

# AGENDA

## LAWSS Board Meeting



Thursday, December 5, 2019  
12:00 pm  
Tourism Sarnia-Lambton Assembly Room  
1455 Venetian Blvd. Point Edward

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1. Declaration of Pecuniary or Conflict of Interest

2. Approval of Regular Agenda Minutes

*A copy of the minutes for the Thursday, October 31, 2019 meeting are attached to this agenda.*

Moved By \_\_\_\_\_

Seconded By \_\_\_\_\_

"That the minutes from the October 31, 2019 meeting of the LAWSS Board be adopted."

3. Delegations

a. Presentation: Canada's Plan for Used Nuclear Fuel, Nuclear Waste Management Organization (NWMO)

Becky Smith, Regional Communications Manager – Southwestern Ontario and Paul Gierszewski, NWMO's Director of Safety and Technical Research.

Moved By \_\_\_\_\_

Seconded By \_\_\_\_\_

"That the National Waste Management Organization's presentation titled "Canada's Plan for Used Nuclear Fuel" **BE RECEIVED** for the information of the Board of Management."

4. LAWSS Monthly Financial Statements

*A copy of the September 2019 LAWSS Budget statement and cash balance sheets are attached for review and approval.*

Moved By \_\_\_\_\_

Seconded By \_\_\_\_\_

"That the September 2019 Financial Statement and Cash Balance sheet **BE RECEIVED** by the Board."

## 5. OCWA Operational Statements

*The October 2019 Monthly Operations Report and other materials from OCWA are attached.*

Moved By \_\_\_\_\_

Seconded By \_\_\_\_\_

"That the October 2019 Operational Statements and OCWA's quarterly financial statement **BE RECEIVED** by the Board for information."

## 6. Information Reports

*The October 2019 Flow Summaries and Information Report.*

Moved By \_\_\_\_\_

Seconded By \_\_\_\_\_

"That the October 2019 Flow Summaries and the Information Report, dated December 5 2019, **BE RECEIVED** for the information by the Board."

- a. October 2019 Flow Summaries
- b. Information Reports (December 5, 2019)
- c. Brooke-Alvinston Water Supply System Modifications

Moved By \_\_\_\_\_

Seconded By \_\_\_\_\_

"That the report titled Brooke-Alvinston Water Supply System Modifications, dated December 5, 2019 **BE RECEIVED** by the Board as information".

## 7. Capital Update

- a. WTP Main Switchgear & Generator Replacement Project

Moved By \_\_\_\_\_

Seconded By \_\_\_\_\_

"That the report titled WTP Main Switchgear and Generator Replacement Project, dated December 5, 2019 **BE RECEIVED** by the Board as information."

8. Reports of Committees

- a. LAWSS Technical Team Meeting Minutes (November 14, 2019)

Moved By \_\_\_\_\_

Seconded By \_\_\_\_\_

"That the November 14, 2019 Technical Team Minutes, Presentation and updated Terms and Conditions **BE RECEIVED** for the information by the Board."

9. Miscellaneous Reports

10. Ongoing Issues

11. Correspondance

12. New Business

- a. WTP Reservoir Leak

Moved By \_\_\_\_\_

Seconded By \_\_\_\_\_

"That the Board **AUTHORIZE** \$50,000 from reserves to complete a reservoir condition assessment as described in the report titled WTP Reservoir Leak, dated December 5, 2019."

13. By-Laws

14. IN-CAMERA Items

The Board will adjourn to an in-camera meeting if necessary.

Moved By \_\_\_\_\_

Seconded By \_\_\_\_\_

"That the Board Adjourn to an in-camera session."

15. Chair to Rise and Report on the Matters of Public Concern from the In-Camera Session.

The Chair will report as required.

16. Adjournment/Next Meeting

Moved By \_\_\_\_\_

Seconded By \_\_\_\_\_

"That the LAWSS Board adjourn this meeting to its next board meeting held on

January 30, 2020 at noon at the Tourism Sarnia-Lambton Assembly Room, 1455 Venetian Blvd. Point Edward."



# Minutes

## LAWSS Board Meeting

Thursday, October 31, 2019

12:00 pm

Tourism Sarnia-Lambton Assembly Room

1455 Venetian Blvd. Point Edward

Members:	Mayor Bev Hand, Village of Point Edward
	Mayor Steve Arnold, St. Clair Township
	Councillor Margaret Bird, City of Sarnia
	Mayor Lonny Napper, Town of Plympton-Wyoming
	Mayor Jackie Rombouts, Township of Warwick
	Councillor Rick Goodhand, Municipality of Lambton Shores
Attendees:	Jay Verstraeten, Manager of Environmental Services Village of Point Edward
	Brian Black, Director of Public Works St. Clair Township
	David Jackson, Director of Engineering City of Sarnia
	Adam Sobanski, Director of Public Works Town of Plympton-Wyoming
	Andrew Maver, Public Works Manager Township of Warwick
	Marina Plain, Councillor Aamjiwnaang First Nations
	Dale LeBritton, Manager Southwest Regoin, OCWA
	Susan Budden, Business Development Manager, OCWA
	David Hunt, Operational Manager, OCWA
	Susan Durling,, Administrative Assistant, OCWA
	Clinton Harper, General Manager, LAWSS

**1. Declaration of Pecuniary or Conflict of Interest**

**2. Approval of Regular Agenda Minutes**

*A copy of the minutes for the September 26, 2019 meeting are attached to this agenda.*

Moved by: Mayor Steve Arnold

Seconded by: Councillor Rick Goodhand

"That the minutes from the September 26, 2019 meeting of the LAWSS Board be adopted."

Carried

**3. Delegations**

**4. LAWSS Monthly Financial Statements**

*A copy of the August LAWSS budget statement and cash balance sheets are attached for review and approval.*

Moved by: Mayor Jackie Rombouts

Seconded by: Mayor Lonny Napper

"That the August 2019 Financial Statement and Cash Balance Sheet **BE RECEIVED** for the information of the Board of Management."

Carried

a. August 2019 Financial Statement and Cash Balance Sheet

**5. OCWA Operational Statements**

*The September Monthly Operations Report and other materials from OCWA are attached.*

Moved by: Mayor Steve Arnold

Seconded by: Mayor Jackie Rombouts

"That the September 2019 Operational Statements **BE RECEIVED** for the information of the Board of Management."

Carried

- a. September 2019 Operational Statement

**6. Information Reports**

*The September 2019 Flow Summaries and Information Report.*

Moved by: Mayor Lonny Napper

Seconded by: Mayor Steve Arnold

"That the September 2019 Flow Summaries and the Information Report, dated October 2019, **BE RECEIVED** for the information by the Board."

Carried

- a. September 2019 Flow Summaries

- b. October 2019 Information Report

**7. Capital Update**

**8. Reports of Committees**

**9. Miscellaneous Reports**

**10. Ongoing Issues**

- a. Clean Harbors Lambton Incineration Facility

Moved by: Mayor Steve Arnold

Seconded by: Mayor Lonny Napper

"That the Thallium Shipment Information Request Report **BE RECEIVED** for information by the Board."

Carried

- b. Emerging Issues- Plastics

Moved by: Mayor Steve Arnold

Seconded by: Councillor Rick Goodhand

That the Emerging Issues- Plastics Report, and its accompanying documentation, **BE RECEIVED** for the information by the Board."

Carried

**11. Correspondence**

**12. New Business**

a. Wireless Communication Proposal

Multiple requests have been received for establishment of a wireless internet hub at LAWSS Water Tower and Standpipe facilities.

Moved by: Mayor Steve Arnold

Seconded by: Councillor Margaret Bird

"That the Joint Board of Management for the Lambton Area Water Supply System to **AUTHORIZE** the General Manager to develop agreements, as they are requested, related to all LAWSS owned Facilities with respect to telecommunication.

Carried

**13. By-Laws**

a. By-Law No. 1-2019 Confirming

Draft Confirming By-Law to confirm the proceedings of LAWSS for the 2018 calendar year.

Moved by: Mayor Steve Arnold

Seconded by: Mayor Lonny Napper

"That the attached 2018 Confirming By-Law **BE INTRODUCED** and approved by the Joint Board."

Carried

b. By-Law No. 2-2019 Procedural

Draft Procedural By-law and Report detailing changes is attached.

Moved by: Mayor Jackie Rombouts

Seconded by: Councillor Margaret Bird



"That the attached By-Law to regulate the proceedings of the Lambton Area Water Supply System Joint Board of Management **BE TABLED** to allow for further review.

Carried

**14. IN-CAMERA Items**

The Board will adjourn to an in-camera meeting if necessary.

That the Board Adjourn to an in-camera session.

**15. Chair to Rise and Report on the Matters of Public Concern from the In-Camera Session.**

The Chair will report as required.

**16. Adjournment/Next Meeting**

Moved by: Councillor Rick Goodhand

Seconded by: Mayor Jackie Rombouts

That the LAWSS Board adjourn this meeting to its next board meeting held on November 28, 2019 at 12:00pm at the Tourism Sarnia-Lambton Assembly Room, 1455 Venetian Blvd. Point Edward.

Carried



# Canada's Plan for Used Nuclear Fuel

Lambton Area Water Supply System Board Meeting, December 2019  
Paul Gierszewski, Director, Safety and Technical Research and Becky Smith, Regional Communications Manager

## NWMO: Who We Are

- Formed in 2002 as required by *Nuclear Fuel Waste Act*
- Charged with developing and implementing national solution for used nuclear fuel
- Funded by Canada's nuclear energy corporations
- Project lifecycle cost of almost \$24B for a capacity of 5.2 million used fuel bundles
- Trust Funds established, fully funded for current used fuel inventory
- Board of Directors, Independent Advisory Council

**Our mission is to develop and implement collaboratively with Canadians, a management approach for the long-term care of Canada's used nuclear fuel that is socially acceptable, technically sound, environmentally responsible, and economically feasible.**



## Dry Storage

# Adaptive Phased Management (APM)

APM emerged from dialogue with citizens and experts – best met key priorities

## A Technical Method

- » Centralized containment and isolation of used nuclear fuel in a deep geological repository
- » Continuous monitoring
- » Potential for retrievability
- » Optional step of shallow underground storage\*

\* Temporary shallow storage at the deep geological repository is optional and not currently included in the NWMO's implementation plan.

## A Management System

- » Flexibility in pace and manner of implementation
- » Phased and adaptive decision-making
- » Responsive to advances in technology, research, Indigenous Knowledge and societal values
- » Open, inclusive, fair siting process – seek informed, willing host community
- » Sustained engagement of people and communities throughout implementation

APM selected by Federal government June 2007

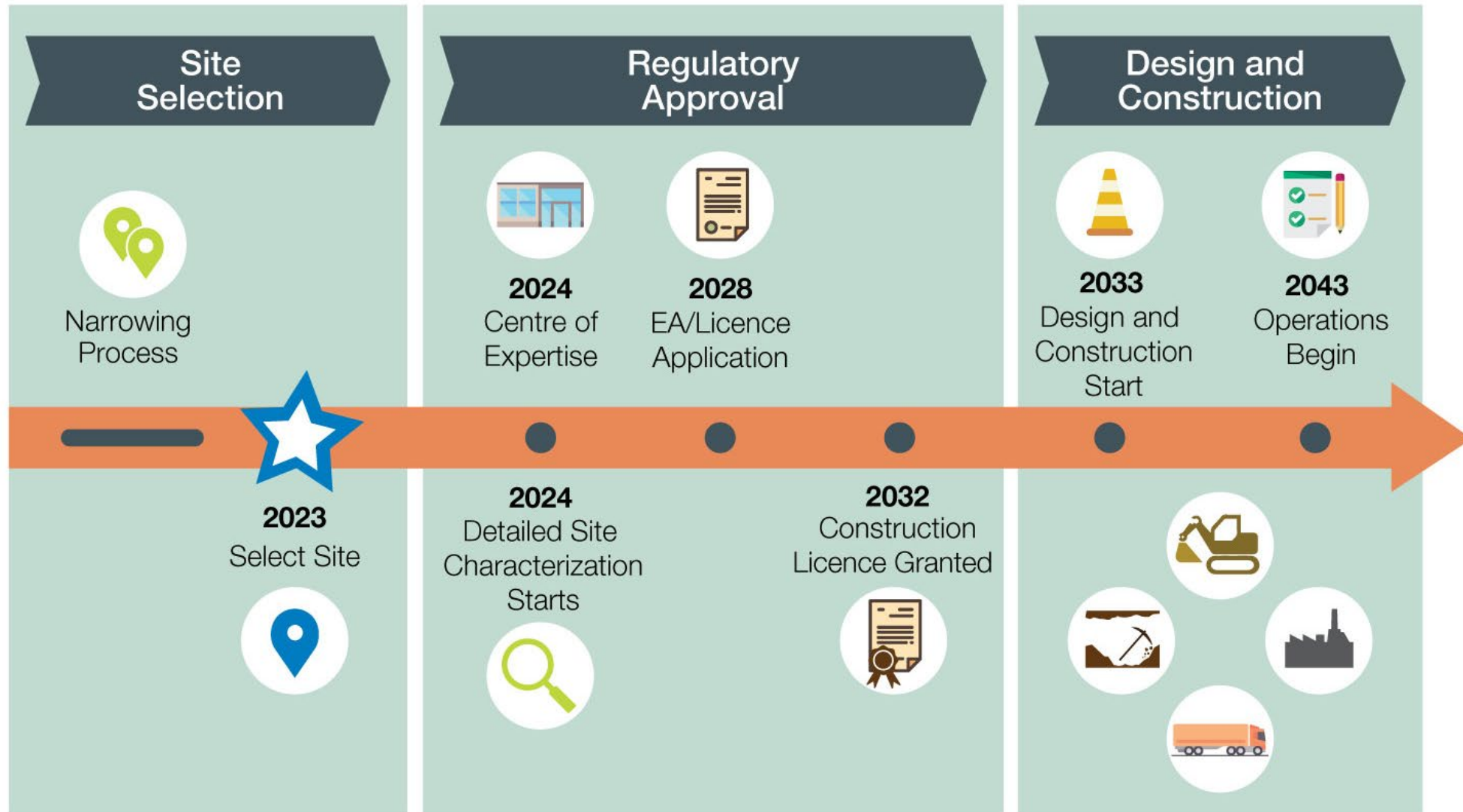
# Site Selection Process: Initiated May 2010

## **Seeking informed and willing host with suitable geology**

- Developed through two-year public dialogue
- Multi-stage technical and socio-economic assessment approach
- Phased process over many years
- Communities expressed interest to participate
- Communities can choose to leave the process

**The project will only proceed with the involvement of the interested community, First Nation and Métis communities in the area, and surrounding communities, working in partnership to implement it.**

# Project Timelines



# Criteria for Selecting a Preferred Site

## Safety

Confidence a deep geological repository can be developed with strong safety case at that location

## Transportation

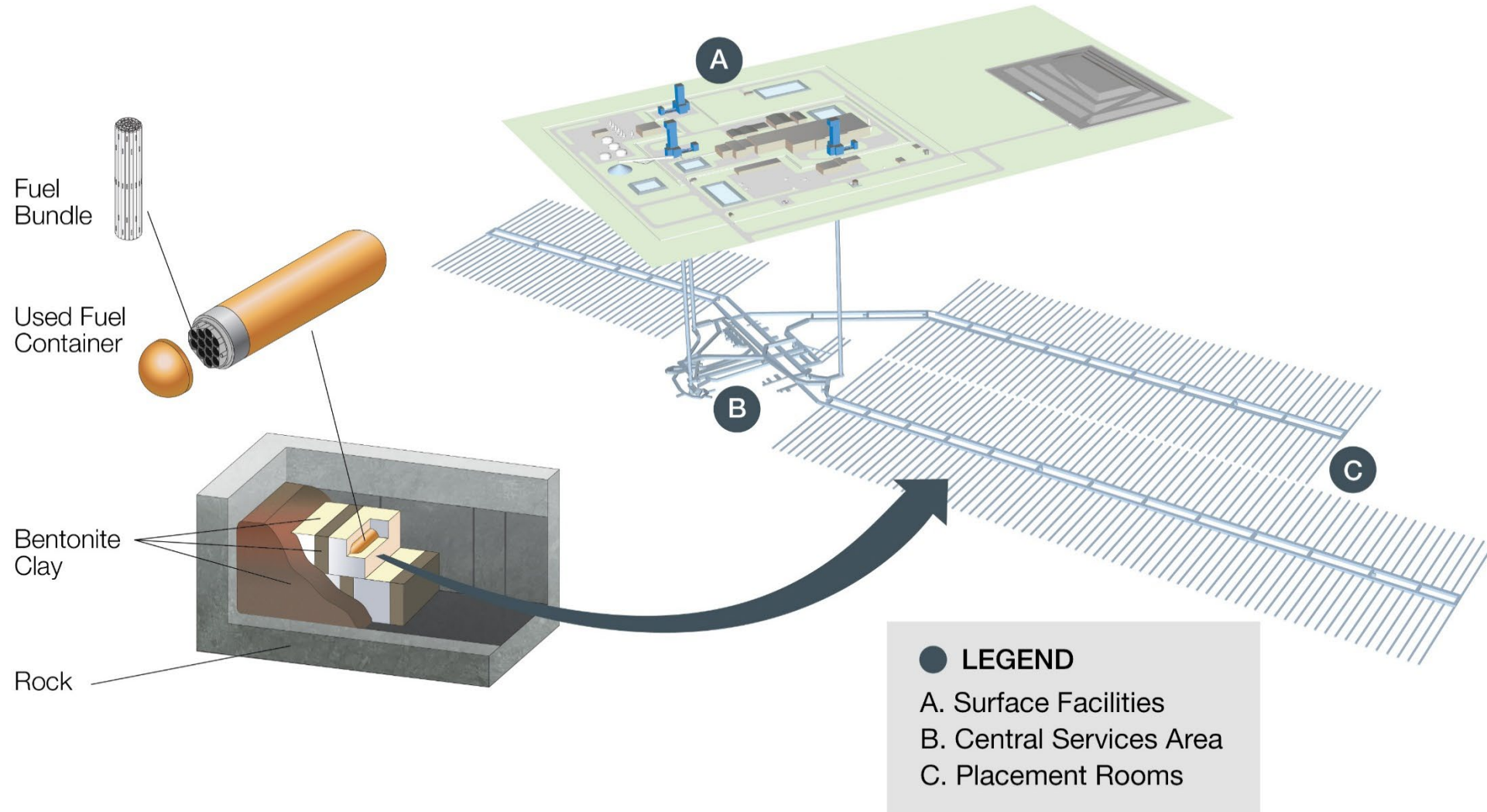
Confidence a safe, secure and socially acceptable transportation plan can be developed

## Partnership

Confidence a strong partnership can be developed with interested community, First Nation and Métis communities in the area, and surrounding communities



# Deep Geological Repository: Ensuring Safety



# Used CANDU Fuel

Used fuel bundle

- Uranium oxide fuel pellets
- Zircaloy alloy metal sheath

Durable solid materials

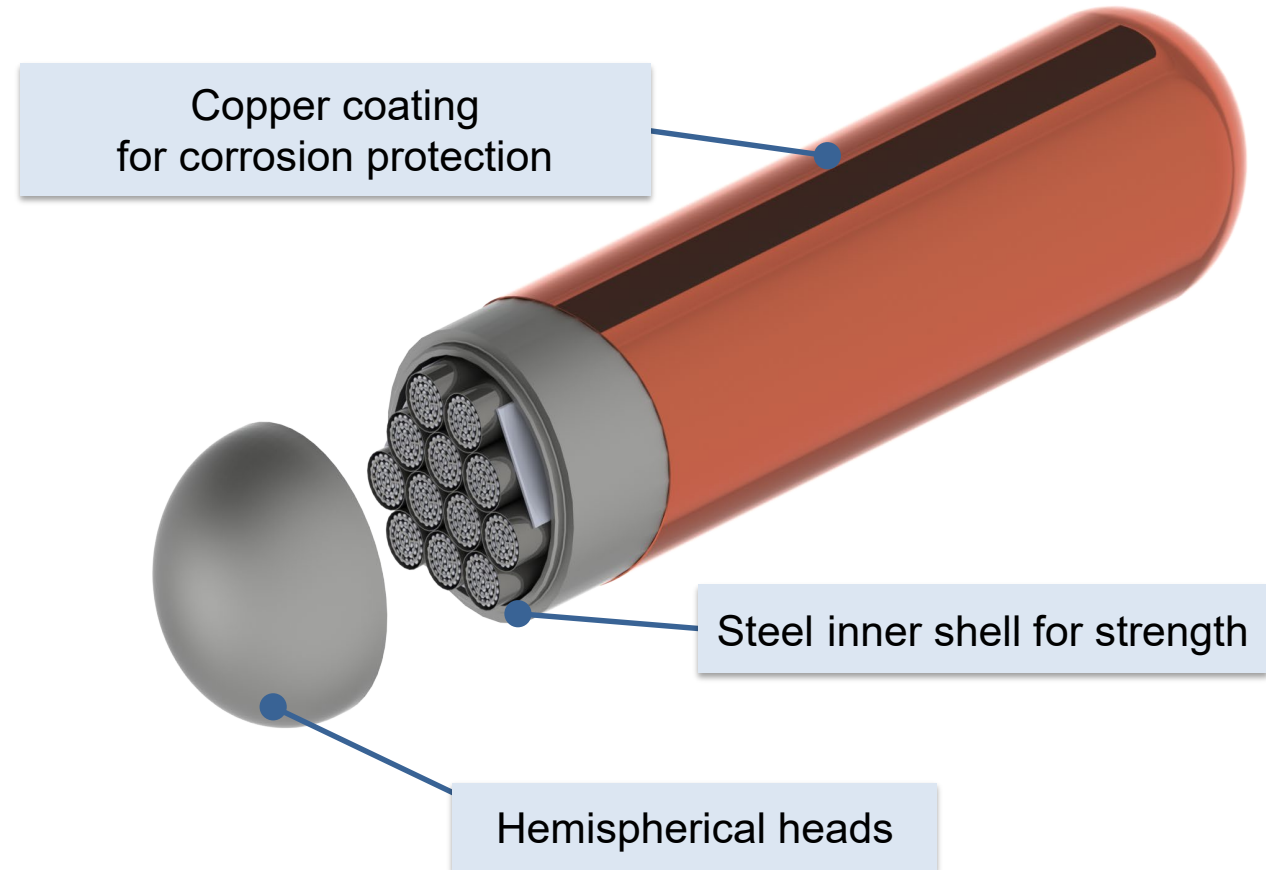
Producing some heat, but does not need water cooling at repository

Initially highly radioactive, decreasing naturally with time

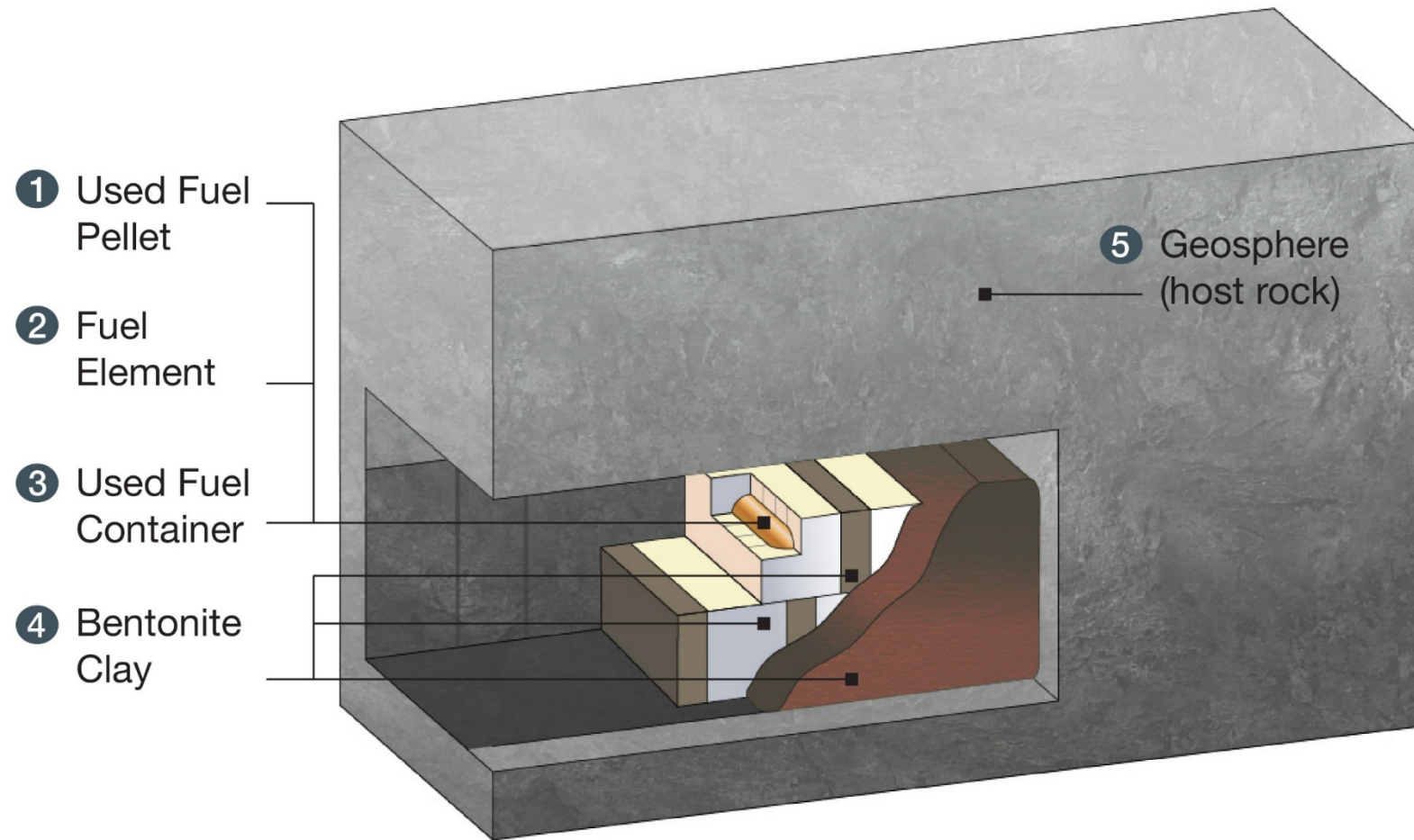


# Used Fuel Container

- Designed for present underground loads and future glacial loads



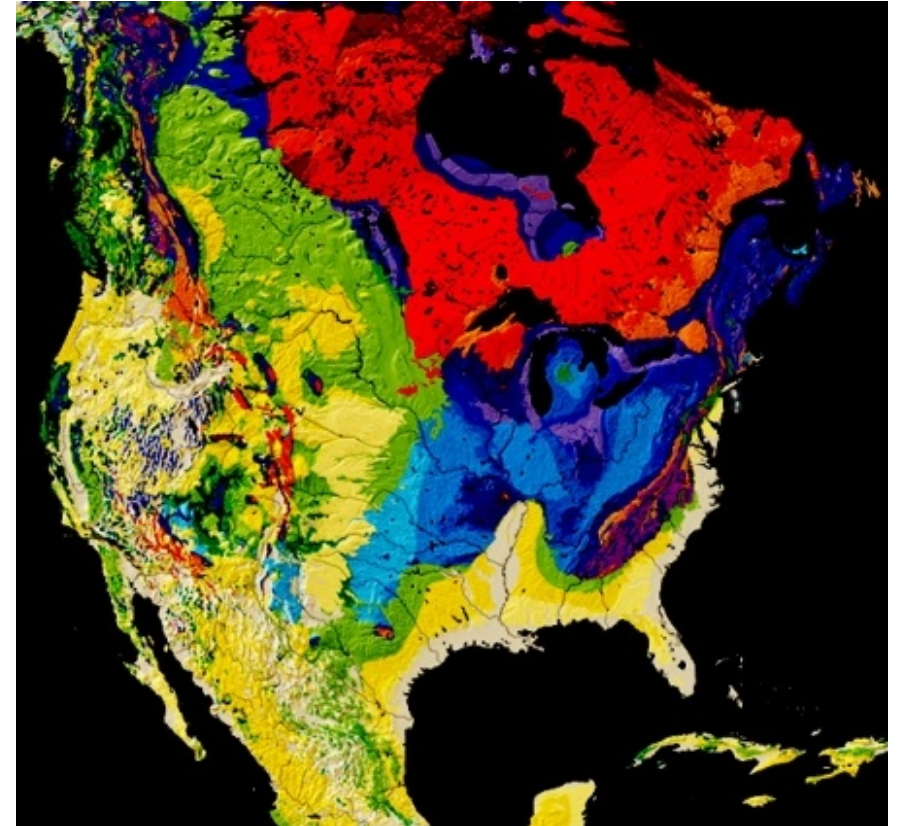
# Engineered Barrier System





# Key host rock characteristics

- Sufficient volume of competent rock at depth
- Low groundwater movement at repository depth
- Resilience to earthquakes
- Resilience to ice ages
- Resilience to land movement (erosion etc.)
- Favourable chemical composition of rock and water at repository depth

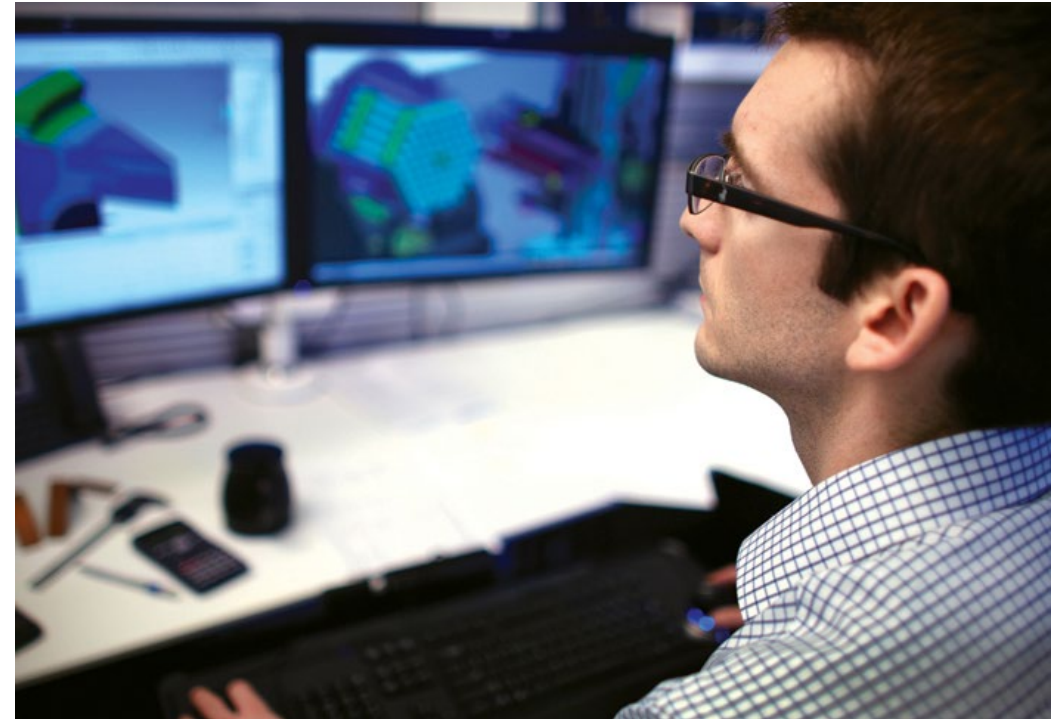


Age of bedrock, from youngest to oldest, is indicated by color: yellow, green, blue, red. Image: U.S. Geological Survey

# Monitoring

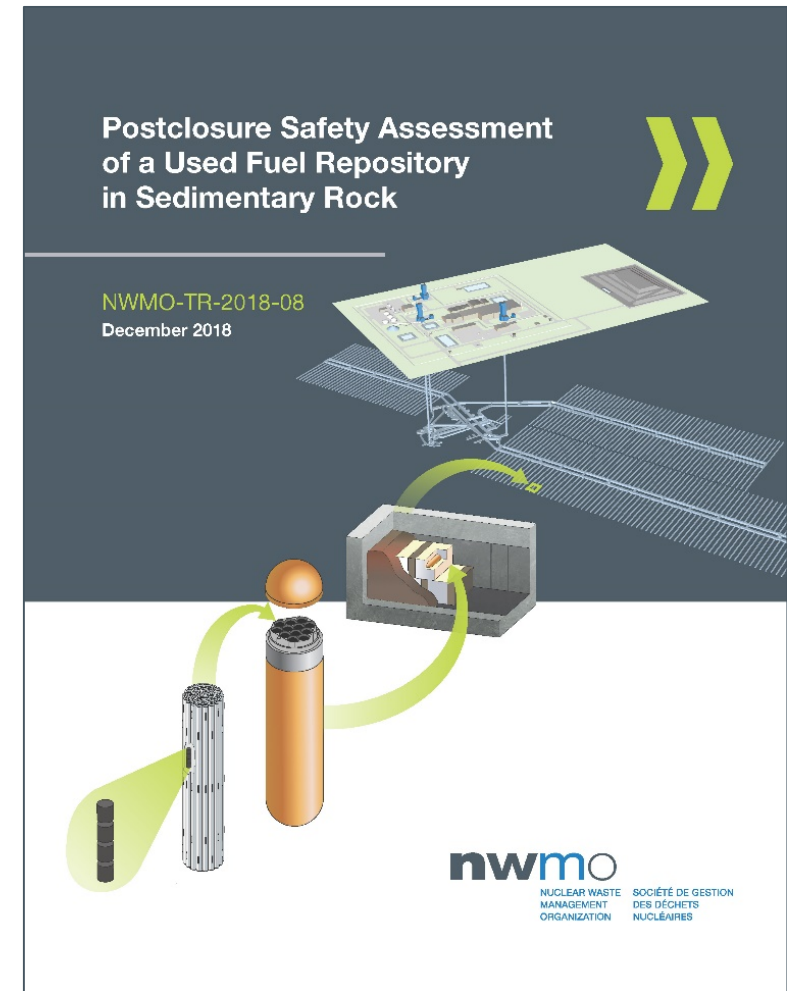
**After the repository has been filled with used fuel:**

- Extended monitoring period with underground accessible
- Repository sealed; site placed under institutional control
- Monitoring as long as desired, but safety is passive



# Long-term Safety Summary

- Durable wasteform
- Robust design and engineered barriers
- Repository depth
- Favourable host rock and site
- Monitoring





# Highlights

- ✓ National infrastructure project
- ✓ A deep geological repository provides long-term safety and protection of people and the environment, including bodies of water
- ✓ Funding for the project in place
- ✓ Continuous engagement of people to identify a safe and socially acceptable repository site
- ✓ Advancing discussions on partnership







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		September Actual	Month Budget	YTD - ACTUAL	YTD - Budget	Annual Budget	Variance	Percent of Budget Used
<b>Municipality Revenue</b>								
4050	Municipality Revenue	-798,369.84	-798,369.83	-7,239,562.75	-7,239,562.75	-9,805,197.00	0.00	74%
	Sarnia	-491,623.80	-491,623.80	-4,424,614.20	-4,424,614.20	-5,899,486.00	0.00	75%
	St. Clair Township	-208,848.33	-208,848.33	-1,879,634.89	-1,879,634.89	-2,506,180.00	0.00	75%
	Plympton-Wyoming	-39,458.50	-39,458.50	-355,026.42	-355,026.42	-473,261.00	0.00	75%
	Lambton Shores	-15,567.82	-15,567.82	-140,110.38	-140,110.38	-186,814.00	0.00	75%
	Warwick	-23,072.31	-23,072.31	-207,650.79	-207,650.79	-276,867.00	0.00	75%
	Point Edward	-19,799.08	-19,799.07	-178,191.67	-178,191.67	-237,589.00	0.00	75%
	Bluewater Power Distribution Corp.			0.00	0.00		0.00	
4120	Brooke-Alvinston Revenue		0.00	-82,210.02	0.00	-225,000.00	-82,210.02	37%
	<b>Total Municipalities Revenue</b>	<b>-798,369.84</b>	<b>-798,369.83</b>	<b>-7,267,438.37</b>	<b>-7,185,228.35</b>	<b>-9,805,197.00</b>	<b>-82,210.02</b>	<b>74%</b>
<b>Other Revenue</b>								
4130	Emergency Water Taking		0.00	0.00	0.00	0.00	0.00	0%
4150	LAWSS Other Revenue		0.00	0.00	0.00	0.00	0.00	0%
	Canada Coast Guard		0.00	-7,000.00	0.00	-7,000.00	-7,000.00	100%
	County of Lambton		0.00	-8,400.00	0.00	-7,000.00	-8,400.00	120%
	Bluewater Power- Reimbursement Progra,		1.00	-6,200.76	0.00	-6,200.76	-6,200.76	
4430	Misc. Revenue (HST Rebate)		0.00	0.00	0.00	-100,000.00	0.00	0%
4430	Misc. Revenue from OCWA		0.00	0.00	0.00	0.00	0.00	0%
4430	Misc. Revenue from St. Clair		0.00	0.00	0.00	0.00	0.00	0%
4430	Misc. Revenue from OPA		0.00	0.00	0.00	0.00	0.00	
	<b>Total Other Revenue</b>	<b>0.00</b>	<b>1.00</b>	<b>-21,600.76</b>	<b>0.00</b>	<b>-120,200.76</b>	<b>-21,600.76</b>	<b>18%</b>
<b>Investment Interest</b>								
4420	Interest Earned	-21,298.48	-15,000.00	-162,244.98	0.00	-72,000.00	-162,244.98	225%
<b>Project Expenses</b>								
5100	<b>Total Revenue</b>	<b>-819,668.32</b>	<b>-813,368.83</b>	<b>-7,451,284.11</b>	<b>-7,185,228.35</b>	<b>-9,997,397.76</b>	<b>-266,055.76</b>	<b>75%</b>
	<b>Project Expenses</b>	<b>192,181.25</b>	<b>0.00</b>	<b>995,839.15</b>	<b>1,200,131.21</b>	<b>9,477,383.00</b>	<b>70,834.84</b>	<b>11%</b>
	19-01 Eng Studies - WTP HVAC Dehumidification		0.00	13,737.60	0.00	20,000.00	-6,262.40	69%
	19-02 Eng Studies- WTP SCADA Mitigation (Filtration Controls)		0.00	0.00	0.00	5,000.00	-5,000.00	0%
	19-03 Eng Studies- WLPS Tank Re-Coating		0.00	0.00	0.00	30,000.00	-30,000.00	0%
	19-04 HVAC Admin Replacement Project	33,785.27	0.00	264,626.13	0.00	250,000.00	14,626.13	106%
	19-05 WTP PLC Conversion /upgrade construction		0.00	0.00	0.00	150,000.00	-150,000.00	0%
	19-06 WTP Exterior Transformers		0.00	0.00	0.00	500,000.00	-500,000.00	0%
	19-07 Transmission Watermain Leak Detection- Phase 1		0.00	0.00	0.00	230,000.00	-230,000.00	0%
	19-08 Flow Restruction/Chamber Removal Project(x6)		0.00	0.00	0.00	175,000.00	-175,000.00	0%
	R19-01 Engineering Study - LAWSS Accessibility Review	7,562.05	1.00	7,562.05	0.00	0.00	7,562.05	
	R19-02 Engineering Study - CDM Study		2.00	9,153.31	0.00	0.00	9,153.31	
	R19-03 Engineering Study - Electrical Reliability Study	4,960.80	3.00	15,874.56	0.00	0.00	15,874.56	
	<b>Tasks carried over from 2018</b>	<b>145,873.13</b>	<b>0.00</b>	<b>717,475.42</b>	<b>644,672.88</b>	<b>5,157,383.00</b>	<b>70,834.84</b>	<b>14%</b>
	14-03 Polymer Systeme Replacement		0.00	1,967.71	0.00	0.00	1,967.71	
	14-09 Main Plant HVAC		0.00	0.00	73,422.88	587,383.00	-73,422.88	0%
	17-05 Engineering Design for Emergency Generators	45,792.00	0.00	66,398.40	31,250.00	250,000.00	35,148.40	27%
	18-01 Rebuild 32" Ross Valve at WLBS		0.00	0.00	8,750.00	70,000.00	-8,750.00	0%
	18-02 New Generators Replacement (Including Air Louvers		0.00	258,847.74	500,000.00	4,000,000.00	-241,152.26	6%
	18-03 SCADA Radio Replacement Work (Installation)	96,413.12	0.00	328,191.83	18,750.00	150,000.00	309,441.83	219%
	18-04 Engineering Studies	3,668.01	0.00	62,069.74	12,500.00	100,000.00	49,569.74	62%
					0.00			
	<b>Distribution Repairs</b>	<b>6,810.21</b>	<b>3,000.00</b>	<b>39,998.76</b>	<b>25,000.00</b>	<b>200,000.00</b>	<b>14,998.76</b>	<b>20%</b>
	<b>Facility Maintenance</b>		<b>6,000.00</b>	<b>5,950.42</b>	<b>3,750.00</b>	<b>30,000.00</b>	<b>2,200.42</b>	

5125

	September Actual	Month Budget	YTD - ACTUAL	YTD - Budget	Annual Budget	Variance	Percent of Budget Used
Major Maintenance	74,665.14	0.00	145,735.21	15,458.33	240,000.00	91,608.08	61%
MM19-01 WTP HMI Computer Replacement		0.00	0.00	833.33	10,000.00	-833.33	0%
MM19-02 WTP Crack Injection Leak Sealing	38,668.80	0.00	38,668.80	3,583.33	43,000.00	35,085.47	0%
MM19-03 WTP Emergency Lights Sealing		0.00	0.00	125.00	1,500.00	-125.00	0%
MM19-04 WTP Sluice gate Inspection and Maintenance		0.00	35,942.44	1,250.00	15,000.00	34,692.44	240%
MM19-05 WTP EQ Tank Cleanout Inspection	20,711.98	0.00	20,711.98	833.33	10,000.00	19,878.65	207%
MM19-06 WTP Eye Wash Station Upgrade		0.00	11,031.63	1,666.67	20,000.00	9,364.96	55%
MM19-07 WLPS Electrical Inspection- 3rd Party Contractor	8,939.62	0.00	8,939.62	833.33	10,000.00	8,106.29	89%
MM19-08 WLPS Motor HLP-2 (VFD Compliant)		0.00	0.00	2,083.33	25,000.00	-2,083.33	0%
MM19-09 WLPS Louvre Actuator Standby Generator Room		0.00	0.00	2,083.33	25,000.00	-2,083.33	0%
MM19-10 ELPS Pump #1 (Watford) Refurbishment		0.00	0.00	833.33	10,000.00	-833.33	0%
MM19-11 ELPS Electrical Inspection- 3rd Party Contractor		0.00	4,149.77	416.67	5,000.00	3,733.10	83%
MM19-12 Vibration Monitoring Program	1,790.98	0.00	1,790.98	83.33	1,000.00	1,707.65	179%
MM19-13 Valve 16" at Camalchie Rd and London Line	4,299.36	0.00	4,299.36	833.33	10,000.00	3,466.03	43%
MM19-14 Hydrant installation London Line (blow off)		0.00	0.00	1,250.00	15,000.00	-1,250.00	0%
MM19-15 Chamber (flow) abandonment		0.00	8,276.93	1,250.00	15,000.00	7,026.93	55%
MM19-16 Waterline Makers Rural		0.00	3,347.37	250.00	3,000.00	3,097.37	112%
MM19-17 Air Relief valves		0.00	1,110.20	125.00	1,500.00	985.20	74%
MM19-18 Concrete Pipe end closures and 20" lengths		0.00	0.00	833.33	10,000.00	-833.33	0%
MM19-19 Repair Clamps & Appurtenances		0.00	7,466.13	833.33	10,000.00	6,632.80	75%
MM18-12 Hydrant Replacement In Pt.Edward	254.40	0.00	254.40	0.00		254.40	
OCWA Operating & Maintenance	368,284.00	368,284.00	3,314,556.00	368,261.92	4,419,143.00	2,946,294.08	75%
Flow Reconciliations		0.00	0.00	12,500.00	150,000.00	-12,500.00	0%
LAWSS Wages & Benefits	10,177.85	32,736.48	113,751.26	20,833.33	250,000.00	92,917.93	46%
WSIB	336.50	0.00	915.49	125.00	1,500.00	790.49	61%
Audit Fees		0.00	14,265.23	1,166.67	14,000.00	13,098.56	102%
Consulting		1.00	1,989.12	208.33	2,500.00		
Accounting & Legal	1,064.66	1,419.50	12,936.46	1,666.67	20,000.00	11,269.79	65%
Advertising & Promotions		0.00	1,060.53	16.67	200.00	1,043.86	0%
Membership Fees		0.00	407.04	166.67	2,000.00	240.37	20%
Education / Conference		1,550.00	3,842.41	333.33	4,000.00	3,509.08	96%
Courier & Postage		0.00	112.25	41.67	500.00	70.58	22%
Income Taxes		0.00	0.00	0.00	0.00	0.00	0%
Property Taxes	962.81	9,000.00	172,920.49	14,583.33	175,000.00	158,337.16	99%
Property Administration	7,825.75	300.00	8,853.36	1,250.00	15,000.00	7,603.36	59%
Insurance		0.00	21,772.80	1,750.00	21,000.00	20,022.80	104%
Interest & Bank Charges		0.00	0.00	8.33	100.00	-8.33	0%
Office Supplies	136.88	0.00	4,498.19	250.00	3,000.00	4,248.19	150%
Computer Software		13,000.00	18,478.58	1,333.33	16,000.00	17,145.25	115%
Internet	85.43	85.00	683.44	125.00	1,500.00	558.44	46%
GIS and Internet Services		0.00	0.00	183.33	2,200.00	-183.33	0%
Travel (Includes Mileage)		18.50	772.02	125.00	1,500.00	647.02	51%
Vehicle Expenses		0.00	0.00	1,041.67	12,500.00	-1,041.67	0%
Telephone	167.16	140.00	1,259.23	125.00	1,500.00	1,134.23	84%
Mobile Phone	123.17	375.00	1,941.41	125.00	1,500.00	1,816.41	129%
Meals & Entertainment	269.27	76.00	1,642.76	208.33	2,500.00	1,434.43	66%
Miscellaneous Expense		270.00	1,250.00	166.67	2,000.00	1,083.33	63%
St.Clair Conservation Consult		0.00	0.00	2,500.00	30,000.00		
Total Expenses	663,090.08	430,255.48	4,885,431.61	2,314,357.67	20,223,909.00	3,269,532.03	24%

**Lambton Area Water Supply System**  
**Cash Balance Sheet as at September 30,2019**

<b>LAWSS Bank Account on September 1, 2019</b>	<b><u>10,248,877.80</u></b>
LAWSS Accounts Receivable - Received	<u>1,008,857.23</u>
	<u>11,257,735.03</u>
<b>LAWSS Accounts Payable - Paid</b>	897,683.26
LAWSS Accounts Payable - Outstanding	<u>0.00</u>
	<u>897,683.26</u>
<b>LAWSS Bank Account on September 30, 2019</b>	<b><u>10,360,051.77</u></b>
<b>Adjusted Bank Balance on September 30,2019</b>	<b><u>10,360,051.77</u></b>
<b>Cash in Reserve</b>	<b><u>1,994,873.22</u></b>

Capital Project	Budget Approved	Board Approved	Total	Consultant/Contractor	PO/Contract Fee	Spent	Unspent	Status
19-01 Eng Studies - WTP HVAC Dehumidification	\$ 20,000.00		\$ 20,000.00			\$13,737.60	\$6,262.40	Complete
19-02 Eng Studies- WTP SCADA Mitigation (Filtration Controls)	\$ 5,000.00		\$ 5,000.00			\$0.00	\$5,000.00	Planning
19-03 Eng Studies- WLPS Tank Re-Coating	\$ 30,000.00		\$ 30,000.00			\$0.00	\$30,000.00	RFP Awarded
19-04 HVAC Admin Replacement Project	\$ 250,000.00		\$ 250,000.00			\$264,626.13	-\$14,626.13	In Progress
19-05 WTP PLC Conversion /upgrade construction	\$ 150,000.00		\$ 150,000.00			\$0.00	\$150,000.00	Planning
19-06 WTP Exterior Transformers	\$ 500,000.00		\$ 500,000.00			\$0.00	\$500,000.00	Cancelled
19-07 Transmission Watermain Leak Detection- Phase 1	\$ 230,000.00		\$ 230,000.00			\$0.00	\$230,000.00	Cancelled
19-08 Flow Restruction/Chamber Removal Project(x6)	\$ 175,000.00		\$ 175,000.00			\$0.00	\$175,000.00	Cancelled
R19-01 Eng Study - LAWSS Accessibility Study	\$ -		\$ -			\$7,562.05	\$0.00	Complete
R19-02 Eng Study - CDM Study	\$ -		\$ -			\$9,153.31	\$0.00	Complete
R19-03 Eng Study - Electrical Reliability	\$ -		\$ -			\$15,874.56	\$0.00	In Progress
\			\$ -					
<b>Projects Carry forward</b>								
14-03 Polymer System Replacement						\$ 1,967.71		Complete
17-05 Engineering Design for Emergency Generators	\$250,000.00	\$115,000.00	\$ 365,000.00	EXP Services Inc.,	PO0228	\$108,361.91	\$256,638.09	In Progress
18-01 Rebuild 32" Ross Valve at WLBS	\$ 70,000.00		\$ 70,000.00			\$0.00	\$70,000.00	Delayed
18-02 New Generators Replacement (Including Air Louvers)	\$ 4,000,000.00	\$ 1,500,000.00	\$ 5,500,000.00			\$ 258,847.74	\$5,241,152.26	RFP Awarded
18-03 SCADA Radio Replacement Work (Installation)	\$ 150,000.00	\$ 362,156.60	\$ 512,156.60	Experteers	PO00237, PO0233	\$380,583.94	\$131,572.66	In Progress
18-04 Engineering Studies	\$ 100,000.00	\$ 34,925.42	\$ 134,925.42	WSP,AECOM, Megacomm	PO00238	\$136,623.88	-\$1,698.46	Complete
<b>Major Maintenance</b>								
MM18-12 Hydrant Replacement in P.E	\$ -		\$ -	OCWA		\$ 254.40	\$0.00	Complete
MM19-01 WTP HMI Computer Replacement	\$ 10,000.00		\$ 10,000.00	OCWA			\$10,000.00	In Progress
MM19-02 WTP Crack Injection Leak Sealing	\$ 43,000.00		\$ 43,000.00	OCWA		\$ 38,668.80	\$4,331.20	Complete
MM19-03 WTP Emergency Lights Sealing	\$ 1,500.00		\$ 1,500.00	OCWA			\$1,500.00	In Progress
MM19-04 WTP Sluice gate Inspection and Maintenance	\$ 15,000.00		\$ 15,000.00	OCWA		\$ 35,942.44	-\$20,942.44	Complete
MM19-05 WTP EQ Tank Cleanout Inspection	\$ 10,000.00		\$ 10,000.00	OCWA		\$20,711.98	-\$10,711.98	Complete
MM19-06 WTP Eye Wash Station Upgrade	\$ 20,000.00		\$ 20,000.00	OCWA		\$11,031.63	\$8,968.37	Complete
MM19-07 WLPS Electrical Inspection- 3rd Party Contractor	\$ 10,000.00		\$ 10,000.00	OCWA		\$8,939.62	\$1,060.38	Complete
MM19-08 WLPS Motor HLP-2 (VFD Compliant)	\$ 25,000.00		\$ 25,000.00	OCWA			\$25,000.00	Cancelled
MM19-09 WLPS Louvre Actuator Standby Generator Room	\$ 25,000.00		\$ 25,000.00	OCWA,			\$25,000.00	In Progress
MM19-10 ELPS Pump #1 (Watford) Refurbishment	\$ 10,000.00		\$ 10,000.00	OCWA			\$10,000.00	Cancelled
MM19-11 ELPS Electrical Inspection- 3rd Party Contractor	\$ 5,000.00		\$ 5,000.00	OCWA		\$4,149.77	\$850.23	Complete
MM19-12 Vibration Monitoring Program	\$ 1,000.00		\$ 1,000.00	OCWA		\$1,790.98	-\$790.98	Complete
MM19-13 Valve 16" at Camalchie Rd and London Line	\$ 10,000.00		\$ 10,000.00	OCWA		\$4,299.36	\$5,700.64	Complete
MM19-14 Hydrant installation London Line (blow off)	\$ 15,000.00		\$ 15,000.00	OCWA			\$15,000.00	In Progress
MM19-15 Chamber (flow) abandonment	\$ 15,000.00		\$ 15,000.00	OCWA		\$8,276.93	\$6,723.07	Complete
MM19-16 Waterline Makers Rural	\$ 3,000.00		\$ 3,000.00	OCWA		\$3,347.37	-\$347.37	Complete
MM19-17 Air Relief valves	\$ 1,500.00		\$ 1,500.00	OCWA		\$1,110.20	\$389.80	Complete
MM19-18 Concrete Pipe end closures and 20" lengths	\$ 10,000.00		\$ 10,000.00	OCWA			\$10,000.00	Cancelled
MM19-19 Repair Clamps & Appurtenances	\$ 10,000.00		\$ 10,000.00	OCWA		\$7,466.13	\$2,533.87	Complete



**Ontario Clean Water Agency**  
**Agence Ontarienne Des Eaux**

## **2019 Client Monthly Operations Report**

**Lambton Area Water Supply System**

**October 31, 2019**

## Facility Description

Facility Name: Lambton Area Water Supply System  
Facility Type: Municipal  
Classification: Class 4 Water Treatment  
Class 4 Water Distribution  
Title Holder: Municipality  
Operation Status: OCWA  
Sr. Operations Manager: Dave Hunt (519) 344-7429 Ext. 251  
Business Development Manager: Susan Budden  
Capacity (m3/d): 181844  
Service Area: City of Sarnia, Village of Point Edward, Township of St. Clair, Township of Warwick-Watford, Municipality of Lambton Shores, Town of Plympton-Wyoming  
Service Population: 104,162  
In service Date: 1975

## Operational Description

The Lambton WTP is a direct filtration surface water facility consisting of chemically assisted filtration with disinfection. The facility consists of an intake system (and alternate intake), a low lift pump station, a treatment system and distribution pumping system situated in the City of Sarnia. Water is drawn into the plant (a zebra mussel system is available as needed) and screened at the surge wells (pre-disinfection is utilized). Water flows to the pump wells where a total of 4 vertical turbine pumps are located and used as needed which pump to a discharge header. Coagulant is added, flashed mixed (PAC is also applied at this location when needed) the raw water is then flocculated (Polymer is added at the flocculation trains as needed) and diverted to filtration (10 dual media filters). The gravity fed filter effluents combine into two clear wells where sodium hypochlorite is injected. To maximize the contact time the water is diverted to the two baffled reservoirs (in series). Six vertical turbine pumps are available for supplying the distribution demand as needed. The entire water treatment system is continuously monitored (via SCADA) with continuous on-line analyzers equipped throughout the processes. The utility serves a large part of Lambton County and has over 250 kilometers of pipeline of various sizes and materials. There is also the East Lambton Booster Station with 9,000 cubic meters of storage capacity which is remotely monitored and controlled from the Lambton WTP via SCADA. During the 1997 calendar year the West Lambton Pumping Station, with the largest above ground water storage in the province with a capacity of 90,000m<sup>3</sup>, was brought on-line. This pumping station is also remotely monitored and controlled from Lambton WTP via SCADA. The LAWSS distribution system has 5 towers/elevated tanks that the utility monitors via SCADA. In 2007 the Residual Management System (RMS) which treats backwash effluent was brought on-line.

## Treatment Process

Pre-treatment Chemicals:	Prechlorination (sodium hypochlorite); Zebra mussel control
Coagulation/Flocculation:	Aluminum Sulphate (Clar+Ion A7)
Filtration:	Dual Media; Filter Aid polymer
Disinfection Method:	Sodium hypochlorite
Post Treatment Chemical Addition:	Fluoride
Waste Residue Management:	Filter backwash effluent is treated by an Actiflo system.
Waste effluent/residue Disposal:	Sludge is hauled to Sarnia WPCP on a needed basis.

Inspections: None

## Maintenance, Operations & Distribution Works Summary 2019

### Maintenance

#### October:

Date	(P)reventative Capital Major Mtc (C)orrective	Description
Oct 1	P	Ran generator at East Lambton Pumping Station.
Oct 1	C	Repaired retaining wall at Port Lambton Tower.
Oct 2	C	Installed new transformer for vacuum pump at East Lambton Pumping Station.
Oct 2	P	Completed annual inspection on Highlight Room butterfly valves #13 and 15 and discharge header.
Oct 2	P	Completed annual inspection on all Highlift Pump globe valves.
Oct 2	P	Completed monthly maintenance on West Lambton Pumping Station chlorine analyzers.
Oct 2	P	Completed annual inspection on Highlift pressure relief valves #33 and 45.
Oct 3	P	Completed monthly inspection on emergency showers and eyewash stations at the water treatment plant.
Oct 3	P	Completed monthly maintenance on all water treatment plant chlorine analyzers.
Oct 3	P	Pumped out rain water from HFS and diesel containment areas
Oct 4	P	Ran generators at West Lambton Pumping Station.
Oct 4	C	Cleared and fixed fault on sodium bisulphite pump #1.
Oct 7	C	Replaced batteries on generator #2 at West Lambton Pumping Station.



Oct 7-8	<b>P</b>	Sentry fire in to do annual checks at all facilities.
Oct 8	<b>Major mtc</b>	Conducted test of HMI replacement.
Oct 7-9	<b>P</b>	Completed monthly maintenance on all turbidity analyzers at the water treatment plant.
Oct 9	<b>Major mtc</b>	Installed Wonder Ware licenses for HMI replacement.
Oct 9	<b>P</b>	Completed semi-annual inspection of highlift pumps 6 and 3.
Oct 9	<b>P</b>	Conducted annual inspection of highlift discharge valve gear drive.
Oct 9	<b>P</b>	Completed monthly inspection of water treatment plant compressor.
Oct 10	<b>P</b>	Tested generators at West Lambton Pumping Station
Oct 10	<b>P</b>	Completed annual inspection of air handling unit above Health and Safety Room.
Oct 11	<b>C</b>	Replaced belt on air handling unit #3 in Highlift area.
Oct 11	<b>P</b>	Completed annual inspection of HFS dosing pumps.
Oct 15	<b>C</b>	Repaired service leaking service line near Valve House hallway.
Oct 15-16	<b>P</b>	Completed monthly inspection of all floc gear drives.
Oct 17	<b>P</b>	Completed monthly inspection of travelling screens in Low Lift Room.
Oct 18	<b>P</b>	Conducted monthly inspection of vacuum priming system at East Lambton Pumping Station.
Oct 18	<b>C</b>	Installing new plumbing for storm drain dechlorination project.
Oct 21	<b>P</b>	Completed annual cleanout of East alum tank.
Oct 21	<b>P</b>	Completed monthly maintenance on pH probes at the water treatment plant.
Oct 22	<b>P</b>	Completed monthly calibration verification of all hand held chlorine analyzers.
Oct 22	<b>P</b>	Completed monthly calibration of East Lambton Pumping Station chlorine analyzers.
Oct 22	<b>P</b>	Completed monthly maintenance on fluoride analyzer.
Oct 23	<b>P</b>	Completed monthly maintenance on streaming current analyzer.
Oct 23	<b>C</b>	Replaced heater element on Cargocaire unit at water treatment plant.
Oct 23-29	<b>P</b>	Completed annual calibration of all water treatment plant level transmitters.
Oct 24	<b>C</b>	Installing new plumbing for storm drain dechlorination project.
Oct 24-31	<b>C</b>	Upgrading T12 ballasts to T8 ballasts at West Lambton Pumping Station.
Oct 28	<b>C</b>	Installing new plumbing for storm drain dechlorination project.
Oct 30	<b>P</b>	Two year annual MCC checks on MCC 2 and 3 at the water treatment plant complete.
Oct 31	<b>C</b>	Installed new level transmitter probe on North Clearwell.

## Operations and Compliance

### October:

Oct 1	Annual calibration and inspection of all Hach lab equipment completed by Hach Service.
Oct 1	Monthly TSS sample taken in the Residual Management System.
Oct 2	Changed PAC bag.
Oct 3	Lead reports completed and sent out.
Oct 3	Bisulphite pump #1 failed.
Oct 8	Prechlorine pumps 1 and 3 failed due to air lock. Pumps and panel was reset with no issues.
Oct 8	Tested RMS and storm water drain for total chlorine residuals. No issues.
Oct 16	Watford recirculation line on for hydrant replacement on Zion Line.
Oct 17	Took bacteriological sample for City of Sarnia watermain break repair on Scott Rd.
Oct 17	Switched over sample pumps for Stations 1, 5 and 6.
Oct 19	Ran Pump 1 at West Lambton Pumping Station.
Oct 20	Ran Pump 5 at West Lambton Pumping Station.
Oct 21	Pre chlorine pump failed. Pump and panel was reset with no issues.
Oct 22	Quarterly test of Critical Control Point Limits completed.
Oct 22	Pre chlorine pump #1 failed due to air lock. Pump and panel was reset with no issues.
Oct 23	Resample 20 weekly bacteriological due to delayed shipment by Purolator.
Oct 24	Conducted monthly test of water treatment plant polymer system.
Oct 25	South clearwell pump #2 failed with P+. Pump and panel was reset without issues.
Oct 26	Ran Pumps 1 and 5 at West Lambton Pumping Station.
Oct 26	South clearwell pump failed with air lock. Pump and panel were reset without issues.
Oct 27	East Lambton hypo pump failed. Pump was reset the next day during the sample run.
Oct 28	Shut down water to kiosk at water treatment plant for winter.

## Distribution

### October:

Oct 1	Meter reads for September completed.
Oct 1	Site meet for work near Bear Creek Bridge.
Oct 1	Flushing hydrants in Plympton-Wyoming.
Oct 2	Flushing hydrants in Sarnia and Warwick.
Oct 2	Site meet for bore hole work on LaSalle Line.
Oct 4	Valve operations and chamber checks in Plympton-Wyoming.
Oct 8	Onsite for third party work at Indian Rd overpass.
Oct 8	Pump out chambers in preparation for hydrant replacement on Zion Line.
Oct 9	Valve operations and chamber checks in Plympton-Wyoming.
Oct 10	Valve operations and chamber checks in Plympton-Wyoming and Warwick Watford and on White Line in St Clair Township.

Oct 11	Valve operations and chamber checks in Plympton-Wyoming on Oil Heritage.
Oct 16	Replacing hydrant #21 on Zion Line.
Oct 22	Valve operations and chamber checks on London Line in Sarnia.
Oct 22	Painted and pumped out hydrants on Zion Line.
Oct 23	Replaced air relief valve on chamber on London Line.
Oct 23	Onsite for third party work at Indian Rd Tower.
Oct 24	Onsite for third party work at 4738 Confederation Line for crossing of LAWSS watermain.
Oct 24	Conducting valve and chamber checks in the City of Sarnia.
Oct 28	Hydrant isolation repair at 3955 Leeland Dr in St Clair Township.
Oct 29	Onsite for third party work for sinkhole repair at 4046 St Clair Parkway in St Clair Township.
Oct 29	Onsite for daylighting of LAWSS 36" watermain on Michigan Ave.
Oct 30	Onsite for crossing of LAWSS watermain on Murphy Rd.
Oct 30	Valve operations and chamber checks in Plympton-Wyoming.
Oct 31	Completed meter reads for October.

### Call Outs 2019

**October:** none

### One Call Utility Locates

These numbers represent the number of locate notifications that were cleared from LAWSS assets

Number of Locates/Month

YEAR	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
2018	50	64	107	149	189	166	163	146	141	163	111	58
2019	69	62	104	164	189	149	182	153	121	148		

### RMS Sludge Haulage

These numbers represent total monthly amounts of sludge produced by the Residual Management System and hauled to Sarnia WPCP

Amount of sludge produced per month in m<sup>3</sup>

YEAR	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
2018	493	300	239	320	230	318	240	240	79	227	238	234
2019	236	158	237	236	216	158	313	237	160	160		

### Required Monthly Reports

**Monthly System Flows-** see separate attached summary report

**Workplace Management System Reports** – see separate attached reports

**Performance Data and Compliance** – See separate attached report

### Required Financial Reports

**Quarterly Financial Summary** –Q4 due January 30, 2020

**Semi-Annual “Schedule G” Reconcilable Commodities Report** –Due January 30, 2020

### Lambton Area WT 2019

For the period of Jan 1, 2019 to September 30, 2019

Org. # : 5544

Project # : LAWSSM5544W-002

Date : 9/30/19

	2018 Actuals	2019 Budget	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	YTD Budget	YTD Actuals	Variance (< YTD budget)
<b>OPERATING CHARGES</b>									
<b>OCWA Service Fee</b>	<b>2,112,364.00</b>	<b>2,166,229.00</b>	541,557.25	541,557.25	541,557.25		<b>1,624,671.75</b>	<b>1,624,671.75</b>	<b>0.00</b>
Diesel	<b>5,416.15</b>	<b>9,000.00</b>	0.00	0.00	0.00		<b>6,750.00</b>	<b>0.00</b>	<b>-6,750.00</b>
Insurance**	<b>94,276.44</b>	<b>91,050.24</b>	22,762.56	22,762.56	22,762.56		<b>68,287.68</b>	<b>68,287.68</b>	<b>0.00</b>
Point Edward Sewage	<b>89,354.82</b>	<b>91,000.00</b>	0.00	0.00	85,869.98		<b>91,000.00</b>	<b>85,869.98</b>	<b>-5,130.02</b>
Chemicals	<b>246,867.34</b>	<b>266,463.00</b>	48,878.91	52,888.97	87,581.19		<b>199,847.25</b>	<b>189,349.07</b>	<b>-10,498.18</b>
Hydro	<b>1,369,006.60</b>	<b>1,640,000.00</b>	338,436.26	328,673.94	350,433.64		<b>1,230,000.00</b>	<b>1,017,543.84</b>	<b>-212,456.16</b>
Sludge Haulage	<b>129,507.29</b>	<b>155,401.00</b>	25,876.85	25,034.58	29,116.59		<b>116,550.75</b>	<b>80,028.02</b>	<b>-36,522.73</b>
<b>TOTAL OPERATING COSTS</b>	<b>4,046,792.64</b>	<b>4,419,143.24</b>	<b>977,511.83</b>	<b>970,917.30</b>	<b>1,117,321.21</b>	<b>0.00</b>	<b>3,337,107.43</b>	<b>3,065,750.34</b>	<b>-271,357.09</b>
<b>TOTAL OPERATING CHARGES</b>	<b>4,046,792.64</b>	<b>4,419,143.24</b>	<b>977,511.83</b>	<b>970,917.30</b>	<b>1,117,321.21</b>	<b>0.00</b>	<b>3,337,107.43</b>	<b>3,065,750.34</b>	<b>-271,357.09</b>

Note: The information contained in this report is current as at September 30, 2019

Ontario Clean Water Agency  
Time Series Info Report

From: 01/01/2019 to 31/10/2019

Report extracted 11/14/2019 11:59

Facility Org Number: 5544  
Facility Works Number: 210000906  
Facility Name: LAMBTON AREA WATER SUPPLY SYSTEM (LAWSS)  
Facility Owner: Local Services Board: LAMBTON AREA WATER SUPPLY SYSTEM  
Facility Classification: Class 4 Water Treatment  
Receiver:  
Service Population: 100000.0  
Total Design Capacity: 181844.0 m3/day

	01/2019	02/2019	03/2019	04/2019	05/2019	06/2019	07/2019	08/2019	09/2019	10/2019	Total	Avg	Max	Min
Coagulation/Floculation / Coagulant Dosage-Calculated - mg/L														
Max IH	38.605	29.517	32.268	31.172	26.559	26.095	23.836	25.822	22.272	31.139			38.605	
Mean IH	26.801	24.002	23.839	22.375	22.91	21.551	20.805	20.898	19.819	21.006		22.396		
Min IH	21.912	18.131	18.009	17.868	19.041	18.452	18.086	19.041	17.621	18.079				17.621
Coagulation/Floculation / Coagulant Used - kg														
Max IH	1792	1408	1651.2	1241.6	1344	2150.4	2060.8	1804.8	1356.8	1472			2150.4	
Mean IH	1220.542	1167.086	1160.671	1009.067	1129.29	1339.307	1594.632	1397.677	1108.139	996.335		1213.314		
Min IH	972.8	947.2	832	768	934.4	921.6	1088	1100.8	844.8	652.8				652.8
Total IH	37836.8	32678.4	35980.8	30272	35008	40179.2	49433.6	43328	33244.16	30886.4	368847.4			
Coagulation/Floculation / Coagulant Volume Used - m³														
Max IH	1.4	1.1	1.29	0.97	1.05	1.68	1.61	1.41	1.06	1.15			1.68	
Mean IH	0.954	0.912	0.907	0.788	0.882	1.046	1.246	1.092	0.866	0.778		0.948		
Min IH	0.76	0.74	0.65	0.6	0.73	0.72	0.85	0.86	0.66	0.51				0.51
Total IH	29560	25530	28110	23650	27350	31390	38620	33850	25972	24130	288162			
Coagulation/Floculation / Polymer Dosage - mg/L														
Max IH	0.042			0.024									0.042	
Mean IH	0.02			0.024								0.021		
Min IH	0.002			0.024										0.002
Coagulation/Floculation / Polymer Used - kg														
Max IH	2.1			1.1									2.1	
Mean IH	1.025			1.1								1.04		
Min IH	0.1			1.1										0.1
Total IH	4.1			1.1							5.2			
DW THM Data / Trihalomethane: Total - µg/l														
Max Lab		30			37			58					58	
Mean Lab		27			31.667			52.667				37.111		
Min Lab		24			25			46						24
East Lambton Booster Station / Cl Residual: Inlet Free - mg/L														
Max OL	1.74	2.49	1.68	1.58	1.43	1.4	1.36	1.29	1.56	1.64			2.49	
Mean OL	1.535	1.401	1.428	1.388	1.3	1.277	1.22	1.124	1.344	1.348		1.337		
Min OL	0	0	0	0	0	0	0	0	0	0				0
Filter Backwash / Backwash Volume - m³														
Max IH	4792	2408	2992	3006	3004	3004	2998	3002	2418	2418			4792	
Mean IH	2268.323	1929.786	2028.194	1927.733	1900.774	2043	2095.032	2056.903	1966.067	1893.871		2012.086		
Min IH	1794	1788	1794	1198	1204	1792	1788	1059	1796	1204				1059
HFS / Fluoride Dosage - mg/L														
Max IH	0.64	0.644	0.614	0.622	0.592	0.628	0.612	0.589	0.573	0.655			0.655	
Mean IH	0.556	0.557	0.559	0.557	0.542	0.548	0.535	0.537	0.531	0.533		0.545		
Min IH	0.46	0.417	0.482	0.487	0.486	0.464	0.486	0.49	0.474	0.476				0.417
HFS / Fluoride Used - l														
Max IH	108.877	97.419	97.419	94.553	100.284	186.246	171.916	143.263	117.475	114.611			186.246	
Mean IH	85.495	87.63	89.655	83.952	90.041	115.949	139.658	123.298	101.43	85.218		100.355		
Min IH	65.901	66.384	71.631	71.631	74.497	88.823	111.745	103.149	85.957	68.766				65.901
Total IH	2650.36	2453.634	2779.305	2518.562	2791.284	3478.466	4329.406	3822.244	3042.903	2641.76	30507.93			
HFS / HFS (kg) - kg														
Max IH	132.83	118.851	118.851	115.355	122.347	227.22	209.737	174.781	143.32	139.825			227.22	
Mean IH	104.304	106.908	109.379	102.422	109.851	141.458	170.383	150.424	123.745	103.966		122.433		
Min IH	80.399	80.989	87.39	87.39	90.886	108.364	136.329	125.842	104.868	83.895				80.399
Total IH	3233.439	2993.434	3390.752	3072.646	3405.367	4243.728	5281.875	4663.138	3712.342	3222.947	37219.67			
HFS / Treated Water Fluoride Residual - mg/L														
Max OL	0.71	0.7	0.7	2	0.84	0.82	0.79	0.7	0.68	2			2	
Mean OL	0.631	0.601	0.578	0.597	0.611	0.575	0.63	0.611	0.576	0.565		0.597		
Min OL	0.56	0.54	0.51	0	0.51	0.24	0.49	0.55	0.42	0				0
Post Disinfection / Chlorine Dosage - mg/L														
Max IH	1.668	1.854	1.682	1.832	1.795	3.071	2.185	2.463	2.654	2.116			3.071	
Mean IH	1.434	1.391	1.458	1.468	1.535	1.696	1.952	2.087	2.142	1.883		1.707		
Min IH	1.215	0.891	1.048	1.271	1.05	1.097	1.594	1.842	1.522	1.64				0.891
Post Disinfection / Hypochlorite Dosage - mg/L														
Max IH	13.899	15.45	14.016	15.268	14.96	25.593	18.208	20.526	22.113	17.637			25.593	
Mean IH	11.947	11.588	12.152	12.232	12.79	14.136	16.268	17.39	17.847	15.692		14.225		
Min IH	10.126	7.428	8.737	10.593	8.747	9.142	13.282	15.347	12.686	13.665				7.428
Post Disinfection / Hypochlorite Used - kg														
Max IH	653.3	665.05	681.5	706.175	808.4	1975.175	1590.95	1434.675	1257.25	974.075			1975.175	
Mean IH	543.456	564	590.191	552.994	632.264	885.167	1241.672	1162.454	997.614	749.157		793.948		
Min IH	444.15	326.65	454.725	407.725	431.225	460.6	956.45	930.6	689.725	471.175				326.65
Total IH	16847.15	15792	18295.93	16589.83	19600.18	26555	38491.83	36036.08	29928.43	23223.88	241360.3			
Post Disinfection / Hypochlorite Volume-Total - m³														
Max IH	0.556	0.566	0.58	0.601	0.688	1.681	1.354	1.221	1.07	0.829			1.681	
Mean IH	0.463	0.48	0.502	0.471	0.538	0.753	1.057	0.989	0.849	0.638		0.676		
Min IH	0.378	0.278	0.387	0.347	0.367	0.392	0.814	0.792	0.587	0.401				0.278
Total IH	14338	13440	15571	14119	16681	22600	32759	30669	25471	19765	205413			
Post Disinfection / Station 7 Cl Residual: Free - mg/L														
Max OL	1.89	1.85	1.92	1.78	1.71	1.75	5	1.76	1.91	1.87			5	
Mean OL	1.699	1.712	1.716	1.608	1.521	1.504	1.533	1.562	1.716	1.706		1.628		
Min OL	1.52	1.54	1.53	1.4	1.29	0	1.26	1.33	1.44	0				0
PrTr / P.A.C. Dosage - mg/L														
Max IH						0.464	0.367	0.54	0.624	0.731			0.731	
Mean IH						0.338	0.291	0.409	0.525	0.622		0.446		
Min IH						0.176	0.218	0.274	0.431	0.499				0.176
PrTr / P.A.C. Used - kg														

Max IH							28.9	25.634	29.462	29.452	29.452						26.212	29.462	
Mean IH							22.199	21.929	26.752	29.152	29.311								
Min IH							12.27	16.36	22.089	26.179	25.09								12.27
Total IH							377.381	679.812	829.31	874.545	908.636	3669.684							
Pre-chlorination / Chlorine Dosage - mg/L																			
Max IH	1.248	1.52	1.193	1.467														1.52	
Mean IH	1.173	1.106	1.07	1.111													1.115		
Min IH	1.061	0.931	0.91	0.972															0.91
Pre-chlorination / Cl Residual: Free - mg/L																			
Max IH	0.74	0.74	0.68	0.7														0.74	
Mean IH	0.632	0.657	0.623	0.623													0.634		
Min IH	0.55	0.59	0.5	0.56															0.5
Pre-chlorination / Cl Residual: Total - mg/L																			
Max IH	0.91	0.89	0.83	0.84														0.91	
Mean IH	0.783	0.824	0.774	0.783													0.79		
Min IH	0.69	0.78	0.66	0.72															0.66
Pre-chlorination / Hypochlorite Dosage - mg/L																			
Max IH	10.399	12.665	9.939	12.221														12.665	
Mean IH	9.773	9.216	8.92	9.258													9.294		
Min IH	8.838	7.76	7.581	8.098															7.581
Pre-chlorination / Hypochlorite Used - kg																			
Max IH	524.05	556.95	511.125	560.475														560.475	
Mean IH	443.657	447.717	433.461	417.692													435.629		
Min IH	383.05	394.8	340.75	338.4															338.4
Total IH	13753.38	12536.08	13437.3	12113.08									51839.83						
Pre-chlorination / Hypochlorite Volume-Total-1 - m³																			
Max IH	0.446	0.474	0.435	0.477														0.477	
Mean IH	0.378	0.381	0.369	0.355													0.371		
Min IH	0.326	0.336	0.29	0.288															0.288
Total IH	11705	10669	11436	10309									44119						
Raw Water / Background - cfu/100mL																			
Max Lab	160	82	82	410	260	720	2800	2800	8600	56								8600	
Mean Lab	69.2	33.25	21.5	105.8	69.25	346.25	751.2	1137.5	2760	15.5							566.455		
Min Lab	18	0	1	13	0	0	0	0	160	0									0
Raw Water / Conductivity - µS/cm																			
Max IH	228.5	223.2	231.5	232.3	243.7	238.2	238.8	236.2	235.2	228.6								243.7	
Mean IH	221.019	219.725	222.174	225.038	233.042	232.617	236.165	235.252	231.17	227.025							228.395		
Min IH	217.8	218	217.9	170	222.6	228.5	232.2	234.1	223.8	225.2									170
Raw Water / E. Coli: EC - cfu/100mL																			
Max Lab	1	0	0	1	0	0	10	< 10	< 10	0							< 10		
Mean Lab	0.4	0	0	0.2	0	0	3.8	< 3.25	< 2.4	0							< 1.068		
Min Lab	0	0	0	0	0	0	0	< 0	0	0									< 0
Raw Water / Raw Flow Daily - m³/d																			
Max IH	52987	56479	56245	51694	56670	100783	98594	80666	61463	59068								100783	
Mean IH	45445.45	48755.75	48621.65	45139.4	49348.52	62028.87	76680.9	66893.58	55870.33	47562.55							54695.56		
Min IH	40082	40763	41664	36877	42212	47569	60157	54511	47226	34339									34339
Raw Water / Raw Flow Rate - l/s																			
Max IH	613.27	653.69	650.98	598.31	654.75	1166.47	1141.13	933.63	926.67	683.66								1166.47	
Mean IH	526.72	565.27	562.75	522.45	571.13	717.93	887.51	774.13	653.31	550.49							633.86		
Min IH	463.91	471.79	482.22	426.82	488.56	550.57	696.26	630.91	546.6	397.44									397.44
Raw Water / Raw Water Turbidity - NTU																			
Max OL	21.4	7.14	13.7	12.2	6.8	3.1	7	2.17	2.4	26.5								26.5	
Mean OL	2.887	1.135	2.448	2.458	1.769	1.08	0.97	0.75	0.785	2.341							1.662		
Min OL	0.46	0.23	0.201	0.57	0.445	0.365	0.33	0.34	0.2	0.284									0.2
Raw Water / Raw Water pH - ---																			
Max IH	8.22	8.12	8.2	8.9	8.35	8.35	8.41	8.41	8.39	8.4								8.9	
Mean IH	8.045	8.008	8.056	8.197	8.239	8.269	8.331	8.355	8.307	8.241							8.206		
Min IH	7.94	7.88	7.86	8.09	8.18	8.2	8.26	8.26	8.22	8.11									7.86
Raw Water / Temperature - °C																			
Max IH	8.01	6	8	11.5	13.1	18.5	23	25	22.5	17.6								25	
Mean IH	6.396	5.025	5.653	9.285	11.661	15.612	21.142	23.064	19.033	14.308							13.183		
Min IH	3	3.25	4	7	10	13	17.8	22	16	12									3
Raw Water / Total Coliform: TC - cfu/100mL																			
Max Lab	39	15	10	31	4	2	100	71	< 66	0							< 100		
Mean Lab	10.2	4.5	2.5	8.2	1.25	0.75	23.6	< 20.25	< 29.2	0							< 10.75		
Min Lab	2	0	0	0	0	0	0	< 0	0	0									< 0
Treated Water / Background - cfu/100mL																			
Max Lab	0	0	0	0	0	0	0	0	0	0								0	
Mean Lab	0	0	0	0	0	0	0	0	0	0							0		
Min Lab	0	0	0	0	0	0	0	0	0	0									0
Treated Water / E. Coli: EC - cfu/100mL																			
Max Lab	0	0	0	0	0	0	0	0	0	0								0	
Mean Lab	0	0	0	0	0	0	0	0	0	0							0		
Min Lab	0	0	0	0	0	0	0	0	0	0									0
Treated Water / Electrical Consumption - kWh																			
Total IH	963849.2	1042697	1022817	1067361	931726.5	922742.6	979665.2	1081486	978235.3	849895.7	9840475								
Treated Water / Flow: Total of All Sources - m³/d																			
Max IH	51137	53292	51967	49343	52401	97988	96442	77634	64029	60875								97988	
Mean IH	44841	46364	46748.23	44048.37	48460.74	61126.97	76220.23	67154.84	56044.43	47285.74							53904.01		
Min IH	41397	41527	41284	39452	41184	41283	60988	56137	50125	41493									39452
Total IH	1390071	1298192	1449195	1321451	1502283	1833809	2362827	2081800	1681333	1465858	16386819								
Treated Water / HPC - cfu/mL																			
Max Lab	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	
Mean Lab	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	
Min Lab	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	
Treated Water / Total Coliform: TC - cfu/100mL																			
Max Lab	0	0	0	0	0	0	0	0	0	0								0	
Mean Lab	0	0	0	0	0	0	0	0	0	0							0		
Min Lab	0	0	0	0	0	0	0	0	0	0									0
Treated Water / Turbidity - NTU																			
Max OL	0.117	0.08	0.1	0.082	0.11	0.095	0.096	0.097	0.096	0.088								0.117	
Mean OL	0.062	0.063	0.065	0.063	0.064	0.066	0.066	0.067	0.067	0.066							0.065		
Min OL	0.043	0.047	0.046	0.047	0.046	0.046	0.049	0.052	0.052	0.047									0.043
West Lambton Booster Station / Cl Residual: Outlet Free - mg/L																			
Max OL	2.19	1.86	1.83	1.8	1.6	1.62	4.99	1.67	2.17	4.99								4.99	
Mean OL	1.684	1.685	1.595	1.586	1.429	1.413	1.395	1.395	1.651	1.868							1.57		
Min OL	0	0	0	0	0	0	0	0	0	0									0
Zebra Mussel Control / Chlorine Dosage - mo/L																			

Max IH						1.125	1.173	1.25	1.327	1.29	1.218	1.285				1.327		
Mean IH						1.125	1.068	1.127	1.158	1.206	1.126	1.112			1.133			
Min IH						1.125	0.955	1.01	1.028	1.113	0.948	0.955						0.948
Zebra Mussel Control / Cl Residual: Free - mg/L																		
Max IH						0.36	0.67	0.66	0.63	0.64	0.64	0.63					0.67	
Mean IH						0.36	0.6	0.588	0.559	0.586	0.59	0.587			0.584			
Min IH						0.36	0.44	0.52	0.39	0.52	0.52	0.5						0.36
Zebra Mussel Control / Cl Residual: Total - mg/L																		
Max IH						0.54	0.81	0.8	0.79	0.79	0.81	0.78					0.81	
Mean IH						0.54	0.746	0.712	0.679	0.72	0.736	0.726			0.719			
Min IH						0.54	0.55	0.63	0.51	0.66	0.66	0.62						0.51
Zebra Mussel Control / Hypochlorite Dosage - mg/L																		
Max IH						9.374	9.777	10.417	11.057	10.753	10.149	10.71					11.057	
Mean IH						9.374	8.898	9.392	9.649	10.049	9.382	9.266			9.439			
Min IH						9.374	7.961	8.418	8.569	9.277	7.9	7.954						7.9
Zebra Mussel Control / Hypochlorite Used - kg																		
Max IH						433.575	514.65	848.35	851.875	774.325	598.075	548.725					851.875	
Mean IH						433.575	439.147	582.408	735.512	670.735	524.246	439.715			564.711			
Min IH						433.575	336.05	444.15	619.225	538.15	413.6	367.775						336.05
Total IH						433.575	13613.55	17472.25	22800.88	20792.8	15727.38	13631.18			104471.6			
Zebra Mussel Control / Hypochlorite Volume-Total-1 - m³																		
Max IH						0.369	0.438	0.722	0.725	0.659	0.509	0.467					0.725	
Mean IH						0.369	0.374	0.496	0.626	0.571	0.446	0.374			0.481			
Min IH						0.369	0.286	0.378	0.527	0.458	0.352	0.313						0.286
Total IH						369	11586	14870	19405	17696	13385	11601			88912			



## Health & Safety Work Order Summary by Facility

Start Date: 2019-10-01

End Date: 2019-10-31

Hub: Lambton

Cluster	ORG ID	Facility ID	Health and Safety					Closure Rate		
			Initiated	Approved	Completed	Total Labor Hrs	Total Cost \$	Target	Actual	Variance
LAWSS (133000)	Lambton Area Water Treatment	5544, East Lambton Distribution (5544-WDEL)	0	0	0	0.00	0.00	85.00%	100.00%	-15.00%
		5544, East Lambton PS (5544-WPEL)	0	0	0	0.00	0.00	85.00%	100.00%	-15.00%
		5544, Forrest Standpipe (5544-WDFS)	0	0	0	0.00	0.00	85.00%	100.00%	-15.00%
		5544, Indian Road Tower (5544-WDIR)	0	0	0	0.00	0.00	85.00%	100.00%	-15.00%
		5544, Lambton Area RMS (5544-WWLA)	0	0	0	0.00	0.00	85.00%	100.00%	-15.00%
		5544, Lambton Area WTP (5544-WTLA)	5	5	5	7.00	268.29	85.00%	100.00%	-15.00%
		5544, Port Lambton Standpipe (5544-WDPL)	0	0	0	0.00	0.00	85.00%	100.00%	-15.00%
		5544, Watford Standpipe (5544-WDWF)	0	0	0	0.00	0.00	85.00%	100.00%	-15.00%
		5544, West Lambton Booster Stn (5544-WPWL)	0	0	0	0.00	0.00	85.00%	100.00%	-15.00%
		5544, West ST.Clair Distribution (5544-WDWS)	0	0	0	0.00	0.00	85.00%	100.00%	-15.00%
		Lambton Area Water Treatment Plant (5544)	0	0	0	0.00	0.00	85.00%	100.00%	-15.00%
		<b>Total</b>	5	5	5	7.00	268.29	85.00%	100.00%	-15.00%

Key Column	Colour	Meaning
Init		No Work Orders initialized
Closed		Closure Rate between 20-50%
Closed		Closure Rate less than 20%

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## Health & Safety Work Order Summary by Facility

Start Date: 2019-01-01

End Date: 2019-10-31

Hub: Lambton

Cluster	ORG ID	Facility ID	Health and Safety					Closure Rate		
			Initiated	Approved	Completed	Total Labor Hrs	Total Cost \$	Target	Actual	Variance
LAWSS (133000)	Lambton Area Water Treatment	5544, East Lambton Distribution (5544-WDEL)	0	0	0	0.00	0.00	85.00%	100.00%	-15.00%
		5544, East Lambton PS (5544-WPEL)	0	0	0	0.00	0.00	85.00%	100.00%	-15.00%
		5544, Forrest Standpipe (5544-WDFS)	0	0	0	0.00	0.00	85.00%	100.00%	-15.00%
		5544, Indian Road Tower (5544-WDIR)	0	0	0	0.00	0.00	85.00%	100.00%	-15.00%
		5544, Lambton Area RMS (5544-WWLA)	0	0	0	0.00	0.00	85.00%	100.00%	-15.00%
		5544, Lambton Area WTP (5544-WTLA)	39	39	39	73.00	2994.89	85.00%	100.00%	-15.00%
		5544, Port Lambton Standpipe (5544-WDPL)	0	0	0	0.00	0.00	85.00%	100.00%	-15.00%
		5544, Watford Standpipe (5544-WDWF)	0	0	0	0.00	0.00	85.00%	100.00%	-15.00%
		5544, West Lambton Booster Stn (5544-WPWL)	0	0	0	0.00	0.00	85.00%	100.00%	-15.00%
		5544, West ST.Clair Distribution (5544-WDWS)	0	0	0	0.00	0.00	85.00%	100.00%	-15.00%
		Lambton Area Water Treatment Plant (5544)	4	4	4	11.75	575.37	85.00%	100.00%	-15.00%
		<b>Total</b>	43	43	43	84.75	3570.26	85.00%	100.00%	-15.00%

Key Column	Colour	Meaning
Init		No Work Orders initialized
Closed		Closure Rate between 20-50%
Closed		Closure Rate less than 20%

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Work Order Summary by Facility

Start Date: 2019-10-01  
End Date: 2019-10-31  
Hub: Lambton

Key Col	Colour	Meaning
Init		No Work Orders initialized
Closed		Closure Rate between 20-50%
Closed		Closure Rate less than 20%

			Corrective Maintenance					Emergency Maintenance					Call Back				
			Init	Approved	Completed	Total Labor Hrs	Total Cost \$	Init	Approved	Completed	Total Labor Hrs	Total Cost \$	Init	Approved	Completed	Total Labor Hrs	Total Cost \$
LAWSS (133000)	Lambton Area Water Treatment Plant (5544)	5544, East Lambton Distribution (5544-WDEL)	1	1	1	7.5	292.15	1	1	1	26.75	1090.31	0	0	0	0	0
		5544, East Lambton PS (5544-WPEL)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		5544, Lambton Area RMS (5544-WWLA)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		5544, Lambton Area WTP (5544-WTLA)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		5544, West Lambton Booster Strn (5544-WPWL)	1	1	1	7	296.94	0	0	0	0	0	0	0	0	0	0
		5544, West ST.Clair Distribution (5544-WDWS)	1	1	0	3	127.26	0	0	0	0	0	0	0	0	0	0
		Lambton Area Water Treatment Plant (5544)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total			3	3	2	17.5	716.35	1	1	1	26.75	1090.31	0	0	0	0.00	0.00

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0

Work Order Summary by Facility

Start Date: 2019-10-01  
End Date: 2019-10-31  
Hub: Lambton

Key Col	Colour	Meaning
Init		No Work Orders initialized
Closed		Closure Rate between 20-50%
Closed		Closure Rate less than 20%

			Preventive Maintenance					Operational					Capital/Project Work					Closure Rate		
			Init	Approved	Completed	Total Labor Hrs	Total Cost \$	Init	Approved	Completed	Total Labor Hrs	Total Cost \$	Init	Approved	Completed	Total Labor Hrs	Total Cost \$	Target	Actual	Variance
LAWSS (133000)	Lambton Area Water Treatment Plant (5544)	5544, East Lambton Distribution (5544-WDEL)	0	0	0	0	0	4	4	4	8.75	397.27	0	0	0	0	0	85%	100%	-15.0%
		5544, East Lambton PS (5544-WPEL)	4	4	4	9.25	461.2	2	2	2	10.25	539.36	0	0	0	0	0	85%	100%	-15.0%
		5544, Lambton Area RMS (5544-WWLA)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	85%	100%	-15.0%
		5544, Lambton Area WTP (5544-WTLA)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	85%	100%	-15.0%
		5544, West Lambton Booster Stn (5544-WPWL)	2	2	2	3.5	136.68	2	2	2	3	108.24	0	0	0	0	0	85%	100%	-15.0%
		5544, West ST.Clair Distribution (5544-WDWS)	55	55	44	82.25	3431.11	12	12	12	1633.5	42125.32	2	2	0	23	1133.83	85%	82.35%	2.647%
		Lambton Area Water Treatment Plant (5544)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	85%	100%	-15.0%
Grand Total			61	61	50	95	4028.99	20	20	20	1655.5	43170.19	2	2	0	23	1133.83	85%	100%	-15.0%

0  
0

Work Order Summary by Facility

Start Date: 2019-01-01  
End Date: 2019-10-31  
Hub: Lambton

Key Col	Colour	Meaning
Init		No Work Orders initialized
Closed		Closure Rate between 20-50%
Closed		Closure Rate less than 20%

			Corrective Maintenance					Emergency Maintenance					Call Back				
			Init	Approved	Completed	Total Labor Hrs	Total Cost \$	Init	Approved	Completed	Total Labor Hrs	Total Cost \$	Init	Approved	Completed	Total Labor Hrs	Total Cost \$
LAWSS (133000)	Lambton Area Water Treatment Plant (5544)	5544, East Lambton Distribution (5544-WDEL)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		5544, East Lambton PS (5544-WPEL)	15	15	14	130	5960.09	6	6	5	39.25	1759.59	0	0	0	0	0
		5544, Lambton Area RMS (5544-WWLA)	6	6	5	35	1710.25	0	0	0	0	0	0	0	0	0	0
		5544, Lambton Area WTP (5544-WTLA)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		5544, West Lambton Booster Strn (5544-WPWL)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		5544, West ST.Clair Distribution (5544-WDWS)	9	9	9	77	3225.48	0	0	0	0	0	1	1	1	15	662.4
		Lambton Area Water Treatment Plant (5544)	42	42	36	325	16800.78	1	1	1	1	46.68	4	4	4	36	1505.9
Grand Total			72	72	64	567	27696.6	7	7	6	40.25	1806.27	5	5	5	51.00	2168.30

0  
0

Work Order Summary by Facility

Start Date: 2019-01-01  
End Date: 2019-10-31  
Hub: Lambton

Key Col	Colour	Meaning
Init		No Work Orders initialized
Closed		Closure Rate between 20-50%
Closed		Closure Rate less than 20%

			Preventive Maintenance					Operational					Capital/Project Work					Closure Rate		
			Init	Approved	Completed	Total Labor Hrs	Total Cost \$	Init	Approved	Completed	Total Labor Hrs	Total Cost \$	Init	Approved	Completed	Total Labor Hrs	Total Cost \$	Target	Actual	Variance
LAWSS (133000)	Lambton Area Water Treatment Plant (5544)	5544, East Lambton Distribution (5544-WDEL)	0	0	0	0	0	0	0	0	0	1	1	1	0	1795.2	85%	100%	-15.0%	
		5544, East Lambton PS (5544-WPEL)	9	9	6	17	1006.35	42	42	42	118	5187.03	5	5	1	36.25	22466.15	85%	93.05%	-8.05%
		5544, Lambton Area RMS (5544-WWLA)	54	54	54	113	5563.38	21	21	21	87.75	4149.56	0	0	0	0	0	85%	98.76%	-13.7%
		5544, Lambton Area WTP (5544-WTLA)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	85%	100%	-15.0%
		5544, West Lambton Booster Stn (5544-WPWL)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	85%	100%	-15.0%
		5544, West ST.Clair Distribution (5544-WDWS)	24	24	24	44.25	2011.52	20	20	20	32.25	1288.98	1	1	1	27.25	22007.7	85%	100%	-15.0%
		Lambton Area Water Treatment Plant (5544)	366	366	345	1321.5	69493.66	124	124	122	16171.25	420765.1	7	7	3	165.75	53733.4	85%	94.59%	-9.59%
Grand Total			453	453	429	1495.75	78074.91	207	207	205	16409.25	431390.7	14	14	6	229.25	100002.5	85%	100%	-15.0%

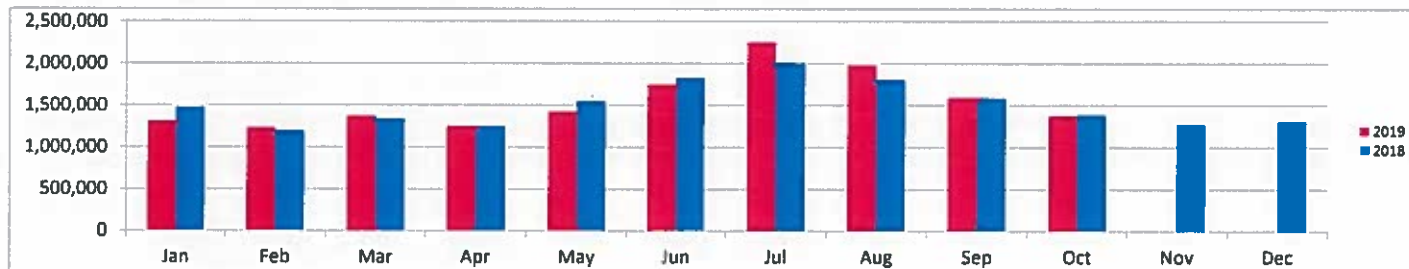
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# LAWSS Flow Summary

Draft

Total Flows as of Oct 2019

LAWSS Member		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total Year To Date for: Jan - Oct	% Total
Sarnia	2019	763,540	710,071	793,833	772,802	859,360	928,004	1,306,982	1,232,482	954,642	843,767	0	0	9,165,482	59.42
	2018	847,619	716,829	792,231	722,416	903,800	1,090,866	1,140,761	992,451	914,117	808,898	717,749	743,262	10,390,999	58.34
Point Edward	2019	27,627	25,262	28,086	27,709	32,081	38,498	50,463	53,100	36,311	31,273	0	0	350,411	2.27
	2018	29,104	24,457	27,752	27,203	39,328	47,078	54,106	49,612	41,322	34,228	26,687	26,579	427,456	2.40
St. Clair	2019	407,497	389,310	437,481	329,430	376,717	607,849	669,638	489,505	436,191	363,446	0	0	4,507,065	29.22
	2018	420,890	328,358	381,560	356,736	416,692	475,796	604,876	568,576	499,609	420,941	409,299	420,293	5,303,627	29.78
Plympton/Wyoming	2019	60,624	55,794	61,245	63,800	73,513	86,825	126,745	108,289	79,740	69,076	0	0	785,650	5.09
	2018	63,990	52,511	56,621	60,990	83,851	102,062	116,025	89,396	74,865	66,964	58,463	61,040	886,779	4.98
Lambton Shores	2019	12,193	15,213	12,491	14,747	28,233	32,872	43,978	43,586	42,789	28,509	0	0	274,611	1.78
	2018	37,681	23,324	25,198	31,014	30,618	34,312	39,802	63,896	14,903	16,800	14,901	12,241	344,689	1.94
Watford/Warwick	2019	29,976	28,550	30,013	31,163	35,804	35,885	41,573	41,590	34,374	33,837	0	0	342,767	2.22
	2018	39,195	35,905	39,130	37,248	45,667	46,959	46,842	37,035	37,798	32,988	30,508	29,142	458,416	2.57
														2019	15425985
Others														2018	17811967
Alvinston	2019	7,072	6,668	10,291	12,120	16,322	18,398	15,460	11,028	8,694	9,193	0	0	115,245	0.74
	2018	10,209	6,415	7,160	7,177	7,951	7,484	7,326	5,996	6,317	6,411	6,293	7,174	85,913	0.48
Petrolia	2019	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
	2018	25,392	2,810	10,788	4,496	0	24,533	0	0	0	0	0	0	68,019	0.38
Chatham-Kent	2019	0	1,071	0	778	129	0	0	0	0	0	0	0	1,978	0.01
	2018	0	0	0	0	20,782	0	0	0	0	0	0	0	20,782	0.12
Totals	2019	1,308,530	1,231,940	1,373,440	1,252,550	1,422,160	1,748,330	2,254,838	1,979,580	1,592,740	1,379,100	0	0	15,543,209	
	2018	1,474,080	1,190,611	1,340,440	1,247,280	1,548,690	1,829,090	2,009,738	1,806,962	1,588,930	1,387,230	1,263,900	1,299,730	17,986,681	



Note:

Work Sheet Revision Date: 07-Jan-2019



Current Year 2019  
Last month entered Oct

													Year to Date Total
LAWSS Members	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan - Oct
City of Samial:	763,540	710,071	793,833	772,802	859,360	928,004	1,306,982	1,232,482	954,642	843,767	0	0	9,165,482
Point Edward:	27,627	25,262	28,086	27,709	32,081	38,498	50,463	53,100	36,311	31,273	0	0	350,411
St. Clair Township:	407,497	389,310	437,481	329,430	376,717	607,849	669,638	489,505	436,191	363,446	0	0	4,507,065
Plympton/Wyoming:	60,624	55,794	61,245	63,800	73,513	86,825	126,745	108,289	79,740	69,076	0	0	785,850
Lambton Shores:	12,193	15,213	12,491	14,747	28,233	32,872	43,978	43,586	42,789	28,509	0	0	274,611
Watford/Warwick:	29,976	28,550	30,013	31,163	35,804	35,885	41,573	41,590	34,374	33,837	0	0	342,767
	1,301,458	1,224,201	1,363,150	1,239,652	1,405,708	1,729,932	2,239,379	1,968,552	1,584,046	1,369,907	0	0	15,425,985
<b>Others</b>													
Town of Alvinston:	7,072	6,668	10,291	12,120	16,322	18,398	15,460	11,028	8,694	9,193	0	0	115,245
Town of Petrolia:	0	0	0	0	0	0	0	0	0	0	0	0	0
Chatham-Kent:	0	1,071	0	778	129	0	0	0	0	0	0	0	1,978
	1,308,530	1,231,940	1,373,440	1,252,550	1,422,160	1,748,330	2,254,838	1,979,580	1,592,740	1,379,100	0	0	
	1,308,530	1,231,940	1,373,440	1,252,550	1,422,160	1,748,330	2,254,838	1,979,580	1,592,740	1,379,100	0	0	15,543,209

Last Years Data 2018

LAWSS Members	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan - Oct
City of Samial:	847,619	716,829	792,231	722,416	903,800	1,090,866	1,140,761	992,451	914,117	808,898	717,749	743,262	10,390,999
Point Edward:	29,104	24,457	27,752	27,203	39,328	47,078	54,106	49,612	41,322	34,228	26,687	26,579	427,456
St. Clair Township:	420,890	328,358	381,560	356,736	416,692	475,796	604,876	568,576	499,609	420,941	409,299	420,293	5,303,627
Plympton/Wyoming:	63,990	52,511	56,621	60,990	83,851	102,062	116,025	89,396	74,865	66,964	58,463	61,040	886,779
Lambton Shores:	37,681	23,324	25,198	31,014	30,618	34,312	39,802	63,896	14,903	16,800	14,901	12,241	344,689
Watford/Warwick:	39,195	35,905	39,130	37,248	45,667	46,959	46,842	37,035	37,798	32,988	30,508	29,142	458,416
	1,438,479	1,181,386	1,322,492	1,235,607	1,519,957	1,797,073	2,002,412	1,800,966	1,582,613	1,380,819	1,257,607	1,292,556	17,811,967
<b>Others</b>													
Town of Alvinston:	10,209	6,415	7,160	7,177	7,951	7,484	7,326	5,996	6,317	6,411	6,293	7,174	85,913
Town of Petrolia:	25,392	2,810	10,788	4,496	0	24,533	0	0	0	0	0	0	68,019
Chatham-Kent:	0	0	0	0	20,782	0	0	0	0	0	0	0	20,782
	1,474,080	1,190,611	1,340,440	1,247,280	1,548,690	1,829,090	2,009,738	1,806,962	1,588,930	1,387,230	1,263,900	1,299,730	
	1,474,080	1,190,611	1,340,440	1,247,280	1,548,690	1,829,090	2,009,738	1,806,962	1,588,930	1,387,230	1,263,900	1,299,730	17,986,681

Work Sheet Revision Date: 07-Jan-2019



LAWSS Water used by the

## City of Sarnia

For the Month of: **October 2019**

**Lambton Area Water Supply System**

**1215 Fort St. Sarnia, On N7V 1M1**

Phone: (519) 344-7429

Fax: (519) 344-4337

Meter num	Meter Location	Read date 31-Oct-19	Last Read date 30-Sep-19	Difference	Calibration Adjustments As Found	As Left	X	Flow
15	HighL High Net Flow Totalizer	1,928,466.1	1,928,466.1	0			1	0
13	HighL Low Net Flow Totalizer	188,810,060.0	187,430,960.0	1,379,100			1	1,379,100

**Entering Sarnia:** 1,379,100

Members Monthly % Used

**Leaving Sarnia to LAWSS Members:**

Village of Point Edward - Grand Total:	31,273	2.3
St. Clair Township - Grand Total:	363,446	26.5
Plympton/Wyoming - Grand Total:	69,076	5.0
Lambton Shores - Grand Total:	28,509	2.1
Village of Watford/Township of Warwick - Grand Total:	33,837	2.5

**Leaving Sarnia to Others:**

Town of Alvinston - Grand Total:	9,193
Town of Petrolia - Grand Total:	0
Chatham-Kent Area Water - Grand Total:	0

**Metered Consumption:** 843,767

**Adjustments:**

**Reason for Adjustment:**

*David Hunt*

**Dave Hunt (Operations Manager)**

**City of Sarnia - Total Consumption:** 843,767

**Leakage rate adjustment** 0% 0

**City of Sarnia - Grand Total:** 843,767 61.6

**Overall Grand Total:** 1,379,100 100.0

LAWSS Water used by the

Lambton Area Water Supply System

1215 Fort St. Sarnia, On N7V 1M1

Phone:(519)344-7429

Fax: (519)344-4337

## Village of Point Edward

For the Month of: October 2019

Meter num	Meter Location	Read date 31-Oct-19	Last Read date 30-Sep-19	Difference	Calibration Adjustments		X	Flow	%
					As Found	As Left			
CH01	Venetian Vill (Mag)	456,198.5	446,953.0	9,246			1	9,246	30.7
CH02	Ven & Exmouth (Mag)	40,888.9	40,268.4	621			1	621	2.1
CH03	Michigan & Monk (Mag)	1,027,016.8	1,008,574.6	18,442			1	18,442	61.3
CH04	Michigan & Front (Mag)	132,587.9	130,825.8	1,762			1	1,762	5.9

**Metered Consumption:** 30,070 100.0

**Reason for Adjustment:**

**Adjustments:**

**Village of Point Edward - Total Consumption:** 30,070

**Leakage rate adjustment 4%** 1,203

**Village of Point Edward - Grand Total:** 31,273



**Dave Hunt (Operations Manager)**

LAWSS Water used by the

## St. Clair Township

For the Month of: **October 2019**

Lambton Area Water Supply System

1215 Fort St. Sarnia, On N7V 1M1

Phone:(519)344-7429

Fax: (519)344-4337

Meter num	Meter Location	Read date 31-Oct-19	Last Read date 30-Sep-19	Difference	Calibration Adjustments As Found As Left	X	Flow	%
WL-O	WL High Net Flow - West Lambton	37,369,268.0	37,018,524.0	350,744		1	350,744	100.4
3100	Plank Road (3/4)	3,480	3,440	40		1	40	0.0
<b>Back to Sarnia</b>								
1100	LaSalle & Parkway	8,911	8,441	470		1	470	0.1
1090	LaSalle & Tashmoo	4,935	4,088	847		1	847	0.2

**Entering St. Clair Township:** 350,784 100.4

**Leaving St. Clair Township**

Back to Sarnia: 1,317 0.4

Chatham-Kent Area Water - Total Consumption: 0

**Metered Consumption:** 349,467 100.0

**Adjustments:**

Reason for Adjustment:

**St. Clair Township - Total Consumption:** 349,467

**Leakage rate adjustment 4%** 13,979

**St. Clair Township - Grand Total:** 363,446



Dave Hunt (Operations Manager)

**Township of Plympton / Village of Wyoming**For the Month of: **October 2019**

Meter num	Meter Location	Read date 31-Oct-19	Last Read date 30-Sep-19	Difference	Calibration Adjustments As Found	As Left	X	Flow	%
<b>Entering Plympton</b>									
5001	Ch05 Low Net Flow - Maundaumin	57,809.0	57,809.0	0			1	0	
5002	Ch05 High Net Flow - Maundaumin	17,872,244.0	17,736,684.0	135,560			1	135,560	
<b>Village of Wyoming</b>									
8001	Wyoming	432,670	432,670	0			1	0	
8002	Wyoming	7,544	6,518	1,026			10	10,260	
<b>Back to Sarnia</b>									
1005	Brights Grove (Sarnia)	610	610	0			0.1	0	
1006	Brights Grove (Sarnia)	81,540	81,540	0			10	0	

**Entering Plympton:** 135,560**Leaving Plympton**

Village of Wyoming: 10,260

Back to Sarnia: 0

Lambton Shores - Total Consumption: 27,412

Watford/Warwick - Total Consumption: 32,536

Town of Alvinston - Total Consumption: 9,193

Town of Petrolia - Total Consumption: 0

**Metered Consumption For Plympton:** 56,159

Village of Wyoming: 10,260

**Adjustments:****Reason for Adjustment:****Plympton/Wyoming - Total Consumption:** 66,419

Leakage rate adjustment 4% 2,657

**Plympton/Wyoming - Grand Total:** 69,076**Dave Hunt (Operations Manager)**

LAWSS Water used by the

## Lambton Shores

For the Month of: October 2019

Lambton Area Water Supply System

1215 Fort St. Sarnia, On N7V 1M1

Phone: (519) 344-7429

Fax: (519) 344-4337

Meter num	Meter Location	Read date	Last Read date	Difference	Calibration Adjustments		X	Flow	%
		31-Oct-19	30-Sep-19		As Found	As Left			
7003	Ch07 High Net Flow - Townsend	3,549,156.2	3,523,052.2	26,104			1	26,104	
7004	Ch07 Low Net Flow - Townsend	245,251.7	243,943.5	1,308			1	1,308	

**Metered Consumption:** 27,412

Reason for Adjustment:

Adjustments:

**Lambton Shores - Total Consumption:** 27,412

**Leakage rate adjustment 4%** 1,096

**Lambton Shores - Grand Total:** 28,509



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Dave Hunt (Operations Manager)

**Village of Watford/Township of Warwick**For the Month of: **October 2019**

Meter num	Meter Location	Read date 31-Oct-19	Last Read date 30-Sep-19	Difference	Calibration Adjustments As Found	As Left	X	Flow	%
<b>Entering Watford/Warwick</b>									
9001	Ch10 High Net Flow - London Line	6,584,099.0	6,535,558.0	48,541			1	48,541	
9002	Ch10 Low Net Flow - London Line	624,222.5	620,230.5	3,992			1	3,992	
9003	Ch11 High Net Flow - Confederation	1,109,864.8	1,099,103.4	10,761			1	10,761	
9004	Ch11 Low Net Flow - Confederation	59,507.8	60,849.1	-1,341			1	-1,341	
<b>Leaving Watford/Warwick</b>									
5013	Ch09 High Net Flow - Egremont	2,666,997.8	2,646,773.0	20,225			1	20,225	
AF	Alvin High Net Flow Totalizer	1,513,974.2	1,504,781.6	9,193			1	9,193	

**Entering Watford/Warwick:** 61,953**Leaving Watford/Warwick:** 29,417**Metered Consumption:** 32,536**Reason for Adjustment:****Adjustments:****Watford/Warwick - Total Consumption:** 32,536**Leakage rate adjustment 4%** 1,301**Village of Watford/Township of Warwick - Grand Total:** 33,837**Dave Hunt (Operations Manager)**

LAWSS Water used by the

## Town of Alvinston

For the Month of: October 2019

Lambton Area Water Supply System

1215 Fort St. Sarnia, On N7V 1M1

Phone:(519)344-7429

Fax: (519)344-4337

Meter num	Meter Location	Read date	Last Read date	Difference	Calibration Adjustments	X	Flow	%
AF	Alvin High Net Flow Totalizer	31-Oct-19	30-Sep-19	9,193	As Found	As Left	1	9,193

**Metered Consumption:** 9,193

**Reason for Adjustment:**

**Adjustments:**

**Town of Alvinston - Total Consumption:** 9,193

**Leakage rate adjustment 0%** 0

**Town of Alvinston - Grand Total:** 9,193



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**Dave Hunt (Operations Manager)**

LAWSS Water used by the

## Town of Petrolia

For the Month of: October 2019

Lambton Area Water Supply System

1215 Fort St. Sarnia, On N7V 1M1

Phone: (519) 344-7429

Fax: (519) 344-4337

Meter num	Meter Location	Read date	Last Read date	Difference	Calibration Adjustments	X	Flow	%
PF	Petrolia Flows	31-Oct-19	30-Sep-19		As Found	As Left		
		133,549	133,549	0			1	0

**Metered Consumption:** 0

Reason for Adjustment:

**Adjustments:**

**Town of Petrolia - Total Consumption:** 0

**Leakage rate adjustment 0%** 0

**Town of Petrolia - Grand Total:** 0



.....  
Dave Hunt (Operations Manager)



LAWSS Water used by the

## Chatham-Kent Area Water

For the Month of: **October 2019**

Lambton Area Water Supply System

1215 Fort St. Sarnia, On N7V 1M1

Phone: (519) 344-7429

Fax: (519) 344-4337

Meter num	Meter Location	Read date	Last Read date	Difference	Calibration Adjustments	X	Flow	%
CKF	Chatham-Kent Flows	31-Oct-19	30-Sep-19		As Found	As Left		
		907	907	0			1	0

**Metered Consumption:** \_\_\_\_\_  
**Adjustments:** \_\_\_\_\_

Reason for Adjustment:

Chatham-Kent Area Water - Total Consumption: \_\_\_\_\_  
Leakage rate adjustment 0% \_\_\_\_\_  
Chatham-Kent Area Water - Grand Total: \_\_\_\_\_

*Dave Hunt*

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Dave Hunt (Operations Manager)

Report No.: 2019-11-01
Report Page: Page 1 of 2
Meeting Date: December 5, 2019
File No.:



**To:** Chair and Members  
Lambton Area Water Supply System Joint Board of Management

**From:** Clinton Harper  
General Manager

**Subject:** Information Reports (December 5, 2019)

## Recommendation

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That the Board receive as information.

## Projects:

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### **WebGIS**

A Standard Operating Procedure booklet for the LAWSS WebGIS has been uploaded to the box.net and made available to all LAWSS-OCWA staff. The booklet contains instructions on how complete all basic and advanced level functions built into the portal.

The formalized agreement for data hosting with the County of Lambton is still under development. The LAWSS General Manager will ensure that the agreement includes a provision for the LAWSS Board Chair to have full access to the system and for the Chair to designate who is permitted to access the data on LAWSS behalf.

### **DWQMS Management Review**

All water systems in Ontario are required to maintain a Drinking Water Quality Management System (DWQMS) as per standardized MECP requirements. Since no two systems are exactly alike each Water Utility is required to build and maintain their own unique DWQMS within the MECP's guidelines. The MECP then completes an annual audit on each system to ensure it is being operated in line with Provincial Standards.

The operational plan must document a procedure for management review that evaluates the continuing suitability, adequacy and effectiveness of the quality management system. Top management shall implement and conform to the procedure, and shall:

- ensure that a management review is conducted at least once every calendar year
- consider the results of the management review and identify deficiencies and action items to address the deficiencies

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- provide a record of any decisions and action items related to the management review including the personnel responsible for delivering the action items and the proposed timelines for their implementation
- report the results of the management review, the identified deficiencies, decisions and action items to the owner

The Management Review of the DWQMS utilized by OCWA-LAWSS was completed on November 8, 2019. OCWA Operational Management, the LAWSS Chair, and LAWSS General Manager attended the meeting. Attached are the Minutes.

### **eSCRIBE Meeting Management Software**

At the October 31, 2019 meeting of the LAWSS Board, a member requested that the HTML version of the agenda be assigned page numbers that correlate to the printable PDF version. The LAWSS General Manager contacted eSCRIBE to determine how this could be achieved and was advised by their technical support staff that the requested configuration is not currently available. eSCRIBE has a process for determining how and what features are added to the system. The LAWSS General Manager has begun their process and formally requested the feature.

### **Master Plan Update**

The Master Plan Update RFP closed at 2pm on November 26, 2019. Proposals were submitted by four Engineering Consulting firms. The proposals are currently being reviewed by the City of Sarnia Purchasing Department, OCWA Operational Management and the LAWSS General Manager.

### **Admin HVAC Project**

The Admin HVAC upgrade project is substantially complete, balanced and is functioning as designed. Final closeout documents, a maintenance walkway, and operator training is still needed to finalize the project. Once the project is finalized a report will be provided to the Board that requests official close out of the project.

This report was prepared by Clinton Harper, LAWSS General Manager

Attachment(s): DWQMS- Management Review Minutes



## 2019 DWQMS Management Review Report

For the review period of July 31, 2018 to November 8, 2019

### **Executive Summary**

As part of Element 20 of the Drinking Water Quality Management Standard (DWQMS) the Lambton Area Water Supply System is required to perform a Management Review at least once every calendar year. The Ministry of Environment and Climate Change (MOECC) requires that Element 20 be evaluated to ensure the continuing suitability, adequacy and effectiveness of the Quality Management System. Through the management review process, Top Management shall identify deficiencies and action items. The following report contains a summary of information that was reviewed during the current review period (July 31, 2018 to November 8, 2019).

Highlights of the management review findings are as follows:

- The Lambton Area Water Supply System is currently operating under DWQMS Version 2.0.
- The Lambton Area Water Supply System underwent the annual MOECC inspection on March 5, 2019. The inspection report was received on March 20, 2019 with the results being 99.35%. The one deficiency was addressed on June 19, 2019.
- DWQEMS procedures were followed by staff and staff were able to prove continual improvement through Internal and External audits and the Management Review
- The internal audit was conducted on-site on July 10, 2019. There were no non-conformities.
- The external audit was conducted off-site by SAI Global with the report being made available on March 26, 2019. There were no non-conformities and the Quality Management System at LAWSS was considered effective.
- There were zero incidents of regulatory non-compliance during the review period.
- There were zero adverse drinking water tests during the review period.
- There were 125 deviations from critical control limits with 107 of these being caused by routine maintenance; the other 18 deviations caused no adverse effects.
- The annual risk assessment was conducted September 11, 2019 and the 36-month review was held on May 19, 2017.
- Raw water supply and drinking water quality trends remain consistent with previous years
- There was one customer complaint. The complaint was the result of a low pressure at a customer's house. The complaint was addressed by LAWSS and OCWA Staff. It was determined that the issue was not a LAWSS related issue

### 1.0 Introduction to DWQMS Management Review

The requirements of the Management Review are stated in Element 20 of Ontario's DWQMS. The standard requires that a management review is conducted at least once every calendar year to evaluate the continuing suitability, adequacy and effectiveness of the Quality Management System (QMS).

During the management review process, Top Management identifies deficiencies and action items which include personnel responsible and proposed timelines to address the deficiencies. The results of the management review are reported to the Owner through the Management Review minutes and this Management Review Report. The Management Review meeting was held on November 8, 2019. The minutes for the 2019 Management Review are found in **Appendix A**.

In accordance with Ontario's Drinking Water Quality Management Standard Top Management must review the following 17 aspects. An 18<sup>th</sup> aspect (r) has been added to the LAWSS Management Review to evaluate the need for re-endorsement of the Operations Plan.

- a) Incidents of regulatory non-compliance
- b) Incidents of adverse drinking-water tests
- c) Deviations from critical control point limits and response actions
- d) The efficacy of the risk assessment process
- e) Internal and third-party audit results
- f) Results of emergency response testing
- g) Operational performance
- h) Raw water supply and drinking water quality trends
- i) Follow-up on action items from previous management reviews
- j) The status of management action items identified between reviews
- k) Changes that could affect the Quality Management System
- l) Consumer feedback
- m) The resources needed to maintain the Quality Management System
- n) The results of the infrastructure review
- o) Operational Plan currency, content and updates
- p) Staff suggestions
- q) Consideration of applicable Best Management Practices (BMP)
- r) Evaluation of the need for re-endorsement of the Operations Plan

### **Summary of Items:**

#### **a) Incidents of Regulatory Non-Compliance**

There were zero incidents of regulatory non-compliance between management reviews.

#### **b) Incidents of Adverse Drinking Water Tests**

There were zero adverse drinking water tests between management reviews.

#### **c) Deviations from critical control limits and response actions**

A Critical Control Point (CCP) is an essential step or point in the subject system at which control can be applied by the operating authority to prevent or eliminate a drinking water health hazard or to reduce it to an acceptable level and a Critical Control Limit (CCL) is the point at which a CCP response procedure is initiated. Critical control limits exist for turbidity, chlorine and fluoride.

There were 125 deviations from the CCL that occurred between the management reviews. Of these 125 deviations 107 were caused by routine maintenance procedures. The eighteen events not caused by routine maintenance were reviewed as part of the management review process.

All eighteen instances were reviewed during the management review. There were no adverse or non-compliance issues related to the eighteen instances.

#### **d) Effectiveness of the risk assessment process**

The 36-month risk assessment was conducted May 19, 2017 and is next due to be done in 2020. The risk assessment process looks at typical hazardous events, possible outcomes, and existing control measures and determines whether a critical control limit is needed. Each risk is assigned a Likelihood rating (with a value between 1 and 5) and a Consequence rating (with a value between 1 and 5) and the Risk Value is calculated by multiplying these numbers. Examples of hazardous events include frazil ice, generator failure and chlorinator failure. The annual review of the risk assessment was conducted September 11, 2019.

### **e) Internal and third-party audit results.**

An off-site external audit was conducted on March 29, 2019 by SAI Global. During the audit there were no non-conformities and no Opportunity for Improvement (OFI) noted.

An internal audit was conducted on July 10, 2019 by OCWA's Regional Safety Process and Compliance Manager and no non-conformities were noted. A number of OFIs were noted and all OFIs were discussed during the management review. Any OFIs that were not implemented were also explained.

### **f) Results of emergency response testing.**

All contingencies were reviewed in 2019.

The Loss of Service Contingency was tested December 11, 2018. The results of the test were reviewed during the management review process. No changes were required after the test.

The PLC/SCADA Failure Contingency was tested September 25, 2019. The results of the test were reviewed during the management review process. As a result of the test, 3 new Standard Operating Procedures were created, one for manually operating the filters, one for manually operating the chemical dosing pumps and one for manually operating the highlift pumps.

### **g) Operational Performance**

A number of tools were used to determine operational performance at LAWSS. The first tool that was used was the MECP inspection of LAWSS that was conducted March 5, 2019. There was one issue brought up in the MOECC inspection that occurred between management reviews. The result of the inspection was a 99.35% rating. The issue was due to an out of date distribution map. A new map showing changes in the distribution system was created on June 19, 2019.

Another tool that was used to measure operational performance was the Work Order Status Reports that are generated by OCWA's Workplace Management System (Maximo). Closure rates of the generated work orders in 2018 were at 99.44 and are well within the target range of 85%. The closure rate for 2019 is currently at 95.4% and is also within the target range of 85%.

The 2018 Annual Report and Annual Summary Report were also used to measure operational performance. The two reports are available in the Reports section of the LAWSS website located at [www.lawss.org](http://www.lawss.org).



# Lambton Area Water Supply System DWQMS Management Review Report

**2019**

During the management review all process data from OCWA's Process Data Collection System (WISKI) was reviewed. There were no outstanding issues noted during the review process.

## **h) Raw Water Supply and Water Quality Trends**

Similar tools to those that are used in the operational performance were reviewed. The main tool that was used in this case was data from OCWA's Process Data Collection System (WISKI). Table 1 below shows key raw water characteristics for 2017 and 2018. Trends for raw and treated water from 2015-2019 were reviewed and show very little fluctuations. These trends reviewed can be found in **Appendix B**.

**Table 1: Key Raw Water Data for 2017-2018**

Characteristic	Minimum		Maximum		Average	
	2017	2018	2017	2018	2017	2018
Year	2017	2018	2017	2018	2017	2018
Temperature (°C)	2.75	5	22.0	24.1	12.3	13.1
Turbidity (NTU)	0.1	0.2	62.4	40.0	2.52	2.0
pH	7.53	7.19	8.45	8.47	8.12	8.17
Conductivity (umho/cm)	174.0	211.4	243.4	233.6	225.9	224.6
<i>E. coli</i> (CFU/100 mL)	0	0	10	10		
Total Coliforms	0	0	440	120		

## **i) Follow-up on action items from previous Management Reviews**

The previous management review was held on August 28, 2018 and the minutes of the previous meeting and the LAWSS 2018 Management Review Tracking Spreadsheet are attached as **Appendix C**. Four action items were required to be followed-up on. All four follow-ups have been completed for the 2018 Management Review.

### **j) Status of management action items identified between reviews**

Lead issues due to the Global News article in regards to lead were discussed. It was decided that the LAWSS GM may include information in regards to lead on the LAWSS website. It was also noted that the MECP has been asking some Municipalities for lead information. At this time no LAWSS Municipalities have inquired to LAWSS about lead information.

### **k) Changes that could affect the QEMS**

Mark Harris will be replacing Dave Hunt as OCWA's Senior Operations Manager at LAWSS. Contacts will be changed as required.

### **l) Consumer feedback**

There was one customer complaint in regards to low pressure at a household. OCWA and LAWSS staff investigated the issue and found that the low pressure issue was not related to the LAWSS system.

### **m) Resources needed to maintain the QEMS**

At this time there is no need for added resources to maintain the QEMS.

### **n) Results of the infrastructure review**

As part of the infrastructure review, documents such as the 6 Year Major Maintenance Plan, OCWA Major Maintenance and Capital Project List, LAWSS Annual Budgets, LAWSS 10 Year Capital Plan and Site Security Action Plans were reviewed. In addition, the LAWSS Representative and OCWA's Senior Operations Manager meet at least once a month to review Capital and Major Maintenance Projects.

### **o) Operational Plan currency, content and updates**

The Operations Plan was last endorsed by all parties on May 31, 2018. It was noted that due to the retirement of Dave Hunt and his replacement by Mark Harris re-endorsement will be needed.

### **p) Staff suggestions**

There were no staff suggestions at this time.

### **q) Consideration of applicable Best Management Practices (BMPs)**

There have been no BMPs identified for LAWSS.

### **r) Evaluation of the need for re-endorsement of the Operations Plan**

It was determined during the Management Review that the Operations Plan endorsed on May 31, 2018 needs to be re-endorsed due to the retirement of Dave Hunt. The Operations Plan was endorsed by OCWA representatives (Mark Harris and Dale LeBritton) and LAWSS representatives (Bev Hand and Clinton Harper) in November of 2019.

## **Appendix A**

### **Signed 2019 Management Review Minutes**

## Management Review Minutes

Issued: 2018/08/29  
Rev.#: 1  
Pages: 1 of 7

Reviewed by: Operations and Compliance Team Lead

Approved by: Senior Operations Manager

Date: August 28, 2018

Attendees: Dave Hunt, Jodi Stradeski, Cindy Sigurdson, Bev Hand, Clinton Harper

Location: LAWSS

Item	Description	Action Item	Responsibility and Target Completion Date	Comments/Completed
	<b>Acceptance of Agenda</b>  Reviewed the purpose of the Management Review and requirements of the Management Review.	None	N/A	N/A
A	<b>Incidents of regulatory non-compliance</b>  No non-compliances in the MOECC inspection	None	N/A	N/A
B	<b>Incidents of adverse Drinking Water Tests</b>  No AWQIs. Discussed that there was one AWQI last year compared to none this year.	None	N/A	N/A

C	<p><b>Deviations of Critical Control Point Limits and Response Actions</b></p> <p>Limits have been set up so that we do not reach a non-compliance situation.</p> <p>There were 108 CCP limits, of these limits reached there were 24 that were not caused due to regularly scheduled maintenance.</p> <p>Jul 5-30, 2018: 10 limits reached. Due to HACH buffer reagents being changed by the manufacturer it has been assumed that the new reagents have caused issues with the readings. The manufacturer has been made aware and they have changed process for the reagents, and will be switching back to the old formula. In the meantime more frequent cleaning is being conducted to alleviate the issue.</p> <p>May 19, 2018: Inlet chlorine residual low due to a leak on the hypo line. Low lift pumps were off at the time.</p> <p>Feb 6, 2018: Turbidity spike &gt;1ntu for less than 1 min, anomaly unknown cause.</p> <p>Jan 17, 18, 2018: Turbidity spike. There was lock out put in place to prevent filter from running if &gt;0.6 NTU for more than 5min.</p> <p>Nov 28 and 29, 2017: Low inlet/outlet residuals due to power failure. Restored when power returned.</p> <p>Nov 8, 2017: High speed flush and cleanout of inlet channels for 11hrs, which is routine maintenance about twice a year. Caused low chlorine due to plant being offline.</p> <p>Jul 31- Aug 2, 2017: High turbidity spikes due to contractors putting insulation on pipes near turbidity analyzers.</p> <p>August 20, 2017: High turbidity spike in the filter effluent. Spike was short with no issues.</p>	None	N/A	N/A
D	<p><b>Effectiveness of the Risk Assessment Process</b></p> <p>June 15, 2018 annual review completed. This included operators, managers as well as the owner representative. New version of 2.0 required the risk assessment to include hazardous events as identified by the MOECC. There were some revisions made which included radio failure, personal coverage shortages, vandalism/terrorism, and extreme weather events.</p> <p>Reviewed the CCP that have been identified in the Risk Assessment.</p>	None	N/A	N/A

E	<p><b>Internal and Third-Party Audit Results (Address OFIs identified)</b></p> <p>Internal Audit is conducted annually and was completed on July 17, 2018. There were no non-conformances. There were many OFIs identified, all the OFIs were reviewed from the table of action items that was prepared. All action items have been addressed in this table. Either the OFI was addressed by making a revision or was addressed by identifying why it wasn't implemented.</p> <p>External Audit March 29, 2018 by Kirsi McLandress for the S1 surveillance audit. There was 1 OFI and no non-conformances. The OFI was addressed.</p>	None	N/A	N/A
F	<p><b>Results of Emergency Response Testing (address OFIs identified)</b></p> <p>The annual test will be SCADA/PLC Failure Contingency but has not been conducted yet because an actual test is going to be performed by running the filters in manual. The delay in testing is due to wanting to perform during lower demands during fall/winter.</p> <p>A spreadsheet has been made to assist in calculations while operating the plant in manual mode for the above contingency.</p> <p>All contingencies were reviewed in June of 2018.</p> <p>Contingency Plan CP-07 was reviewed for SCADA/PLC failure.</p>	Conduct annual contingency test when water demand and staffing allow.	OCWA to complete by November 31, 2018	
G	<p><b>Operational Performance</b></p> <p>Annual Report and Summary Report for 2017 were reviewed. The flow readings show that the plant is not at capacity. Annual Report reviews sampling results. All anomalies were explained.</p> <p>MOECC Inspection report had no non-compliances and as such received 100% inspection rating.</p> <p>83% corrective work orders were closed so far in 2018. 95% preventative work orders were closed so far in 2018.</p> <p>97% corrective work orders were closed in 2017. 99% corrective work orders were closed in 2017.</p> <p>Process Data Management reports are provided monthly to the owner representative. There have been no concerns with the reports.</p>	None	N/A	N/A

H	<b>Raw Water Supply and Drinking Water Quality Trends</b>  Trends from 2014-2018 were reviewed. The reviewed information showed very little fluctuations in the parameters reviewed. Raw water quality can fluctuate based on lake conditions. Parameters that were reviewed include bacteriological results, conductivity, flows, turbidity and temperature of Raw and Treated water.	None	N/A	N/A
I	<b>Follow-up Action Items from Previous Management Reviews</b>  Spreadsheet of 2017 Management Review action items was reviewed. All action items have been addressed.  Discussion on sign in/out board; muster boards. A test of the fire alarm should be scheduled so that all staff are aware and know the muster points. This should be done when Mike (accounts payable) is onsite so he is aware.  Generators SOP failure was reviewed since it was modified to ensure safety of the staff. Look into portable generator system options if there is a failure of the onsite generators and include into SOP.	Test fire alarm system. Ensure that Mike Helps is onsite for test.  Look into changing SOP to include use of portable generators	OCWA to complete by October 31, 2018  OCWA to complete by October 31, 2018	
J	<b>Status of management Action Items Identified Between Reviews</b>  No action items have been identified between management reviews.	None	N/A	N/A
K	<b>Changes that could Affect the QEMS</b>  The potential hazardous events from the MOECC have now been included in the Risk Assessment process.	None	N/A	N/A



<b>L</b>	<p><b>Consumer Feedback</b></p> <p>Five customer complaints were recorded since.</p> <p>Aug 21, 2017—Low pressure during hydrant flushing when Forest Standpipe was out of service for painting. Alarm set points were modified to warn of issue in the future as well as asking for notice of flushing in advance of flushing.</p> <p>3551 London Line-Oct 6, 2017 low pressure; investigation into the issue line pressure 42psi therefore, there is no issue with the system and is the consumers issue. Plympton Wyoming has been notified.</p> <p>4530 London Line—Oct 6, 2017 PRV in home failure, LAWSS pressure was fine. No further issues. This complaint was not related to the other complaint above as this home is on the outlet of the reservoir.</p> <p>Nov 26—City of Samia consumer, the complaint should have been forwarded to the city and not to LAWSS. Sulfur complaint, the LAWSS GM attempted to call consumer back with no response. Determined it was not a water supply issue.</p> <p>June 15, 2018— Low pressure in Plympton Wyoming due to an incorrect valve being closed during water taking with Petrolia. SOP has been revised to ensure only LAWSS operators to operate the valve.</p>	None	N/A	N/A
<b>M</b>	<p><b>Resources Needed to Maintain the QEMS</b></p> <p>There are sufficient resources needed to maintain the QEMS.</p>	None	N/A	N/A
<b>N</b>	<p><b>Results of the Infrastructure Review</b></p> <p>Once a month the Owner Representative and Senior Operations Manager review the capital and major maintenance.</p> <p>Security Inspection Reports from April 2018 were reviewed.</p> <p>Budgets were reviewed.</p>	None	N/A	N/A
<b>O</b>	<p><b>Operational Plan and Endorsement Currency, Content and Updates</b></p> <p>Operational Plan endorsed by all parties on May 31, 2018. If there are significant changes to board members when the municipal election occurs it will be considered at that time. There are no other significant changes that would require re-endorsement of the Operational Plan.</p>	Change as needed any contacts that may change as part of the upcoming Municipal Election	OCWA/LAWSS to be completed by December 31, 2018	

P	<b>Staff Suggestions</b>  Quarterly staff meeting has DWQMS as a standing agenda and reviewed the new requirements of DWQMS 2.0 and the Operational Plan revisions.  Emergency response plan to be reviewed if new board members are in place once the election is completed. Also will require the contact numbers for the new board members when available.	Change as needed any contacts that may change as part of the upcoming Municipal Election	OCWA/LAWSS to be completed by December 31, 2018	
Q	<b>Consideration of applicable Best Management Practices (BMPs)</b>  There have been no BMPs identified for the system.	None	N/A	N/A
R	<b>Evaluation of need for re-endorsement of the Operations Plan</b>  Discussion was made and it was decided that the Operations Plan does not need re-endorsement at this time.	None	N/A	N/A

## Management Review Acknowledgement

OCWA Senior Operations Manager:	<i>Daniel Hunt</i>
Date:	<i>30/08/18</i>
LAWSS Representative:	<i>Clinton Hargen</i>
Date:	<i>30/08/18</i>

**Revision History**

Date	Revision #	Reason for Revision	Revision By
Aug 28, 2018	0	Create Minutes	Cindy Sigurdson
Aug 29, 2018	1	Reviewed and revised minutes	Jodi Stradeski

## **Appendix B**

### **Raw and Treated Water Quality Trends**

# Raw and Treated Water Quality Trends

## LAWSS Water Treatment Plant

Parameter	2015	2016	2017	2018	2019
Raw water Max Background cfu/100mL	2800	3200	4400	20000	8600
Raw water Avg Background cfu/100mL	138	298	668	711	626
Raw water Max Ecoli cfu/100mL	10	20	10	10	10
Raw water Avg Ecoli cfu/100mL	1.385	1.53	1.17	1.4	1.2
Raw water Max Total Coliform cfu/100mL	23	820	230	120	100
Raw water Avg Total Coliform cfu/100mL	2.3	22	12	15.1	11.8
Treated Water Max Background cfu/100mL	5	2	1	0	0
Treated Water Avg Background cfu/100mL	0.1	0.06	0.02	0	0
Treated Water Max Ecoli cfu/100mL	0	0	0	0	0
Treated Water Avg Ecoli cfu/100mL	0	0	0	0	0
Treated water Max Total Coliform cfu/100mL	0	1	0	0	0
Treated water Avg Total Coliform cfu/100mL	0	0.02	0	0	0
Treated Water Max HPC cfu/1mL	50	140	390	30	10
Treated Water Avg HPC cfu/1mL	12	14	17.5	10.8	10
Raw Water Max Conductivity uS/cm	240	251	243	234	244
Raw Water Min Conductivity uS/cm	23	214	174	211	170
Raw Water Avg Conductivity uS/cm	224	226	226	225	229
Raw Water Daily Max Flow m3/day	79435	94102	89833	86355	100783
Raw Water Daily Min Flow m3/day	31193	38861	38694	33049	36877
Raw Water Daily Avg Flow m3/day	54248	55161	51873	53104	55506
Raw Water Flow m3	19800517	20189198	18933498	19383015	
Treated Water Daily Max Flow m3/day	78221	90569	84344	84253	97988
Treated Water Daily Min Flow m3/day	36043	40266	38573	34795	39452
Treated Water Daily Avg Flow m3/day	53033	53772	51088	52128	54655
Treated Water Flow m3	19357021	19680571	18646948	19026833	
Raw Water Turbidity Max NTU	33.5	38.2	62.4	40	21.4
Raw Water Turbidity Min NTU	0.02	0.33	0.1	0.2	0.2
Raw Water Turbidity Avg NTU	1.385	2.449	2.521	2.028	1.587

Raw Water Max pH	8.56	8.62	8.47	8.45	8.9
Raw Water Min pH	7.85	7.83	7.53	7.19	7.86
Raw Water Avg pH	8.23	8.24	8.12	8.177	8.2
Treated Water Max pH	7.83	7.48	8.05	7.77	7.69
Treated Water Min pH	7.27	7.39	7.11	7.21	7.15
Treated Water Avg pH	7.57	7.55	7.51	7.49	7.47
Raw Water Max Temperature	21.7	23.4	22	24.1	25
Raw Water Min Temperature	4	4	2.75	5	3
Raw Water Avg Temperature	12.2	12.39	12.3	13.1	13.1

## **Appendix C**

### **Signed 2018 Management Review Minutes and Tracking Spreadsheet**

**LAWSS**  
**LAWSS 2018 Management Review Tracking Spreadsheet**  
**Management Review Conducted August 28, 2018**

Item # from Mgmt Review	Issue Identified	Response Action	Estimated Date of Completion	Actual Date of Completion
F	It was noted that the annual test of a contingency was not conducted yet this year. A plan is in place to conduct the test on the SCADA/PLC Failure Contingency when water demands drop and staffing becomes available.	Conduct annual test of of contingency from Facility Emergency Plan. SCADA/PLC Failure Contingency will be tested.	November 31, 2018	Completed December 11, 2018
I	Mike Helps (LAWSS Accounting Clerk) should be trained on proper emergency evacuation procedures including testing of fire alarms.	Test emergency evacuation procedure and fire alarms and ensure that Mike Helps is present.	31-Oct-18	Completed August 30, 2018
I	It was noted that during the review of the Power Failure LAWSS WTP Generators Fail to Start SOP that there is no mention of using a portable generator system.	Add to Power Failure LAWSS WTP Generators Fail to Start Standard Operating Procedure that a temporary generator system may be required.	31-Aug-18	Completed August 29, 2018
O & P	It was noted during the review that contacts will need to be changed due to the upcoming Municipal Elections.	Change contacts as required.	31-Dec-18	Completed December 2018

**Revision History**

**Date**

28-Aug-18

**Revision #**

0

**Reviewed By**

Jodi Stradeski



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Report Page: Page 1 of 2
Meeting Date: December 5, 2019
File No.:



**To:** Chair and Members  
Lambton Area Water Supply System Joint Board of Management

**From:** Clinton Harper  
General Manager

**Subject:** Brooke-Alvinston Water Supply System Modifications

## Recommendation

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That the LAWSS Board receive this report as information.

## Background:

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The Municipality of Brooke-Alvinston is supplied potable water by LAWSS through a connection to the Watford Subsystem. In 2018 LAWSS supplied 85,913m<sup>3</sup> at as rate of \$1.13/m<sup>3</sup>. To supply the town, Brooke-Alvinston operates a reservoir pumping station and elevated water tower. Potable water entering the Municipality from LAWSS first travels to the Municipality's reservoir pumping station. From the reservoir, water is pumped into the town's elevated storage. OCWA has been contracted by Brooke-Alvinston to operate the water system.

In addition to pumping and storage, the original purpose of the pumping station reservoir was to treat water from the Sydenham River. The plant commissioned in 1974 was capable of treating up to 150m<sup>3</sup>/day. Treated water would be stored in the reservoir and eventually pumped into the community's elevated storage. Due to the quality of the source water, an effort was made in the 2004 to tie the Municipal system into LAWSS. Once the connection to LAWSS was made, the Municipality de-commissioned the treatment components of the reservoir pumping facility and established their current operational process.

In July 2015, the Municipality hired MIG Engineering to complete system modeling to help the Municipality better understand the necessity of their existing water infrastructure. Among other things, the 2015 MIG Engineering report concluded that the supply via the Watford Subsystem was sufficient to allow for the decommissioning of the reservoir pumping station. The LAWSS system pressure is already capable of filling the Municipality's elevated storage under normal operating conditions. The MIG Report recommends that the water tower be retained for emergency preparedness and fire-fighting purposes.

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## Comments:

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In June 2019, LAWSS staff was approached by a municipal representative with the 2015 MIG Engineering Report. The representative requested that LAWSS enter into a conversation with Brooke-Alvinston aimed at allowing them to de-commission their pumping station reservoir. The request was based on the MIG Engineering report's findings and recommendations.

The modeling used by MIG Engineering in their 2015 report was based off of data provided by LAWSS to MIG Engineering in 2012 for the development of the original LAWSS Master Plan. The MIG Report was considered to be out of date by staff and an updated modeling report was requested.

Based on agreed upon scope and criteria, Brooke-Alvinston hired AECOM to re-evaluate the request based on the recently updated LAWSS model created by AECOM. AECOM concluded that under existing and future demand conditions for water serviceability can be achieved without the Alvinston pumping station reservoir. They further advised that to prevent the standpipe from overflowing, a flow/pressure control valve would need to be installed to regulate water levels in the standpipe.

Essentially, Brooke-Alvinston is requesting an operational relationship with LAWSS that resembles the operational relationship between LAWSS and the Town of Plympton-Wyoming. In the Town of Plympton-Wyoming, specialized valving is used to control the elevation of the tower.

## Consultation:

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AECOM, and OCWA-LAWSS and OCWA-Alvinston staff were consulted in the preparation of this report.

## Financial Implications:

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There are no financial implications to LAWSS. All costs associated with the modifications will be borne by Brooke-Alvinston.

The rate Brooke-Alvinston pays to LAWSS was reviewed in 2018 and is subject to annual CPI increases. Due to the non-impact of the modification to LAWSS, a review of this rate for possible increase is not being recommended. The pumping station reservoir costs Brooke-Alvinston approx. \$15,000-\$20,000 annually to operate.

This report was prepared by Clinton Harper, LAWSS General Manager

Attachment(s):

Report No.: 2019-11-2
Report Page: Page 1 of 3
Meeting Date: December 5, 2019
File No.:



**To:** Chair and Members  
Lambton Area Water Supply System Joint Board of Management

**From:** Clinton Harper  
General Manager

**Subject:** WTP Main Switchgear & Generator Replacement Project

## Recommendation

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That the Board receive as information and allow for a presentation related to the award of the 5kV switchgear by the LAWSS General Manager.

## Background:

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RFP 18-131 "Engineering Design for Replacement of Emergency Generators at LAWSS" was awarded to EXP Services Inc. on July 17, 2019. EXP Services Inc's proposal was the best among seven proposals received for this project. Proposals were evaluated by a team consisting of the City of Sarnia Procurement Department, OCWA Operational Staff, and the LAWSS General Manager.

At the recommendation of staff, in November 2018, the Board authorized EXP to explore and include in the final build a provision for the new generator system to be used non-standby applications.

At the end of 2018, the Board requested that staff explore efficiencies related to replacement of the WTP 5kV Switchgear as part of the Generator Project. In a Board report dated January 31, 2019, the efficiencies related to combining the projects were described. Based on the information and the recommendations provided, the Board increased the overall project construction budget from \$4million to \$5.5million and approved EXP Services Inc. to provide the Engineering Services needed to combine the 5kV Switchgear with the Generator Project.

In June 2019, based on a recommendation from staff, Toromont was selected to provide the generator package for the Generator Replacement portion of the project. A PO was issued and work began to assemble the equipment. As of October 2019, the three 1.5MW units were delivered to the Toromont testing facility in Burlington and are currently in the process of being tested as per LAWSS specifications. OCWA and EXP Services Inc. have provided staff to attend this testing.

Report No.: 2019-11-2
Report Page: Page 2 of 3
Meeting Date: December 5, 2019
File No.:



## Comments:

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### **Contractor Pre-qualification**

Due to the criticality of the systems that will be affected during the Generator and 5kV Switchgear Replacement Project, an effort was made to prequalify the contractors and subcontractors authorized to bid. The pre-qualification process was based:

- Demonstration of a specified level of overall Company qualifications and experience.
- Availability of specialized staff required for the project.
- Past Company safety performance.
- Commitment to communication.

A Request for Vendor Pre-qualification was publicly tendered on the City of Sarnia's Bids and Tenders website from October 15, 2019 to November 15, 2019. The processes yielded three potential Contractors with sufficient experience and qualifications necessary to successfully complete the LAWSS Generator and Switchgear Replacement Project.

### **5kV Switchgear**

The WTP 5kV Switchgear has reached its end of life and has been slated for replacement. An RFQ specific to the physical switchgear component was developed by EXP Services Inc. as per LAWSS specification and provided to 4 switchgear suppliers on November 7, 2019. The RFP closed on November 25, 2019 and resulted in bids from three of the requested suppliers. Bids are currently being reviewed by EXP Services Inc. to determine completeness. A recommendation is expected on Monday December 2, 2019.

### **Project Timeline Update as of December 1, 2019:**

Based on the most up-to-date information project timeline is as follows:

<u>Benchmark</u>	<u>Description</u>
Monday, December 2, 2019	EXP Services completes evaluation and provides recommendation on 5kV Switchgear supplier.
Tuesday, December 3, 2019	LAWSS-Supplier Review of Sales Agreement.
Thursday, December 5, 2019	Board awarded 5kV Switchgear and PO issued.
Week of January 20, 2020	5kV switchgear shop drawings provided to EXP Services.
Week of February 3, 2020	Construction Project Tender issued to the three pre-qualified General Contractors.
Week of March 2, 2020	Project Closing, submissions review.
Thursday, March 26, 2020	Project General Contractor awarded by Board.

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Report Page: Page 3 of 3
Meeting Date: December 5, 2019
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## Consultation:

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This report was completed in consultation with EXP Services Inc., and OCWA Operational Staff, the City of Sarnia's Purchasing Department and LAWSS Corporate Legal Council.

## Financial Implications:

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Selection of the 5kV switchgear is currently underway. This section will be presented with the additional information related to the award of the 5kV switchgear.

This report was prepared by Clinton Harper, LAWSS General Manager

Attachment(s):

# Minutes

## LAWSS Technical Team Meeting



Thursday November 14, 2019

10am

LAWSS WTP – 1215 Fort Street, Sarnia ON N7V 1M1

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### **1. Delegation.**

None

### **2. New Business.**

#### **a. Terms of Reference.**

DRAFT Terms of Reference review.

#### **Discussion:**

Additional Sections requested are listed below. DRAFT Updated and attached.

1. "Order of the Day" section.
2. Define Minutes and the Agenda Requirements.
3. Specify the proposed dates for the upcoming year.

#### **b. Service Level Agreement.**

Purpose:

1. To establish a clear separation between LAWSS and the Member Municipalities.
2. To provide a uniform relationship between LAWSS and the Member Municipalities.

Subject Matter Examples:

- Communication Protocols
- Fire Hydrants
- Service Connections

#### **Discussion:**

System delineation points needs to be better established as part of this agreement.

LAWSS General Manager requested that the group prepare a list of the "grey" areas that they are aware of to begin this process of establishing clear delineation.

#### **c. ICIP Green Stream.**

- \$200 million in funding for critical water, wastewater and stormwater rehabilitation and replacement projects is available.

- Applications due by January 22, 2020

The LAWSS GM contacted the Ministry with a number of questions once the funding was announced. The key responses were as follows; Due to the legal standing of LAWSS it cannot apply for the funding independently of its Members. Also, a clearly define project scope is highly recommended prior to applying for funding.

One question related to the ability of LAWSS Members to combine their funding to achieve a common project remains unanswered.

### **Discussion:**

Some Municipal member had mentioned that they have already earmarked their funding for a specific project.

## **3. Ongoing Business.**

### **a. Emergency Preparedness Exercises.**

Recap: There is an initial event that requires LAWSS to close its primary and secondary intake. Initially, LAWSS customers are asked to conserve but eventually all reservoirs are depleted and the distribution network falls below the minimum legislated requirements. "Do not use" advisory issued for LAWSS. For the scenario we will use a marine traffic incident.

x3 separate operations in motion.

1. Alternative supply of potable water.
2. Alternative Fire Protection.
3. Re-commissioning of the LAWSS WTP and Distribution Network.

At a meeting with representatives from Lambton County Fire, CEMC and Public Health on Tuesday November 12, 2019, it was determined that the three separate operations should be commanded by the County of Lambton Emergency Operations Center.

The LAWSS Technical Team will be vital in establishing the Re-commissioning plan.

### **Discussion:**

A Request will be sent to the municipalities, via the Technical Team Member, to establish a re-commissioning plan specific to their unique system. In general, the Plan will be based of two steps that will be combined with the LAWSS-OCWA and neighboring municipal action plans.

Step #1- Remove the air from the System.

Step #2- Flush the System for Water Quality.

Request for all Municipalities serviced by LAWSS.

- Identify the key FH needed for both steps.
- Identify additional FH needed as additional sampling points.
- Develop unique plan.
- Designate a position and alternate position as Municipal lead.

**b. LAWSS Website.**

Potential to provide generic Water FAQ on the LAWSS Website. Possible subject matter:

- Water Treatment Process
- Fluoridation
- Tap vs. Bottled Water
- Service Area
- Infrastructure
- Lead Services

**Discussion:**

Generally, members are in agreement that FAQ on website could be beneficial. LAWSS GM will approach Board with DRAFT website content.

**c. LAWSS Master Plan Update.**

Project timing and closing date adjusted slightly. We are still requiring that the report be finalized in time to allow for resulting project to be considered in 2021 Budget proposal.

Event:	Date:
Pre-Bid Information Meeting;	Wednesday, October 30, 2019 @ 11am
Questions, Inquires and Clarification Deadline;	Tuesday, November 19, 2019 @ 2pm
RFP Closing Date and Time;	Tuesday, November 26, 2019 @ 2pm
Review & Evaluation of RFP Submissions;	Week of December 9 <sup>th</sup> 2019
Interviews & Presentations (if required);	Week of December 9 <sup>th</sup> 2019
Award Successful Proponent;	Thursday, January 30, 2020
Kick-off Meeting / commencement of Project; and	Week of February 3, 2020
Final Report Submission.	Thursday, September 10, 2020



## **Discussion:**

The Consultant that is awarded this project will be tasked with compiling all of the relevant growth and development information needed. This will result in the municipality being contacted directly for information.

## **4. Capital and O&M Update.**

### Generator and Main Plant Switch Gear Replacement Project

- X3 1.5MW Toromont Generators currently under construction.
- 5kV Switchgear closes November 25<sup>th</sup>. If the RFQ is successful, the Board will be asked to select the Gear at the meeting on December 5<sup>th</sup>.
- Contractor Pre-selection closes on November 15<sup>th</sup>.
- GC selection expected by February 2020.

### SD-WAN Communication

- Deployment of SD-WAN is expected in early 2020.

### HVAC Admin

- Balancing and project closeout this week.
- Awaiting the Operations and Maintenance Manual.
- Official commissioning and hand over of the system to Operator expected before the end of November.

### Major Maintenance

- OCWA is wrapping up 2020 Major Maintenance.
  - WLPS louver upgrade is underway.
  - Air release valve upgrade upcoming in Plympton-Wyoming. Notifications will be going out once date is set.

## **5. New Meeting.**

The next meeting of the LAWSS Technical Team to be held on Thursday, February 13, 2020 at 10am at the LAWSS water treatment plant.

1.0:	Purpose:
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To advise the LAWSS Joint Board of Management on matters pertaining to the overall capital, operations and maintenance of the Water System.

1.1	Objective:
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To provide an open forum to Municipal Members for discussion of LAWSS, to improve communication and flow of information between the LAWSS Member Municipalities, and the LAWSS General Manager. To improve Member Municipalities' access to LAWSS Administration and Operations staff.

1.2	Mandate:
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To improve the ability for LAWSS General Manager in developing recommendations that incorporate the unique perspective of all Municipal Members for consideration by the LAWSS Joint Board of Management.

2.0	Administrative Process:
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The LAWSS Technical Team shall report to the LAWSS Joint Board of Management through the LAWSS General Manager.

At the first meeting of the year, the team shall:

- a) Establish dates and times for regular meetings for the upcoming year.
- b) Review the Terms of Reference.

2.1	2020 Meetings:
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- Thursday, February 13, 2020
- Thursday, May 14, 2020
- Thursday, August 13, 2020
- Thursday, November 12, 2020

2.2	Agenda:
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An agenda will be prepared by the LAWSS General Manager and provided to the LAWSS Technical Team 1 week in advance of the meeting. Team members who wish to bring a topic to the meeting must submit a request prior to the 1-week deadline.

2.3	Minutes:
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Minutes of meetings shall be recorded and shall be amended as necessary and adopted at the next regular meeting of the LAWSS Joint Board of Management.

2.4	Decision Making:
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Discussions that take place during meetings of the LAWSS Technical Team will be used to develop recommendations for consideration by the LAWSS Joint Board of Management. The LAWSS Joint Board of Management ultimately make all strategic and policy level decisions with respect to LAWSS.

2.5	Order of the Day:
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The prepared Agenda shall include:

1. Delegation.
2. New Business.
3. Ongoing Business.
4. Capital and O&M Update.
5. Next meeting.

3.0	Representatives:
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The LAWSS Technical Team consists of an Engineering/Operations staff designated by each Member Municipality, OCWA-LAWSS Operational Management and the LAWSS General Manager.

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Report Page: Page 1 of 2
Meeting Date: December 5, 2019
File No.:



**To:** Chair and Members  
Lambton Area Water Supply System Joint Board of Management

**From:** Clinton Harper  
General Manager

**Subject:** WTP Reservoir Leak

## Recommendation

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It is recommended that the Board approve \$50,000 to clean the WTP Reservoir and complete a "Reservoir Condition Assessment".

## Background:

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The WTP Reservoir is located under the berm just north of the WTP. The reservoir holds approx. 67,000m<sup>3</sup> of potable water and consists of two equal-baffled cells in series. The WTP reservoir was constructed during the original plant construction in 1971.

In 1979, a major concrete deficiency was identified in the east cell. At the base of the exterior wall near the northeast corner, considerable erosion of the concrete joint just above the footing was identified. The erosion had exposed the reinforcing steel to the chlorinated water. Repairs were fully completed in 1985.

In 1991, an effort was made to clean out and re-seal, inside and out, the vertical concrete control joints along the south and west edge of the reservoir. The work included the first three control joint east of the southwest corner, and the first two control joints north of the southwest corner. The information does not indicate the reason the work was undertaken but it can be assumed that this work either pre-emptive measure or a response to a possible leak, or leak in the area of the re-seal.

In 2003, a major capital project was undertaken that involved installing 24' high concrete baffle walls throughout the reservoir. At that time, OCWA staff completed a full inspection of the interior structure. The inspection did not identify an issue with how the 1985 or 1991 work was holding up. The inspection during the baffle install did reveal an issue with how the flag pole was installed over the north west corner. The flag pole issue was corrected as part of the 2003 baffle install project.

Prior to treated water leaving the WTP, a certain amount of chlorine contact time (CT) is required by the Ministry of Environment Conservation and Parks (MECP). Chlorine is

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Meeting Date: December 5, 2019
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added after filtration and then the treated water travels through the baffled system at a controlled rate to achieve CT.

## Comments:

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The OCWA Operator noticed water on the surface of the rear service roadway between the treatment plant and the reservoir during standard rounds the week of October 28<sup>th</sup>. Water appeared to be coming from a concrete joint on the south reservoir wall.

Water Operators in Distribution use specialized testing equipment to identify watermain breaks in the field. Testing of the water on the roadway indicated the presence of chlorine at a level similar to what is usually observed at a watermain break. A reservoir leak was assumed and appeared to be coming from the first control joint east of the southwest corner of the structure. (one of the control joints cleaned and re-sealed during the 1991 project)

The following week, divers entered the reservoir over two days and completed a preliminary internal inspection of the area adjacent to the exterior leak. The dive inspection confirmed the water found on the roadway originated from the reservoir and the leaks location in the structure wall. The preliminary internal inspection report and video were provided to GM Blueplan Engineering and a workplan was requested to complete a reservoir condition assessment. GM Blueplan is an Engineering Consultant familiar with reservoir repairs of similar type.

## Consultation:

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This Report was prepared in consultation with OCWA Operational Staff.

## Financial Implications:

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It is important that the leak be corrected as soon as possible. The first step is to drain the reservoir completely, gently clean the surfaces, and allow the Engineer physical access to complete a structural assessment. Draining and cleaning the reservoir will require special approval by the MECP and is expected to cost \$35,000. Once cleaned, the area can be inspected and condition assessed. A complete inspection, that includes the entire reservoir, is estimated at \$15,000. With the inspection complete, a project to address the issue can be developed. A project recommendation with full costing estimate will be brought before the Board at a future date for its consideration.

This report was prepared by Clinton Harper, LAWSS General Manager

Attachment(s): none