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The Regional Municipality of Durham Report

To: The Works Committee
From: Commissioner of Works
Report: #2023-W-10
Date: March 8, 2023

Subject:

The Regional Municipality of Durham's Drinking Water Systems 2022 Summary Report

Recommendations:

That the Committee of the Whole recommends to Regional Council:

- A) That the 2022 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.
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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 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 provides a list of all Drinking Water Systems (DWS) and their Municipal Drinking Water Licences for the period from January 1, 2022, to December 31, 2022.

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.

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 *	Not Compliant	Did Not Exceed
Whitby *	Not Compliant	Did Not Exceed
Ajax *	Not 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	Not 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 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.

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 to provide an

explanation of any non-compliance issues that were identified during the reporting period.

- 3.2 Water quality monitoring data is available on the [Region of Durham's website](http://www.durham.ca) 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 June 14, 2022. 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 was one action item identified during the meeting to ensure better tracking of the Groundwater Summary Reports recommendations. There was one internal audit completed from September 26 to 29, 2022. The results were satisfactory with no non-conformances to the DWQMS and nine 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 2022 accreditation audit was completed on December 22, 2022. The audit found no non-conformances to the DWQMS and one opportunity for improvement which is being responded to by the DWS staff.
- 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:

(a) O. Reg. 170/03 Schedule 16 Section 16-9 Reporting of Adverse Test Results and Other problems – Notice of Issue Resolution

Ajax DWS

- On April 21, 2022, Notification for Adverse Water Quality Incident (AWQI) 158243 was reported to the Region of Durham Health Department and the MECP through the Spills Action Centre. The issue was resolved on the same day.

- The Notice of Issue Resolution was submitted to the Region of Durham Health Department and MECP on May 2, 2022.
- The Notice of Issue Resolution did not meet the requirements of Schedule 16 Section 16-9 of O. Reg. 170/03 to provide a written notice summarizing the action taken to the Medical Officer of Health (MOH) and the MECP through the Spills Action Centre, within seven (7) days.

Remedial Action:

- Training has been provided to all required staff on the regulatory requirements of AWQI reporting to ensure administrative processes are completed and compliant.

(b) O. Reg. 170/03 Schedule 16 Section 16-6 – Reporting Adverse Test Results and Other Problems: Manner of making immediate report**Ajax DWS**

- On July 5, 2022, several low-pressure incidents were listed on the same Notification of AWQI 159011 and were not reported to the MOH or MECP. These instances are required to be reported immediately under Schedule 16 Section 16-6 of O. Reg. 170/03 as observations of inadequately disinfected water being directed to users.
- The Region sought clarification from the MECP regarding reporting low pressure in the distribution system as an adverse. The MECP does not deem these short duration low pressure events as adverse unless they continue past five minutes or meet other existing conditions for reporting.
- The MECP informed the Region of Durham Health Department of their interpretation moving forward.

Remedial Action:

- Training has been provided to all required staff on what constitutes a reportable AWQI for pressure in the distribution system to ensure administrative processes are completed and compliant.

Ajax DWS

- On July 5, 2022, AWQI 159011 was reported to the MECP through the Spills Action Centre, but not reported to the Region of Durham Health

Department immediately after observation. Verbal and written notifications of AWQI 159011 were provided to the Region of Durham Health department on July 6, 2022.

- The AWQI reported to the Region of Durham Health Department on July 6, 2022, did not meet the requirements of Schedule 16 Section 16-6 of O. Reg. 170/03, which requires that an immediate verbal report be given to a staff member of the MOH, and MECP Spills Action Centre. Staff were unable to establish contact with the Region of Durham Health Department on July 5, 2022, despite several attempts. The MECP Spills Action Centre was notified of the unsuccessful attempts to contact the Region of Durham Health Department on July 5, 2022. Staff were able to contact Region of Durham Health inspectors on the following morning of July 6, 2022.

Remedial Action:

- To assist in communications, staff have been provided with the contact information for the Region of Durham Health Department Supervisor and Manager to be used in the event the on-call Health Inspector is not available.

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

Oshawa/Whitby DWS

- All entries made in the logbook at the Oshawa/Whitby Depot did not permit
- All entries made in the logbook at the Oshawa/Whitby Depot did not permit the person to be unambiguously identified as the maker of the entry as required.

Remedial Action

- Training has been reinforced with all required staff on the regulatory requirements of logbook entries to ensure administrative processes are completed and compliant.

Newcastle DWS

- All entries made in the Orono Depot logbook did not permit the person to be unambiguously identified as the maker of the entry.

Remedial Action:

- Orono Depot staff responsible for making logbook entries shall receive training by March 31, 2023, to ensure they understand the record-keeping policies and requirements. The training shall include, but is not limited to, the requirement for a person making logbook entries to be unambiguously identified as required.
- The Region will provide MECP Inspector, Connie Height via email at connie.height@ontario.ca, by March 31, 2023, with confirmation that the training has been completed.

(d) Drinking Water Works Permit No. 003-209, Schedule B, Condition 4.6.1 – Minor Modifications to the Drinking Water System**Newcastle DWS**

- On October 28, 2022, it was discovered that booster pump #2 at the Newtonville Pumping Station was modified to a Variable Frequency Drive (VFD) without a Form 2 – Record of Minor Modifications or Replacements to the Drinking Water System completed prior to the component being placed into service as required by Schedule B, condition 4.6.1 of the Newcastle Drinking Water Works Permit.
- A Form 2 was subsequently completed on November 14, 2022.

Remedial Action:

- Training on Schedule B of the DWWP and the associated forms is being scheduled for staff to ensure administrative processes are completed and compliant.

(e) Best Management Practices**Ajax DWS**

- All entries made in the logbook at the Ajax Depot did not permit the person to be unambiguously identified as the maker of the entry as required.

Remedial Action:

- Refresher training has been provided to all required staff on the regulatory requirements of logbook entries to ensure administrative processes are completed and compliant.

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 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 on the [Region of Durham's website](http://www.durham.ca) 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:
- 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 greenspaces, 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
 - c. 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, Acting Manager, Technical Support Division, at 905-668-7711 extension 3737.

9. Attachment

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

Respectfully submitted,

Original signed by:

John Presta, P.Eng., MPA
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
 2022 Flow Summary Report

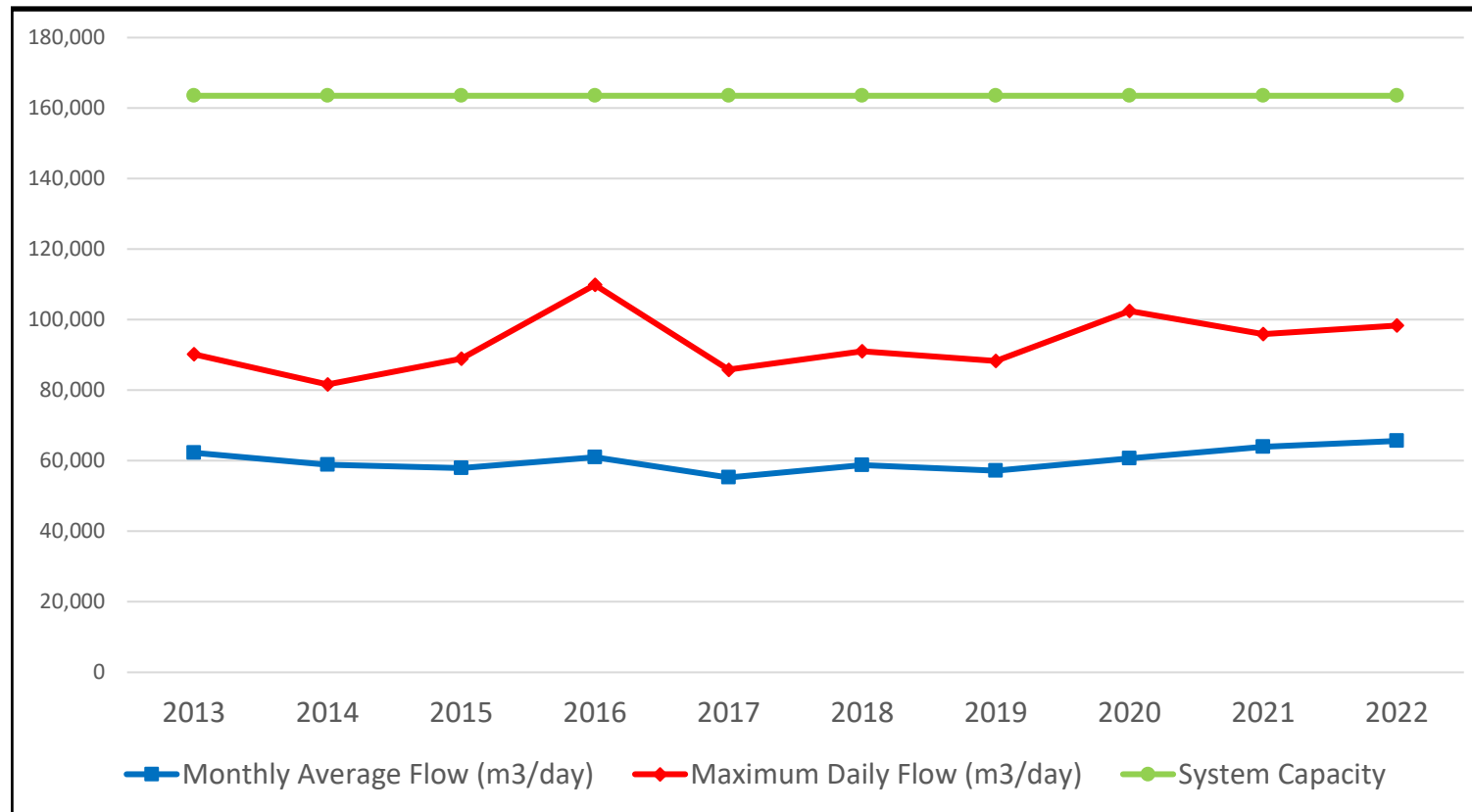
Month	Raw Water Monthly Average Flow Cubic metres per day (m ³ /day)	Raw Water Maximum Daily Flow (m ³ /day)	Total Raw Water Flow (m ³)	Treated Water Monthly Average Flow (m ³ /day)	Treated Water Maximum Daily Flow (m ³ /day)	Total Treated Water Flow (m ³)
January	65,403	78,500	2,027,506	63,697	78,911	1,974,611
February	66,395	81,376	1,859,048	63,352	78,532	1,773,858
March	64,697	77,499	2,005,619	61,923	76,892	1,919,605
April	63,675	70,732	1,910,258	60,535	68,023	1,816,057
May	68,386	82,465	2,119,960	64,679	80,461	2,005,047
June	72,035	96,662	2,161,056	67,738	89,498	2,032,130
July	79,776	102,802	2,473,041	75,010	98,337	2,325,316
August	74,720	88,750	2,316,321	70,926	84,026	2,198,695
September	69,172	85,826	2,075,161	66,703	83,857	2,001,083
October	66,783	82,710	2,070,272	64,379	81,405	1,995,741
November	65,111	76,214	1,953,319	62,944	74,931	1,888,331
December	67,609	83,042	2,095,881	65,497	81,079	2,030,420
Annual Total			25,067,443			23,960,892
Maximum		102,802			98,337	
Average	68,647			65,615		
% Capacity		60			60	
Permit to Take Water Limit		170,000				
Municipal Drinking Water Licence Limit					163,500	

**The Regional Municipality of Durham
 Ajax Drinking Water System
 2022 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)
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
2020	60,682	102,507	163,500
2021	63,940	95,933	163,500
2022	65,615	98,337	163,500

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



The Regional Municipality of Durham
 Beaverton Drinking Water System
 2022 Flow Summary Report

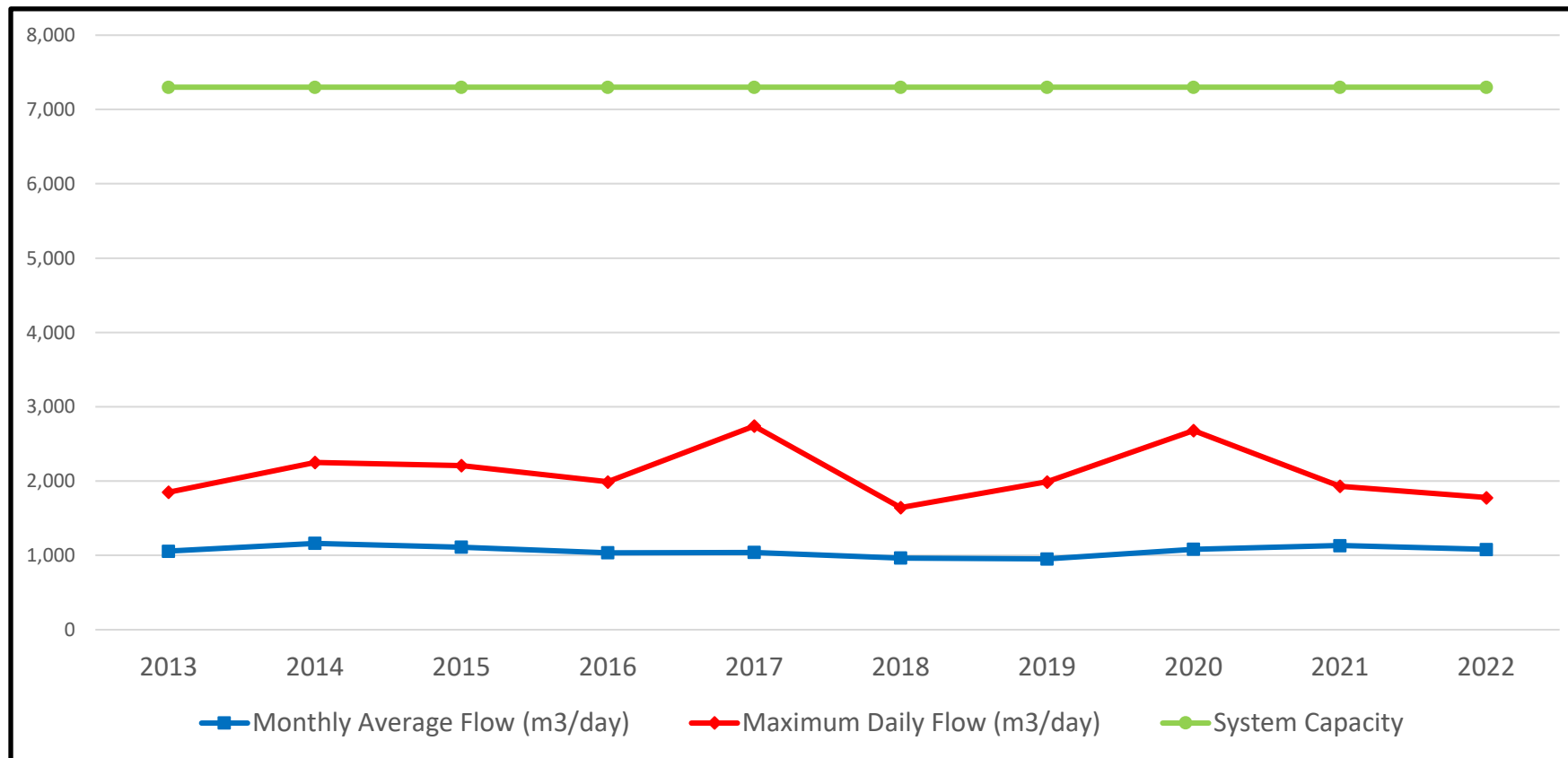
Month	Raw Water Monthly Average Flow Cubic metres per day (m ³ /day) Pro-Rated	Raw Water Maximum Daily Flow (m ³ /day) Pro-Rated	Total Raw Water Flow (m ³)	Treated Water Monthly Average Flow (m ³ /day) Pro-Rated	Treated Water Maximum Daily Flow (m ³ /day) Pro-Rated	Total Treated Water Flow (m ³)
January	1,033	1,194	31,983	967	1,106	29,936
February	1,063	1,354	29,920	964	1,057	26,981
March	1,044	1,360	32,438	971	1,255	30,092
April	1,043	1,356	31,407	936	1,013	28,142
May	1,261	1,577	39,124	1,157	1,591	35,876
June	1,366	1,726	41,047	1,224	1,532	36,702
July	1,557	1,925	48,212	1,390	1,777	43,066
August	1,517	1,845	47,060	1,321	1,514	40,865
September	1,309	1,937	39,388	1,145	1,643	34,423
October	1,097	1,554	34,138	967	1,166	30,010
November	1,043	1,407	31,443	922	1,053	27,698
December	1,071	1,437	33,209	985	1,176	30,380
Annual Total			439,369			394,171
Maximum		1,937			1,777	
Average	1,200			1,079		
% Capacity		27			24	
Permit to Take Water Limit		7,300				
Municipal Drinking Water Licence Limit					7,300	

**The Regional Municipality of Durham
Beaverton Drinking Water System
2022 Flow Summary Report**

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 (m ³ /day)
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
2020	1,082	2,679	7,300
2021	1,131	1,929	7,300
2022	1,079	1,777	7,300

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



The Regional Municipality of Durham
 Blackstock Drinking Water System
 2022 Flow Summary Report

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	618	153	206	4,712
February	0	0	0	0	642	157	219	4,412
March	0	0	0	0	642	157	212	4,840
April	0	0	0	0	642	171	232	5,078
May	0	0	0	0	648	163	233	4,996
June	0	0	0	0	594	131	221	3,919
July	0	0	0	0	588	151	220	4,624
August	0	0	0	0	570	129	182	3,958
September	0	0	0	0	552	115	172	3,418
October	0	0	0	0	570	138	220	4,245
November	0	0	0	0	588	128	170	3,813
December	0	0	0	0	594	132	199	4,045
Annual Total				0				52,060
Maximum	0		0		648		233	
Average		0				144		
% Capacity					95		24	
Permit to Take Water Limit	684		985		684		985	

Well 7 not in service in 2022.

The Regional Municipality of Durham
 Blackstock Drinking Water System
 2022 Flow Summary Report

Month	Treated Water Monthly Average Flow cubic metres per day (m ³ /day)	Treated Water Maximum Daily Flow (m ³ /day)	Total Treated Water Flow (m ³)
January	131	166	4,066
February	139	202	3,888
March	134	160	4,163
April	150	176	4,487
May	134	176	4,153
June	101	132	3,016
July	119	172	3,689
August	89	139	2,750
September	43	104	1,284
October	116	164	3,598
November	116	153	3,484
December	119	183	3,680
Annual Total			42,258
Maximum		202	
Average	116		
% Capacity		20	
Municipal Drinking Water Licence Limit		994	

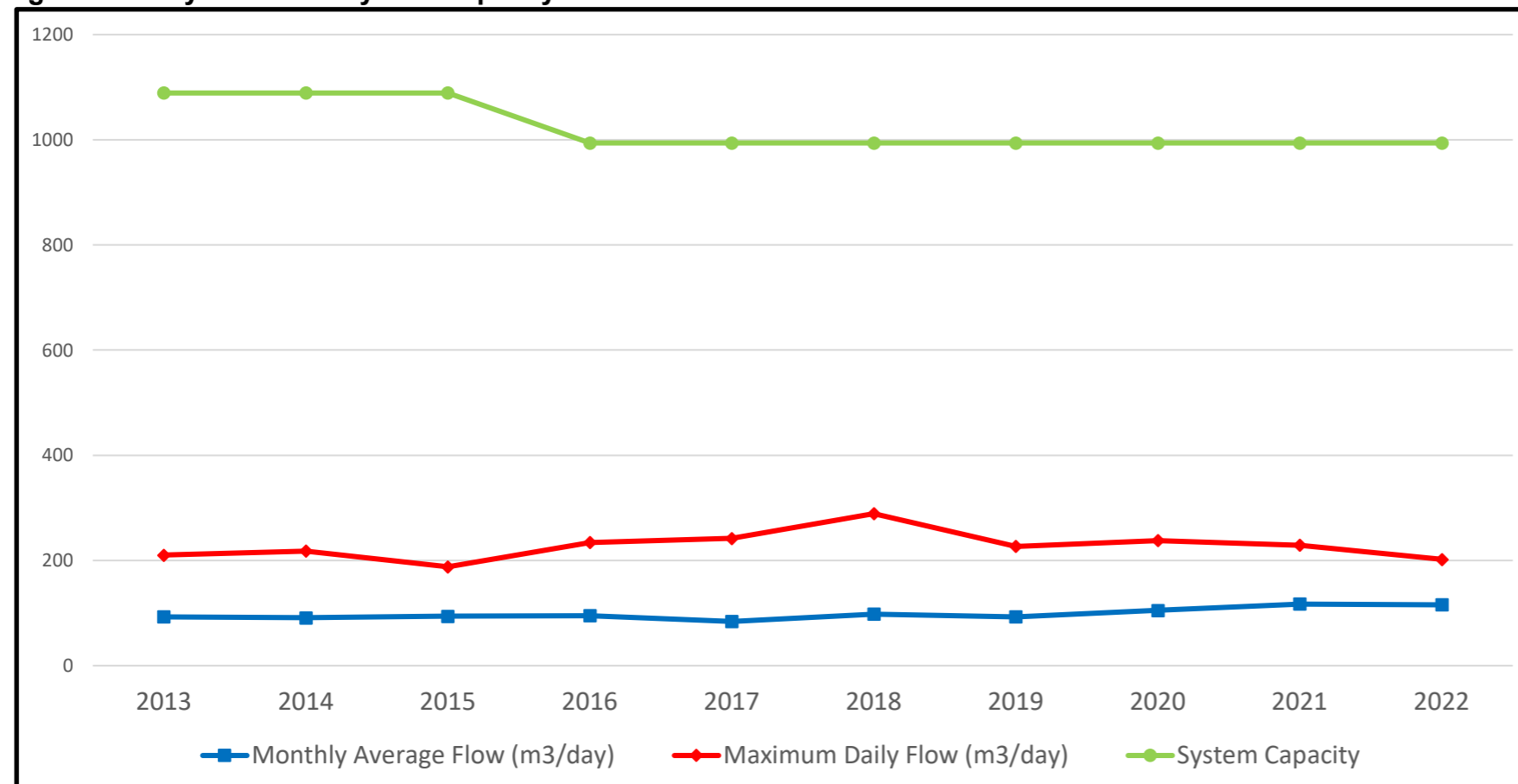
The Regional Municipality of Durham
 Blackstock Drinking Water System
 2022 Flow Summary Report

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 (m ³ /day)*
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
2020	105	238	994
2021	117	229	994
2022	116	202	994

* Well 7 not in service since 2016.

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



The Regional Municipality of Durham
Bowmanville Drinking Water System
2022 Flow Summary Report

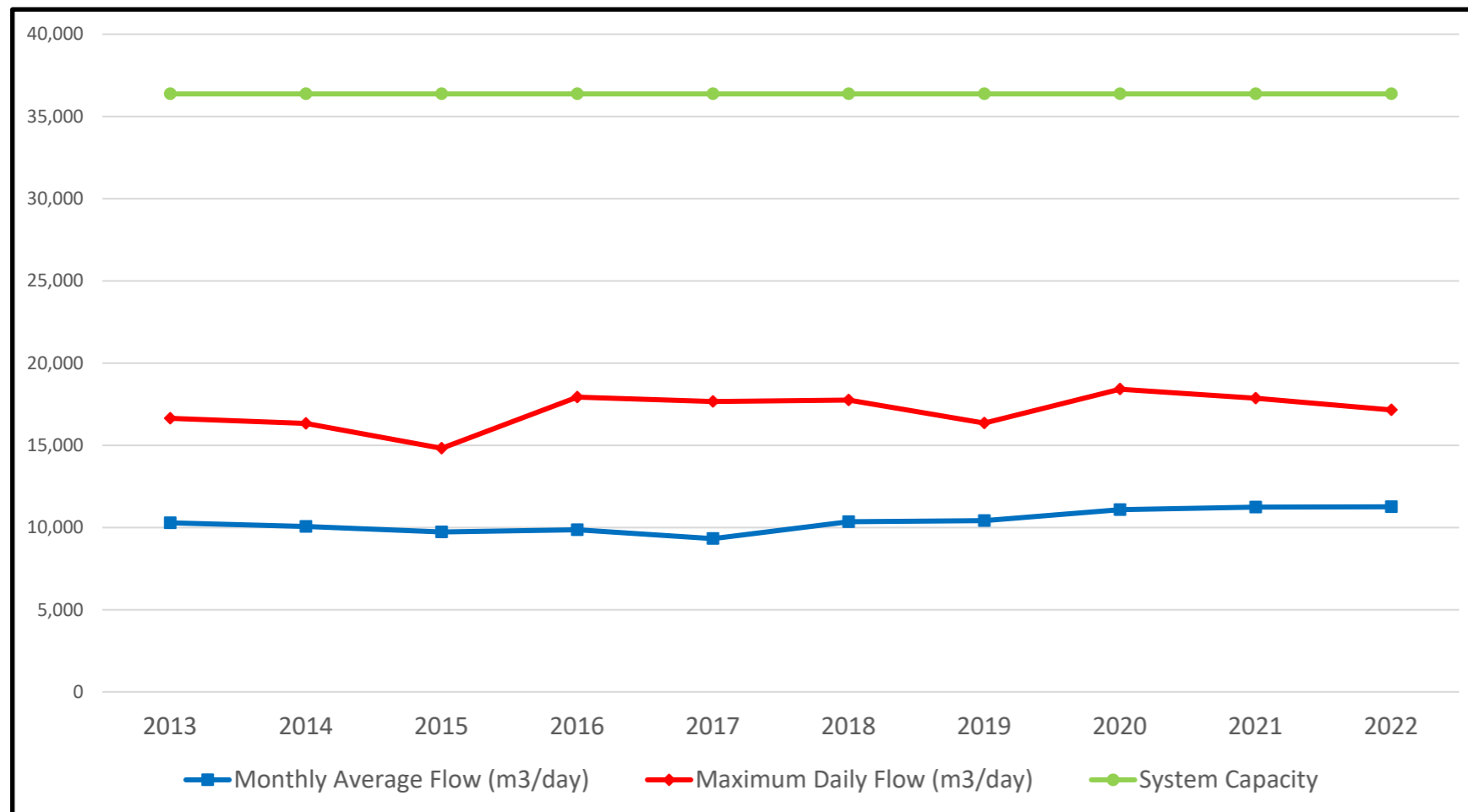
Month	Raw Water Monthly Average Flow Cubic metres per day (m ³ /day)	Raw Water Maximum Daily Flow (m ³ /day)	Total Raw Water Flow (m ³)	Treated Water Monthly Average Flow (m ³ /day)	Treated Water Maximum Daily Flow (m ³ /day)	Total Treated Water Flow (m ³)
January	11,303	12,749	350,393	10,315	11,606	319,758
February	11,245	13,694	314,847	10,368	12,263	290,299
March	10,733	12,736	332,732	10,246	12,521	317,619
April	10,746	13,297	322,383	10,204	12,698	306,127
May	12,247	14,795	379,664	11,698	14,107	362,650
June	13,065	15,307	391,941	12,421	14,792	372,622
July	13,926	18,075	431,707	13,194	17,140	409,008
August	13,362	15,942	414,217	12,680	15,482	393,065
September	12,039	14,499	361,164	11,430	14,390	342,891
October	11,403	12,692	353,486	10,791	12,358	334,534
November	11,268	13,164	338,046	10,674	12,132	320,233
December	11,757	13,407	364,467	11,075	13,354	343,337
Annual Total			4,355,047			4,112,143
Maximum		18,075			17,140	
Average	11,925			11,258		
% Capacity		38			47	
Permit to Take Water Limit		47,700				
Municipal Drinking Water Licence Limit					36,368	

**The Regional Municipality of Durham
Bowmanville Drinking Water System
2022 Flow Summary Report**

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 (m ³ /day)
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
2020	11,079	18,409	36,368
2021	11,227	17,867	36,368
2022	11,258	17,140	36,368

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



The Regional Municipality of Durham
Cannington Drinking Water System
2022 Flow Summary Report

Month	Well # 2 Raw Water Maximum Taken per Minute (litres)	Well # 2 Raw Water Monthly Average Flow Cubic metres per day (m3/day) Pro-Rated	Well # 2 Raw Water Maximum Daily Flow (m3/day) Pro-rated	Well # 2 Total Raw Water Flow (m3)	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 (m3)
January	80	44	56	1,359	44	56	1,359
February	80	46	64	1,282	46	64	1,282
March	80	48	55	1,487	48	55	1,487
April	80	51	57	1,534	51	57	1,534
May	80	50	65	1,554	50	65	1,554
June	80	42	52	1,261	42	52	1,261
July	80	41	51	1,285	41	51	1,285
August	80	40	50	1,240	40	50	1,240
September	80	37	42	1,119	37	42	1,119
October	80	37	45	1,149	37	45	1,149
November	80	38	45	1,136	38	45	1,136
December	80	41	51	1,272	41	51	1,272
Annual Total				15,678			15,678
Maximum	80		65			65	
Average		43			43		
% Capacity	95		53			13	
Permit to Take Water Limit	84		121				
Municipal Drinking Water 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
2022 Flow Summary Report

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 (m3/day) Pro-rated	Well # 7 Treated Water Maximum Daily Flow (m3/day) Pro-rated	Well # 7 Total Treated Water Flow (m3)
January	260	146	188	4,540	146	188	4,540
February	260	154	217	4,309	154	217	4,309
March	260	161	183	5,004	161	183	5,004
April	260	169	190	5,068	169	190	5,068
May	260	167	212	5,176	167	212	5,176
June	260	142	177	4,252	142	177	4,252
July	260	141	172	4,370	141	172	4,370
August	260	135	169	4,178	135	169	4,178
September	260	128	146	3,876	128	146	3,876
October	260	124	149	3,867	124	149	3,867
November	260	125	149	3,732	125	149	3,732
December	260	135	171	4,202	135	171	4,202
Annual Total				52,573			52,573
Maximum	260		217			217	
Average		144			144		
% Capacity	96		56			43	
Permit to Take Water Limit	270		389				
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
2022 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 (m ³)
January	189	244	5,899
February	200	281	5,591
March	209	237	6,491
April	220	248	6,602
May	218	275	6,730
June	184	230	5,513
July	182	223	5,655
August	175	218	5,418
September	165	189	4,995
October	161	194	5,016
November	163	194	4,868
December	176	222	5,473
Maximum		281	
Average	187		
% Capacity		55	
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
2022 Flow Summary Report

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)
January	160	88	113	2,731	88	113	2,731
February	160	96	111	2,679	96	111	2,679
March	170	100	116	3,084	100	116	3,084
April	160	106	113	3,186	106	113	3,186
May	160	102	133	3,160	102	133	3,160
June	170	86	110	2,583	86	110	2,583
July	160	88	109	2,727	88	109	2,727
August	160	81	98	2,513	81	98	2,513
September	160	78	90	2,353	78	90	2,353
October	160	77	94	2,387	77	94	2,387
November	160	78	95	2,323	78	95	2,323
December	160	80	99	1,907	80	99	1,907
Annual Total				31,632			31,632
Maximum	170		133			133	
Average		88			88		
% Capacity	94		51			51	
Permit to Take Water Limit	180		259				
Municipal Drinking Water License Limit						259	

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

The Regional Municipality of Durham
Cannington Drinking Water System
2022 Flow Summary Report

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)
January	180	101	129	3,135	101	129	3,135
February	190	109	140	3,044	109	140	3,044
March	190	104	127	3,244	104	127	3,244
April	190	110	123	3,313	110	123	3,313
May	190	110	173	3,401	110	173	3,401
June	190	94	111	2,821	94	111	2,821
July	190	90	107	2,802	90	107	2,802
August	180	87	104	2,690	87	104	2,690
September	180	85	105	2,556	85	105	2,556
October	190	82	110	2,551	82	110	2,551
November	180	86	102	2,594	86	102	2,594
December	190	97	128	3,004	97	128	3,004
Annual Total				35,154			35,154
Maximum	190		173			173	
Average		96			96		
% Capacity	99		62			63	
Permit to Take Water Limit	192		277				
Municipal Drinking Water License Limit						276	

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

The Regional Municipality of Durham
Cannington Drinking Water System
2022 Flow Summary Report

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)
January	380	191	249	5,950	191	249	5,950
February	390	206	270	5,776	206	270	5,776
March	390	212	244	6,599	212	244	6,599
April	390	226	248	6,782	226	248	6,782
May	385	221	357	6,837	221	357	6,837
June	380	174	204	5,273	174	204	5,273
July	370	183	232	5,666	183	232	5,666
August	370	175	223	5,440	175	223	5,440
September	370	165	210	4,954	165	210	4,954
October	380	161	221	4,996	161	221	4,996
November	380	153	194	4,577	153	194	4,577
December	340	156	219	4,847	156	219	4,847
Annual Total				67,696			67,696
Maximum	390		357			357	
Average		185			185		
% Capacity	69		44			44	
Permit to Take Water Limit	568		818				
Municipal Drinking Water License Limit						818	

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

The Regional Municipality of Durham
Cannington Drinking Water System
2022 Flow Summary Report

Month	Total System Raw Water Monthly Average Flow Cubic metres per day (m ³ /day) Pro-rated	Total System Raw Water Maximum Daily Flow (m ³ /day)	Total Raw Water Flow (m ³)	Total System Treated Water Monthly Average Flow (m ³ /day)	Total System Treated Water Maximum Daily Flow (m ³ /day)	Total System Total Treated Water Flow (m ³)
January	570	735	17,715	570	735	17,715
February	610	801	17,090	610	801	17,090
March	626	708	19,418	626	708	19,418
April	662	710	19,883	662	710	19,883
May	651	818	20,128	651	818	20,128
June	537	608	16,190	537	608	16,190
July	543	643	16,850	543	643	16,850
August	517	625	16,061	517	625	16,061
September	493	590	14,856	493	590	14,856
October	481	617	14,948	481	617	14,948
November	480	559	14,362	480	559	14,362
December	490	614	15,231	490	614	15,231
Annual Total			202,732			202,732
Maximum		818			818	
Average	555			555		
% Capacity		44			44	
Permit to Take Water Limit		1863				
Municipal Drinking Water License Limit					1863	

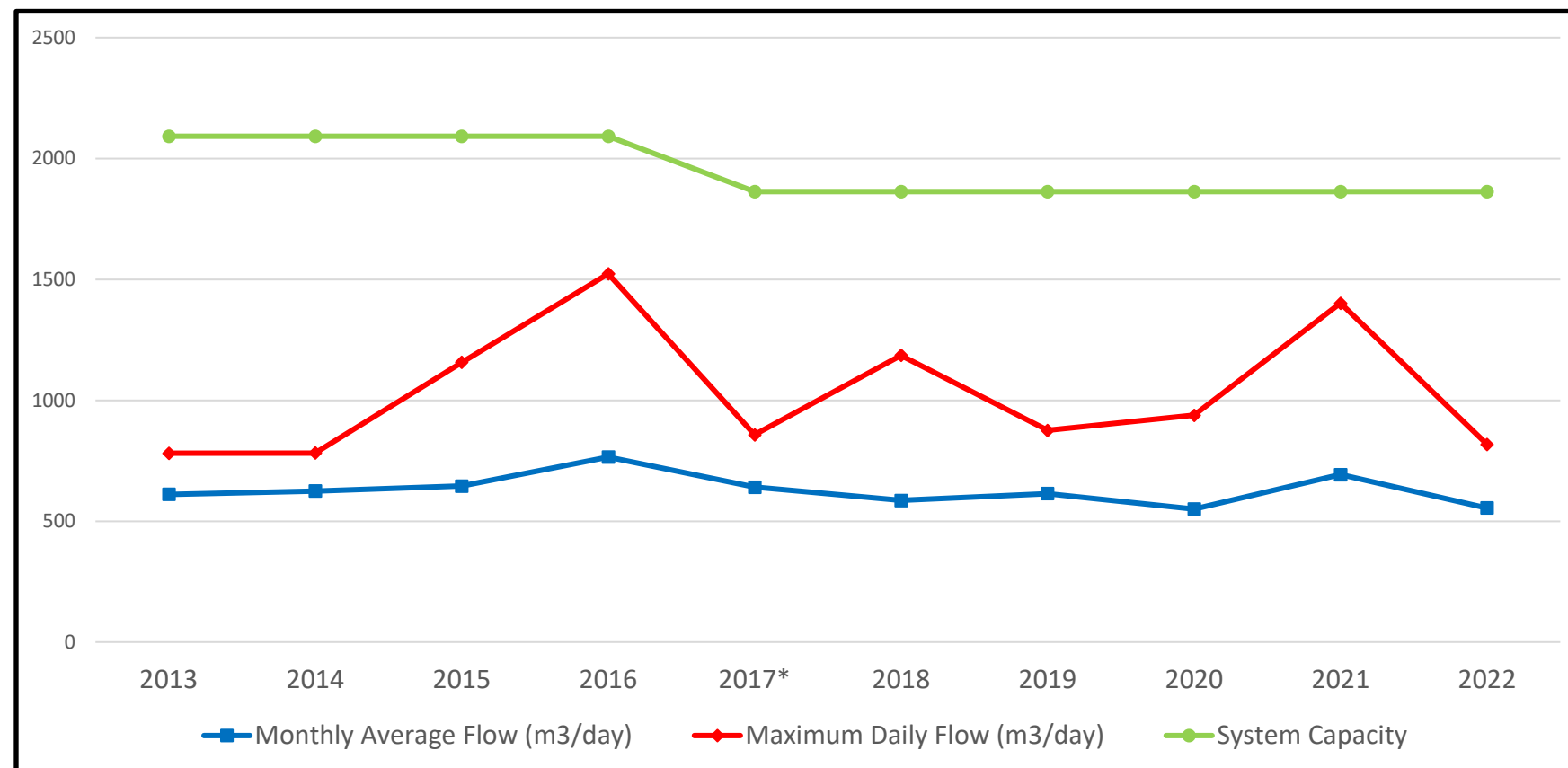
**The Regional Municipality of Durham
Cannington Drinking Water System
2022 Flow Summary Report**

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 (m ³ /day)*
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
2020	550	938	1,863
2021	693	1,402	1,863
2022	555	818	1,863

*Capacity changed due to decommissioning of Well 6.

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



The Regional Municipality of Durham
Greenbank Drinking Water System
2022 Flow Summary Report

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	20	31	586	80	27	45	844
February	60	17	21	473	85	25	31	689
March	60	24	45	726	85	32	59	996
April	65	30	45	879	85	36	55	1,061
May	65	34	47	1,034	85	43	63	1,329
June	65	24	31	710	85	31	42	952
July	65	24	33	734	83	30	42	932
August	60	22	30	676	80	29	40	887
September	60	21	28	624	80	27	36	822
October	60	20	29	607	80	27	41	822
November	60	16	27	478	80	22	49	657
December	60	19	25	585	80	23	30	724
Annual Total				8,112				10,715
Maximum	65		47		85		63	
Average		22				29		
% Capacity	93		46		93		48	
Permit to take water limit	70		101		91		130	

The Regional Municipality of Durham
Greenbank Drinking Water System
2022 Flow Summary Report

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	55	18	31	563	60	16	22	470
February	60	17	21	474	64	17	20	465
March	60	22	40	683	60	20	34	618
April	65	27	42	800	65	24	36	704
May	63	32	46	970	60	29	43	883
June	65	23	31	701	60	20	26	596
July	65	24	34	737	60	19	26	578
August	65	22	32	688	58	18	25	561
September	63	21	28	633	55	17	22	501
October	65	21	31	628	56	15	23	472
November	62	17	40	516	60	13	25	394
December	60	18	23	562	54	14	19	447
Annual Total				7,954				6,689
Maximum	65		46		65		43	
Average		22				18		
% Capacity	96		46		96		43	
Permit to take water limit	68		99		68		99	

The Regional Municipality of Durham
Greenbank Drinking Water System
2022 Flow Summary Report

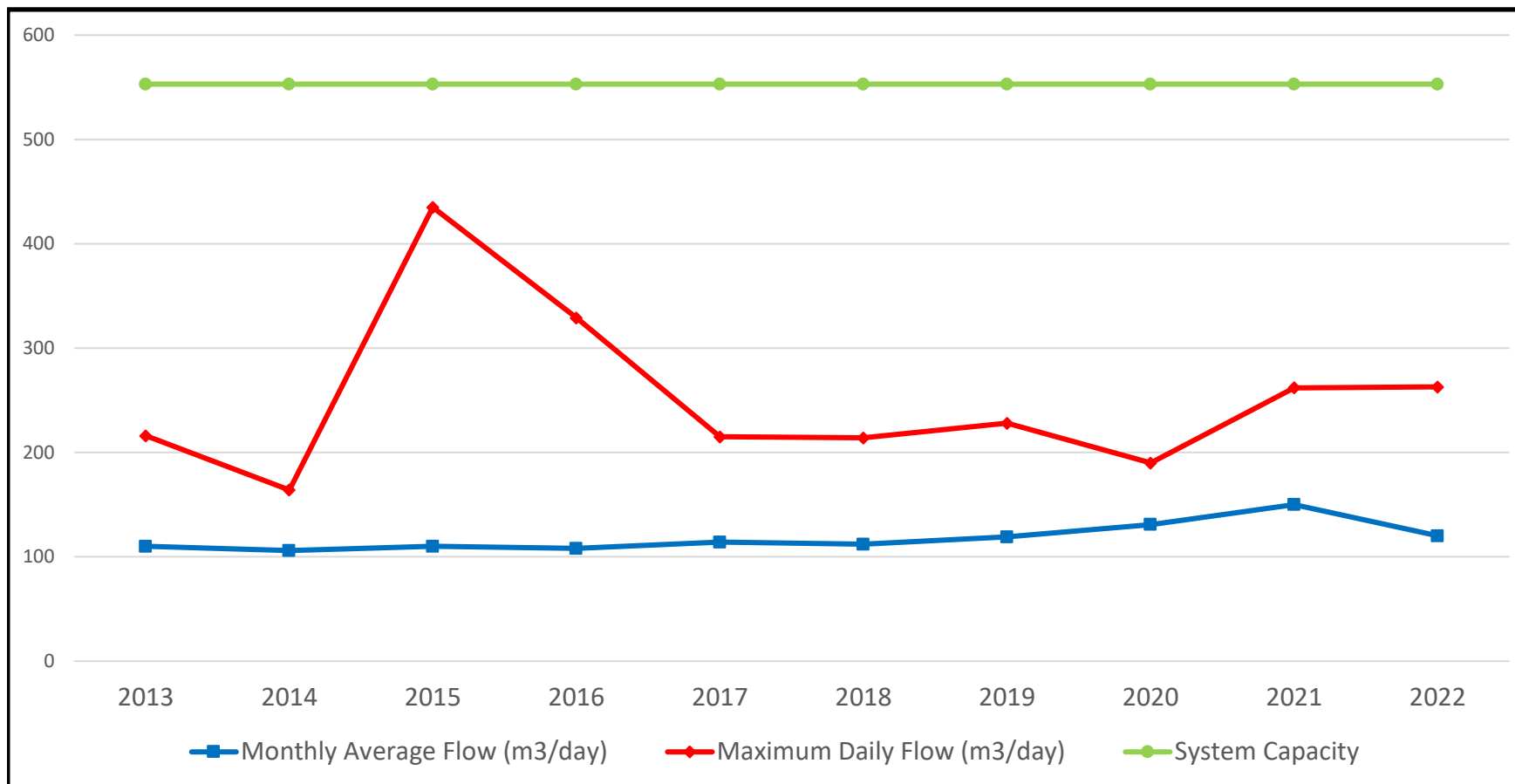
Month	Well # 6 Raw Water Maximum Taken per Minute (litres)	Well # 6 Raw Water Monthly Average Flow cubic metres per day (m ³ /day) Pro-rated	Well # 6 Raw Water Maximum Daily Flow (m ³ /day) Pro-rated	Well # 6 Total Raw Water Flow (m ³)	Treated Water Monthly Average Flow cubic metres per day (m ³ /day) Pro-rated	Treated Water Maximum Daily Flow (m ³ /day) Pro-rated	Total Treated Water Flow (m ³)
January	82	23	32	642	101	129	3,104
February	80	23	29	649	98	121	2,749
March	80	30	52	925	128	230	3,949
April	80	35	53	1,041	150	229	4,485
May	83	44	65	1,336	181	263	5,553
June	83	31	43	926	128	170	3,885
July	80	30	42	929	126	178	3,911
August	82	29	43	912	120	169	3,724
September	83	29	37	858	114	150	3,438
October	85	28	44	866	111	167	3,395
November	85	23	54	680	85	97	2,544
December	80	23	29	718	98	125	3,036
Annual Total				10,482			43,772
Maximum	85		65			263	
Average		29			120		
% Capacity	93		50			48	
Permit to take water limit	91		130				
Municipal Drinking Water License Limit						553	

**The Regional Municipality of Durham
Greenbank Drinking Water System
2022 Flow Summary Report**

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 (m ³ /day)
2013	110	216	553
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	263	553

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



The Regional Municipality of Durham
Newcastle Drinking Water System
2022 Flow Summary Report

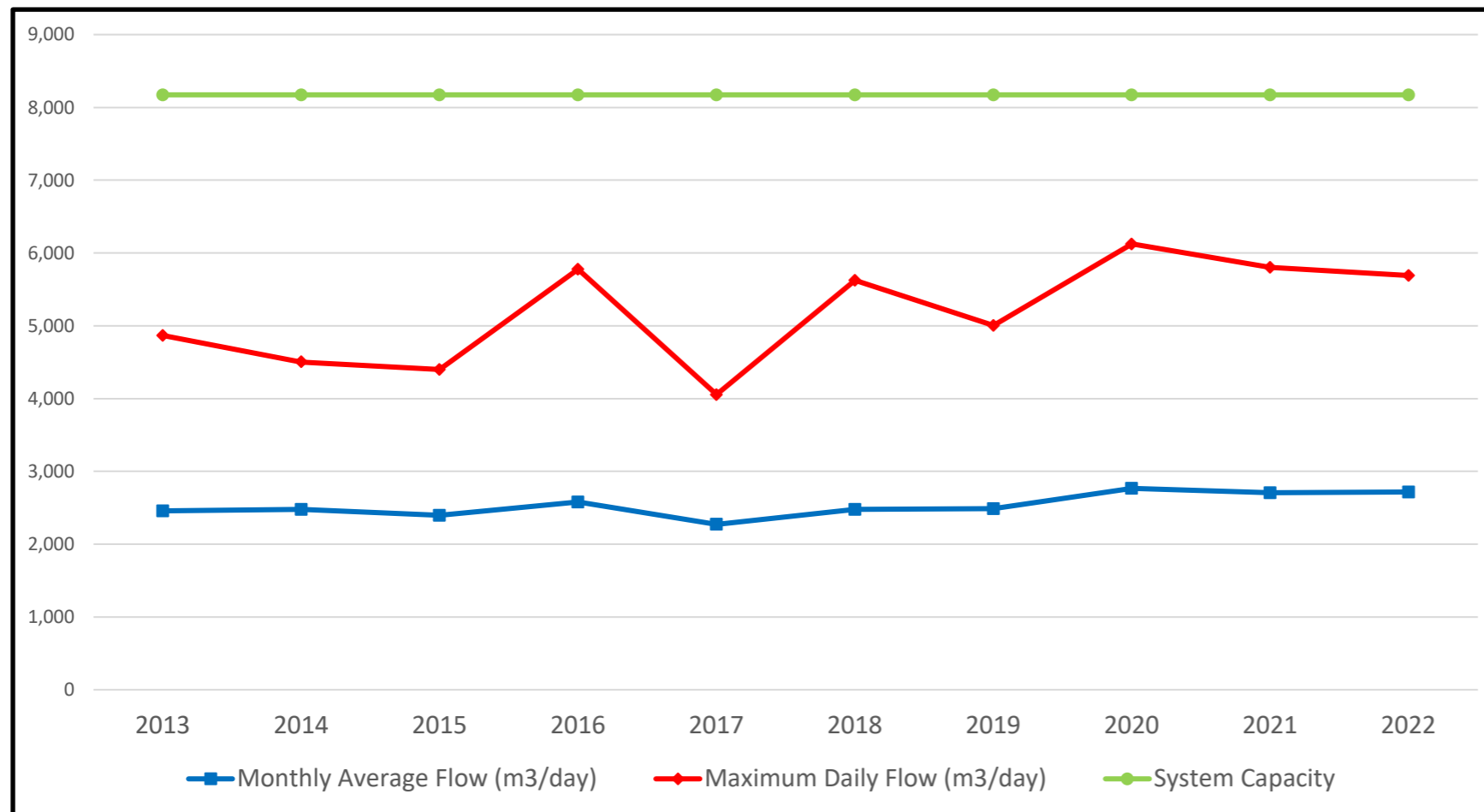
Month	Raw Water Monthly Average Flow Cubic metres per day (m ³ /day)	Raw Water Maximum Daily Flow (m ³ /day)	Total Raw Water Flow (m ³)	Treated Water Monthly Average Flow (m ³ /day)	Treated Water Maximum Daily Flow (m ³ /day)	Total Treated Water Flow (m ³)
January	2,526	3,344	78,612	2,414	3,250	74,829
February	2,511	3,454	70,300	2,389	3,250	66,892
March	2,472	3,022	76,627	2,343	2,818	72,619
April	2,478	3,306	74,339	2,348	3,187	70,437
May	3,057	4,739	94,769	2,887	4,430	89,496
June	3,396	4,582	101,889	3,219	4,392	96,562
July	3,824	5,938	118,551	3,656	5,690	113,334
August	3,641	5,020	112,861	3,460	4,740	107,265
September	2,933	4,224	88,002	2,743	4,412	82,297
October	2,625	3,634	81,389	2,443	3,349	75,740
November	2,496	3,348	74,868	2,353	3,105	70,601
December	2,487	3,290	77,108	2,338	3,090	72,488
Annual Total			1,049,315			992,560
Maximum		5,938			5,690	
Average	2,871			2,716		
% Capacity		33			70	
Permit to Take Water Limit		18,100				
Municipal Drinking Water Licence Limit					8,173	

**The Regional Municipality of Durham
Newcastle Drinking Water System
2022 Flow Summary Report**

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 (m ³ /day)
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
2020	2,767	6,125	8,173
2021	2,707	5,802	8,173
2022	2,716	5,690	8,173

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



The Regional Municipality of Durham
Orono Drinking Water System
2022 Flow Summary Report

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	726	224	288	5,328	744	192	265	1,579
February	732	252	381	4,966	744	181	278	1,665
March	726	247	346	5,122	744	251	293	2,529
April	720	227	292	1,368	756	286	375	7,096
May	768	347	629	6,604	732	328	443	4,900
June	756	383	588	7,523	744	347	559	3,920
July	756	432	622	9,846	708	394	466	3,181
August	756	391	618	8,817	696	363	528	2,953
September	762	286	385	6,554	702	259	344	1,812
October	756	272	629	6,754	720	352	571	2,496
November	762	286	346	5,874	708	283	319	2,647
December	762	279	341	6,692	714	261	344	2,038
Annual Total				75,448				36,816
Maximum	768		629		756		571	
Average		302				291		
% Capacity	84		72		83		65	
Permit to Take Water Limit	909		872		909		872	

*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
2022 Flow Summary Report

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	264	336	6,746
February	0	0	0	273	476	6,469
March	0	0	0	327	420	7,469
April	0	0	0	387	764	8,394
May	0	0	0	387	764	11,377
June	0	0	0	442	751	11,269
July	0	0	0	347	478	12,862
August	0	0	0	413	543	11,584
September	0	0	0	296	418	8,226
October	0	0	0	274	434	9,089
November	0	0	0	250	349	8,336
December	0	0	0	246	327	8,568
Annual Total						110,388
Maximum					764	
Average				326		
% Capacity					87 / 44	
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.

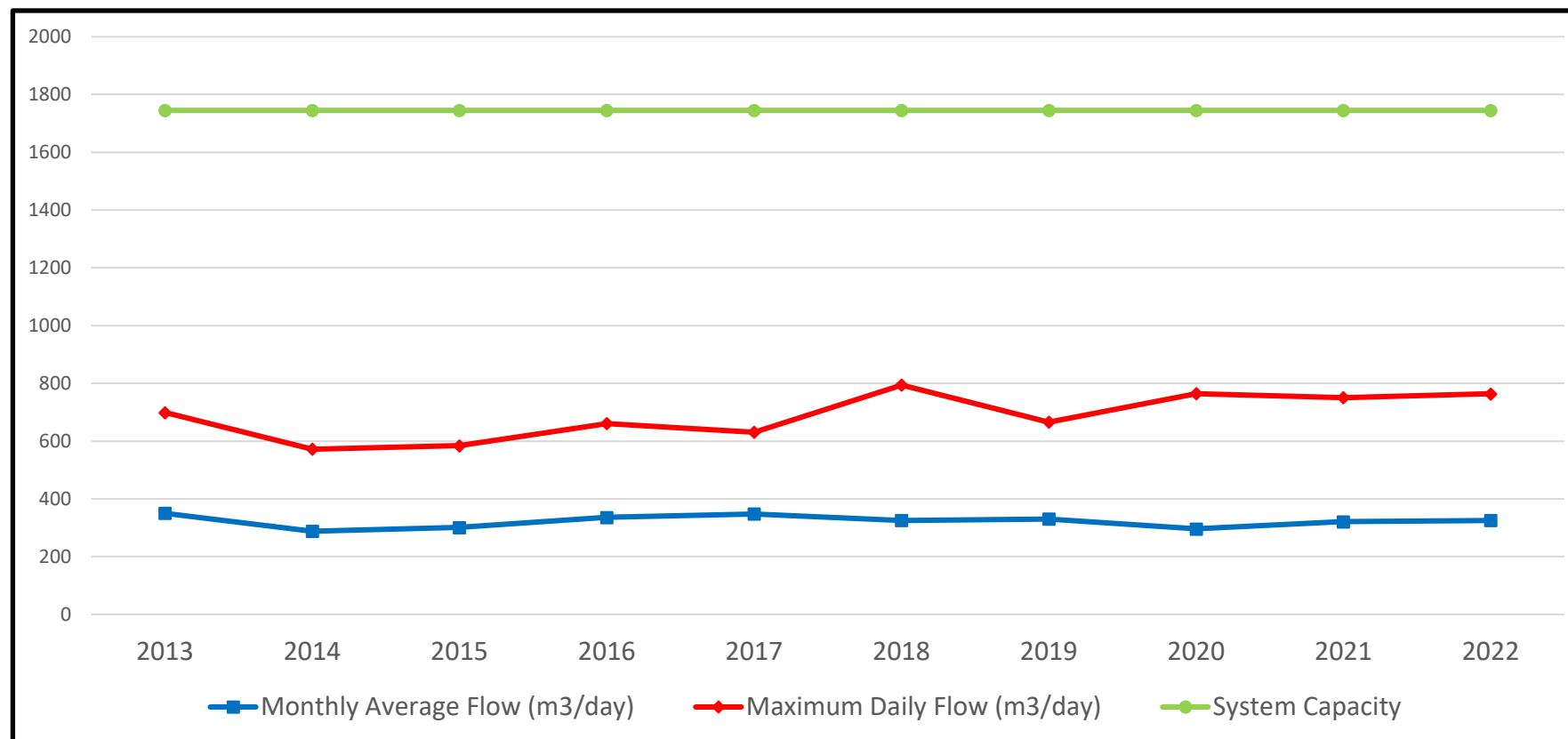
**The Regional Municipality of Durham
Orono Drinking Water System
2022 Flow Summary Report**

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 (m ³ /day)*
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
2020	296	764	1,745
2021	321	751	1,745
2022	326	764	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.



The Regional Municipality of Durham
Oshawa Drinking Water System
2022 Flow Summary Report

Month	Plant 1 West Intake Raw Water Monthly Average Flow Cubic metres per day (m ³ /day)	Plant 1 West Intake Raw Water Maximum Daily Flow (m ³ /day)	Plant 1 West Intake Total Raw Water Flow (m ³)	Plant 2 East Intake Raw Water Monthly Average Flow (m ³ /day)	Plant 2 East Intake Raw Water Maximum Daily Flow (m ³ /day)	Plant 2 East Intake Total Raw Water Flow (m ³)
January	11,048	11,937	342,491	38,648	41,738	1,199,200
February	11,502	12,795	322,067	37,559	43,302	1,051,655
March	11,126	12,505	344,908	37,552	41,947	1,164,114
April	10,838	12,007	325,127	37,021	40,798	1,110,634
May	12,444	21,223	385,765	42,383	71,289	1,313,883
June	12,252	14,125	367,575	42,267	48,088	1,268,014
July	13,585	15,374	421,131	48,072	54,156	1,490,234
August	14,300	15,163	443,301	42,267	52,820	1,535,634
September	14,221	15,716	426,627	42,267	51,865	1,391,431
October	11,475	14,406	355,735	42,662	54,144	1,322,527
November	10,947	12,625	328,398	41,231	46,625	1,236,917
December	12,165	16,326	377,114	42,410	55,051	1,314,715
Annual Total			4,440,238			15,398,956
Maximum		21,223			71,289	
Average	12,159			41,195		
% Capacity		48			79	
Permit to Take Water Limit		44,000			90,000	

The Regional Municipality of Durham
Oshawa Drinking Water System
2022 Flow Summary Report

Month	Total Raw Water Monthly Average Flow Cubic metres per day (m3/day)	Total Raw Water Maximum Daily Flow (m3/day)	Total Raw Water Flow (m3)	Total Treated Water Monthly Average Flow (m3/day)	Total Treated Water Maximum Daily Flow (m3/day)	Total Treated Water Flow (m3)
January	49,732	53,609	1,541,691	44,452	48,571	1,378,022
February	49,061	56,098	1,373,722	44,483	50,401	1,245,516
March	48,678	54,452	1,509,021	43,644	49,392	1,352,953
April	47,859	52,804	1,435,761	43,648	48,172	1,309,453
May	50,777	92,512	1,574,099	49,941	83,547	1,548,183
June	54,520	62,213	1,635,589	49,656	56,242	1,489,688
July	61,657	69,530	1,911,364	56,697	62,822	1,757,597
August	63,837	67,781	1,978,934	59,877	62,919	1,856,179
September	60,602	65,941	1,818,058	57,806	62,632	1,734,182
October	54,137	68,550	1,678,261	48,435	61,602	1,501,472
November	52,177	58,655	1,565,315	46,453	51,020	1,393,585
December	54,575	70,583	1,691,829	46,869	59,505	1,452,929
Annual Total			19,713,644			18,019,759
Maximum		92,512			83,547	
Average	53,968			49,330		
% Capacity		69			78	
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.

The Regional Municipality of Durham
 Oshawa Drinking Water System
 2022 Flow Summary Report

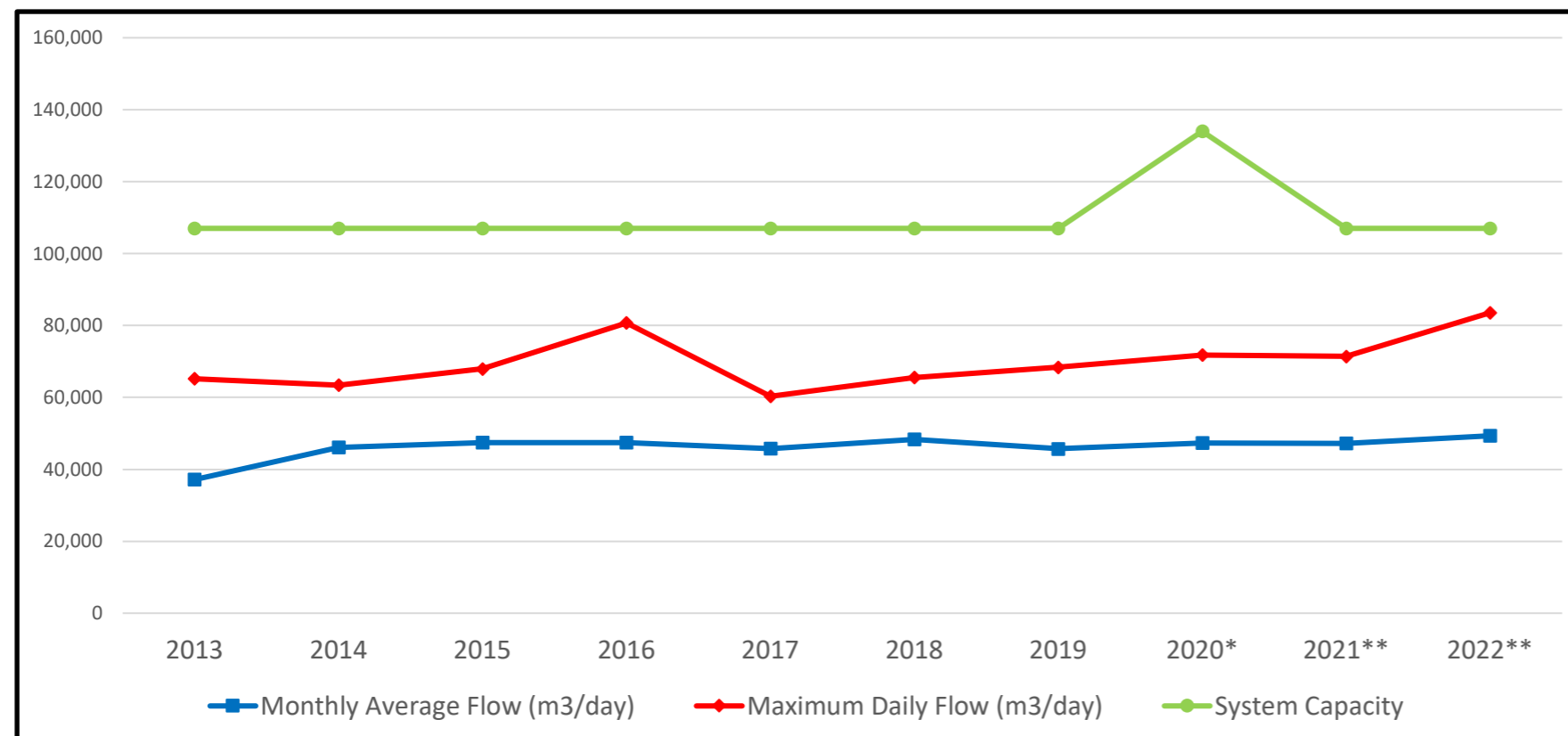
Table 1: Ten year annual system capacity and treated water flow data.

Year	Monthly Average Flow (m ³ /day)	Maximum Daily Flow (m ³ /day)	System Capacity (m ³ /day)
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	45,707	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

*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.

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

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



The Regional Municipality of Durham
Port Perry Drinking Water System
2022 Flow Summary Report

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 (m ³)
January	1,700	257	325	7,975	1,650	238	296	7,401
February	1,700	237	312	6,583	1,750	239	318	6,636
March	1,700	204	311	6,387	1,700	204	298	6,405
April	1,700	161	267	4,822	1,700	160	264	4,802
May	1,700	203	308	6,260	1,700	201	302	6,201
June	1,700	226	377	6,745	1,700	222	371	6,622
July	1,700	238	352	7,367	1,700	224	313	6,912
August	1,700	214	379	6,650	1,700	203	370	6,313
September	1,700	207	351	6,165	1,700	198	368	5,895
October	1,700	168	313	5,205	1,700	302	158	4,912
November	1,700	239	584	7,167	1,700	223	539	6,667
December	1,700	207	268	6,443	1,700	190	253	5,908
Annual Total				77,769				74,674
Maximum	1,700		584		1,750		539	
Average		213				217		
% Capacity	94		22		96		21	
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
2022 Flow Summary Report

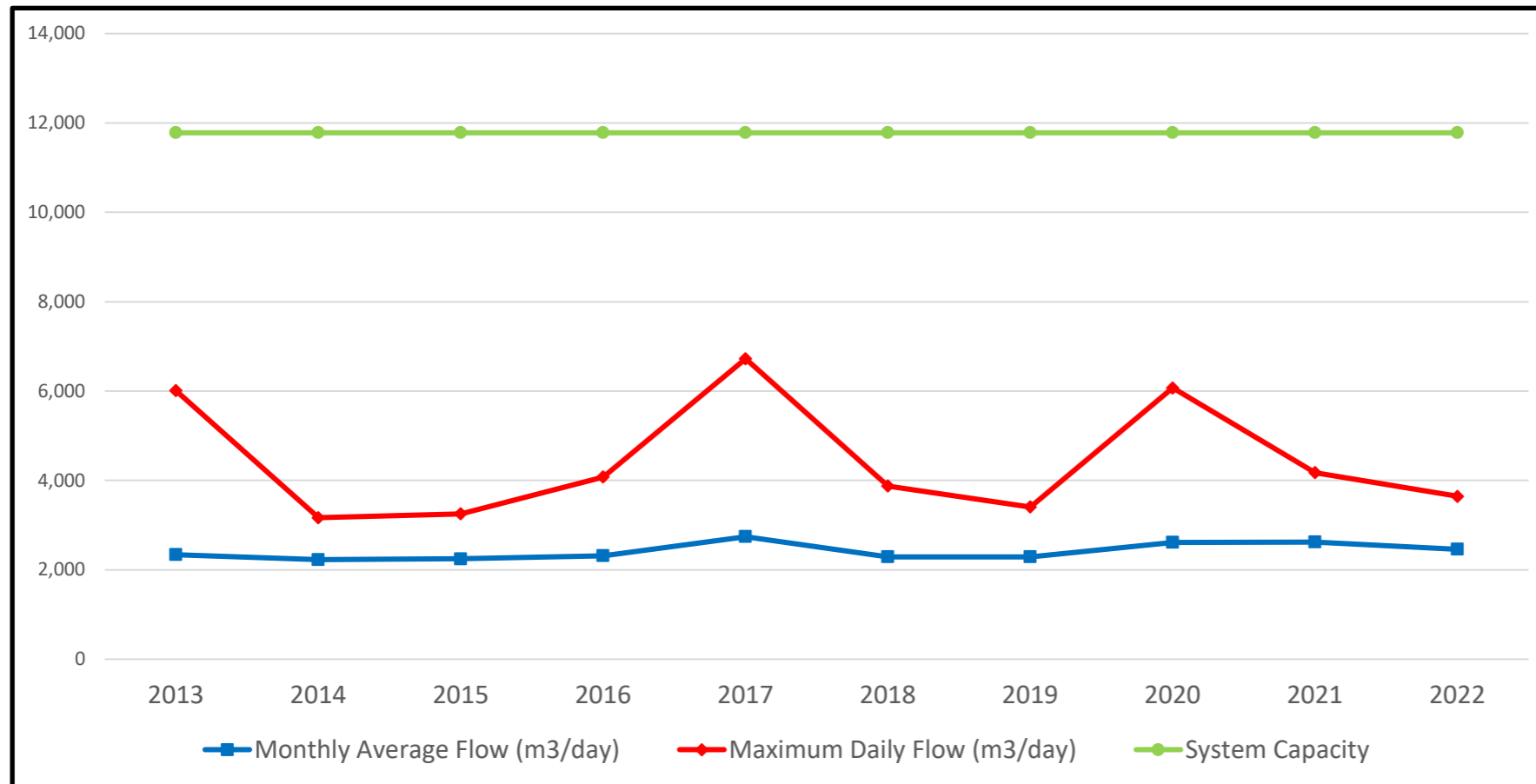
Month	Well # 6 Maximum Taken per Minute (litres)	Well # 6 Monthly Average Flow cubic metres per day (m ³ /day) Pro-rated	Well # 6 Maximum Daily Flow (m ³ /day) Pro-rated	Well # 6 Total Water Flow (m ³)	Treated Water Monthly Average Flow (m ³ /day) Pro-rated	Treated Water Maximum Daily Flow (m ³ /day) Pro-rated	Total Treated Water Flow (m ³)
January	4,300	1,868	2,202	58,135	2,363	2,711	73,256
February	4,300	1,817	2,030	50,981	2,293	2,457	64,200
March	4,300	1,871	2,150	58,155	2,279	2,559	70,947
April	4,300	1,937	2,380	58,085	2,257	2,583	67,708
May	4,300	2,177	2,560	67,628	2,580	2,959	80,090
June	4,300	2,358	3,284	71,608	2,806	3,631	84,975
July	4,300	2,581	3,150	80,032	3,043	3,621	94,311
August	4,300	2,472	3,250	77,027	2,888	3,644	89,990
September	4,300	2,083	2,779	62,755	2,488	2,996	74,815
October	4,300	1,918	2,390	59,388	2,244	2,762	69,505
November	4,300	1,662	2,314	49,998	2,124	2,432	63,832
December	4,300	1,776	2,055	55,378	2,173	2,391	67,729
Annual Total				749,170			901,358
Maximum	4,300		3,284			3,644	
Average		2,043			2,462		
% Capacity	95		50			31	
Permit to take water limit	4,543		6,542				
Municipal Drinking Water License Limit			6,545			11,781	

**The Regional Municipality of Durham
Port Perry Drinking Water System
2022 Flow Summary Report**

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 (m ³ /day)
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
2020	2,613	6,070	11,781
2021	2,621	4,173	11,781
2022	2,462	3,644	11,781

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



The Regional Municipality of Durham
 Sunderland Drinking Water System
 2022 Flow Summary Report

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)
January	450	300	433	9,302	300	433	9,302
February	450	363	387	10,195	363	387	10,195
March	450	331	406	10,268	331	406	10,268
April	450	323	368	9,696	323	368	9,696
May	456	369	469	11,466	369	469	11,466
June	450	388	518	11,585	388	518	11,585
July	450	376	490	11,658	376	490	11,658
August	450	422	631	13,078	422	631	13,078
September	450	415	580	12,547	415	580	12,547
October	450	363	600	11,173	363	600	11,173
November	450	335	364	10,080	335	364	10,080
December	450	359	440	11,121	359	440	11,121
Annual Total				132,169			132,169
Maximum	456		631			631	
Average		362			422		
% Capacity	45		46			46	
Permit to Take Water Limit	1,023		1,373				
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
 2022 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	660	7	15	28	0	0	0
February	660	3	5	14	0	0	0
March	708	3	6	17	0	0	0
April	732	5	6	19	0	0	0
May	708	3	4	15	0	0	0
June	708	31	54	192	0	0	0
July	708	23	37	247	0	0	0
August	708	12	34	85	0	0	0
September	708	22	64	116	0	0	0
October	768	14	33	78	0	0	0
November	720	5	7	26	0	0	0
December	720	3	5	13	0	0	0
Annual Total				850			
Maximum			64				
Average		11					
% Capacity			5				
Permit to Take Water Limit	1,023		1,373				
Municipal Drinking Water Licence Limit						1,374	

*Well 2 was offline in 2022.

The Regional Municipality of Durham
 Sunderland Drinking Water System
 2022 Flow Summary Report

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)
January	444	126	189	1,515	164	189	1,475
February	600	83	172	506	0	0	0
March	600	86	131	695	0	0	0
April	600	40	84	453	0	0	0
May	600	25	38	237	0	0	0
June	588	27	44	300	0	0	0
July	588	32	49	300	0	0	0
August	588	13	40	98	0	0	0
September	594	17	36	121	0	0	0
October	600	17	37	110	0	0	0
November	600	4	5	23	0	0	0
December	600	87	162	359	0	0	0
Annual Total				4,717			1,475
Maximum	600		189			189	
Average		46			14		
% Capacity	100		22			22	
Permit to Take Water Limit	600		864				
Municipal Drinking Water Licence Limit						864	

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

The Regional Municipality of Durham
 Sunderland Drinking Water System
 2022 Flow Summary Report

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	349	433	10,833	347	433	10,770
February	382	512	10,715	363	387	10,175
March	353	501	10,980	331	406	10,250
April	338	428	10,168	323	368	9,679
May	376	480	11,718	369	469	11,426
June	404	526	12,077	388	518	11,640
July	392	516	12,205	376	490	11,647
August	428	631	13,261	422	631	13,081
September	423	612	12,784	415	580	12,462
October	368	600	11,361	363	600	11,250
November	337	366	10,129	335	364	10,059
December	371	495	11,493	359	440	11,142
Annual Total			137,723			133,581
Maximum		631			631	
Average	377			366		
% Capacity		23			28	
Permit to Take Water Limit		2,745				
Municipal Drinking Water Licence Limit					2,238	

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

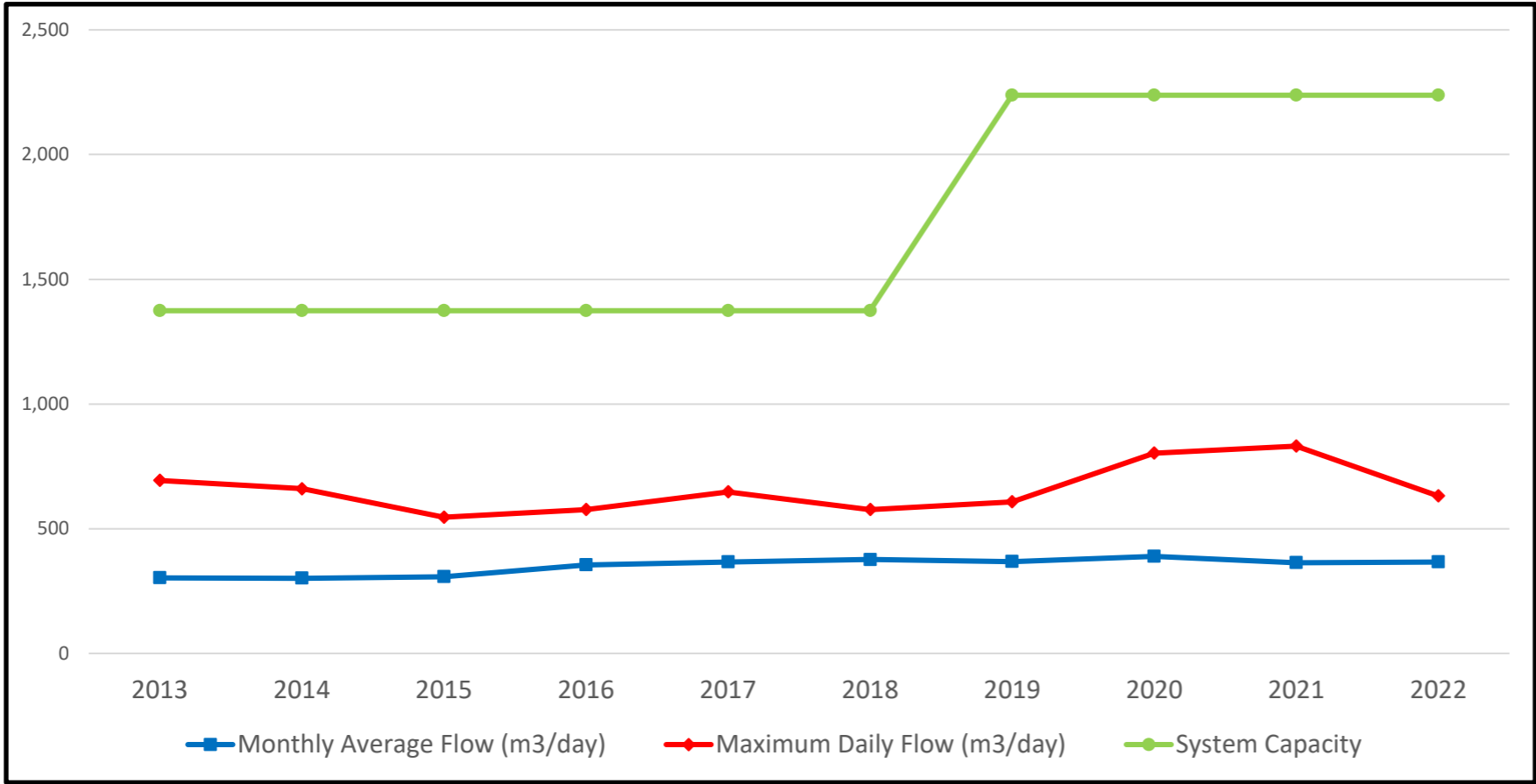
**The Regional Municipality of Durham
Sunderland Drinking Water System
2022 Flow Summary Report**

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 (m ³ /day)*
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
2020	389	803	2,238
2021	364	831	2,238
2022	366	631	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.



The Regional Municipality of Durham
 Uxbridge Drinking Water System
 2022 Flow Summary Report

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)**
January	2,700	1,020	1,179	20,369	1,018	1,179	20,341
February	2,700	1,007	1,235	15,120	1,004	1,235	15,090
March	2,700	1,014	1,270	18,295	1,013	1,270	18,265
April	2,700	1,029	1,256	15,471	1,027	1,256	15,441
May	2,700	1,324	2,703	31,601	1,323	2,703	31,571
June	2,700	1,519	2,113	36,472	1,518	2,113	36,442
July	2,700	1,655	2,230	46,235	1,580	2,230	43,731
August	2,700	1,531	2,243	42,803	1,470	2,243	41,142
September	2,700	1,405	1,900	32,373	1,404	1,900	32,358
October	2,700	1,058	1,310	18,886	1,057	1,310	18,856
November	2,700	1,029	2,007	18,799	1,027	2,007	18,774
December	2,700	1,008	1,318	18,125	1,006	1,318	18,095
Annual Total				314,549			
Maximum	2,700		2,703			2,703	
Average		1,217			1,204		
% Capacity	90		63			33	
Permit to take water limit	3,000		4,320				
Municipal Drinking Water License 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
 2022 Flow Summary Report

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)**
January	1,500	726	906	10,913	724	906	10,883
February	1,500	760	976	12,886	758	976	12,856
March	1,600	725	900	13,071	722	900	13,026
April	1,600	784	940	14,999	782	940	14,969
May	1,600	814	1,420	11,632	811	1420	11,587
June	1,600	827	1,306	9,890	822	1306	9,840
July	1,600	837	1,500	8,463	833	1500	8,423
August	1,600	751	1,673	9,828	748	1673	9,783
September	1,600	739	1,340	9,066	736	1340	9,036
October	1,600	791	1,029	13,421	789	1029	13,391
November	1,600	715	969	11,449	713	969	11,419
December	1,600	783	982	14,176	781	982	14,146
Annual Total				139,794			
Maximum	1,600		1,673			1,673	
Average		771			768		
% Capacity	53		39			20	
Permit to Take Water Limit	3,000		4,320				
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
 2022 Flow Summary Report

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) 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 (m ³ /day) Pro-rated	Well # 6 Total Raw/Treated Water Flow (m ³)
January	1,007	1,179	31,220	2,520	1,335	1,547	41,398
February	998	1,235	27,955	2,520	1,369	1,604	38,406
March	1,007	1,270	31,228	2,520	1,346	1,619	41,828
April	1,009	1,256	30,259	2,520	1,403	1,631	42,320
May	1,390	2,703	43,102	2,520	1,526	2,317	47,595
June	1,543	2,113	46,304	2,520	1,782	2,175	53,459
July	1,695	2,256	52,559	2,520	1,921	2,463	59,615
August	1,642	2,243	50,887	2,520	1,890	2,482	58,571
September	1,371	1,900	41,134	2,520	1,604	2,299	48,525
October	1,046	1,310	32,424	2,520	1,385	1,687	42,745
November	996	2,007	29,890	2,520	1,356	1,703	40,885
December	1,037	1,318	32,160	2,520	1,362	1,934	42,233
Annual Total							
Maximum		2,703		2,520		2,482	
Average	1,229						
% Capacity		33		92		63	
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.

**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
 2022 Flow Summary Report

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	2,344	2,446	72,680	2,342	2,446	72,622
February	2,370	2,523	66,412	2,367	2,523	66,352
March	2,354	2,555	73,119	2,356	2,555	73,194
April	2,414	2,572	72,790	2,412	2,572	72,730
May	2,919	3,738	90,828	2,917	3,738	90,753
June	3,328	4,274	99,821	3,326	4,274	99,741
July	3,686	4,418	114,313	3,617	4,418	111,769
August	3,588	4,374	111,202	3,532	4,374	109,496
September	2,977	3,779	89,964	2,975	3,779	89,919
October	2,433	2,716	75,052	2,431	2,716	74,992
November	2,355	2,917	71,133	2,353	2,917	71,078
December	2,398	2,703	74,534	2,396	2,703	74,474
Annual Total			1,011,848			
Maximum		4,418			4,418	
Average	2,764			2,752		
% Capacity		54				
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.

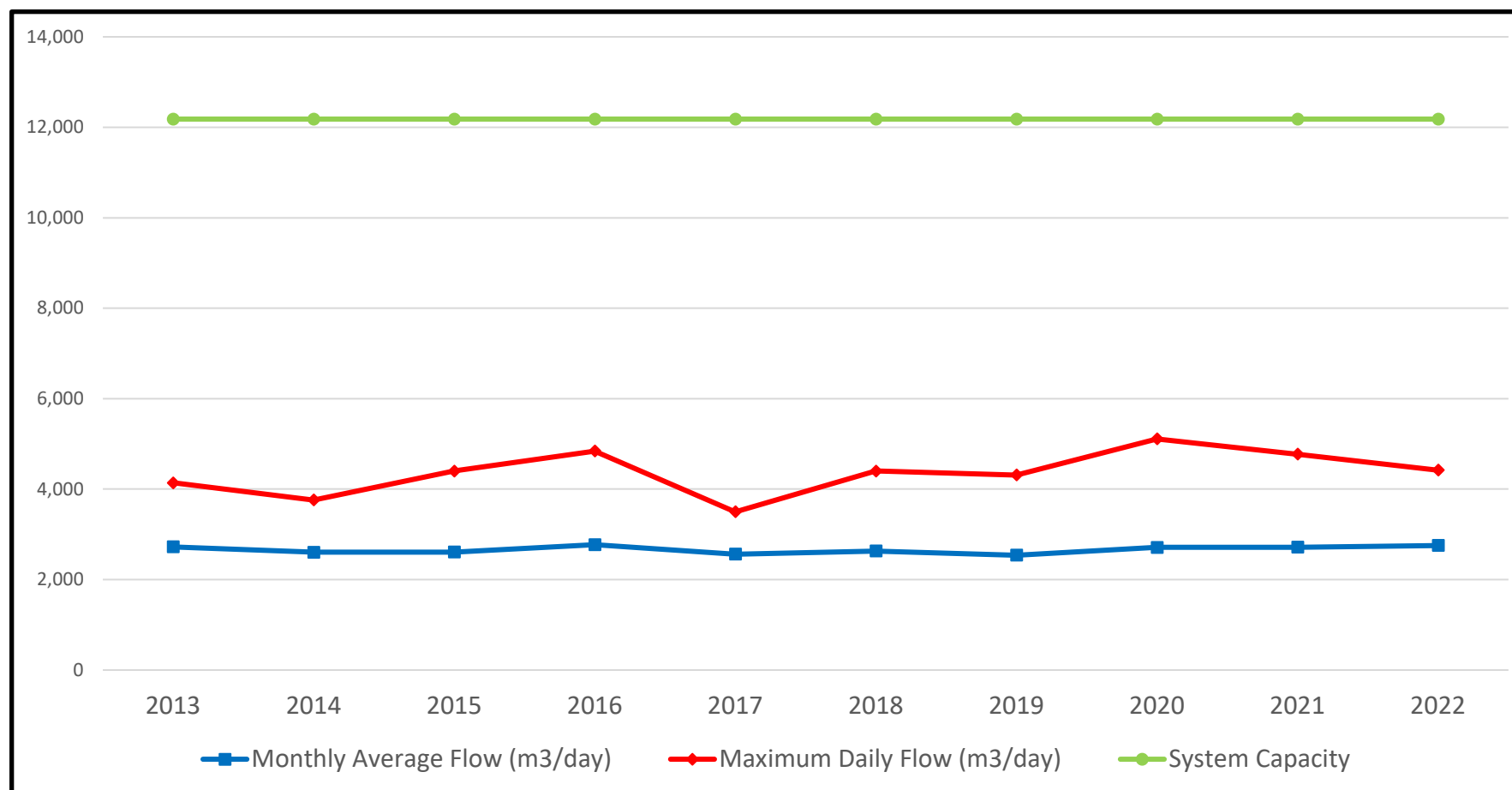
***3,931 m³/day is the rated capacity for Well 6.

**The Regional Municipality of Durham
Uxbridge Drinking Water System
2022 Flow Summary Report**

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 (m ³ /day)
2013	2,721	4,139	12182
2014	2,605	3,760	12182
2015	2,609	4,401	12182
2016	2,772	4,839	12182
2017	2,564	3,497	12182
2018	2,630	4,401	12182
2019	2,538	4,310	12182
2020	2,711	5,109	12182
2021	2,715	4,771	12182
2022	2,752	4,418	12182

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



The Regional Municipality of Durham
Whitby Drinking Water System
2022 Flow Summary Report

Month	Raw Process Water Monthly Average Flow Cubic metres per day (m3/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	52,002	54,023	1,612,067	8,577	10,333	265,880
February	52,037	53,678	1,457,046	9,183	10,190	257,114
March	51,534	52,894	1,597,541	5,205	7,019	161,363
April	51,924	54,559	1,557,728	4,365	5,410	130,955
May	54,482	77,269	1,688,950	5,002	9,013	155,076
June	61,162	78,056	1,834,853	6,932	10,211	207,972
July	70,512	82,931	2,185,866	6,755	10,755	209,420
August	66,658	78,914	2,066,387	8,084	10,915	250,617
September	54,882	66,805	1,646,447	6,978	12,477	209,328
October	53,226	60,624	1,650,019	3,622	7,178	112,279
November	53,296	55,240	1,598,876	5,476	10,954	164,289
December	54,090	58,693	1,676,775	4,435	5,790	137,485
Annual Total			20,572,555			2,261,778
Maximum		82,931			12,477	
Average	56,317			6,218		

The Regional Municipality of Durham
Whitby Drinking Water System
2022 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 (m3)
January	60,939	63,587	1,889,122	51,617	53,256	1,600,131
February	61,589	63,383	1,724,506	48,059	51,959	1,345,649
March	57,149	59,489	1,771,605	46,051	47,185	1,427,572
April	56,598	59,891	1,697,954	46,160	49,087	1,384,804
May	59,801	86,208	1,853,842	48,394	70,454	1,500,205
June	68,463	86,510	2,053,880	54,215	70,662	1,626,445
July	77,670	93,097	2,407,756	61,747	73,316	1,914,171
August	75,160	89,759	2,329,969	58,661	70,186	1,818,485
September	62,233	76,448	1,866,997	48,517	59,567	1,455,517
October	57,143	61,094	1,771,435	47,197	54,872	1,463,109
November	59,109	64,444	1,773,281	49,933	52,344	1,497,980
December	58,826	63,838	1,823,600	52,312	56,289	1,621,662
Annual Total			22,963,946			18,655,731
Maximum		93,097			73,316	
Average	62,890			51,072		
% Capacity		65			62	
Permit to Take Water Limit		144,000				
Municipal Drinking Water Licence Limit					118,000	

**The Regional Municipality of Durham
Whitby Drinking Water System
2022 Flow Summary Report**

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 (m ³ /day)
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
2020	53,472	81,583	118,000
2021	53,268	83,975	118,000
2022	51,072	73,316	118,000

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

