

AGENDA

LAWSS Board Meeting



Thursday, September 26, 2019

12:00 pm

Lambton Area Water Supply System WTP – 1215 Fort Street, Sarnia ON N7V 1M1

1. Declaration of Pecuniary or Conflict of Interest

2. Approval of Regular Agenda Minutes

A copy of the minutes for the meeting are attached to this agenda.

Moved By _____

Seconded By _____

"That the minutes from the June 27, 2019 meeting of the LAWSS Board be adopted."

3. Delegations

4. LAWSS Monthly Financial Statements

A copy of the May, June, and July LAWSS budget statement and cash balance sheets are attached for review and approval.

Moved By _____

Seconded By _____

"That the Board accept the financial statements and cash balance sheets for May, June and July 2019."

a. May 2019 Financial Statement and Cash Balance Sheet

b. June 2019 Financial Statement and Cash Balance Sheet

c. July 2019 Financial Statement and Cash Balance Sheet

5. OCWA Monthly Operational Statements

The June, July and August 2019 Monthly Operations Report and 2nd Quarter Financial Report from OCWA are attached.

Moved By _____

Seconded By _____

"That the Board accept the June, July and August 2019 Operational Statements and 2nd Quarter Financial Report from OCWA."

- a. June 2019 Operational Statements
- b. July 2019 Operational Statement
- c. August 2019 Operational Statement
- d. 2nd Quarter Financial Report

6. Information Reports

The June, July and August 2019 Flow Summaries are attached.

Moved By _____

Seconded By _____

"Motion to receive June, July and August 2019 Flow Summaries as Information."

- a. June 2019 Flow Summary Sheets
- b. July 2019 Flow Summary Sheets
- c. August 2019 Flow Summary Sheets

7. Capital Update

- a. Radio / PLC Upgrade Project

Moved By _____

Seconded By _____

"Motion to **receive** report Subject: Radio / PLC Upgrade Project Update, dated September 26, 2019, as information and approve implementation of cloud-based, software defined, wide area network to replace existing radio communication system."

8. Reports of Committees

- a. Meeting Minutes: LAWSS Technical Group

Moved By _____

Seconded By _____

"Motion to **receive** Minutes of the LAWSS Technical Group, dates September 12, 2019, as information."

1. Revised TM#4 Financial Plan (20 Year Plan)

9. Miscellaneous Report

10. Ongoing Issues

11. Correspondence

12. New Business

a. DRAFT 2020 Budget

Moved By _____

Seconded By _____

"The Board **receive** the LAWSS 20 Year Growth Plan as information."

Moved By _____

Seconded By _____

"The Board **receive** the WTP- Electrical Reliability Study as information."

Moved By _____

Seconded By _____

"The Board **receive** the WTP- Main Plant HVAC Assessment as information."

Moved By _____

Seconded By _____

"The Board **receive** the Facility Storage- Condition Assessment for the Indian Road Water Tower and West Lambton Pumping Station Reservoir as information."

Moved By _____

Seconded By _____

"The Board **approve** the 2020 Budget as presented complete with 3.0% increase."

Moved By _____

Seconded By _____

"The Board **receive** the 2020-2025 Capital Forecast as Information."

b. Dog Park @ Forest Standpipe

Moved By _____

Seconded By _____

"The Board agrees in principal to re-purposing an area of LAWSS property as a dog park, and will allow staff to work with the Municipality of Lambton Shores to develop an agreement for its use. Agreement will be presented to the LAWSS Board at a later meeting for approval."

c. Accessibility - LAWSS WTP

Moved By _____

Seconded By _____

"Motion to **receive** report Subject: LAWSS WTP Accessibility, dated September 26, 2019 as information"

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 October 31, 2019 at noon

MINUTES

LAWSS Board Meeting



Thursday, June 27, 2019

12:00pm

Lambton Area Water System WTP – 1215 Fort Street, Sarnia ON N7V 1M1

Attendees:

Members

Bev Hand, Chair, Village of Point Edward
Steve Arnold, Vice-Chair, St. Clair Township
Margaret Bird, City of Sarnia
Rick Goodhand, Municipality of Lambton Shores
Jackie Rombouts, Township of Warwick
Lonny Napper, Town of Plympton-Wyoming

Staff

Brian Black, St. Clair Township
Adam Sobanski, Town of Plympton-Wyoming
Jay Verstraeten, Village of Point Edward
David Jackson, City of Sarnia
Dave Hunt, OCWA Operations Manager
Susan Budden, Business Development Manager OCWA
Suzanne Durling, OCWA Admin
Clinton Harper, LAWSS

1. Declaration of Pecuniary or Conflict of Interest.

2. Approval of Regular Agenda Minutes.

A copy of the minutes for the May 30, 2019 meeting is attached to this agenda.

"That the minutes of the May 30, 2019 LAWSS Board Meeting be adopted."

Moved by: Mayor Steve Arnold
Seconded by: Mayor Lonny Napper
Carried

3. Delegations.

a) Protection of Drinking Water at LAWSS and in Ontario.

Marc Bechard, Drinking Water Supervisor (Sarnia District) for the Ministry of Environment Conservation Parks (MECP) & Clinton Harper, LAWSS GM.

b) OCWA Information Session on QEMS.

Jodi Stradeski, Operations and Compliance Team Lead, LAWSS-OCWA Southwest Region.

4. LAWSS Monthly Financial Statements.

A copy of the April 2019 LAWSS budget statement and April 2019 cash balance sheets are attached for review and approval.

"That the Board accept the financial statements and cash balance sheets for March 2019."

Moved by: Mayor Steve Arnold
Seconded by: Mayor Jackie Rombouts
Carried

5. OCWA Operational Statements.

The Monthly Operations Report and other materials from OCWA for May 2019 are attached.

"That the Board accept the May 2019 operational statement and other materials from OCWA."

Moved by: Mayor Steve Arnold
Seconded by: Mayor Lonny Napper
Carried

6. Information Reports.

A summary of the capital and major maintenance projects including purchase orders (POs) issued and money spent for April 2019 are attached.

Water Flows: The water flow sheets for May 2019 are attached.

"Motion to receive memo subject "Information Reports", dated June 27, 2019."

Moved by: Mayor Jackie Rombouts
Seconded by: Councillor Rick Goodhand
Carried

7. Operational/Capital Update.

a) Generator Replacement Project.

Recommendation that the Chair declare the LAWSS Board Meeting go in-camera to discuss commercially sensitive information explicitly supplied in confidence to LAWSS, pursuant to s. 239 (3)(i) and (j) of the *Municipal Act, 2001*.

"Motion for LAWSS Board to sign Toromont Sales Agreement Project #180616 and proceed with purchase of equipment proposed in Toromont Quotation #180616 (Rev2). Purchase subject to negotiated Terms and Conditions (LAWSS Amendment), dated June 19, 2019"

Moved by: Mayor Steve Arnold

Seconded by: Councillor Margaret Bird

Carried

8. Ongoing Issues.

a) Energy Conservation and Demand Management Plan (2020-2024).

Attached is a memo subject "Energy Conservation and Demand Management Plan" dated June 27, 2019.

"Motion to accept and endorse LAWSS Energy Conservation and Demand Management Plan (2020-2024), dated July 1, 2019, and approval to consider conservation measures as outlined within.

Moved by: Mayor Steve Arnold

Seconded by: Mayor Lonny Napper

Carried

9. New Business.

a) GIS Project Update.

Attached is a memo subject "GIS Project Update" dated June 27, 2019.

"Motion to enter into agreement with the County of Lambton in the amount of \$1110 annually for hosting and support services related to LAWSS GIS."

Moved by: Mayor Steve Arnold

Seconded by: Mayor Lonny Napper

Carried

b) Accessibility at LAWSS WTP

"Motion for Clinton to bring a report for better security and accessibility for the WTP plant"

Moved by: Mayor Steve Arnold
Seconded by: Councillor Margaret Bird
Carried

"Motion for an off-site meeting at the visitor chamber as needs basis"

Moved by: Mayor Steve Arnold
Seconded by: Councillor Margaret Bird
Carried

"Motion to send a note to Ministry referencing risk of micro plastics be reviewed and for staff to report back on any cities that put waste back into the great lakes."

Moved by: Mayor Steve Arnold
Seconded by: Councillor Margaret Bird
Carried

10. IN-CAMERA Items.

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

"Motion to go in-camera meeting."

Moved by: Mayor Jackie Rombouts
Seconded by: Mayor Steve Arnold
Carried

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

The Chair will report as required.

12. Adjournment/Next Meeting.

"That the LAWSS Board adjourn this meeting to its next board meeting held at the request of the Chair.

Moved by: Mayor Steve Arnold
Seconded by: Mayor Jackie Rombouts
Carried

pdf Attachments:

Presentation: Information Session on OCWA's QEMS
Minutes of LAWSS Board Meeting- May 30, 2019
LAWSS Financial Statement – April 2019
LAWSS Cash Balance Sheet – April 2019
OCWA Monthly Operations Report Ending May 31, 2019
OCWA Data Report for LAWSS- May 2019
OCWA Health and Safety Work Order Status- May 2019
OCWA Health and Safety Work Order Status- YTD 2019
OCWA Work Order Status- May 2019
OCWA Work Order Status- YTD 2019
Project list for April 2019
LAWSS Flows- May 2019
Memo – Information Reports
 Finalized 2018 Auditors Report
 Finalized 2018 LAWSS Financial Statements
 Occupancy Agreement: Tourism Sarnia-Lambton Inc.
Memo – Energy Conservation and Demand Management Plan (CDM)
 Energy Conservation and Demand Management Plan (2020-2024)
Memo – GIS Project Update

		May Actual	Month Budget	YTD - ACTUAL	YTD - Budget	Annual Budget	Variance	Percent of Budget Used
Municipality Revenue								
4050	Municipality Revenue	-798,349.79	-820,539.83	-3,991,748.99	-3,991,748.99	-9,805,197.00	0.00	41%
	Sarnia	-491,623.80	-491,623.80	-2,458,119.00	-2,458,119.00	-5,899,486.00	0.00	42%
	St. Clair Township	-208,848.31	-208,848.33	-1,044,241.57	-1,044,241.57	-2,506,180.00	0.00	42%
	Plympton-Wyoming	-39,438.48	-39,438.50	-197,192.42	-197,192.42	-473,261.00	0.00	42%
	Lambton Shores	-15,567.82	-15,567.82	-77,839.10	-77,839.10	-186,814.00	0.00	42%
	Warwick	-23,072.31	-23,072.31	-115,361.55	-115,361.55	-276,867.00	0.00	42%
	Point Edward	-19,799.07	-19,799.07	-98,995.35	-98,995.35	-237,589.00	0.00	42%
	Bluewater Power Distribution Corp.			0.00	0.00		0.00	
4120	Brooke-Alvinston Revenue		-22,190.00	-27,875.62	0.00	-225,000.00	-27,875.62	12%
	Total Municipalities Revenue	-798,349.79	-820,539.83	-4,019,624.61	-3,991,748.99	-9,805,197.00	-27,875.62	41%
Other Revenue								
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	-6,200.76	0.00	-6,200.76	0.00	-7,000.00	-6,200.76	89%
	County of Lambton		0.00	-8,400.00	0.00	-7,000.00	-8,400.00	120%
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	0%
	Total Other Revenue	-6,200.76	0.00	-14,600.76	0.00	-114,000.00	-14,600.76	13%
Investment Interest								
4420	Interest Earned	-18,633.67	-15,000.00	-81,032.03	0.00	-72,000.00	-81,032.03	113%
Project Expenses								
	Total Revenue	-823,184.22	-835,539.83	-4,115,257.40	-3,991,748.99	-9,991,197.00	-123,508.41	41%
5100	Project Expenses	100,911.95	0.00	405,651.22	805,240.25	9,477,383.00	-189,493.95	4%
	19-01 Eng Studies - WTP HVAC Dehumidification	1,526.40	0.00	17,706.24	0.00	20,000.00	-2,293.76	89%
	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	88,421.34	0.00	147,657.01	0.00	250,000.00	-102,342.99	59%
	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%
	Tasks carried over from 2018	10,964.21	0.00	240,287.97	429,781.92	5,157,383.00	-189,493.95	5%
	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	48,948.58	587,383.00	-48,948.58	0%
	17-05 Engineering Design for Emergency Generators		0.00	16,536.00	20,833.33	250,000.00	-4,297.33	7%
	18-01 Rebuild 32" Ross Valve at WLBS		0.00	0.00	5,833.33	70,000.00	-5,833.33	0%
	18-02 New Generators Replacement (Including Air Louvers		0.00	0.00	333,333.33	4,000,000.00	-333,333.33	0%
	18-03 SCADA Radio Replacement Work (Installation)		0.00	194,982.29	12,500.00	150,000.00	182,482.29	130%
	18-04 Engineering Studies	10,964.21	0.00	28,769.68	8,333.33	100,000.00	20,436.35	29%
5150	Distribution Repairs		17,050.00	15,181.40	100,000.00	200,000.00	-84,818.60	8%

5125

	May Actual	Month Budget	YTD - ACTUAL	YTD - Budget	Annual Budget	Variance	Percent of Budget Used
Major Maintenance	0.00	0.00	4,457.57	15,458.33	240,000.00	-11,000.76	2%
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		0.00	0.00	3,583.33	43,000.00	-3,583.33	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	0.00	1,250.00	15,000.00	-1,250.00	0%
MM19-05 WTP EQ Tank Cleanout Inspection		0.00	0.00	833.33	10,000.00	-833.33	0%
MM19-06 WTP Eye Wash Station Upgrade		0.00	0.00	1,666.67	20,000.00	-1,666.67	0%
MM19-07 WLPS Electrical Inspection- 3rd Party Contractor		0.00	0.00	833.33	10,000.00	-833.33	0%
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	0.00	416.67	5,000.00	-416.67	0%
MM19-12 Vibration Monitoring Program		0.00	0.00	83.33	1,000.00	-83.33	0%
MM19-13 Valve 16" at Camalchie Rd and London Line		0.00	0.00	833.33	10,000.00	-833.33	0%
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	0.00	1,250.00	15,000.00	-1,250.00	0%
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	0.00	833.33	10,000.00	-833.33	0%
OCWA Operating & Maintenance	368,284.00	368,284.00	1,841,420.00	368,261.92	4,419,143.00	1,473,158.08	42%
Flow Reconciliations		0.00	0.00	12,500.00	150,000.00	-12,500.00	0%
LAWSS Wages & Benefits	10,738.19	121,256.30	42,520.84	20,833.33	250,000.00	21,687.51	17%
WSIB		0.00	273.54	125.00	1,500.00	148.54	18%
Audit Fees	12,836.01	0.00	14,265.23	1,166.67	14,000.00	13,098.56	102%
Consulting		1.00	569.86	208.33	2,500.00		
Accounting & Legal	1,774.44	1,419.50	8,322.92	1,666.67	20,000.00	6,656.25	42%
Advertising & Promotions		0.00	915.33	16.67	200.00	898.66	0%
Membership Fees		0.00	407.04	166.67	2,000.00	240.37	20%
Education / Conference		1,550.00	65.05	333.33	4,000.00	-268.28	2%
Courier & Postage		0.00	35.92	41.67	500.00	-5.75	7%
Income Taxes		0.00	0.00	0.00	0.00	0.00	0%
Property Taxes	8,936.09	9,000.00	82,321.02	14,583.33	175,000.00	67,737.69	47%
Property Administration	179.76	300.00	449.16	1,250.00	15,000.00	-800.84	3%
Insurance	21,772.80	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	400.63	0.00	1,275.13	250.00	3,000.00	1,025.13	43%
Computer Software	782.53	13,000.00	11,314.69	1,333.33	16,000.00	9,981.36	71%
Internet	49.81	85.00	306.10	125.00	1,500.00	181.10	20%
GIS and Internet Services		0.00	0.00	183.33	2,200.00	-183.33	0%
Travel (Includes Mileage)	182.50	18.50	490.53	125.00	1,500.00	365.53	33%
Vehicle Expenses		0.00	0.00	1,041.67	12,500.00	-1,041.67	0%
Telephone	153.93	140.00	615.73	125.00	1,500.00	490.73	41%
Mobile Phone	114.06	375.00	1,469.72	125.00	1,500.00	1,344.72	98%
Meals & Entertainment	323.90	76.00	1,098.19	208.33	2,500.00	889.86	44%
Miscellaneous Expense		270.00	0.00	166.67	2,000.00	-166.67	0%
St.Clair Conservation Consult		0.00	0.00	2,500.00	30,000.00		
Total Expenses	527,440.60	532,825.30	2,455,198.99	1,779,575.75	20,223,909.00	1,602,952.02	12%

**Lambton Area Water Supply System
Cash Balance Sheet as at May 31,2019**

LAWSS Bank Account on May 1, 2019	<u>9,103,945.91</u>
LAWSS Accounts Receivable - Received	<u>737,960.04</u>
	<u>9,841,905.95</u>
LAWSS Accounts Payable - Paid	545,083.28
LAWSS Accounts Payable - Outstanding	<u>49,814.84</u>
	<u>594,898.12</u>
LAWSS Bank Account on May 31, 2019	<u>9,296,822.67</u>
Adjusted Bank Balance on May 31,2019	<u>9,247,007.83</u>
Cash in Reserve	<u>1,994,873.22</u>

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			\$17,706.24	\$2,293.76	In Progress
19-02 Eng Studies- WTP SCADA Mitigation (Flitration 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	Planning
19-04 HVAC Admin Replacement Project	\$ 250,000.00		\$ 250,000.00			\$144,109.68	\$105,890.32	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	Planning
19-07 Transmission Watermain Leak Detection- Phase 1	\$ 230,000.00		\$ 230,000.00			\$0.00	\$230,000.00	Planning
19-08 Flow Restruction/Chamber Removal Project(x6)	\$ 175,000.00		\$ 175,000.00			\$0.00	\$175,000.00	Planning
			\$ -					
Projects Carry forward								
14-03 Polymer System Replacement						\$ 1,967.71		Complete
14-09 Main Plant HVAC	\$587,383.00		\$ 587,383.00	Efficiency Engineering, Landon Mechanical, Building Innovations	PO00236	\$609,092.92	-\$21,709.92	In Progress
17-05 Engineering Design for Emergency Generators	\$250,000.00	\$115,000.00	\$ 365,000.00	EXP Services Inc.,	PO0228	\$62,569.91	\$302,430.09	In Progress
R17-01 24" Watermain Abandonment	\$360,628.58		\$ 360,628.58	MIG Eng, Cope		\$ 301,232.34	\$59,396.24	Complete
18-01 Rebuild 32" Ross Valve at WLBS	\$ 70,000.00		\$ 70,000.00			\$0.00	\$70,000.00	RFP Development
18-02 New Generators Replacement (Including Air Louvers)	\$ 4,000,000.00	\$ 1,500,000.00	\$ 5,500,000.00			\$ -	\$5,500,000.00	RFP Development
18-03 SCADA Radio Replacement Work (Installation)	\$ 150,000.00	\$ 362,156.60	\$ 512,156.60	Experteers	PO00237, PO0233	\$257,476.12	\$254,680.48	In Progress
18-04 Engineering Studies	\$ 100,000.00	\$ 22,525.42	\$ 122,525.42	WSP,AECOM, Megacomm	PO00238	\$103,323.82	\$19,201.60	In Progress
Major Maintenance								
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			\$43,000.00	In Progress
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			\$15,000.00	In Progress
MM19-05 WTP EQ Tank Cleanout Inspection	\$ 10,000.00		\$ 10,000.00	OCWA			\$10,000.00	In Progress
MM19-06 WTP Eye Wash Station Upgrade	\$ 20,000.00		\$ 20,000.00	OCWA			\$20,000.00	In Progress
MM19-07 WLPS Electrical Inspection- 3rd Party Contractor	\$ 10,000.00		\$ 10,000.00	OCWA			\$10,000.00	In Progress
MM19-08 WLPS Motor HLP-2 (VFD Compliant)	\$ 25,000.00		\$ 25,000.00	OCWA			\$25,000.00	In Progress
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	In Progress
MM19-11 ELPS Electrical Inspection- 3rd Party Contractor	\$ 5,000.00		\$ 5,000.00	OCWA			\$5,000.00	In Progress
MM19-12 Vibration Monitoring Program	\$ 1,000.00		\$ 1,000.00	OCWA			\$1,000.00	In Progress
MM19-13 Valve 16" at Camalchie Rd and London Line	\$ 10,000.00		\$ 10,000.00	OCWA			\$10,000.00	In Progress
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			\$15,000.00	In Progress
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	In Progress
MM19-19 Repair Clamps & Appurtenances	\$ 10,000.00		\$ 10,000.00	OCWA			\$10,000.00	In Progress

		June Actual	Month Budget	YTD - ACTUAL	YTD - Budget	Annual Budget	Variance	Percent of Budget Used
Municipality Revenue								
4050	Municipality Revenue	-852,704.24	-820,539.83	-4,844,453.23	-4,844,453.23	-9,805,197.00	0.00	49%
	Sarnia	-491,623.80	-491,623.80	-2,949,742.80	-2,949,742.80	-5,899,486.00	0.00	50%
	St. Clair Township	-208,848.33	-208,848.33	-1,253,089.90	-1,253,089.90	-2,506,180.00	0.00	50%
	Plympton-Wyoming	-39,458.50	-39,438.50	-236,650.92	-236,650.92	-473,261.00	0.00	50%
	Lambton Shores	-15,567.82	-15,567.82	-93,406.92	-93,406.92	-186,814.00	0.00	50%
	Warwick	-23,072.31	-23,072.31	-138,433.86	-138,433.86	-276,867.00	0.00	50%
	Point Edward	-19,799.08	-19,799.07	-118,794.43	-118,794.43	-237,589.00	0.00	50%
	Bluewater Power Distribution Corp.			0.00	0.00		0.00	
4120	Brooke-Alvinston Revenue	-54,334.40	-22,190.00	-82,210.02	0.00	-225,000.00	-82,210.02	37%
	Total Municipalities Revenue	-852,704.24	-820,539.83	-4,872,328.85	-4,790,118.83	-9,805,197.00	-82,210.02	50%
Other Revenue								
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	-6,200.76	0.00	-7,000.00	-6,200.76	89%
	County of Lambton		0.00	-8,400.00	0.00	-7,000.00	-8,400.00	120%
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	0%
	Total Other Revenue	0.00	0.00	-14,600.76	0.00	-114,000.00	-14,600.76	13%
Investment Interest								
4420	Interest Earned	-19,624.81	-15,000.00	-120,170.81	0.00	-72,000.00	-120,170.81	167%
Project Expenses								
	Total Revenue	-872,329.05	-835,539.83	-5,007,100.42	-4,790,118.83	-9,991,197.00	-216,981.59	50%
5100	Project Expenses	72,510.06	0.00	478,161.28	805,240.25	9,477,383.00	-120,799.89	5%
	19-01 Eng Studies - WTP HVAC Dehumidification		0.00	17,706.24	0.00	20,000.00	-2,293.76	89%
	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	3,816.00	0.00	151,473.01	0.00	250,000.00	-98,526.99	61%
	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%
	Tasks carried over from 2018	68,694.06	0.00	308,982.03	429,781.92	5,157,383.00	-120,799.89	6%
	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	48,948.58	587,383.00	-48,948.58	0%
	17-05 Engineering Design for Emergency Generators		0.00	16,536.00	20,833.33	250,000.00	-4,297.33	7%
	18-01 Rebuild 32" Ross Valve at WLBS		0.00	0.00	5,833.33	70,000.00	-5,833.33	0%
	18-02 New Generators Replacement (Including Air Louvers	64,711.94	0.00	64,711.94	333,333.33	4,000,000.00	-268,621.39	2%
	18-03 SCADA Radio Replacement Work (Installation)		0.00	194,982.29	12,500.00	150,000.00	182,482.29	130%
	18-04 Engineering Studies	3,982.12	0.00	32,751.80	8,333.33	100,000.00	24,418.47	33%
5150	Distribution Repairs	11,801.83	17,050.00	29,580.15	100,000.00	200,000.00	-70,419.85	15%

5125

	June Actual	Month Budget	YTD - ACTUAL	YTD - Budget	Annual Budget	Variance	Percent of Budget Used
Major Maintenance	66,866.90	0.00	71,324.47	15,458.33	240,000.00	55,866.14	30%
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		0.00	0.00	3,583.33	43,000.00	-3,583.33	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	35,942.44	0.00	35,942.44	1,250.00	15,000.00	34,692.44	240%
MM19-05 WTP EQ Tank Cleanout Inspection		0.00	0.00	833.33	10,000.00	-833.33	0%
MM19-06 WTP Eye Wash Station Upgrade	11,031.63	0.00	11,031.63	1,666.67	20,000.00	9,364.96	55%
MM19-07 WLPS Electrical Inspection- 3rd Party Contractor		0.00	0.00	833.33	10,000.00	-833.33	0%
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	4,149.77	0.00	4,149.77	416.67	5,000.00	3,733.10	83%
MM19-12 Vibration Monitoring Program		0.00	0.00	83.33	1,000.00	-83.33	0%
MM19-13 Valve 16" at Camalchie Rd and London Line		0.00	0.00	833.33	10,000.00	-833.33	0%
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	8,276.93	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	7,466.13	0.00	7,466.13	833.33	10,000.00	6,632.80	75%
OCWA Operating & Maintenance	368,284.00	368,284.00	2,209,704.00	368,261.92	4,419,143.00	1,841,442.08	50%
Flow Reconciliations		0.00	0.00	12,500.00	150,000.00	-12,500.00	0%
LAWSS Wages & Benefits		121,256.30	42,520.84	20,833.33	250,000.00	21,687.51	17%
WSIB	305.45	0.00	578.99	125.00	1,500.00	453.99	39%
Audit Fees	1,419.26	0.00	15,684.49	1,166.67	14,000.00	14,517.82	112%
Consulting		1.00	569.86	208.33	2,500.00		
Accounting & Legal	1,419.55	1,419.50	9,742.47	1,666.67	20,000.00	8,075.80	49%
Advertising & Promotions		0.00	915.33	16.67	200.00	898.66	0%
Membership Fees		0.00	407.04	166.67	2,000.00	240.37	20%
Education / Conference	3,777.36	1,550.00	3,842.41	333.33	4,000.00	3,509.08	96%
Courier & Postage	76.33	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	190.75	9,000.00	82,511.77	14,583.33	175,000.00	67,928.44	47%
Property Administration	193.75	300.00	642.91	1,250.00	15,000.00	-607.09	4%
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	2,650.91	0.00	3,926.04	250.00	3,000.00	3,676.04	131%
Computer Software	7,021.44	13,000.00	18,336.13	1,333.33	16,000.00	17,002.80	115%
Internet	121.05	85.00	427.15	125.00	1,500.00	302.15	28%
GIS and Internet Services		0.00	0.00	183.33	2,200.00	-183.33	0%
Travel (Includes Mileage)	101.83	18.50	592.36	125.00	1,500.00	467.36	39%
Vehicle Expenses		0.00	0.00	1,041.67	12,500.00	-1,041.67	0%
Telephone	153.93	140.00	769.66	125.00	1,500.00	644.66	51%
Mobile Phone	120.23	375.00	1,589.95	125.00	1,500.00	1,464.95	106%
Meals & Entertainment	275.30	76.00	1,373.49	208.33	2,500.00	1,165.16	55%
Miscellaneous Expense		270.00	0.00	166.67	2,000.00	-166.67	0%
St.Clair Conservation Consult		0.00	0.00	2,500.00	30,000.00		
Total Expenses	537,289.93	532,825.30	2,995,085.84	1,779,575.75	20,223,909.00	1,989,063.16	15%

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

LAWSS Bank Account on June 1, 2019	<u>9,296,822.67</u>
LAWSS Accounts Receivable - Received	<u>1,003,770.65</u>
	<u>10,300,593.32</u>
LAWSS Accounts Payable - Paid	465,753.65
LAWSS Accounts Payable - Outstanding	<u>1,467.01</u>
	<u>467,220.66</u>
LAWSS Bank Account on June 30, 2019	<u>9,834,839.67</u>
Adjusted Bank Balance on June 30,2019	<u>9,833,372.66</u>
Cash in Reserve	<u>1,994,873.22</u>

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			\$17,706.24	\$2,293.76	In Progress
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	Planning
19-04 HVAC Admin Replacement Project	\$ 250,000.00		\$ 250,000.00			\$147,925.68	\$102,074.32	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	Planning
19-07 Transmission Watermain Leak Detection- Phase 1	\$ 230,000.00		\$ 230,000.00			\$0.00	\$230,000.00	Planning
19-08 Flow Restruction/Chamber Removal Project(x6)	\$ 175,000.00		\$ 175,000.00			\$0.00	\$175,000.00	Planning
			\$ -					
Projects Carry forward								
14-03 Polymer System Replacement						\$ 1,967.71		Complete
14-09 Main Plant HVAC	\$587,383.00		\$ 587,383.00	Efficiency Engineering, Landon Mechanical, Building Innovations	PO00236	\$609,092.92	-\$21,709.92	In Progress
17-05 Engineering Design for Emergency Generators	\$250,000.00	\$115,000.00	\$ 365,000.00	EXP Services Inc.,	PO0228	\$62,569.91	\$302,430.09	In Progress
18-01 Rebuild 32" Ross Valve at WLBS	\$ 70,000.00		\$ 70,000.00			\$0.00	\$70,000.00	RFP Development
18-02 New Generators Replacement (Including Air Louvers)	\$ 4,000,000.00	\$ 1,500,000.00	\$ 5,500,000.00			\$ 64,711.94	\$5,435,288.06	RFP Development
18-03 SCADA Radio Replacement Work (Installation)	\$ 150,000.00	\$ 362,156.60	\$ 512,156.60	Experteers	PO00237, PO0233	\$257,476.12	\$254,680.48	In Progress
18-04 Engineering Studies	\$ 100,000.00	\$ 22,525.42	\$ 122,525.42	WSP,AECOM, Megacomm	PO00238	\$103,323.82	\$19,201.60	In Progress
Major Maintenance								
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			\$43,000.00	In Progress
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	In Progress
MM19-05 WTP EQ Tank Cleanout Inspection	\$ 10,000.00		\$ 10,000.00	OCWA			\$10,000.00	In Progress
MM19-06 WTP Eye Wash Station Upgrade	\$ 20,000.00		\$ 20,000.00	OCWA		\$11,031.63	\$8,968.37	In Progress
MM19-07 WLPS Electrical Inspection- 3rd Party Contractor	\$ 10,000.00		\$ 10,000.00	OCWA			\$10,000.00	In Progress
MM19-08 WLPS Motor HLP-2 (VFD Compliant)	\$ 25,000.00		\$ 25,000.00	OCWA			\$25,000.00	In Progress
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	In Progress
MM19-11 ELPS Electrical Inspection- 3rd Party Contractor	\$ 5,000.00		\$ 5,000.00	OCWA		\$4,149.77	\$850.23	In Progress
MM19-12 Vibration Monitoring Program	\$ 1,000.00		\$ 1,000.00	OCWA			\$1,000.00	In Progress
MM19-13 Valve 16" at Camalchie Rd and London Line	\$ 10,000.00		\$ 10,000.00	OCWA			\$10,000.00	In Progress
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	In Progress
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	In Progress
MM19-19 Repair Clamps & Appurtenances	\$ 10,000.00		\$ 10,000.00	OCWA		\$7,466.13	\$2,533.87	In Progress

		July Actual	August Actual	September Actual	October Actual	November Actual	December Actual	Month Budget	YTD - ACTUAL	YTD - Budget	Annual Budget	Variance	Percent of Budget Used
Municipality Revenue													
4050	Municipality Revenue	-798,369.84	0.00	0.00	0.00	0.00	0.00	-820,539.83	-5,642,823.07	-5,642,823.07	-9,805,197.00	0.00	58%
	Sarnia	-491,623.80						-491,623.80	-3,441,366.60	-3,441,366.60	-5,899,486.00	0.00	58%
	St. Clair Township	-208,848.33						-208,848.33	-1,461,938.23	-1,461,938.23	-2,506,180.00	0.00	58%
	Plympton-Wyoming	-39,458.50						-39,438.50	-276,109.42	-276,109.42	-473,261.00	0.00	58%
	Lambton Shores	-15,567.82						-15,567.82	-108,974.74	-108,974.74	-186,814.00	0.00	58%
	Warwick	-23,072.31						-23,072.31	-161,506.17	-161,506.17	-276,867.00	0.00	58%
	Point Edward	-19,799.08						-19,799.07	-138,593.51	-138,593.51	-237,589.00	0.00	58%
	Bluewater Power Distribution Corp.								0.00	0.00		0.00	
4120	Brooke-Alvinston Revenue							-22,190.00	-82,210.02	0.00	-225,000.00	-82,210.02	37%
	Total Municipalities Revenue	-798,369.84	0.00	0.00	0.00	0.00	0.00	-820,539.83	-5,670,698.69	-5,588,488.67	-9,805,197.00	-82,210.02	58%
Other Revenue													
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	-6,200.76	0.00	-7,000.00	-6,200.76	89%
	County of Lambton							0.00	-8,400.00	0.00	-7,000.00	-8,400.00	120%
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	0%
	Total Other Revenue	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-14,600.76	0.00	-114,000.00	-14,600.76	13%
Investment Interest													
4420	Interest Earned	-19,513.97						-15,000.00	-120,170.81	0.00	-72,000.00	-120,170.81	167%
Project Expenses													
5100	Project Expenses	256,934.43	0.00	0.00	0.00	0.00	0.00	0.00	735,095.71	805,240.25	9,477,383.00	98,681.06	8%
	19-01 Eng Studies - WTP HVAC Dehumidification	9,153.31						0.00	26,859.55	0.00	20,000.00	6,859.55	134%
	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	28,300.17						0.00	179,773.18	0.00	250,000.00	-70,226.82	72%
	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%
	Tasks carried over from 2018	219,480.95		0.00	0.00	0.00	0.00	0.00	528,462.98	429,781.92	5,157,383.00	98,681.06	10%
	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	48,948.58	587,383.00	-48,948.58	0%
	17-05 Engineering Design for Emergency Generators							0.00	16,536.00	20,833.33	250,000.00	-4,297.33	7%
	18-01 Rebuild 32" Ross Valve at WLBS							0.00	0.00	5,833.33	70,000.00	-5,833.33	0%
	18-02 New Generators Replacement (Including Air Louvers	211,848.95						0.00	276,560.89	333,333.33	4,000,000.00	-56,772.44	7%
	18-03 SCADA Radio Replacement Work (Installation)	7,632.00						0.00	202,614.29	12,500.00	150,000.00	190,114.29	135%
	18-04 Engineering Studies							0.00	32,751.80	8,333.33	100,000.00	24,418.47	33%
5150	Distribution Repairs	2,596.92						17,050.00	29,580.15	100,000.00	200,000.00	-70,419.85	15%

5125

		July Actual	August Actual	September Actual	October Actual	November Actual	December Actual	Month Budget	YTD - ACTUAL	YTD - Budget	Annual Budget	Variance	Percent of Budget Used
	Major Maintenance	0.00	0.00	0.00	0.00	0.00	0.00	0.00	71,324.47	15,458.33	240,000.00	55,866.14	30%
	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							0.00	0.00	3,583.33	43,000.00	-3,583.33	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							0.00	0.00	833.33	10,000.00	-833.33	0%
	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							0.00	0.00	833.33	10,000.00	-833.33	0%
	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							0.00	0.00	83.33	1,000.00	-83.33	0%
	MM19-13 Valve 16" at Camalchie Rd and London Line							0.00	0.00	833.33	10,000.00	-833.33	0%
	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%
General & Administrative Expenses													
5200	OCWA Operating & Maintenance	368,284.00						368,284.00	2,577,988.00	368,261.92	4,419,143.00	2,209,726.08	58%
5300	Flow Reconciliations							0.00	0.00	12,500.00	150,000.00	-12,500.00	0%
5400	LAWSS Wages & Benefits	12,029.79						121,256.30	54,550.63	20,833.33	250,000.00	33,717.30	22%
5450	WSIB							0.00	578.99	125.00	1,500.00	453.99	39%
5500	Audit Fees							0.00	15,684.49	1,166.67	14,000.00	14,517.82	112%
5505	Consulting							1.00	569.86	208.33	2,500.00		
5510	Accounting & Legal	1,419.55						1,419.50	11,162.02	1,666.67	20,000.00	9,495.35	56%
5515	Advertising & Promotions							0.00	915.33	16.67	200.00	898.66	0%
5520	Membership Fees							0.00	407.04	166.67	2,000.00	240.37	20%
5522	Education / Conference							1,550.00	3,842.41	333.33	4,000.00	3,509.08	96%
5535	Courier & Postage							0.00	112.25	41.67	500.00	70.58	22%
5540	Income Taxes							0.00	0.00	0.00	0.00	0.00	0%
5545	Property Taxes	5,455.68						9,000.00	87,967.45	14,583.33	175,000.00	73,384.12	50%
5550	Property Administration	199.35						300.00	842.26	1,250.00	15,000.00	-407.74	6%
5555	Insurance							0.00	21,772.80	1,750.00	21,000.00	20,022.80	104%
5560	Interest & Bank Charges							0.00	0.00	8.33	100.00	-8.33	0%
5565	Office Supplies	377.96						0.00	4,304.00	250.00	3,000.00	4,054.00	143%
5566	Computer Software							13,000.00	18,336.13	1,333.33	16,000.00	17,002.80	115%
5570	Internet	85.43						85.00	512.58	125.00	1,500.00	387.58	34%
5571	GIS and Internet Services							0.00	0.00	183.33	2,200.00	-183.33	0%
5575	Travel (Includes Mileage)	94.56						18.50	686.92	125.00	1,500.00	561.92	46%
5576	Vehicle Expenses							0.00	0.00	1,041.67	12,500.00	-1,041.67	0%
5580	Telephone	153.93						140.00	923.59	125.00	1,500.00	798.59	62%
5585	Mobile Phone	116.11						375.00	1,706.06	125.00	1,500.00	1,581.06	114%
5590	Meals & Entertainment	1,250.00						76.00	2,623.49	208.33	2,500.00	2,415.16	105%
5600	Miscellaneous Expense							270.00	0.00	166.67	2,000.00	-166.67	0%
	St.Clair Conservation Consult							0.00	0.00	2,500.00	30,000.00		
	Total Expenses	648,997.71	0.00	0.00	0.00	0.00	0.00	532,825.30	3,641,486.63	1,779,575.75	20,223,909.00	2,378,529.52	18%

**Lambton Area Water Supply System
Cash Balance Sheet as at July 31,2019**

LAWSS Bank Account on July 1, 2019	<u>9,834,839.67</u>
LAWSS Accounts Receivable - Received	<u>552,600.83</u>
	<u>10,387,440.50</u>
LAWSS Accounts Payable - Paid	632,219.84
LAWSS Accounts Payable - Outstanding	<u>85,602.87</u>
	<u>717,822.71</u>
LAWSS Bank Account on July 31, 2019	<u>9,755,220.66</u>
Adjusted Bank Balance on July 31,2019	<u>9,669,617.79</u>
Cash in Reserve	<u>1,994,873.22</u>

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			\$26,859.55	-\$6,859.55	In Progress
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	Planning
19-04 HVAC Admin Replacement Project	\$ 250,000.00		\$ 250,000.00			\$173,604.91	\$76,395.09	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	Planning
19-07 Transmission Watermain Leak Detection- Phase 1	\$ 230,000.00		\$ 230,000.00			\$0.00	\$230,000.00	Planning
19-08 Flow Restruction/Chamber Removal Project(x6)	\$ 175,000.00		\$ 175,000.00			\$0.00	\$175,000.00	Planning
			\$ -					
Projects Carry forward								
14-03 Polymer System Replacement						\$ 1,967.71		Complete
14-09 Main Plant HVAC	\$587,383.00		\$ 587,383.00	Efficiency Engineering, Landon Mechanical, Building Innovations	PO00236	\$609,092.92	-\$21,709.92	In Progress
17-05 Engineering Design for Emergency Generators	\$250,000.00	\$115,000.00	\$ 365,000.00	EXP Services Inc.,	PO0228	\$62,569.91	\$302,430.09	In Progress
18-01 Rebuild 32" Ross Valve at WLBS	\$ 70,000.00		\$ 70,000.00			\$0.00	\$70,000.00	RFP Development
18-02 New Generators Replacement (Including Air Louvers)	\$ 4,000,000.00	\$ 1,500,000.00	\$ 5,500,000.00			\$ 276,560.89	\$5,223,439.11	RFP Development
18-03 SCADA Radio Replacement Work (Installation)	\$ 150,000.00	\$ 362,156.60	\$ 512,156.60	Experteers	PO00237, PO0233	\$265,108.12	\$247,048.48	In Progress
18-04 Engineering Studies	\$ 100,000.00	\$ 22,525.42	\$ 122,525.42	WSP,AECOM, Megacomm	PO00238	\$103,323.82	\$19,201.60	In Progress
Major Maintenance								
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			\$43,000.00	In Progress
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	In Progress
MM19-05 WTP EQ Tank Cleanout Inspection	\$ 10,000.00		\$ 10,000.00	OCWA			\$10,000.00	In Progress
MM19-06 WTP Eye Wash Station Upgrade	\$ 20,000.00		\$ 20,000.00	OCWA		\$11,031.63	\$8,968.37	In Progress
MM19-07 WLPS Electrical Inspection- 3rd Party Contractor	\$ 10,000.00		\$ 10,000.00	OCWA			\$10,000.00	In Progress
MM19-08 WLPS Motor HLP-2 (VFD Compliant)	\$ 25,000.00		\$ 25,000.00	OCWA			\$25,000.00	In Progress
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	In Progress
MM19-11 ELPS Electrical Inspection- 3rd Party Contractor	\$ 5,000.00		\$ 5,000.00	OCWA		\$4,149.77	\$850.23	In Progress
MM19-12 Vibration Monitoring Program	\$ 1,000.00		\$ 1,000.00	OCWA			\$1,000.00	In Progress
MM19-13 Valve 16" at Camalchie Rd and London Line	\$ 10,000.00		\$ 10,000.00	OCWA			\$10,000.00	In Progress
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	In Progress
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	In Progress
MM19-19 Repair Clamps & Appurtenances	\$ 10,000.00		\$ 10,000.00	OCWA		\$7,466.13	\$2,533.87	In Progress



Ontario Clean Water Agency
Agence Ontarienne Des Eaux

2019 Client Monthly Operations Report

Lambton Area Water Supply System

June 30, 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 90,000m³, 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

June:

Date	(P)reventative Capital Major Mtc (C)orrective	Description
June 3	P	Pumped out water from diesel and HFS containment areas
June 3	C	Changed dechlorination filters at West Lambton Pumping Station.
June 3	P	Tested panel alarm dialers at the water treatment plant.
June 3	P	Completed six month inspection on safety spill kit at the water treatment plant.
June 3	P	Completed six month inspection of backwash pump.
June 3	P	Conducted monthly inspection of eyewash and emergency showers at the water treatment plant.
June 4	P	Completed six month inspection on safety spill kit at West Lambton Pumping Station.
June 4	P	Completed monthly calibration of chlorine analyzers at the water treatment plant and at West Lambton Pumping Station.
June 5	P	Conducted monthly inspection on water treatment plant compressor.
June 5	P	Completed monthly calibration on all filter effluent turbidity meters and on Station 5 turbidity meters.
June 5	P	Completed annual inspection on sludge holding tank mixer in the Residual Management System.
June 5-6	P	Prepping replacement fluoride analyzer probes.
June 6	P	Completed monthly inspection of vacuum priming system at East Lambton Pumping Station.

June 6	P	Completed calibration of Stations 1, 3 and 7 turbidity meters.
June 6	P	Completed calibration on lab turbidity meter.
June 10	P	Conducted generator tests at East and West Lambton Pumping Stations.
June 10-11	C	Working on cleaning up all chlorine pumps at the water treatment plant.
June 12	P	Conducted monthly maintenance on travelling screens in Screens Room.
June 12	P	Annual replacement of online fluoride probe completed.
June 12	P	Conducted annual calibration of alum feed flow meters.
June 17	C	Pumped water from out of HFS and diesel containment areas.
June 17	P	Completed monthly calibration on East Lambton Pumping Station chlorine analyzers.
June 17	P	Completed monthly calibration on all portable chlorine analyzers.
June 18	C	Man down alarm now working. Issue was with a failed UPS.
June 18	C	New LED lights installed in the filter gallery.
June 18	P	Conducted calibration of all pH probes at the water treatment plant.
June 18-19	P	Conducted monthly maintenance on all flocculator gear drives.
June 19	P	Completed monthly maintenance on streaming current meters.
June 19	P	Completed monthly maintenance on the turbidity meters in the Residual Management System.
June 20	C	Installed chemical line for dechlorination of storm drains at the plant water.
June 21	C	Setting up pump for dechlorination of the storm drains at the water plant.
June 24-27	P	Iconix in to do calibration of flow meters in the distribution system.
June 24	C	Working on plumbing for the bisulphite pump for the storm drains at the water plant.
June 24	P	Completed monthly test of polymer system at the water treatment plant.
June 25	P	Cleaned and flushed out clearwell sodium hypochlorite lines at the water treatment plant.
June 26	C	Rotork in to work on Filter #5 effluent valve.
June 26	Capital	Meeting with client in regards to radio project.
June 26-27	C	Working on fluoride analyzer troubleshooting issues.
June 27	C	Removed anthracite from Actiflo #1.
June 27	C	Daymar in to look at mandown system.
June 27	C	Setting up pump for dechlorination of the storm drains at the water plant.

Operations and Compliance

June:

June 2	Filter #6 inlet valve failed to open after backwash. Valve was manually opened.
June 3	DWSP samples taken.
June 6	Pre CI pump failed with high pressure. Pump and panel was reset with no issues
June 6	Site security audits start.
June 7	Pre CI pump failed with high pressure. Pump and panel was reset with no issues
June 9	Filter #5 effluent valve failed to close prior to backwash. Valve was manually closed before backwash continued.
June 12	Pre CI pump failed with high pressure. Pump and panel was reset with no issues
June 13	Gave One Water Presentation to students at Errol Village School.
June 13	Started PAC system for the summer.
June 14	Staff meeting with DWQMS and health and safety topics.
June 16	Pre chlorine pump failed with air lock. Pump and panel was reset with no issues.
June 17	Changed contacts on Man Down SOP.
June 17	Pre chlorine pumps failed with high pressure. Pumps and panel were reset with no issues.
June 18	Daymar receiving no test signal for the water plant man down alarms.
June 18	Filter #5 effluent valve failed to close prior to backwash. Valve was closed manually and the backwash restarted.
June 18	Pre chlorine pump #2 failed with high pressure. Pump and panel was reset.
June 19	Nova Corunna taking water. Emergency feed valve opened.
June 20	Internal audit conducted by Cindy Sigurdson.
June 21	Pre chlorine pump #3 failed with high pressure. Pump and panel was reset.
June 21	Filter #5 effluent valve failed to close prior to backwash. Valve was closed manually and the backwash restarted.
June 21	Pre chlorine pump #1 failed with air lock. Pump and panel was reset with no issues.
June 27	South clearwell pump #2 failed with air lock. Pump and panel was reset with no issues.
June 28	Small power blip required the resetting and restarting of pumps.
June	Pre chlorine pump #1 and 3 failed with air lock. Pumps and panel were reset with no issues.
June	South clearwell pump failed with air lock. Pump and panel was reset with no issues.

Distribution

June:

June 4	Site meet with Murray Mills Excavating in regards to culvert work on Confederation Line.
June 7	Investigating possible watermain leak at 3418 St Clair Parkway.
June 11	Onsite for watermain break repair at 3418 St Clair Parkway in St Clair Township.
June 11	Flushing hydrants on Front St, Campbell and Savoy in the City of Sarnia.
June 12	Onsite for third party work on Confederation Line in Warwick-Watford.
June 17-19	Onsite for third party work on Confederation Line for culvert work.
June 18-20	Flushing hydrants on London Line.
June 19	Onsite for third party work with Vink Network at 1880 London Line.
June 24	Onsite for crossing of 30" LAWSS watermain on Michigan Ave in the City of Sarnia.
June 25	After hours emergency locate # 20192613658 on Hill St in St Clair Township.
June 26	Hydrant flushing on London Line.
June 27	Site meet in regards to Michigan Ave project.
June 28	Onsite for crossing of LAWSS watermain on Michigan Ave.
June 28	Meter reads done.

Call Outs 2019

June: Call out on June 9th to replace sodium hypochlorite pump as the pre chlorine system was not working.

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						

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 m³

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						

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 –Q2 due July 30, 2019

Semi-Annual “Schedule G” Reconcilable Commodities Report –Due July 30, 2019.

Health & Safety Work Order Summary by Facility

Start Date: 2019-06-01

End Date: 2019-06-30

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 Plant (5544)	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, Lambton Area RMS (5544-WWLA)	0	0	0	0.00	0.00	85.00%	100.00%	-15.00%
		5544, Lambton Area WTP (5544-WTLA)	4	4	4	7.00	284.25	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%
Total			4	4	4	7.00	284.25	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%

Health & Safety Work Order Summary by Facility

Start Date: 2019-01-01

End Date: 2019-06-30

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 Plant (5544)	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, Lambton Area RMS (5544-WWLA)	0	0	0	0.00	0.00	85.00%	100.00%	-15.00%
		5544, Lambton Area WTP (5544-WTLA)	24	24	24	45.00	1893.96	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)	2	2	2	6.25	341.81	85.00%	100.00%	-15.00%
Total			26	26	26	51.25	2235.77	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%

Work Order Summary by Facility

Start Date: 2019-06-01
End Date: 2019-06-30
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)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		5544, Lambton Area RMS (5544-WWLA)	2	2	2	12	512.86	0	0	0	0	0	0	0	0	0	0
		5544, Lambton Area WTP (5544-WTLA)	3	3	0	13	554.13	0	0	0	0	0	1	1	1	18	736.92
		5544, West Lambton Booster Stn (5544-WPWL)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		5544, West ST.Clair Distribution (5544-WDWS)	0	0	0	0	0	1	1	1	17	1296.79	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	5	5	2	25	1066.99	1	1	1	17.00	1296.79	1	1	1	18.00	736.92

* NOTE: Capital/Project Work is not included in the calculation of the Closure Rate
17/07/19 14:09:22

Work Order Summary by Facility

Start Date: 2019-06-01
End Date: 2019-06-30
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	5	207.72	0	0	0	0	0	85%	100%	-15.0%
		5544, East Lambton PS (5544-WPEL)	4	4	4	10.75	543.04	3	3	3	9.5	455.06	0	0	0	0	0	85%	100%	-15.0%
		5544, Lambton Area RMS (5544-WWLA)	3	3	3	3.5	144.94	2	2	2	2.5	100.42	0	0	0	0	0	85%	100%	-15.0%
		5544, Lambton Area WTP (5544-WTLA)	32	32	29	110.75	4541.13	13	13	11	1433	39153.1	0	0	0	0	0	85%	83.67%	1.326%
		5544, West Lambton Booster Stn (5544-WPWL)	3	3	3	5	262.94	2	2	2	25.75	1212.69	0	0	0	0	0	85%	100%	-15.0%
		5544, West ST.Clair Distribution (5544-WDWS)	0	0	0	0	0	2	2	2	5.75	263.51	0	0	0	0	0	85%	100%	-15.0%
		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			42	42	39	130	5492.05	26	26	24	1481.5	41392.5	0	0	0	0	0	85%	89.33%	10.66%

* NOTE: Capital/Project Work is not included in the calculation of the Closure Rate
17/07/19 14:09:22

Work Order Summary by Facility

Start Date: 2019-01-01
End Date: 2019-06-30
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)	6	6	6	98.75	4716.08	5	5	4	12.5	669.28	0	0	0	0	0	
		5544, East Lambton PS (5544-WPEL)	2	2	2	10	416.82	0	0	0	0	0	0	0	0	0	0	
		5544, Lambton Area RMS (5544-WWLA)	5	5	5	52	2243.33	0	0	0	0	0	0	0	0	0	0	
		5544, Lambton Area WTP (5544-WTLA)	24	24	19	192.25	7882.71	1	1	1	1	46.68	4	4	4	36	1505.9	
		5544, West Lambton Booster Stn (5544-WPWL)	7	7	5	19.25	896.02	0	0	0	0	0	1	1	1	54.75	2521.45	
		5544, West ST.Clair Distribution (5544-WDWS)	2	2	2	8.25	389.73	2	2	2	26.5	1867.46	0	0	0	0	0	0
		Lambton Area Water Treatment Plant (5544)	7	7	6	65.75	2972.86	0	0	0	0	0	0	0	0	0	0	0
Grand Total			53	53	45	446.25	19517.55	8	8	7	40.00	2583.42	5	5	5	90.75	4027.35	

* NOTE: Capital/Project Work is not included in the calculation of the Closure Rate
17/07/19 14:14:16

Work Order Summary by Facility

Start Date: 2019-01-01
End Date: 2019-06-30
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)	9	9	4	16	945.67	24	24	24	71.5	3082.27	5	4	1	36.25	11116.61	85%	86.36%	-1.36%
		5544, East Lambton PS (5544-WPEL)	33	33	32	66.25	3295.14	13	13	13	48.75	2226.7	0	0	0	0	0	85%	97.91%	-12.9%
		5544, Lambton Area RMS (5544-WWLA)	15	15	15	26.25	1175.3	12	12	12	24	968.38	1	1	0	6	291.56	85%	100%	-15.0%
		5544, Lambton Area WTP (5544-WTLA)	213	213	199	756	40335.53	78	78	75	9779.75	257361.2	4	4	0	119.75	12875.71	85%	93.12%	-8.12%
		5544, West Lambton Booster Stn (5544-WPWL)	41	41	38	61.25	2922.03	12	12	12	111.75	5031.79	0	0	0	0	0	85%	91.80%	-6.80%
		5544, West ST.Clair Distribution (5544-WDWS)	3	3	1	4	161.84	12	12	12	36	1537.49	0	0	0	0	0	85%	89.47%	-4.47%
		Lambton Area Water Treatment Plant (5544)	3	3	3	17.5	922.92	0	0	0	0	0	5	5	4	178.5	59173.76	85%	90%	-5.00%
Grand Total			317	317	292	947.25	49758.43	151	151	148	10071.75	270207.8	15	14	5	340.5	83457.64	85%	93.07%	6.928%

* NOTE: Capital/Project Work is not included in the calculation of the Closure Rate
17/07/19 14:14:16

**Ontario Clean Water Agency
Time Series Info Report**

From: 01/01/2019 to 30/06/2019

Report extracted 07/18/2019 12:26

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	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			38.605	
Mean IH	26.801	24.002	23.839	22.375	22.91	21.551		23.591		
Min IH	21.912	18.131	18.009	17.868	19.041	18.452				17.868
Coagulation/Floculation / Coagulant Used - kg										
Max IH	1792	1408	1651.2	1241.6	1344	2150.4			2150.4	
Mean IH	1220.542	1167.086	1160.671	1009.067	1129.29	1339.307		1171.023		
Min IH	972.8	947.2	832	768	934.4	921.6				768
Total IH	37836.8	32678.4	35980.8	30272	35008	40179.2	211955.2			
Coagulation/Floculation / Coagulant Volume Used - m³										
Max IH	1.4	1.1	1.29	0.97	1.05	1.68			1.68	
Mean IH	0.954	0.912	0.907	0.788	0.882	1.046		0.915		
Min IH	0.76	0.74	0.65	0.6	0.73	0.72				0.6
Total IH	29560	25530	28110	23650	27350	31390	165590			
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				37	
Mean Lab		27			31.667			29.333		

Min Lab			24				25						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					2.49			
Mean OL	1.535	1.401	1.428	1.388	1.3	1.277				1.388				
Min OL	0	0	0	0	0	0						0		
Filter Backwash / Backwash Volume - m³														
Max IH	4792	2408	2992	3006	3004	3004					4792			
Mean IH	2268.323	1929.786	2028.194	1927.733	1900.774	2043				2018.077				
Min IH	1794	1788	1794	1198	1204	1792						1198		
HFS / Fluoride Dosage - mg/L														
Max IH	0.64	0.644	0.614	0.622	0.592	0.628					0.644			
Mean IH	0.556	0.557	0.559	0.557	0.542	0.548				0.553				
Min IH	0.46	0.417	0.482	0.487	0.486	0.464						0.417		
HFS / Fluoride Used - l														
Max IH	108.877	97.419	97.419	94.553	100.284	186.246					186.246			
Mean IH	85.495	87.63	89.655	83.952	90.041	115.949				92.108				
Min IH	65.901	66.384	71.631	71.631	74.497	88.823						65.901		
Total IH	2650.36	2453.634	2779.305	2518.562	2791.284	3478.466	16671.61							
HFS / HFS (kg) - kg														
Max IH	132.83	118.851	118.851	115.355	122.347	227.22					227.22			
Mean IH	104.304	106.908	109.379	102.422	109.851	141.458				112.372				
Min IH	80.399	80.989	87.39	87.39	90.886	108.364						80.399		
Total IH	3233.439	2993.434	3390.752	3072.646	3405.367	4243.728	20339.37							
HFS / Treated Water Fluoride Residual - mg/L														
Max OL	0.71	0.7	0.7	2	0.84	0.82					2			
Mean OL	0.631	0.601	0.578	0.597	0.611	0.575				0.599				
Min OL	0.56	0.54	0.51	0	0.51	0.24						0		
Post Disinfection / Chlorine Dosage - mg/L														
Max IH	1.668	1.854	1.682	1.832	1.795	3.071					3.071			
Mean IH	1.434	1.391	1.458	1.468	1.535	1.696				1.498				
Min IH	1.215	0.891	1.048	1.271	1.05	1.097						0.891		
Post Disinfection / Hypochlorite Dosage - mg/L														
Max IH	13.899	15.45	14.016	15.268	14.96	25.593					25.593			
Mean IH	11.947	11.588	12.152	12.232	12.79	14.136				12.481				
Min IH	10.126	7.428	8.737	10.593	8.747	9.142						7.428		
Post Disinfection / Hypochlorite Used - kg														
Max IH	653.3	665.05	681.5	706.175	808.4	1975.175					1975.175			
Mean IH	543.456	564	590.191	552.994	632.264	885.167				628.067				
Min IH	444.15	326.65	454.725	407.725	431.225	460.6						326.65		
Total IH	16847.15	15792	18295.93	16589.83	19600.18	26555	113680.1							
Post Disinfection / Hypochlorite Volume-Total - m³														
Max IH	0.556	0.566	0.58	0.601	0.688	1.681					1.681			
Mean IH	0.463	0.48	0.502	0.471	0.538	0.753				0.535				

Min IH	0.378	0.278	0.387	0.347	0.367	0.392			0.278
Total IH	14338	13440	15571	14119	16681	22600	96749		
Post Disinfection / Station 7 Cl Residual: Free - mg/L									
Max OL	1.89	1.85	1.92	1.78	1.71	1.75		1.92	
Mean OL	1.699	1.712	1.716	1.608	1.521	1.504	1.626		
Min OL	1.52	1.54	1.53	1.4	1.29	0		0	
PrTr / P.A.C. Dosage - mg/L									
Max IH						0.464		0.464	
Mean IH						0.338	0.338		
Min IH						0.176		0.176	
PrTr / P.A.C. Used - kg									
Max IH						28.9		28.9	
Mean IH						22.199	22.199		
Min IH						12.27		12.27	
Total IH						377.381	377.381		
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		720	

Mean Lab	69.2	33.25	21.5	105.8	69.25	346.25		106			
Min Lab	18	0	1	13	0	0				0	
Raw Water / Conductivity - µS/cm											
Max IH	228.5	223.2	231.5	232.3	243.7	238.2			243.7		
Mean IH	221.019	219.725	222.174	225.038	233.042	232.617		225.664			
Min IH	217.8	218	217.9	170	222.6	228.5				170	
Raw Water / E. Coli: EC - cfu/100mL											
Max Lab	1	0	0	1	0	0			1		
Mean Lab	0.4	0	0	0.2	0	0		0.115			
Min Lab	0	0	0	0	0	0				0	
Raw Water / Raw Flow Daily - m³/d											
Max IH	52987	56479	56245	51694	56670	100783			100783		
Mean IH	45445.45	48755.75	48621.65	45139.4	49348.52	62028.87		49867.92			
Min IH	40082	40763	41664	36877	42212	47569				36877	
Raw Water / Raw Flow Rate - l/s											
Max IH	613.27	653.69	650.98	598.31	654.75	1166.47			1166.47		
Mean IH	526.72	565.27	562.75	522.45	571.13	717.93		577.44			
Min IH	463.91	471.79	482.22	426.82	488.56	550.57				426.82	
Raw Water / Raw Water Turbidity - NTU											
Max OL	21.4	7.14	13.7	12.2	6.8	3.1			21.4		
Mean OL	2.887	1.135	2.448	2.458	1.769	1.08		1.963			
Min OL	0.46	0.23	0.201	0.57	0.445	0.365				0.201	
Raw Water / Raw Water pH - ---											
Max IH	8.22	8.12	8.2	8.9	8.35	8.35			8.9		
Mean IH	8.045	8.008	8.056	8.197	8.239	8.269		8.137			
Min IH	7.94	7.88	7.86	8.09	8.18	8.2				7.86	
Raw Water / Temperature - °C											
Max IH	8.01	6	8	11.5	13.1	18.5			18.5		
Mean IH	6.396	5.025	5.653	9.285	11.661	15.612		8.965			
Min IH	3	3.25	4	7	10	13				3	
Raw Water / Total Coliform: TC - cfu/100mL											
Max Lab	39	15	10	31	4	2			39		
Mean Lab	10.2	4.5	2.5	8.2	1.25	0.75		4.923			
Min Lab	2	0	0	0	0	0				0	
Treated Water / Background - cfu/100mL											
Max Lab	0	0	0	0	0	0			0		
Mean Lab	0	0	0	0	0	0		0			
Min Lab	0	0	0	0	0	0				0	
Treated Water / E. Coli: EC - cfu/100mL											
Max Lab	0	0	0	0	0	0			0		
Mean Lab	0	0	0	0	0	0		0			
Min Lab	0	0	0	0	0	0				0	
Treated Water / Electrical Consumption - kWh											

Total IH		963849.2		1042697		1022817		1067361		931726.5		922742.6		5951193							
Treated Water / Flow: Total of All Sources - m³/d																					
Max IH		51137		53292		51967		49343		52401		97988				97988					
Mean IH		44841		46364		46748.23		44048.37		48460.74		61126.97		48591.17							
Min IH		41397		41527		41284		39452		41184		41283							39452		
Total IH		1390071		1298192		1449195		1321451		1502283		1833809		8795001							
Treated Water / HPC - cfu/mL																					
Max Lab	<	10	<	10	<	10	<	10	<	10	<	10	<	10		<	10				
Mean Lab	<	10	<	10	<	10	<	10	<	10	<	10	<	10		<	10				
Min Lab	<	10	<	10	<	10	<	10	<	10	<	10	<	10					<	10	
Treated Water / Total Coliform: TC - cfu/100mL																					
Max Lab		0		0		0		0		0		0				0					
Mean Lab		0		0		0		0		0		0		0							
Min Lab		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				0.117					
Mean OL		0.062		0.063		0.065		0.063		0.064		0.066		0.064							
Min OL		0.043		0.047		0.046		0.047		0.046		0.046							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				2.19					
Mean OL		1.684		1.685		1.595		1.586		1.429		1.413		1.565							
Min OL		0		0		0		0		0		0							0		
Zebra Mussel Control / Chlorine Dosage - mg/L																					
Max IH								1.125		1.173		1.25				1.25					
Mean IH								1.125		1.068		1.127		1.097							
Min IH								1.125		0.955		1.01							0.955		
Zebra Mussel Control / Cl Residual: Free - mg/L																					
Max IH								0.36		0.67		0.66				0.67					
Mean IH								0.36		0.6		0.588		0.591							
Min IH								0.36		0.44		0.52							0.36		
Zebra Mussel Control / Cl Residual: Total - mg/L																					
Max IH								0.54		0.81		0.8				0.81					
Mean IH								0.54		0.746		0.712		0.726							
Min IH								0.54		0.55		0.63							0.54		
Zebra Mussel Control / Hypochlorite Dosage - mg/L																					
Max IH								9.374		9.777		10.417				10.417					
Mean IH								9.374		8.898		9.392		9.145							
Min IH								9.374		7.961		8.418							7.961		
Zebra Mussel Control / Hypochlorite Used - kg																					
Max IH								433.575		514.65		848.35				848.35					
Mean IH								433.575		439.147		582.408		508.377							
Min IH								433.575		336.05		444.15							336.05		
Total IH								433.575		13613.55		17472.25		31519.38							

Zebra Mussel Control / Hypochlorite Volume-Total-1 - m ³																			
Max IH							0.369		0.438		0.722					0.722			
Mean IH							0.369		0.374		0.496			0.433					
Min IH							0.369		0.286		0.378							0.286	
Total IH							369		11586		14870		26825						

Lambton Area WT 2019

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

Org. # : 5544

Project # : LAWSSM5544W-002

Date : 6/30/19

	2018 Actuals	2019 Budget	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	YTD Budget	YTD Actuals	Variance (< YTD budget)
OPERATING CHARGES									
OCWA Service Fee	2,112,364.00	2,252,914.00	563,228.50	563,228.50			1,126,457.00	1,126,457.00	0.00
Diesel	5,416.15	9,000.00	0.00	0.00			4,500.00	0.00	-4,500.00
Insurance**	94,276.44	91,050.24	22,762.56	22,762.56			45,525.12	45,525.12	0.00
Point Edward Sewage	89,354.82	91,000.00	0.00	0.00			0.00	0.00	0.00
Chemicals	246,867.34	266,463.00	48,878.91	52,888.97			133,231.50	101,767.88	-31,463.62
Hydro	1,369,006.60	1,640,000.00	338,436.26	328,673.94			820,000.00	667,110.20	-152,889.80
Sludge Haulage	129,507.29	155,401.00	25,876.85	25,034.58			77,700.50	50,911.43	-26,789.07
TOTAL OPERATING COSTS	4,046,792.64	4,505,828.24	999,183.08	992,588.55	0.00	0.00	2,207,414.12	1,991,771.63	-215,642.49
TOTAL OPERATING CHARGES	4,046,792.64	4,505,828.24	999,183.08	992,588.55	0.00	0.00	2,207,414.12	1,991,771.63	-215,642.49

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



Ontario Clean Water Agency
Agence Ontarienne Des Eaux

2019 Client Monthly Operations Report

Lambton Area Water Supply System

July 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 90,000m³, 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

July:

Date	(P)reventative Capital Major Mtc (C)orrective	Description
July 1	P	Completed monthly inspection of eyewash and emergency shower stations at the water treatment plant.
July 4	P	Completed annual inspection of High Pump #2 discharge valve.
July 5	P	Completed monthly calibration of East and West Lambton chlorine analyzers.
July 8	P	Conducted monthly inspection of compressor at the water treatment plant.
July 8	P	Completed monthly calibration of all chlorine analyzers at the water treatment plant.
July 9-10	P	Completed monthly calibration of all online turbidity meters at the water treatment plant.
July 10	P	Completed monthly inspection of East Lambton Pumping Station vacuum priming system.
July 10	P	Completed monthly inspection of online fluoride monitor.
July 10	P	Completed monthly verification of lab turbidity meter.
July 11	C	Reset ground fault which caused radio failure for Wyoming.
July 12	P	Completed monthly inspection of travelling screens at the water treatment plant.
July 12	P	Completed monthly verification of all hand held chlorine analyzers.
July 15	C	Cleaned/sanded valve #1 at West Lambton Pumping Station.

July 15	Major Mtc	Vector Crack injection on site at water treatment plant.
July 16	C	Replaced leaking valve on the hot water tank in the Residual Management System.
July 17-19	P	Completed monthly maintenance on flocculator gear drives.
July 18	C	Troubleshoot and corrected issue with Flocculator #3 controls.
July 18	C	Installed repaired valve for Pump #1 at West Lambton Pumping Station.
July 22	P	Tested generators at East Lambton Pumping Station.
July 23	P	Tested generators at West Lambton Pumping Station.
July 24	C	Removing vegetation from transformer area at West Lambton Pumping Station.
July 26	Major Mtc	EQ cleanout.
July 29	C	Rotork in to check/repair Filter #5 surface wash valve that is not hitting limit.
July 30	Capital	Meeting with LAWSS GM and Expertees in regards to radio project.
July 30	P	Tested generators at the water treatment plant.
July 30	C	Replaced lighting above chlorine dosing pumps at the water treatment plant.

Operations and Compliance

July:

July 2	Annual security audit starts.
July 2-4	Setting up sodium bisulphite dosing pump for storm drain dechlorination.
July 2	Nova Chemicals taking water.
July 5	Switched to large treated water mag meter due to high demand.
July 7	Pre Cl pump failed (air lock). Pump and panel were reset.
July 7	Surface wash valve on filter 5 failed to close after backwash. Valve was manually closed.
July 8	Tested dechlorination on the storm drain.
July 8	Power spike shut down pumps. Pumps were reset with no issues.
July 9	Nova Chemicals no longer taking water.
July 10	Chlorine pump fault at East Lambton Pumping Station. Pump was primed and reset.
July 10	Surface wash valve on filter 5 failed to close after backwash. Valve was manually closed.
July 10	Pre Cl pump #3 failed (air lock). Pump and panel were reset.
July 11	Pre Cl pump #3 failed (air lock). Pump and panel were reset.
July 12	Pre Cl pump #3 failed (air lock). Pump and panel were reset.
July 12	Pump #2 valve at West Lambton Pumping Station failed to open 100%. Pumps was stopped and restarted with no issues.
July 13	Ran Pump #1 at West Lambton Pumping Station. Valve failed to open 100%.
July 13	Pre Cl pumps # 1 and 3 failed (air lock). Pumps and panel were reset.

July 14	Power spike shut down pumps. Pumps were reset with no issues.
July 14	Surface wash valve on filter 5 failed to close after backwash. Valve was manually closed.
July 14	Ran Pump #5 at West Lambton Pumping Station.
July 15	Power spike shut down pumps. Pumps were reset with no issues.
July 16	Surface wash valve on filter 5 failed to close after backwash. Valve was manually closed.
July 17	Floculator #3 controls not working correctly.
July 18	Tested repaired valve for Pump #1 at West Lambton Pumping Station.
July 19	Surface wash valve on filter 5 failed to close after backwash. Valve was manually closed.
July 20	Pre CI pumps # 1 and 2 failed (air lock). Pumps and panel were reset.
July 22	Surface wash valve on filter 5 failed to close after backwash. Valve was manually closed.
July 22	Ran Pump #1 at West Lambton Pumping Station.
July 23	Tested polymer system at the water treatment plant.
July 23	Ran Residual Management System to test for chlorine residuals from RMS outlet. Tested plant discharge water to river to ensure there is no chlorine residual.
July 24	Pre CI pump # 1 failed (air lock). Pump and panel was reset.
July 24	Adjusted flow to Filter #4 turbidity meter causing high turbidity (>1 NTU). Filter was shut down until turbidity dropped to normal range.
July 25	Pre CI pumps # 1 and 2 failed (air lock). Pumps and panel were reset.
July 25	South clearwell pump # 1 failed (air lock). Pump and panel was reset.
July 29	Pre CI pump failed (air lock). Pump and panel were reset.
July 30	Tested water treatment plant generators dechlorination system.
July 30	Chlorine pump fault at East Lambton Pumping Station. Pump was primed and reset.
July 30	Valve on Pump #2 at West Lambton Pumping Station failed to open 100%. Pump was reset and restarted with no issues.
July 31	Resampled a number of bacteriological samples due to an issue with Purolator failing to deliver samples within holding time.

Distribution

July:

July 2	Site meet with Cope on Michigan Rd for future hydrovac work.
July 3	Onsite for hydrovac on isolation valve on Michigan Ave.
July 4	Exercised blow off on Sandy Lane in the City of Sarnia.
July 4	Emergency locate #20172719422.
July 7	Emergency locate 1149 on Confederation Street in Sarnia.
July 8	Repaired hydrant isolation valve at Michigan Rd and Colborne.
July 9	Onsite for crossing of LAWSS watermain at 3073 London Line.
July 17	Flushing on London Line completed.
July 18	Onsite for 2 inch hot tap to LAWSS watermain on Lakeshore.
July 18	Site meet on Moore Line for future culvert work.
July 18	Flushing hydrants on Nauvoo Rd and Zion Line in Warwick-Watford.

July 19	Onsite for hot tap for new hydrant at 3962 Lakeshore.
July 22	Onsite for hot tap of LAWSS watermain at Country Corners at 3962 Lakeshore.
July 22	Emergency locate #2019306392 in St Clair Township.
July 23	Site meet at Bear Creek Bridge.
July 23	Flushing hydrants from Zion Line to Lakeshore in Warwick-Watford.
July 23	Bagged hydrant #21 at 6838 Zion line as the operator stem is broken.
July 24	Onsite for 1.5" hot tap at 4091 Confederation Line.
July 24	Flushing hydrants on Lakeshore Rd in Plympton-Wyoming.
July 25	Flushing hydrants on St Clair Parkway and Lakeshore Rd.
July 31	Meter reads completed.
July 31	Onsite for third party work on Greenfield Line.

Call Outs 2019

July: 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					

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 m³

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					

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 –Q2 was due July 30, 2019. Q3 due October 30

Semi-Annual “Schedule G” Reconcilable Commodities Report –Was due July 30, 2019. Next due January 30, 2020

Ontario Clean Water Agency
Time Series Info Report

From: 01/01/2019 to 31/07/2019

Report extracted 08/10/2019 17:55

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	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			38.605	
Mean IH	26.801	24.002	23.839	22.375	22.91	21.551	20.805		23.183		
Min IH	21.912	18.131	18.009	17.868	19.041	18.452	18.086				17.868
Coagulation/Floculation / Coagulant Used - kg											
Max IH	1792	1408	1651.2	1241.6	1344	2150.4	2060.8			2150.4	
Mean IH	1220.542	1167.086	1160.671	1009.067	1129.29	1339.307	1594.632		1232.966		
Min IH	972.8	947.2	832	768	934.4	921.6	1088				768
Total IH	37836.8	32678.4	35980.8	30272	35008	40179.2	49433.6	261388.8			
Coagulation/Floculation / Coagulant Volume Used - m³											
Max IH	1.4	1.1	1.29	0.97	1.05	1.68	1.61			1.68	
Mean IH	0.954	0.912	0.907	0.788	0.882	1.046	1.246		0.963		
Min IH	0.76	0.74	0.65	0.6	0.73	0.72	0.85				0.6
Total IH	29560	25530	28110	23650	27350	31390	38620	204210			
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					37	
Mean Lab		27			31.667				29.333		
Min Lab		24			25						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			2.49	
Mean OL	1.535	1.401	1.428	1.388	1.3	1.277	1.22		1.364		
Min OL	0	0	0	0	0	0	0				0
Filter Backwash / Backwash Volume - m³											
Max IH	4792	2408	2992	3006	3004	3004	2998			4792	
Mean IH	2268.323	1929.786	2028.194	1927.733	1900.774	2043	2095.032		2029.33		
Min IH	1794	1788	1794	1198	1204	1792	1788				1198
HFS / Fluoride Dosage - mg/L											
Max IH	0.64	0.644	0.614	0.622	0.592	0.628	0.612			0.644	
Mean IH	0.556	0.557	0.559	0.557	0.542	0.548	0.535		0.55		
Min IH	0.46	0.417	0.482	0.487	0.486	0.464	0.486				0.417
HFS / Fluoride Used - l											
Max IH	108.877	97.419	97.419	94.553	100.284	186.246	171.916			186.246	
Mean IH	85.495	87.63	89.655	83.952	90.041	115.949	139.658		99.061		
Min IH	65.901	66.384	71.631	71.631	74.497	88.823	111.745				65.901
Total IH	2650.36	2453.634	2779.305	2518.562	2791.284	3478.466	4329.406	21001.02			
HFS / HFS (kg) - kg											
Max IH	132.83	118.851	118.851	115.355	122.347	227.22	209.737			227.22	
Mean IH	104.304	106.908	109.379	102.422	109.851	141.458	170.383		120.855		
Min IH	80.399	80.989	87.39	87.39	90.886	108.364	136.329				80.399
Total IH	3233.439	2993.434	3390.752	3072.646	3405.367	4243.728	5281.875	25621.24			
HFS / Treated Water Fluoride Residual - mg/L											
Max OL	0.71	0.7	0.7	2	0.84	0.82	0.79			2	
Mean OL	0.631	0.601	0.578	0.597	0.611	0.575	0.63		0.603		
Min OL	0.56	0.54	0.51	0	0.51	0.24	0.49				0
Post Disinfection / Chlorine Dosage - mg/L											
Max IH	1.668	1.854	1.682	1.832	1.795	3.071	2.185			3.071	
Mean IH	1.434	1.391	1.458	1.468	1.535	1.696	1.952		1.564		
Min IH	1.215	0.891	1.048	1.271	1.05	1.097	1.594				0.891
Post Disinfection / Hypochlorite Dosage - mg/L											
Max IH	13.899	15.45	14.016	15.268	14.96	25.593	18.208			25.593	
Mean IH	11.947	11.588	12.152	12.232	12.79	14.136	16.268		13.035		
Min IH	10.126	7.428	8.737	10.593	8.747	9.142	13.282				7.428
Post Disinfection / Hypochlorite Used - kg											
Max IH	653.3	665.05	681.5	706.175	808.4	1975.175	1590.95			1975.175	
Mean IH	543.456	564	590.191	552.994	632.264	885.167	1241.672		717.792		
Min IH	444.15	326.65	454.725	407.725	431.225	460.6	956.45				326.65
Total IH	16847.15	15792	18295.93	16589.83	19600.18	26555	38491.83	152171.9			

Post Disinfection / Hypochlorite Volume-Total - m³												
Max IH	0.556	0.566	0.58	0.601	0.688	1.681	1.354			1.681		
Mean IH	0.463	0.48	0.502	0.471	0.538	0.753	1.057		0.611			
Min IH	0.378	0.278	0.387	0.347	0.367	0.392	0.814				0.278	
Total IH	14338	13440	15571	14119	16681	22600	32759	129508				
Post Disinfection / Station 7 Cl Residual: Free - mg/L												
Max OL	1.89	1.85	1.92	1.78	1.71	1.75	5			5		
Mean OL	1.699	1.712	1.716	1.608	1.521	1.504	1.533		1.613			
Min OL	1.52	1.54	1.53	1.4	1.29	0	1.26				0	
PrTr / P.A.C. Dosage - mg/L												
Max IH						0.464	0.367			0.464		
Mean IH						0.338	0.291		0.308			
Min IH						0.176	0.218				0.176	
PrTr / P.A.C. Used - kg												
Max IH						28.9	25.634			28.9		
Mean IH						22.199	21.929		22.025			
Min IH						12.27	16.36				12.27	
Total IH						377.381	679.812	1057.193				
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		
Mean Lab	69.2	33.25	21.5	105.8	69.25	346.25	729		189.067			
Min Lab	18	0	1	13	0	0	0				0	
Raw Water / Conductivity - µS/cm												
Max IH	228.5	223.2	231.5	232.3	243.7	238.2	238.8			243.7		
Mean IH	221.019	219.725	222.174	225.038	233.042	232.617	236.165		227.2			
Min IH	217.8	218	217.9	170	222.6	228.5	232.2				170	
Raw Water / E. Coli: EC - cfu/100mL												
Max Lab	1	0	0	1	0	0	10			10		
Mean Lab	0.4	0	0	0.2	0	0	4.75		0.733			
Min Lab	0	0	0	0	0	0	0				0	
Raw Water / Raw Flow Daily - m³/d												
Max IH	52987	56479	56245	51694	56670	100783	98594			100783		
Mean IH	45445.45	48755.75	48621.65	45139.4	49348.52	62028.87	76680.9		53788.68			
Min IH	40082	40763	41664	36877	42212	47569	60157				36877	
Raw Water / Raw Flow Rate - l/s												
Max IH	613.27	653.69	650.98	598.31	654.75	1166.47	1141.13			1166.47		
Mean IH	526.72	565.27	562.75	522.45	571.13	717.93	887.51		622.78			
Min IH	463.91	471.79	482.22	426.82	488.56	550.57	696.26				426.82	
Raw Water / Raw Water Turbidity - NTU												
Max OL	21.4	7.14	13.7	12.2	6.8	3.1	7			21.4		
Mean OL	2.887	1.135	2.448	2.458	1.769	1.08	0.97		1.821			
Min OL	0.46	0.23	0.201	0.57	0.445	0.365	0.33				0.201	
Raw Water / Raw Water pH - ---												
Max IH	8.22	8.12	8.2	8.9	8.35	8.35	8.41			8.9		
Mean IH	8.045	8.008	8.056	8.197	8.239	8.269	8.331		8.165			
Min IH	7.94	7.88	7.86	8.09	8.18	8.2	8.26				7.86	
Raw Water / Temperature - °C												
Max IH	8.01	6	8	11.5	13.1	18.5	23			23		
Mean IH	6.396	5.025	5.653	9.285	11.661	15.612	21.142		10.745			
Min IH	3	3.25	4	7	10	13	17.8				3	
Raw Water / Total Coliform: TC - cfu/100mL												
Max Lab	39	15	10	31	4	2	100			100		
Mean Lab	10.2	4.5	2.5	8.2	1.25	0.75	29.5		8.2			
Min Lab	2	0	0	0	0	0	0				0	
Treated Water / Background - cfu/100mL												
Max Lab	0	0	0	0	0	0	0			0		

Mean Lab	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Lab	0	0	0	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	0	0	0
Mean Lab	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Lab	0	0	0	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	6930858						
Treated Water / Flow: Total of All Sources - m³/d														
Max IH	51137	53292	51967	49343	52401	97988	96442					97988		
Mean IH	44841	46364	46748.23	44048.37	48460.74	61126.97	76220.23					52631.26		
Min IH	41397	41527	41284	39452	41184	41283	60988							39452
Total IH	1390071	1298192	1449195	1321451	1502283	1833809	2362827					11157828		
Treated Water / HPC - cfu/mL														
Max Lab	< 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
Min Lab	< 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	0	0	0
Mean Lab	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Lab	0	0	0	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					0.117		
Mean OL	0.062	0.063	0.065	0.063	0.064	0.066	0.066					0.064		
Min OL	0.043	0.047	0.046	0.047	0.046	0.046	0.049							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					4.99		
Mean OL	1.684	1.685	1.595	1.586	1.429	1.413	1.395					1.541		
Min OL	0	0	0	0	0	0	0							0
Zebra Mussel Control / Chlorine Dosage - mg/L														
Max IH				1.125	1.173	1.25	1.327					1.327		
Mean IH				1.125	1.068	1.127	1.158					1.118		
Min IH				1.125	0.955	1.01	1.028							0.955
Zebra Mussel Control / Cl Residual: Free - mg/L														
Max IH				0.36	0.67	0.66	0.63					0.67		
Mean IH				0.36	0.6	0.588	0.559					0.58		
Min IH				0.36	0.44	0.52	0.39							0.36
Zebra Mussel Control / Cl Residual: Total - mg/L														
Max IH				0.54	0.81	0.8	0.79					0.81		
Mean IH				0.54	0.746	0.712	0.679					0.71		
Min IH				0.54	0.55	0.63	0.51							0.51
Zebra Mussel Control / Hypochlorite Dosage - mg/L														
Max IH				9.374	9.777	10.417	11.057					11.057		
Mean IH				9.374	8.898	9.392	9.649					9.313		
Min IH				9.374	7.961	8.418	8.569							7.961
Zebra Mussel Control / Hypochlorite Used - kg														
Max IH				433.575	514.65	848.35	851.875					851.875		
Mean IH				433.575	439.147	582.408	735.512					584.089		
Min IH				433.575	336.05	444.15	619.225							336.05
Total IH				433.575	13613.55	17472.25	22800.88					54320.25		
Zebra Mussel Control / Hypochlorite Volume-Total-1 - m³														
Max IH				0.369	0.438	0.722	0.725					0.725		
Mean IH				0.369	0.374	0.496	0.626					0.497		
Min IH				0.369	0.286	0.378	0.527							0.286
Total IH				369	11586	14870	19405					46230		

Health & Safety Work Order Summary by Facility

Start Date: 2019-07-01

End Date: 2019-07-31

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 Plant (5544)	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, Lambton Area RMS (5544-WWLA)	0	0	0	0.00	0.00	85.00%	100.00%	-15.00%
		5544, Lambton Area WTP (5544-WTLA)	3	3	3	6.75	277.07	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%
Total			3	3	3	6.75	277.07	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%

Health & Safety Work Order Summary by Facility

Start Date: 2019-01-01

End Date: 2019-07-31

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 Plant (5544)	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, Lambton Area RMS (5544-WWLA)	0	0	0	0.00	0.00	85.00%	100.00%	-15.00%
		5544, Lambton Area WTP (5544-WTLA)	27	27	27	51.75	2171.03	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)	2	2	2	6.25	341.81	85.00%	100.00%	-15.00%
Total			29	29	29	58.00	2512.84	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%

Work Order Summary by Facility

Start Date: 2019-07-01
End Date: 2019-07-31
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)	2	2	2	7.25	282.39	0	0	0	0	0	0	0	0	0	0
		5544, East Lambton PS (5544-WPEL)	2	2	2	8	292.6	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)	3	3	1	14	696.08	0	0	0	0	0	0	0	0	0	0
		5544, West Lambton Booster Stn (5544-WPWL)	1	1	1	16	588	0	0	0	0	0	0	0	0	0	0
		5544, West ST.Clair Distribution (5544-WDWS)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Lambton Area Water Treatment Plant (5544)	1	1	1	17.5	1061.73	0	0	0	0	0	0	0	0	0	0
Grand Total			9	9	7	62.75	2920.8	0	0	0	0.00	0.00	0	0	0	0.00	0.00

* NOTE: Capital/Project Work is not included in the calculation of the Closure Rate
16/08/19 10:07:25

Work Order Summary by Facility

Start Date: 2019-07-01
End Date: 2019-07-31
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	6	6	5	23.5	1064.12	0	0	0	0	0	85%	87.5%	-2.50%
		5544, East Lambton PS (5544-WPEL)	5	5	4	8.25	415.63	2	2	2	10.75	497.39	0	0	0	0	0	85%	88.88%	-3.88%
		5544, Lambton Area RMS (5544-WWLA)	2	2	2	3.5	182.71	2	2	2	1	43.17	0	0	0	0	0	85%	100%	-15.0%
		5544, Lambton Area WTP (5544-WTLA)	30	30	28	83	3470.29	11	11	10	1608.25	39065.54	1	0	0	0	0	85%	88.63%	-3.63%
		5544, West Lambton Booster Stn (5544-WPWL)	3	3	3	9	485.4	2	2	2	22.5	1120.55	0	0	0	0	0	85%	100%	-15.0%
		5544, West ST.Clair Distribution (5544-WDWS)	0	0	0	0	0	2	2	2	7.5	340.5	0	0	0	0	0	85%	100%	-15.0%
		Lambton Area Water Treatment Plant (5544)	1	1	0	2	121.34	0	0	0	0	0	0	0	0	0	0	85%	50%	35%
Grand Total			41	41	37	105.75	4675.37	25	25	23	1673.5	42131.27	1	0	0	0	0	85%	89.33%	10.66%

* NOTE: Capital/Project Work is not included in the calculation of the Closure Rate
16/08/19 10:07:25

Work Order Summary by Facility

Start Date: 2019-01-01
End Date: 2019-07-31
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)	8	8	8	106	4998.47	5	5	4	12.5	669.28	0	0	0	0	0	
		5544, East Lambton PS (5544-WPEL)	4	4	4	18	709.42	0	0	0	0	0	0	0	0	0	0	
		5544, Lambton Area RMS (5544-WWLA)	5	5	5	52	2243.33	0	0	0	0	0	0	0	0	0	0	
		5544, Lambton Area WTP (5544-WTLA)	27	27	21	207.5	8654.63	1	1	1	1	46.68	4	4	4	36	1505.9	
		5544, West Lambton Booster Stn (5544-WPWL)	8	8	6	35.25	1484.02	0	0	0	0	0	1	1	1	54.75	2521.45	
		5544, West ST.Clair Distribution (5544-WDWS)	2	2	2	8.25	389.73	2	2	2	26.5	1867.46	0	0	0	0	0	0
		Lambton Area Water Treatment Plant (5544)	8	8	8	84.25	4095.26	0	0	0	0	0	0	0	0	0	0	0
Grand Total			62	62	54	511.25	22574.86	8	8	7	40.00	2583.42	5	5	5	90.75	4027.35	

* NOTE: Capital/Project Work is not included in the calculation of the Closure Rate
16/08/19 10:12:05

Work Order Summary by Facility

Start Date: 2019-01-01
End Date: 2019-07-31
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)	9	9	6	17	1006.35	30	30	29	95	4146.39	5	4	1	36.25	11116.61	85%	90.38%	-5.38%
		5544, East Lambton PS (5544-WPEL)	38	38	36	74.5	3710.77	15	15	15	59.5	2724.09	0	0	0	0	0	85%	96.49%	-11.4%
		5544, Lambton Area RMS (5544-WWLA)	17	17	17	29.75	1358.01	14	14	14	25	1011.55	1	1	1	27.25	22007.7	85%	100%	-15.0%
		5544, Lambton Area WTP (5544-WTLA)	243	243	230	907	46366.11	89	89	85	11396	296727.2	5	4	0	124.75	13066.88	85%	93.68%	-8.68%
		5544, West Lambton Booster Stn (5544-WPWL)	44	44	41	70.25	3407.43	14	14	14	134.25	6152.34	0	0	0	0	0	85%	92.53%	-7.53%
		5544, West ST.Claire Distribution (5544-WDWS)	3	3	1	4	161.84	14	14	14	43.5	1877.99	0	0	0	0	0	85%	90.47%	-5.47%
		Lambton Area Water Treatment Plant (5544)	4	4	3	19.5	1044.26	0	0	0	0	0	5	5	4	178.5	59173.76	85%	91.66%	-6.66%
Grand Total			358	358	334	1122	57054.77	176	176	171	11753.25	312639.6	16	14	6	366.75	105365	85%	93.76%	6.239%

* NOTE: Capital/Project Work is not included in the calculation of the Closure Rate
16/08/19 10:12:05



Ontario Clean Water Agency
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2019 Client Monthly Operations Report

Lambton Area Water Supply System

August 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 90,000m³, 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

August:

Date	(P)reventative Capital Major Mtc (C)orrective	Description
August 1	P	Completed monthly maintenance on online fluoride analyzer.
August 6	C	Door and lighting work at West Lambton Pumping Station.
August 6	P	Completed monthly maintenance on chlorine analyzers at East and West Lambton Pumping Stations.
August 6-7	P	Completed monthly maintenance on all chlorine analyzers at the water treatment plant.
August 8	Major Mtc	Working with Elektek on first phase of annual electrical maintenance at West Lambton Pumping Station.
August 8-10	P	Completed annual maintenance on all ten filter Loss of Head pressure transmitters.
August 8	C	PAC room flooding. Reset system with no issues.
August 9	C	Removed anthracite and sand from Actiflo #2 clarifier unit.
August 12	Capital	Meeting with LAWSS GM in regards to radio project.
August 12	C	Replaced hard drive on SCADA Server 1
August 13	P	Running diesel generators at West Lambton Pumping Station.
August 13	P	Completed monthly maintenance on lab turbidity meter.
August 13	P	Completed monthly inspection of compressors at the water treatment plant.
August 13	Major Mtc	Working with Elektek on second phase of annual electrical maintenance at West Lambton Pumping Station.

Aug 13-14	P	Completed monthly maintenance on all water treatment plant online turbidity meters.
August 14	P	Conducted monthly inspection on emergency eyewash stations and safety shower.
August 14	P	Repaired sump pump discharge house at Watford Tower.
August 15	C	Replaced sand auger sleeve on the Residual Management System.
August 15	P	Running diesel generator at East Lambton Pumping Station.
August 16	C	Repaired broken valve box at Port Lambton Tower.
August 16	P	Completed annual inspection and maintenance on Pumps 1, 2 and 5 at West Lambton Pumping Station.
August 16	Capital	Meeting with LAWSS GM in regards to radio project.
August 16	P	Completed monthly inspection of the vacuum priming station at East Lambton Pumping Station.
August 19-20	C	Working with ElectroZad and Rockwell in order to troubleshoot frequency issue with the VFD running under generator power at West Lambton Pumping Station.
August 19-20	P	Completed monthly maintenance on all online pH probes at the water treatment plant.
August 21	C	Set up new torque limits on Filter #5 effluent valve actuator.
Aug 19-20	P	Completed monthly inspection of all six floc gear drives.
August 21	C	Set up new torque limits on Filter #5 surface wash valve actuator.
August 21	C	Replaced lighting in the chemical room of the water treatment plant.
August 22-23	P	Completed monthly calibration on all chlorine handheld units.
August 23	P	Completed monthly maintenance on online fluoride analyzer.
August 23	P	Completed monthly maintenance on the Residual Management System turbidity meters.
August 26	Capital	Powered up MCC room A/C units after terminations were completed.
August 26	P	Completed monthly inspection of travelling screens at the water treatment plant.
August 26-29	Capital	Assist contractors with HVAC capital project work.
August 28	P	Testing generators at water treatment plant. During test battery on generator #5 failed.
August 28	C	Clean up failed batteries from generator #5.
August 29	C	Replaced generator batteries on generator #5.
August 30	P	Alberts Generator Service on site for annual maintenance on generators at West Lambton Pumping Station.

Operations and Compliance

August:

August 1	Conducted quarterly test of critical control point alarms.
August 2	Prechlorine pump #3 failed due to air lock. Pump and panel was reset.
August 3	All 3 prechlorine pumps failed due to air lock. Changed over hypo tank, pumps and panel was reset.
August 6	South clearwell pump #2 failed due to air lock. Pump and panel was reset.
August 7	Actiflo #2 having issues with high turbidity spikes.
August 7	South clearwell pump #2 failed due to air lock. Pump and panel was reset.
August 7	Prechlorine pumps 1 and 3 failed due to air lock. Pumps and panel was reset.
August 8	Prechlorine pump failed due to air lock. Pump and panel was reset.
August 10	Running Pump #5 at West Lambton Pumping Station.
August 11	Running Pump #1 at West Lambton Pumping Station.
August 12	Switched over lead/lag pumps for Forest and Watford at East Lambton Pumping Station.
August 12	Quarterly THM, nitrates and HAA samples taken.
August 12	South clearwell pump failed due to air lock. Pump and panel was reset.
August 13	Changed over PAC bag.
August 15	Running polymer system as per SOP to test system at the water treatment plant.
August 15	Prechlorine pump #3 failed due to air lock. Pump and panel was reset.
August 16	South clearwell #1 pump failed due to air lock. Pump and panel was reset.
August 20	Prechlorine pump #3 failed due to air lock. Pump and panel was reset.
August 20	Surface wash for filter #67 failed to hit close limit.
August 29	Prechlorine pump #1 failed due to air lock. Pump and panel was reset.

Distribution

August:

August 1	Completed July meter reads.
August 1	Site meet on Highway 40 and LaSalle Line in regards to new drain system.
August 7	After hours emergency locate at 3565 St Clair Parkway.
August 8	Site meet on Michigan Ave.
August 12	Onsite at 1717 London Line for exposure of LAWSS line.
August 13	Flushing and hydrant inspection on St Clair Parkway in Sombra.
August 18	After hours emergency locate #2019340767.
August 22	After hours emergency locate #20190822001 in St Clair Township.
August 22	Installed valve extension at chamber at Port Lambton Tower.
August 26	Found small water main leak on the service at 3188 St Clair Parkway.
August 26	Site meet at Bickford Line for work around LAWSS main.
August 27	Site meet at Bickford Line and Moore Line for work around LAWSS main.
August 27	Installed new 7ft valve extension on valve at Front St and London Rd.
August 28	Flushing and hydrant inspection on St Clair Parkway.
August 29	Flushing and hydrant inspection on St Clair Parkway.

August 29	Site meet at Bickford Line for work around LAWSS main.
August 29	Repaired service at 3188 St Clair Parkway.
August 30	Flushing hydrants in St Clair Township.
August 30	August meter reads completed.

Call Outs 2019

August: August 4 call out to investigate possible leak near Sipkins Nursery on London Line. Issue was with Petrolia water system not LAWSS. Petrolia water system was notified.

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				

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 m³

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				

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 –Q3 due October 30

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

Ontario Clean Water Agency
Time Series Info Report

Report extracted 09/10/2019 10:42

From: 01/01/2019 to 31/08/2019

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	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			38.605	
Mean IH	26.801	24.002	23.839	22.375	22.91	21.551	20.805	20.898		22.892		
Min IH	21.912	18.131	18.009	17.868	19.041	18.452	18.086	19.041				17.868
Coagulation/Floculation / Coagulant Used - kg												
Max IH	1792	1408	1651.2	1241.6	1344	2150.4	2060.8	1804.8			2150.4	
Mean IH	1220.542	1167.086	1160.671	1009.067	1129.29	1339.307	1594.632	1397.677		1253.979		
Min IH	972.8	947.2	832	768	934.4	921.6	1088	1100.8				768
Total IH	37836.8	32678.4	35980.8	30272	35008	40179.2	49433.6	43328	304716.8			
Coagulation/Floculation / Coagulant Volume Used - m³												
Max IH	1.4	1.1	1.29	0.97	1.05	1.68	1.61	1.41			1.68	
Mean IH	0.954	0.912	0.907	0.788	0.882	1.046	1.246	1.092		0.98		
Min IH	0.76	0.74	0.65	0.6	0.73	0.72	0.85	0.86				0.6
Total IH	29560	25530	28110	23650	27350	31390	38620	33850	238060			
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			2.49	
Mean OL	1.535	1.401	1.428	1.388	1.3	1.277	1.22	1.124		1.334		
Min OL	0	0	0	0	0	0	0	0				0
Filter Backwash / Backwash Volume - m³												
Max IH	4792	2408	2992	3006	3004	3004	2998	3002			4792	
Mean IH	2268.323	1929.786	2028.194	1927.733	1900.774	2043	2095.032	2056.903		2032.848		
Min IH	1794	1788	1794	1198	1204	1792	1788	1059				1059
HFS / Fluoride Dosage - mg/L												
Max IH	0.64	0.644	0.614	0.622	0.592	0.628	0.612	0.589			0.644	
Mean IH	0.556	0.557	0.559	0.557	0.542	0.548	0.535	0.537		0.549		
Min IH	0.46	0.417	0.482	0.487	0.486	0.464	0.486	0.49				0.417
HFS / Fluoride Used - l												
Max IH	108.877	97.419	97.419	94.553	100.284	186.246	171.916	143.263			186.246	
Mean IH	85.495	87.63	89.655	83.952	90.041	115.949	139.658	123.298		102.153		
Min IH	65.901	66.384	71.631	71.631	74.497	88.823	111.745	103.149				65.901
Total IH	2650.36	2453.634	2779.305	2518.562	2791.284	3478.466	4329.406	3822.244	24823.26			
HFS / HFS (kg) - kg												
Max IH	132.83	118.851	118.851	115.355	122.347	227.22	209.737	174.781			227.22	
Mean IH	104.304	106.908	109.379	102.422	109.851	141.458	170.383	150.424		124.627		
Min IH	80.399	80.989	87.39	87.39	90.886	108.364	136.329	125.842				80.399
Total IH	3233.439	2993.434	3390.752	3072.646	3405.367	4243.728	5281.875	4663.138	30284.38			
HFS / Treated Water Fluoride Residual - mg/L												
Max OL	0.71	0.7	0.7	2	0.84	0.82	0.79	0.7			2	
Mean OL	0.631	0.601	0.578	0.597	0.611	0.575	0.63	0.611		0.604		
Min OL	0.56	0.54	0.51	0	0.51	0.24	0.49	0.55				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			3.071	
Mean IH	1.434	1.391	1.458	1.468	1.535	1.696	1.952	2.087		1.631		
Min IH	1.215	0.891	1.048	1.271	1.05	1.097	1.594	1.842				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			25.593	
Mean IH	11.947	11.588	12.152	12.232	12.79	14.136	16.268	17.39		13.59		
Min IH	10.126	7.428	8.737	10.593	8.747	9.142	13.282	15.347				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			1975.175	
Mean IH	543.456	564	590.191	552.994	632.264	885.167	1241.672	1162.454		774.518		
Min IH	444.15	326.65	454.725	407.725	431.225	460.6	956.45	930.6				326.65
Total IH	16847.15	15792	18295.93	16589.83	19600.18	26555	38491.83	36036.08	188208			
Post Disinfection / Hypochlorite Volume-Total - m³												
Max IH	0.556	0.566	0.58	0.601	0.688	1.681	1.354	1.221			1.681	
Mean IH	0.463	0.48	0.502	0.471	0.538	0.753	1.057	0.989		0.659		
Min IH	0.378	0.278	0.387	0.347	0.367	0.392	0.814	0.792				0.278
Total IH	14338	13440	15571	14119	16681	22600	32759	30669	160177			

Mean IH		44841	46364	46748.23	44048.37	48460.74	61126.97	76220.23	67154.84		54484.07			
Min IH		41397	41527	41284	39452	41184	41283	60988	56137					39452
Total IH		1390071	1298192	1449195	1321451	1502283	1833809	2362827	2081800	13239628				
Treated Water / HPC - cfu/mL														
Max Lab	<	10	<	10	<	10	<	10	<	10	<	10	<	10
Mean Lab	<	10	<	10	<	10	<	10	<	10	<	10	<	10
Min Lab	<	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		
Mean Lab		0	0	0	0	0	0	0	0	0	0			
Min Lab		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			0.117		
Mean OL		0.062	0.063	0.065	0.063	0.064	0.066	0.066	0.067		0.064			
Min OL		0.043	0.047	0.046	0.047	0.046	0.046	0.049	0.052					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			4.99		
Mean OL		1.684	1.685	1.595	1.586	1.429	1.413	1.395	1.395		1.523			
Min OL		0	0	0	0	0	0	0	0					0
Zebra Mussel Control / Chlorine Dosage - mg/L														
Max IH					1.125	1.173	1.25	1.327	1.29			1.327		
Mean IH					1.125	1.068	1.127	1.158	1.206		1.14			
Min IH					1.125	0.955	1.01	1.028	1.113					0.955
Zebra Mussel Control / Cl Residual: Free - mg/L														
Max IH					0.36	0.67	0.66	0.63	0.64			0.67		
Mean IH					0.36	0.6	0.588	0.559	0.586		0.582			
Min IH					0.36	0.44	0.52	0.39	0.52					0.36
Zebra Mussel Control / Cl Residual: Total - mg/L														
Max IH					0.54	0.81	0.8	0.79	0.79			0.81		
Mean IH					0.54	0.746	0.712	0.679	0.72		0.713			
Min IH					0.54	0.55	0.63	0.51	0.66					0.51
Zebra Mussel Control / Hypochlorite Dosage - mg/L														
Max IH					9.374	9.777	10.417	11.057	10.753			11.057		
Mean IH					9.374	8.898	9.392	9.649	10.049		9.497			
Min IH					9.374	7.961	8.418	8.569	9.277					7.961
Zebra Mussel Control / Hypochlorite Used - kg														
Max IH					433.575	514.65	848.35	851.875	774.325			851.875		
Mean IH					433.575	439.147	582.408	735.512	670.735		605.75			
Min IH					433.575	336.05	444.15	619.225	538.15					336.05
Total IH					433.575	13613.55	17472.25	22800.88	20792.8	75113.05				
Zebra Mussel Control / Hypochlorite Volume-Total-1 - m³														
Max IH					0.369	0.438	0.722	0.725	0.659			0.725		
Mean IH					0.369	0.374	0.496	0.626	0.571		0.516			
Min IH					0.369	0.286	0.378	0.527	0.458					0.286
Total IH					369	11586	14870	19405	17696	63926				

Health & Safety Work Order Summary by Facility

Start Date: 2019-08-01

End Date: 2019-08-31

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 Plant (5544)	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, Lambton Area RMS (5544-WWLA)	0	0	0	0.00	0.00	85.00%	100.00%	-15.00%
		5544, Lambton Area WTP (5544-WTLA)	3	3	3	5.75	217.98	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)	1	1	1	0.50	28.45	85.00%	100.00%	-15.00%
Total			4	4	4	6.25	246.43	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%

Health & Safety Work Order Summary by Facility

Start Date: 2019-01-01

End Date: 2019-08-31

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 Plant (5544)	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, Lambton Area RMS (5544-WWLA)	0	0	0	0.00	0.00	85.00%	100.00%	-15.00%
		5544, Lambton Area WTP (5544-WTLA)	30	30	30	57.50	2389.01	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)	3	3	3	6.75	370.26	85.00%	100.00%	-15.00%
Total			33	33	33	64.25	2759.27	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%

Work Order Summary by Facility

Start Date: 2019-08-01
End Date: 2019-08-31
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	2.5	113.5	0	0	0	0	0	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)	2	2	2	14	492.68	0	0	0	0	0	0	0	0	0	0
		5544, Lambton Area WTP (5544-WTLA)	5	5	1	11	789.29	0	0	0	0	0	0	0	0	0	0
		5544, West Lambton Booster Stn (5544-WPWL)	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
		5544, West ST.Clair Distribution (5544-WDWS)	1	1	1	15.75	955.56	1	1	1	8.5	369.94	0	0	0	0	0
		Lambton Area Water Treatment Plant (5544)	2	2	1	8.5	467.86	0	0	0	0	0	0	0	0	0	0
		Grand Total	11	11	6	51.75	2818.89	2	2	1	8.50	369.94	0	0	0	0.00	0.00

* NOTE: Capital/Project Work is not included in the calculation of the Closure Rate
9/17/19 08:56:43

Work Order Summary by Facility

Start Date: 2019-08-01
End Date: 2019-08-31
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	7.25	336.01	0	0	0	0	0	85%	100%	-15.0%
		5544, East Lambton PS (5544-WPEL)	4	4	4	12.5	649.91	2	2	2	5	228.9	0	0	0	0	0	85%	100%	-15.0%
		5544, Lambton Area RMS (5544-WWLA)	3	3	3	4	193.2	2	2	2	3	124.09	0	0	0	0	0	85%	100%	-15.0%
		5544, Lambton Area WTP (5544-WTLA)	33	33	30	65.25	2809.79	12	12	11	1473.75	36645.6	0	0	0	0	0	85%	84%	1.000%
		5544, West Lambton Booster Stn (5544-WPWL)	7	7	7	15.5	828.21	2	2	2	15.5	704.44	0	0	0	0	0	85%	90%	-5.00%
		5544, West ST.Clair Distribution (5544-WDWS)	2	2	1	9.25	530.66	2	2	2	15.75	713.94	0	0	0	0	0	85%	83.33%	1.666%
		Lambton Area Water Treatment Plant (5544)	1	1	1	0.5	28.45	0	0	0	0	0	1	1	0	19.5	1150.82	85%	66.66%	18.33%
Grand Total			50	50	46	107	5040.22	24	24	23	1520.25	38752.98	1	1	0	19.5	1150.82	85%	87.35%	12.64%

* NOTE: Capital/Project Work is not included in the calculation of the Closure Rate
9/17/19 08:56:43

Work Order Summary by Facility

Start Date: 2019-01-01
End Date: 2019-08-31
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)	9	9	9	108.5	5111.97	5	5	4	12.5	669.28	0	0	0	0	0
		5544, East Lambton PS (5544-WPEL)	4	4	4	18	709.42	0	0	0	0	0	0	0	0	0	0
		5544, Lambton Area RMS (5544-WWLA)	7	7	7	66	2758.86	0	0	0	0	0	0	0	0	0	0
		5544, Lambton Area WTP (5544-WTLA)	32	32	26	223.5	9747.28	1	1	1	1	46.68	4	4	4	36	1505.9
		5544, West Lambton Booster Stn (5544-WPWL)	8	8	6	38.25	1594.27	1	1	0	0	0	1	1	1	54.75	2521.45
		5544, West ST.Clair Distribution (5544-WDWS)	3	3	3	24	1345.29	3	3	3	35	2237.4	0	0	0	0	0
		Lambton Area Water Treatment Plant (5544)	10	10	9	92.75	4563.12	0	0	0	0	0	0	0	0	0	0
Grand Total			73	73	64	571	25830.21	10	10	8	48.50	2953.36	5	5	5	90.75	4027.35

* NOTE: Capital/Project Work is not included in the calculation of the Closure Rate
9/17/19 08:53:00

Work Order Summary by Facility

Start Date: 2019-01-01
End Date: 2019-08-31
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)	9	9	6	17	1006.35	34	34	34	102.25	4482.4	5	4	1	36.25	11116.61	85%	92.98%	-7.98%
		5544, East Lambton PS (5544-WPEL)	42	42	41	91.5	4551.57	17	17	17	64.5	2952.99	0	0	0	0	0	85%	98.41%	-13.4%
		5544, Lambton Area RMS (5544-WWLA)	20	20	20	33.75	1551.21	16	16	16	28	1135.64	1	1	1	27.25	22007.7	85%	100%	-15.0%
		5544, Lambton Area WTP (5544-WTLA)	276	276	264	1051.25	56335.77	101	101	98	12877.75	333786.8	5	4	2	125.25	51857.22	85%	94.92%	-9.92%
		5544, West Lambton Booster Stn (5544-WPWL)	51	51	48	85.75	4235.64	16	16	16	149.75	6856.78	0	0	0	0	0	85%	92.20%	-7.20%
		5544, West ST.Clair Distribution (5544-WDWS)	5	5	3	13.75	713.71	16	16	16	59.25	2591.93	0	0	0	0	0	85%	92.59%	-7.59%
		Lambton Area Water Treatment Plant (5544)	5	5	5	20.5	1103.05	0	0	0	0	0	6	6	4	198	60324.58	85%	93.33%	-8.33%
Grand Total			408	408	387	1313.5	69497.3	200	200	197	13281.5	351806.6	17	15	8	386.75	145306.1	85%	94.97%	5.028%

* NOTE: Capital/Project Work is not included in the calculation of the Closure Rate
9/17/19 08:53:00

Lambton Area WT 2019

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

Org. # : 5544

Project # : LAWSSM5544W-002

Date : 6/30/19

	2018 Actuals	2019 Budget	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	YTD Budget	YTD Actuals	Variance (< YTD budget)
OPERATING CHARGES									
OCWA Service Fee	2,112,364.00	2,252,914.00	563,228.50	563,228.50			1,126,457.00	1,126,457.00	0.00
Diesel	5,416.15	9,000.00	0.00	0.00			4,500.00	0.00	-4,500.00
Insurance**	94,276.44	91,050.24	22,762.56	22,762.56			45,525.12	45,525.12	0.00
Point Edward Sewage	89,354.82	91,000.00	0.00	0.00			0.00	0.00	0.00
Chemicals	246,867.34	266,463.00	48,878.91	52,888.97			133,231.50	101,767.88	-31,463.62
Hydro	1,369,006.60	1,640,000.00	338,436.26	328,673.94			820,000.00	667,110.20	-152,889.80
Sludge Haulage	129,507.29	155,401.00	25,876.85	25,034.58			77,700.50	50,911.43	-26,789.07
TOTAL OPERATING COSTS	4,046,792.64	4,505,828.24	999,183.08	992,588.55	0.00	0.00	2,207,414.12	1,991,771.63	-215,642.49
TOTAL OPERATING CHARGES	4,046,792.64	4,505,828.24	999,183.08	992,588.55	0.00	0.00	2,207,414.12	1,991,771.63	-215,642.49

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

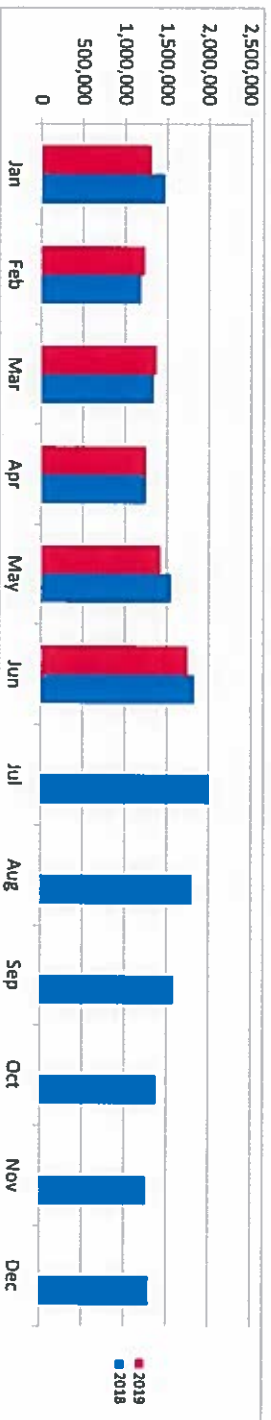
LAWSS Flow Summary

Total Flows as of Jun 2019

Draft

Total % Total
Year To Date for:
Jan - Jun

LAWSS Member	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Sarnia	763,540	710,071	793,833	772,802	859,360	928,004	0	0	0	0	0	0	4,827,611
Point Edward	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
St. Clair	27,627	25,262	28,086	27,709	32,081	38,498	0	0	0	0	0	0	179,264
Plympton/Wyoming	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
Lambton Shores	407,497	389,310	437,481	329,430	376,717	607,849	0	0	0	0	0	0	2,548,285
Watford/Warwick	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
Others	60,624	55,794	61,245	63,800	73,513	86,825	0	0	0	0	0	0	401,800
Alvinston	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
Petrolia	12,193	15,213	12,491	14,747	28,233	32,872	0	0	0	0	0	0	115,750
Chatham-Kent	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
Totals	29,976	28,550	30,013	31,163	35,804	35,885	0	0	0	0	0	0	191,392
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
2019	7,072	6,668	10,291	12,120	16,322	18,398	0	0	0	0	0	0	826,410
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	70,871
2019	0	0	0	0	0	0	0	0	0	0	0	0	85,913
2018	25,392	2,810	10,788	4,496	0	24,533	0	0	0	0	0	0	68,019
2019	0	1,071	0	778	129	0	0	0	0	0	0	0	1,978
2018	0	0	0	0	20,782	0	0	0	0	0	0	0	20,782
2019	1,308,530	1,231,940	1,373,440	1,252,550	1,422,160	1,748,330	0	0	0	0	0	0	8,336,950
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 Jun

Year to Date

LAWSS Members	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan - Jun Total
City of Samlial:	763,540	710,071	793,833	772,802	859,360	928,004	0	0	0	0	0	0	4,827,611
Point Edward:	27,627	25,262	28,086	27,709	32,081	38,498	0	0	0	0	0	0	179,264
St. Clair Township:	407,497	389,310	437,481	329,430	376,717	607,849	0	0	0	0	0	0	2,548,285
Plympton/Wyoming:	60,624	55,794	61,245	63,800	73,513	86,825	0	0	0	0	0	0	401,800
Lambton Shores:	12,193	15,213	12,491	14,747	28,233	32,872	0	0	0	0	0	0	115,750
Wainford/Warwick:	29,976	28,550	30,013	31,163	35,804	35,885	0	0	0	0	0	0	191,392
Others	1,301,458	1,224,201	1,363,150	1,239,652	1,405,708	1,729,932	0	0	0	0	0	0	8,264,101
Town of Alvinston:	7,072	6,668	10,291	12,120	16,322	18,398	0	0	0	0	0	0	70,871
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	0	0	0	0	0	0	8,336,950
	1,308,530	1,231,940	1,373,440	1,252,550	1,422,160	1,748,330	0	0	0	0	0	0	8,336,950

Last Years Data 2018

LAWSS Members	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan - Jun Total
City of Samlial:	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	10,390,994
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	886,774
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
Wainford/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	458,419
Others	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
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	17,986,681
	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

Lambton Area Water Supply System

1215 Fort St. Sarnia, On N7V 1M1

Phone: (519) 344-7429

Fax: (519) 344-4337

City of Sarnia

For the Month of: June 2019

Meter num	Meter Location	Read date	Last Read date	Difference	Calibration Adjustments	As Found	As Left	X	Flow
15	High/Low Net Flow Totalizer	30-Jun-19	31-May-19	1,675,647.8	0			1	0
13	High/Low Net Flow Totalizer			181,856,620.0	180,108,290.0	1,748,330		1	1,748,330

Entering Sarnia: 1,748,330

Members Monthly % Used

Leaving Sarnia to LAWSS Members:

Village of Point Edward - Grand Total:	38,498	2.2
St. Clair Township - Grand Total:	607,849	35.1
Plympton/Wyoming - Grand Total:	86,825	5.0
Lambton Shores - Grand Total:	32,872	1.9
Village of Watford/Township of Warwick - Grand Total:	35,885	2.1

Leaving Sarnia to Others:

Town of Alvinston - Grand Total:	18,398
Town of Petroliia - Grand Total:	0
Chatham-Kent Area Water - Grand Total:	0
Metered Consumption:	928,004

Adjustments:

Reason for Adjustment:

City of Sarnia - Total Consumption:	928,004
Leakage rate adjustment	0%
City of Sarnia - Grand Total:	928,004
Overall Grand Total:	1,748,330
	100.0

Dave Hunt

Dave Hunt (Operations Manager)

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: June 2019

Meter num	Meter Location	Read date		Last Read date		Difference	Calibration Adjustments			X	Flow	%
		30-Jun-19	31-May-19				As Found	As Left				
CH01	Venetian Vill (Mag)	408,663.2	400,121.8			8,541	407,484	407,493	1	1	8,533	23.1
CH02	Ven & Exmouth (Mag)	39,053.0	38,523.4			530	38,979	39,016	1	1	493	1.3
CH03	Michigan & Monk (Mag)	918,983.7	892,607.3			26,376	914,502	914,629	1	1	26,250	70.9
CH04	Michigan & Front (Mag)	125,388.4	123,822.4			1,566	125,251	125,255	1	1	1,562	4.2

Reason for Adjustment:

Estimated Flow during calibration	CH01	17
Estimated Flow during calibration	CH02	1
Estimated Flow during calibration	CH03	162
Estimated Flow during calibration	CH04	0

Metered Consumption: 36,837

Adjustments:

Village of Point Edward - Total Consumption:

37,017

Leakage rate adjustment 4%

1,481

Village of Point Edward - Grand Total:

38,498

Dave Hunt

Dave Hunt (Operations Manager)

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

St. Clair Township

For the Month of: June 2019

Meter num	Meter Location	Read date	Last Read date	Difference	Calibration Adjustments	X	Flow	%
		30-Jun-19	31-May-19		As Found	As Left		
WL-O 3100	WL High Net Flow - West Lambton Plank Road (3/4)	35,486,008.0	34,901,984.0	584,024			1	584,024 99.9
		1,490	1,015	475			1	475 0.1

Back to Sarnia								
1100	LaSalle & Parkway	8,009	7,988	21			1	21 0.0
1090	LaSalle & Tashmoo	4,029	4,021	8			1	8 0.0

Reason for Adjustment:

Note: Nova is taking a lot of water during a pumpthouse refurb

<u>Entering St. Clair Township:</u>	584,499	100.0
<u>Leaving St. Clair Township</u>		
Back to Sarnia:	29	0.0
Chatham-Kent Area Water - Total Consumption:	0	0.0
<u>Metered Consumption:</u>	584,470	100.0
<u>Adjustments:</u>		
St. Clair Township - Total Consumption:	584,470	
Leakage rate adjustment 4%	23,379	
<u>St. Clair Township - Grand Total:</u>	<u>607,849</u>	

Dave Hunt

Dave Hunt (Operations Manager)

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

Township of Plympton / Village of Wyoming

For the Month of: June 2019

Meter num	Meter Location	Read date 30-Jun-19	Last Read date 31-May-19	Difference	Calibration Adjustments As Found	As Left	X	Flow	%
5001	Ch05 Low Net Flow - Maundaumin	57,809.0	57,801.3	8	57,801	57,807	1	2	
5002	Ch05 High Net Flow - Maundaumin	17,160,480.0	16,992,478.0	168,002	17,127,288	17,127,296	1	167,994	
	Village of Wyoming								
8001	Wyoming	432,670	432,670	0			1	0	
8002	Wyoming	2,112	9,682	2,430			10	24,300	
	Back to Sarnia								
1005	Brights Grove (Sarnia)	610	610	0			0.1	0	
1006	Brights Grove (Sarnia)	81,540	81,540	0			10	0	

Entering Plympton: 167,996Leaving Plympton

Village of Wyoming: 24,300

Back to Sarnia: 0

Lambton Shores - Total Consumption: 31,608

Watford/Warwick - Total Consumption: 34,505

Town of Alvinston - Total Consumption: 18,398

Town of Petrolia - Total Consumption: 0

Metered Consumption For Plympton: 59,185

Village of Wyoming: 24,300

Adjustments:

Reason for Adjustment: Estimated Flow during calibration 5001 0

Estimated Flow during calibration 5002 0

Plympton/Wyoming - Total Consumption: 83,485

Leakage rate adjustment 4% 3,339

Plympton/Wyoming - Grand Total: 86,825


Dave Hunt (Operations Manager)

LAWSS Water used by the

Lambton Shores

For the Month of: June 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	%
		30-Jun-19	31-May-19		As Found	As Left				
7003	Ch07 High Net Flow - Townsend	3,403,563.5	3,373,413.8	30,150	3,396,668	3,396,676	1	1	30,142	
7004	Ch07 Low Net Flow - Townsend	238,093.5	236,614.2	1,479	237,751	237,758	1	1	1,473	

Reason for Adjustment:

Estimated Flow during calibration
Estimated Flow during calibration

7003
7004

-6
-1

Metered Consumption: 31,614

Adjustments:

Lambton Shores - Total Consumption: 31,608

Leakage rate adjustment 4% 1,264

Lambton Shores - Grand Total: 32,872

Dave Hunt

Dave Hunt (Operations Manager)

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 Watford/Township of Warwick

For the Month of: June 2019

Meter num	Meter Location	Read date 30-Jun-19	Last Read date 31-May-19	Difference	Calibration Adjustments As Found	As Left	X	Flow	%
Entering Watford/Warwick									
9001	Ch10 High Net Flow - London Line	6,369,309.0	6,311,689.5	57,620	6,358,510	6,358,671	1	57,459	
9002	Ch10 Low Net Flow - London Line	606,522.0	601,767.6	4,754	605,631	605,641	1	4,744	
9003	Ch11 High Net Flow - Confederation	1,073,336.2	1,064,597.8	8,738	1,071,704	1,071,708	1	8,734	
9004	Ch11 Low Net Flow - Confederation	56,702.5	54,420.1	2,282	55,976	55,975	1	2,284	
Leaving Watford/Warwick									
5013	Ch09 High Net Flow - Egremont	2,585,100.2	2,564,540.2	20,560	2,581,650	2,581,661	1	20,549	
AF	Alvin High Net Flow Totalizer	1,469,600.1	1,451,201.9	18,398			1	18,398	

Reason for Adjustment:

Estimated Flow during calibration	5013	-14
Estimated Flow during calibration	9001	220
Estimated Flow during calibration	9002	18
Estimated Flow during calibration	9003	6
Estimated Flow during calibration	9004	1

Adjustments:

<u>Entering Watford/Warwick:</u>	73,221
<u>Leaving Watford/Warwick:</u>	38,947
<u>Metered Consumption:</u>	34,274

Watford/Warwick - Total Consumption:	34,505
Leakage rate adjustment 4%	1,380
<u>Village of Watford/Township of Warwick - Grand Total:</u>	<u>35,885</u>

Dave Hunt

Dave Hunt (Operations Manager)

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

Town of Alvinston

For the Month of: June 2019

Meter num	Meter Location	Read date	Last Read date	Difference	Calibration Adjustments	As Found	As Left	X	Flow	%
AF	Alvin High Net Flow Totalizer	30-Jun-19	31-May-19	1,469,600.1	1,451,201.9	18,398		1	18,398	

Metered Consumption: 18,398

Adjustments:

Reason for Adjustment:

Dave Hunt

Dave Hunt (Operations Manager)

Town of Alvinston - Total Consumption: 18,398

Leakage rate adjustment 0%

Town of Alvinston - Grand Total: 18,398

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

Town of Petrolia

For the Month of: June 2019

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

Reason for Adjustment:

Metered Consumption: 0
Adjustments:

Dave Hunt

Dave Hunt (Operations Manager)

Town of Petrolia - Total Consumption: 0
Leakage rate adjustment 0%
Town of Petrolia - Grand Total: 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

Chatham-Kent Area Water

For the Month of: June 2019

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

Reason for Adjustment:

Metered Consumption: 0
Adjustments:

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

.....
Dave Hunt (Operations Manager)

Dave Hunt

LAWSS Flow Summary

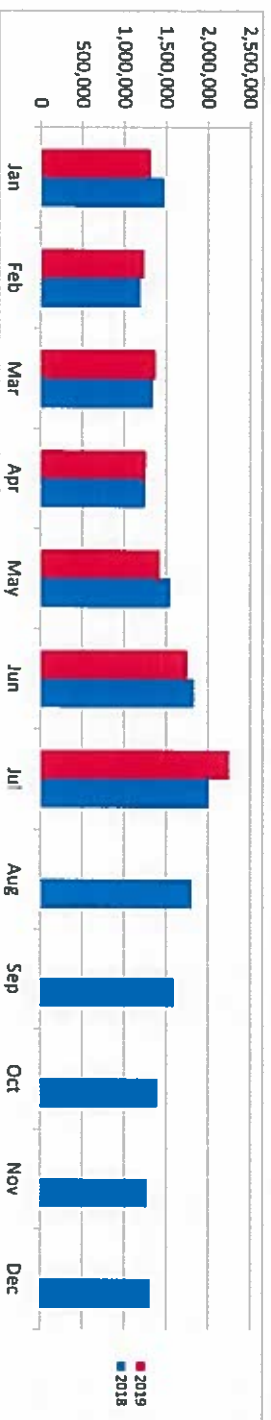
Total Flows as of Jul 2019

Draft

Total % Total
Year To Date for:
Jan - Jul

LAWSS Member	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	% Total
Sarnia	763,540	710,071	793,833	772,802	859,360	928,004	1,306,982	0	0	0	0	0	6,134,592	58.41
Point Edward	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
St. Clair	27,627	25,262	28,086	27,709	32,081	38,498	50,463	0	0	0	0	0	229,727	2.19
Plympton/Wyoming	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
Lambton Shores	407,497	389,310	437,481	329,430	376,717	607,849	669,638	0	0	0	0	0	3,217,923	30.64
Watford/Warwick	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
Others	60,624	55,794	61,245	63,800	73,513	86,825	126,745	0	0	0	0	0	528,545	5.03
Alvinston	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
Petrolia	12,193	15,213	12,491	14,747	28,233	32,872	43,978	0	0	0	0	0	159,727	1.52
Chatham-Kent	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
Totals	29,976	28,550	30,013	31,163	35,804	35,885	41,573	0	0	0	0	0	232,965	2.22
	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
	7,072	6,668	10,291	12,120	16,322	18,398	15,460	0	0	0	0	0	86,331	0.81
	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	0.81
	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
	25,392	2,810	10,788	4,496	0	24,533	0	0	0	0	0	0	68,019	0.64
	0	1,071	0	778	129	0	0	0	0	0	0	0	1,978	0.02
	0	0	0	0	20,782	0	0	0	0	0	0	0	20,782	0.19
	1,308,530	1,231,940	1,373,440	1,252,550	1,422,160	1,748,330	2,254,838	0	0	0	0	0	10,591,789	100.00
	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	170.00

Note:



Work Sheet Revision Date: 07-Jan-2019

Current Year 2019
Last month entered Jul

Year to Date

Total

LAWSS Members	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan - Jul
City of Samial:	763,540	710,071	793,833	772,802	859,360	928,004	1,306,982	0	0	0	0	0	6,134,592
Point Edward:	27,627	25,262	28,086	27,709	32,081	38,498	50,463	0	0	0	0	0	229,727
St. Clair Township:	407,497	389,310	437,481	329,430	376,717	607,849	669,638	0	0	0	0	0	3,217,923
Plympton/Wyoming:	60,624	55,794	61,245	63,800	73,513	86,825	126,745	0	0	0	0	0	528,545
Lambton Shores:	12,193	15,213	12,491	14,747	28,233	32,872	43,978	0	0	0	0	0	159,727
Walford/Warwick:	29,976	28,550	30,013	31,163	35,804	35,885	41,573	0	0	0	0	0	232,965
Others	1,301,458	1,224,201	1,363,150	1,239,652	1,405,708	1,729,932	2,239,379	0	0	0	0	0	10,503,480
Town of Alvinston:	7,072	6,668	10,291	12,120	16,322	18,398	15,460	0	0	0	0	0	86,331
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	0	0	0	0	0	10,591,789
	1,308,530	1,231,940	1,373,440	1,252,550	1,422,160	1,748,330	2,254,838	0	0	0	0	0	10,591,789

Last Years Data 2018

LAWSS Members

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	10,390,994
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	886,775
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	344,688
Walford/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	458,417
Others	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	17,811,962
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	17,986,681
	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

Lambton Area Water Supply System

1215 Fort St. Sarnia, On N7V 1M1

Phone:(519)344-7429

Fax: (519)344-4337

City of Sarnia

For the Month of: July 2019

Meter num	Meter Location	Read date	Last Read date	Difference	Calibration Adjustments	As Found	As Left	X	Flow
15	High High Net Flow Totalizer	31-Jul-19	30-Jun-19	1,928,466.1	252,818			1	252,818
13	High Low Net Flow Totalizer			183,858,640.0	2,002,020			1	2,002,020

Entering Sarnia: 2,254,838

Members Monthly % Used

Leaving Sarnia to LAWSS Members:

Village of Point Edward - Grand Total:	50,463	2.3
St. Clair Township - Grand Total:	669,638	29.9
Plympton/Wyoming - Grand Total:	126,745	5.4
Lambton Shores - Grand Total:	43,978	2.0
Village of Watford/Township of Warwick - Grand Total:	41,573	1.9
Leaving Sarnia to Others:		
Town of Alvinston - Grand Total:	15,460	
Town of Petrolia - Grand Total:	0	
Chatham-Kent Area Water - Grand Total:	0	
Metered Consumption:	1,306,982	
Adjustments:		

Reason for Adjustment:

Dave Hunt
Dave Hunt (Operations Manager)

City of Sarnia - Total Consumption:	1,306,982
Leakage rate adjustment 0%	0
City of Sarnia - Grand Total:	1,306,982
Overall Grand Total:	2,254,838
	58.4
	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: July 2019

Meter num	Meter Location	Read date 31-Jul-19	Last Read date 30-Jun-19	Difference	Calibration Adjustments		X	Flow	%
					As Found	As Left			
CH01	Venetian Vill (Mag)	420,323.4	408,663.2	11,660			1	11,660	24.0
CH02	Ven & Exmouth (Mag)	39,308.7	39,053.0	256			1	256	0.5
CH03	Michigan & Monk (Mag)	954,270.8	918,983.7	35,287	929,194	929,253	1	35,229	72.6
CH04	Michigan & Front (Mag)	126,746.7	125,388.4	1,358			1	1,358	2.8

Reason for Adjustment:

E&H retested Meter Flow estimate

Metered Consumption: 48,503

Adjustments:

19

0.6

Village of Point Edward - Total Consumption: 48,522

Leakage rate adjustment 4% 1,941

Village of Point Edward - Grand Total: 50,463

Dave Hunt

Dave Hunt (Operations Manager)

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

St. Clair Township

For the Month of: July 2019

Meter num	Meter Location	Read date	Last Read date	Difference	Calibration Adjustments	As Found	As Left	X	Flow	%
WL-O 3100	WL High Net Flow - West Lambton Plank Road (3/4)	31-Jul-19	30-Jun-19	36,128,336.0	642,328	3,120	1,490	1	642,328	99.8
									1,630	0.3
Back to Sarnia										
1100	LaSalle & Parkway	8,079	8,009	70				1	70	0.0
1090	LaSalle & Tashmoo	4,034	4,029	5				1	5	0.0

Reason for Adjustment:

Note: Nova is taking a lot of water

Total potable water used from LAWSS/St Clair Township = 303,370.417 m3

<u>Entering St. Clair Township:</u>	643,958	100.0
<u>Leaving St. Clair Township</u>		
Back to Sarnia:	75	0.0
Chatham-Kent Area Water - Total Consumption:	0	0.0
<u>Metered Consumption:</u>	643,883	100.0
<u>Adjustments:</u>		

Dave Hunt

Dave Hunt (Operations Manager)

St. Clair Township - Total Consumption:	643,883
Leakage rate adjustment 4%	25,755
<u>St. Clair Township - Grand Total:</u>	<u>669,638</u>

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

Township of Plympton / Village of Wyoming

For the Month of: July 2019

Meter num	Meter Location	Read date 31-Jul-19	Last Read date 30-Jun-19	Difference	Calibration Adjustments As Found As Left	X	Flow	%
5001	Entering Plympton							
5002	Ch05 Low Net Flow - Maundaumin	57,809.0	57,809.0	0		1	0	
	Ch05 High Net Flow - Maundaumin	17,380,070.0	17,160,480.0	219,590		1	219,590	
8001	Village of Wyoming							
8002	Wyoming	432,670	432,670	0		1	0	
	Wyoming	4,015	2,112	1,903		10	19,030	
1005	Back to Sarnia							
1006	Brights Grove (Sarnia)	610	610	0		0.1	0	
	Brights Grove (Sarnia)	81,540	81,540	0		10	0	

Entering Plympton: 219,590

Leaving Plympton

Village of Wyoming: 19,030

Back to Sarnia: 0

Lambton Shores - Total Consumption: 42,286

Watford/Warwick - Total Consumption: 39,974

Town of Alvinston - Total Consumption: 15,460

Town of Petrolia - Total Consumption: 0

Metered Consumption For Plympton: 102,840

Village of Wyoming: 19,030

Adjustments:

Reason for Adjustment:

Plympton/Wyoming - Total Consumption: 121,870

Leakage rate adjustment 4% 4,875

Plympton/Wyoming - Grand Total: 126,745

Dave Hunt

Dave Hunt (Operations Manager)

LAWSS Water used by the

Lambton Shores

For the Month of: July 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-Jul-19	30-Jun-19		As Found	As Left				
7003	Ch07 High Net Flow - Townsend	3,443,913.0	3,403,563.5	40,350				1	40,350	
7004	Ch07 Low Net Flow - Townsend	240,030.1	238,093.5	1,937				1	1,937	

Reason for Adjustment:

<u>Metered Consumption:</u>	42,286
Adjustments:	

Lambton Shores - Total Consumption:	42,286
Leakage rate adjustment 4%	1,691
<u>Lambton Shores - Grand Total:</u>	<u>43,978</u>

Dave Hunt

Dave Hunt (Operations Manager)

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 Watford/Township of Warwick

For the Month of: July 2019

Meter num	Meter Location	Read date	Last Read date	Difference	Calibration Adjustments	As Found	As Left	X	Flow	%
Entering Watford/Warwick										
9001	Ch10 High Net Flow - London Line	6,430,686.0	6,369,309.0	61,377				1	61,377	
9002	Ch10 Low Net Flow - London Line	611,618.4	606,522.0	5,096				1	5,096	
9003	Ch11 High Net Flow - Confederation	1,079,829.2	1,073,336.2	6,493				1	6,493	
9004	Ch11 Low Net Flow - Confederation	60,725.4	56,702.5	4,023				1	4,023	
Leaving Watford/Warwick										
5013	Ch09 High Net Flow - Egremont	2,606,655.8	2,585,100.2	21,556				1	21,556	
Af	Alvin High Net Flow Totalizer	1,485,059.6	1,469,600.1	15,460				1	15,460	

Reason for Adjustment:

Entering Watford/Warwick:	76,989
Leaving Watford/Warwick:	37,015
Metered Consumption:	39,974
Adjustments:	

Watford/Warwick - Total Consumption:	39,974
Leakage rate adjustment 4%	1,599

Village of Watford/Township of Warwick - Grand Total: **41,573**

Dave Hunt

Dave Hunt (Operations Manager)

LAWSS Water used by the

Town of Alvinston

For the Month of: July 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-Jul-19	30-Jun-19		As Found	As Left		
		1,485,059.6	1,469,600.1	15,460			1	15,460

Reason for Adjustment:

Metered Consumption: 15,460
Adjustments:

Town of Alvinston - Total Consumption: 15,460
Leakage rate adjustment 0%
Town of Alvinston - Grand Total: 15,460

David Hunt
.....
Dave Hunt (Operations Manager)

LAWSS Water used by the

Lambton Area Water Supply System
1215 Fort St. Sarnia, On N7V 1M1

Town of Petrolia

For the Month of: July 2019

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-Jul-19	30-Jun-19	0	As Found	As left	1	0
		133,549	133,549					

Reason for Adjustment:

Metered Consumption: 0
Adjustments:

Town of Petrolia - Total Consumption: 0
Leakage rate adjustment 0%
Town of Petrolia - Grand Total: 0

.....
Dave Hunt (Operations Manager)

Dave Hunt

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

Chatham-Kent Area Water

For the Month of: July 2019

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

Reason for Adjustment:

Metered Consumption: 0

Adjustments:

Chatham-Kent Area Water - Total Consumption: 0

Leakage rate adjustment 0% 0

Chatham-Kent Area Water - Grand Total: 0

Dave Hunt (Operations Manager)

Dave Hunt

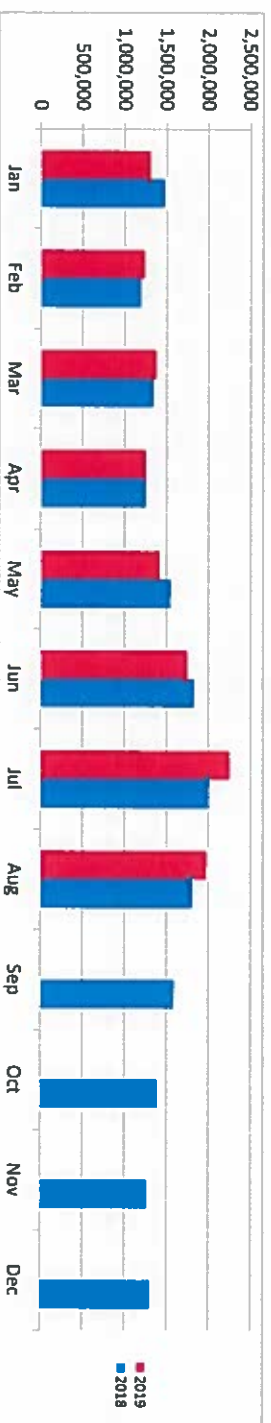
LAWSS Flow Summary

Total Flows as of Aug 2019

Draft

Total % Total
Year To Date for:
Jan - Aug

LAWSS Member	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	% Total
Sarnia	763,540	710,071	793,833	772,802	859,360	928,004	1,306,982	1,232,482	0	0	0	0	7,367,074	59.07
Point Edward	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
St. Clair	27,627	25,262	28,086	27,709	32,081	38,498	50,463	53,100	0	0	0	0	282,827	2.27
Plympton/Wyoming	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
Lambton Shores	407,497	389,310	437,481	329,430	376,717	607,849	669,638	489,505	0	0	0	0	3,707,428	29.73
Watford/Warwick	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
Others	60,624	55,794	61,245	63,800	73,513	86,825	126,745	108,289	0	0	0	0	636,834	5.11
Alvinston	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
Petrolia	12,193	15,213	12,491	14,747	28,233	32,872	43,978	43,586	0	0	0	0	203,313	1.63
Chatham-Kent	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
Totals	29,976	28,550	30,013	31,163	35,804	35,885	41,573	41,590	0	0	0	0	274,555	2.20
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	12472032													
2018	17811967													
2019	97359													
2018	85913													
2019	68019													
2018	1978													
2019	20782													
2018	12571369													
2019	17986681													



Note:

Work Sheet Revision Date: 07-Jan-2019

Current Year 2019
Last month entered Aug

Year to Date

LAWSS Members	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
City of Samial:	763,540	710,071	793,833	772,802	859,360	928,004	1,306,982	1,232,482	0	0	0	0	7,367,074
Point Edward:	27,627	25,262	28,086	27,709	32,081	38,498	50,463	53,100	0	0	0	0	262,827
St. Clair Township:	407,497	389,310	437,481	329,430	376,717	607,849	669,638	489,505	0	0	0	0	3,707,428
Plympton/Wyoming:	60,624	55,794	61,245	63,800	73,513	86,825	126,745	108,289	0	0	0	0	636,834
Lambton Shores:	12,193	15,213	12,491	14,747	28,233	32,872	43,978	43,586	0	0	0	0	203,313
Walford/Warwick:	29,976	28,550	30,013	31,163	35,804	35,885	41,573	41,590	0	0	0	0	274,555
Others	1,301,458	1,224,201	1,363,150	1,239,652	1,405,708	1,729,932	2,239,379	1,968,552	0	0	0	0	12,472,032
Town of Alvinston:	7,072	6,668	10,291	12,120	16,322	18,398	15,460	11,028	0	0	0	0	97,359
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	0	0	0	0	12,571,369
	1,308,530	1,231,940	1,373,440	1,252,550	1,422,160	1,748,330	2,254,838	1,979,580	0	0	0	0	12,571,369

Last Years Data 2018

LAWSS Members

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	10,390,984
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	5,303,620
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	886,776
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	344,680
Walford/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
Others	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
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	17,986,661
	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	17,986,661

Work Sheet Revision Date: 07-Jan-2019

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

City of Sarnia

For the Month of: August 2019

Meter num	Meter Location	Read date	Last Read date	Difference	Calibration Adjustments	As Found	As Left	X	Flow
15	High High Net Flow Totalizer	31-Aug-19	31-Jul-19	1,928,466.1	0			1	0
13	High Low Net Flow Totalizer			185,838,220.0	1,979,580			1	1,979,580

Entering Sarnia: 1,979,580

Members Monthly % Used

Leaving Sarnia to LAWSS Members:

Village of Point Edward - Grand Total:	53,100	2.7
St. Clair Township - Grand Total:	489,505	24.9
Plympton/Wyoming - Grand Total:	108,289	5.4
Lambton Shores - Grand Total:	43,586	2.2
Village of Watford/Township of Warwick - Grand Total:	41,590	2.1

Leaving Sarnia to Others:

Town of Alvinston - Grand Total:	11,028
Town of Petrolia - Grand Total:	0
Chatham-Kent Area Water - Grand Total:	0

Metered Consumption: 1,232,482

Adjustments:

Reason for Adjustment:

Dave Hunt (Operations Manager)

City of Sarnia - Total Consumption:	1,232,482	
Leakage rate adjustment	0	
City of Sarnia - Grand Total:	1,232,482	62.6
Overall Grand Total:	1,979,580	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: August 2019

Meter num	Meter Location	Read date		Last Read date		Difference		Calibration Adjustments		X	Flow	%
		31-Aug-19		31-Jul-19				As Found	As Left			
CH01	Venetian Vill (Mag)	435,769.0		420,323.4		15,446				1	15,446	30.3
CH02	Ven & Exmouth (Mag)	39,734.9		39,308.7		426				1	426	0.8
CH03	Michigan & Monk (Mag)	986,722.4		954,270.8		32,452				1	32,452	63.6
CH04	Michigan & Front (Mag)	129,481.0		126,746.7		2,734				1	2,734	5.4

Reason for Adjustment:

Metered Consumption: 51,058 100.0
Adjustments:

Village of Point Edward - Total Consumption: 51,058

Leakage rate adjustment 4% 2,042

Village of Point Edward - Grand Total: 53,100

Dave Hunt

Dave Hunt (Operations Manager)

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

St. Clair Township

For the Month of: August 2019

Meter num	Meter Location	Read date	Last Read date	Difference	Calibration Adjustments	As Found	As Left	X	Flow	%
WL-O 3100	WL High Net Flow - West Lambton Plank Road (3/4)	31-Aug-19	31-Jul-19	36,598,952.0	470,616			1	470,616	100.0
		3,325	3,120	205				1	205	0.0

1100	Back to Sarnia									
1090	LaSalle & Parkway	8,220	8,079	141				1	141	0.0
	LaSalle & Tashmoo	4,036	4,034	2				1	2	0.0

Reason for Adjustment:

3100 Meter replaced

Page 1 of 1

Chatham-Kent Area Water - Total Consumption:

Metered Consumption: 470,678

Adjustments:

Entering St. Clair Township: 470,821

Leaving St. Clair Township: 148

Back to Sarnia: 143

Chatham-Kent Area Water - Total Consumption: 0

Metered Consumption: 470,678

Adjustments:

St. Clair Township - Total Consumption: 470,678

Leakage rate adjustment 4% 18,827

St. Clair Township - Grand Total: 489,505

Dave Hunt

Dave Hunt (Operations Manager)

Township of Plympton / Village of Wyoming

For the Month of: August 2019

Meter num	Meter Location	Read date	Last Read date	Difference	Calibration Adjustments	As Found	As Left	X	Flow	%
5001	Ch05 Low Net Flow - Maundaumin	31-Aug-19	31-Jul-19	57,809.0	57,809.0	0		1	0	
5002	Ch05 High Net Flow - Maundaumin	31-Aug-19	31-Jul-19	17,577,122.0	17,380,070.0	197,052		1	197,052	
Village of Wyoming										
8001	Wyoming			432,670	432,670	0		1	0	
8002	Wyoming			5,439	4,015	1,424		10	14,240	
Back to Sarnia										
1005	Brights Grove (Sarnia)			610	610	0		0.1	0	
1006	Brights Grove (Sarnia)			81,540	81,540	0		10	0	

Entering Plympton: 197,052Leaving Plympton

Village of Wyoming: 14,240

Back to Sarnia: 0

Lambton Shores - Total Consumption: 41,910

Watford/Warwick - Total Consumption: 39,990

Town of Alvinston - Total Consumption: 11,028

Town of Petrolia - Total Consumption: 0

Metered Consumption For Plympton: 89,884

Village of Wyoming: 14,240

Adjustments:

Reason for Adjustment:

Plympton/Wyoming - Total Consumption: 104,124

Leakage rate adjustment 4% 4,165

Plympton/Wyoming - Grand Total: 108,289*Dave Hunt*

Dave Hunt (Operations Manager)

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

Lambton Shores

For the Month of: August 2019

Meter num	Meter Location	Read date	Last Read date	Difference	Calibration Adjustments			X	Flow	%
		31-Aug-19	31-Jul-19		As Found	As Left				
7003	Ch07 High Net Flow - Townsend	3,483,863.2	3,443,913.0	39,950				1	39,950	
7004	Ch07 Low Net Flow - Townsend	241,989.5	240,030.1	1,959				1	1,959	

Reason for Adjustment:

Metered Consumption: 41,910
Adjustments:

Lambton Shores - Total Consumption: 41,910

Leakage rate adjustment 4% 1,676

Lambton Shores - Grand Total: 43,586

Dave Hunt

.....
Dave Hunt (Operations Manager)

LAWSS Water used by the

Lambton Area Water Supply System
1215 Fort St. Sarnia, On N7V 1M1

Village of Watford/Township of Warwick

For the Month of: August 2019

Phone:(519)344-7429
Fax: (519)344-4337

Meter num	Meter Location	Read date 31-Aug-19	Last Read date 31-Jul-19	Difference	Calibration Adjustments As Found	As Left	X	Flow	%
Entering Watford/Warwick									
9001	Ch10 High Net Flow - London Line	6,487,555.5	6,430,686.0	56,870			1	56,870	
9002	Ch10 Low Net Flow - London Line	616,288.8	611,618.4	4,670			1	4,670	
9003	Ch11 High Net Flow - Confederation	1,088,674.8	1,079,829.2	8,846			1	8,846	
9004	Ch11 Low Net Flow - Confederation	62,022.7	60,725.4	1,297			1	1,297	
Leaving Watford/Warwick									
5013	Ch09 High Net Flow - Egremont	2,627,320.2	2,606,655.8	20,664			1	20,664	
AF	Alvin High Net Flow Totalizer	1,496,087.6	1,485,059.6	11,028			1	11,028	

Reason for Adjustment:

Entering Watford/Warwick:	71,683
Leaving Watford/Warwick:	31,692
Metered Consumption:	39,990
Adjustments:	

Watford/Warwick - Total Consumption:	39,990
Leakage rate adjustment 4%	1,600
Village of Watford/Township of Warwick - Grand Total:	41,590

Dave Hunt (Operations Manager)

Dave Hunt

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

Town of Alvinston

For the Month of: August 2019

Meter num	Meter Location	Read date	Last Read date	Difference	Calibration Adjustments	As Found	As Left	X	Flow	%
AF	Alvin High Net Flow Totalizer	31-Aug-19	31-Jul-19	11,028				1	11,028	

Reason for Adjustment:

Metered Consumption: 11,028
Adjustments:

Dave Hunt

Dave Hunt (Operations Manager)

Town of Alvinston - Total Consumption: 11,028
Leakage rate adjustment 0%
Town of Alvinston - Grand Total: 11,028

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

Town of Petrolia

For the Month of: August 2019

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

Reason for Adjustment:

Metered Consumption: 0
Adjustments:

.....
Dave Hunt (Operations Manager)

Dave Hunt

Town of Petrolia - Total Consumption: 0
Leakage rate adjustment 0%
Town of Petrolia - Grand Total: 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

Chatham-Kent Area Water

For the Month of: August 2019

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

Reason for Adjustment:

Metered Consumption: 0
Adjustments:

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

Dave Hunt (Operations Manager)

Dave Hunt

Report No.: 2019-12-03
Report Page: 1 of 3
Meeting Date: September 26, 2019
File No.:



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

From: Clinton Harper
General Manager

Subject: Radio / PLC Upgrade Project Update

Recommendation

It is recommended that the Board Approve the SD-WAN communication solution as outlined in Experteer's "Network Upgrade Solution Final Proposal for LAWSS" dated September 12, 2019.

Background:

In November 2015, LAWSS hired Megacomm to complete a "Radio Communication Feasibility Study" to review the existing system and provide a radio system upgrade recommendation based on current technologies.

Based on the 2015 study, a project for a new 400MHz SCADA Wireless IP Radio Network was developed. The new project listed all equipment needed and outlined a scope of work. In August 2016, the project was split into material and engineering components. In November and December of 2016, all Radio and PLC equipment were purchased by LAWSS.

In May 2017, WSP was awarded the engineering portion of the work, which included design, and tender preparation. At that time WSP was provided a set of PLCs to develop the program code. In September 2018, the construction portion of the project was award to Experteers.

On Wednesday, November 14th 2018, LAWSS and OCWA staff attended a factory acceptance test (FAT) for the project at WSP headquarters in Toronto. The test was intended to demonstrate, or prove, the PLC coding of the project had been successfully completed. Once accepted, the next step would have been to hand over all of LAWSS radio/PLC equipment to Experteers so they could be built into new panels, etc.

During the FAT, WSP was able to successfully demonstrate that the PLC coding of the project was complete. However, the FAT identified an unexpected issue with the radio equipment. According to the radio specialist, equipment that has been identified in 2016

Report No.: 2019-12-03
Report Page: 2 of 3
Meeting Date: September 26, 2019
File No.:



had not been performing as per manufacturer specifications and could not be used to complete the project.

In January 2019 the Board agreed to a modified plan proposed by Megacomm that increase the project cost by \$159,800 and involved the purchase of 5 new radios that would allow us to salvage a majority of the pre-purchased equipment. The final system was still planned to be a licences radio communication network. Experteers was permitted to proceed with the installation of antenna and ELPS tower foundation while preparation was made to complete a FAT on the modified system.

By May 2019 Megacomm had still been unsuccessful in their efforts to configure the radio communication system design. Due to this, Megacomm was removed from the project. Experteers, the company LAWSS has hired to complete the construction of the system, was asked to develop a solution that utilizes as much of the existing system as possible.

Comments:

The recommended solution proposed by Experteers involves the construction of a Software Defined Wide Area Network (SD WAN). The SD-WAN network is a cloud-based network that offers substantial advantages over a conventional radio system. Key advantages over conventional radio system are:

- Long-term solution network for years to come of multiple levels of services.
- Integrated intruder detection and protection. Greatly improved security
- Data collection, reporting, and handling is vastly superior.
- Interference, weather, and other circumstances will not affect links.

The primary disadvantage of cloud-based versus a conventional radio network is in the annual licensing fees which are outlined below. Another disadvantage of the cloud-based solution, that is arguably a non-issue, is the systems dependence on North America's existing communication network. Redundant service providers are built into the fees outlined and provide for the necessary system redundancy.

The construction of the cloud-based system is the best option available for communication LAWSS going forward. The solution will utilize as much as the current project as possible.

Consultation:

This report was prepared in consulation with OCWA Operational Staff and Experteers.

Report No.: 2019-12-03
Report Page: 3 of 3
Meeting Date: September 26, 2019
File No.:



Financial Implications:

The construction of as SD-WAN for communication at LAWSS is expected to put the project approx. \$101,330 below the approved budget.

Total Project Budget:		\$512,000
Actual Spent (as of September 2019)	-	\$347,474
Additional Engineering for SD-WAN	-	\$10,500
Additional Construction for SD-WAN	-	\$52,696
Saving from Pre-approved Budget	=	\$101,330

Due to the managed nature of the communication network under SD-WAN configuration licensing costs will be increased. A summary of the increase is provided below:

	Existing Radio System	SD-WAN
Licencing:	\$544	\$4,555
Service Provider:	+0	+\$480
Total Annual Fees:	\$544	\$5,035

This report was prepared by Clinton Harper, LAWSS General Manager

Attachment(s): none.

Minutes

LAWSS Technical Team Meeting



Thursday September 12, 2019

3pm

Lambton Area Water System WTP – 1215 Fort Street, Sarnia ON N7V 1M1

Attendees:

Brain Black St. Clair Township

Adam Sobanski - Town of Plympton-Wyoming

Pratt Rawat - City of Sarnia

David Jackson - City of Sarnia

Nick Verhoeven - Municipality of Lambton Shores

Dave Hunt – OCWA

Clinton Harper - LAWSS

Regrets:

Andrew Maver- Township of Warwick

Jay Verstraeten - Village of Point Edward

1. New Business

a) AECOM- 20yr Plan – TM#3 Update:

AECOM presented the DRAFT TM#4 of the LAWSS 20yr Growth Plan to the LAWSS Technical Team on September 12, 2019 at 3pm. The following changes were requested:

- Project financing explored in TM#4 is limited to what AECOM considers to be non-growth related. In the DRAFT Report DC is assumed to fund 2/3 of projects proposed. A water rate increase is proposed to cover what is considered non-growth or approx. 1/3 of total projected costs. Group requested an additional column in each section that expressed an overall non-DC approach to funding of all project.
- Table #7 needs to be updated to reflect population of the Municipality of Lambton Shores serviced by LAWSS and not total population of the Municipality.
- Major investment in the LAWSS is expended in the upcoming years for infrastructure renewal and upgrade. The Team requests a thorough review of the LAWSS Transfer Order, with the assistance of legal counsel, to assist in

understanding the scope/limits of member municipalities obligations to the System.

Finalized 20yr Growth Plan is expected to be presented to the LAWSS Board on September 26, 2019. The document is a "high-level" engineering document that has identified existing issues with the LAWSS. In the 2020 LAWSS Budget proposal it will be requested that these issues, and their full Municipal Class Environmental Assessment, be incorporated into a rebuild of the LAWSS Master Plan in 2020.

b) GIS Update:

LAWSS GIS Update is complete and has been uploaded to the County's servers. The database kept at the County of Lambton is LAWSS primary data and will be updated remotely from LAWSS on a continual basis through the new Geocortex portal. Viewing access through the portal was provided to members of the LAWSS Technical Team the week of September 2, 2019. The County has been asked to integrate the LAWSS portal with the municipal portals for the two members that already use the County's GIS system for separate in-house municipality specific applications.

2. Ongoing Items

a) Emergency Preparedness Exercise development:

The emergency scenario that has been proposed at LAWSS involves a event that requires the complete re-commissioning of the LAWSS system and resulting systematic re-commissioning of the entire distribution network. The scenario requires the expertise of three separate groups in Lambton County. A tabletop exercise, that will bring the three groups together, has been postponed to the summer of 2020.

Group #1- Re-commissioning of System – In the event of an actual emergency, OCWA and the local municipal water operators will be needed to complete this task. How this task will be coordinated between the various municipal groups will be discussed at the next meeting of the LAWSS technical group on November 14th.

Group #2- Temporary delivery of potable water – local Community Emergency Management Coordinators (CEMCs) to coordinate under the direction of the Lambton County CEMC. In the summer of 2019, I presented this scenario at one of the quarterly meeting of the individual CEMC groups at the Lambton of County Administration Building. The Lambton County CEMC group is interested in completing this scenario in 2020.

Group #3- Temporary Fire Protection – Local Fire to coordinate. I plan to attend the next quarterly meeting of the individual Fire representatives to present the scenario and request their assistance in running the scenario in 2020.

The Lake Huron Primary Water Supply (LHPWS) and LAWSS have both recently completed updates to the hydraulic models of the overall systems. These models are independent of each other and are both currently housed with AECOM. In a joint effort to better understand support limitations, various joint scenarios are being explored. These scenarios will gauge LHPWS's ability to supply LAWSS in an emergency situation and vice versa. Report to follow.

3. Meeting Frequency:

The LAWSS Technical Team currently meets quarterly. The group believes that this frequency is adequate and should be maintained in 2020. LAWSS GM may still request special meetings of the group as needed.

4. Next Meeting

The next LAWSS Technical Team Meeting to be held on Thursday, November 14, 2019 at 10:00 am at the LAWSS water treatment plant."

Attachments: Revised TM#4 Financial Plan (20 Year Plan)

To	Clinton	Page	1 of 11
CC	Lambton Area Water Supply System		
Subject	Technical Memo – Conceptual Engineering Design Options and Cost Estimate Related to Planned Growth – Financial Plan		
From	JME Maxwell, Semyon Chaymann, Benny Wan		
Date	September 17, 2019	Project Number	60557190

Financial Plan for Paying for Capital Costs Related to Planned Growth

The financial plan for paying for the capital costs associated with the forecast water supply projects is presented in 3 sections. The first section forecasts the water demand over 20 years for each of the Lambton Area Water Supply System (LAWSS) municipalities. The second section then provides the capital cost and timing details of the forecast water supply projects required to meet LAWSS planned growth. The third section has two parts. The first part determines the impact of development charges and changes to the water rate in funding the forecast projects capital costs with a total system based water rate calculation. The second part of this section calculates different changes in the water rate for each municipality based on three different cost allocation methods.

Water Demand Forecast

The demand for water in the LAWSS area is growing (Figure 1). Increase in water demand is driven by growth in population. All the constituent municipalities in the LAWSS area are forecasting growth in population and water demand between 2016 and 2036 (Table 1).

Table 1. LAWSS Annual Water Demand 2016 – 2036 by municipality (m³)

	2016	2021	2026	2031	2036
City of Sarnia	11,783,918	13,041,235	14,432,315	15,971,971	17,676,091
Town of St. Clair	5,002,432	5,554,656	6,167,641	6,848,044	7,603,809
Village of Point Edward	521,735	577,559	639,179	707,241	782,818
Town of Plympton-Wyoming	792,909	877,503	971,115	1,074,818	1,189,471
Township of Warwick	549,003	790,547	1,138,371	1,639,279	2,360,691
Municipality of Lambton Shores	278,259	311,968	349,756	392,053	439,503
Alvinston	110,359	112,506	114,653	116,800	119,162
Remainder of Lambton County	742,024	821,250	908,850	1,005,682	1,113,035
Sum of LAWSS Municipalities	19,780,638	22,087,224	24,721,879	27,755,888	31,284,579

Based on discussion with LAWSS, it has been confirmed that the 20-year growth rates provided in the Request for Proposal (RFP) would be used for the analysis. The 2016 water demand was calculated based on flow balance calculations

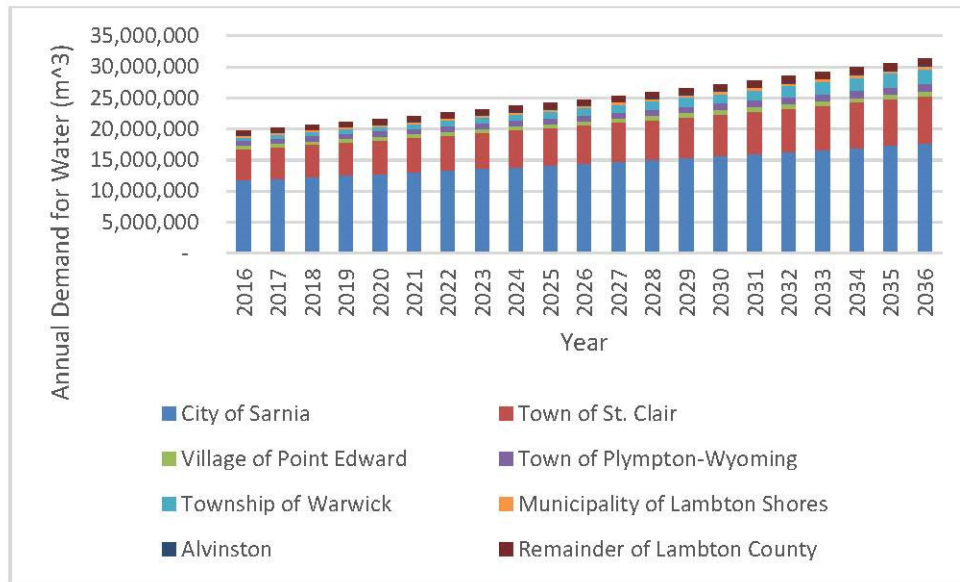


Figure 1. LAWSS Water Demand 2016 – 2036 by municipality

The demand for water across the LAWSS area drives the required engineering and works projects to ensure supply to its constituent municipalities.

Water Supply Projects

LAWSS has planned projects that upgrade and expand their water supply system to meet the growth in demand forecast in the next 20 years. The following projects are forecasted to be implemented between 2016 and 2036. The capital costs of these forecasted projects have been included in the financial analysis. These costs and timing of these projects are summarized below (Table 2) and fully detailed in Appendix A.

Table 2. LAWSS Forecast Project Summary

ID	Project List	Location	Conceptual Cost Estimate	In Service By
1A	New Booster Pump Station Studies	London Line and Brigden Road	\$161,000	2017
1A	Booster Pump Station	London Line and Brigden Road	\$7,567,000	2017
1A	Check Valve for Booster Zone Separation	London Line and Brigden Road	\$2,205,700	2031
1A	Watermain twinning	London Line between Brigden Road to ELPS Reservoir	\$20,225,625	2026
2A Phase 1	Grid Reinforcement Project - Phase 1	Twinning transmission main through St. Clair Township to Courtright Lane	\$38,640,000	2031
2A Phase II	Grid Reinforcement Project - Phase 2	Grid reinforcement through Sarnia along Indian Road	\$21,735,000	2026
2B	WLPS Studies	WLPS	\$161,000	2017
2B	Revise WLPS Operations and Piping	WLPS	\$996,188	2017
2B	B Check Valves for West Lambton Zone Separation		\$1,288,000	2017
3B	New watermain Studies	Confederation Line from Fleming Road to Nauvoo Road and Michigan Line from Fleming Road to Nauvoo Road	\$161,000	2021

ID	Project List	Location	Conceptual Cost Estimate	In Service By
3B	New watermain	Confederation Line from Fleming Road to Nauvoo Road and Michigan Line from Fleming Road to Nauvoo Road	\$179,563,300	2021
5D	Watermain twinning Studies	Fleming Road from ELPS to Queen Street, Lakeshore Road from Queen Street to Townsend Line, Townsend Line from Lakeshore Road to Forest Standpipe	\$161,000	2031
5D	Watermain twinning	Fleming Road from ELPS to Queen Street, Lakeshore Road from Queen Street to Townsend Line, Townsend Line from Lakeshore Road to Forest Standpipe	\$21,406,560	2031
6B	New watermain Studies	Mandaumin Road between London Line and Confederation Line	\$161,000	2026
6B	Watermain interconnection	Wets Lambton – Rural Lands	\$16,100	2026
6B	New watermain	Mandaumin Road between London Line and Confederation Line	\$2,608,200	2031
Sum of Projects			\$297,056,673	

Each of the above projects benefits the constituent municipalities disproportionately. Some projects impact on multiple municipalities while others benefit only a single municipality. The following table (Table 3) shows the impact of individual projects on the constituent municipalities.

Table 3. Impact of Forecast Projects on LAWSS Municipalities

	City of Sarnia	Town of St. Clair	Village of Point Edward	Town of Plympton-Wyoming	Township of Warwick	Municipality of Lambton Shores	Alvinston	Remainder of Lambton County	Total Benefit of Project
1A Studies	1.00%			21.00%	58.00%	4.00%		16.00%	100.00%
1Ai	1.00%			21.00%	58.00%	4.00%		16.00%	100.00%
1Aii	1.00%			21.00%	58.00%	4.00%		16.00%	100.00%
1Aiii	1.00%			21.00%	58.00%	4.00%		16.00%	100.00%
2Ai		100.00%							100.00%
2Aii	50.00%	50.00%							100.00%
2B Studies		100.00%							100.00%
2Bi		100.00%							100.00%
2Bii		100.00%							100.00%
3B Studies				9.00%	81.00%			10.00%	100.00%
3B				9.00%	81.00%			10.00%	100.00%
5D Studies				63.00%		37.00%			100.00%
5D				63.00%		37.00%			100.00%
6B Studies	100.00%								100.00%
6Bi		100.00%							100.00%
6Bii	100.00%								100.00%

Based on the timing of the forecast water supply projects, the demand for water and other factors a plan for financing the system upgrades has been developed.

Financing the Forecast Projects

Methodology

In order to pay for the forecasted projects, development charge funding and an increase to the existing LAWSS water rates are required to cover the capital costs of the projects. Financing the forecasted projects is based on summing the total project capital cost, determining what percentage of the projects are related to growth and can be funded through development charges. The remaining costs are then covered by an increase in the LAWSS water rate based on the forecasted water demand.

It is assumed that the rate increase takes effect at the start of the analysis (2016) and remains in place until 2036. The analysis does not take into consideration any incremental changes to operating costs. The analysis is based on non-discounted cash flows, i.e., there is no preference in this analysis for monies that are received sooner rather than later. In other words, there is no Net Present Value (NPV) calculation for future forecast costs. It is also assumed that no interest is earned on surplus funds.

None of the revenue or costs included in this analysis are increased by inflation. All of the costs in this analysis are presented in 2018 dollars. This means that in nominal terms the water rates and other future costs will increase each year at the rate of inflation. This inflation in costs is not represented in this analysis.

Development Charges for funding Growth

A percentage of the \$297 million of capital cost associated with the forecasted projects is related to growth. The financing plan assumes that the portion of these projects associated with growth will be paid for by development charges.

The portion of each project associated with new growth is identified below (Table 4). This is used to determine the amount of development charge financing that will be applied to each project.

Table 4. Portion of Forecast Projects related to Growth

	Percentage Related to New Growth
1A Studies	10.00%
1Ai	10.00%
1Aii	10.00%
1Aiii	90.00%
2Ai	10.00%
2Aii	10.00%
2B Studies	10.00%
2Bi	10.00%
2Bii	10.00%
3B Studies	100.00%
3B	100.00%
5D Studies	100.00%
5D	100.00%
6B Studies	90.00%
6Bi	90.00%
6Bii	90.00%

Subtracting the development charge financing from the total capital cost gives us the total amount that needs to be covered through incremental increases to the water rate (Table 5).

Table 5. Forecasted Project Financing Requirements after Development Charge Funding

	Expenditure	DC Funding	To be funded by an increase in Rates
1A Studies	\$161,000	\$(16,100)	\$144,900
1Ai	\$7,567,000	\$(756,700)	\$6,810,300
1Aii	\$2,205,700	\$(220,570)	\$1,985,130
1Aiii	\$20,225,625	\$(18,203,063)	\$2,022,563
2Ai	\$38,640,000	\$(3,864,000)	\$34,776,000
2Aii	\$21,735,000	\$(2,173,500)	\$19,561,500
2B Studies	\$161,000	\$(16,100)	\$144,900
2Bi	\$996,188	\$(99,619)	\$896,569
2Bii	\$1,288,000	\$(128,800)	\$1,159,200
3B Studies	\$161,000	\$(161,000)	\$-
3B	\$179,563,300	\$(179,563,300)	\$-
5D Studies	\$161,000	\$(161,000)	\$-
5D	\$21,406,560	\$(21,406,560)	\$-
6B Studies	\$161,000	\$(144,900)	\$16,100
6Bi	\$16,100	\$(14,490)	\$1,610
6Bii	\$2,608,200	\$(2,347,380)	\$260,820
Sum of Projects	\$297,056,673	\$(229,277,081)	\$67,779,591

The financing plan for the LAWSS assumes that 77.18% of the total capital cost will be funded by development charges.

Impact on the Rates

An incremental increase to the LAWSS water rate is required to pay for the \$68 million of capital costs associated with the forecast projects not funded by development charges. Between the years of 2016 and 2036 demand for water in the LAWSS system is just over 526 million m³ of water. If all LAWSS water users pay for the remainder of the forecasted projects capital costs through increases in their rates, there will be a \$0.13 / m³ increase starting in 2016 and remaining in place until 2036 (Table 6).

Table 6. Change required to LAWSS water rate

Net Cost after Capital Funding	\$67,779,591.25
Forecast Water Demand (m ³)	526,020,608.82
Change in LAWS rate (\$/m ³)	\$0.13

This incremental change to the water rate, combined with the forecasted projects, results in the following annual (Figure 2) and cumulative (Figure 3) cash flows between 2016 and 2036.

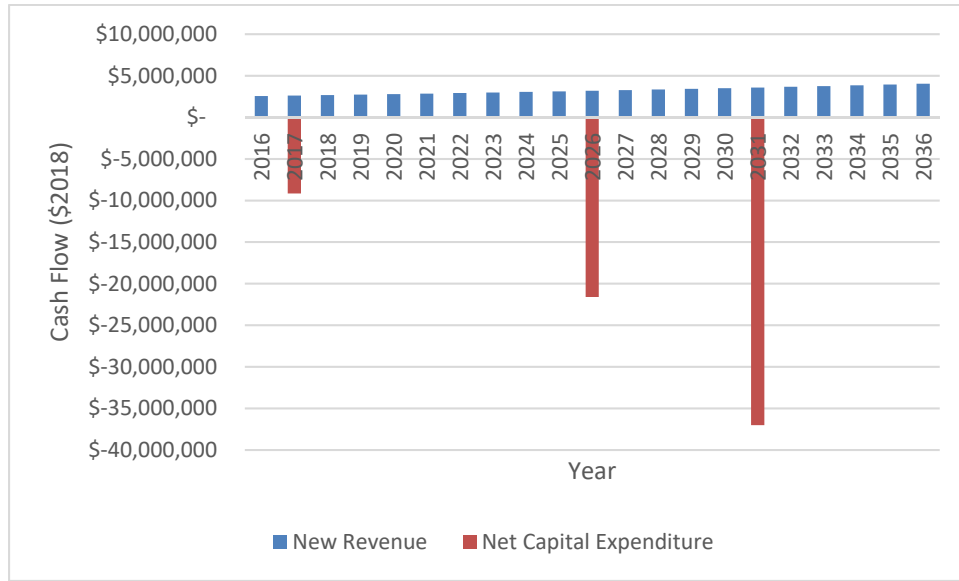


Figure 2. Annual Cash Flow with \$0.13/m³ Increase in Water Rate and Forecast Projects

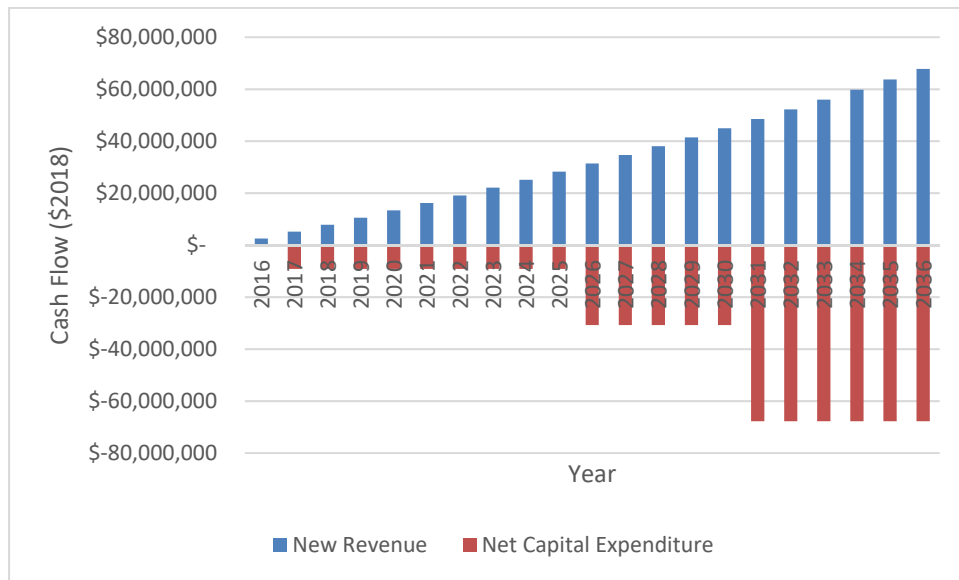


Figure 3. Cumulative Cash Flow with \$0.13/m³ Increase in Water Rate and Forecast Projects

Alternative Rate Calculations

Three alternatives to calculating a uniform rate increase across LAWSS were considered. Each of the three alternatives are based on having a separate increase in rate by LAWSS municipality. A separate rate for each LAWSS municipality was calculated based on: 2016 population, 2016 water demand, the proportional benefit to the municipality from the forecasted projects.

Municipal Rate Increase based on 2016 Population

In this financing scenario the total net system costs after development charges were proportionally divided by each municipality's 2016 population. The water demand forecast by municipality from 2016 – 2036 was then used to calculate unique rate increases for each municipality (Table 7).

Table 7. Increase in Rate by Municipality based on 2016 Population.

	2016 Population	2016 Population (%)	Proportion of Net Cost	2016 – 2036 Water Demand Forecast	Change in Water Rate (\$/m ³)
City of Sarnia	69,198	60.48%	\$40,992,266	305,607,629	\$0.13
Town of St. Clair	14,179	12.39%	\$8,399,511	130,670,429	\$0.06
Village of Point Edward	1,916	1.67%	\$1,135,021	13,533,556	\$0.08
Town of Plympton-Wyoming	7,448	6.51%	\$4,412,128	20,564,315	\$0.21
Township of Warwick	3,532	3.09%	\$2,092,325	26,570,068	\$0.08
Municipality of Lambton Shores	2,656	2.32%	\$1,573,390	7,422,168	\$0.21
Alvinston	2,443	2.14%	\$1,447,211	2,408,356	\$0.60
Remainder of Lambton County	13,045	11.40%	\$7,727,739	19,244,088	\$0.40
Sum of LAWSS Municipalities	114,417	100.00%	\$67,779,591	526,020,609	\$0.13

Municipal Rate Increase based on 2016 Water Demand

In this financing scenario the total net system costs after development charges were proportionally divided by each municipality's 2016 water Demand. The water demand forecast by municipality from 2016 – 2036 was then used to calculate unique rate increases for each municipality (Table 9).

Table 8. Increase in Rate by Municipality based on 2016 Water Demand.

	2016 Water Demand	2016 Water Demand (%)	Proportion of Net Cost	2016 – 2036 Water Demand Forecast	Change in Water Rate (\$/m ³)
City of Sarnia	11,783,918	59.57%	\$40,378,329	305,607,629	\$0.13
Town of St. Clair	5,002,432	25.29%	\$17,141,147	130,670,429	\$0.13
Village of Point Edward	521,735	2.64%	\$1,787,759	13,533,556	\$0.13
Town of Plympton-Wyoming	792,909	4.01%	\$2,716,952	20,564,315	\$0.13
Township of Warwick	549,003	2.78%	\$1,881,193	26,570,068	\$0.07
Municipality of Lambton Shores	278,259	1.41%	\$953,471	7,422,168	\$0.13
Alvinston	110,359	0.56%	\$378,151	2,408,356	\$0.16
Remainder of Lambton County	742,024	3.75%	\$2,542,590	19,244,088	\$0.13
Sum of LAWSS Municipalities	19,780,638	100.00%	\$67,779,591	526,020,609	\$0.13

Municipal Rate Increase based on the aggregated proportionate benefit from the Forecast projects

In this financing scenario the individual forecast project costs after development charges were proportionally divided by the proportion of benefit they provided to each municipality (Table 8 - above). The proportionate costs were then aggregated and combined with the water demand forecast by municipality from 2016 – 2036 to calculate unique rate increases for each municipality (Table 9).

Table 9. Increase in Rate by Municipality based on Forecast Project Benefit to Municipality.

	Proportionate Cost based on Benefit	2016 – 2036 Water Demand Forecast	Change in Water Rate (\$/m ³)
City of Sarnia	\$10,167,299	305,607,629	\$0.03
Town of St. Clair	\$46,759,029	130,670,429	\$0.36
Village of Point Edward	\$-	13,533,556	\$-
Town of Plympton-Wyoming	\$2,302,207	20,564,315	\$0.11
Township of Warwick	\$6,358,478	26,570,068	\$0.24
Municipality of Lambton Shores	\$438,516	7,422,168	\$0.06
Alvinston	\$-	2,408,356	\$-
Remainder of Lambton County	\$1,754,063	19,244,088	\$0.09
Sum of LAWSS Municipalities	\$67,779,591	526,020,609	\$0.13

Conclusion

In order to cover the capital costs of the LAWSS forecast projects after development charge funding an increase of \$0.13 / m³ is required to the water rate. If the increase to the water rate will vary by municipality based on the three alternative allocation methods that were explored, water rate increases could vary from zero to \$0.33 m³ depending on the municipality.

Development charges are the major funding source for the forecasted projects. Development charge funding accounts for 77% or \$229 million of the \$297 million of capital cost associated with the forecasted projects. If no development charge funding was in place, rates could see over a four-fold increase over the change in rate that has been calculated in this financing plan.

The funding for 23% of the capital costs of the forecasted projects covered by an increase in the water rate is highly dependent on the water demand forecast. If water demand is greater than forecast, the forecasted projects' capital costs may be fully funded before the 20 year timeframe. If water demand is less than forecast, LAWSS may find that the full capital costs of these projects has not been recovered in the timeframe of the analysis.

Appendix A. LAWSS Forecast Project Details

		Proposed Works										
		Item	Description	Unit	Quantity	Unit Price	Proposed Works Sub-Total	Contractor OH + Profit	Contingency	Proposed Works Total	Engineering Total	Grand Total
1A Studies	Item 1	0.1	Preliminary Study	L.S.	1.00	\$50,000.00	\$50,000	\$5,000	\$15,000	\$70,000	\$10,500	\$80,500
	Item 2	0.2	Environmental Approvals & Mitigation	L.S.	1.00	\$50,000.00	\$50,000	\$5,000	\$15,000	\$70,000	\$10,500	\$80,500
1Ai	Item 1	1.2	BPS inline	LS	1.00	\$4,500,000.00	\$4,500,000	\$450,000	\$1,350,000	\$6,300,000	\$945,000	\$7,245,000
	Item 2	1.1	Connections - at each end	LS	2.00	\$100,000.00	\$200,000	\$20,000	\$60,000	\$280,000	\$42,000	\$322,000
1Aii	Item 1	1.4	Water course/ railroad crossings (allowance)	m	200.00	\$3,350.00	\$670,000	\$67,000	\$201,000	\$938,000	\$140,700	\$1,078,700
	Item 2	1.5	Air release chambers	ea	2.00	\$100,000.00	\$200,000	\$20,000	\$60,000	\$280,000	\$42,000	\$322,000
	Item 3	1.6	Check valves	LS	2.00	\$200,000.00	\$400,000	\$40,000	\$120,000	\$560,000	\$84,000	\$644,000
	Item 4	1.7	Connections - hydrants; local	LS	20.00	\$5,000.00	\$100,000	\$10,000	\$30,000	\$140,000	\$21,000	\$161,000
1Aiii	Item 1	1.3	CPP - 600mm - watermain twinning on London Line between Brigden Road to ELPS Reservoir	m	7,500.00	\$1,675.00	\$12,562,500	\$1,256,250	\$3,768,750	\$17,587,500	\$2,638,125	\$20,225,625
2Ai	Item 1			LS	1.00	\$24,000,000.00	\$24,000,000	\$2,400,000	\$7,200,000	\$33,600,000	\$5,040,000	\$38,640,000
2Aii	Item 1			LS	1.00	\$13,500,000.00	\$13,500,000	\$1,350,000	\$4,050,000	\$18,900,000	\$2,835,000	\$21,735,000
2B Studies	Item 1	0.1	Preliminary Study	L.S.	1.00	\$50,000.00	\$50,000	\$5,000	\$15,000	\$70,000	\$10,500	\$80,500
	Item 2	0.2	Environmental Approvals & Mitigation	L.S.	1.00	\$50,000.00	\$50,000	\$5,000	\$15,000	\$70,000	\$10,500	\$80,500
2Bi	Item 1	1.3	CPP - 600mm - yard piping	m	250.00	\$1,675.00	\$418,750	\$41,875	\$125,625	\$586,250	\$87,938	\$674,188
	Item 2	1.3	Connections	LS	2.00	\$100,000.00	\$200,000	\$20,000	\$60,000	\$280,000	\$42,000	\$322,000
2Bii	Item 1	1.6	Check valves	LS	4.00	\$200,000.00	\$800,000	\$80,000	\$240,000	\$1,120,000	\$168,000	\$1,288,000
3B Studies	Item 1	0.1	Preliminary Study	L.S.	1.00	\$50,000.00	\$50,000	\$5,000	\$15,000	\$70,000	\$10,500	\$80,500
	Item 2	0.2	Environmental Approvals & Mitigation	L.S.	1.00	\$50,000.00	\$50,000	\$5,000	\$15,000	\$70,000	\$10,500	\$80,500
3B	Item 1	1.1	Connections - at each end	LS	4.00	\$100,000.00	\$400,000	\$40,000	\$120,000	\$560,000	\$84,000	\$644,000
	Item 2	1.2	East Lambton PS upgrade - new pumps	LS	1.00	\$3,000,000.00	\$3,000,000	\$300,000	\$900,000	\$4,200,000	\$630,000	\$4,830,000
	Item 3	1.3	CPP - 600mm - watermain twinning	m	62,600.00	\$1,675.00	\$104,855,000	\$10,485,500	\$31,456,500	\$146,797,000	\$22,019,550	\$168,816,550
	Item 4	1.4	Water course/ railroad crossings (allowance)	m	500.00	\$3,350.00	\$1,675,000	\$167,500	\$502,500	\$2,345,000	\$351,750	\$2,696,750
	Item 5	1.5	Air release chambers	ea	6.00	\$100,000.00	\$600,000	\$60,000	\$180,000	\$840,000	\$126,000	\$966,000
	Item 6	1.6	Check valves	LS	2.00	\$200,000.00	\$400,000	\$40,000	\$120,000	\$560,000	\$84,000	\$644,000
	Item 7	1.7	Connections - hydrants; local	LS	120.00	\$5,000.00	\$600,000	\$60,000	\$180,000	\$840,000	\$126,000	\$966,000
5D Studies	Item 1	0.1	Preliminary Study	L.S.	1.00	\$50,000.00	\$50,000	\$5,000	\$15,000	\$70,000	\$10,500	\$80,500
	Item 2	0.2	Environmental Approvals & Mitigation	L.S.	1.00	\$50,000.00	\$50,000	\$5,000	\$15,000	\$70,000	\$10,500	\$80,500
5D	Item 1	1.1	Connections - at each end	LS	2.00	\$100,000.00	\$200,000	\$20,000	\$60,000	\$280,000	\$42,000	\$322,000
	Item 2	1.3	CPP - 450mm - watermain twinning	m	10,000.00	\$1,200.00	\$12,000,000	\$1,200,000	\$3,600,000	\$16,800,000	\$2,520,000	\$19,320,000
	Item 3	1.4	Water course/ railroad crossings (allowance)	m	200.00	\$2,480.00	\$496,000	\$49,600	\$148,800	\$694,400	\$104,160	\$798,560
	Item 4	1.5	Air release chambers	ea	3.00	\$100,000.00	\$300,000	\$30,000	\$90,000	\$420,000	\$63,000	\$483,000
	Item 5	1.6	Check valves	LS	1.00	\$200,000.00	\$200,000	\$20,000	\$60,000	\$280,000	\$42,000	\$322,000
	Item 6	1.7	Connections - hydrants; local	LS	20.00	\$5,000.00	\$100,000	\$10,000	\$30,000	\$140,000	\$21,000	\$161,000
6B Studies	Item 1	0.1	Preliminary Study	L.S.	1.00	\$50,000.00	\$50,000	\$5,000	\$15,000	\$70,000	\$10,500	\$80,500
	Item 2	0.2	Environmental Approvals & Mitigation	L.S.	1.00	\$50,000.00	\$50,000	\$5,000	\$15,000	\$70,000	\$10,500	\$80,500
6Bi	Item 1	1.3	Watermain interconnection - West Lambton rural lands; 200mm watermain	m	50.00	\$200.00	\$10,000	\$1,000	\$3,000	\$14,000	\$2,100	\$16,100
6Bii	Item 1	1.4	New watermain - Mandaumin Road between London Line and Confederation Line; 300mm	m	2,700.00	\$600.00	\$1,620,000	\$162,000	\$486,000	\$2,268,000	\$340,200	\$2,608,200

Appendix B. The impact on water rates assuming no development charge funding

If all of the capital improvement costs needed to be recovered through rates, and no development charge funding was available, this appendix explores the impacts on LAWSS rates. In the base financial model 77.18% of the capital cost is assumed to be covered through development charges. This alternative scenario assumes that none of this funding is available.

Impact on the Rates

An incremental increase to the LAWSS water rate would be required to pay for the full \$297 million of capital costs associated with the forecasted projects not funded by development charges. Between the years of 2016 and 2036 demand for water in the LAWSS system is just over 526 million m³ of water. If all LAWSS water users pay for the full forecasted projects' capital costs through increases in their rates there would be a \$0.56 / m³ increase starting in 2016 and remaining in place until 2036 (Table B1).

Table B1. Change required to LAWSS water rate, assuming no Development Charge funding

Net Cost after Capital Funding	\$297,056,672.50
Forecast Water Demand (m ³)	526,020,608.82
Change in LAWS rate (\$/m ³)	\$0.56

Alternative Rate Calculations

The removal of development charge funding would impact the three alternatives to calculate a uniform rate increase across the LAWSS. A separate rate for each LAWSS municipality was re-calculated, assuming no development charges based on: 2016 population, 2016 water demand, the proportional benefit to the municipality from the forecasted projects.

Municipal Rate Increase based on 2016 Population and no Development Charges

In this financing scenario the total net system costs were proportionally divided by each municipality's 2016 population. The water demand forecast by municipality from 2016 – 2036 was then used to calculate unique rate increases for each municipality (Table B2).

Table B2. Increase in Rate by Municipality based on 2016 Population assuming no Development Charge funding

	2016 Population	2016 Population (%)	Proportion of Net Cost	2016 – 2036 Water Demand Forecast	Change in Water Rate (\$/m ³)
City of Sarnia	69,198	60.48%	\$179,656,237	305,607,629	\$0.59
Town of St. Clair	14,179	12.39%	\$36,812,419	130,670,429	\$0.28
Village of Point Edward	1,916	1.67%	\$4,974,441	13,533,556	\$0.37
Town of Plympton-Wyoming	7,448	6.51%	\$19,336,970	20,564,315	\$0.94
Township of Warwick	3,532	3.09%	\$9,170,002	26,570,068	\$0.35
Municipality of Lambton Shores	2,656	2.32%	\$6,895,676	7,422,168	\$0.93
Alvinston	2,443	2.14%	\$6,342,672	2,408,356	\$2.63
Remainder of Lambton County	13,045	11.40%	\$33,868,256	19,244,088	\$1.76
Sum of LAWSS Municipalities	114,417	100.00%	297,056,673	526,020,609	\$0.56

Municipal Rate Increase based on 2016 Water Demand assuming no Development Charge funding.

In this financing scenario the total net system costs were proportionally divided by each municipality's 2016 water Demand. The water demand forecast by municipality from 2016 – 2036 was then used to calculate unique rate increases for each municipality (Table B3).

Table B3. Increase in Rate by Municipality based on 2016 Water Demand.

	2016 Water Demand	2016 Water Demand (%)	Proportion of Net Cost	2016 – 2036 Water Demand Forecast	Change in Water Rate (\$/m ³)
City of Sarnia	11,783,918	59.57%	\$176,965,542	305,607,629	\$0.58
Town of St. Clair	5,002,432	25.29%	\$75,124,265	130,670,429	\$0.57
Village of Point Edward	521,735	2.64%	\$7,835,185	13,533,556	\$0.58
Town of Plympton-Wyoming	792,909	4.01%	\$11,907,546	20,564,315	\$0.58
Township of Warwick	549,003	2.78%	\$8,244,678	26,570,068	\$0.31
Municipality of Lambton Shores	278,259	1.41%	\$4,178,765	7,422,168	\$0.56
Alvinston	110,359	0.56%	\$1,657,319	2,408,356	\$0.69
Remainder of Lambton County	742,024	3.75%	\$11,143,374	19,244,088	\$0.58
Sum of LAWSS Municipalities	19,780,638	100.00%	\$297,056,673	526,020,609	\$0.56

Municipal Rate Increase based on the aggregated proportionate benefit from the Forecast projects assuming no development charges

In this financing scenario the individual forecasted project costs were proportionally divided by the proportion of benefit they provided to each municipality. The proportionate costs were then aggregated and combined with the water demand forecast by municipality from 2016 – 2036 to calculate unique rate increases for each municipality (Table B4).

Table B4. Increase in Rate by Municipality based on Forecast Project Benefit to Municipality assuming no Development Charges

	Proportionate Cost based on Benefit	2016 – 2036 Water Demand Forecast	Change in Water Rate (\$/m ³)
City of Sarnia	\$13,938,293	305,607,629	\$0.05
Town of St. Clair	\$51,968,788	130,670,429	\$0.40
Village of Point Edward	\$-	13,533,556	\$-
Town of Plympton-Wyoming	\$36,096,208	20,564,315	\$1.76
Township of Warwick	\$163,069,092	26,570,068	\$6.14
Municipality of Lambton Shores	\$9,186,370	7,422,168	\$1.24
Alvinston	\$-	2,408,356	\$-
Remainder of Lambton County	\$22,797,922	19,244,088	\$1.18
Sum of LAWSS Municipalities	\$297,056,673	526,020,609	\$0.56

Report No.: 2019-12-01
Report Page: 1 of 12
Meeting Date: September 26, 2019
File No.:



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

From: Clinton Harper
General Manager

Subject: 2020 Operating and Capital Budget

Recommendation

That the following actions be taken by the Lambton Area Water Supply System Joint Board of Management with regard to the 2020 Budget.

1. The Board **receive** the LAWSS 20 Year Growth Plan as information.
2. The Board **receive** the WTP- Electrical Reliability Study as information.
3. The Board **receive** the WTP- Main Plant HVAC Assessment as information.
4. The Board **receive** the Facility Storage- Condition Assessment for the Indian Road Water Tower and West Lambton Pumping Station Reservoir as information.
5. The Board **approve** the 2020 Budget as presented with 3.0% increase.
6. The Board **receive** the 2020-2025 Capital Forecast as Information.

Proposed 2020 Operating Budget

Water Treatment Operations Contract

The two largest costs for the water supply system are:

1. OCWA Service Fee @ \$2,214,969.
2. Electricity @ \$1,525,000.

The total 2020 budgeted operating costs, including chemicals, fuel, sludge haulage, Sewage Fees, and insurance are estimated at \$4.553 million. The estimate reflects a net 1.43% projected decrease compared to the 2019 budget. Of the \$4.553 million, energy comprises approximately 34% of operating expenditures.

Administration and Other Expenses

The Administration and Other Expenses projected for the 2020 budget is approximately \$378,000 and represents a \$48,000 net increase over the 2019 budgeted amount. This net increase is due to numerous changes to the water supply system, including:

- \$30,000 Annual Facility Maintenance
- \$3,100 annually catering expenses and venue rentals
- \$6,900 Meeting Management Software

Report No.: 2019-12-01
Report Page: 2 of 12
Meeting Date: September 26, 2019
File No.:



Other factors that affect the overall cost accounted for under this section include:

- Overhead and service costs:
 - administration charges for IT, accounting, clerical, procurement and HR support are either new in 2020 or represent marginally increased to reflect current actual costs to the County and the City.
- Management & Administrative Personnel: The new employee being proposed in 2020 will result in minimum increase. The current funding was previously established for two fulltime employees. See Appendix C for job description.

Proposed 2020 Capital Budget

Project specific summaries are provided in Appendix B of this report.

Proposed Master, Financial and Asset Management Plan Rebuild Timeline

The Master, Financial and Asset Management Plan are guidance documents that assist staff in establishing the best direction for capital investment. These three documents continually grow as projects are completed and added. A reviewed and update of each is performed annually. It is necessary to rebuild each document every five years. Due to the effort required it is not recommended to complete a rebuild on more than one plan in one calendar year. It is proposed that the LAWSS Master Plan be rebuilt in 2020.

The Master Plan is being proposed first because it established the main directions with respect to policy. The Master Plan directs how the Financial and Asset Management Plans are applied.

	Current Version	Proposed Re-build
Master Water Plan	Jan. 2015	2020
Asset Management Plan	2009	2021
Financial Plan	Dec. 2014	2022

The 20 Year Growth Plan

In 2019 LAWSS completed a 20 Year Growth Plan that identified a number of issues, existing and future, with the LAWSS distribution/transmission network.

Existing Issues Identified:

- East Lambton Booster Station (ELBS) Fill Constraints.
- ELBS to Watford Standpipe Network Capacity.
- ELBS to Forest Standpipe Network Capacity.

Report No.: 2019-12-01
Report Page: 3 of 12
Meeting Date: September 26, 2019
File No.:



The next step is to complete a Municipal Class Environmental Assessment (Class EA) of each of the issues. It is proposed that the Class EA for these issues be included in the 2020 Master Plan rebuild in 2020.

The Class EA process will entail a wholistic approach to identifying appropriate alternative. The 20 Year Growth Plan will be one component in the overall assessment process.

Grid Re-enforcement and Twinning Expansion

In 2012 LAWSS undertook a Class EA to address redundancy and reliability issues in south Sarnia and St. Clair Township. A twinning of the transmission network between LaSalle Line and Courtright Line along Tashmoo Ave. and the grid re-enforcement of the section between Confederation and Lasalle Line along Indian Road and MacGregor, in the City of Sarnia, were identified as the best solution. In June 2021 the Class EA for this project expires.

There have been a number of major changes and additional requirements that have been imposed by the Province since 2012. It is recommended that a complete review of the original Class EA is completed in 2020. The review, also know as an "Addendum" at this point will allow LAWSS to complete the additional requirements and effectively extend the project start window out an additional ten years. An "Addendum" is expected to take approx. 8months and will cost approx. \$105,000.

If the work to complete the Twinning and Grid Reinforcement Project does not begin prior to June 2021, and no "Addendum" is undertaken in advance of the deadline, it is expected that the existing Cass EA will be considered invalid by the Province. If a new Class EA needs to be undertaken it is possible that the recommended solution will differ from what was previously recommended. Previously completed detailed engineering for the original solution would no longer be valid.

This review and update of the Class EA for Grid Reinforcement and Twinning is strongly recommended included in the 2020 Budget proposal.

WTP Electrical Reliability Study

In 2019 an electrical reliability study of equipment located at the WTP was completed. In 2020 LAWSS will be replacing the Main Plant 4160V Switchgear as part of the Generator Replacement Project. The study revealed that all electrical equipment downstream of this new equipment is beyond its life expectancy and is in need for systematic replacement. The reliability study provides a path forward for equipment replacement. In 2020, while the new 4160V Switchgear is being installed it is proposed that engineering design be completed to replace the 5kV Motor Control Group A & B. Engineering costs for this project are estimated at \$90,000. Beyond 2020 an additional

Report No.: 2019-12-01
Report Page: 4 of 12
Meeting Date: September 26, 2019
File No.:



1.7 million dollars will be needed in combined engineering and construction to complete the project. Project schedule is outlined in the attached Capital Plan Forecast (Appendix A).

WTP Main Plant HVAC Assessment

In 2019 an assessment of the Main Plant HVAC system was completed. The assessment revealed that all equipment still utilized for Main Plant HVAC has reached or surpassed life expectancy. The dehumidification air handler, which services the majority of the plant area, has had its refrigeration coils removed in a recent project. The modification means this equipment can no longer provide dehumidification. In 2017 major piping was insulated, and while this work substantially reduced the need for de-humidification, there are still many exposed piping and equipment that generate and are affected by excessive condensation.

Project engineering is proposed for 2020 and is estimated at \$111,000. The resulting project is estimated at \$738,000 and scheduled for 2021. The project will include the replacement of all major main plant HVAC components and the addition of an air-cooled chiller to replace the once-through cooling water. Project schedule is included in the attached Capital Plan Forecast (Appendix A).

Facility Storage- Condition Assessment

Indian Road Water Tower Assessment Summary

In 2019 as assessment was completed on the Indian Road Water Tower. The assessment revealed that the exterior coating system is providing an adequate level of corrosion protection to the tank structure. The interior lining is also providing an adequate level of corrosion protection to the steel structure. The assessment noted that severe localized corrosion developed at some point in time prior to the last rehabilitation project and resulted in significant pitting throughout the entire storage cell and main inlet riser structure. Due to the severe pitting of the interior steel surfaces and remaining life of the interior and exterior coating systems it is recommended that short-term and long-term rehabilitation upgrades are completed.

It is proposed that in 2021 the tank will be drained, cleaned and thoroughly inspected to assess for any impacts of the severe pitting found during the ROV inspection. The inspection work will include full access to the interior steel surfaces, plate thickness measurements of affected areas and non-destructive testing. The inspection will help establish and refine timing/scope for long-term solution. In addition, the short-term upgrades in 2021 will include items that are required for safe access of the facility as well as any immediate work that could be completed without affecting the interior and exterior coating system.

Report No.: 2019-12-01
Report Page: 5 of 12
Meeting Date: September 26, 2019
File No.:

Short-term Upgrades: (Downtime= 3-4 weeks):

- Thorough inspection of the tank interior to ascertain the extent of steel pitting.
- Touch-up of interior lining system, as required.
- Replacement of existing fall restraint system.
- Removal and replacement of existing D-ring transfer anchors.
- Installation of rescue ports at the main platform and roof of the tank.

Long-term Upgrades: (Downtime= 4-6 months):

- Interior steel repairs.
- Full replacement of the interior lining system.
- Full replacement of the exterior coating system, complete with construction of a temporary scaffolding structure and lead abatement.
- Tank appurtenance, accessory and safety system upgrades.
- Electrical and process upgrades.

Engineering for the short-term upgrade are included in the 2020 budget proposal to facilitate a 2021 project. In 2020 a modified operational plan will be developed to allow for the removal of the Indian Road WT from operation for 3-4 weeks. Engineering of the long-term upgrade is proposed for 2023 to facilitate a 2024 project. The schedule for the long-term upgrade may be impacted by the results from inspections carried out during the short-term upgrade. Project schedule is included in the attached Capital Plan Forecast (Appendix A).

West Lambton Pumping Station Reservoir

In 2019 an assessment was completed on the West Lambton Pumping Station Reservoirs. The assessment revealed that the interior lining system is nearing the end of its useful life and full replacement within the next 1 to 2 years is recommended to prevent further corrosion and escalating steel repair costs. Since the interior condition of the North Reservoir appears better than the South Reservoir, it is recommended to start the rehabilitation process with the South Reservoir.

The assessment also confirmed that the exterior coating system has surpassed its useful life and is no longer providing an adequate level of corrosion protection to both reservoirs. Due to its current condition and its characteristics, installation of an overcoat system on either reservoir is not feasible. Full replacement of the coating system by abrasive blasting is recommended in the immediate future.

Full Rehabilitation of the North and South Reservoir (Downtime: 5-7months/reservoir)

- Complete replacement of the interior lining system by abrasive blasting.
- Inspection of interior steel sections and repairs as required.
- Inspection of the magnesium anodes and repairs as required.
- Complete replacement of the exterior coating system including repairs to the galvanized tank components such as stairways, platforms and appurtenances.

Report No.: 2019-12-01
Report Page: 6 of 12
Meeting Date: September 26, 2019
File No.:



- Safety system upgrades.
- Electrical and process upgrades.

Engineering for both the north and south reservoir is included in the 2020 Budget proposal. During the engineering process OCWA will be requested to assist in developing and proving a modified operational plan that will allow for 1/2 reservoirs offline for duration of the expected 5-7 months rehabilitation timeline. Rehabilitation of the south reservoir is proposed for 2021. Rehabilitation of the north reservoir is proposed for 2022. Project schedule is included in the attached Capital Plan (Appendix A).

2020 Capital Plan

Brief project summaries are provided in Appendix B.

Lifecycle Projects (Maintain Level of Service (LOS))

Proposed projects in the 2020 Capital Budget aimed at maintaining current LOS.

- 5kV Motor Control Group A & B (Engineering Component) @ WTP.
- Main Plant HVAC Rehabilitation (Engineering Component) @ WTP.
- Reservoir Rehabilitation (Engineering Component) @ WLPS.
- Indian Road Water Tower Rehabilitation (Engineering Component).
- Field Gate 4G Network Upgrade.
- Condition Assessment - Port Lambton SP & Watford SP.

In addition to the above-noted capital projects, the 2020 Capital Budget includes approved Major Maintenance Projects. Major Maintenance projects are defined by the service agreement as maintenance projects estimated to not exceed \$50,000. These projects are undertaken by the contacted operating authority, OCWA, on behalf of the Board. All Major Maintenance projects are listed in Appendix A.

Service Improvement Projects (Enhanced Level of Service, Regulatory Changes, Efficiency)

Proposed projects in the 2019 Capital Budget geared towards enhancing LOS.

- Master Water Plan
- PLC Conversion/upgrade & Construction
- Loop Study & Corrosion Control Member Municipality Impact Study.

Capital Forecast

A number of capital projects are projected beyond the 2020 Capital Budget year, which will have an impact on the financial forecast and future water rates for the water system. LAWSS Master Water Plan is in need of a rebuilt and is included in the 2020

Report No.: 2019-12-01
Report Page: 7 of 12
Meeting Date: September 26, 2019
File No.:



Capital Budget proposal. Future updates to the Asset Management Plan and Financial Plan are anticipated to be initiated in 2021 and 2022.

Flow and Financial Analysis

To fund the work forecasted in the Capital Plan a 3% sustained increase is needed over the next three years to the overall LAWSS Budget.

2018 Demand Actuals (Flow) are used to determine cost allocation between Member Municipalities in the current years budget proposal. Demand Actuals collected between January 2019 and August 2019 were used to determine anticipated total 2020 demand. A 5-year trending analysis was used to estimate total demand beyond 2020.

Actual 2018 Total Demand	17,986,680m ³
Anticipated 2019 Total Demand (Estimate based on Jan-Aug 2019 Actuals)	18,167,000m ³
Anticipated 2020 Total Demand (Estimate based on 2014-2018 Trending)	18,412,000m ³

Financial forecast in Table #1 expresses cash flow at 3.0% increase if maintained for the next 3 years. Note that the total expenses in 2022 exceed the starting balance for that year. This means that, while that year's total revenue is expected to cover total expenses, LAWSS may need to carry up to 9.1 million in debt within the year to cover the cost to operate the system.

Table #1	Budget 2019	Prop. 2020	2021	2022	2023	2024
Annual Demand (MI)	17.44	17.81	18.17	18.41	18.66	18.91
Water Rate (/m ³)	\$0.545	0.554	0.559	0.569	0.57	0.57
Budget % Incr	0.0%	3.0%	3.0%	3.0%	0.0%	0.0%
Starting Balance (x1000)	\$6,828	\$4,299	\$7,286	\$4,424	\$1,628	\$5,936
Total Revenue (x1000)	\$9,877	\$10,040	\$10,337	\$10,643	\$10,794	10,939
Total Expenses (x1000)	\$12,407	\$7052	\$13,199	\$13,440	\$6,486	9,346
Ending Balance (x1000)	\$4,299	\$7,286	\$4,424	\$1,628	\$5,936	\$7,529

This report was prepared by Clinton Harper, LAWSS General Manager.

Report No.:	2019-12-01
Report Page:	8 of 12
Meeting Date:	September 26, 2019
File No.:	



Attachment(s): 2020 LAWSS Operating, Maintenance, and Capital Budget DRAFT
Appendix A: 2020 Capital Plan with Forecast for 2020 to 2025
Appendix B: 2020 Capital Project Summary
Appendix C: LAWSS Compliance Coordinator- Job Description

Report No.:	2019-12-01
Report Page:	9 of 12
Meeting Date:	September 26, 2019
File No.:	



Appendix B: 2020 Capital Project Summary

Lifecycle Projects (Maintain LOS)

4	<u>5kV Motor Control Group A & B (Engineering)-</u> as per Electrical Reliability Study prepared by EXP and presented within 2020 Budget Report.
13	<u>Main Plant HVAC Rehabilitation (Engineering)-</u> as per Main Plant HVAC Assessment Report prepared by Building Innovation and presented within the 2020 Budget Report.
31, 32	<u>Indian Road WT and West Lambton Pumping Station South Reservoir Rehabilitation-</u> as per Assessment reports prepared by CIMA and presented within the 2020 Budget Report

Service Improvement Projects (Enhance LOS, Growth, Regulatory Changes, Efficiency)

17	<u>PLC Conversion/upgrade & Construction-</u> Relocation and upgrade of PLC equipment located in Filter Gallery.
45	<u>Field Gate 4G Network Upgrade-</u> System flow meters, located in the transmission network, and used by LAWSS to capture the billable flow information use proprietary software on a 3G wireless to communicate with the WTP. This project will complete a required upgrade of all meters onto their 4G platform.
48, 70	<u>Loop Study & Corrosion Control Member Municipality Impact Study-</u> The City of Sarnia is undertaking a three-year program to get a better understanding of the quantity of lead service connections within its limits. If it is determined that lead service connections are extensive then corrosion control will be needed at the LAWSS WTP. Approx. 2 years of research and analysis is needed prior to implementing corrosion control at LAWSS. The Loop Study and Corrosion Control Member Municipality Impact Study is recommended to begin in 2020.
62	<u>Master Plan-</u> A Master Plan for the Lambton Area Water Supply System was completed in 2015. The purpose of the Master Plan Update is to identify capital works and operational changes that to address future water supply needs.
77	<u>Condition Assessment - Port Lambton SP & Watford SP</u>

Report No.: 2019-12-01
Report Page: 10 of 12
Meeting Date: September 26, 2019
File No.:



Appendix C: LAWSS Compliance Coordinator

Title: Compliance Coordinator

Summary or Duties:

Reports to LAWSS General Manager. Acts under the direction of the LAWSS General Manager to review, monitor and audit the operation of the Lambton Area Water Supply System for compliance with regulatory and legal requirements, water quality control and assurance, compliance of the contract operator with the Service Agreement, and compliance with the system's Environmental Management System and ISO14001 standard. Assists and coordinates public information on the performance of the Lambton Area Water Supply System.

Work Performed:

Monitors and conducts reviews of the operation of the Lambton Area Water Supply water treatment and transmission systems for compliance and conformance to best management practices, policy/procedure, contractual operational requirements, regulatory and legal requirements, develop Environmental Management Systems, and water quality management systems.

Coordinates and conducts periodic (internal) audits of the Lambton Area Water Supply System for compliance and conformance to best management practices, policy/procedure, contractual operational requirements, regulatory and legal requirements, Environmental Management Systems (ISO14001), and water quality management systems.

Participates or assists in the development and implementation of Environmental Management System programs and other management system programs.

Prepares reports and supporting documentation for water supply Joint Boards of Management and recommends to General Manager for approval.

Schedules, arranges, attends and chair meetings with members of LAWSS technical leads, contractors, individuals, utilities, and other external agencies and authorities to plan, coordinate and discuss projects, including public meetings and forums.

Investigates complaints and inquiries and provides information and/or makes recommendations on resolving problems.

On-site investigation, providing technical expertise and resolution of water quality, operational and regulatory issues.

Report No.: 2019-12-01
Report Page: 11 of 12
Meeting Date: September 26, 2019
File No.:



Carries out field liaison with contractors, stakeholders, City forces, businesses and other municipalities as a Lambton Area Water Supply System representative.

Prepares "Requests for Proposals" for Consulting Engineers and professional consultants/contractors. Reviews and recommends submitted proposals for approval.

Prepares in-house contract documents and provides resident site inspection as "City" Inspector.

Administers capital works projects. Monitors the project for compliance with policy/procedure, and Safety Act and Regulations and takes action appropriate to correct contraventions. Audits for conformance to policies and procedures.

Reviews, assesses for compliance and recommends acceptance of various technical studies, computer analyses, designs, drawings, applications and proposals submitted by consultants, contractors and others for approval by General Manager

Maintain and manage of the LAWSS Geographical Information System.

Assists in the creation, maintenance, modifications and dissemination of public information through the water supply website, media release, brochures, and documentation.

Performs related duties as assigned.

Qualifications:

Three-year Community College Environmental Technology Diploma, or equivalent education and directly related work experience.

Experience:

Four years related experience.

Specialized Training and Licenses:

Skills and abilities in the following areas are necessary:

Valid Driver's Licence - Class G

Demonstrated proficiency in word processing, spreadsheets, databases, and various software.

Working knowledge of Management Systems and standards.

Working knowledge of the Ontario Health and Safety Regulations for construction and inspection projects, and industrial establishments.

Report No.: 2019-12-01
Report Page: 12 of 12
Meeting Date: September 26, 2019
File No.:



Working knowledge of provincial and federal water and related environmental regulations and standards

Working knowledge of the Ontario *Safe Drinking Water Act* and regulations.

2020 LAWSS OPERATING, MAINTENANCE, AND CAPITAL SUMMARY BUDGET DRAFT

ITEM	EXPENSES	Sarnia	St. Clair	Plympton-Wyoming	Warwick	Point Edward	Lambton Shores
2020 Percent Budget Allocations Based on 2018 Flows		58.34%	29.78%	4.98%	2.57%	2.40%	1.93%
<i>2019 Percent Budget Allocations Based on 2017 Flows</i>		<i>61.58%</i>	<i>26.16%</i>	<i>4.94%</i>	<i>2.89%</i>	<i>2.48%</i>	<i>1.95%</i>
2020 OPERATING AND MAINTENANCE COSTS (OCWA) (CPI = 2.25%)							
Service Fee	\$2,214,969						
Hydro	\$1,525,000						
Sludge Haulage	\$150,000						
Point Edward Sewage Fee	\$92,450						
Chemicals	\$270,860						
Insurance	\$90,960						
Diesel Fuel	\$9,000						
Subtotal	\$4,353,239	\$2,539,680	\$1,296,395	\$216,791	\$111,878	\$104,478	\$84,018
2020 LAWSS OPERATING							
Emergency Repairs	\$200,000						
Special Facility Maintenance	\$30,000						
General and Administrative Expense	\$348,000						
Staff Salary and Benefits	\$250,000						
Schedule G Reconciliation Estimate	\$150,000						
Subtotal	\$978,000	\$570,565	\$291,248	\$48,704	\$25,135	\$23,472	\$18,875
TOTAL OPERATING AND MAINTENANCE	\$5,331,239	\$3,110,245	\$1,587,643	\$265,496	\$137,013	\$127,950	\$102,893
2020 Capital Projects							
5kV Motor Control Group A & B (Engineering) (EXP- Reliability Study 2019)	\$90,000						
WTP Main Plant HVAC Repair (Engineering Design)	\$111,000						
WLPS Reservoir Rehabilitation (Engineering Design)	\$120,000						
Indian Road WT Rehabilitation (Engineering Design)	\$30,000						
WTP PLC Conversion/upgrade construction	\$150,000						
Distribution- Field Gate 4G Network Upgrade	\$75,000						
2020 Engineering Studies							
System- Master Plan Rebuild (w/ Class EA for Issues Identified in 20yr Growth Plan AECOM 2019)	\$250,000						
Condition Assessment (Port Lambton Standpipe & Watford Standpipe)	\$30,000						
Jacob's Loop Study	\$300,000						
Jacob's Corrosion Control Member Municipalities Impact Study	\$113,000						
Watermain Condition Assessment Approach and Prioritization Study	\$35,000						
Twinning & Grid Reinforcement Class EA (Addendum)	\$105,000						
Pervious Years Carryover							
Generator Replacement Project	\$4,000,000						
Generator Replacement Project (Engineering	\$150,000						
Main Plant Switch Gear	\$1,500,000						
Main Plant Switch Gear (Engineering)	\$116,000						
PLC Upgrade Project	\$150,000						
36" Ross Valve	\$70,000						
Radio PLC Upgrade Project	\$512,000						
Funds to Reserve	\$2,987,259						
TOTAL 2020 CAPITAL	\$10,894,259	\$6,355,711	\$3,244,310	\$542,534	\$279,982	\$261,462	\$210,259

2020 LAWSS MAJOR MAINTENANCE							
WTP - Filter Core Sampling	\$15,000						
WTP - VFD Flocc Mixers	\$45,000						
WTP - Replace 7 Chlorine On-Line Analyzers	\$20,000						
WTP - Traveling Screen Assessment and Inspection	\$12,000						
WTP - Chemical Feed Pumps (3)	\$16,000						
WTP - Gearbox Refurb at Floc Tanks 2/yr	\$42,000						
WTP - Lab pH meter replacement	\$2,500						
WTP - Vibration Monitoring Program	\$1,500						
WTP - Valve gate isolation(3) 10 inch	\$25,000						
WTP - Low Lift Wet Well Cleanout	\$15,000						
WLPS - Crack Injection (West Wall)	\$5,000						
WLPS - Valve Discharge P1 Refurbish	\$25,000						
Hydrant Installation London Line (blow off)6622 London Line	\$20,000						
Various Energy Conservation and efficiency studies	\$8,000						
Chamber (flow) abandonment	\$20,000						
Air Relief valves (5867 Confederation Line) Relocate Air Valve	\$15,000						
Hydrant Isolation valve repairs x (3) (gland bolts)	\$15,000						
Repair Clamps & Appurtenances	\$10,000						
TOTAL 2020 MAJOR MAINTENANCE	\$312,000	\$182,021	\$92,914	\$15,538	\$8,018	\$7,488	\$6,022
Revenue from Sale of Water	-\$100,000						
Revenue from Interest or Rental Fees	-\$72,000						
Revenue Transferred from Previous Budget	-\$6,498,000						
TOTAL EXPENDITURES	\$16,537,498	\$9,647,976	\$4,924,867	\$823,567	\$425,014	\$396,900	\$319,174
TOTAL REVENUE	-\$6,670,000	-\$3,891,278	-\$1,986,326	-\$332,166	-\$171,419	-\$160,080	-\$128,731
2020 Total Budget/Operating/Maintenance/Capital	\$9,867,498	\$5,756,698	\$2,938,541	\$491,401	\$253,595	\$236,820	\$190,443
<i>2019 Total Budget</i>	<i>\$9,580,197</i>	<i>\$5,899,485</i>	<i>\$2,506,180</i>	<i>\$473,262</i>	<i>\$276,868</i>	<i>\$237,589</i>	<i>\$186,814</i>

Note the 2019 Budget is greater than the 2018 Adjusted Budget by
Note total flow in 2018, excluding non-members is 17,811,967 m3 and cost per member is

3.00% -2.42% 17.25% 3.83% -8.41% -0.32% 1.94%

\$0.5540 per cubic metre

**Appendix A: Lambton Area Water Supply System
2020 Budget
2020 Capital Plan with Forecast for 2020 to 2025
(\$000's)**

No.			Description	Prev.	2019	2020	2021	2022	2023	2024	2025
1	WTP	MM	Filter Core Sampling			15					15
2	WTP	MM	VFD Flocc Mixers			45					
3	WTP	MM	Replace 7 Chlorine On-Line Analyzers			20	15				
4	WTP		Electrical Upgrade (Reliability Study)		500	90	696	677	282	16	
12	WTP	MM	Chemical Feed Pumps (3)			16					
13	WTP		Main Plant HVAC Rehab			111	738				
14	WTP	MM	Gearbox Refurb at Floc Tanks 2/yr			42	43				
15	WTP	MM	Lab pH meter replacement			3					
16	WTP		Radio PLC Upgrade	352	160						
17	WTP		PLC conversion/upgrade construction		150	150					
18	WTP	MM	Sluice gate inspection & Maintenance				15				
19	WTP	MM	Vibration Monitoring Program		2	2	2	2	2	2	2
20	WTP		Admin HVAC Replacement		250						
21	WTP	MM	Security Camera Upgrades				45				
22	WTP	MM	Person Down Alarm Monitor 3rd party				5				
23	WTP	MM	3rd party electrical inspection				18		18		25
24	WTP	MM	Valve gate isolation(3) 10 inch			25					
25	WTP	MM	Low Lift Wet Well Cleanout			15	15	15	15	15	15
26	WTP		Emergency Generator w/ Main Plant 4160V Switchgear	4150	1,616						
27	WTP		Lighting/Barrier North walkway (outdoors)				200				
28	WTP		Inlet Water Screens						185	185	
29	WTP		Pump Upgrade Demand forecast							350	
30	WTP	MM	EQ Tank Cleanout Inspection								22
	WLPS		Storage Tank (South) Rehabilitation			60	5,600				
32	WLPS		Storage Tank (North) Rehabilitation			60		5,600			
36	WLPS	MM	Electrical Inspection-3rd party contractor		10		10		10		10
37	WLPS	MM	Motor HLP-2 (VFD Compliant)				25				
38	WLPS		36" Ross Valve	70							
39	WLPS	MM	Crack Injection (West Wall)			5					
40	WLPS	MM	Valve Discharge P1 Refurbish			25					
42	ELBS	MM	Electrical Inspection-3rd party contractor		5		5		5		5
44	ELBS	MM	Actuator Inlet Valve (electronic)							14	
45	SYS.		Field Gate 4 G network upgrade			75					
47	SYS.		Indian Road Water Tower Rehabilitation			30	120		270	3,000	

48	SYS.		Loop Study (including OCWA's time)			300						
52	SYS.	MM	Hydrant Installation- 6622 London Line			20	20	20	20			
53	SYS.		Leak Detection		230							
54	SYS.	MM	Chamber (flow) abandonment			20	20	20	20			
55	SYS.	MM	Air Relief valve- 5867 Confederation Line			15						
56	SYS.	MM	Hydrant Isolation valve repairs x (3) (gland bolts)			15	2					
57	SYS.		Flow Restriction/Chamber Removal		175							
58	SYS.	MM	Concrete Pipe end closures and 20' lengths		10		15	15	15	15	15	15
59	SYS.		Port Lambton Tower refurbish					1,400				
61	SYS.	MM	Repair Clamps & Appurtenances		10	10	10	10	10	10	10	10
62	ENG.		System - Master Plan			250						
63	ENG.		System - Asset Management Plan				150					
64	ENG.		System - Financial Plan					150				
65	ENG.		WTP- Travelling Water Screen Assessment			12						
66	ENG.		System - Energy Efficient Lighting grant program			2						
67	ENG.		System - Power factor study WTP)			2						
68	ENG.		System - Pump Upgrades for forecasted demand growth			2						
70	ENG.		Corrosion Control Member Municipality Impact Study			113						
71	ENG.		WTP - Backwash Pump softstart or VFD conversion			2						
72	ENG.		WTP - Electrical Reliability Study									
	ENG.		Twinning & Grid-Municipal Class EA (Addendum)			105						
73	ENG.		WTP - HVAC Dehumidification		20							
74	ENG.		WTP - Pump Upgrade to match growth strategy									
	ENG.		Watermain Condition Assessment			35						
75	ENG.		WTP - Filter Core sampling									15
76	ENG.		Condition Assessment - WLPS & Indian Road WT		30							
77	ENG.		Condition Assessment - Port Lambton SP & Watford SP			30						
Total:				\$4,572	\$3,168	\$1,721	\$7,769	\$7,909	\$852	\$3,607	\$134	

Report No.:	2019-12-04
Report Page:	1 of 2
Meeting Date:	September 26, 2019
File No.:	



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

From: Clinton Harper
General Manager

Subject: Forest Standpipe – Dog Park

Recommendation

It is recommended that:

1. The Board agree in principal to re-purposing an area of LAWSS property as dog park, and
2. allow staff to work with the local municipality to develop an agreement for future LAWSS Board approval.

Background:

The Municipality of Lambton Shores has requested that a section of the green space on the north side of the Forest Standpipe, within the Forest Standpipe compound, be re-purposed as a dog park and make assessable to area residents. Representation of the special interest group that initiated the request plan to address local council in early October.

Comments:

There is approximately 0.5 acres of green space on the north side of the Forest Standpipe that may be re-purposed for the requested use without affecting the operation or maintenance of the Facility. Staff requests permission to work with the local municipality to develop an appropriate agreement. Attached is a sketch that roughly indicates the area being requested.

Consultation:

OCWA-LAWSS Operational Staff will be consulted in the development of any agreement.

Report No.: 2019-12-04
Report Page: 2 of 2
Meeting Date: September 26, 2019
File No.:



Financial Implications:

Assuming an agreement can be established, this is an opportunity to dispense a very small amount of facility maintenance while providing a service to the community.

This report was prepared by Clinton Harper, LAWSS General Manager

Attachment(s): Forest Standpipe Site Map with proposed area



This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

Report No.:	2019-12-04
Report Page:	1 of 3
Meeting Date:	September 26, 2019
File No.:	



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

From: Clinton Harper
General Manager

Subject: LAWSS WTP Accessibility

Recommendation

Report provided as information.

Background:

LAWSS is a publicly funded water utility governed by the LAWSS Joint Board of Management. The Joint Board of Management regularly convenes to address matters of the water system at the LAWSS Water Treatment Plant (WTP), located at 1215 Fort Street in the Village of Point Edward. Meetings of the LAWSS Joint Board of Management are open to the public.

The Accessibility for Ontarians with Disabilities Act (AODA) became law on June 13, 2005 and applies to all levels of government, non-profits, and private sector businesses in Ontario. The AODA aims to identify, remove, and prevent barriers for people with disabilities.

One of the five standards that make up the AODA is the Design of Public Spaces Standard. This standard focuses on removing barriers to people with disabilities in buildings and public spaces such as parks, paths of travel, parking lots, and beaches. The Standard provides a minimum benchmark for how public access are to be designed in Ontario going forward.

Existing public spaces, that do not meet the requirements of the AODA, are not required to be renovated if alternative access or arrangements are provided.

Comments:

The LAWSS WTP was constructed in early 1970s and is not considered assessible under AODA standards. Additionally, the WTP lacks secure separation between the administration and operational areas which would allow for the general public to freely access operational area of the Plant. The main entrance of the WTP is not compatible with meetings that are open to the general public.

Report No.: 2019-12-04
Report Page: 2 of 3
Meeting Date: September 26, 2019
File No.:



In June the Board requested that an effort be undertaken to determine the costs associated with providing improved access and establishing separation between the operations and administration area of the WTP.

Two concepts were developed and cost estimates prepared. Due to the excessive slope between the WTP's main entrance and the roadway the final rise of steps cannot be overcome by ramping alone. Therefore, both exterior options include a mechanical lifting device. Both concepts utilize the same approach to separating the administration and operational areas.

Interior Solution:

The interior concept involves a new "public" entrance into the Administration area. The separate Administration area includes the two LAWSS offices, a new accessible unisex washroom, the Board Room, and the Lab. A secure doorway between the administration and operational area is proposed along with modifications to the Woman's washroom.

Exterior Solution #1:

The first exterior concept involves converting the planter immediately in front on the WTP into a ramp structure and installing a mechanical stair lift for the final rise to entrance grade.

Exterior Solution #2:

The second exterior concept involves building an elevator on the south wall, re-purposing a section of the front planter, and building a new sidewalk to the base of the elevator from the roadway. A small area within the WTP would be re-purposed as an elevator control room.

Consultation:

This report was prepared in consultation with MIG Engineering Ltd. and OCWA Operational and Maintenance Staff.

Report No.: 2019-12-04
Report Page: 3 of 3
Meeting Date: September 26, 2019
File No.:



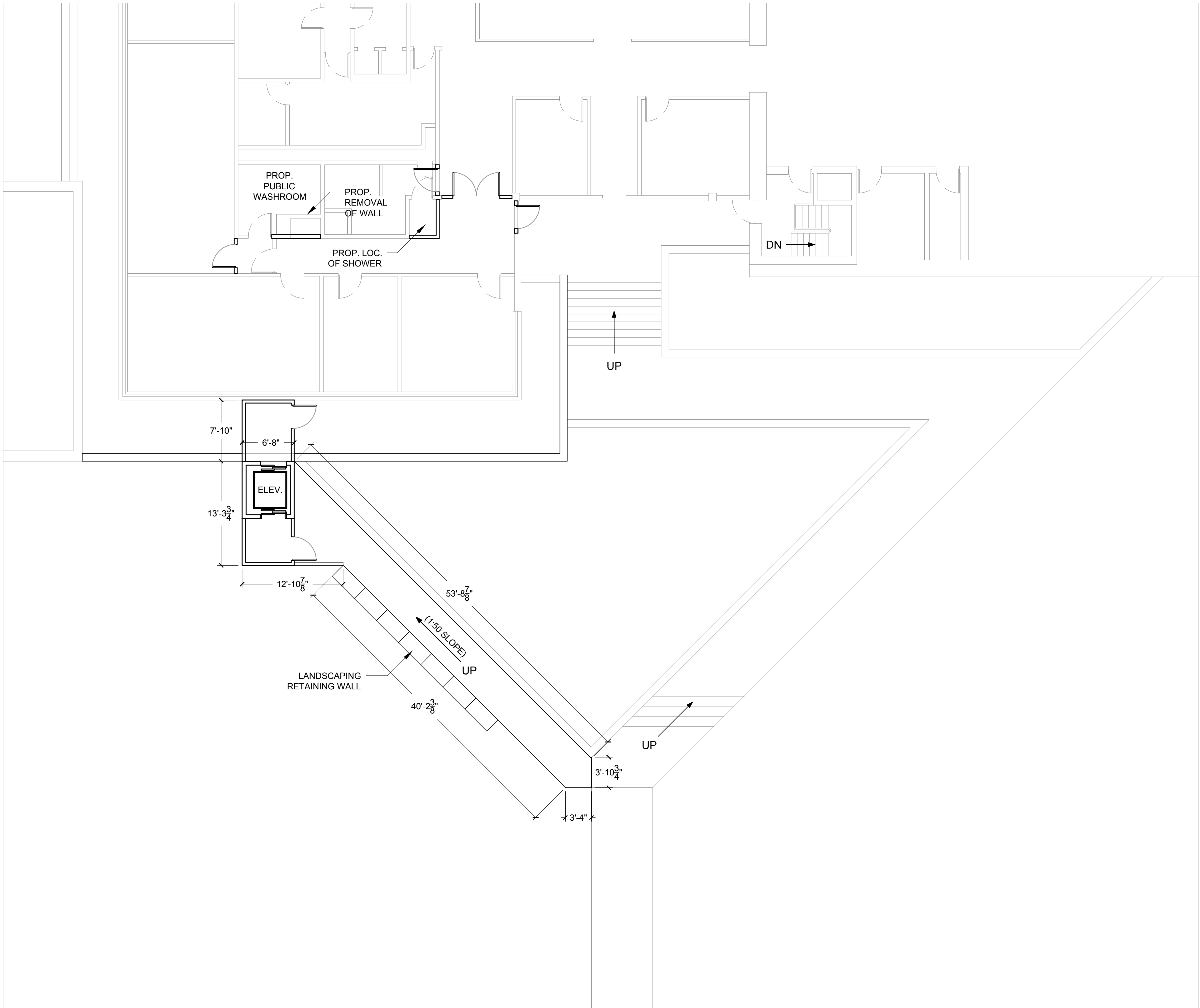
Financial Implications:

The cost to complete this work was not included in the 2020 Budget Proposal.

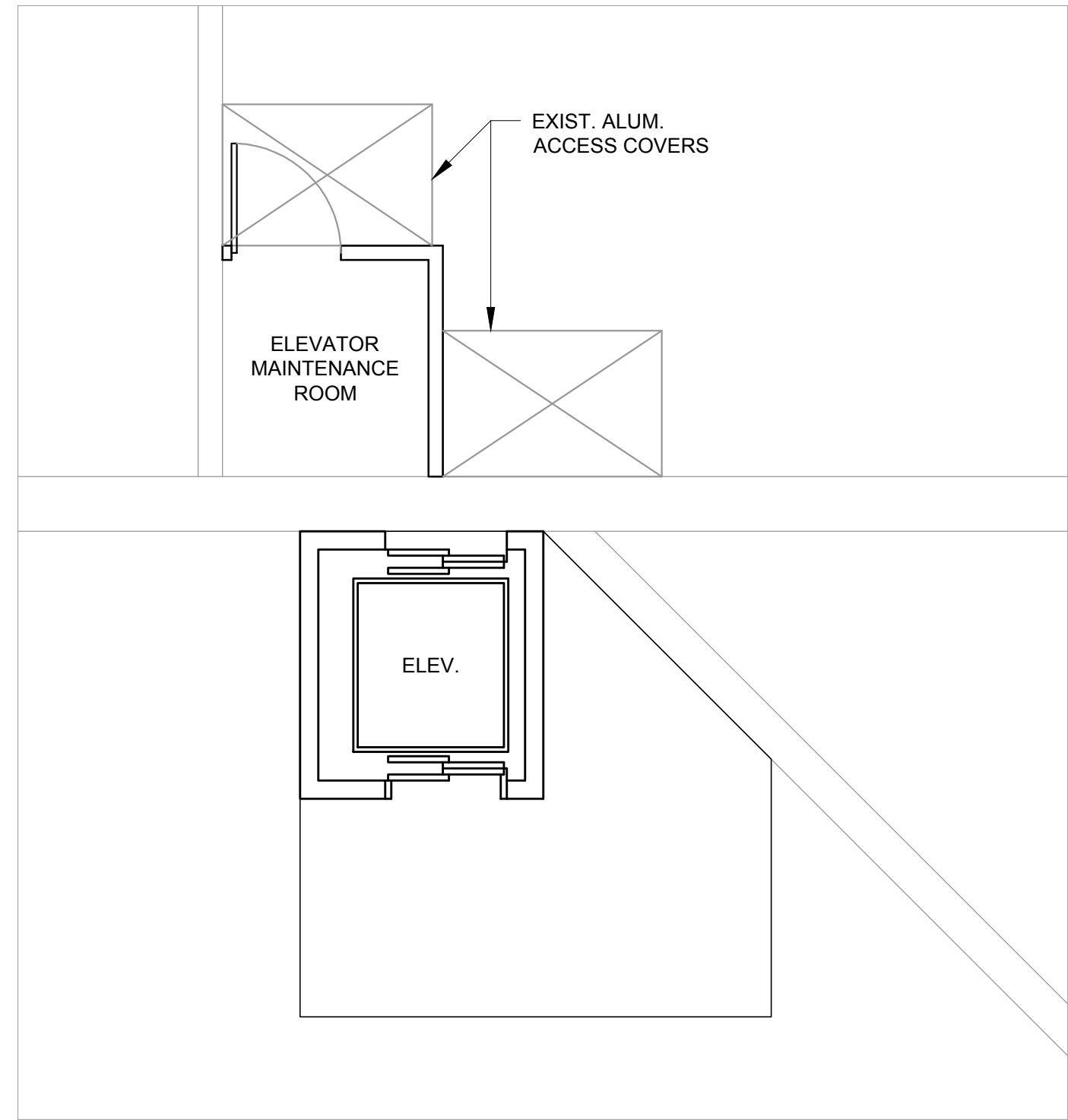
(x1000)	Solution #1 (Chair Lift)	Solution #2 (Elevator)
Exterior Construction:	\$238	\$227
Interior Construction:	\$54	\$54
Total Engineering:	\$50	\$50
Total Capital Cost:	\$342	\$331

This report was prepared by Clinton Harper, LAWSS General Manager

Attachment(s): AODA Front Entrance WTP Conceptual Design Solution #1 & #2



01
A101 PROPOSED FLOOR PLAN
SCALE: 1/8"=1'-0"



02
A101 PROPOSED LOCATION OF ELEV. MAINT. ROOM
SCALE: 1/4"=1'-0"

NOTES

SCALES

PLOTTED SIZE - 22" x 34"
SCALE: 1/8" = 1'-0"

PLOTTED SIZE - 11" x 17"
SCALE: 1/4" = 1'-0"



MIG PROJECT No.: 11110.00

A	ISSUED FOR REVIEW			2019.09.17	SP	RT	RT	RT	
NO.	REVISIONS			DATE	DRAWN	DESIGNED	CHECKED	APPROVED	

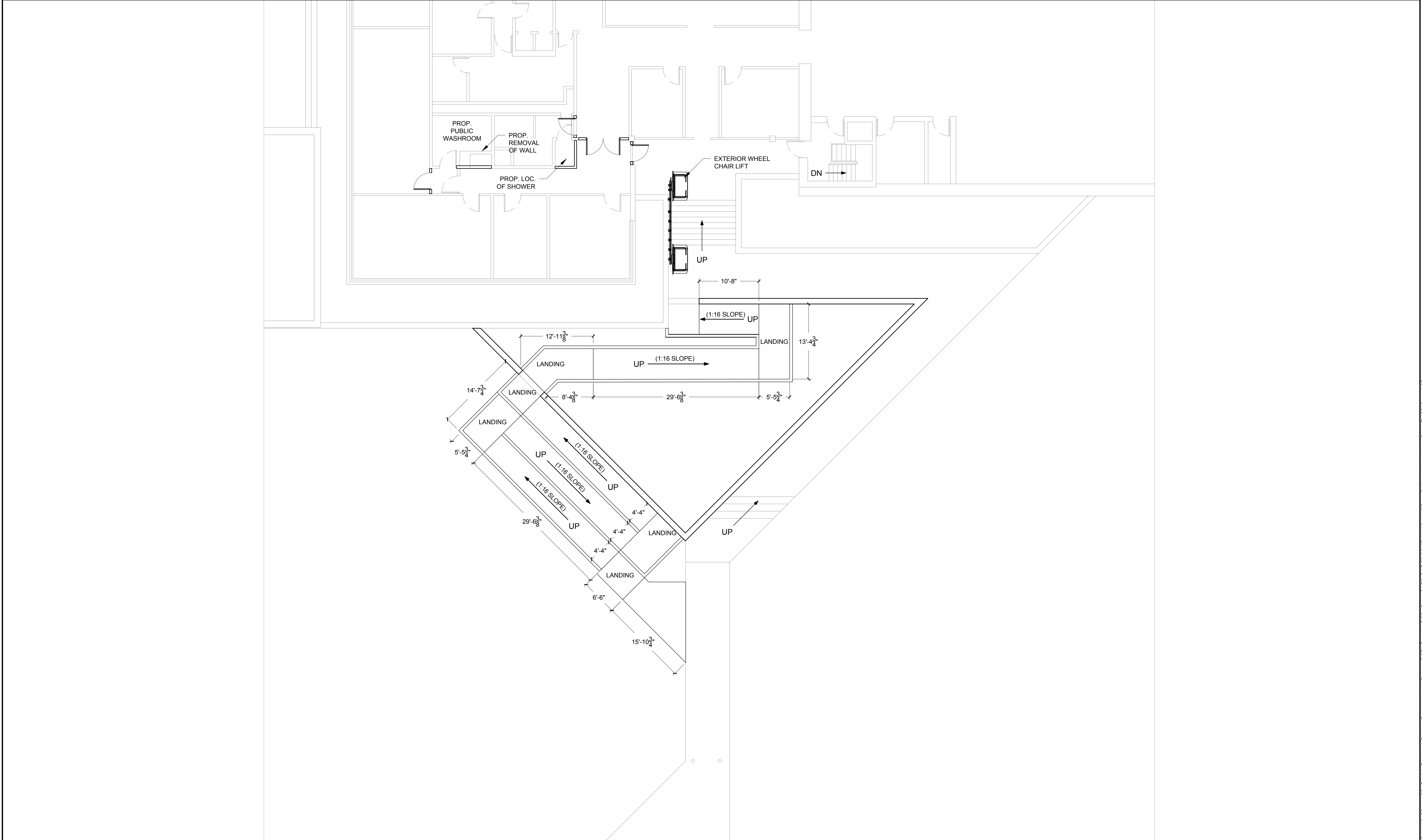
LAMBTON AREA WATER SUPPLY SYSTEM
1215 FORT ST. SARNIA, ON. N7V 1M1
OPTION 1 - MAIN FLOOR PLAN


DRAWING NUMBER

A-101

REVISION

A



NOTES	<div>SCALES</div> <div>PLOTTED SIZE - 22" x 34"</div> <div>SCALE: 1/8" = 1'-0"</div> <div></div> <div>PLOTTED SIZE - 11" x 17"</div> <div>SCALE: 1/4" = 1'-0"</div> <div>MIG PROJECT No.: 11110.00</div>									<div>LAMBTON AREA WATER SUPPLY SYSTEM</div> <div>1215 FORT ST. SARNIA, ON. N7V 1M1</div> <div>OPTION 2 - MAIN FLOOR PLAN</div>				DRAWING NUMBER	
														A-101	
														REVISION	
														A	
				A	ISSUED FOR REVIEW			2019.09.17	SP					RT	RT
		NO.	REVISIONS			DATE	DRAWN	DESIGNED	CHECKED	APPROVED					

X:\Projects\11110_00_LAWSS-Public-Entrance_Barrier-Free_Upgrade_Phase\05_Drawings\02_Design\ARCH\17.09.2019\11110 LAWSS - Options.dwg sprints Sep 17, 2019 - 4:23pm