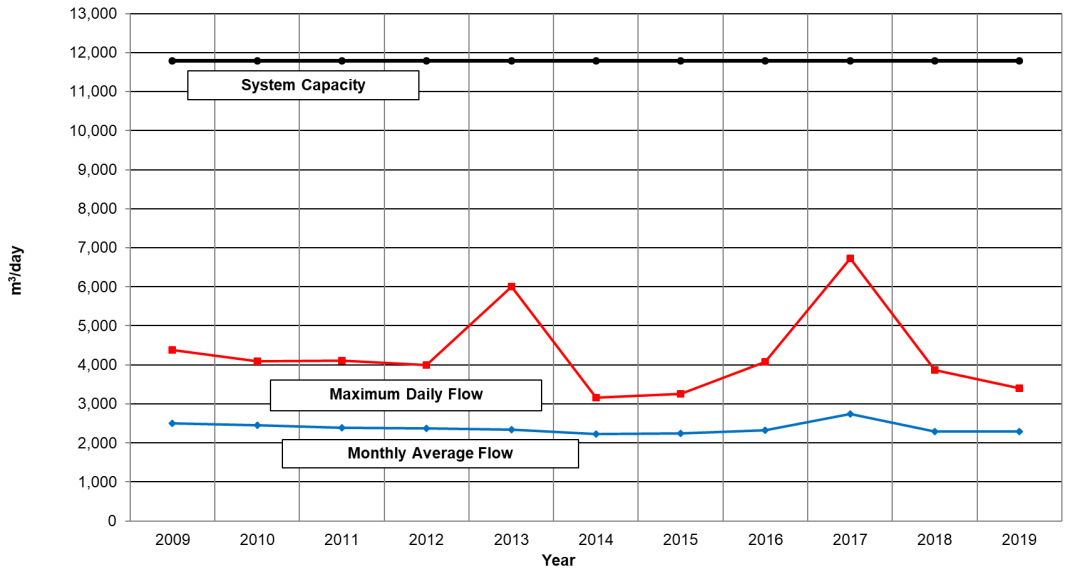
Month	Well # 6 Maximum Taken per Minute (litres)	Well # 6 Monthly Average Flow cubic metres per day (m^3/day) Pro-rated	Well # 6 Maximum Daily Flow (m^3/day) Pro-rated	Well # 6 Total Water Flow (m^3)	Treated Water Monthly Average Flow (m^3/day) Pro-rated	Treated Water Maximum Daily Flow (m^3/day) Pro-rated	Total Treated Water Flow (m^3)
January	4,000	1,678	2,252	52,331	2,111	3,403	65,818
February	4,000	1,715	1,931	48,096	2,137	2,370	59,899
March	4,000	1,758	1,998	54,472	2,153	2,384	66,619
April	4,000	1,794	2,339	53,847	2,107	2,423	63,280
May	4,000	2,021	2,578	63,026	2,278	2,578	71,004
June	4,000	2,114	2,642	63,197	2,493	2,867	74,570
July	4,000	2,376	3,106	74,316	2,786	3,390	86,885
August	4,000	2,191	3,056	68,061	2,612	3,377	81,336
September	4,000	1,935	2,369	57,948	2,305	2,634	68,928
October	4,000	1,831	2,302	57,244	2,225	2,660	69,383
November	4,000	1,761	2,055	52,954	2,131	2,563	64,035
December	4,000	1,767	2,393	54,817	2,164	2,575	66,997
Annual Total	Not Required (NR)	NR	NR	700,309	NR	NR	838,754
Maximum	4,000		3,106			3,403	
Average	NR	1,912	NR	NR	2,292	NR	NR
% Capacity	88		47			29	
Permit to Take Water Limit	4,543	NR	6,542	NR	NR	NR	NR
Municipal Drinking Water Licence Limit			6,545			11,781	

The Regional Municipality of Durham

Port Perry Drinking Water System Capacity and Treated Water Flow Data

Year	Monthly Average Flow cubic metres per day (m^3/day) Pro-rated	Maximum Daily Flow (m^3/day) Pro-rated	System Capacity (m^3/day)
2009	2,499	4,383	11,781
2010	2,454	4,096	11,781
2011	2,391	4,106	11,781
2012	2,365	4,001	11,781
2013	2,341	6,006	11,781
2014	2,228	3,167	11,781
2015	2,245	3,251	11,781
2016	2,317	4,075	11,781
2017	2,740	6,724	11,781
2018	2,289	3,873	11,781
2019	2,292	3,403	11,781

Port Perry Drinking Water System Capacity and Treated Water Flow Graph



The Regional Municipality of Durham
Sunderland Drinking Water System
2019 Flow Data - Well Number (#) 1 Raw Water and *Treated Water

Month	Well # 1 Raw Water Maximum Taken per Minute (litres)	Well # 1 Raw Water Monthly Average Flow Cubic metres per day (m^3/day) Pro-rated	Well # 1 Raw Water Maximum Daily Flow (m^3/day) Pro-rated	Well # 1 Total Raw Water Flow (m^3)	Well #1 Treated Water Monthly Average Flow (m^3/day) Pro-rated	Well #1 Treated Water Maximum Daily Flow (m^3/day) Pro-rated	Well # 1 Total Treated Water Flow (m^3) Pro-rated
January	420	323	444	10,037	323	444	10,020
February	420	343	392	9,638	343	392	9,590
March	420	395	450	12,220	395	450	12,248
April	420	363	451	10,861	363	451	10,889
May	414	361	441	11,205	361	441	11,174
June	492	421	569	12,623	421	469	12,625
July	450	471	608	14,539	471	608	14,613
August	450	364	606	11,244	364	606	11,271
September	450	153	342	4,520	153	342	4,594
October	450	129	233	4,028	129	233	4,002
November	450	131	282	3,923	131	282	3,941
December	450	191	399	5,956	191	399	5,929
Annual Total	Not Required (NR)	NR	NR	110,793	NR	NR	
Maximum	492		608			608	
Average	NR	304	NR	NR	304	NR	NR
% Capacity	48		44			44	
Permit to Take Water Limit	1,023	NR	1,373	NR	NR	NR	NR
Municipal Drinking Water Licence Limit						1,374	

*Treated water volumes calculated by subtracting waste from raw water volumes

The Regional Municipality of Durham
Sunderland Drinking Water System
2019 Flow Data - *Well Number (#) 2 Raw Water and Treated Water

Month	Well # 2 Raw Water Maximum Taken per Minute (litres)	Well # 2 Raw Water Monthly Average Flow Cubic metres per day (m^3/day) Pro-rated	Well # 2 Raw Water Maximum Daily Flow (m^3/day) Pro-rated	Well # 2 Total Raw Water Flow (m^3)	Well # 2 Treated Water Monthly Average Flow (m^3/day) Pro-rated	Well # 2 Treated Water Maximum Daily Flow (m^3/day) Pro-rated	Well # 2 Total Treated Water Flow (m^3) Pro-rated
January	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0
March	0	0	0	0	0	0	0
April	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0
June	0	0	0	0	0	0	0
July	0	0	0	0	0	0	0
August	0	0	0	0	0	0	0
September	0	0	0	0	0	0	0
October	0	0	0	0	0	0	0
November	0	0	0	0	0	0	0
December	0	0	0	0	0	0	0
Annual Total	Not Required (NR)	NR	NR	NR	NR	NR	NR
Maximum							
Average	NR	NR	NR	NR	NR	NR	NR
% Capacity							
Permit to Take Water Limit	1,023	NR	1,373	NR	NR	NR	NR
Municipal Drinking Water Licence Limit							

*Well # 2 was offline in 2019.

The Regional Municipality of Durham
Sunderland Drinking Water System
2019 Flow Data - *Well Number (#) 3 Raw Water and **Treated Water

Month	Well # 3 Raw Water Maximum Taken per Minute (litres)	Well # 3 Raw Water Monthly Average Flow Cubic metres per day (m^3/day) Pro-rated	Well # 3 Raw Water Maximum Daily Flow (m^3/day) Pro-rated	Well # 3 Total Raw Water Flow (m^3)	Well # 3 Treated Water Monthly Average Flow (m^3/day) Pro-rated	Well # 3 Treated Water Maximum Daily Flow (m^3/day) Pro-rated	Well # 3 Total Treated Water Flow (m^3) Pro-rated
January	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0
March	0	0	0	0	0	0	0
April	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0
June	0	0	0	0	0	0	0
July	0	0	0	0	0	0	0
August	0	0	0	0	0	0	0
September	600	169	232	4,555	169	232	4,558
October	588	202	401	6,296	202	401	6,247
November	588	200	282	6,035	200	282	6,009
December	588	239	354	6,734	239	354	6,703
Annual Total	Not Required (NR)	NR	NR	23,620	NR	NR	
Maximum	600		401			401	
Average	NR	203	NR	NR	203	NR	NR
% Capacity	100		46			46	
Permit to Take Water Limit	600	NR	864	NR	NR	NR	NR
Municipal Drinking Water Licence Limit						864	

*Well # 3 online as of September, 2019.
**Treated water volumes calculated by subtracting waste from raw water volumes

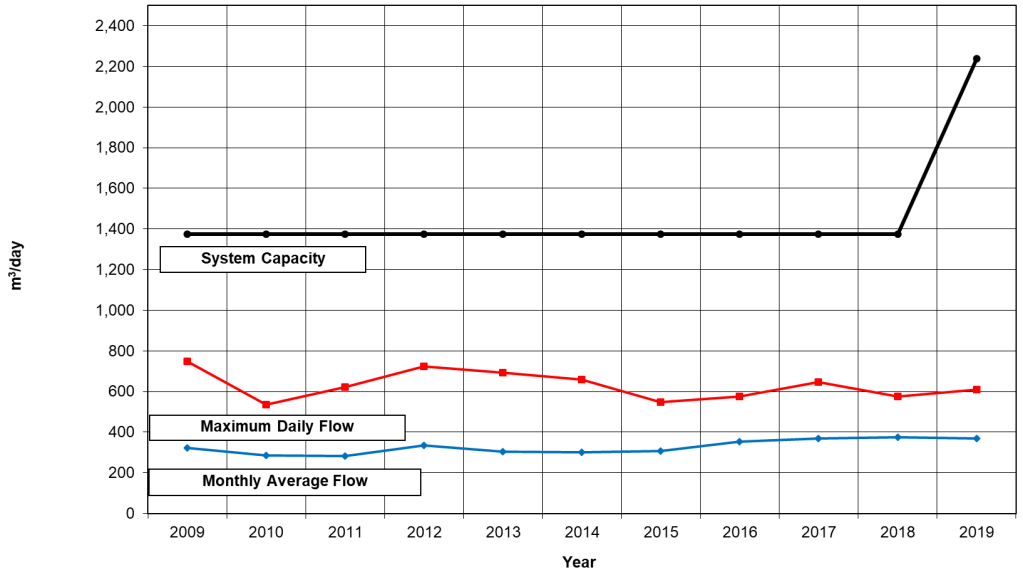
The Regional Municipality of Durham

Sunderland Drinking Water System Capacity and Treated Water Flow Data

Year	Monthly Average Flow cubic metres per day (m^3/day) Pro-rated	Maximum Daily Flow (m^3/day) Pro-rated	*System Capacity (m^3/day)
2009	323	749	1,374
2010	284	535	1,374
2011	282	622	1,374
2012	334	722	1,374
2013	303	693	1,374
2014	301	660	1,374
2015	307	546	1,374
2016	355	576	1,374
2017	367	647	1,374
2018	376	576	1,374
2019	368	608	2,238

*Sunderland DWS cannot achieve its rated capacity due to hydraulic restrictions within the treatment process.

Sunderland Drinking Water System Capacity and Treated Water Flow Graph



The Regional Municipality of Durham
Uxbridge Drinking Water System
2019 Flow Data - Well Number (#) 5 Raw Water and **Treated Water

Month	Well # 5 Raw Water Maximum Taken per Minute (litres)	Well # 5 Raw Water Monthly Average Flow Cubic metres per day (m^3/day) Pro-rated	Well # 5 Raw Water Maximum Daily Flow (m^3/day) Pro-rated	Well # 5 Total Raw Water Flow (m^3)	Well # 5 Treated Water Monthly Average Flow (m^3/day) Pro-rated	Well # 5 Treated Water Maximum Daily Flow (m^3/day) Pro-rated	Well # 5 Total Treated Water Flow (m^3) Pro-rated
January	2,700	1,081	2,186	20,624	1,081	2,186	20,532
February	2,700	999	1,208	15,980	997	1,208	15,952
March	2,800	938	1,265	15,994	937	1,265	15,929
April	2,700	1,006	1,215	17,181	1,004	1,215	17,066
May	2,700	1,022	1,365	20,421	1,020	1,365	20,394
June	2,700	1,154	1,557	20,779	1,152	1,557	20,737
July	2,700	1,399	1,859	32,174	1,398	1,859	32,151
August	2,700	1,313	1,971	35,404	1,311	1,971	35,402
September	2,700	1,138	1,373	21,382	1,136	1,373	21,586
October	2,700	1,005	1,203	19,162	1,003	1,203	19,062
November	2,700	995	1,183	16,991	993	1,183	16,888
December	2,700	944	1,244	15,025	941	1,244	15,062
Annual Total	Not Required (NR)	NR	NR	251,117	NR	NR	
Maximum	2,800		2,186			2,186	
Average	NR	1,083	NR	NR	1,081	NR	NR
% Capacity	93		51			26	
Permit to Take Water Limit	3,000	NR	4,320	NR	NR	NR	NR
Municipal Drinking Water Licence Limit						8,251*	

*Limit is combined for Wells 5 and 7.
**Treated water volumes calculated by subtracting waste from raw water volumes

The Regional Municipality of Durham
Uxbridge Drinking Water System
2019 Flow Data - Well Number (#) 7 Raw Water and **Treated Water

Month	Well # 7 Raw Water Maximum Taken per Minute (litres)	Well # 7 Raw Water Monthly Average Flow Cubic metres per day (m^3/day) Pro-rated	Well # 7 Raw Water Maximum Daily Flow (m^3/day) Pro-rated	Well # 7 Total Raw Water Flow (m^3)	Well # 7 Treated Water Monthly Average Flow (m^3/day) Pro-rated	Well # 7 Treated Water Maximum Daily Flow (m^3/day) Pro-rated	Well # 7 Total Treated Water Flow (m^3) Pro-rated
January	1,500	722	945	12,319	720	945	12,232
February	1,500	752	955	12,002	750	755	11,999
March	1,500	763	958	14,557	803	958	14,456
April	1,500	766	984	13,073	765	984	12,996
May	1,500	818	1,064	13,107	816	1,064	13,057
June	1,500	904	1,130	14,467	902	1,130	14,435
July	1,600	834	1,407	11,704	831	1,407	11,633
August	1,500	825	1,473	10,739	822	1,473	10,681
September	1,500	870	1,060	13,052	868	1,060	13,019
October	1,500	715	927	12,219	712	927	12,106
November	1,500	743	926	12,547	741	926	12,602
December	1,500	803	1,091	16,194	801	1,091	16,027
Annual Total	Not Required (NR)	NR	NR	155,980	NR	NR	
Maximum	1,600		1,473			1,473	
Average	NR	793	NR	NR	794	NR	NR
% Capacity	53		34			18	
Permit to Take Water Limit	3,000	NR	4,320	NR	NR	NR	NR
Municipal Drinking Water Licence Limit						8,251*	

*Limit is combined for Wells 5 and 7.
**Treated water volumes calculated by subtracting waste from raw water volumes

The Regional Municipality of Durham
Uxbridge Drinking Water System
2019 Flow Data - Well Number (#) 5 and 7 **Treated Water and Well # 6 Raw and Treated Water

Month	Well # 5 and 7 Treated Water Monthly Average Flow Cubic metres per day (m^3/day) Pro-rated	Well # 5 and 7 Treated Water Maximum Daily Flow (m^3/day) Pro-rated	Well # 5 and 7 Total Treated Water Flow (m^3)	Well # 6 Raw and Treated Water Maximum Taken per Minute (litres)	Well # 6 Raw and Treated Water Monthly Average Flow (m^3/day) Pro-rated	Well # 6 Raw and Treated Water Maximum Daily Flow (m^3/day) Pro-rated	Well # 6 Total Raw and Treated Water Flow (m^3)
January	1,057	2,186	32,764	2,520	1,355	2,124	42,188
February	998	1,208	27,951	2,520	1,307	1,612	36,535
March	980	1,265	30,385	2,580	1,305	1,512	40,405
April	1,002	1,215	30,062	2,640	1,330	1,734	40,172
May	1,079	1,365	33,451	2,520	1,415	1,748	43,856
June	1,172	1,557	35,172	2,520	1,533	1,883	46,140
July	1,412	1,859	43,783	2,520	1,679	2,270	52,221
August	1,487	1,971	46,082	2,520	1,707	2,439	53,251
September	1,154	1,373	34,604	2,520	1,488	1,778	44,402
October	1,005	1,203	31,168	2,520	1,316	1,572	41,077
November	983	1,183	29,491	2,520	1,310	1,542	39,207
December	1,003	1,245	31,089	2,520	1,377	1,574	42,893
Annual Total	Not Required (NR)	NR		NR	NR	NR	522,347
Maximum		2,186		2,640		2,439	
Average	1,111	NR	NR	NR	1,427	NR	NR
% Capacity		26		97		62	
Permit to Take Water Limit	NR		NR	2,727	NR	3,927	NR
Municipal Drinking Water Licence Limit		8,251*				3,931	

*Limit is combined for Wells 5 and 7.
**Treated water volumes for Wells 5 and 7 calculated by subtracting waste from raw water volumes

The Regional Municipality of Durham
Uxbridge Drinking Water System
2019 Flow Data – System Total Raw Water and Treated Water

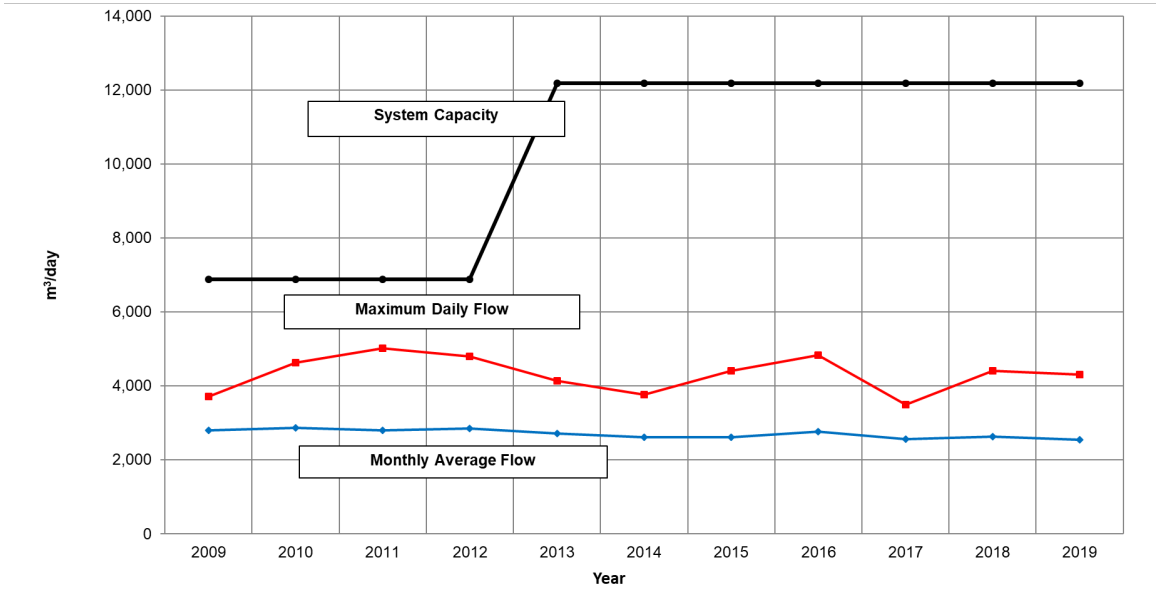
Month	Raw Water Monthly Average Flow Cubic metres per day (m^3/day) Pro-rated	Raw Water Maximum Daily Flow (m^3/day) Pro-rated	Total Raw Water Flow (m^3)	Treated Water Monthly Average Flow (m^3/day) Pro-rated	Treated Water Maximum Daily Flow (m^3/day) Pro-rated	Total Treated Water Flow (m^3) Pro-rated
January	2,414	4,310	75,131	2,412	4,310	74,758
February	2,307	2,567	64,517	2,305	2,567	64,545
March	2,286	2,559	70,955	2,285	2,559	70,827
April	2,334	2,718	70,427	2,332	2,718	69,967
May	2,497	2,811	77,384	2,494	2,811	77,323
June	2,708	3,156	81,386	2,706	3,156	81,171
July	3,094	3,703	96,099	3,092	3,703	95,840
August	3,197	3,912	99,394	3,194	3,912	99,001
September	2,643	2,837	78,836	2,641	2,837	79,237
October	2,324	2,499	72,458	2,321	2,499	71,962
November	2,295	2,467	68,745	2,293	2,467	68,785
December	2,383	2,535	74,112	2,380	2,535	73,789
Annual Total	NR	NR	929,444	NR	NR	
Maximum		4,310			4,310	
Average	2,540	NR	NR	2,538	NR	NR
% Capacity		52				
Permit to Take Water Limit	NR	8,251*	NR	NR	NR	NR
Municipal Drinking Water Licence Limit					8,251** 3,931***	

*Permit to Take Water allows two wells to operate simultaneously however, the daily total taking of water for any combination is limited to a maximum of 8,251 m^3/day.
**8,251 m^3/day is the rated capacity for Wells # 5 and 7.
***3,931 m^3/day is the rated capacity for Well # 6

The Regional Municipality of Durham
Uxbridge Drinking Water System Capacity and Treated Water Flow Data

Year	Monthly Average Flow cubic metres per day (m^3/day) Pro-rated	Maximum Daily Flow (m^3/day) Pro-rated	System Capacity (m^3/day)
2009	2,794	3,718	6,877
2010	2,859	4,626	6,877
2011	2,803	5,017	6,877
2012	2,846	4,796	6,877
2013	2,721	4,139	12,182
2014	2,605	3,760	12,182
2015	2,609	4,401	12,182
2016	2,772	4,839	12,182
2017	2,564	3,497	12,182
2018	2,630	4,401	12,182
2019	2,538	4,310	12,182

Uxbridge Drinking Water System Capacity and Treated Water Flow Graph



If this information is required in an accessible format, please contact 1-800-372-1102 ext. 3540.

The Regional Municipality of Durham Report

To:	Works Committee
From:	Commissioner of Works
Report:	#2020-W-18
Date:	March 4, 2020

Subject:

Agreement with Metrolinx for the Construction of Bridge Modifications Associated with the Electrification of the GO Metrolinx Network on Bridges, within the Regional Municipality of Durham

Recommendation:

That the Works Committee recommends to Regional Council:

A) That the Regional Municipality of Durham be authorized to enter into an agreement with Metrolinx for the construction of bridge modifications associated with the Electrification of the GO Metrolinx Network subject to terms and conditions satisfactory to the Commissioner of Works and the Regional Municipality of Durham's solicitors; and

B) That the Regional Chair and Clerk be authorized to execute the agreement.

Report:

1. Purpose

1.1 The purpose of this report is to seek Regional Council approval to enter into an agreement with Metrolinx for the construction of bridge modifications associated with the Electrification of the GO Metrolinx Network, within the Regional Municipality of Durham (Region).

2. Background

2.1 As part of Moving Ontario Forward, Metrolinx is committed to electrifying the GO Transit system to bring 15-minute, two-way electrified service to core parts of the network through the Regional Express Rail (RER) program. The purpose of the GO Rail Network Electrification project is to convert six GO-owned rail corridors from diesel to electric propulsion, including the Lakeshore East Rail Corridor.

2.2 There are several overhead bridges and rail overpass bridges along the rail corridors to be electrified. While there are some structures that will not require any type of modification to facilitate electrification, there are several bridges located on Regional Roads within the Lakeshore East Rail Corridor that will require one or more modifications as follows:

a. Overhead Contact System (OCS) Attachments, to allow for electrification through/under the structure;
b. Protection Plates (flash plates), for concrete bridges, will be installed above the OCS attached to the underside of the bridge and interconnected to the static wire;
c. Bridge protection barriers, to protect pedestrians and travelers/infrastructure users within the public right-of-way, and electrification equipment;
d. Grounding and bonding, to prevent damage from flashovers to the bridge structures and to prevent step and touch potential from exceeding permissible limits as defined in the applicable standards.

2.3 The following bridges located on Regional Roads within the Lakeshore East Rail Corridor have been identified for modifications related to the electrification infrastructure:

a. Whites Road (Regional Road 38) over CN and GO Bridge, in the City of Pickering;
b. Liverpool Road (Regional Road 29) over Highway 401 and GO Bridge, in the City of Pickering;
c. Brock Road (Regional Road 1) over CN and GO Bridge, in the City of Pickering;
d. Lake Ridge Road (Regional Road 23) over Highway 401, CN and GO Bridge, in the Town of Whitby;
e. Henry Street (Regional Road 45) over GO Bridge, in the Town of Whitby; and

f. Brock Street (Regional Road 46) over CN and GO Bridge, in the Town of Whitby.

3. Bridge Modifications Agreement

3.1 An agreement has been prepared to define the responsibilities of each party for the construction of bridge modifications associated with the electrification of the GO Metrolinx network on bridges, within the Region.

3.2 The general principle of the agreement is that all design, third party permits and approvals, construction, maintenance, and repair or replacement costs of the electrification infrastructure are the sole responsibility of Metrolinx. Metrolinx will also be the sole owner of the electrification infrastructure.

3.3 The Region will grant permission to Metrolinx to perform the construction work, and to operate and maintain the electrification infrastructure.

4. Conclusion

4.1 It is recommended that the Regional Municipality of Durham enter into an agreement with Metrolinx for the construction of bridge modifications associated with the Electrification of the GO Metrolinx Network, within the Regional Municipality of Durham.

4.2 Legal Services – Corporate Services has reviewed this report and concurs with the proposed agreement.

4.3 For additional information, contact: Steve Mayhew, Manager, Transportation Infrastructure, at 905-668-7711, extension 3484.

Respectfully submitted,

Original signed by:

Susan Siopis, P.Eng.
Commissioner of Works

Recommended for Presentation to Committee

Original signed by:

Elaine Baxter-Trahair
Chief Administrative Officer

If this information is required in an accessible format, please contact 1-800-372-1102 ext. 3540.

The Regional Municipality of Durham Report

To:	Works Committee
From:	Commissioner of Works
Report:	#2020-W-19
Date:	March 4, 2020

Subject:

Amendments to Gross Vehicle Weight – Bridges By-Law #42-2019

Recommendations:

That the Works Committee recommends to Regional Council:

A) That Corporate Services – Legal Services be directed to prepare an amending by-law to amend By-Law #42-2019, generally in the form included as Attachment #1 to this report, for presentation to Regional Council for passage; and

B) That staff be authorized to take all steps required and necessary to give effect to the amendments contemplated to By-Law #42-2019 as indicated in the form included as Attachment #1.

Report:

1. Purpose

1.1 The purpose of this report is to amend Gross Vehicle Weight – Bridges By-Law #42-2019.

2. Background

2.1 The Gross Vehicle Weight – Bridges By-Law #42-2019 was enacted on September 25, 2019, which limits the gross vehicle weights (loads) of vehicles passing over one of the 118 bridges (Simcoe Street CPR Overpass, south of Olive Avenue) on Regional Roads.

2.2 The Region's biennial bridge inspection program and a structural evaluation have identified a second structure, the Beaverton River Bridge on Simcoe Street (Regional Road 15), located just west of Highway 12, for load restriction due to the extent of deterioration. The results of a detailed structural evaluation indicate that this structure does not have adequate capacity to support full traffic loads and it is therefore recommended to post the bridge with a load restriction.

2.3 Pursuant to Ontario Regulation 103/97 of the Highway Traffic Act, load limit by-law recommendations have to be signed and sealed by two professional engineers who have recommended the bridge load limit and the duration for which the load postings remain valid. Two professional engineers of Ontario have examined Regional structures which are currently posted with load restrictions and have submitted load limit by-law recommendations. A copy of the professional engineers' approvals is included as Attachment #2.

3. Discussions

3.1 The following amendments to Gross Vehicle Weight – Bridges By-Law #42-2019 are proposed, for which authority is being sought pursuant to this report.

a. An addition to Schedule 'A' is required to include the Beaverton River Bridge (Site ID 015003) on Regional Road 15, 0.05 km west of Highway 12, in the Township of Brock (Attachment #3). The updated Schedule 'A' of the proposed by-law is provided with Attachment #1.

3.2 It is noted that the rehabilitation/replacement of the Beaverton River Bridge is in the Region's forecast for the 2021 budget year.

4. Conclusion

4.1 The proposed amendment to the Gross Vehicle Weight – Bridges By-Law #42-2019 reflects the results and recommendations of the detailed structural evaluation completed on the Beaverton River Bridge.

4.2 This report has been reviewed by the Legislative Services and Legal Services Divisions of the Corporate Services Department.

4.3 For additional information, please contact Steve Mayhew, Manager, Transportation Infrastructure, at 905-668-7711, extension 3484.

5. Attachments

Attachment #1: Amendments to Gross Vehicle Weight – Bridges By-Law #42-2019

Attachment #2: Copy of Professional Engineers' of Ontario Approval

Attachment #3: Location Map of the Beaverton River Bridge, Township of Brock

Respectfully submitted,

Original signed by:

Susan Siopis, P.Eng.
Commissioner of Works

Recommended for Presentation to Committee

Original signed by:

Elaine C. Baxter-Trahair
Chief Administrative Officer

By-law Number **-2020

of The Regional Municipality of Durham

Being a by-law to amend By-law #42-2019 to limit the gross vehicle weight of any vehicle or any class thereof passing over a bridge forming part of the Regional Road system.

Whereas the results of a detailed structural evaluation of one of the bridges within the Regional Road system determined that this bridge did not have adequate capacity to support full traffic loads and it is recommended to limit the gross vehicle weight of any vehicle passing over this bridge.

Now therefore, the Council of The Regional Municipality of Durham hereby enacts as follows:

1. That By-law #42-2019 be amended to repeal Schedule ‘A’ and replace it with the revised Schedule ‘A’ attached hereto.

This By-law Read and Passed on the ----th day of ----------, 2020.

J. Henry, Regional Chair and CEO

R. Walton, Regional Clerk

Schedule A

Bridges Located on Regional Roads

Regional Structure No.	Name and Location of Bridge	Gross Weight Limit (tonnes)	Year of Construction	Time Period from Passing of By-Law for which Weight Restrictions are Valid
002006	Simcoe Street CPR Overpass, Regional Road 2, 0.2 km south of Olive Avenue	Level 1 – 56 Level 2 – 39 Level 3 – 22	1913	2 Years
015003	Beaverton River Bridge, Regional Road 15, 0.05 km west of Highway 12	Level 1 – 13 Level 2 – 10 Level 3 – 9	1965	2 Years

THE REGIONAL MUNICIPALITY OF DURHAM

PROPOSED WEIGHT RESTRICTION BY-LAW NO. _____

I, D.L. BAXTER, P. ENG., AND M. DUHIG, P. ENG., PROFESSIONAL ENGINEERS OF THE CONSULTING FIRM OF GHD LIMITED HAVE REVIEWED THE RESTRICTION OF THE WEIGHT OF VEHICLES PASSING OVER THE STRUCTURES KNOWN AS STRUCTURE NO. 002006 AND 015003 MORE PARTICULARLY DESCRIBED IN THE PROPOSED BY-LAW. EFFECTIVE THE DATE OF APPROVAL OF THIS BY-LAW, I AGREE WITH THE RECOMMENDED WEIGHT LIMITS AS SET OUT IN THE PROPOSED BY-LAW FOR A PERIOD OF TWO YEARS.

SIGNED: _____ Stamp
D. L. Baxter, P. Eng.

_____ Stamp
M. Duhig, P. Eng.

DATED: January 23, 2020

The Regional Municipality of Durham
Works Department

This map has been produced from a variety of sources.
The Region of Durham does not make any representations concerning the accuracy, likely results, or reliability of the use of the materials. The Region hereby disclaims all representations and warranties.

ORTHOPHOTOGRAPHY, 2016 (c) FBS

ATTACHMENT NO. 3
Beaverton River Bridge
Township of Brock

N

1:5,000

If this information is required in an accessible format, please contact 1-800-372-1102 ext. 3540.

The Regional Municipality of Durham Report

To:	Works Committee
From:	Commissioner of Works
Report:	#2020-W-20
Date:	March 4, 2020

Subject:

Acquisition of Property for the Harmony Road (Regional Road 33) Widening Project, in the City of Oshawa

Recommendation:

That the Works Committee recommends to Regional Council:

A) That Authority be granted to Regional Municipality of Durham to enter into an agreement pursuant to s.30 of the Expropriation Act and advance compensation for the required lands as follows:

John Edwin Geisberger	1735 Harmony Road North Part of Lot 4, Concession 4 being part of PIN 16272-0011 shown as Part 4 on 40R-29984 City of Oshawa	$85,000

B) That additional costs related to the completion of the s.30 Agreement including interim legal, appraisal and land transfer costs be approved as obligated under s. 32 of the Expropriations Act be paid. Such costs will be reviewed by the Region's solicitor to determine that they are reasonable prior to payment;

C) That financing for the acquisition be provided from the funds allocated in the approved project budget, with a recovery of $52,530 from the City of Oshawa; and

D) That the Regional Chair and Clerk be authorized to execute all documents associated with the agreement.

Report:

1. Purpose

1.1 The purpose of this report is to obtain approval for the acquisition of a portion of the land at 1735 Harmony Road North, in the City of Oshawa (Oshawa), (Attachment #1) being property identified as a requirement for the Harmony Road (Regional Road 33) widening.

1.2 The land is being acquired through a s.30 Agreement. The Expropriations Act (s.30) allows an expropriating authority to acquire land required without having to comply with the formal requirements of the Expropriations Act, while providing a landowner with all of the rights protections, including cost protections, set out in the Act. The use of a s.30 Agreement in this case is an effective and efficient manner of proceeding with this acquisition, as a full and final agreement cannot be reached with the land owner.

2. Background

2.1 The Regional Municipality of Durham is proposing to widen Harmony Road North (Regional Road 33) from Coldstream Drive to Conlin Road, in Oshawa. The proposed works will include road widening and urbanization to 4 through lanes, a median and turning lanes. Traffic signals will be installed at the intersection of Harmony Road and Greenhill Avenue and at the south entrance to Delpark Homes Centre as part of the project. The work will also include the construction of a sidewalk on the west boulevard and a multi-use path on the east boulevard, as well as street lighting, watermains, and storm sewers.

3. Property Acquisition

3.1 The property is located north of Coldstream Drive at 1735 Harmony Road North in Oshawa. The parent parcel, being 0.6899 acres (2,792 square metres), is improved with a single-family residence. The requirement, being 0.0438 acres (177.4 square metres) along the western frontage of the property, is needed for the construction of the east boulevard and the proposed multi-use path which will provide a connection for the residents to the Delpark Homes Centre.

3.2 A third-party valuation was prepared which resulted in a market value estimate of $75,500 for the partial taking of land plus an additional $9,500 for a two-year temporary easement required for grading purposes and utility relocation. The

property owner's solicitor has agreed to this compensation as an initial sum, reserving the right to additional claims available under the Expropriations Act.

4. Financial Implications

4.1 Financing for the land acquisition will be provided from the approved project budget (Project R1723), with a recovery of $52,530 from the City of Oshawa given the multi-use path is not part of the Regional Cycling Network. The path was requested to be included by the City and therefore the increase in land required over that needed for a sidewalk will be the responsibility of the City. The City will be seeking Council approval for this cost sharing. If additional claims under the Expropriations Act are incurred, these costs will be discussed with the City for appropriate cost sharing.

5. Conclusion

5.1 The acquisition of land from John Edwin Geisberger is required for the planned road widening along Harmony Road North (Regional Road 33). A s.30 Agreement is required in order for the Regional Municipality of Durham to have possession of the land to meet the project schedule, as a full and final agreement cannot be reached.

5.2 This report has been reviewed by the Legal Services Division of the Corporate Services Department.

5.3 For additional information, please contact Jenni Demanuele, Director of Business Services, at 905-668-4113, extensions 3456.

6. Attachments

Attachment #1: Location Map – 1735 Harmony Road North, Oshawa

Respectfully submitted,

Original signed by:

Susan Siopis, P.Eng.
Commissioner of Works

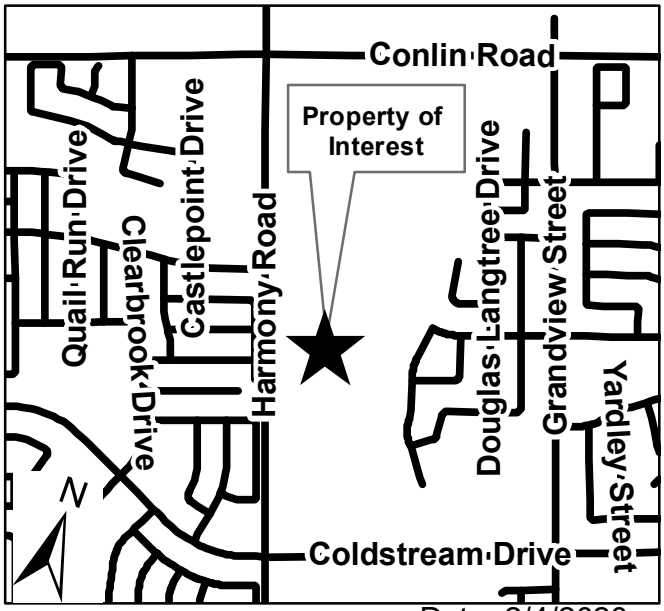
Recommended for Presentation to Committee

Original signed by:

Elaine Baxter-Trahair
Chief Administrative Officer

Attachment #1 - Location Map

1735 Harmony Road (Regional Road 33) in the City of Oshawa



Date: 2/4/2020

If this information is required in an accessible format, please contact 1-800-372-1102 ext. 3540.

The Regional Municipality of Durham Report

To:	Works Committee
From:	Commissioner of Works
Report:	#2020-W-21
Date:	March 4, 2020

Subject:

Award of Request for Proposal #1118-2019 for Engineering Services for the Preliminary and Detailed Design of the Zone 2 Watermain on William Jackson Drive and Taunton Road from Earl Grey Avenue to Ravenscroft Road in the City of Pickering and Town of Ajax

Recommendation:

That the Works Committee recommends to Regional Council:

A) That Request for Proposal #1118-2019 be awarded to The Municipal Infrastructure Group Ltd. (TMIG), a T.Y. Lin International Company, for engineering services for the preliminary and detailed design of a new watermain on William Jackson Drive and Taunton Road from Earl Grey Avenue to Ravenscroft Road in the City of Pickering and Town of Ajax, at an amount not to exceed $232,757*; and

B) That the Commissioner of Finance be authorized to execute the necessary engineering services agreement and any required amendments.

Report:

1. Purpose

1.1 The purpose of this report is to seek approval to award Request for Proposal (RFP) #1118-2019 to The Municipal Infrastructure Group Ltd., a T.Y. Lin International Company (TMIG) for engineering services for the preliminary and detailed design of a new watermain on William Jackson Drive and Taunton Road from Earl Grey Avenue to Ravenscroft Road in the City of Pickering (Pickering)

and Town of Ajax (Ajax). Dollar amounts followed by an asterisk (*) are before applicable taxes and include disbursements.

2. Background

2.1 Residential developments adjacent to Brock Road, north of Rossland Road, are generally serviced by the Duffin Heights Zone 2 Pumping Station located at Brock Road and Dersan Street, in Pickering.

2.2 The proposed Zone 2 watermain was included in the 2019 Water Supply Capital Budget to provide system security and meet the demand for future growth at the north end of Ajax and Pickering with a supply from the Westney Road Zone 2 Reservoir.

2.3 The proposed 400 millimetre (mm) diameter watermain will be located on William Jackson Drive and Taunton Road (approximately 2.7 kilometres in length) in Pickering and Ajax.

3. Request for Proposal #1118-2019

3.1 Request for Proposal (RFP) #1118-2019 to provide engineering services for preliminary and detailed design for the Zone 2 Watermain on William Jackson Drive and Taunton Road from Earl Grey Avenue to Ravenscroft Road in Pickering and Ajax was issued and advertised publicly on November 28, 2019, through Durham Region's Bids and Tenders website. The RFP included the scope of work, description of the services to be provided, submission instructions, and evaluation criteria that would be applied during the review of proposals.

3.2 The RFP closed on December 19, 2019, resulting in the submission of seven compliant proposals from the following consulting firms:

a. AECOM Canada Ltd.
b. Arup
c. CIMA Canada Inc.
d. Cole Engineering Group Ltd.
e. exp Services Inc.
f. GHD Limited
g. TMIG

3.3 Evaluation of the proposals submitted was carried out by an Evaluation Committee made up of Works Department staff. The Purchasing Section of the Finance Department oversaw the evaluation process.

3.4 The proposals were reviewed by the Evaluation Committee based on the following criteria:

a. Understanding of Project Requirements (10%);
b. Company Background, Qualifications and Experience (5%);
c. Work Team Background, Qualifications and Experience (20%);
d. Methodology / Project Management (40%); and
e. Pricing (25%).

3.5 Based on an overall evaluation of the proposals by the evaluation committee, it is recommended that the highest scoring proposal, TMIG, be awarded the professional services assignment.

4. Financial Implications

4.1 Section 9.4.1 of the Region's Purchasing By-Law 68-2000 (Amended) requires where the project or annual value of a consulting or professional service assignment is expected to be more than $60,000, the approval of Regional Council is required for the award of the assignment when proposals are obtained

4.2 The funding for the proposed engineering assignment in the amount of $232,757* can be provided from within the approved capital project budget of $400,000 (Project D1904).

5. Conclusion

5.1 It is recommended that Request for Proposal #1118-2019 be awarded to TMIG for engineering services for the preliminary and detailed design of a new watermain on William Jackson Drive and Taunton Road from Earl Grey Avenue to Ravenscroft Road in the City of Pickering and Town of Ajax, at an amount not to exceed $232,757*.

5.2 This report has been reviewed by the Finance Department.

5.3 For additional information, please contact Nathaniel Andres. Project Engineer, at 905-668-7711, extension 3170.

Respectfully submitted,

Original signed by:

Susan Siopis, P.Eng.
Commissioner of Works

Recommended for Presentation to Committee

Original signed by:

Elaine C. Baxter-Trahair
Chief Administrative Officer

If this information is required in an accessible format, please contact 1-800-372-1102 ext. 3540.

The Regional Municipality of Durham Report

To:	Works Committee
From:	Commissioner of Works
Report:	#2020-W-22
Date:	March 4, 2020

Subject:

Approval to Award Sole Source Agreement N-656-2019 Maintenance Service and Supply of Spare Parts for Alfa Laval Centrifuges at the York-Durham Duffin Creek Water Pollution Control Plant, in the City of Pickering

Recommendations:

That the Works Committee recommends to Regional Council:

A) That the Regional Municipality of Durham enter into a sole source agreement with Alfa Laval Inc. for preventative maintenance and supply of spare parts on an as required basis effective in April 2020 for a term not to exceed five (5) years at an estimated total contract value of $583,199* for a period of five years with the Regional Municipality of Durham's share determined annually based on the proportionate utilization of each Region, currently estimated at a five year total of $110,050*, which is to be funded from the annual Duffin Creek operating budget; and

B) That the Commissioner of Finance be authorized to execute the necessary documents related to this sole source agreement.

Report:

1. Purpose

1.1 The purpose of this report is to obtain authorization to enter into a sole source agreement with Alfa Laval Inc. to perform preventative maintenance and periodic supply of spare parts on an as required basis for the operation of eight (8) dewatering centrifuges in use at the Duffin Creek Water Pollution Control Plant

(WPCP). Dollar amounts followed by an asterisk (*) are before applicable taxes.

2. Background

2.1 The eight (8) dewatering centrifuges were originally purchased under The Regional Municipality of York (York) issued contract P-07-17. This equipment was subsequently installed under York's issued contract T-08-59 (a component of the Stage 3 Solids Expansion program). The units have been in operation since 2010.

2.2 The centrifuges are used to dewater sludge prior to processing in the incineration facility. Reliable centrifuge operation is required to maintain security of sludge management for all of Durham and York's wastewater treatment plants.

2.3 Duffin Creek Operations staff perform most of the routine maintenance required. The services to be provided by the vendor include rehabilitative works (i.e. balancing of centrifuge scrolls) that are required at periodic intervals based on usage.

2.4 Works Committee Report #2011-W-43 provided council authorization for the Commissioner of Finance to negotiate sole source contracts with a number of major vendors for equipment supplied under the Stage 3 Expansion program at the Duffin Creek WPCP.

2.5 Based on the above authorization, a sole source agreement was in place for the period 2013 to 2018. This agreement has expired and a new negotiation document, N-656-2019 Maintenance Service and Supply of Spare Parts, was issued in December 2019. The negotiated terms of the agreement include the Regional Municipality of Durham (Durham) receiving a discount from the vendor on list pricing for spare parts.

3. Sole Source Justification

3.1 Replacement spare parts are only obtainable from the original manufacturer. There are no authorized distributors.

3.2 Highly specialized maintenance including scroll rebalancing may be required, based on plant usage and runtimes over the life of the agreement. This work requires the equipment to be shipped to the manufacturer's local repair facility which has the specialized equipment and resources to refurbish the units. This maintenance cannot be performed by another vendor who does not have the specialized equipment or proprietary information available.

3.3 Inventory of spare parts and scheduling of both preventative and rehabilitative maintenance efforts are necessary to ensure equipment reliability, and asset longevity.

4. Financial Implications

4.1 The Region's Purchasing By-law #68-2000 (Amended), Section 8, permits the acquisition of goods and services through sole source negotiations. The by-law also requires approval by the appropriate standing committee and Council for the award of sole source contracts that exceed $125,000 in value.

4.2 Financing for the provision of services and supply of spare parts of Alfa Laval Inc. centrifuges at an estimated annual value of $116,640* annually will be funded from the annual Duffin Creek WPCP Operating Budget. The estimated total contract value for the five year period is $583,199*. Durham's share will be determined on an annual basis based on the utilization by each Region and is estimated at a five year total of $110,050 based on Durham's current budgeted utilization.

4.3 The annual costs are shared with York as follows:

Durham Region's (18.87%) Share	$ 22,010
York Region's (81.13%) Share	$ 94,630
Total Annual Upset Limit	**$116,640**

5. Conclusion

5.1 It is recommended that Regional Council approve the sole source award to Alfa Laval Inc. to perform the essential periodic maintenance service and spare part supply.

5.2 This report has been reviewed by the Finance Department and the Commissioner of Finance concurs with the financial recommendations.

5.3 For additional information, please contact Brad Dobson, Project Superintendent, Duffin Creek Water Pollution Control Plant, at 905-435-2105.

Respectfully submitted,

Original signed by:

Susan Siopis, P.Eng.
Commissioner of Works

Recommended for Presentation to Committee

Original signed by:

Elaine C. Baxter-Trahair
Chief Administrative Officer

If this information is required in an accessible format, please contact 1-800-372-1102 ext. 3540.

The Regional Municipality of Durham Report

To:	Works Committee
From:	Commissioner of Works
Report:	#2020-W-23
Date:	March 4, 2020

Subject:

Servicing Agreement with CSH Ballycliffe Lodge Inc., Including Cost Sharing in Accordance with the Region Share Policy for Regional Services, for the Extension and Oversizing of a Sanitary Sewer Located Within an Easement on 70 Station Street, in the Town of Ajax

Recommendation:

That the Works Committee recommends to Regional Council:

A) That the Regional Municipality of Durham be authorized to enter into a servicing agreement with CSH Ballycliffe Lodge Inc. including cost sharing in accordance with the Regional Municipality of Durham's Share Policy for Regional Services, for the extension and oversizing of a sanitary sewer located within an easement on 70 Station Street, in the Town of Ajax, at an estimated cost of $116,600;

B) Financing for the servicing agreement be provided from the following Regional sources:

Developer's Share – Sanitary Sewer

CSH Ballycliffe Lodge Inc.	$33,300

Regional Costs – Sanitary Sewer

2020 Sanitary Sewerage System

Item #29 – Allowance for Regional share for works in conjunction with residential development (M2010)

Residential Development Charge Reserve Fund	$61,475
Commercial Development Charge Reserve Fund	$3,832
User Rate	$17,993
Total Regional Costs	$83,300
Total Project Financing – Sanitary Sewer	**$116,600**

C) That the Regional Chair and Clerk be authorized to execute any necessary documents or agreements.

Report:

1. Purpose

1.1 The purpose of this report is to seek approval to enter into a servicing agreement with CSH Ballycliffe Lodge Inc. including cost sharing in accordance with the Regional Municipality of Durham's (Region) Share Policy for Regional Services, related to the construction of a proposed sanitary sewer located within an easement on 70 Station Street, in the Town of Ajax, as shown on Attachment #1.

2. Background

2.1 CSH Ballycliffe Lodge Inc. is proposing to redevelop and expand their long term care facility to a 224 bed, 179 unit facility. In order to expand their site, a new sanitary sewer is required.

2.2 The Region requested that the size of the new sanitary sewer be increased and the sewer extended to accommodate future development of adjacent lands.

3. Regional Infrastructure

3.1 A 300 mm diameter sanitary sewer located within an easement on 70 Station Street is required as shown on Attachment #1. This sewer will service the CSH Ballycliffe Lodge Inc. lands and has been sized to accommodate future development of adjacent lands.

3.2 The Region's Share Policy for Regional Services generally requires the developer to pay for the works required to service the subject development. The Region is responsible to pay for the balance of the cost. In this case, CSH Ballycliffe Lodge Inc. would be responsible to pay for the cost to construct a 200 millimetre (mm)

diameter sanitary sewer which is the minimum size and the Region would be required to pay for the cost of extending and oversizing this pipe to a 300 mm diameter.

3.3 All other requirements of the Regional servicing agreement will be in place, including the posting of a letter of credit for 100 per cent of the cost of the works, Regional inspection requirements and the two year infrastructure maintenance period.

4. Financial Implications

4.1 Staff has estimated the costing of the project at $116,600 as follows:

Developer's Share – Sanitary Sewer

CSH Ballycliffe Lodge Inc.	$33,300

Regional Costs – Sanitary Sewer

2020 Sanitary Sewerage System

Item #29 – Allowance for Regional share for works in conjunction with residential development (M2010)

Residential Development Charge Reserve Fund	$61,475
Commercial Development Charge Reserve Fund	$3,832
User Rate	$17,993
Total Regional Costs	$83,300
Total Project Financing – Sanitary Sewer	**$116,600**

5. Conclusion

5.1 It is recommended that the Regional Municipality of Durham enter into a servicing agreement with CSH Ballycliffe Lodge Inc. containing the foregoing provisions.

5.2 This report has been reviewed by the Finance Department and the Commissioner of Finance concurs with the financial recommendation.

5.3 For additional information, please contact Mike Hubble, Development Approvals Engineer, at 905-668-7711, extension 3460.

6. Attachments

Attachment #1: Location Plan – CSH Ballycliffe Lodge Inc., in the Town of Ajax

Respectfully submitted,

Original signed by:

Susan Siopis, P.Eng.
Commissioner of Works

Recommended for Presentation to Committee

Original signed by:

Elaine C. Baxter-Trahair
Chief Administrative Officer

HIGHWAY 401

CP RAIL

70 STATION STREET

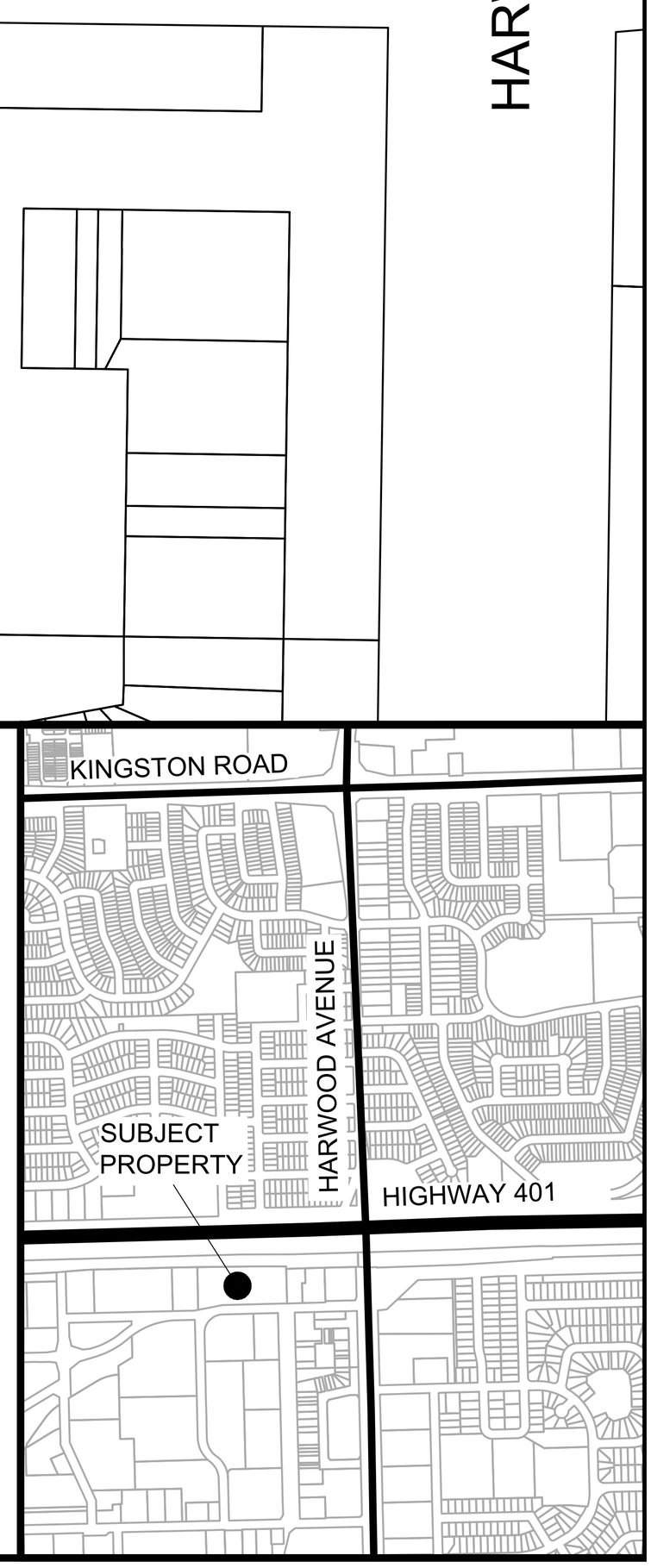
STATION STREET

MILL STREET

COMMERCIAL AVENUE

HARWOOD AVENUE

Attachment #1: 70 STATION STREET



DURHAM REGION

If this information is required in an accessible format, please contact 1-800-372-1102 ext. 3540.

The Regional Municipality of Durham Report

To:	Works Committee
From:	Commissioner of Works
Report:	#2020-W-24
Date:	March 4, 2020

Subject:

Servicing Agreement with the Municipality of Clarington that Includes an Endeavour to Collect Clause for the Construction of Local Watermains and Sanitary Sewers in Conjunction with a Municipality of Clarington Road Project to Service Existing Industrial Lands on Courtice Court, in the Municipality of Clarington

Recommendation:

That the Works Committee recommends to Regional Council:

A) That the Regional Municipality of Durham be authorized to enter into a servicing agreement with an Endeavour to Collect clause with the Municipality of Clarington for the construction of a 300 millimetre watermain and 200 millimetre sanitary sewer subject to the following conditions:

   i) The costs for the design, construction and inspection of the watermain and sanitary sewer will be borne fully by the Municipality of Clarington;

   ii) The normal requirement for posting a letter of credit for 100 per cent of the cost of Regional Municipality of Durham works as security for the Servicing Agreement be waived; and

   iii) The Regional Municipality of Durham approves the design and inspects the works prior to the acceptance of the sanitary sewer and watermain.

B) The Regional Chair and Clerk be authorized to execute any necessary documents or agreements.

Report:

1. Purpose

1.1 The purpose of this report is to seek Regional Council approval to enter into a Servicing Agreement with an Endeavour to Collect clause with the Municipality of Clarington (Clarington) by which the Regional Municipality of Durham (Region) will make best efforts to collect or give Clarington the opportunity to collect the portion of the project costs related to non-participating properties prior to providing connection permits to any non-participating property owners.

1.2 In addition, this report seeks approval to waive the normal requirement of posting a letter of credit for 100 per cent of the cost of Regional works as security for the Servicing Agreement.

2. Background

2.1 Clarington has completed tendering of a road reconstruction project which includes the installation of local watermains and sanitary sewers on behalf of the existing properties to service the existing industrial area on Courtice Court from McKnight Road to the west end of Courtice Court (Attachment #1).

2.2 There are six (6) properties which are not participating in the project. Clarington is funding the non-participating properties costs related to the local watermain and sanitary sewer installation.

2.3 Clarington has requested that the Region include an endeavour to collect clause in the Servicing Agreement, providing Clarington an opportunity to recover their costs (see Attachment #2).

3. Financial Implications

3.1 Clarington has requested that the Region waive the requirement to post a letter of credit for 100 per cent of the cost of the Regional Works. All other requirements of the Regional Servicing Agreement will be in place, including inspection and maintenance period. As the applicant is an Ontario municipality, it is reasonable to waive this requirement.

4. Conclusion

4.1 It is recommended that the Regional Municipality of Durham enter into a Servicing Agreement with an Endeavour to Collect clause with the Municipality of Clarington containing the foregoing provisions and the requirement for posting a letter of credit for 100 per cent of the cost as security be waived.

4.2 This report has been reviewed by the Finance Department and the Commissioner of Finance concur with the recommendations.

4.3 For additional information, please contact Mike Hubble, Development Approvals, at 905-668-7711, extension 3460.

5. Attachments

Attachment #1: Location Plan

Attachment #2: Municipality of Clarington letter dated January 17, 2020

Respectfully submitted,

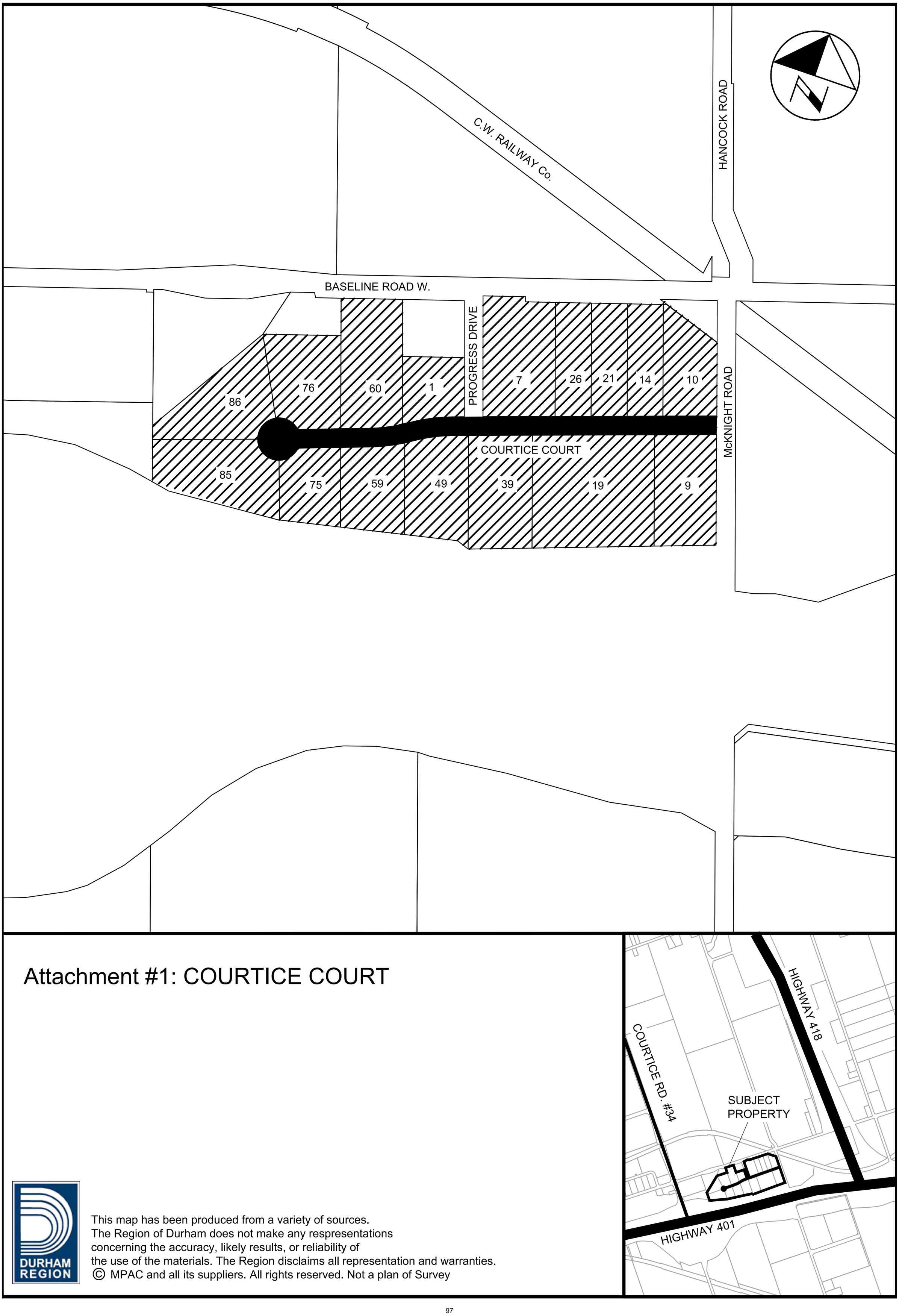
Original signed by:

Susan Siopis, P.Eng.
Commissioner of Works

Recommended for Presentation to Committee

Original signed by:

Elaine C. Baxter-Trahair
Chief Administrative Officer



Attachment #1: COURTICE COURT

DURHAM REGION

Clarington

January 17, 2020

Mike Hubble, P. Eng.
Development Approvals Engineer
The Regional Municipality of Durham
605 Rossland Road East
Whitby, Ontario L1N 6A3

RE: Courtice Court Servicing Endeavor to Collect

Dear Mr. Hubble,

As you are aware, Clarington is moving forward with tendering the sanitary servicing and water servicing of Courtice Court from McKnight Road to the west end of Courtice Court. Clarington is proceeding with this tender in part to garner support from the landowners by (1) reducing their up-front funding requirements and (2) committing to front-end the share of the costs for those properties that are choosing not to participate.

In order to ensure recovery of Clarington's contribution for the non participating properties, we request that the Region include an endeavor to collect clause in the sanitary and water Servicing Agreement. This is particularly important for the lots that are already developed as they would not be required to enter into a site plan agreement with Clarington, effectively removing the Municipality's ability to enforce collection. While the undeveloped sites would be required to go through site plan approval before receiving servicing, we would like the Region to include an endeavor to collect clause for these properties as well as an added level of enforcement and for consistency.

The following is a list of non participating properties as well as the status and estimated share of the servicing for the property:

Location	Development Status	Sanitary Cost	Water Cost	TOTAL COST
1 McKnight Road	Developed	$83,593.35	$100,898.01	**$184,491.36**
10 Courtice Court	Vacant	$38,126.31	$69,182.49	**$107,308.81**
14 Courtice Court	Developed	$26,320.77	$54,933.08	**$81,253.85**
76 Courtice Court	Vacant	$48,239.60	$81,430.09	**$129,669.69**
85 Courtice Court	Vacant	$29,089.64	$52,413.54	**$81,503.18**
75 Courtice Court	Vacant	$46,250.62	$71,264.96	**$117,515.59**

If this information is required in an alternate format, please contact the Accessibility Co-ordinator at 905-623-3379 ext. 2131

The above table will be updated to reflect the tendered amount of the project costs when available.

Should you require any additional information, please let us know.

Thank you for your cooperation on this project.

Regards,

Ron Albright, P. Eng.
Acting Director
Engineering Services
Municipality of Clarington
905-623-3379 ext. 2305
ralbright@clarington.net

RA/kb

cc: Jeff Almeida, Development Approvals Division, Regional Municipality of Durham
Rob Brezina, Capital Works Engineer, Municipality of Clarington
Rob Maciver, Municipal Solicitor, Municipality of Clarington
Carlo Pellarin, Manager of Development Review, Municipality of Clarington