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The Regional Municipality of Durham Report

To: Works Committee

From: Acting Commissioner of Works

Report: #2024-W-5 Date: March 6, 2024

Subject:

The Regional Municipality of Durham's Drinking Water Systems 2023 Summary Report

Recommendation:

That the Works Committee recommends to Regional Council:

- A) That the 2023 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 that 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.

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2. Summary Report

2.1 Schedule 22 of O. Reg. 170/03 requires that a Summary Report include 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, the drinking water works permit, the 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 to enable the owner of the system to assess the capability of the system to meet existing and planned uses of the system:
 - A summary of the quantities and flow rates of the water supplied during the period covered by the 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 license, 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 lists all the Drinking Water Systems (DWS) and their Municipal Drinking Water Licences issued from January 1, 2023, to December 31, 2023.

Table 1 – Municipal Drinking Water License Summary

Drinking Water System	Municipal Drinking Water License #	Issue Number	Issue Date
Oshawa *	003-111	7	September 23, 2020
Whitby *	003-111	7	September 23, 2020
Ajax *	003-111	7	September 23, 2020
Beaverton	003-107	4	November 15, 2019
Blackstock	003-101	4	November 15, 2019
Bowmanville	003-103	5	September 23, 2020
Cannington	003-106	4	November 15, 2019
Greenbank	003-104	4	November 15, 2019
Newcastle	003-109	7	September 23, 2020
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 but listed individually for this report.

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2.3 Table 2 below provides a summary of compliance for each DWS with the prescribed conditions of Schedule 22 of O. Reg. 170/03.

Table 2 – Compliance Summary

Drinking Water System	Compliance Requirements	Water Taking Conditions	
Oshawa *	Non-compliant	Did Not Exceed	
Whitby *	Compliant	Did Not Exceed	
Ajax *	Non-compliant	Did Not Exceed	
Beaverton	Compliant	Did Not Exceed	
Blackstock	Compliant	Did Not Exceed	
Bowmanville	Compliant	Did Not Exceed	
Cannington	Non-Compliant	Did Not Exceed	
Greenbank	Compliant	Did Not Exceed	
Newcastle	Non-Complaint	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 but listed individually for this report.

2.4 The DWS 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 under O. Reg. 319/08.

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3. General Overview of Compliance Status

3.1 The Summary Report requires a review of each DWS with respect to the SDWA, Permit 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 an explanation of any non-compliance issues identified during the reporting period.

- 3.2 Water quality monitoring data is available on the <u>Region of Durham's website</u> at www.durham.ca.
- 3.3 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 October 6, 2023. The staff identified in the Operational Plan as part of the top management team were in attendance. The meeting reviewed the agenda items listed in the DWQMS 2.0, Element 20. Three action items were identified during the meeting: to ensure better tracking of the Groundwater Summary Reports recommendations, review the requirements for diesel fuel tank inspections and ensure that customer complaints are appropriately tracked by all areas. One internal audit was completed on October 10, 2023. The results were satisfactory, with two non-conformances to the DWQMS and seven opportunities for improvement recommended for evaluation.
- 3.4 Durham Region is also required, as part of accreditation to the DWQMS, to have an external audit of the management system conducted by an approved registrar. The 2023 accreditation audit was completed on November 17, 2023. The audit found no non-conformances to the DWQMS and one opportunity for improvement, which is being addressed by the DWS staff (mandatory DWQMS audit meeting attendance).
- 3.5 The minutes of the management review meeting and the final audit reports for the internal and external audits are available from the Region.

4. Specific Compliance Items

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

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(a) Municipal Drinking Water License No. 003-111, Schedule C, Condition 1.5, Table 3 – Residuals Management

Ajax DWS

- Discharge of chlorinated water to Lake Ontario exceeded the MDWL annual average limit of 0.02 mg/L.
 - July 6, 2023: Approximately 1,500 cubic metres of chlorinated diesel generator cooling water was discharged into Lake Ontario from the Ajax Water Supply Plant (WSP) outfall. The total chlorine residual measured at the time of the incident was 0.36 mg/L.
 - August 15, 2023: Approximately 1,500 cubic metres of chlorinated diesel generator cooling water was discharged into Lake Ontario from the Ajax WSP outfall. The free chlorine residual measured at the time of the incident was 0.27 mg/L.
- These incidents were caused by the cooling system for the backup diesel generators directing chlorinated effluent water to the outfall in Lake Ontario. The incidents were promptly reported to the MECP Spills Action Centre, the Plant Superintendent, the Compliance Manager and Fisheries Canada.

Remedial Action:

 The upcoming Ajax WSP expansion will redirect chlorinated diesel cooling water through a dechlorination process before being released into the environment. Until the design and construction are completed, dechlorination pucks are being placed in the discharge to neutralize the chlorine.

Oshawa DWS

- Discharge of chlorinated water to Lake Ontario exceeded the MDWL annual average limit of 0.02 mg/L.
 - October 3, 2023: Not more than 1,000 cubic metres of chlorinated, flocculated water was discharged into Lake Ontario from the Oshawa WSP storm drain. The free chlorine residual measured at the time of the incident was 1.8 mg/L.
 - The roof drainpipe at the Oshawa WSP runs through the flocculation conduit. The spill was caused by a separation in the roof drainpipe, resulting in flocculated water overflowing into the roof drain when the flocculation conduit was greater than 70

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percent capacity. The flocculated water collected in the roof drain was directed to a storm sewer and discharged into the environment.

Remedial Action:

- On October 3, 2023, the discharge was paused, and de-chlorination pucks were placed in the discharge pipe to neutralize chlorinated water.
- The spill was operationally mitigated by ensuring the flocculation conduit flowed at 60 percent capacity or less until the pipe was repaired on October 16, 2023. The location of the roof drain is scheduled to be relocated and removed from the flocculation conduit at the end of 2025. Plant operations conduct weekly checks to monitor for leaks.

(b) Procedure for Disinfection of Drinking Water in Ontario

Cannington DWS

- Sampling in accordance with the Procedure for Disinfection of Drinking Water in Ontario and the American Water Works Association (AWWA) Standard for Disinfection of Water Treatment Plants (653) after inspection, repair or other activities.
 - On August 11, 2023, a remotely operated submersible inspection was conducted for a general condition assessment at the Cannington standpipe. Disinfection and sampling procedures were conducted in accordance with the Procedure for Disinfection of Drinking Water in Ontario and the AWWA Standard for Disinfection of Water Treatment Plants (C653).
 - Bacteriological samples were submitted to the York-Durham Regional Environmental lab on August 11, 2023, but were not analyzed within hold time due to a large number of samples to be tested and ongoing construction.

Remedial Action

 York-Durham Regional Environmental Lab completed a corrective action report to investigate, identify, and implement preventative measures. Report #2024-W-5 Page 8 of 10

Newtonville DWS

 Sampling in accordance with the Procedure for Disinfection of Drinking Water in Ontario and the AWWA Standard for Disinfection of Water Treatment Plants (653) after inspection, repair or other activities.

- On August 11, 2023, a remotely operated submersible inspection was conducted for a general condition assessment at the Newtonville standpipe. Disinfection and sampling procedures were conducted in accordance with the Procedure for Disinfection of Drinking Water in Ontario and the AWWA Standard for Disinfection of Water Treatment Plants (C653).
- Bacteriological samples were submitted to the York-Durham Regional Environmental lab on August 11, 2023, but were not analyzed within hold time due to an extreme sample load and ongoing construction.

Remedial Action

 York-Durham Regional Environmental Lab completed a corrective action report to investigate, identify, and implement preventative measures.

5. Summary of Water Quantity and Flow Rates

5.1 DWS Capacity and Water Flow Data are provided in Attachment #1 – Drinking Water System Capacity and Water Flow Data, as summary charts. Each summary chart provides the monthly average and maximum daily flow for the reporting period. Some of the flow data in Attachment #1 have been prorated, which is used to determine the volume of water pumped over a 24-hour period. Prorated data are indicated in the chart headings.

6. Public Notification and Information

6.1 The Summary Report is available on the Region's website at www.durham.ca.

7. Relationship to Strategic Plan

7.1 This report aligns with the following strategic goals and priorities in the Durham Region Strategic Plan:

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a. Goal 1 Environmental Sustainability - To protect the environment for the future by demonstrating leadership in sustainability and addressing climate change.

- Protect, preserve and restore the natural environment, including green spaces, waterways, parks, trails and farmland.
- b. Goal 2 Community Vitality To foster an exceptional quality of life with services that contribute to strong neighbourhoods, vibrant and diverse communities, and influence our safety and well-being.
 - Enhance community safety and well-being.
- Goal 5 Service Excellence To provide exceptional value to Durham taxpayers through responsive, effective and fiscally sustainable service delivery.
 - Demonstrate commitment to continuous quality improvement and communicating results.

8. Conclusion

- 8.1 As required under Ontario Regulation 170/03, this Summary Report for the Regional Municipality of Durham's Drinking Water System 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.
- 8.2 For additional information, contact: Tavis Nimmo, Manager, Water Resource Monitoring & Protection Division, at 905-668-4113, extension 3737.

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9. Attachment

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

Respectfully submitted,

Original signed by:

Ramesh Jagannathan, MBA, M. Eng, P. Eng, PTOE Acting Commissioner of Works

Recommended for Presentation to Committee

Original signed by:

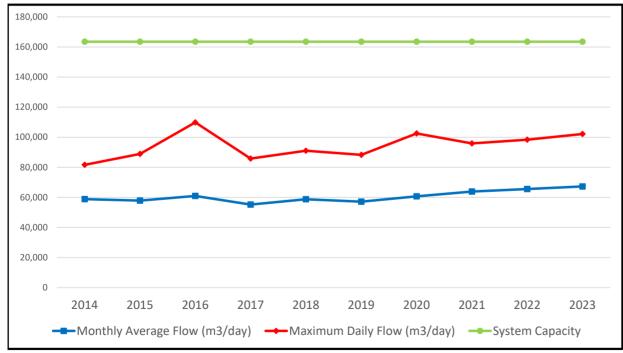
Elaine C. Baxter-Trahair Chief Administrative Officer

Month	Raw Water Monthly Average Flow Cubic metres per day (m³/day)	Raw Water Maximum Daily Flow (m³/day)	Total Raw Water Flow (m³)	Treated Water Monthly Average Flow (m³/day)	Treated Water Maximum Daily Flow (m³/day)	Total Treated Water Flow (m³)
January	65,679	76,380	2,036,057	63,920	75,082	1,981,525
February	65,375	74,547	1,830,511	63,657	73,708	1,782,388
March	67,931	78,922	2,105,859	66,017	78,063	2,046,535
April	68,342	78,584	2,050,245	65,632	75,613	1,968,947
Мау	79,185	100,296	2,454,732	76,408	96,118	2,368,645
June	71,877	104,650	2,156,296	68,761	102,148	2,062,818
July	73,486	84,442	2,278,054	70,049	81,818	2,171,515
August	70,622	79,584	2,189,273	67,773	75,651	2,100,955
September	72,939	82,605	2,188,179	69,811	80,448	2,094,343
October	66,312	80,128	2,055,661	64,236	76,273	1,991,313
November	67,753	80,691	2,032,603	65,941	78,133	1,978,241
December	66,840	77,136	2,072,041	65,388	76,979	2,027,022
Annual Total			25,449,511			24,574,247
Maximum		104,650			102,148	
Average	69,695			67,299		
% Capacity		62			62	
Permit to Take Water Limit		170,000				
Municipal Drinking Water Licence Limit					163,500	

Table 1: Ten year annual system capacity and treated water flow data.

Year	Monthly Average Flow (m ³ /day)	Maximum Daily Flow (m³/day)	System Capacity (m³/day)	
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	
2020	60,682	102,507	163,500	
2021	63,940	95,933	163,500	
2022	65,615	98,337	163,500	
2023	67,299	102,148	163,500	

Figure 1: Ten year annual system capacity and treated water flow data.



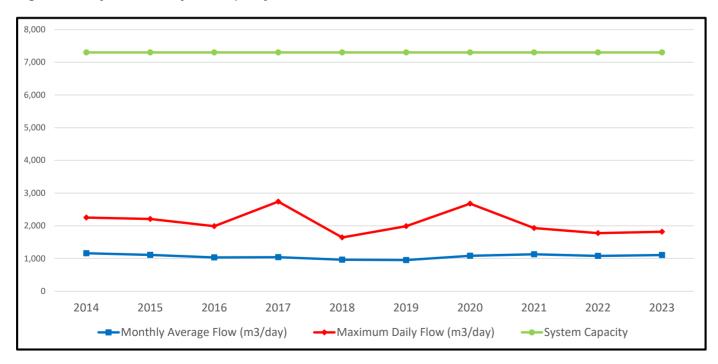
The Regional Municipality of Durham Beaverton Drinking Water System 2023 Flow Summary Report

Month	Raw Water Monthly Average Flow Cubic metres per day (m³/day) Pro-Rated	Raw Water Maximum Daily Flow (m ³ /day) Pro- Rated	Total Raw Water Flow (m³)	Treated Water Monthly Average Flow (m³/day) Pro-Rated	Treated Water Maximum Daily Flow (m³/day) Pro- Rated	Total Treated Water Flow (m ³)
January	1,124	1,556	35,135	1,025	1,273	31,854
February	1,088	1,298	30,477	1,002	1,168	28,047
March	1,059	1,244	32,866	962	1,088	29,739
April	1,105	1,696	33,179	976	1,085	29,286
May	1,264	1,711	39,333	1,144	1,606	35,515
June	1,480	1,880	44,421	1,345	1,665	40,245
July	1,535	1,989	47,735	1,392	1,818	43,186
August	1,406	1,821	43,635	1,272	1,530	39,388
September	1,370	2,307	41,671	1,200	1,503	36,249
October	1,166	1,520	35,992	1,029	1,210	31,714
November	1,043	1,461	31,344	952	1,146	28,617
December	1,054	1,296	33,009	989	1,145	30,925
Annual Total			448,797			404,765
Maximum		2,307			1,818	
Average	1,224			1,107		
% Capacity		32			25	
Permit to Take Water Limit		7,300				
Municipal Drinking Water Licence Limit					7,300	

Table 1: Ten year annual system capacity and treated water flow data.

Year	Monthly Average Flow (m³/day)	Maximum Daily Flow (m³/day)	System Capacity (m³/day)	
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	
2020	1,082	2,679	7,300	
2021	1,131	1,929	7,300	
2022	1,079	1,777	7,300	
2023	1,107	1,818	7,300	

Figure 1: Ten year annual system capacity and treated water flow data.



Month	Well # 7* Raw Water Maximum Taken per Minute (litres)	Well # 7* Raw Water Monthly Average Flow cubic metres per day (m³/day) Pro-rated	Well # 7* Raw Water Maximum Daily Flow (m ³ /day) Pro-rated	Well # 7* Total Raw Water Flow (m³)	Well # 8 Raw Water Maximum Taken per Minute (litres)	Well # 8 Raw Water Monthly Average Flow (m³/day) Pro- rated	Well # 8 Raw Water Maximum Daily Flow (m³/day) Pro- rated	Well # 8 Total Raw Water Flow (m ³)
January	0	0	0	0	636	144	220	4,385
February	0	0	0	0	720	134	190	3,719
March	0	0	0	0	660	120	196	3,670
April	0	0	0	0	666	101	148	2,975
May	0	0	0	0	594	127	187	3,934
June	0	0	0	0	588	117	187	3,486
July	0	0	0	0	594	103	148	3,161
August	0	0	0	0	564	114	172	3,515
September	0	0	0	0	570	122	226	3,584
October	0	0	0	0	564	127	187	3,939
November	0	0	0	0	576	129	169	3,852
December	0	0	0	0	582	107	151	3,280
Annual Total				0				43,500
Maximum	0		0		720**		226	
Average		0				120		
% Capacity					105		23	
Permit to Take Water Limit	684		985		684		985	

^{*}Well 7 not in service.

^{**}Instantaneous surge in flow rate upon system startup; PTTW Section 3.3 indicates that this flow exceedance of less than a minute duration is acceptable.

The Regional Municipality of Durham Blackstock Drinking Water System 2023 Flow Summary Report

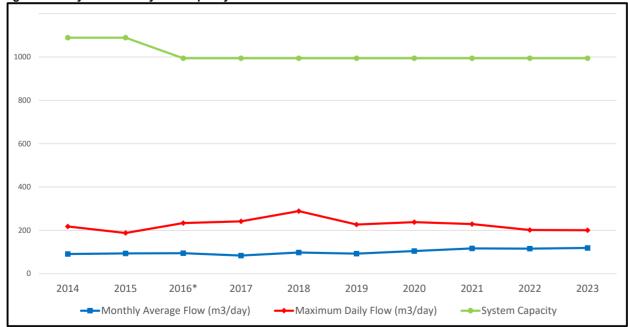
Month	Treated Water Monthly Average Flow cubic metres per day (m³/day)	Treated Water Maximum Daily Flow (m³/day)	Total Treated Water Flow (m ³)	
January	128	146	3,958	
February	120	152	3,372	
March	120	133	3,708	
April	100	127	2,988	
May	126	170	3,907	
June	115	151	3,458	
July	101	173	3,129	
August	113	145	3,498	
September	118	149	3,549	
October	128	154	3,983	
November	128	201	3,834	
December	106	138	3,293	
Annual Total			42,677	
Maximum	-	201		
Average	117			
% Capacity		20		
Municipal Drinking Water Licence Limit		994		

Table 1: Ten year annual system capacity and treated water flow data.

Year	Monthly Average Flow (m³/day)	Maximum Daily Flow (m³/day)	System Capacity (m³/day)
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
2020	105	238	994
2021	117	229	994
2022	116	202	994
2023	119	201	994

^{*} Well 7 taken out of service.

Figure 1: Ten year annual system capacity and treated water flow data.



The Regional Municipality of Durham Bowmanville Drinking Water System 2023 Flow Summary Report

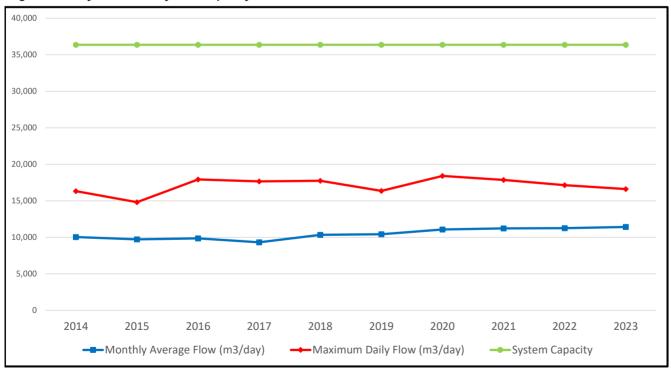
Month	Raw Water Monthly Average Flow Cubic metres per day (m ³ /day)	Raw Water Maximum Daily Flow (m³/day)	Total Raw Water Flow (m³)	Treated Water Monthly Average Flow (m³/day)	Treated Water Maximum Daily Flow (m³/day)	Total Treated Water Flow (m3)
January	11,278	12,777	349,605	10,656	12,814	330,333
February	11,077	12,513	310,155	10,482	12,106	293,491
March	11,043	12,433	342,322	10,437	11,970	323,541
April	11,051	12,430	331,515	10,424	12,138	312,715
May	12,876	17,485	399,160	12,297	12,297	381,210
June	13,824	17,361	414,705	13,369	16,613	401,055
July	12,758	14,490	369,990	12,323	14,079	357,355
August	12,769	14,490	395,850	12,335	12,335	382,392
September	12,883	15,895	386,500	12,435	15,175	373,051
October	11,681	13,477	362,104	11,217	13,408	347,735
November	11,160	16,903	334,789	10,485	14,567	314,564
December	11,239	13,784	348,401	10,589	12,350	328,272
Annual Total			4,345,096			4,145,714
Maximum		17,485			16,613	
Average	11,970			11,421		
% Capacity		37			46	
Permit to Take Water Limit		47,700				
Municipal Drinking Water Licence Limit					36,368	

Prepared by: Water Resource Monitoring and Protection Division

Table 1: Ten year annual system capacity and treated water flow data.

Voor	Monthly Average	Maximum Daily	System Capacity
Year	Flow (m³/day)	Flow (m ³ /day)	(m³/day)
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
2020	11,079	18,409	36,368
2021	11,227	17,867	36,368
2022	11,258	17,140	36,368
2023	11,421	16,613	36,368

Figure 1: Ten year annual system capacity and treated water flow data.



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 (m³/day) Pro- rated	Well # 2 Total Raw Water Flow (m ³)	Well # 2 Treated Water Monthly Average Flow (m³/day) Pro-rated	Well # 2 Treated Water Maximum Daily Flow (m³/day) Pro-rated	Well # 2 Total Treated Water Flow (m ³)
January	80	48	54	1,488	48	54	1,488
February	80	54	60	1,513	54	60	1,513
March	80	57	65	1,778	57	65	1,778
April	80	69	78	2,070	69	78	2,070
Мау	80	83	94	2,578	83	94	2,578
June	80	56	73	1,655	56	73	1,655
July	80	46	86	1,434	46	86	1,434
August	70	40	54	1,247	40	54	1,247
September	80	45	53	1,346	45	53	1,346
October	80	64	74	1,971	64	74	1,971
November	80	68	80	2,058	68	80	2,058
December	80	73	82	2,255	73	82	2,255
Annual Total				21,393			21,393
Maximum	80		94			94	
Average		58			58		
% Capacity	95		78			18	
Permit to Take Water Limit	84		121				
Municipal Drinking Water Limit*						510	

^{*}Limit is combined for Wells 2 & 7.

Month	Well # 7 Raw Water Maximum Taken per Minute (litres)	Well # 7 Raw Water Monthly Average Flow Cubic metres per day (m³/day)	Well # 7 Raw Water Maximum Daily Flow (m³/day) Pro- rated	Well # 7 Total Raw Water Flow (m³)	Well # 7 Treated Water Monthly Average Flow (m ³ /day) Pro-rated	Well # 7 Treated Water Maximum Daily Flow (m³/day) Pro-rated	Well # 7 Total Treated Water Flow (m ³)
January	260	158	181	4,915	158	181	4,915
February	260	177	199	4,957	177	199	4,957
March	260	190	218	5,916	190	218	5,916
April	260	225	255	6,748	225	255	6,748
Мау	260	273	308	8,495	273	308	8,495
June	260	199	249	5,929	199	249	5,929
July	260	169	311	5,266	169	311	5,266
August	260	154	205	4,793	154	205	4,793
September	260	161	188	4,835	161	188	4,835
October	265	216	249	6,695	216	249	6,695
November	260	233	274	7,029	233	274	7,029
December	260	247	280	7,695	247	280	7,695
Annual Total				73,273			73,273
Maximum	265		311			311	
Average		200			200		
% Capacity	98		80			61	
Permit to Take Water Limit	270		389				
Municipal Drinking Water Licence Limit*						510	

^{*}Limit is combined for Wells 2 & 7.

The Regional Municipality of Durham Cannington Drinking Water System 2023 Flow Summary Report

Month	Well # 2 and 7 Treated Water Monthly Average Flow Cubic metres per day (m ³ /day)	Well # 2 and 7 Treated Water Maximum Daily Flow (m ³ /day) Pro-rated	Well # 2 and 7 Total Treated Water Flow (m³)	
January	206	235	6,402	
February	231	259	6,470	
March	247	284	7,694	
April	294	333	8,818	
Мау	356	402	11,073	
June	254	322	7,584	
July	215	397	6,700	
August	194	260	6,040	
September	206	238	6,181	
October	280	323	8,666	
November	302	354	9,087	
December	320	362	9,950	
Maximum		402		
Average	259			
% Capacity*		79		
Municipal Drinking Water Licence Limit*		510		

Note: Treated water volumes calculated by subtracting waste from raw water volumes.

^{*}Limit is combined for Wells 2 & 7.

Month	Well # 3 Raw Water Maximum Taken per Minute (litres)	Well # 3 Raw Water Monthly Average Flow Cubic metres per day (m³/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)
January	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0
March	180	7	7	8	0	0	0
April	180	132	158	2,516	132	158	2,514
May	180	159	184	4,928	159	184	4,928
June	180	130	161	3,874	130	161	3,874
July	160	103	128	3,182	103	128	3,182
August	160	95	125	2,870	95	125	2,870
September	170	101	113	3,031	101	113	3,031
October	170	132	158	4,096	132	158	4,096
November	160	145	172	4,369	145	172	4,369
December	160	153	174	4,768	153	174	4,768
Annual Total				33,642			33,632
Maximum	180		184			184	
Average		96			96		
% Capacity	100		71			71	
Permit to Take Water Limit	180		259				
Municipal Drinking Water License Limit						259	

Month	Well # 4 Raw Water Maximum Taken per Minute (litres)	Well # 4 Raw Water Monthly Average Flow Cubic metres per day (m³/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)
January	180	109	122	3,379	109	122	3,379
February	190	127	136	3,542	127	136	3,542
March	190	133	155	4,143	133	155	4,143
April	190	157	189	4,706	157	189	4,706
May	180	172	185	5,335	172	185	5,335
June	170	126	153	3,754	126	153	3,754
July	170	101	120	3,124	101	120	3,124
August	170	95	123	2,960	95	123	2,960
September	170	93	105	2,784	93	105	2,784
October	170	122	148	3,777	122	148	3,777
November	160	132	162	3,993	132	162	3,993
December	160	146	162	4,531	146	162	4,531
Annual Total				46,028			46,028
Maximum	190		189			189	
Average		126			126		
% Capacity	99		68			68	
Permit to Take Water Limit	192		277				
Municipal Drinking Water License Limit		acting waste from raw wa				276	

Month	Well # 8 Raw Water Maximum Taken per Minute (litres)	Well # 8 Raw Water Monthly Average Flow Cubic metres per day (m³/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 (m³/day) Pro-rated	Well # 8 Treated Water Maximum Daily Flow (m³/day) Pro-rated	Well # 8 Total Treated Water Flow (m ³)
January	330	183	209	5,666	183	209	5,666
February	330	148	174	4,139	148	174	4,139
March	250	158	184	4,911	158	184	4,911
April	250	138	175	2,057	138	175	2,057
May	300	94	253	829	94	253	829
June	270	185	233	5,516	185	233	5,516
July	290	141	174	4,377	141	174	4,377
August	300	148	197	4,620	148	197	4,620
September	300	135	173	4,042	135	173	4,042
October	250	64	144	709	78	144	705
November	240	31	91	422	0	0	0
December	260	68	98	1,042	0	0	0
Annual Total				38,330			36,862
Maximum	330		253			253	
Average		124			117		
% Capacity	58		31			31	
Permit to Take Water Limit	568		818				
Municipal Drinking Water License Limit						818	

Month	Total System Raw Water Monthly Average Flow Cubic metres per day (m³/day) Pro-rated	Total System Raw Water Maximum Daily Flow (m ³ /day)	Total Raw Water Flow (m³)	Total System Treated Water Monthly Average Flow (m ³ /day)	Total System Treated Water Maximum Daily Flow (m³/day)	Total System Total Treated Water Flow (m ³)
January	498	559	15,447	498	559	15,447
February	506	538	14,151	506	538	14,151
March	538	623	16,756	537	623	16,748
April	604	684	18,098	604	684	18,096
Мау	714	954	22,164	714	954	22,164
June	695	854	20,728	695	854	20,728
July	559	697	17,383	559	697	17,383
August	530	663	16,490	530	663	16,490
September	535	615	16,038	535	615	16,038
October	556	635	17,248	556	635	17,244
November	592	687	17,871	579	687	17,449
December	649	771	20,291	619	690	19,249
Annual Total			212,665			211,187
Maximum		954			954	
Average	581			578		
% Capacity		35			51	
Permit to Take Water Limit*		2,693				
Municipal Drinking Water License Limit					1,863	

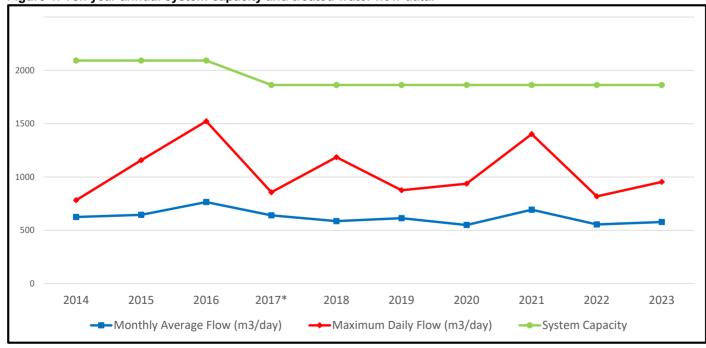
^{*}The Permit to Take Water Limit includes Municipal Wells 9 and 10, which are currently not in service.

Table 1: Ten year annual system capacity and treated water flow data.

Voor	Monthly Average	Maximum Daily Flow	System Capacity
Year	Flow (m ³ /day)	(m³/day)	(m³/day)
2014	625	782	2,092
2015	645	1157	2,092
2016	765	1,523	2,092
2017*	641	857	1,863
2018	586	1186	1,863
2019	614	876	1,863
2020	550	938	1,863
2021	693	1402	1,863
2022	555	818	1,863
2023	578	954	1,863

^{*}Capacity changed due to decommissioning of Well 6.

Figure 1: Ten year annual system capacity and treated water flow data.



Month	Well # 1 Raw Water Maximum Taken per Minute (litres)	Well # 1 Raw Water Monthly Average Flow cubic metres per (day m³/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	19	26	592	80	23	31	700
February	60	18	26	511	80	22	29	614
March	60	17	26	533	80	21	30	635
April	60	19	24	550	80	22	28	643
May	60	20	30	634	75	24	34	740
June	60	24	49	710	75	28	58	849
July	60	20	28	615	75	25	34	767
August	60	16	25	507	73	23	34	712
September	60	20	28	587	73	25	36	747
October	60	18	23	559	73	22	31	681
November	60	17	23	484	73	21	31	619
December	60	18	28	504	73	23	31	704
Annual Total				6,787				8,410
Maximum	60		49		80		58	
Average		19				23		
% Capacity	86		48		88		44	
Permit to take water limit	70		101		91		130	

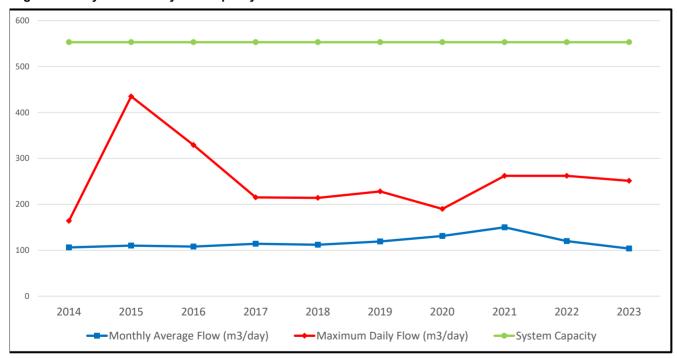
Month	Well # 4 Raw Water Maximum Taken per Minute (litres)	Well # 4 Raw Water Monthly Average Flow cubic metres per day (m ³ /day) Pro-rated	Well # 4 Raw Water Maximum Daily Flow (m ³ /day) Pro-rated	Well # 4 Total Raw Water Flow (m³)	Well # 5 Raw Water Maximum Taken per Minute (litres)	Well # 5 Raw 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 (m³)
January	63	18	24	552	55	13	19	401
February	65	17	23	489	55	14	21	388
March	65	16	24	508	55	14	20	437
April	65	18	23	517	55	16	20	448
May	65	20	28	628	55	18	26	554
June	65	23	47	687	60	21	43	643
July	65	20	27	628	67	19	26	574
August	63	18	27	565	65	18	26	572
September	63	19	25	560	60	20	29	589
October	63	18	23	543	68	16	23	497
November	63	17	25	492	55	16	22	462
December	62	19	25	561	61	18	25	541
Annual Total				6,729				6,107
Maximum	65		47		68		43	
Average		19				17		
% Capacity	96		48		100		44	
Permit to take water limit	68		99		68		99	

Month	Well # 6 Raw Water Maximum Taken per Minute (litres)	Well # 6 Raw Water Monthly Average Flow cubic metres per day (m³/day) Pro-rated	Well # 6 Raw Water Maximum Daily Flow (m³/day) Pro-rated	Well # 6 Total Raw Water Flow (m ³)	Treated Water Monthly Average Flow cubic metres per day (m³/day) Pro- rated	Treated Water Maximum Daily Flow (m³/day) Pro- rated	Total Treated Water Flow (m³)
January	82	24	32	735	98	132	2,981
February	85	24	33	668	96	131	2,670
March	85	23	34	702	91	135	2,815
April	85	23	30	696	95	124	2,853
May	85	29	40	883	111	157	3,438
June	85	31	54	933	128	251	3,822
July	89	29	40	911	113	152	3,494
August	90	27	40	849	103	151	3,204
September	85	30	44	899	113	141	3,382
October	90	27	36	821	100	135	3,102
November	85	26	38	762	94	137	2,819
December	86	29	42	881	102	143	3,191
Annual Total				9,739			37,771
Maximum	90		54			251	
Average		27			104		
% Capacity	99		42			45	
Permit to take water limit	91		130			NR	
Municipal Drinking Water License Limit						553	

Table 1: Ten year annual system capacity and treated water flow data.

Year	Monthly Average	Maximum Daily	System Capacity
Teal	Flow (m ³ /day)	Flow (m ³ /day)	(m³/day)
2014	106	164	553
2015	110	435	553
2016	108	329	553
2017	114	215	553
2018	112	214	553
2019	119	228	553
2020	131	190	553
2021	150	262	553
2022	120	262	553
2023	104	251	553

Figure 1: Ten year annual system capacity and treated water flow data.



The Regional Municipality of Durham Newcastle Drinking Water System 2023 Flow Summary Report

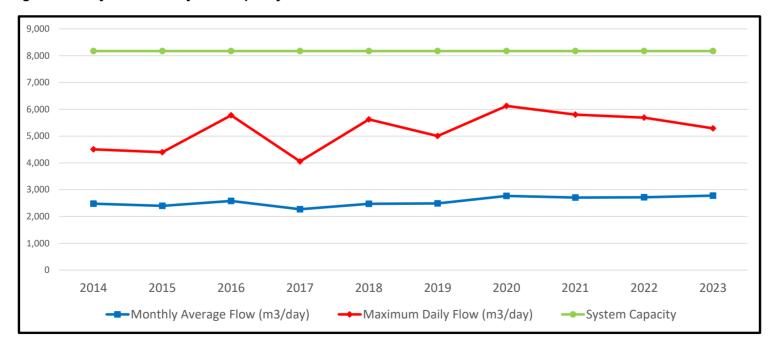
Month	Raw Water Monthly Average Flow Cubic metres per day (m³/day)	Raw Water Maximum Daily Flow (m³/day)	Total Raw Water Flow (m³)	Treated Water Monthly Average Flow (m³/day)	Treated Water Maximum Daily Flow (m³/day)	Total Treated Water Flow (m ³)
January	2,491	3,313	77,221	2,362	3,161	73,208
February	2,464	3,224	68,989	2,334	3,103	65,355
March	2,427	3,199	75,238	2,300	3,077	71,293
April	2,567	3,503	77,000	2,429	3,276	72,873
May	3,132	4,913	97,094	2,954	4,670	91,563
June	3,466	4,666	103,970	3,268	4,396	98,026
July	3,546	4,727	109,938	3,359	4,299	104,132
August	3,373	4,298	104,573	3,176	4,019	98,443
September	3,575	5,513	107,237	3,384	5,290	101,509
October	2,896	4,464	89,785	2,704	4,263	83,825
November	2,746	4,070	82,388	2,550	3,736	76,503
December	2,742	3,857	85,002	2,531	3,602	78,452
Annual Total			1,078,435			1,015,182
Maximum		5,513			5,290	
Average	2,952			2,779		
% Capacity		30			65	
Permit to Take Water Limit		18,100				
Municipal Drinking Water Licence Limit					8,173	

Prepared by: Water Resource Monitoring and Protection Division

Table 1: Ten year annual system capacity and treated water flow data.

Year	Monthly Average Flow (m ³ /day)	Maximum Daily Flow (m ³ /day)	System Capacity (m³/day)
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
2020	2,767	6,125	8,173
2021	2,707	5,802	8,173
2022	2,716	5,690	8,173
2023	2,779	5,290	8,173

Figure 1: Ten year annual system capacity and treated water flow data.



Month	Well # 3 Raw Water Maximum Taken per Minute (litres)	Well # 3 Raw Water Monthly Average Flow cubic metres per day (m³/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	756	262	312	6,222	720	254	298	1,801
February	762	308	385	6,398	714	178	356	2,173
March	762	328	508	6,850	690	309	387	3,400
April	768	281	414	6,389	696	160	319	1,943
May	762	278	549	6,862	702	103	464	2,469
June	768	346	544	7,886	672	137	430	3,271
July	756	371	514	8,479	660	372	509	3,393
August	744	327	425	7,115	660	366	436	3,307
September	744	328	454	7,429	648	267	339	1,897
October	744	272	399	6,459	648	247	312	2,035
November	738	230	290	4,543	654	231	277	2,348
December	738	247	335	6,098	666	216	276	1,535
Annual Total			_	80,730	_			29,572
Maximum	768		549		720		509	
Average		298				237		
% Capacity	84		63		79		58	
Permit to Take Water Limit	909	n hours per day as indica	872	las Martan	909		872	

^{*}Well cannot be run for more than sixteen hours per day as indicated in the Permit to Take 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 (m³)
January	0	0	0	255	312	7,860
February	0	0	0	303	386	8,429
March	0	0	0	326	508	10,047
April	0	0	0	266	414	8,164
May	0	0	0	296	637	9,191
June	0	0	0	358	549	10,993
July	0	0	0	379	514	11,712
August	0	0	0	333	425	10,242
September	0	0	0	308	454	9,146
October	0	0	0	270	399	8,334
November	0	0	0	218	290	6,711
December	0	0	0	243	335	7,454
Annual Total						108,283
Maximum					637	
Average				296		
% Capacity					73 / 37	
Permit to Take Water Limit	909	872				
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 m³/day for up to 90 days per calendar year.

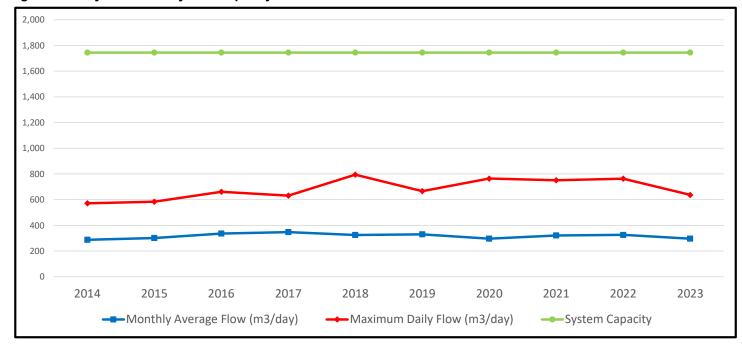
The Regional Municipality of Durham Orono Drinking Water System 2023 Flow Summary Report

Table 1: Ten year annual system capacity and treated water flow data.

Year	Monthly Average Flow (m³/day)	Maximum Daily Flow (m³/day)	System Capacity (m³/day)*
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
2020	296	764	1,745
2021	321	751	1,745
2022	326	764	1,745
2023	296	637	1,745

^{*}The rated capacity can be increased to 1,745 m³/day not exceeding 90 days per calendar year.

Figure 1: Ten year annual system capacity and treated water flow data.



Prepared by: Water Resource Monitoring and Protection Division

The Regional Municipality of Durham Oshawa Drinking Water System 2023 Flow Summary Report

Month	West Intake Raw Water Monthly Average Flow Cubic metres per day (m³/day)	West Intake Raw Water Maximum Daily Flow (m³/day)	West Intake Total Raw Water Flow (m³)	East Intake Raw Water Monthly Average Flow (m³/day)	East Intake Raw Water Maximum Daily Flow (m³/day)	East Intake Total Raw Water Flow (m³)
January	12,398	14,212	384,346	42,966	47,984	1,331,941
February	12,810	15,571	358,671	46,132	57,017	1,291,689
March	11,688	15,124	362,341	42,771	55,192	1,325,898
April	10,983	14,840	329,480	40,870	55,324	1,226,110
Мау	14,202	17,431	440,260	52,782	69,371	1,636,236
June	15,901	20,400	477,026	56,814	74,800	1,704,420
July	15,584	17,999	483,109	50,567	56,813	1,567,570
August	15,182	17,519	470,637	49,516	53,697	1,534,999
September	15,284	17,339	458,530	51,557	58,055	1,546,713
October	13,129	16,169	407,002	46,747	54,168	1,449,157
November	11,109	12,881	333,261	40,375	49,152	1,211,260
December	11,194	12,149	347,006	41,004	46,642	1,271,122
Annual Total			4,851,670			17,097,115
Maximum		20,400			74,800	
Average	13,289			46,842		
% Capacity		46			83	
Permit to Take Water Limit		44,000			90,000	

Prepared by: Water Resource Monitoring and Protection Division

The Regional Municipality of Durham Oshawa Drinking Water System 2023 Flow Summary Report

Month	Total Raw Water Monthly Average Flow Cubic metres per day (m ³ /day)	Total Raw Water Maximum Daily Flow (m³/day)	Total Raw Water Flow (m³)	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	55,364	62,196	1,716,287	47,342	52,839	1,467,606
February	58,941	72,588	1,650,359	50,800	61,823	1,422,405
March	54,459	70,317	1,688,239	47,011	60,600	1,457,341
April	51,853	70,164	1,555,591	45,992	61,225	1,379,769
May	66,984	86,803	2,076,496	58,644	73,942	1,817,977
June	72,715	93,623	2,181,445	64,023	79,808	1,920,696
July	66,151	71,515	2,050,680	61,692	64,432	1,912,447
August	63,212	68,602	1,959,577	61,555	63,641	1,908,191
September	66,841	75,394	2,005,243	61,688	66,645	1,850,639
October	59,876	70,069	1,856,160	53,998	62,778	1,673,934
November	53,755	62,253	1,612,640	49,728	57,182	1,491,824
December	52,198	58,720	1,618,127	49,923	55,369	1,547,624
Annual Total			21,970,844			19,850,452
Maximum		93,623			79,808	
Average	60,196			54,366		
% Capacity		70			75	
Permit to Take Water Limit*		134,000				
Municipal Drinking Water Licence Limit					107,000	

^{*} Oshawa Plant 1 has a capacity of 27,000 m3/day. Plant 2 has a capacity of 107,000 m3/day. Only Plant 2 was operational during the reporting period.

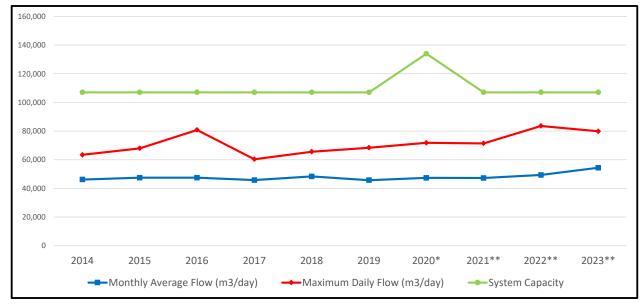
Prepared by: Water Resource Monitoring and Protection Division

Table 1: Ten year annual system capacity and treated water flow data.

Year	Monthly Average Flow (m³/day)	Maximum Daily Flow (m ³ /day)	System Capacity (m³/day)	
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	45,707	68,374	107,000	
2020*	47,311	71,764	134,000	
2021**	47,229	71,381	107,000	
2022**	49,330	83,547	107,000	
2023**	54,366	79,808	107,000	

^{*}Oshawa Plant 1 has a capacity of 27,000 m³/day. Plant 2 has a capacity of 107,000 m³/day. Plant 1 was out of service from 2010 to 2020 for upgrades. When it came online November 3rd, 2020 the system capacity increased from 107,000 m³/day to 134,000 m³/day.

Figure 1: Ten year annual system capacity and treated water flow data.



^{**} Oshawa Plant 1 was taken out of service on June 3, 2021.

The Regional Municipality of Durham Port Perry Drinking Water System 2023 Flow Summary Report

Month	Well # 3 Maximum Taken per Minute (litres)	Well # 3 Monthly Average Flow cubic metres per day (m³/day) Pro-rated	Well # 3 Maximum Daily Flow (m ³ /day) Pro-rated	Well # 3 Total Water Flow (m³)	Well # 5 Maximum Taken per Minute (litres)	Well # 5 Monthly Average Flow (m³/day) Pro-rated	Well # 5 Maximum Daily Flow (m³/day) Pro-rated	Well # 5 Total Water Flow (m³)
January	1,700	222	322	6,803	1,700	195	263	5,965
February	1,700	213	330	5,885	1,600	167	257	4,628
March	1,700	196	347	6,147	1,600	142	313	4,430
April	1,700	190	333	5,740	1,200	128	223	3,855
Мау	1,700	182	305	5,616	1,400	125	209	3,863
June	1,700	242	509	6,211	1,250	150	225	3,987
July	1,700	289	389	1,732	1,200	124	268	1,354
August	1,700	251	417	7,749	1,200	173	286	5,346
September	1,700	214	419	2,961	1,200	169	284	2,007
October	1,700	29	59	146	0	0	0	0
November	1,700	515	1,168	12,332	1,700	506	1,209	12,585
December	1,700	204	284	6,423	1,700	207	285	6,491
Annual Total				67,745				54,511
Maximum	1,700		1,168		1,700		1,209	
Average		229				174		
% Capacity	94		45		94		46	
Permit to take water limit	1,817		2,617		1,817		2,617	
Municipal Drinking Water License Limit			2,618				2,618	

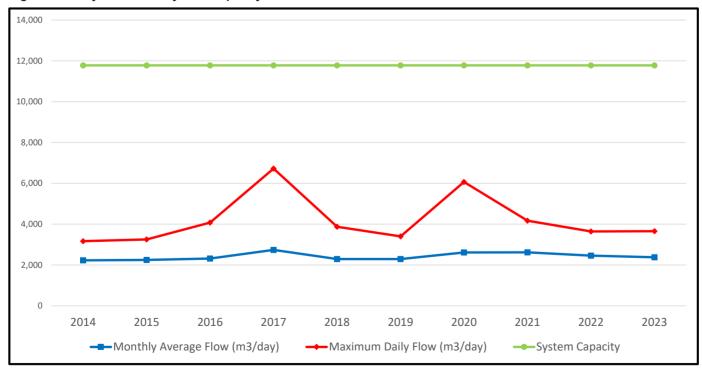
The Regional Municipality of Durham Port Perry Drinking Water System 2023 Flow Summary Report

Month	Well # 6 Maximum Taken per Minute (litres)	Well # 6 Monthly Average Flow cubic metres per day (m³/day) Pro-rated	Well # 6 Maximum Daily Flow (m ³ /day) Pro-rated	Well # 6 Total Water Flow (m³)	Treated Water Monthly Average Flow (m³/day) Pro-rated	Treated Water Maximum Daily Flow (m ³ /day) Pro-rated	Total Treated Water Flow (m³)
January	4,300	1,728	2,119	53,353	2,144	2,402	66,121
February	4,300	1,782	2,225	50,239	2,162	2,534	60,752
March	4,300	1,774	2,195	55,323	2,112	2,383	65,900
April	4,300	1,851	2,295	55,151	2,169	2,541	64,746
Мау	4,400	2,210	3,015	68,768	2,517	3,276	78,247
June	4,300	2,482	3,280	74,953	2,827	3,658	85,151
July	4,300	2,485	3,264	76,895	2,586	3,278	79,981
August	4,300	2,183	2,864	67,904	2,607	3,180	80,999
September	4,300	2,545	3,052	76,496	2,712	3,505	81,464
October	4,300	2,338	2,883	72,721	2,342	2,883	72,867
November	4,300	1,713	2,570	41,317	2,205	2,570	66,234
December	4,300	1,730	2,045	54,237	2,141	2,416	67,152
Annual Total				747,357			869,614
Maximum	4,400		3,280			3,658	
Average		2,069			2,377		
% Capacity	97		50			31	
Permit to take water limit	4,543		6,542				
Municipal Drinking Water License Limit			6,545			11,781	

Table 1: Ten year annual system capacity and treated water flow data.

Year	Monthly Average Flow (m³/day)	Maximum Daily Flow (m³/day)	System Capacity (m ³ /day)	
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	
2020	2,613	6,070	11,781	
2021	2,621	4,173	11,781	
2022	2,462	3,644	11,781	
2023	2,377	3,658	11,781	

Figure 1: Ten year annual system capacity and treated water flow data.



Month	Well # 1 Raw Water Maximum Taken per Minute (litres)	Well # 1 Raw Water Monthly Average Flow Cubic metres per day (m³/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 (m³/day) Pro-rated	Well #1 Treated Water Maximum Daily Flow (m ³ /day) Pro-rated	Well # 1 Total Treated Water Flow (m ³)
January	450	305	407	9,444	305	407	9,444
February	450	172	274	3,970	172	274	3,970
March	450	189	357	5,887	189	357	5,887
April	450	199	305	5,962	199	305	5,962
Мау	456	217	352	6,743	217	352	6,743
June	450	223	406	6,735	223	406	6,735
July	450	174	307	5,394	174	307	5,394
August	450	202	301	6,291	202	301	6,291
September	450	227	278	1,146	227	278	1,146
October	468	108	407	1,674	89	407	1,378
November	438	170	273	5,111	170	273	5,111
December	450	161	258	5,037	161	258	5,037
Annual Total				63,393			63,096
Maximum	468		407			407	
Average		195			194		
% Capacity	46		30			30	
Permit to Take Water Limit	1,023		1,373				
Municipal Drinking Water Licence Limit						1,374	

Prepared by: Water Resource Monitoring and Protection Division Prepared on: 2024-01-26

The Regional Municipality of Durham Sunderland Drinking Water System 2023 Flow Summary Report

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)
January	726	5	12	33	0	0	0
February	738	29	130	157	0	0	0
March	702	17	36	71	0	0	0
April	558	51	156	216	0	0	0
Мау	570	13	23	98	0	0	0
June	576	18	43	110	0	0	0
July	564	14	35	111	0	0	0
August	564	14	33	130	0	0	0
September	558	14	16	28	0	0	0
October	510	4	7	13	0	0	0
November	564	4	4	15	0	0	0
December	564	4	6	18	0	0	0
Annual Total				1,000			
Maximum			156			0	
Average		15			0		
% Capacity			11				
Permit to Take Water Limit	1,023		1,373				
Municipal Drinking Water Licence Limit							

Note: Well 2 was not in service in 2023.

Prepared by: Water Resource Monitoring and Protection Division Prepared on: 2024-02-12

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 (m³/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 (m³/day) Pro- rated	Well # 3 Total Treated Water Flow (m ³)
January	576	197	305	2,417	197	305	2,412
February	564	255	512	7,216	255	512	7,216
March	564	206	290	6,367	206	290	6,367
April	564	202	280	6,067	202	280	6,067
Мау	564	199	311	6,242	199	311	6,242
June	564	203	334	6,142	203	334	6,142
July	552	184	237	5,723	184	237	5,723
August	552	203	386	6,387	203	386	6,387
September	552	362	520	10,870	362	520	10,870
October	564	328	702	10,220	328	702	10,220
November	564	185	243	5,554	185	243	5,554
December	564	189	241	5,893	189	241	5,893
Annual Total				79,097			79,092
Maximum	576		702			702	
Average		226			226		
% Capacity	96		81			81	
Permit to Take Water Limit	600		864				
Municipal Drinking Water Licence Limit						864	

Prepared by: Water Resource Monitoring and Protection Division

Month	Raw Water Monthly Average Flow Cubic metres per day (m³/day) Pro-rated	Raw Water Maximum Daily Flow (m³/day) Pro-rated	Total Raw Water Flow (m ³)	Treated Water Monthly Average Flow (m ³ /day) Pro-rated	Treated Water Maximum Daily Flow (m³/day) Pro-rated	Total Treated Water Flow (m³) Pro-rated
January	382	445	11,894	381	440	11,804
February	401	584	11,343	396	515	11,087
March	397	513	12,325	395	513	12,254
April	408	577	12,245	401	509	12,032
Мау	419	560	13,083	416	557	12,893
June	429	627	12,986	426	627	12,771
July	362	477	11,227	358	460	11,098
August	409	558	12,808	405	552	12,554
September	400	617	12,044	399	600	11,983
October	381	752	11,907	371	739	11,499
November	356	416	10,680	355	416	10,658
December	350	442	10,948	349	442	10,826
Annual Total			143,490			141,459
Maximum		752			739	
Average	391			388		
% Capacity		27			33	
Permit to Take Water Limit		2,745				
Municipal Drinking Water Licence Limit					2,238	

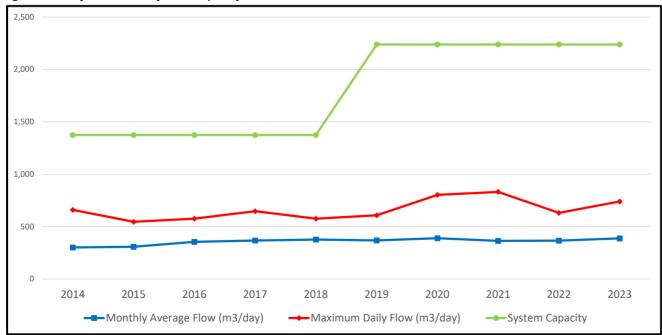
Prepared by: Water Resource Monitoring and Protection Division

Table 1: Ten year annual system capacity and treated water flow data.

Year	Monthly Average Flow (m³/day)	Maximum Daily Flow (m³/day)	System Capacity (m³/day)*
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
2020	389	803	2,238
2021	364	831	2,238
2022	366	631	2,238
2023	388	739	2,238

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

Figure 1: Ten year annual system capacity and treated water flow data.



Month	Well # 5 Raw Water Maximum Taken per Minute (litres)	Well # 5 Raw Water Monthly Average Flow Cubic metres per day (m³/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 (m³/day) Pro-rated	Well # 5 Treated Water Maximum Daily Flow (m ³ /day) Pro-rated	Well # 5 Total Treated Water Flow (m³)
January	2,700	1,014	1,223	15,249	1,012	1,223	15,219
February	2,700	1,032	1,313	17,486	1,030	1,313	17,456
March	2,700	954	1,175	18,164	951	1,175	18,119
April	2,700	1,034	1,280	17,470	1,032	1,280	17,440
Мау	2,700	1,349	1,899	24,296	1,347	1,899	24,266
June	2,700	1,572	2,265	45,422	1,572	2,265	45,412
July	2,700	1,416	2,021	43,972	1,416	2,021	43,972
August	2,700	1,161	1,900	33,508	1,194	1,900	33,248
September	2,700	1,308	1,880	36,328	1,308	1,880	36,328
October	2,700	1,065	1,674	19,431	1,064	1,674	19,416
November	2,700	996	1,202	16,893	995	1,202	16,863
December	2,700	1,112	1,411	18,961	1,110	1,411	18,931
Annual Total				307,180			
Maximum	2,700		2,265			2,265	
Average		1,168			1,169		
% Capacity	90		52			27	
Permit to take water limit	3,000		4,320				
Municipal Drinking Water License Limit*						8,251	

Prepared by: Water Resource Monitoring and Protection Division Prepared on: 2024-01-26

^{*}Limit is combined for Wells 5 and 7.

Month	Well # 7 Raw Water Maximum Taken per Minute (litres)	Well # 7 Raw Water Monthly Average Flow Cubic metres per day (m³/day) Pro-rated	Well # 7 Raw Water Maximum Daily Flow (m³/day) Pro-rated	Well # 7 Total Raw Water Flow (m³)	Well # 7 Treated Water Monthly Average Flow (m³/day) Pro-rated	Well # 7 Treated Water Maximum Daily Flow (m ³ /day) Pro-rated	Well # 7 Total Treated Water Flow (m ³)
January	1,600	784	1,123	15,649	782	1,123	15,619
February	1,600	734	894	11,009	732	894	10,979
March	1,600	742	900	12,656	741	900	12,631
April	1,600	763	1,000	13,000	762	1,000	12,975
Мау	1,600	840	1,281	15,097	837	1,281	15,057
June	1,600	679	1,711	7,465	674	1,711	7,405
July	1,600	389	1,126	2,992	382	1,126	2,937
August	1,600	629	1,202	9,147	648	1,202	8,759
September	1,600	654	1,142	6,611	647	1,142	6,551
October	1,600	815	1,097	13,809	813	1,097	13,779
November	1,600	720	988	12,973	717	988	12,933
December	1,600	818	987	14,822	864	987	14,792
Annual Total				135,230			
Maximum	1,600		1,711			1,711	
Average		714			717		
% Capacity	53		40			21	
Permit to Take Water Limit	3,000		4,320				
Municipal Drinking Water Licence Limit*						8,251	

Prepared by: Water Resource Monitoring and Protection Division Prepared on: 2024-01-26

^{*}Limit is combined for Wells 5 and 7.

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 (m³) Pro-rated**	Well # 6 Raw/Treated Water Maximum Taken per Minute (litres)	Well # 6 Raw/Treated Water Monthly Average Flow (m ³ /day) Pro-rated	Well # 6 Raw/Treated Water Maximum Daily Flow (m³/day) Pro-rated	Well # 6 Total Raw/Treated Water Flow (m ³)
January	995	1,417	30,838	2,520	1,354	1,937	41,973
February	1,016	1,315	28,435	2,520	1,347	1,787	37,919
March	992	1,305	30,750	2,520	1,320	1,554	40,834
April	1,014	1,258	30,415	2,580	1,350	1,661	40,522
Мау	1,268	2,011	39,323	2,520	1,650	2,135	51,160
June	1,761	2,428	52,817	2,520	1,874	2,688	56,438
July	1,513	2,204	46,909	2,520	1,623	2,349	50,257
August	1,355	1,900	42,007	2,520	1,579	1,897	49,282
September	1,429	2,128	42,879	2,520	1,618	1,906	48,368
October	1,071	1,813	33,195	2,520	1,497	1,866	46,401
November	993	1,408	29,796	2,520	1,334	1,673	40,245
December	1,088	1,506	33,723	2,520	1,445	1,700	44,985
Annual Total							
Maximum		2,428		2,580		2,688	
Average	1,208						
% Capacity		29		95		68	
Permit to Take Water Limit		4,320		2,730		3,931	
Municipal Drinking Water Licence Limit		8,251*				3,931	

^{*}Limit is combined for Wells 5 and 7.

Prepared by: Water Resource Monitoring and Protection Division Prepared on: 2024-02-12

^{**}Treated water volumes for Wells 5 and 7 calculated by subtracting waste from raw water volumes.

Month	Raw Water Monthly Average Flow Cubic metres per day (m³/day) Pro-rated	Raw Water Maximum Daily Flow (m³/day) Pro-rated	Total Raw Water Flow (m³)	Treated Water Monthly Average Flow (m³/day) Pro-rated	Treated Water Maximum Daily Flow (m³/day) Pro-rated	Total Treated Water Flow (m³)
January	2,351	3,131	72,871	2,348	3,131	72,811
February	2,366	2,525	66,414	2,364	2,525	66,354
March	2,309	2,569	71,654	2,309	2,422	71,584
April	2,369	2,772	70,992	2,366	2,661	70,937
Мау	2,921	3,971	90,553	2,918	3,807	90,483
June	3,650	4,971	109,325	3,640	4,468	109,255
July	3,137	3,867	97,221	3,137	4,132	97,166
August	2,969	3,734	92,202	2,929	3,256	91,289
September	3,051	3,898	91,307	3,055	3,668	91,247
October	2,562	3,389	79,641	2,561	3,298	79,596
November	2,338	2,701	70,111	2,328	2,610	70,041
December	2,536	3,089	78,768	2,527	2,855	78,708
Annual Total			991,059			
Maximum		4,971			4,468	
Average	2,713			2,707		
% Capacity		60				
Permit to Take Water Limit*		8,251				
Municipal Drinking Water Licence Limit**					8,251	
					3,931	

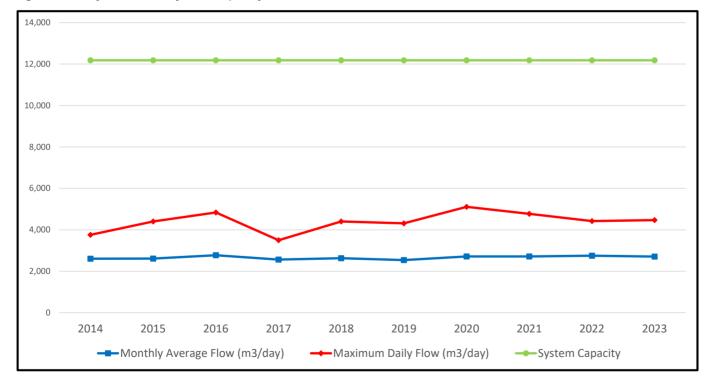
^{*}Permit to Take Water allows two wells to operate simultaneously however, the daily total taking of water for any combination is limited to a maximum of 8,251 m³/day.

^{**8,251} m³/day is the rated capacity for Wells 5 and 7 and 3,931 m³/day is the rated capacity for Well 6.

Table 1: Ten year annual system capacity and treated water flow data.

Year	Monthly Average Flow (m³/day)	Maximum Daily Flow (m³/day)	System Capacity (m ³ /day)
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
2020	2,711	5,109	12,182
2021	2,715	4,771	12,182
2022	2,752	4,418	12,182
2023	2,707	4,468	12,182

Figure 1: Ten year annual system capacity and treated water flow data.



The Regional Municipality of Durham Whitby Drinking Water System 2023 Flow Summary Report

Month	Raw Process Water Monthly Average Flow Cubic metres per day (m ³ /day)	Raw Process Water Maximum Daily Flow (m³/day)	Total Raw Process Water Flow (m³)	Raw Industrial Water Monthly Average Flow (m³/day)	Raw Industrial Water Maximum Daily Flow (m³/day)	Total Raw Industrial Water Flow (m³)
January	53,833	56,608	1,668,831	4,915	7,561	152,367
February	53,564	58,250	1,499,783	4,853	7,898	135,896
March	55,398	70,510	1,717,342	4,783	8,311	154,135
April	54,486	63,891	1,634,592	2,140	5,413	64,202
Мау	51,629	71,450	1,600,506	689	3,010	21,349
June	68,016	100,467	2,040,472	1,441	2,926	43,223
July	64,850	77,846	2,010,343	5,151	10,026	159,665
August	59,879	77,428	1,856,254	4,473	7,728	138,669
September	62,030	78,356	1,860,911	4,439	6,460	133,170
October	57,114	65,995	1,770,540	4,797	8,015	148,721
November	55,058	63,207	1,651,748	5,073	6,942	152,177
December	55,288	62,915	1,713,923	5,677	6,638	175,974
Annual Total			21,025,243			1,479,546
Maximum		100,467			10,026	
Average	57,596			4,036		

Prepared by: Water Resource Monitoring and Protection Division

The Regional Municipality of Durham Whitby Drinking Water System 2023 Flow Summary Report

Month	Raw Water Monthly Average Flow Cubic metres per day (m³/day)	Raw Water Maximum Daily Flow (m³/day)	Total Raw Water Flow (m³)	Treated Water Monthly Average Flow (m³/day)	Treated Water Maximum Daily Flow (m³/day)	Total Treated Water Flow (m ³)
January	59,048	62,439	1,830,471	52,080	55,149	1,614,482
February	58,724	65,091	1,644,283	51,899	56,576	1,453,172
March	60,540	76,720	1,876,735	53,415	67,259	1,655,852
April	56,928	67,369	1,707,834	52,535	60,519	1,576,042
May	52,544	71,717	1,628,860	48,684	68,861	1,509,196
June	69,912	103,309	2,097,356	64,457	94,951	1,933,701
July	70,459	82,860	2,184,238	61,094	74,120	1,893,897
August	64,712	85,598	2,006,063	56,469	72,106	1,750,548
September	66,836	81,719	2,005,073	58,384	74,731	1,751,506
October	62,211	71,857	1,928,538	54,123	62,407	1,677,806
November	60,427	69,300	1,812,809	52,309	60,887	1,569,256
December	61,273	69,557	1,899,467	52,526	59,082	1,628,304
Annual Total			22,621,726			20,013,763
Maximum		103,309			94,951	
Average	61,968			54,831		
% Capacity		72			80	
Permit to Take Water Limit		144,000				
Municipal Drinking Water Licence Limit					118,000	

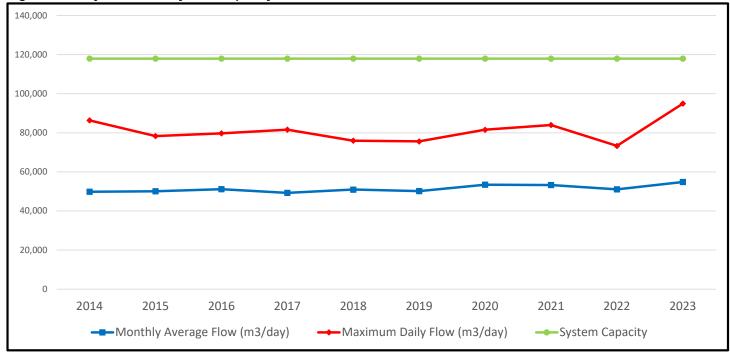
Prepared by: Water Resource Monitoring and Protection Division

The Regional Municipality of Durham Whitby Drinking Water System 2023 Flow Summary Report

Table 1: Ten year annual system capacity and treated water flow data.

Year	Monthly Average Flow (m³/day)	Maximum Daily Flow (m³/day)	System Capacity (m³/day)
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
2020	53,472	81,583	118,000
2021	53,268	83,975	118,000
2022	51,072	73,316	118,000
2023	54,831	94,951	118,000

Figure 1: Ten year annual system capacity and treated water flow data.



Prepared by: Water Resource Monitoring and Protection Division