Lake Huron
Primary Water Supply System

2024 Compliance Report

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Profile

Who We Are

The Lake Huron Primary Water Supply System (LHPWSS) is owned by a Board of Management who governs the drinking water system. The Board of Management is made up of members appointed from each of the eight (8) member municipalities that are currently supplied with water from the LHPWSS. One of these member municipalities, the City of London, acts as the Administering Municipality. Accordingly, the City of London provides all associated administrative and management services on behalf of the Board. The Board of Management currently contracts the operation and maintenance of the LHPWSS to the Ontario Clean Water Agency (OCWA), an independent Operating Authority.

Operating Authority:

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

LHPWSS Board Member Municipalities:

- City of London (Administering Municipality)
- Municipality of Bluewater
- Municipality of Lambton Shores
- Township of Lucan Biddulph
- Municipality of Middlesex Centre
- Municipality of North Middlesex
- Municipality of South Huron
- Municipality of Strathroy-Caradoc

What Is Important

Values of the Water System

The values of the LHPWSS are the inherent beliefs or moral standards that generally reflect what the LHPWSS Board of Management stands for and believes in:

- **Sustainable** - be financially, environmentally, socially, and physically sustainable;
- **Inclusive** - provide access to bulk drinking water for current and prospective members, in accordance with Board policy;
- **Fair and equitable** - balance the interests of individual members with the best interests of all members, as well as the needs of existing members with the needs of new members;
- **Vigilant** - ensure an adequate supply of safe and reasonably priced drinking water is available to members;
- **Innovative** - be receptive to and supportive of new ideas and opportunities for improvement;
- **Cooperative** – be supportive to the needs of the Lake Huron Primary Water Supply System;
- **Open and transparent –** conduct business in a manner that enables member municipalities and the public to review and provide input into major decisions as appropriate;
- **Public Ownership –** retain ownership of the water system in public hands.

What We Do

Water Treatment & Supply

The LHPWSS is responsible for the treatment and transmission of drinking water to eight (8) member municipalities in southwestern Ontario. The population served by this system is approximately 390,000 *(as per the 2020 Master Water Plan)*. Water is provided bulk wholesale to the member municipalities who then distribute it to their customers.

The LHPWSS has been in operation since 1967. The LHPWSS employs pre-chlorination, screening, powder activated carbon addition (seasonally on an as-required basis), coagulation, flocculation, sedimentation, dual-media filtration, post-chlorination, and sodium hydroxide addition to treat raw water obtained from Lake Huron. After the water is treated it is pumped from LHPWSS to the member municipalities or to storage reservoirs. The drinking water system is monitored at various locations via a Supervisory Control and Data Acquisition (SCADA) system.

The LHPWSS is operated under the Municipal Drinking Water Licence (MDWL) #001-101 and Drinking Water Works Permit (DWWP) #001-201.

LHPWSS Assets:

- 1 water treatment plant
- 1 residuals management facility
- 3 water pumping stations
- 3 in-ground storage reservoirs
- 8 monitoring stations
- 151 km of water main

Figure 1: McGillivray Booster Pumping Station

LHPWSS: At A Glance

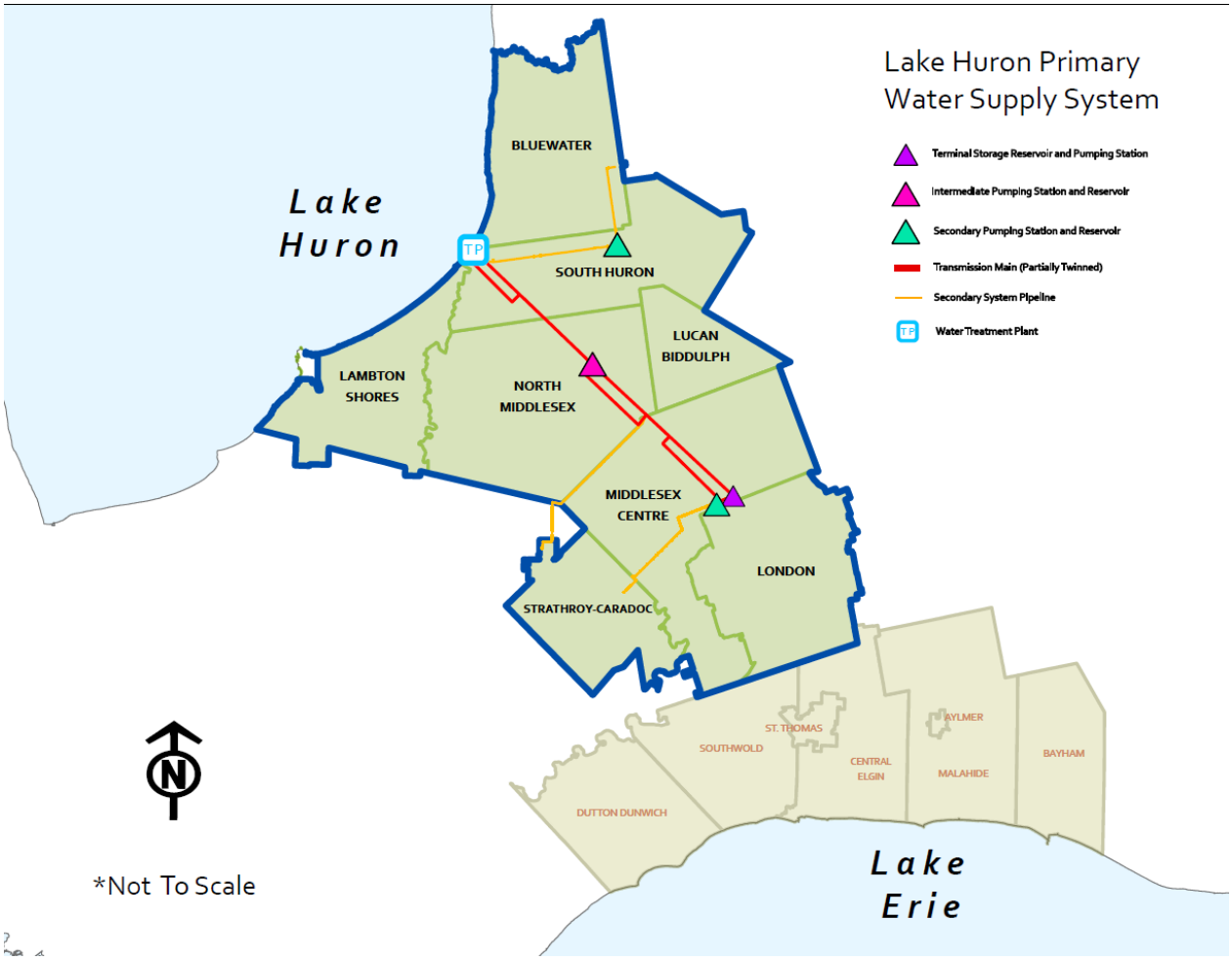

Figure 2: LHPWSS Major Infrastructure Locations

The Water Treatment Process

The following figure provides a general overview of the conventional water treatment process. The processes outlined below are very similar to the treatment at the LHPWSS, although they are not an exact representation. Some details may vary.

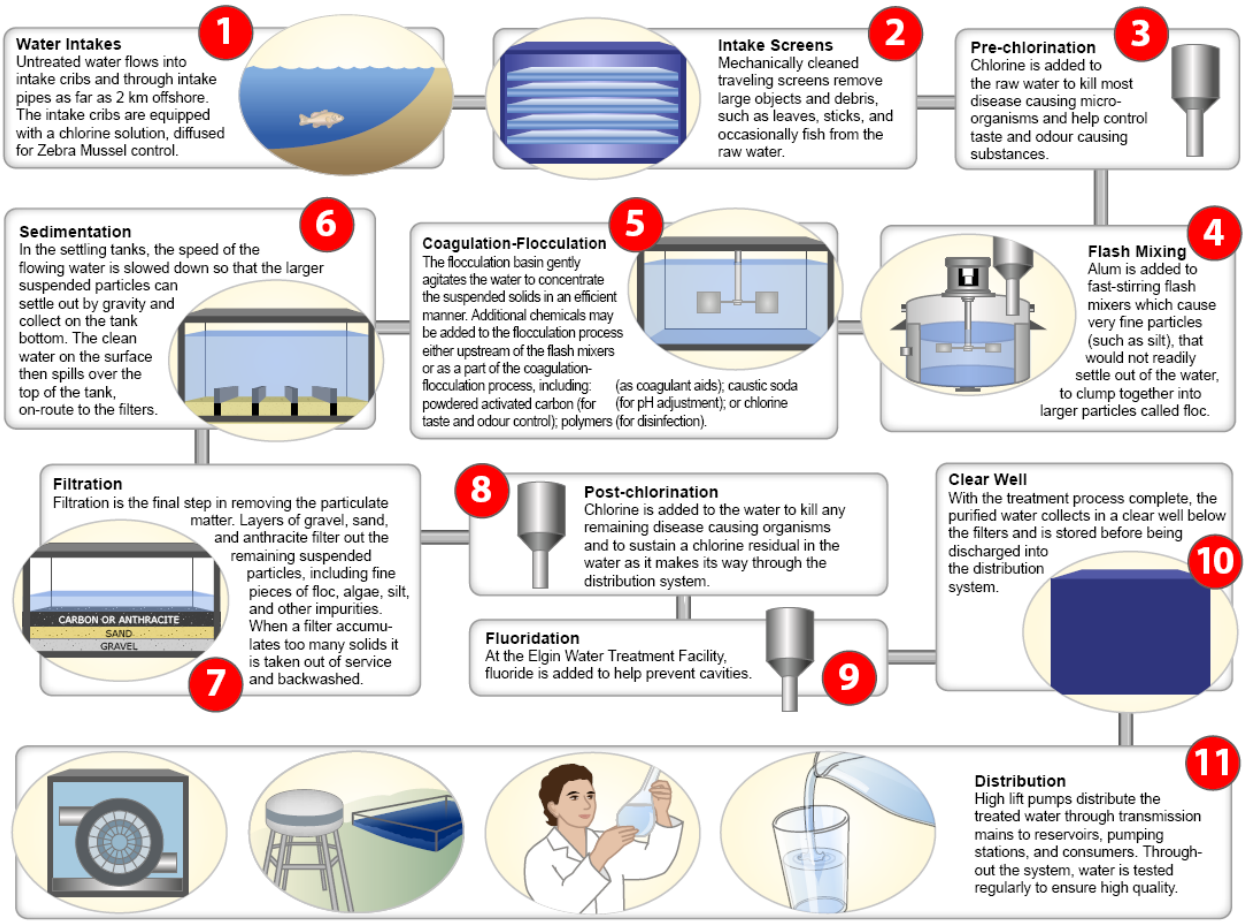

Figure 3: Overview of the Water Treatment Process

At the LHPWSS, Step 9 (Fluoridation) does not take place.

At the LHPWSS, one additional treatment step takes place:

Sodium Hydroxide is added as the treated water leaves the water treatment plant (WTP) and enters the transmission system (Step 11) to raise the treated water pH, resulting in reduced corrosion potential.

2024 Highlights – General

Water Quality Facility Plan

In 2022 a project was awarded to Stantec Consulting Ltd. to update the Water Quality Facility Plan (WQFP). The WQFP is updated every five (5) years with the purpose of providing the LHPWSS with new information on WTP performance and treatment capacity as supply conditions change. The final updated WQFP provides staff with a detailed report on the status of the WTP and residuals management processes and their overall performance. It also provides recommendations and the framework to prioritize the timing for further sampling programs, studies, capital upgrades and/or operational modifications or changes to improve water treatment efficiency and efficacy. The recommendations will be implemented as future projects over a 10-year planning horizon. The WQFP update was completed in December 2024.

Master Plan

The LHPWSS is required to undertake a Master Plan every five (5) years. The LHPWSS, through its consultant, AECOM Canada ULC (AECOM), initiated a Master Plan, in accordance with the Municipal Engineers Association Class Environmental Assessment, to assess regional water system needs for the utility over the next 20+ years. The Master Plan is intended to evaluate and identify recommended system improvements, including major system upgrades and expansion, to accommodate proposed growth. Public and agency consultation, and Indigenous engagement are important aspects of the Master Plan. An outcome of the Master Plan is a roadmap outlining major system improvements over the next twenty years.
The Master Water Plan update was awarded and initiated in 2024, with anticipated completion in fall of 2025.

2024 Capital Project Highlights

Coagulation System Upgrade

The coagulation system at the Lake Huron WTP was original to the facility. The original wheel-type chemical feeders (i.e. rotodips) had reached end of life and were prone to equipment failures. Previous studies revealed that adequate mixing was not being achieved in the existing flash mixers. This project involved the replacement of the coagulant dosing system equipment to improve the treated water quality and overall plant performance at higher plant flows. The rotodips were replaced with new chemical metering pumps. Two (2) new jet mixer assemblies were installed at a new dosing location upstream of the flash mixers, to improve chemical mixing and subsequently improve the treatment process. This project optimizes coagulant dosing, reduces chemical consumption, and improves the overall system reliability and efficacy. The new coagulation system was commissioned from 2023-2024, with substantial performance reached in fall 2024.

Figure 4a: The four (4) original rotodip wheel-type chemical feeders which are scheduled for decommissioning
Figure 4b: Two (2) new coagulant dosing skids, each with three (3) new peristaltic pumps

SCADA/PLC Software Review & Upgrade

Ongoing maintenance and replacement of the Supervisory Control and Data Acquisition System (SCADA) and the associated programmable logic controllers (PLC) have typically focused on hardware replacement and server upgrades necessary to ensure the system continues to operate effectively and without undue risks. Notwithstanding, much of the software and firmware versions used throughout the system were outdated and required extensive review and upgrades to ensure the critical control systems that operate the treatment and pumping systems continue to operate. The project also involved a review and incorporation of programming and data storage improvements throughout the system. The software upgrade project was substantially completed in 2024.

Exeter-Hensall Pump Station (EHPS) Pump Control Upgrades

The EHPS experiences varying water demand conditions for the pumps throughout the day. The objective of this project was to update the pump programming at this station so the pumps operate as efficiently as possible. The project included investigation and modification of the communication programming between the LHPWSS and the Municipality of South Huron. The scope of work included reprogramming the high lift pump variable frequency drive (VFD) controls. Through the reprogramming, the smaller jockey pump is utilized first until increased demand requires the use of a larger pump. This programming change was completed in March 2024 and has resulted in significant energy optimization at this facility. Preliminary analysis indicates >20% savings in both electricity usage (kWh) and electricity cost ($) at the facility.

Figure 5: Pump room at the Exeter-Hensall Pump Station (EHPS)

Low Lift Pump Rebuild

Intended for long service lives, the low lift pumps require periodic rebuilding of the pump impellers, seals, bearings, and other high-wear components. This low lift pump rebuild project is a multi-year program in which one low lift pump is rebuilt every year over a six-year period. In 2024, low lift pump #1 was completely taken apart, inspected, rebuilt and placed back into service. Low lift pump #2 is being rebuilt in 2025 and is the final pump to be completed.

Figure 6: Low lift pump #1 after rebuild

Clarifier Ramp Replacements

The existing ramps in the flocculated water conduit were made from corrugated steel and were beginning to corrode, with holes worn through the ramping at certain spots. This presented a health and safety hazard during cleaning access and negatively impacted the treatment plant process hydraulics. This project was to replace the ramps. The steel structure directing flow into the clarifiers was disassembled, and all parts that were no longer fit for service were removed and replaced.

Figure 7a: The old clarifier ramp (view of the underside). Corrosion and holes in the ramp are evident
Figure 7b: The new clarifier ramp (view of the topside)

McGillivray Facility Upgrades

The McGillivray Pumping Station (PS) was constructed in 1976. The various electrical and mechanical systems, including the heating, ventilation, and air conditioning (HVAC) system, were original equipment at this facility and were well past their useful life. The electrical and HVAC equipment required replacement as evidenced by the frequency of selected equipment failures. Many of the replacement components for both the electrical and mechanical systems were no longer readily available.

From 2021-2022, Stantec Consulting Ltd. completed the preliminary and detailed design for the various electrical and mechanical upgrades required for the McGillivray PS. The tender for construction was awarded to Sutherland-Schultz Ltd. in the fall of 2022. Construction began in 2023 and continued through 2024. Substantial performance was reached in December 2024.

The upgraded electrical equipment at this facility includes a new outdoor diesel generator set, new switchgear, cable trays (interior and exterior), and a new distribution sub-station.

Upgraded HVAC equipment includes new chillers, air handling units, dehumidifiers, HVAC unit heaters, HVAC ductwork, and new control panels.

Figure 8a: New diesel generator set, and new chillers
Figure 8b: Example of a new dehumidification unit

Figure 9a: New chilled water supply piping
Figure 9b: One (1) of four (4) new air handling units

Figure 10a: New 600v switchgear electrical panels
Figure 10b: New 4160v switchgear electrical panels

Oneida Nation of the Thames Transmission Pipeline

In 2022 the LHPWSS Board of Management endorsed the request from Oneida Nation of the Thames (ONOTT) to supply drinking water to the Oneida Nation from the LHPWSS. A water supply agreement between the LHPWSS and ONOTT was formalized and executed in 2023 following the federal government's funding announcement to ONOTT.

Given the location of the Oneida Nation settlement, the existing LHPWSS transmission pipeline, which currently terminates northwest of the community of Mount Brydges, will be extended to a connection point located along Muncey Road (County Road 11) within the municipal right-of-way, east of the Thames River. The preliminary design of the transmission pipeline was completed by Stantec Consulting Ltd. in early 2023. The designed route involves extending the existing transmission pipeline northeast of Mount Brydges by approximately 21 km to a new connection point for ONOTT.

In June 2023, Stantec was awarded the engineering consulting services assignment for detailed design, tendering and construction administration. The detailed design was advanced in 2024. Contractor pre-qualification was

completed in late 2024. Final completion of the detailed design is anticipated in spring 2025 with the tender to follow. Construction is anticipated to start in mid-2025.

Administration Building Extension & Site Redevelopment

The existing Lake Huron WTP main building was designed and constructed in the 1960s and has not undergone any major renovations or modifications since. There are several challenges with the existing WTP main building that need to be addressed to modernize the facility, enhance the functionality, address gender equity issues, and improve the overall indoor working environment for improved health and safety of staff.

Board staff retained Stantec Consulting Ltd. in 2023 to complete an engineering assignment to address the challenges and configuration of the existing main building, and provide direction for subsequent project phases, including design and construction. Various design concepts for a new administration building addition/extension were reviewed and developed, with consideration of municipal approvals, sustainable design and preferred project delivery type. Stantec completed the engineering assignment in 2023, including detailed cost estimates and conceptual floor plan layouts.

The preferred design concept was identified as a new two-story administration building addition to the existing WTP. This concept will address existing challenges and provide an enhanced indoor working environment. Various site changes will be required to accommodate this new building, including parking lot reconfiguration, fencing changes, fire protection and stormwater management. A municipal building permit and site plan approval will be required.

A two-staged procurement process to retain a Licensed Coordinating Professional to undertake preliminary design, detailed design and provide services during construction was completed in 2024. The assignment was awarded to Ventin Group Limited and was initiated in fall of 2024.

The LHPWSS Board of Management has previously endorsed a recommendation to pursue Leadership in Energy and Environmental Design (LEED) silver certification of the overall building addition and renovation project, as well as striving to meet the Zero-Carbon Building standard for the new building, where feasible.

2024 Flow Summary

As per the water system's current Permit To Take Water (PTTW), the amount of raw water taken into the LHPWSS cannot exceed 454.98 million litres/day or 5,266 litres/second.

The 2024 water taking was approved under PTTW #P-300-2068363222.

As per the water system's current Municipal Drinking Water Licence, the rated capacity of the WTP is 340.0 million litres/day, which converts to 3,935 litres/second. The maximum daily flow of treated water from the treatment plant into the transmission system shall not exceed this value.

The following table contains a flow summary, with comparison to the system's rated capacity and permit limits in order to assess the capability of the system to meet existing and planned uses.

	Total Daily Flow (ML/day)	Total Daily Flow (% of Capacity)	Daily Instantaneous Peak Flow (ML/day)
PTTW – permitted raw water taking amount	454.98	100	454.98
Raw Water Flow – Average Day	137.96	30.3	239.25
Raw Water Flow – Max. Day	200.29	44.0	283.74
WTP Rated Capacity	340.00	100	340.00
Treated Water Flow – Average Day	135.04	39.7	209.6
Treated Water Flow – Max. Day	198.85	58.5	266.1

A complete flow summary for the LHPWSS can be found in Appendix A.

Treated Water Flows

The average daily flow from the LHPWSS was 135.04 ML/day, which is a 2.66% increase from the previous year. The maximum daily flow for 2024 was 198.85 ML/day, which is <1% increase from the previous year.

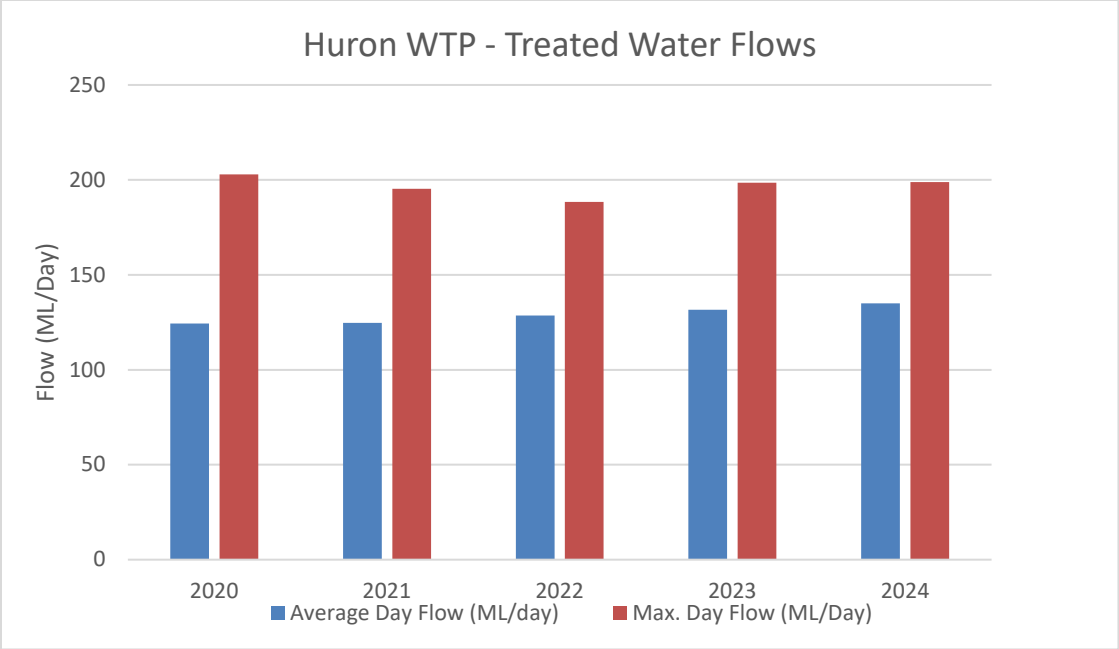

Figure 11: Five Year Treated Water Flow Comparison

The City of London utilizes the largest volume of treated drinking water from the LHPWSS. As shown in Figure 12, the City of London utilizes 82.85% of the volume, with the other seven (7) municipalities utilizing the remaining 17.15% of the volume.

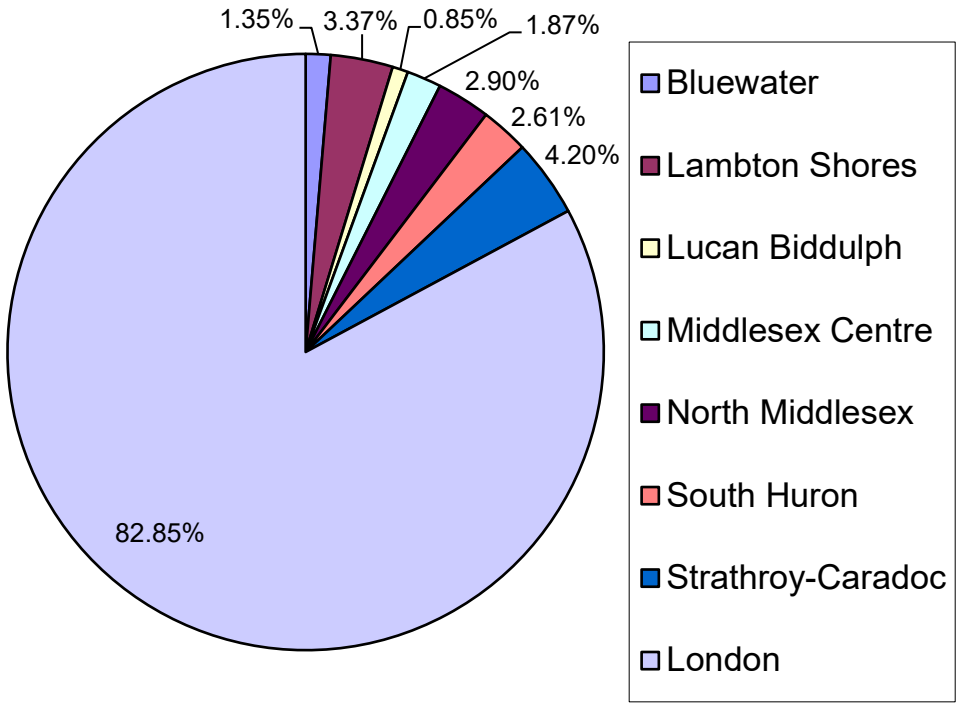

Figure 12: 2024 Treated Water Volumes per Municipality

2024 Chemical Consumption

A variety of water treatment chemicals are used at the LHPWSS to ensure safe, clean drinking water. The following table outlines the chemicals most frequently used for the LHPWSS. As part of the system's registered ISO14001 Environmental Management System, objectives and targets are currently in place to optimize chemical usage.

Chemical	Used for	Total Amount Used in 2024
Aluminum Sulphate	Coagulation	924,658 kg
Powdered Activated Carbon	Taste and odour control (seasonally)	63,712 kg
Chlorine Gas	Mussel control	46,239 kg
Chlorine Gas	Primary disinfection	50,107 kg
Chlorine Gas	Pre-Chlorination	4,620 kg
Sodium Hydroxide	pH adjustment for corrosion control	633,128 L
Polymer	Filter aid (used on an as-required basis)	<5 kg
Polymer	Residuals Management Facility – dewatering aid	6,405 L
Sodium Bisulphite	Residuals Management Facility – dechlorination	10,851 L

2024 Water Quality Sampling and Monitoring

The LHPWSS consistently provides treated drinking water with water quality above the standards required by provincial regulation. Where applicable, this is a result of the LHPWSS standards being more stringent than what is required by provincial regulation. For example, the target at the LHPWSS for filtered water turbidity (a measure of the cloudiness of water) is 10 times more stringent than the provincial standard. The LHPWSS is utilizing best management practices and continual improvement to ensure that high drinking water standards are maintained and enhanced where possible.

All water quality sampling at the LHPWSS is performed in accordance with the Safe Drinking Water Act and its associated regulations. All samples are collected by licensed operating authority personnel and are submitted to Canadian Association for Laboratory Accreditation (CALA)/Standards Council of Canada (SCC) accredited laboratories for both bacterial and chemical analysis.

In 2024, a total of 618 microbiological samples were collected from raw, treated and distribution system water, and were submitted to the laboratory for E. Coli,

total coliforms and heterotrophic plate count (HPC) analysis. There were no reported incidents of adverse microbiological test results in 2024. For more information, please see the Annual Report which is included as Appendix B.

Annual samples are collected and submitted to the laboratory for inorganics (metals) and organics analysis, which include herbicides, pesticides and volatile organic compounds. Quarterly sampling and laboratory analysis is also completed for trihalomethanes and haloacetic acids (disinfection by-products), nitrates and nitrites.

Seasonal samples are collected and submitted to the laboratory for total microcystin from June through to the end of October as part of the Harmful Algal Bloom (HAB) Monitoring and Sampling Program. The purpose of the HAB program is to keep drinking water safe from potential impacts of aquatic algal bacteria overgrowth (i.e. cyanobacteria), which can produce toxins (i.e. cyanotoxins) in the surrounding water when the algal cells are damaged or die. These toxins, which include microcystins, can be harmful to people. A total of 24 raw water samples were collected and submitted to the laboratory for total microcystin analysis. There were no detectable results in the raw water samples.

In addition, the WTP operator samples the raw, in-process and treated water six times per day and carries out an array of physical and chemical analysis for operational control.

As required by regulation, the LHPWSS also prepares an Annual Report which includes a summary of water quality test results and a maintenance report. The 2024 Annual Report can be found in Appendix B.

Research and Partnerships

The LHPWSS acknowledges the importance of scientific research on water quality and the effects on human health. The LHPWSS has partnered with the Natural Sciences and Engineering Research Council (NSERC) Chair in Drinking Water Research at the University of Waterloo and the University of Toronto to pursue research opportunities, as well as Western University. The LHPWSS is a member of the Water Research Foundation (WRF). In addition, the LHPWSS continues to evaluate and conduct specific research on the efficacy of the existing treatment processes, optimizing and improving treatment systems, and evaluating the potential and need of more advanced treatment alternatives.

Ministry Inspection

The Ontario Ministry of the Environment, Conservation and Parks (MECP) conducts an inspection of the LHPWSS annually. A MECP inspection took place on November 21, 2024. The final inspection report was issued on January 10, 2025. There were no non-compliances identified in the inspection report. The final inspection rating received for the 2024-2025 reporting year was 100% and can be found in Appendix C.

Lake Huron
Primary Water Supply System

Regional Water Supply Division
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Appendix A: 2024 Flow Summary

1. Raw Water Intake – Flow (ML/Day)

Day	January (ML/day)	February (ML/day)	March (ML/day)	April (ML/day)	May (ML/day)	June (ML/day)	July (ML/day)	August (ML/day)	September (ML/day)	October (ML/day)	November (ML/day)	December (ML/day)
1	128.80	125.74	141.07	137.38	132.19	136.21	139.87	168.59	137.39	172.32	150.94	130.34
2	116.40	130.13	125.20	89.41	135.52	129.38	146.88	192.03	156.32	150.43	126.88	105.02
3	112.67	124.16	123.41	190.29	138.85	128.88	154.96	160.22	133.50	140.96	132.35	153.98
4	128.53	121.23	117.65	91.60	128.35	159.23	188.50	155.20	179.22	150.98	134.27	124.74
5	131.18	133.52	126.50	157.30	126.02	140.96	165.66	158.16	166.99	143.49	119.04	133.12
6	129.57	171.38	113.33	129.20	129.06	165.09	169.60	146.35	151.58	128.61	131.78	128.61
7	115.23	123.52	136.40	138.45	149.92	150.86	178.67	146.82	158.37	132.99	128.13	131.07
8	120.21	134.10	133.52	158.70	106.67	132.38	152.34	148.75	129.94	140.93	129.57	135.23
9	134.96	126.98	122.26	139.42	150.27	126.22	194.43	157.62	145.17	144.26	130.21	128.38
10	105.90	122.14	120.86	141.73	136.80	132.42	143.49	158.88	141.81	140.00	124.77	129.86
11	136.82	119.90	121.57	140.82	132.06	137.63	145.82	161.70	167.63	138.82	139.39	136.29
12	115.86	116.42	120.50	136.64	111.98	146.64	158.27	148.16	163.52	136.64	116.90	132.06
13	132.91	129.57	118.90	134.43	126.02	158.30	152.72	164.90	148.96	121.76	130.46	130.91
14	112.03	142.02	143.10	131.66	127.52	164.18	163.12	164.88	159.42	127.30	110.62	130.88
15	121.89	88.30	122.05	133.98	137.25	165.12	151.12	192.42	152.58	122.18	132.61	127.81
16	130.24	143.54	118.21	134.99	139.84	148.77	151.98	143.79	162.98	138.82	131.81	126.27
17	142.69	134.78	126.37	128.45	146.94	154.61	152.77	150.90	171.74	147.36	130.18	110.56
18	132.26	111.26	139.46	150.42	128.58	184.18	162.11	142.18	152.99	138.59	128.70	112.90
19	138.75	110.11	78.98	143.33	133.89	200.29	149.71	139.02	155.46	133.06	137.95	130.85
20	119.06	136.72	155.58	143.36	148.45	168.51	147.81	143.65	159.68	135.55	115.36	132.45
21	116.82	81.71	118.83	125.17	137.28	172.90	160.37	159.23	150.88	152.96	133.41	121.38
22	125.41	125.25	133.30	136.90	157.66	144.75	149.12	144.62	145.34	104.00	123.30	129.54
23	136.35	135.82	128.03	145.90	155.57	142.37	165.66	159.58	145.22	133.82	126.59	113.34
24	130.94	113.01	136.93	87.55	140.78	134.03	190.56	182.37	126.85	132.70	126.08	108.86
25	126.10	113.78	129.86	149.70	156.99	159.87	144.83	168.48	138.34	151.87	129.95	101.44
26	126.91	128.27	121.60	136.66	131.04	154.54	175.62	163.50	132.22	135.90	131.30	99.07
27	123.12	124.16	127.62	118.98	134.08	153.60	177.86	176.19	141.70	137.02	121.95	102.14
28	113.73	120.83	140.59	120.61	137.25	172.46	169.66	156.26	130.08	127.33	123.81	101.31
29	128.00	135.10	132.72	122.90	135.46	152.26	161.07	152.13	136.54	114.14	129.63	106.43
30	124.82		114.16	131.20	136.00	141.79	150.00	154.61	148.83	117.82	124.77	114.75
31	125.74		134.51		138.08		150.61	158.50		149.57		112.16
Monthly Total	3883.89	3623.46	3923.04	4027.10	4226.37	4558.43	4965.20	4919.68	4491.25	4242.18	3852.70	3781.76

Day	January (ML/day)	February (ML/day)	March (ML/day)	April (ML/day)	May (ML/day)	June (ML/day)	July (ML/day)	August (ML/day)	September (ML/day)	October (ML/day)	November (ML/day)	December (ML/day)
Monthly Minimum	105.90	81.71	78.98	87.55	106.67	126.22	139.87	139.02	126.85	104.00	110.62	99.07
Monthly Maximum	142.69	171.38	155.58	190.29	157.66	200.29	194.43	192.42	179.22	172.32	150.94	153.98
Monthly Average	125.29	124.95	126.55	134.24	136.33	151.95	160.17	158.70	149.71	136.84	128.42	121.99

Annual Total (ML)	50,495.06
Annual Minimum (ML/day)	78.98
Annual Maximum (ML/day)	200.29
Annual Average (ML/day)	137.96

Note: (i) As per the water system's current Permit To Take Water (PTTW), the amount of raw water taken into the Lake Huron Water Treatment Plant cannot exceed 454.98 million litres/day.

2. Raw Water Instantaneous Peak Flow (ML/day)

Day	January (ML/day)	February (ML/day)	March (ML/day)	April (ML/day)	May (ML/day)	June (ML/day)	July (ML/day)	August (ML/day)	September (ML/day)	October (ML/day)	November (ML/day)	December (ML/day)
1	244.27	243.71	248.28	240.15	240.03	242.29	255.33	255.95	254.96	252.92	253.86	240.58
2	228.34	247.29	241.02	244.52	241.12	244.18	262.86	256.72	253.54	254.07	212.35	249.60
3	243.60	242.23	240.58	247.45	242.92	244.61	255.55	255.58	239.24	254.70	251.74	252.24
4	245.26	241.20	203.40	249.34	244.76	254.48	254.57	252.78	257.69	254.37	251.18	232.92
5	242.11	242.96	170.00	242.98	245.30	253.23	274.96	255.36	276.20	252.45	251.30	261.24
6	230.53	283.74	185.71	178.85	269.33	245.08	256.38	254.79	255.55	254.89	250.53	258.17
7	178.05	239.24	170.34	241.40	259.70	245.48	254.92	254.79	255.26	254.82	168.69	255.32
8	253.34	244.54	167.33	240.87	260.54	244.54	256.41	252.81	254.09	253.27	164.60	267.10
9	270.75	189.95	165.01	242.54	252.99	247.70	257.73	254.09	254.65	254.88	164.02	251.21
10	247.92	229.25	164.70	243.68	248.99	243.08	254.05	255.07	256.02	254.45	163.57	251.92
11	247.84	228.46	164.54	251.96	234.78	240.18	253.09	255.88	257.44	262.09	163.83	234.53
12	199.04	240.80	163.68	250.33	230.27	244.33	255.83	250.28	254.58	253.15	171.47	251.71
13	273.63	245.73	163.80	252.56	231.18	243.40	253.83	254.70	253.90	267.69	191.97	250.40
14	204.85	242.89	247.78	247.78	245.11	244.46	255.70	257.04	252.61	252.22	181.66	250.03
15	266.38	275.98	257.07	246.53	245.82	242.01	256.26	268.63	253.71	253.33	167.94	251.19
16	244.10	256.35	206.31	261.03	238.72	242.17	259.73	255.51	253.58	253.03	163.59	242.26
17	228.87	224.22	258.70	261.65	246.51	257.64	258.34	254.96	253.58	254.34	163.36	250.83
18	253.09	210.05	238.88	241.67	242.15	256.26	255.29	256.42	251.61	254.24	163.71	252.15
19	244.16	235.69	247.37	242.68	245.10	254.96	260.21	253.09	253.95	248.73	186.24	251.77
20	237.85	240.27	254.67	241.20	255.24	264.24	256.04	253.86	253.99	254.04	189.29	252.80
21	168.93	241.00	234.32	240.08	239.99	253.83	257.10	253.21	255.41	252.37	160.33	250.77
22	249.97	228.87	163.98	241.30	243.18	254.51	253.00	247.37	256.39	255.08	160.21	254.48
23	167.10	243.70	244.63	243.07	239.49	256.79	271.76	252.84	256.75	242.70	160.25	250.16
24	246.85	178.70	243.63	241.78	257.89	254.34	278.76	255.42	256.82	253.26	160.09	249.68
25	239.16	178.33	225.44	241.65	244.70	256.58	256.69	252.30	254.61	256.30	159.56	158.76
26	241.48	230.62	254.42	252.80	260.13	265.23	272.04	255.51	255.39	253.09	160.10	149.97
27	176.85	240.84	261.03	241.95	242.89	256.54	258.51	254.95	253.36	253.68	160.28	235.03
28	172.93	225.97	247.91	243.21	243.83	255.14	254.62	254.82	257.89	245.70	253.00	147.07
29	245.61	244.63	239.72	241.71	245.14	256.42	256.91	254.20	266.49	157.50	250.38	249.01
30	241.08		217.80	241.02	237.26	255.24	271.48	252.92	255.42	172.71	208.11	249.38
31	255.27		243.29		244.64		261.53	253.39		185.95		255.02

Day	January (ML/day)	February (ML/day)	March (ML/day)	April (ML/day)	May (ML/day)	June (ML/day)	July (ML/day)	August (ML/day)	September (ML/day)	October (ML/day)	November (ML/day)	December (ML/day)
Monthly Minimum	167.10	178.33	163.68	178.85	230.27	240.18	253.00	247.37	239.24	157.50	159.56	147.07
Monthly Maximum	273.63	283.74	261.03	261.65	269.33	265.23	278.76	268.63	276.20	267.69	253.86	267.10
Monthly Average	231.91	235.08	217.27	243.26	245.80	250.63	259.34	254.68	255.49	245.87	190.24	240.56

Annual Minimum (ML/day)	147.07
Annual Maximum (ML/day)	283.74
Annual Average (ML/day)	239.25

Note: (i) As per the water system's current Permit To Take Water (PTTW), the amount of raw water taken into the Lake Huron Water Treatment Plant cannot exceed 454.98 million litres/day. This converts to 5266 litres/second.

3. Treated Water Flow (ML/Day)

Day	January (ML/day)	February (ML/day)	March (ML/day)	April (ML/day)	May (ML/day)	June (ML/day)	July (ML/day)	August (ML/day)	September (ML/day)	October (ML/day)	November (ML/day)	December (ML/day)
1	125.82	123.07	138.50	135.17	129.98	133.31	137.41	164.80	134.40	170.18	146.69	125.82
2	112.32	127.23	123.01	86.27	133.57	128.38	143.23	188.22	152.96	146.37	124.10	101.38
3	109.18	122.11	121.54	189.06	137.28	127.04	152.51	156.80	130.75	138.18	129.22	151.36
4	125.76	119.30	114.43	87.36	127.55	155.78	185.66	150.91	175.55	148.29	129.79	121.86
5	128.19	131.46	124.48	154.88	123.97	138.11	162.82	154.43	162.94	140.99	115.65	130.56
6	126.78	169.54	106.37	127.87	125.50	163.52	167.30	142.59	147.52	124.67	128.06	126.59
7	112.58	121.09	133.38	135.94	147.46	149.12	175.49	143.55	154.75	129.15	124.74	128.70
8	117.70	130.43	128.38	155.78	103.68	129.28	149.76	146.62	127.04	138.18	125.82	132.16
9	132.99	124.48	114.11	136.13	146.05	122.82	191.23	155.52	142.40	141.44	127.04	126.14
10	102.59	119.30	116.74	138.05	134.08	128.90	141.38	156.48	138.30	137.60	121.28	124.80
11	130.43	116.86	117.82	137.22	129.15	133.57	143.68	158.85	164.67	136.58	135.62	128.83
12	113.79	113.79	116.42	132.86	108.54	143.55	156.48	144.64	160.83	134.08	114.37	130.30
13	130.50	126.66	115.52	132.48	123.01	155.58	151.74	160.77	146.24	119.30	127.10	128.38
14	109.18	140.48	131.39	128.64	123.71	161.15	162.24	160.90	157.38	123.97	107.26	128.70
15	118.34	86.98	118.98	131.78	133.50	164.22	149.38	189.31	149.76	118.72	129.09	127.30
16	127.94	140.61	116.16	131.26	136.96	148.16	148.22	140.35	160.06	135.74	128.32	123.90
17	140.99	132.80	123.97	123.78	144.58	153.47	150.14	148.10	168.51	144.00	127.04	107.84
18	129.86	108.99	137.22	147.39	125.18	183.62	159.10	137.98	150.27	135.55	124.35	110.78
19	135.74	108.61	74.24	140.67	131.26	198.85	147.39	136.13	152.83	130.88	127.87	128.38
20	117.25	134.21	153.98	140.86	147.14	165.31	145.28	140.54	156.67	133.76	113.22	125.18
21	115.65	78.27	116.16	122.18	134.21	171.01	157.31	156.48	148.03	150.72	132.48	119.36
22	121.73	123.39	129.92	133.95	156.16	141.57	145.47	140.67	140.74	99.97	123.52	126.85
23	131.07	133.44	118.34	143.04	154.11	140.35	161.60	155.90	140.99	131.33	125.76	109.89
24	128.32	110.40	133.95	84.80	138.05	130.24	187.14	179.07	123.52	129.28	125.38	105.92
25	123.52	111.81	127.30	148.67	155.84	157.18	142.21	164.67	135.49	149.18	129.15	99.26
26	124.42	126.27	117.25	135.23	129.28	150.02	172.35	159.55	128.83	133.25	130.50	97.22
27	121.28	121.34	124.86	117.44	131.71	148.99	174.59	172.93	138.24	133.89	121.34	100.16
28	111.68	118.66	138.56	119.30	133.95	170.18	167.55	151.68	127.68	125.57	114.88	99.26
29	126.78	132.35	131.01	121.02	132.35	150.72	158.02	148.99	134.08	112.70	126.72	104.32
30	121.09		111.87	129.41	132.35	139.14	147.01	151.87	145.98	116.93	122.18	112.32
31	122.88		132.22		134.91		141.31	155.01		141.12		110.21
Monthly Total	3796.35	3553.92	3808.06	3948.48	4145.09	4483.14	4875.01	4814.34	4397.44	4151.55	3758.53	3693.76

Day	January (ML/day)	February (ML/day)	March (ML/day)	April (ML/day)	May (ML/day)	June (ML/day)	July (ML/day)	August (ML/day)	September (ML/day)	October (ML/day)	November (ML/day)	December (ML/day)
Monthly Minimum	102.59	78.27	74.24	84.80	103.68	122.82	137.41	136.13	123.52	99.97	107.26	97.22
Monthly Maximum	140.99	169.54	153.98	189.06	156.16	198.85	191.23	189.31	175.55	170.18	146.69	151.36
Monthly Average	122.46	122.55	122.84	131.62	133.71	149.44	157.26	155.30	146.58	133.92	125.28	119.15

Annual Total (ML)	49,425.66
Annual Minimum (ML/day)	74.24
Annual Maximum (ML/day)	198.85
Annual Average (ML/day)	135.04

Note: (i) As per the water system's current Municipal Drinking Water Licence, the rated capacity of the Water Treatment Plant is 340.0 million litres/day. The maximum daily flow of treated water from the treatment plant into the distribution system shall not exceed this value.

4. Treated Water Instantaneous Peak Flow (ML/day)

Day	January (ML/day)	February (ML/day)	March (ML/day)	April (ML/day)	May (ML/day)	June (ML/day)	July (ML/day)	August (ML/day)	September (ML/day)	October (ML/day)	November (ML/day)	December (ML/day)
1	174.10	173.24	200.35	202.89	218.21	199.09	233.14	244.57	241.25	240.85	214.89	181.33
2	173.23	174.79	206.80	229.13	235.58	179.75	239.89	246.51	244.17	239.49	210.60	173.42
3	170.59	177.32	199.57	231.09	232.27	190.30	243.98	245.05	237.83	203.09	174.30	233.34
4	226.22	219.67	170.70	244.85	175.47	240.17	240.85	244.47	218.12	239.68	174.60	226.70
5	224.76	242.22	174.60	235.68	176.84	237.34	261.93	241.44	215.77	239.29	170.30	174.40
6	175.67	232.85	175.87	177.62	175.86	232.16	241.45	235.39	191.87	201.92	174.20	177.03
7	176.45	172.25	178.31	204.65	241.54	214.80	239.69	240.07	204.85	210.22	169.42	176.46
8	204.75	172.35	168.94	202.41	237.54	226.90	236.27	241.63	235.49	216.08	182.70	218.89
9	222.42	176.05	164.26	205.43	230.22	223.58	244.57	243.69	237.44	232.95	163.27	208.17
10	225.05	170.02	151.57	202.51	229.24	220.17	237.15	242.91	237.93	231.00	166.60	215.18
11	203.09	173.42	170.39	219.78	196.75	235.01	239.88	238.51	243.01	236.56	167.38	216.06
12	200.16	171.68	165.04	222.60	220.36	238.13	244.07	241.44	242.41	236.57	178.10	225.24
13	174.88	175.18	166.40	202.02	220.36	242.51	244.65	239.59	241.44	203.57	177.14	225.63
14	170.98	230.32	170.59	198.99	218.60	242.70	243.18	243.78	246.32	205.73	171.48	174.69
15	204.46	239.19	200.65	220.94	221.54	229.62	249.64	244.76	243.10	176.54	171.96	173.62
16	206.89	240.17	209.82	220.56	202.70	241.43	241.63	241.73	242.91	241.83	163.18	171.48
17	208.85	224.94	177.82	200.07	237.83	242.50	205.14	246.31	240.07	238.12	166.30	170.79
18	204.17	171.67	234.12	203.09	237.72	245.72	248.57	209.44	239.97	237.05	164.45	175.38
19	198.80	176.54	230.90	234.13	206.12	236.94	239.10	225.72	238.91	199.77	172.64	175.18
20	198.11	229.54	203.39	232.66	205.72	236.95	239.39	241.53	242.51	235.10	169.04	183.09
21	173.23	228.46	203.09	187.87	234.03	237.93	235.97	243.89	237.73	234.70	168.26	177.32
22	172.64	201.04	168.93	176.94	249.53	238.71	243.00	242.60	234.70	229.15	169.14	187.38
23	172.26	178.11	169.52	202.99	241.35	232.66	244.75	239.97	237.05	192.45	169.03	173.62
24	174.88	168.84	234.22	233.24	219.20	181.51	244.47	241.63	193.33	236.27	169.13	174.98
25	174.30	174.21	226.60	231.78	200.94	211.48	266.11	241.53	233.35	231.59	168.06	141.22
26	175.37	180.64	173.52	206.41	199.77	236.07	245.63	240.86	225.34	195.67	170.40	146.00
27	172.35	174.20	206.11	173.33	240.85	240.95	239.97	243.10	199.38	205.04	164.64	144.05
28	173.42	171.76	205.63	175.86	233.05	241.05	237.63	243.69	215.78	202.21	174.50	147.77
29	200.85	200.85	194.89	176.46	204.95	243.19	242.22	232.85	236.37	145.43	172.94	172.84
30	200.75		173.52	238.41	198.99	204.85	241.34	235.88	242.51	171.28	174.30	178.01
31	174.30		201.82		206.41		239.59	237.24		172.64		169.71

Day	January (ML/day)	February (ML/day)	March (ML/day)	April (ML/day)	May (ML/day)	June (ML/day)	July (ML/day)	August (ML/day)	September (ML/day)	October (ML/day)	November (ML/day)	December (ML/day)
Monthly Minimum	170.59	168.84	151.57	173.33	175.47	179.75	205.14	209.44	191.87	145.43	163.18	141.22
Monthly Maximum	226.22	242.22	234.22	244.85	249.53	245.72	266.11	246.51	246.32	241.83	214.89	233.34
Monthly Average	190.58	193.85	189.61	209.81	217.73	227.47	241.77	240.06	231.36	215.54	173.43	183.51

Annual Minimum (ML/day)	141.2
Annual Maximum (ML/day)	266.1
Annual Average (ML/day)	209.6

Note: (i) As per the water system's current Municipal Drinking Water Licence, the rated capacity of the Water Treatment Plant is 340.0 million litres/day. This converts to 3935 litres/second. The maximum daily flow of treated water from the treatment plant into the distribution system shall not exceed this value.

Appendix B: 2024 Annual Report

Ontario

Drinking-Water Systems Regulation O. Reg. 170/03

Drinking-Water System Number:	210000791
Drinking-Water System Name:	**Lake Huron Primary Water Supply System**
Drinking-Water System Owner:	Lake Huron Primary Water Supply System Joint Board of Management
Drinking-Water System Operating Authority:	Ontario Clean Water Agency (OCWA)
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1, 2024 through December 31, 2024

Complete if your Category is Large Municipal Residential or Small Municipal Residential	**Complete for all other Categories.**
Does your Drinking-Water System serve more than 10,000 people? **Yes [X] No [ ]** **Is your annual report available to the public at no charge on a web site on the Internet?** **Yes [X] No [ ]** **Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.** Lake Huron and Elgin Area Water Supply Systems c/o Regional Water Supply Division 235 North Centre Road, Suite 200 London, ON N5X 4E7 https://huronelginwater.ca/ Lake Huron Water Treatment Plant 71155 Bluewater Hwy. Grand Bend, ON	**Number of Designated Facilities served:** N/A **Did you provide a copy of your annual report to all Designated Facilities you serve?** **Yes [ ] No [ ]** **Number of Interested Authorities you report to:** N/A **Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility?** **Yes [ ] No [ ]**

List all Drinking-Water Systems (if any), which receive all of their drinking water from your system:

Systems that receive their drinking water from the LHPWSS:

Drinking Water System Name	Drinking Water System Number
City of London Distribution System	260004917
Bluewater Lakeshore Distribution System	260006542
Hensall Zurich Distribution System	260091650
East Lambton Shores Water Distribution System	260006568
Lucan Biddulph Distribution System	260003071
Middlesex Centre Distribution System	260004202
North Middlesex Distribution System	260006529
Strathroy-Caradoc Distribution System	260080106
South Huron Water Distribution System	220001520

Systems that may receive their drinking water from the LHPWSS:

Drinking Water System Name	Drinking Water System Number
Municipality of Lambton Shores (West Lambton Shores Distribution System) *Normally supplied by the Lambton Area Water Supply System (LAWSS) but a connection to the LHPWSS exists	260006581

Did you provide a copy of your annual report to all Drinking-Water System owners that are connected to you and to whom you provide all of its drinking water?

Yes [X] No [ ]

Indicate how you notified system users that your annual report is available, and is free of charge.

- **[X] Public access/notice via the web**
- **[X] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[ ] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[ ] Public access/notice via other method _____**

Describe your Drinking-Water System

The Lake Huron Primary Water Supply System (LHPWSS) employs pre-chlorination, screening, powder activated carbon addition (seasonally on an as-required basis), coagulation, flocculation, sedimentation, dual-media filtration, post-chlorination, and pH adjustment using sodium hydroxide to treat raw water obtained from Lake Huron. The intake crib and raw water intake pipe have an estimated gross capacity of 454.6 Megalitres/day (MLD). The LHPWSS rated capacity is 340.0 MLD.

A Residuals Management Facility (RMF) providing equalization, clarification, sediment thickening and dechlorination is also housed in the main complex. Thickened sediment is dewatered by centrifuges and the sediment is sent to the landfill for final disposal. Clarified and dechlorinated liquid streams are sent back to Lake Huron through the plant drain via the diversion chamber.

The transmission system is comprised of the McGillivray Booster Pumping Station and Reservoir, the Exeter-Hensall Booster Pumping Station and Reservoir, Arva Terminal Reservoir, Komoka-Mt. Brydges Booster Pumping Station (PS#4) and associated interconnecting transmission water mains, which includes the primary, Strathroy, Exeter-Hensall, and Komoka-Mt. Brydges transmission water mains.

The drinking water system is monitored at various locations throughout the system via a Supervisory Control and Data Acquisition (SCADA) system.

List all water treatment chemicals used over this reporting period

Filter Aid Polymer (on an as-required basis)
Aluminum Sulphate
Powder Activated Carbon
Chlorine Gas
Sodium Hydroxide
Sodium Hypochlorite (Exeter-Hensall Pumping Station)
Dewatering Polymer (Residuals Management Facility)
Sodium Bisulphite (Residuals Management Facility)

Were any significant expenses incurred to?

[X] Install required equipment
[X] Repair required equipment
[X] Replace required equipment

Please provide a brief description and breakdown of monetary expenses incurred:

Capital and Maintenance Projects:

- Handrail replacements (Chlorine Building and High Lift Building Stairwells)
- Concrete crack injections (Flocculation Building, High Lift Building basement, tunnel and Arva Valve House)
- Interior door replacements
- Service water line piping replacements
- Clarifier #2 gear drive replacement and variable frequency drive (VFD) installation
- Roof drain replacements
- Pipeline chamber flood prevention upgrades
- Clarifier ramp replacements
- Coagulation system upgrade
- Lowlift pump #1 rebuild
- Lowlift pump check valve and isolation valve replacements
- Raw water actuator replacements and SCADA integration
- North and South filtered water chlorine analyzer relocation
- Strathroy Monitoring Station #2 panel upgrade
- McGillivray Booster Station exterior wall cladding upgrades
- Arva Reservoir clean-out and condition assessment inspection
- B-Line south back-up generator electrical upgrades
- Site security and lighting upgrades
- Equipment guarding and safety upgrades
- McGillivray Booster Station Heating, Ventilation & Air Conditioning (HVAC) and electrical upgrades
- SCADA software upgrades
- Exeter-Hensall Pumping Station (EHPS) pump control upgrades
- Arva drain valve replacement

Studies & Design:

- Water Quality Facility Plan Update
- Master Water Plan Update
- Powder Activated Carbon (PAC) system upgrade - design
- Oneida Transmission Pipeline - design
- Water Treatment Plant (WTP) Administration Building Extension and Site Redevelopment – design
- Dechlorination at remote stations (Arva site) - design
- Highlift discharge flow meters replacement – design and equipment purchase

Provide details on the notices submitted in accordance with subsection 18(1) of the Safe Drinking-Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to Spills Action Centre

Incident Report Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
N/A	N/A	N/A	N/A	N/A	N/A

Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03, during this reporting period.

Location	Number of Samples	Range of E. coli Results (CFU/100mL) (min #)-(max #)	Range of Total Coliform Results (CFU/100mL) (min #)-(max #)	Range of HPC Results (CFU/1mL) (min #)-(max #)
Raw Water	103	(0)-(100)	(0)-(11,500)	(<10)-(1,230)
Treated Water (WTP)	230	(0)-(0)	(0)-(0)	(<10)-(20)
Distribution (McGillivray PS)	56	(0)-(0)	(0)-(0)	(<10)-(420)
Distribution (North Exeter)	60	(0)-(0)	(0)-(0)	(<10)-(20)
Distribution (South Exeter)	56	(0)-(0)	(0)-(0)	(<10)-(10)
Distribution (Exeter-Hensall Reservoir)	54	(0)-(0)	(0)-(0)	(<10)-(>2,000)
Distribution (Komoka-Mt. Brydges PS)	59	(0)-(0)	(0)-(0)	(<10)-(30)

Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report.

Parameter	Number of Samples	Range of Results (min #)-(max #)
Treated Water Free Chlorine (mg/L)	Continuous Monitoring	(0.53)-(2.00)
Filter #1 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.02)-(0.57)
Filter #2 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.02)-(0.54)
Filter #3 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.02)-(0.21)
Filter #4 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.02)-(1.99*)
Filter #5 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.02)-(0.32)
Filter #6 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.02)-(0.69)
Filter #7 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.02)-(0.56)
Filter #8 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.02)-(0.18)
Filter #9 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.02)-(0.81)
Filter #10- Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.02)-(0.15)
Filter #11- Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.02)-(0.55)
Filter #12- Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.02)-(0.79)
Distribution Grab Samples Free Chlorine (mg/L)	Grab Samples	(0.69)-(1.33)

*maximum turbidity >1NTU on filter 4 was less than 1 minute in duration, no Adverse Water Quality Incident (AWQI) as a result of the spike.

All filter performance criteria of <0.3NTU 95% of the time for the month were met for all 12 filters.

Summary of Inorganic parameters tested during this reporting period

*(*All tests were conducted on treated water leaving the WTP unless otherwise noted)*

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	January 9, 2024	Not Detected	mg/L	NO
Arsenic	January 9, 2024	Not Detected	mg/L	NO
Barium	January 9, 2024	0.0141	mg/L	NO
Boron	January 9, 2024	0.014	mg/L	NO
Cadmium	January 9, 2024	0.000004	mg/L	NO
Chromium	January 9, 2024	0.00018	mg/L	NO
Lead (Komoka Mt-Brydges Monitoring Station #2)	January 9, 2024 April 11, 2024 July 16, 2024 October 10, 2024	0.00001 Not Detected 0.00001 0.00001	mg/L mg/L mg/L mg/L	NO
Mercury	January 9, 2024	Not Detected	mg/L	NO
Selenium	January 9, 2024	0.00010	mg/L	NO
Sodium	January 10, 2024	11.5	mg/L	NO
Uranium	January 9, 2024	0.000051	mg/L	NO
Fluoride	January 10, 2024	Not Detected	mg/L	NO
Nitrite	January 9, 2024 April 11, 2024 July 16, 2024 October 10, 2024	Not Detected Not Detected Not Detected Not Detected	mg/L mg/L mg/L mg/L	NO
Nitrate	January 9, 2024 April 11, 2024 July 16, 2024 October 10, 2024	0.544 0.378 0.449 0.258	mg/L mg/L mg/L mg/L	NO

Summary of Organic parameters sampled during this reporting period or the most recent sample results

*(*All tests were conducted on treated water leaving the WTP unless otherwise noted)*

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	January 9, 2024	Not Detected	mg/L	NO
Atrazine + N-dealkylated metabolites	January 9, 2024	0.00002	mg/L	NO
Azinphos-methyl	January 9, 2024	Not Detected	mg/L	NO
Benzene	January 9, 2024	Not Detected	mg/L	NO
Benzo(a)pyrene	January 9, 2024	Not Detected	mg/L	NO
Bromoxynil	January 9, 2024	Not Detected	mg/L	NO
Carbaryl	January 9, 2024	Not Detected	mg/L	NO
Carbofuran	January 9, 2024	Not Detected	mg/L	NO
Carbon Tetrachloride	January 9, 2024	Not Detected	mg/L	NO
Chlorpyrifos	January 9, 2024	Not Detected	mg/L	NO
Diazinon	January 9, 2024	Not Detected	mg/L	NO
Dicamba	January 9, 2024	Not Detected	mg/L	NO
1,2-Dichlorobenzene	January 9, 2024	Not Detected	mg/L mg/L	NO
1,4-Dichlorobenzene	January 9, 2024	Not Detected	mg/L mg/L	NO
1,2-Dichloroethane	January 9, 2024	Not Detected	mg/L	NO
1,1-Dichloroethylene (vinylidene chloride)	January 9, 2024	Not Detected	mg/L	NO
Dichloromethane	January 9, 2024	Not Detected	mg/L	NO
2-4 Dichlorophenol	January 9, 2024	Not Detected	mg/L mg/L	NO
2,4-Dichlorophenoxy acetic acid (2,4-D)	January 9, 2024	Not Detected	mg/L	NO
Diclofop-methyl	January 9, 2024	Not Detected	mg/L	NO
Dimethoate	January 9, 2024	Not Detected	mg/L	NO
Diquat	January 9, 2024	Not Detected	mg/L	NO
Diuron	January 9, 2024	Not Detected	mg/L	NO
Glyphosate	January 9, 2024	Not Detected	mg/L	NO
Haloacetic Acids (HAA's) (Arva Reservoir)	January 9, 2024 April 11, 2024 July 16, 2024 October 10, 2024	0.0159 0.0061 0.0066 Not Detected	mg/L mg/L mg/L mg/L	NO

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Haloacetic Acids (HAA's) (Arva Reservoir) Running Annual Average	2024	0.0072	mg/L	NO
Haloacetic Acids (HAA's) (Exeter-Hensall Monitoring Station #3)	January 9, 2024 April 11, 2024 July 16, 2024 October 10, 2024	0.0150 0.0081 0.0088 0.0056	mg/L mg/L mg/L mg/L	NO
Haloacetic Acids (HAA's) (Exeter-Hensall Monitoring Station #3) Running Annual Average	2024	0.0094	mg/L	NO
Haloacetic Acids (HAA's) (Komoka Mt-Brydges Monitoring Station #2)	January 9, 2024 April 11, 2024 July 16, 2024 October 10, 2024	0.0165 Not Detected 0.0062 Not Detected	mg/L mg/L mg/L mg/L	NO
Haloacetic Acids (HAA's) (Komoka Mt-Brydges Monitoring Station #2) Running Annual Average	2024	0.0057	mg/L	NO
Haloacetic Acids (HAA's) (Strathroy-Caradoc Monitoring Station #2)	January 9, 2024 April 11, 2024 July 16, 2024 October 10, 2024	0.0186 0.0069 0.0073 Not Detected	mg/L mg/L mg/L mg/L	NO
Haloacetic Acids (HAA's) (Strathroy-Caradoc Monitoring Station #2) Running Annual Average	2024	0.0076	mg/L	NO
Malathion	January 9, 2024	Not Detected	mg/L	NO
Metribuzin	January 9, 2024	Not Detected	mg/L	NO
Monochlorobenzene	January 9, 2024	Not Detected	mg/L	NO
Paraquat	January 9, 2024	Not Detected	mg/L	NO

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Pentachlorophenol	January 9, 2024	Not Detected	mg/L	NO
Phorate	January 9, 2024	Not Detected	mg/L	NO
Picloram	January 9, 2024	Not Detected	mg/L	NO
Polychlorinated Biphenyls (PCB)	January 9, 2024	Not Detected	mg/L	NO
Prometryne	January 9, 2024	Not Detected	mg/L	NO
Simazine	January 9, 2024	Not Detected	mg/L	NO
Total Trihalomethanes (Arva Reservoir)	January 9, 2024 April 11, 2024 July 16, 2024 October 10, 2024	0.023 0.022 0.030 0.023	mg/L mg/L mg/L mg/L	NO
Total Trihalomethanes (THMs) (Arva Reservoir) Running Annual Average	2024	0.025	mg/L	NO
Total Trihalomethanes (Exeter-Hensall Monitoring Station #3)	January 9, 2024 April 11, 2024 July 16, 2024 October 10, 2024	0.027 0.030 0.039 0.036	mg/L mg/L mg/L mg/L	NO
Total Trihalomethanes (Exeter-Hensall Monitoring Station #3) Running Annual Average	2024	0.033	mg/L	NO
Total Trihalomethanes (Komoka Mt-Brydges Monitoring Station #2)	January 9, 2024 April 11, 2024 July 16, 2024 October 10, 2024	0.023 0.026 0.035 0.029	mg/L mg/L mg/L mg/L	NO
Total Trihalomethanes (Komoka Mt-Brydges Monitoring Station #2) Running Annual Average	2024	0.028	mg/L	NO
Total Trihalomethanes (Strathroy-Caradoc Monitoring Station #2)	January 9, 2024 April 11, 2024 July 16, 2024 October 10, 2024	0.026 0.024 0.032 0.026	mg/L mg/L mg/L mg/L	NO

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Total Trihalomethanes (Strathroy-Caradoc Monitoring Station #2) Running Annual Average	2024	0.027	mg/L	NO
Terbufos	January 9, 2024	Not Detected	mg/L	NO
Tetrachloroethylene	January 9, 2024	Not Detected	mg/L	NO
2,3,4,6-Tetrachlorophenol	January 9, 2024	Not Detected	mg/L	NO
Triallate	January 9, 2024	Not Detected	mg/L	NO
Trichloroethylene	January 9, 2024	Not Detected	mg/L	NO
2,4,6-Trichlorophenol	January 9, 2024	Not Detected	mg/L	NO
Trifluralin	January 9, 2024	Not Detected	mg/L	NO
Vinyl Chloride	January 9, 2024	Not Detected	mg/L	NO

NOTE: During 2024, no Inorganic or Organic parameter(s) exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.

Appendix C - 2024 Ministry of the Environment Conservation and Parks Inspection Summary

DWS Name:	LAKE HURON PRIMARY WATER SUPPLY SYSTEM
DWS Number:	210000791
DWS Owner:	LAKE HURON PRIMARY WATER SUPPLY SYSTEM JOINT BOARD OF MANAGEMENT
Municipal Location:	LONDON
Regulation:	O.REG. 170/03
DWS Category:	DW Municipal Residential
Type of Inspection:	Focused
Compliance Assessment Start Date:	Nov-21-2024
Ministry Office:	Sarnia District Office

Maximum Risk Rating: 455

Inspection Module	Non Compliance Risk (X out of Y)
Capacity Assessment	0/30
Certification and Training	0/42
Distribution System	0/4
Logbooks	0/14
Operations Manuals	0/14
Reporting & Corrective Actions	0/25
Source	0/0
Treatment Processes	0/214
Water Quality Monitoring	0/112
Overall - Calculated	**0/455**

Inspection Risk Rating:	**0.00%**

Final Inspection Rating:	**100.00%**

DWS Name:	LAKE HURON PRIMARY WATER SUPPLY SYSTEM
DWS Number:	210000791
DWS Owner Name:	LAKE HURON PRIMARY WATER SUPPLY SYSTEM JOINT BOARD OF MANAGEMENT
Municipal Location:	LONDON
Regulation:	O.REG. 170/03
DWS Category:	DW Municipal Residential
Type of Inspection:	Focused
Compliance Assessment Start Date:	Nov-21-2024
Ministry Office:	Sarnia District Office

All legislative requirements were met. No detailed rating scores.

Maximum Question Rating: 455

Inspection Risk Rating:	**0.00%**

FINAL INSPECTION RATING:	**100.00%**