

Agenda Including Addeds Lake Huron Primary Water Supply System Joint Board of Management

The 2nd Meeting of the Lake Huron Primary Water Supply System Joint Board of Management
March 3, 2022, 2:00 PM
2022 Virtual Meeting - during the COVID-19 Emergency

	Pages
1. Call to Order	
1.1. Disclosures of Pecuniary Interest	
2. Adoption of Minutes	
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3. Consent Items	
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5. Deferred Matters/Additional Business

5.1. *(ADDED) Draft Climate Emergency Action Plan - Water Board Risks -
Councillor M. van Holst*

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6. Upcoming Meeting Dates

June 2, 2022

October 6, 2022

December 1, 2022

January 19, 2023

7. Adjournment

Lake Huron Primary Water Supply System Report

The 1st Meeting of the Lake Huron Primary Water Supply System Joint Board of Management
December 2, 2021

Attendance: Meeting held remotely on Thursday, December 2, 2021, commencing at 2:01 PM.

PRESENT: A. DeViet (Acting Chair), J. Brennan, C. Burghardt-Jesson, D. Faubert, J. Fergusson, A. Hemming, P. Walden, J. Wilcox and B. Willard and J. Bunn (Committee Clerk)

ALSO PRESENT: A. Henry and K. Scherr

1. Call to Order

1.1 Disclosures of Pecuniary Interest

That it BE NOTED that no pecuniary interests were disclosed.

2. Adoption of Minutes

2.1 Minutes of the 4th Meeting held on October 7, 2021

WILLARD AND WILCOX

That the minutes of the 4th meeting of the Lake Huron Primary Water Supply System Board of Management, held on October 7, 2021, **BE NOTED AND FILED. CARRIED**

Motion Passed

3. Consent Items

3.1 Quarterly Compliance Report (3rd Quarter 2021: July - September)

BRENNAN AND FERGUSSON

That, on the recommendation of the Chief Administrative Officer, the report dated December 2, 2021, with respect to the general, regulatory and contractual obligations of the Lake Huron Primary Water Supply System, for July to September 2021, **BE RECEIVED. CARRIED**

Motion Passed

3.2 Environmental Management System and Quality Management System

BRENNAN AND FERGUSON

That, on the recommendation of the Chief Administrative Officer, the report dated December 2, 2021, with respect to the Environmental Management System and Quality Management System for the Lake Huron Primary Water Supply System, **BE RECEIVED. CARRIED**

Motion Passed

3.3 Quarterly Operating Financial Status - 3rd Quarter 2021

BRENNAN AND FERGUSON

That, on the recommendation of the Chief Administrative Officer, the report dated December 2, 2021, with respect to the Quarterly Operating Financial Status of the Lake Huron Water Supply System, **BE RECEIVED. CARRIED**

Motion Passed

3.4 2021 and 2022 Meeting Schedule - Revised

BRENNAN AND FERGUSON

That, on the recommendation of the Chief Administrative Officer, the revised meeting schedule for the Lake Huron Primary Water Supply System Board of Management, as appended to the report dated December 2, 2021, **BE APPROVED. CARRIED**

Motion Passed

4. Items for Discussion

4.1 LH1429 Clearwell and Conduit Emergency Repairs

BURGHARDT-JESSON AND HEMMING

That, on the recommendation of the Chief Administrative Officer, the following actions be taken with respect to the report, dated December 2,

2021, with respect to LH1429 Clearwell and Conduit Emergency Repairs project:

- a) an increase to the project budget by \$165,000, for a total budget of \$725,000, **BE APPROVED**; it being noted that the funds will be provided from the Emergency Reserve Fund; and,
- b) the above-noted report **BE RECEIVED. CARRIED**

Motion Passed

4.2 LH1257 Chamber 63 Access Culvert - Tender Award

FAUBERT AND BRENNAN

That, on the recommendation of the Chief Administrative Officer, the following actions be taken with respect to the report, dated December 2, 2021, with respect to the Lake Huron Primary Water Supply System Chamber 63 Access Culvert (LH1257) project:

- a) the Board Chair and Chief Administrative Officer **BE AUTHORIZED** to execute an agreement with Premier North Ltd. for the construction of the Chamber 63 Access Culvert in the amount of \$241,006 (excluding HST);
- b) the existing engineering assignment with RV Anderson for contract administration and construction supervision services, at an estimated cost of \$37,000 (excluding HST), **BE EXTENDED**; and,
- c) the above-noted report **BE RECEIVED. CARRIED**

Motion Passed

5. Deferred Matters/Additional Business

None.

6. Next Meeting Date

March 3, 2022

7. Adjournment

The meeting adjourned at 2:15 PM.



To: Chair and Members, Board of Management
Lake Huron Primary Water Supply System

From: Kelly Scherr, P.Eng., MBA, FEC
Chief Administrative Officer

Subject: Quarterly Compliance Report (4th Quarter 2021: October - December)

RECOMMENDATION

That the Quarterly Compliance report with respect to the general, regulatory and contractual obligations of the Lake Huron Primary Water Supply System **BE RECEIVED** for the information of the Board of Management; it being noted that there were no Adverse Water Quality Incidents reported in the 4th quarter of 2021.

BACKGROUND

Pursuant to Board of Management resolution, this Compliance Report is prepared on a quarterly basis to report on general, regulatory and contractual compliance issues relating to the regional water system. For clarity, the content of this report is presented in two basic areas, namely regulatory and contractual, and does not intend to portray an order of importance or sensitivity nor a complete list of all applicable regulatory and contractual obligations.

DISCUSSION

Regulatory Issues

Recent Regulatory Changes: At the time of drafting this report, there were no new regulatory changes for this reporting period which may significantly impact the LHPWSS.

New Environmental Registry of Ontario (ERO) Postings: At the time of drafting this report, there were no new postings on the ERO that may have a significant impact on the LHPWSS.

Quarterly Water Quality Reports: The [Water Quality Quarterly Report](#) for the period of October 1 – December 31, 2021 was completed by the operating authority, and is posted on the Water Systems' website for public information.

Note: In order to better comply with the *Accessibility for Ontarians with Disabilities Act, 2005*, the detailed tables of water quality test results which were previously appended to this Report have been removed. The full list of test results of drinking water quality parameters is posted on the water system's website and available in print at the Board's Administration Office in London upon request. In addition, detailed water quality information is also published within the water system's Annual Report required by O.Reg. 170/03 under the *Safe Drinking Water Act*.



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Adverse Water Quality Incidents (AWQIs): There were no AWQI reported by the operating authority or the third-party accredited laboratory during this quarter.

Compliance Inspections: The Ministry of the Environment, Conservation and Parks (MECP) conducted a physical inspection of the LHPWSS on November 10, 2021. The final inspection report was issued by the MECP on January 21, 2022 and is the subject of a separate report to the Board.

Contractual Issues

ARTICLE 3, “Operation and Maintenance of the Facilities – General”:

Board staff informally meets with OCWA on a monthly basis to discuss operations and maintenance related issues, and formally on a quarterly basis to review contractual performance. The 2021 fourth quarter Contract Report was received from OCWA on January 28, 2022 and was scheduled to be discussed at the quarterly administration meeting between Board staff and OCWA on February 10, 2022. Copies of the monthly Operations and Maintenance Reports, and quarterly Contract Reports are available at the Board’s Administration Office in London upon request.

Prepared by: Erin McLeod, Quality Assurance & Compliance Manager

Submitted by: Andrew Henry, P. Eng.,
Director, Regional Water

Recommended by: Kelly Scherr, P.Eng., MBA, FEC
Chief Administrative Officer



To: Chair and Members, Board of Management
Lake Huron Primary Water Supply System

From: Kelly Scherr, P.Eng., MBA, FEC
Chief Administrative Officer

Subject: Environmental Management System and Quality Management System

RECOMMENDATION

That the following report with respect to the Environmental Management System and Quality Management System for the Lake Huron Primary Water Supply System **BE RECEIVED** for information.

BACKGROUND

Environmental Management System (EMS)

The Lake Huron Primary Water Supply System (LHPWSS) has an Environmental Management System (EMS) which has been registered to the ISO 14001 standard since 2003. The LHPWSS underwent a three-year registration audit in October 2020 and was recommended for registration to the ISO 14001:2015 standard for a three-year period (ending in 2023).

The continued utilization and registration of the EMS to the ISO 14001 standard is a requirement of the Service Agreement with Ontario Clean Water Agency (OCWA), the contracted Operating Authority for the LHPWSS.

Quality Management System (QMS)

In 2006, the Drinking Water Quality Management Standard (DWQMS) was integrated with the existing EMS and the combined EMS/QMS is maintained by the contracted Operating Authority. The *Safe Drinking Water Act* (SDWA) and the water system's Municipal Drinking Water License (MDWL) require that an accredited Operating Authority be in operational charge of the drinking water system. In order to become accredited, the Operating Authority must utilize and maintain an Operational Plan that meets the requirements of the DWQMS and must undergo an external accreditation audit every three years.

OCWA received full scope DWQMS re-accreditation in November 2019 and is currently accredited for the three-year period ending in 2022.

DISCUSSION

Management Review

The documented EMS/QMS and its performance requires Management Review by Top Management a minimum of once every calendar year to ensure that the management team of the Board and the Operating Authority stay informed of environmental and quality related issues. Items discussed at the Management Review meetings include, but are not limited to, water quality test results, environmental and quality performance, legislative changes, identified non-conformances, corrective and preventive actions, staff suggestions, changing circumstances and business strategies, and resource requirements. Corrective and preventive actions include not only those to address non-conformance issues and opportunities for improvement identified as part of internal and external audits, but also non-compliance issues identified by the Ministry of the Environment, Conservation and Parks (MECP), suggestions from staff, and opportunities for improvement identified during the Management Review process.

In order to carry out more effective Management Review meetings, the Board's administration has opted to conduct shorter meetings at more frequent intervals. Although each required Management Review input may not be covered at every meeting, over the course of the year all required inputs are reviewed at least once. Management Review meetings are held in a combined format for both the LHPWSS and the Elgin Area Primary Water Supply System (EAPWSS).

A Management Review meeting was held on January 25, 2022. The meeting minutes are included as [Appendix A](#) for the information of the Board.

Internal Audits

Pursuant to the international ISO 14001 EMS standard and the provincial DWQMS standard, periodic "internal" audits are performed by the Board's administration to ensure continued compliance with legislated, contractual, and other requirements, as well as conformance with the ISO 14001 EMS standard and DWQMS standard. Internal audits also ensure that the ongoing operation of the LHPWSS conforms to the EMS and QMS as implemented. As required by the standards, internal audits are performed a minimum of once every calendar year.

There were no internal audits conducted during the reporting period.

External Audits

Annual surveillance audits (third-party external audits) are conducted for both the EMS and QMS, with a recertification audit taking place every third year. The external registrar for both the EMS and QMS is currently SAI Global. External audits review all aspects of the EMS or QMS, including the scope and results of internal audits, subsequent management reviews, and corrective action processes.

The QMS surveillance audit was performed by SAI Global on November 1, 2021 and a summary of the findings is included in [Appendix B](#) of this report (full report available upon request). There were no non-conformances and one (1) opportunity for improvement identified during the audit. The opportunity for improvement is administrative in nature and relates to referencing additional procedures within the Operational Plan. The audit findings were discussed at the January 25, 2022 Management Review meeting.

The EMS surveillance audit was performed by SAI Global November 25-26, 2021 and a summary of the findings included in [Appendix C](#) of this report (full report available upon request). There were no non-conformances and six (6) opportunities for improvement identified during the audit. Two (2) findings relate to environment and compliance including external training of new compliance staff and the consideration of beach erosion as an environmental impact. One (1) finding relates to the documentation and inclusion of security in emergency procedures. Two (2) findings relate to operational controls including internal verification sign-offs and onsite contractor storage. One (1) finding relates to enhancing documentation to facilitate trending. The audit findings were discussed at the January 25, 2022 Management Review meeting.

During the EMS audit, the external auditor specifically provided positive comments about the status and success of the LHPWSS management systems. The auditor confirmed to staff during the closing meeting that, based on their national experience, the LHPWSS has successfully implemented some of the best management systems they have seen, not just within the drinking water industry but across all industries. Specifically noted was the cooperative relationship between the LHPWSS and its operating authority, and the proactive approach to identifying improvement projects.

Corrective and Preventive Actions

For the EMS/QMS to be effective on an on-going basis, an organization must have a systematic method for identifying actual and potential non-conformities, making corrections and undertaking corrective and preventive actions, preferably identifying and preventing problems before they occur. The Internal Audit process and Management Review are the two main drivers for proactively identifying potential problems and opportunities for improvement for the LHPWSS and implementing corrective actions. Preventive actions may originate from identified opportunities for improvement as part of an audit, but also staff suggestions and discussions with management.

It is important to note that action items should not be construed as **compliance failures**, but rather an action to be undertaken which will improve the LHPWSS's overall performance.

Action items are the result of the "Plan-Do-Check-Act" continual improvement process. The identification of action items is a critical component of continual improvement and an essential element of management systems. The identification of action items should be seen as a positive element, as this drives continual improvement.

A key concept of Plan-Do-Check-Act is that it does not require nor expect 100% conformance but promotes an environment of continual improvement by identifying shortfalls, implementing corrective and preventive measures, and setting objectives and targets for improvement. Figure 1 outlines the general process.

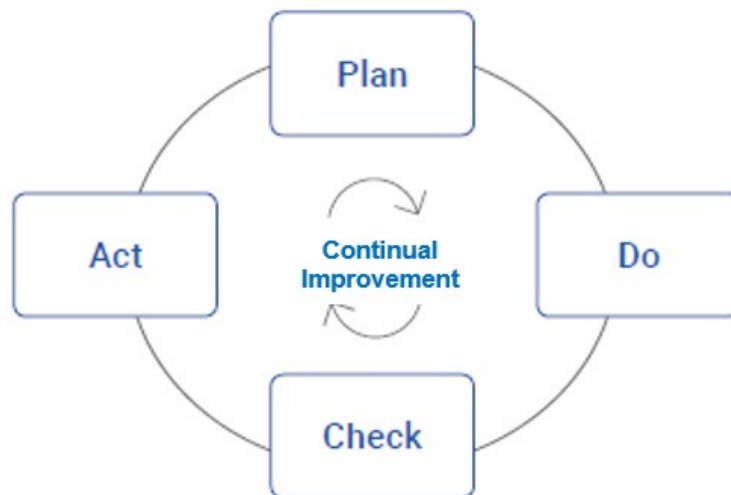


Figure 1: Plan-Do-Check-Act improvement process

Since the last report to the Board, the following summarizes new action items that have been added to the EMS/QMS action item tracking system:

- One (1) new action item was added as a result of the QMS external audit
- Six (6) new action items were added as a result of the EMS external audit
- Sixteen (16) new action items were added as a result of a QMS internal audit (presented at the previous Board meeting)
- Two (2) new action items were added as the result of an unauthorized entry at a monitoring station (Strathroy MS1) in November 2021. This was high importance and corrected with external security measures.
- Two (2) new action items were added as the result of Contingency Plan Testing

As of January 28, 2022, there are currently forty (40) open action items in the system. Action items are prioritized and addressed using a risk-based approach, and deadlines established given reasonable timeframes and resources that are available. Board staff are pleased with the performance of the corrective and preventive action process and have no concerns with the number of open action items.



CONCLUSION

The Internal Audits and frequent Management Review meetings continue to effectively identify system deficiencies. The EMS/QMS for the LHPWSS continues to be suitable, adequate and effective. Activities by OCWA continue to address the need for change, and the management systems are being revised and refined as required.

Prepared by: Erin McLeod, Quality Assurance & Compliance Manager with the assistance of Allison McGuckin, Compliance Coordinator

Submitted by: Andrew Henry, P. Eng.,
Director, Regional Water

Recommended by: Kelly Scherr, P.Eng., MBA, FEC
Chief Administrative Officer

Attachments:

[Appendix A](#) – Management Review Meeting Minutes (January 25, 2022)

[Appendix B](#) – QMS External Audit Report (November 1, 2021)

[Appendix C](#) – EMS External Audit Report (November 25-26, 2021)

APPENDIX A: MANAGEMENT REVIEW MEETING MINUTES (JANUARY 25, 2022)

Lake Huron & Elgin Area Primary Water Supply Systems EMS/QMS Management Review

Date: January 25, 2022

Time: 10:00am

Location: Virtual – Microsoft Teams

Attendees: Andrew Henry (RWS), Erin McLeod (RWS), Allison McGuckin (RWS), Blair Tully (OCWA), Denny Rodrigues (OCWA), Simon Flanagan (OCWA)

Regrets: Greg Henderson (OCWA), Randy Lieber (OCWA)

N.B.: Management Review meetings are held in a combined format for both the Lake Huron Primary Water Supply System (LHPWSS) and the Elgin Area Primary Water Supply System (EAPWSS).

-----Meeting Notes-----

1. Review and Approval of Previous Minutes (LHPWSS & EAPWSS)

The minutes from the previous meeting (September 22, 2021) are posted to SharePoint. The minutes were approved. No concerns

2. Elgin Ministry of the Environment, Conservation and Parks (MECP) Inspection Report

MECP issued the Inspection report in December 2021. It contained no non-compliance or best management practices. EAPWSS received a rating of 100%. No actions required

3. Huron MECP Inspection Report

MECP issued the Inspection report in January 2022. It contained no non-compliance or best management practices. The report card is still pending but I am confident the LHPWSS will receive a rating of 100%. No actions required

4. Elgin QMS Internal Audit (October 20-21, 2021)

Discussion occurred on all internal audit findings and the edits and updates were captured in the Elgin Corrective Action Form (CAF) Tracking Spreadsheet.

5. Huron QMS Internal Audit (October 13-14, 2021)

Discussion occurred on all internal audit findings and the edits and updates were captured in the Huron CAF Tracking Spreadsheet.

6. Elgin QMS External Audit (November 2, 2021)

There were no non-conformances and one (1) Opportunity for Improvement (OFI). Discussion occurred on this finding and the edits and updates were captured in the Elgin CAF Tracking Spreadsheet.

7. Huron QMS External Audit (November 1, 2021)

There were no non-conformances and one (1) OFI. Discussion occurred on this finding and the edits and updates were captured in the Huron CAF Tracking Spreadsheet.

8. Elgin EMS External Audit (November 4-5, 2021)

There were no non-conformances and two (2) OFI's. Discussion occurred on these findings and the edits and updates were captured in the Elgin CAF Tracking Spreadsheet.

9. Huron EMS External Audit (November 25-26, 2021)

There were no non-conformances and six (6) OFI's. Discussion occurred on these findings and the edits and updates were captured in the Huron CAF Tracking Spreadsheet.

10. Corrective Action Forms (LHPWSS & EAPWSS)

- a. Elgin – Loss of SCADA Event (June 16, 2021)
- b. Elgin – Plant Drain Flush Total Chlorine Residual Exceedance (June 21, 2021)
- c. Elgin – Raw Water Challenges (September 9, 2021)
- d. Huron – MS1 Strathroy (Neil Rd) Unauthorized Entry (November 12, 2021)

Top Management was informed that each of the above events were captured on a Corrective Action Form and included in the appropriate CAF tracking spreadsheet.

Top Management acknowledged these items and had no additional comments.

11. Contingency Plan Test (LHPWSS & EAPWSS)

- a. Elgin Loss of SCADA Event (June 16, 2021)
- b. Huron Fire Response (July 27, 2021)
- c. Huron Unauthorized Entry or Vandalism (November 12, 2021)
- d. Elgin Fire Response (January 21, 2022)

Top Management was informed that each of the above events were captured on a Contingency Plan Test Form and included in the appropriate CAF tracking spreadsheet.

Top Management acknowledged these items and had no additional comments.

12. Management of Change (EAPWSS Site Security)

The following Management of Change Forms are required/completed:

1. Completed
 - a. EAPWSS On-Site Security
 - i. Action items identified and added to the Elgin CAF tracking spreadsheet.
2. Required
 - a. EAPWSS and LHPWSS E-Logbooks
 - b. LHPWSS residuals disposal
 - i. Effective January 1, 2022, the residuals are going to South Huron Landfill
 - c. LHPWSS High Lift Pump Project
 - d. EAPWSS and LHPWSS Computerized Maintenance Management System (CMMS) change to Maximo
 - e. LHPWSS North Filtered Conduit/Clearwell Repairs
 - f. Elgin-Middlesex Pumping Station (EMPS) Ownership Reconciliation & Joint Occupancy Agreement

13. Results of Board Meetings (October 7, 2021 and December 2, 2021)

There have been 2 board meetings conducted since the last Management Review.

Oct. 7th Board Meetings

The EMS/QMS Report were received for information by each respective Board. There were no specific questions or comments on the EMS/QMS reports.

Dec. 2nd Board Meetings

The EMS/QMS Reports were received for information by each respective Board. There were no specific questions or comments on the Huron EMS/QMS report. The Elgin Board had general discussion on non-revenue water and process water losses, and customer service.

Items discussed at the Dec. 2nd Board meeting that may impact the EMS/QMS in future include: renewal of the operating contract with OCWA, EMPS joint occupancy agreement, system growth and expansion. These items will be further considered at a future EMS/QMS Management review meeting when updates to internal & external issues, and interested parties are discussed.

14. Compliance Obligations Update

[Proposed amendments to drinking water operator and water quality analyst certification regulation to address impacts of emergencies](#)

Source: Ministry of the Environment, Conservation and Parks (MECP)

Date Posted/Notice Received: December 3, 2021

Comments Due: N/A



Summary: With the rapid spread of the highly transmissible omicron variant, MECP recognizes that drinking water and wastewater systems may experience pandemic related critical staffing shortages that could impact the continuity of operations. Recent regulatory amendments were made to address potential shortages. O. Reg. 128/04 (Certification of Drinking Water System Operators and Water Quality Analysts) was amended to provide systems with temporary staffing options (e.g., use of knowledgeable non-certified persons) during an emergency that could adversely affect the operation of a system resulting in a drinking water health hazard or a significant risk to human health or the natural environment.

Potential Impacts:

None anticipated. However, if the organization takes any actions under the authority of these provisions, notification is required to MECP within 7 days.

The Operational Plan procedures that address continuity of operations/emergency scenarios are up to date.

[Guidelines for Canadian Drinking Water Quality: Dicamba](#)

Source: Health Canada

Date Posted/Notice Received: January 14, 2022

Comments Due: N/A

Summary:

The updated document establishes the maximum acceptable concentration (MAC) of 0.11 mg/L (110 µg/L) for dicamba in drinking water. Dicamba is an herbicide registered for use on lawn and turf, as well as on industrial and agricultural sites. It is not commonly found in source or drinking water in Canada, except at low levels during targeted monitoring where dicamba is being applied.

Potential Impacts: The current Ontario MAC is 0.12 mg/L. Test results for dicamba in treated water are non-detect for both the EAPWSS and LHPWSS.

[Guidelines for Canadian Drinking Water Quality: Diquat](#)

Source: Health Canada

Date Posted/Notice Received: January 21, 2022

Comments Due: N/A

Summary:

The updated document establishes the maximum acceptable concentration (MAC) of 0.05 mg/L (50 µg/L) for diquat in drinking water. Diquat is an herbicide that is deliberately applied to food crops and to water sources for weed control.

Potential Impacts: The current Ontario MAC is 0.07 mg/L. Test results for diquat in treated water are non-detected for both the EAPWSS and LHPWSS.

[Guidance on the Temperature Aspects of Drinking Water](#)

Source: Health Canada

Date Posted/Notice Received: December 24, 2021

Comments Due: N/A

Summary: The document highlights water temperature aspects that may be relevant to drinking water utilities. Water temperature affects all physical, chemical, microbiological, and biochemical processes to some extent. This, in turn, affects treatment efficacy and water



quality and can result in issues related to health-based contaminants and/or aesthetics. The document states that all water utilities should implement a risk management approach requiring a system assessment that: characterizes the water source; describes treatment barriers; highlights the conditions that can result in contamination; and identifies control measures.

Potential Impacts: None (reference material). The DWQMS Operational Plan includes a risk assessment as recommended.

[Amendments to the Director's Technical Rules made under the Clean Water Act, 2006](#)

Source: MECP

Date Posted/Notice Received: December 3, 2021

Comments Due: N/A

Summary:

MECP has updated the Director's Technical Rules for assessing vulnerability and risks under the Clean Water Act, 2006. These Technical Rules are used by source protection authorities and municipalities to help develop and implement collaborative, watershed-based assessment reports and source protection plans that protect local drinking water supplies. A supporting document contains details on the updates to the Director's Technical Rules, including the Tables of Drinking Water Threats.

Potential Impacts: None anticipated.

[Moving to a project list approach under the Environmental Assessment Act](#)

Source: MECP

Date Posted/Notice Received: November 26, 2021

Comments Due: January 25, 2022

Summary:

Recent amendments to the Environmental Assessment Act (EAA) enabled the move to a project list approach, which means that projects that require a comprehensive environmental assessment (EA) (previously known as an individual EA) will be listed in the regulation rather than being based mainly on who is proposing the project.

Under the proposal, most project types that currently require a comprehensive EA will continue to need one. Proposed changes will allow some projects to instead follow a streamlined process which will continue to ensure environmental oversight and robust consultation prior to the project being able to proceed.

Projects subject to a comprehensive EA include waste management, electricity, transit, highway, railway, waterfront, and mineral development projects.

Potential Impacts:

None anticipated.

Waterfront projects in the Great Lakes-St. Lawrence River System subject to comprehensive EA requirements, would involve establishing "works" (e.g., berm, marina, channel, island, beach, pier, wall or riprap) which alter at least 1 km of shoreline, and require at least 4ha of lakebed or riverbed to be filled.



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15. Other Business

No other business discussed.

Next Meeting: April 5, 2022

APPENDIX B: QMS SURVEILLANCE AUDIT REPORT SUMMARY (NOVEMBER 1, 2021)

Audit Type and Purpose

Surveillance Audit:

A systems desktop audit in accordance with the systems audit procedure as it applies to Full Scope accreditation. The audit also included consideration of the results of the most recent audit undertaken in accordance with this Accreditation Protocol and any of the following that have occurred after that audit including but limited to:

- a) the results of any audits undertaken in accordance with element 19 of the DWQMS V2;
- b) historical responses taken to address corrective action requests made by an Accreditation Body;
- c) the results of any management reviews undertaken in accordance with element 20 of the DWQMS V2; and,
- d) any changes to the documentation and implementation of the QMS.

Audit Objectives

The objective of the audit was to determine whether the drinking water Quality Management System (QMS) of the subject system conforms to the requirements of the Ontario Ministry of the Environment, Conservation and Parks (MECP) Drinking Water Quality Management Standard (DWQMS V2).

The audit was also intended to gather the information necessary for SAI Global to assess whether accreditation can continue or be offered or to the Operating Authority.

Audit Scope

The facilities and processes associated with the Operating Authority's QMS were objectively evaluated to obtain audit evidence and to determine a) whether the quality management activities and related results conform with DWQMS V2 requirements, and b) if they have been effectively implemented and/or maintained.

Audit Criteria:

- The Drinking Water Quality Management Standard Version 2
- Current QMS manuals, procedures and records implemented by the Operating Authority
- SAI Global Accreditation Program Handbook

Confidentiality and Documentation Requirements

The SAI Global stores their records and reports to ensure their preservation and confidentiality. Unless required by law, the SAI Global will not disclose audit records to a third party without prior written consent of the applicant. The only exception will be that the SAI Global will provide audit and corrective action reports to the Ontario Ministry of the Environment. For more information, please refer to the SAI Global Accreditation Program Handbook.

As part of the SAI Global Terms, it is necessary for you to notify SAI Global of any changes to your Quality Management System that you believe are significant enough to risk non-

conformity with DWQMS V2: For more information, please refer to the SAI Global Accreditation Program Handbook.

Review of any changes

Changes to the Operating Authority since the last audit: None

EXECUTIVE OVERVIEW

Based on the results of this surveillance system audit the management system remains effectively implemented and meets the requirements of the standard relative to the scope of certification; therefore, a recommendation for continued certification will be submitted.

Recommendation

Based on the results of this audit it has been determined that the management system is effectively implemented and maintained and meets the requirements of the standard relative to the scope of certification identified in this report; therefore, a recommendation for (continued) certification will be submitted to SAI Global review team.

Opportunities for Improvement:

The following opportunities for improvement have been identified.

- **Element 5 Document and Records Control** – There is an opportunity to ensure document control. HMC-8 was assigned to the Environmental Emergency Plan (v.3.0, 19-Jul-2017) and Critical Shortage of Staff (v.1.0, 13-Mar-2020).

It is suggested that the opportunities for improvement be considered by management to further enhance the Operating Authority's Quality Management System and performance.

Management System Documentation

The management systems operational plan(s) was reviewed and found to be in conformance with the requirements of the standard.

Management Review

Records of the most recent management review meetings were verified and found to meet the requirements of the standard. All inputs were reflected in the records and appear suitably managed as reflected by resulting actions and decisions.

Internal Audits

Internal audits are being conducted at planned intervals to ensure conformance to planned arrangements, the requirements of the standard and the established management system.

Corrective, Preventive Action & Continual Improvement Processes

The Operating Authority is implementing an effective process for the continual improvement of the management system using the quality policy, quality objectives, audit results, data analysis, the appropriate management of corrective and preventive actions and management review.

APPENDIX C: EMS SURVEILLANCE AUDIT REPORT SUMMARY (NOVEMBER 25-26, 2021)

SURVEILLANCE EXECUTIVE OVERVIEW

The objective of this audit was to determine continuing compliance of your organization's management system with the audit criteria; and its effectiveness in achieving continual improvement and system objectives

Changes to the audit plan and the reasons for the change:

No changes were made to the audit plan.

Significant issues impacting on the Audit Programme:

New RWS Compliance Coordinator – refer to 6.1.3 OFI

Site(s) description: activities/processes at each site:

Refer to scope statement above.

Interrelationship between sites (dependency):

Refer to scope statement above.

The objectives of the audit were achieved.

Overall Recommendation

The capability of the management system to meet expected outcomes:

The organization continues to demonstrate continual improvement (e.g., refer to projects outlined in the Audit Summary including proactive relationship between OCWA and RWS to identify improvements, e.g., energy team) through meeting long-term electricity and chemical usage objectives and compliance with obligations (refer to audit summary below – refer to OFI). Environmental awareness (e.g., impact on the environment) at management and operational levels is evident.

Audit recommendations are always subject to ratification by SAI Global certification authority.

For the following standard(s): ISO 14001:2015

Based on the evidence verified and findings of this audit, the management system is being managed and utilized by all employees interviewed. There is appropriate input and support

from top management. There have been no issues identified that need immediate attention although the contents of this report should be fully reviewed to determine any ongoing system improvement opportunities.

Non-Conformances (NCRs):

All the applicable requirements of the ISO 14001:2015 were audited and considered to be implemented except for the non-conformances identified below.

None identified.

Opportunities for Improvement:

The following opportunities for improvement have been identified.

- **6.1.2 Environmental aspects** – Consider including beach erosion as an environmental impact as part of the Aspects listing (in addition to relation to existing construction activities).
- **6.1.3 Compliance obligations** – Consider the use of an external party to support new Compliance Coordinator in relation to compliance:
 - i. audit services to address internal auditing backlog, and
 - ii. training for additional due diligence.
- **7.3 Awareness** – Consider emergency procedures sign-off by Security personnel and including the latter in spill exercises.
- **8.1 Operational planning and control** – There is an opportunity to review Kenadian High Lift Pump project explosive mini torch compressed gas storage.
- **8.2 Emergency preparedness and response** – There is an opportunity to ensure all fire extinguisher and spill kit inspection tags are signed off monthly (e.g., Arva, McGillivray, and Exeter).
- **10.2 Nonconformity and corrective action** – Consider, as part of Corrective Action Tracking spreadsheet addition of 'EMS / QMS Element(s)' column to facilitate corrective action / OFI analysis / trending.

It is suggested that the opportunities for improvement be considered by management to further enhance the company's Management System and performance of the business.

To: Chair and Members, Board of Management
Lake Huron Primary Water Supply System

From: Kelly Scherr, P.Eng., MBA, FEC
Chief Administrative Officer

Subject: Quarterly Operating Financial Status – 4th Quarter 2021

RECOMMENDATION

That this report regarding the Quarterly Operating Financial Status of the Lake Huron Water Supply System be **RECEIVED** by the Board of Management for information; it being noted that the financial information presented in this report is unaudited and subject to adjustments including the preparation of the financial statements and completion of the annual audit.

BACKGROUND

At the request of the Board of Management, a Financial Status Report is provided on a quarterly basis for information. The financial status provides a high-level overview of incurred expenditures and revenues on a cash-flow basis and is compared to the approved operating budget of the water supply system. All expenditures and revenues provided in this Financial Status Report are unaudited and may include accrued and/or unaccrued expenses from a previous or future fiscal year.

A high-level summary of incurred expenses and revenues for the water supply system is attached to this report as Appendix A for the fourth quarter 2021 (October 1 to December 31) as well as a comparative accumulation of expensed for the year to date.

Note: The reported expenditures and revenues may be subject to adjustments, including but not limited to corrections and entries required for the preparation of financial statements and completion of the annual audit.

DISCUSSION

For the information and reference of the Board, the following highlights of the attached summary provide a brief explanation of notable deviations from the approved budget and/or clarifications of the financial summary:

- Contracted Operating Services in the summary report reflects the total direct operating costs of the contracted operation of the water treatment and transmission system, as well as other related contracted services. The total accumulated operating costs over the year (unaudited) is higher than the same period in 2020 and is reflective of contractual increases in service agreements with the operating authority and other contracted services.
- Contracted Administrative Services in the summary report reflects the fees paid to the City of London.
- Electricity expenditures include the purchase of energy and related energy management service charges for the water system. The water system was marginally lower than the previous year largely due to energy-saving programs implemented.
- Salaries, wages and benefits expenditures include all direct labour costs for administrative staff including benefits. Variations over the same period in 2020 are attributed to annual salary adjustments, previous staff vacancies, and additional costs as a result of the pandemic.
- Administration and Other Expenses relates to various overhead operating expenses, including subscriptions and memberships, and office supplies. While the reported expenditures may be adjusted as part of the year-end process, accounting for 2022 pre-payments and other cost accounting adjustments, the costs to date marginally similar to 2020.
- Vehicles and Equipment expenditures include costs associated with vehicles, computers and office equipment for administrative staff. Anticipated 2021 year-end expenditures are anticipated to be only marginally higher than 2020.
- Purchased Services and Professional Fees largely relate to allowances for ad hoc professional consulting and legal services, security services, office lease, telephone charges, network and SCADA maintenance, printing services, and pipeline locate costs. The increased cost when compared to the same period in 2020 is largely attributed to the addition of security services introduced in late 2020, higher insurance premiums, and additional legal costs incurred by the water system related to the High-Pressure event as well as discussions related to the Joint Municipal Services Board and Municipal Services Corporation under the Municipal Act.
- Debt Principle and Interest payments occur twice per year; in the first and third quarter.

- Contributions to the Reserve Funds occur at the end of the fiscal year (fourth quarter) as part of the year-end process and in preparation for the year-end audit, where the actual contributions are the total remaining revenue in excess of expenditures. Accordingly, the amount of the anticipated contribution is currently adjusted to reflect the additional revenue and expenses incurred and may be subject to further adjustment as a result of the completion of the year-end financial statements and audit.

Prepared by: Archana Gagnier
Budget and Finance Analyst

Submitted by: Andrew Henry, P. Eng.,
Director, Regional Water Supply

Recommended by: Kelly Scherr, P.Eng., MBA, FEC
Chief Administrative Officer

Attachments: Operating Financial Status Summary – 3rd Quarter 20201

Quarterly Financial Summary Report

Lake Huron Water Supply System

4th Quarter 2021 (October 1 to December 31)

(\$,000's)

	Approved 2021 Budget	Q4-2021	2021 Year to Date	% Year to Date	Variance Year To Date	2020 Year To Date
Total Revenue	23,300	7,591	23,741	101.9%	-441	23,719
<u>Expenditures:</u>						
Contracted Operating Services	6,947	1,842	6,887	99.1%	60	6,681
Contracted Administrative Services	318	79	318	100.0%	0	306
Electricity	3,500	606	2,913	83.2%	587	2,977
Salaries, Wages, Benefits	741	254	800	108.0%	-59	692
Administration and Other Expenditures	383	5	350	91.4%	33	360
Vehicles and Equipment	46	13	51	110.9%	-5	50
Purchased Services & Professional Fees	1,210	219	1,204	99.5%	6	880
Debt Principle Payments	1,269	0	1,261	99.4%	8	1,239
Interest on Long-Term Debt	144	1	126	87.5%	18	154
Contributions to Reserve Funds	8,741	8,741	9,830	112.5%	-1,089	10,379
Total Expenditures	23,300	11,760	23,741	101.9%	-441	23,719



To: Chair and Members, Board of Management
Lake Huron Primary Water Supply System

From: Kelly Scherr, P.Eng., MBA, FEC
Chief Administrative Officer

Subject: Capital Status Report

RECOMMENDATION

That, on the recommendation of the Chief Administrative Officer, the following actions be taken with regards to Lake Huron Primary Water Supply System capital projects:

- a) That this report regarding the status of capital projects **BE RECEIVED** for information.
- b) That projects LH1105 Computerized Maintenance Management System, LH1239 Sluice Gate Repairs, LH1263 Low Lift Pump Motor Replacement, LH1271 Non-Revenue Meter and LH1385 1996 Crop Loss Monitoring be **CLOSED** with surplus funding in the approximate amount of **\$218,299** be released to the Reserve Funds: and,
- c) That projects LH1025 Bluewater Highway Property and LH1373 IT Security Upgrades be **CLOSED** with additional funding in the approximate amount of **\$139,614** be drawn from the Reserve Funds.

DISCUSSION

The Capital Project Status Report, attached to this report as Appendix A for the Board's information, provides a brief overview of the status of current capital projects for the Lake Huron Primary Water Supply System. This report is provided for the general information of the Board.

The status report is divided into four categories of projects, namely:

1. **Ongoing Projects:** This section provides a summary list of all projects which are funded by the Board through the Capital Budget, and which are currently in-progress. Board funded projects are typically for the replacement or upgrade of existing assets, the construction of new assets, or engineering studies and assessments, as approved by the Board.



Under the terms of the Service Agreement with the contracted operating authority, the Board is also required to pay for some maintenance/repair activities. The benchmark used in the operating contract is that if the value of the material and any contracted labour is over \$36,408.98 (indexed annually to inflation from the start of the contract), the project is considered Capital Maintenance and the contracted operating authority would fund the first \$36,408.98 (indexed), with the balance funded by the Board. Accordingly, the Board maintains an annual “fund” within the Board’s capital budget to pay for these projects as they arise.

- 2. Completed Projects - Release Surplus to Reserve Funds:** This section provides a summary list of all projects which are presently completed and do not require additional funds from that budgeted. Should the Board approve the closure of the listed projects, it is the recommendation of staff to release the surplus funds, if any, to the appropriate Reserve Fund.

Completed Projects – Reduce Authorized Debt: In the case where the project is funded through the issuance of a debenture, should the Board approve the closure of the listed project it is the recommendation of staff to reduce the previously authorized but unissued debt for the project(s).

- 3. Completed Projects - Additional Funding Required:** This section provides a summary list of all projects which are presently completed but require additional funds from that originally approved by the Board. Should the Board approve the closure of the listed projects, it is the recommendation of staff to provide the required additional funding from the Board’s Reserve Fund.

Prepared by: Archana Gagnier, Budget and Finance Analyst

Submitted by: Andrew Henry, P. Eng., Director, Regional Water Supply

Recommended by: Kelly Scherr, P.Eng., MBA, FEC, Chief Administrative Officer

Attachments: Appendix A - Capital Project Status Summary

APPENDIX A: CAPITAL PROJECT STATUS SUMMARY

A.1 Ongoing Capital Projects

PROJECT NO.	PROJECT	APPROVED BUDGET	EXPENDED TO DATE *	STATUS
LH1016	Huron Safety Railing Replacement	\$400,000	\$296,536	Project ongoing
LH1020	2021 Financial Plan	\$50,000	\$2,061	Project ongoing
LH1021	Huron Low Lift Pump 6 Refurbishment	\$165,000	\$32,324	Project ongoing
LH1026	RW Office Expansion & Renovation	\$200,000	\$98,292	Project ongoing
LH1106	Ilderton Meter Chamber	\$100,000	\$63,421	Project ongoing
LH1107	SCADA/PLC Software Review & Upgrade	\$500,000	\$20,757	Project ongoing
LH1204	McGillivray HVAC Replacement	\$1,750,000	\$0	Project ongoing in conjunction with LH1243
LH1207	Concrete Crack Injection	\$170,000	\$119,125	Ongoing multi-year project
LH1216	Closed Loop Chlorine Control	\$100,000	\$14,863	Project on hold pending LH1230 completion
LH1219	Filter Backwash Turbidity Meters	\$250,000	\$191,784	Project ongoing
LH1229	Security Upgrades	\$800,000	\$566,036	Project ongoing
LH1230	High Lift Pump Replacement	\$13,557,000	\$5,401,576	Project ongoing
LH1232	Arva Victaulic Repair	\$175,000	\$45,565	Project ongoing
LH1242	Hydraulic/Transient Model Update and Monitoring	\$440,000	\$214,704	Project ongoing
LH1243	McGillivray Electrical Upgrades	\$5,885,000	\$84,868	Project ongoing
LH1245	Walking Beam Flocculator Rehab	\$200,000	\$0	Project to be initiated



PROJECT NO.	PROJECT	APPROVED BUDGET	EXPENDED TO DATE *	STATUS
LH1246	LL Building – Curtain Wall/Clearstory Window Replacement	\$375,000	\$0	Project to be initiated
LH1251	PAC Feed/Transfer Pump System Replacement	\$100,000	\$0	Project to be initiated
LH1255	Crop Yield Monitoring – 2012 Rupture	\$110,000	\$100,469	Project ongoing
LH1256	Crop Yield Monitoring – 2014 Pipeline Twinning	\$1,500,000	\$58,141	Project ongoing
LH1257	Chamber 63 Access Culvert	\$405,000	\$61,485	Project ongoing
LH1258	McGillivray Control Panel Replacement	\$150,000	\$22,564	Project ongoing
LH1260	Flash Mixer Upgrade	\$1,437,000	\$990,892	Project ongoing
LH1261	PLC Replacements	\$40,000	\$0	Project ongoing
LH1264	Vehicle Door Replacements	\$225,000	\$143,168	Project ongoing
LH1265	RMF Settling Tank Repairs	\$85,000	\$68,756	Project ongoing
LH1266	Huron Plant UV Disinfection	\$1,200,000	\$0	Project on hold pending LH1426 outcome
LH1267	Plant Interior Door Replacement	\$60,000	\$23,415	Project ongoing
LH1268	Obsolete Equipment Removal	\$150,000	\$81,494	Project ongoing
LH1269	Settled Water TSS Analyzer	\$75,000	\$45,070	Project ongoing
LH1270	Interior LED Lighting Upgrades	\$150,000	\$101,658	Project ongoing
LH1272	Service Water Pipe Replacement	\$75,000	\$74,001	Annual program



PROJECT NO.	PROJECT	APPROVED BUDGET	EXPENDED TO DATE *	STATUS
LH1273	(PS3) Exeter-Hensall Pump Control Upgrades	\$100,000	\$7,441	Project ongoing
LH1274	SCADA Control Modifications	\$100,000	\$2,160	Project ongoing
LH1276	Backwash Check Valve	\$200,000	\$189,421	Project ongoing
LH1277	IT Asset Replacement Program	\$425,000	\$210,234	Project ongoing
LH1278	Safety Showers Upgrade	\$60,000	\$49,653	Project ongoing
LH1279	Cyber Intrusion Detection System	\$10,000	\$0	Project ongoing
LH1284	Huron Flocc Gear Drive	\$225,000	\$117,803	Project ongoing
LH1303	Easement Maintenance	\$185,000	\$191,917	Project ongoing
LH1316-21	Annual Maintenance (2021)	\$125,000	\$56,756	Annual program
LH1317	Distressed Pipe Replacement	\$1,750,000	\$593,562	Project ongoing
LH1327	Strathroy Transmission Main	\$22,000,000	\$14,838,658	Project complete. Final Invoice to be issued.
LH1338	Huron WTP Instrumentation	\$885,000	\$845,639	Annual program
LH1347	Pipeline Chamber Upgrades	\$500,000	\$481,858	Project ongoing
LH1353	WTP Modifications	\$350,000	\$156,440	Multi-year project
LH1380	Clarifier Upgrades	\$235,000	\$91,801	Project ongoing
LH1388	Coagulation Optimization Study	\$50,000	\$0	Project on hold
LH1425	Huron Erosion Control	\$1,250,000	\$1,186,765	Project complete warranty ends in April 2022



Lake Huron
Primary Water Supply System

Report No.: LH-2022-01-04

Report Page: 6 of 7

Meeting Date: March 3, 2022

File No.:

PROJECT NO.	PROJECT	APPROVED BUDGET	EXPENDED TO DATE *	STATUS
LH1426	Microbial Inactivation and Storage EA	\$500,000	\$189,672	Project ongoing
LH1429	South Water Conduit Emergency Repairs	\$725,000	\$357,576	Project ongoing
LH1433	Asset Management Plan 2021	\$150,000	\$61,847	Project ongoing
LH1900	Record Drawings & Documents	\$491,000	\$404,207	Ongoing multi-year project
LH1901	Water Quality Facility Plan	\$290,000	\$0	Project to be initiated
LH2036	Roof Drain Replacement	\$50,000	\$0	Project to be initiated
LH2037	Hydrant Replacement	\$50,000	\$0	Project to be initiated
LH2038	Chamber Flood Prevention/Rehab	\$100,000	\$0	Project to be initiated
LH2039	Arva 600V MCC	\$50,000	\$0	Project to be initiated
LH2040	Remote Site Generator Connections	\$20,000	\$0	Project to be initiated
LH2041	Plant Roof Replacement	\$110,000	\$0	Project to be initiated
LH2042	Pipeline-A Double Isolation Valve	\$1,247,000	\$0	Project to be initiated
LH2043	Construction Site Trailer Pad & Electrical	\$75,000	\$0	Project to be initiated
TOTAL		\$63,187,000	\$28,956,435	



A.2(a) Completed Projects – Release Surplus to Reserve Funds (\$218,299)

PROJECT NO.	PROJECT	APPROVED BUDGET	EXPENDED TO DATE *	STATUS
LH1105	Computerized Maintenance Management System	\$180,000	\$179,930	Project completed
LH1239	Sluice Gate Repairs	\$150,000	\$135,087	Project completed
LH1263	LLP Motor Replacement	\$475,000	\$408,013	Project completed
LH1271	Non-Revenue Meter Replacement	\$75,000	\$55,528	Project completed
LH1385	1996 Crop Yield Monitoring	\$450,000	\$333,143	Project completed
TOTAL		\$1,330,000	\$1,111,701	

A.2(b) Completed Projects – Reduce Authorized Debt

PROJECT NO.	PROJECT	APPROVED BUDGET	EXPENDED TO DATE *	STATUS
TOTAL		\$ 0	\$ 0	

A.3 Completed Projects – Additional Funding Required (\$139,614)

PROJECT NO.	PROJECT	APPROVED BUDGET	EXPENDED TO DATE *	STATUS
LH1025	Bluewater Hwy Property Purchase	\$600,000	\$681,303	Project completed
LH1373	IT Upgrades	\$750,000	\$808,311	Project completed
TOTAL		\$1,350,000	\$1,489,614	

Notes:

* Expended as of December 31, 2021

To: Chair and Members, Board of Management
Lake Huron Primary Water Supply System

From: Kelly Scherr, P.Eng., MBA, FEC
Chief Administrative Officer

Subject: Ministry of the Environment, Conservation and Parks Inspection Report

RECOMMENDATION

That this report with respect to the Ministry of the Environment, Conservation and Parks (MECP) annual inspection **BE RECEIVED** for the information of the Board of Management.

BACKGROUND

The Ministry of the Environment, Conservation and Parks (MECP) conducts an inspection of the Lake Huron Primary Water Supply System (LHPWSS) annually. The objective of the inspection is to determine the compliance of the drinking water system with specified requirements under the *Safe Drinking Water Act* and associated regulations, as well as licences and permits issued by the MECP. An inspection report is issued by the MECP which outlines any non-compliances as well as recommended best management practices for the water system's consideration.

Violations identified within an inspection report, if any, have been evaluated by the MECP based on the potential and degree of risk to consumers. Any identified violations are monitored for compliance with the minimum standards for drinking water in Ontario as set forth under the *Safe Drinking Water Act* and associated regulations. Where risk is deemed to be high and/or compliance is an ongoing concern, violations are forwarded to the Ministry's Investigation and Enforcement Branch by the MECP Inspector.

DISCUSSION

Inspection Findings

The MECP conducted an announced "detailed" physical inspection of the LHPWSS on November 10, 2021. The final inspection report was issued by the MECP on January 21, 2022. The inspection covered the period from November 1, 2020 through October 31, 2021.

The final inspection report issued by the MECP did not contain any non-compliances, and no recommended best management practices were identified by the Ministry Inspector. No action is required by either the operating authority or owner. The Inspection Rating Report (IRR) is no longer issued with the final inspection report and will be provided by the MECP in a few months. Given that there were no non-compliances identified, the final inspection rating is anticipated to be 100.00% for the inspection period.

Due to the length of the Ministry’s final inspection report, this Board report contains a summary only for the general information of the Board. Copies of the complete inspection report as issued by the MECP are available to the Board, the benefiting municipalities, and the public at large from Board staff at the Regional Water Supply office in London upon request.

It is noted for the Board’s information and reference that these annual inspection reports were previously posted to the water systems’ website for ease of public access. Unfortunately, the Inspection Report issued by the MECP does not comply with the *Accessibility for Ontarians with Disabilities Act*. As a result, previous inspection reports have been removed from the water systems’ website. This and future annual inspection reports issued by the Ministry will only be made available upon request until such time as the Ministry makes the document compliant with the Act.

Risk Rating

The MECP applies a risk rating methodology to establish an annual inspection rating. Any non-compliance identified in the inspection report is evaluated based on the potential to compromise the delivery of safe drinking water to the public. For example, a “failure to document” may have a relatively low risk to the consumer, whereas a “failure to disinfect” would have a relatively high risk. The primary goal of this type of assessment is to encourage ongoing improvement and to establish a way to measure improvement, which is weighted by the severity of the risk. A low inspection rating does not necessarily mean that drinking water is unsafe, but rather it is an indication of the degree to which there is room for improvement with respect to a drinking water system’s operation and related administrative activities.

This methodology of risk assessment and rating has been used consistently by the MECP since the 2008-2009 inspection period, and therefore can serve as a comparative measure both provincially and specifically to the LHPWSS since that time. The methodology utilized for annual inspections is reviewed by the MECP every three years. If changes occur in the application of the methodology and risk ratings, ratings from one three-year period may be slightly inconsistent with another.

The following table outlines inspection ratings for the LHPWSS over the last five years:

Inspection Year	Final Inspection Rating	# of Non-compliances	Type of Inspection	Operating Authority
2017-2018	90.71%	2	Focused	OCWA
2018-2019	100.00%	0	Detailed	OCWA
2019-2020	93.25%	2	Detailed	OCWA
2020-2021	100.00%	0	Detailed	OCWA
2021-2022	100.00%	0	Detailed	OCWA



Correspondence and Communications

Prior to issuing the final inspection report, the MECP issues a draft copy to the owner-representative and operating authority, providing the opportunity to comment or request clarification on the findings. As no non-compliances or recommended best practices were identified, neither OCWA nor Board staff submitted formal comments.

CONCLUSION

The MECP inspection report has indicated that all requirements of applicable legislation for the LHPWSS were met for this inspection period. Board staff will continue to discuss any inspection findings with the MECP Regional Office to ensure that inspection findings are consistent, appropriate and relevant to the LHPWSS.

Prepared by: Erin McLeod, Quality Assurance & Compliance Manager

Submitted by: Andrew Henry, P. Eng.,
Director, Regional Water Supply

Recommended by: Kelly Scherr, P.Eng., MBA, FEC
Chief Administrative Officer

To: Chair and Members, Board of Management
Lake Huron Primary Water Supply System

From: Kelly Scherr, P.Eng., MBA, FEC
Chief Administrative Officer

Subject: Asset Management Plan - Levels of Service Framework

RECOMMENDATION

That the following actions be taken with regards to Asset Management Plan Levels of Service Framework for the Lake Huron Primary Water Supply System:

- a) The Board of Management for the Lake Huron Primary Water Supply System **ENDORSE** the Asset Management Plan Levels of Service Framework as presented in this report; and,
- b) The Board of Management for the Lake Huron Primary Water Supply System **RECEIVE** this report regarding the Asset Management Plan Levels of Service Framework for information.

PREVIOUS AND RELATED REPORTS

October 2, 2014 Asset Management – Level of Service and Risk Management

December 3, 2020 Asset Management Maturity Assessment and Roadmap

March 4, 2021 Asset Management – Roadmap and Plan Update

October 7, 2021 Asset Management Policy and Asset Management Plan Update

BACKGROUND

The Board previously endorsed the Asset Management Policy at its meeting on October 7, 2021, and the current Level of Service and Risk Management framework on October 2, 2014.

As part of the Asset Management Plan update, Board staff reviewed the 2014 Levels of Service (LOS) Framework and identified proposed revisions to update the LOS framework to be in alignment with global best practice standards for Asset Management such as ISO (International Organization for Standardization) 55000.

The guiding principles from the Asset Management Policy that relate to the LOS Framework include:

- **Service Delivery:** Service delivery is the key purpose of infrastructure assets. Decision-making should be focused on delivering defined levels of service that reflect customer expectations and balance risk and affordability.



- **Environmentally Conscious:** The utility shall minimize the impact of infrastructure on the environment and address the vulnerabilities and risks caused by climate change through lifecycle management. This includes energy and resource optimization, meeting environmental standards such as ISO 14001 in our operation, considering end of product life disposal or reuse options, and whole lifecycle considerations at the time of repair, replacement or new build.

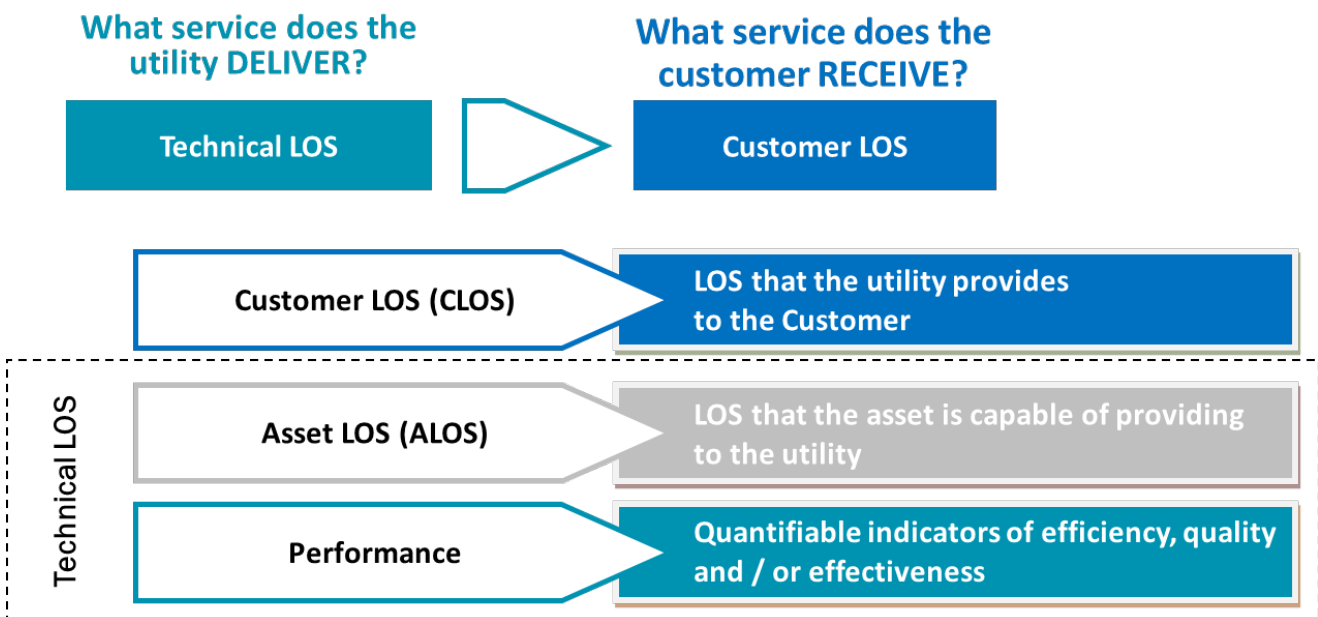
DISCUSSION

Asset management is the coordinated activity of the utility to realize value from its assets.

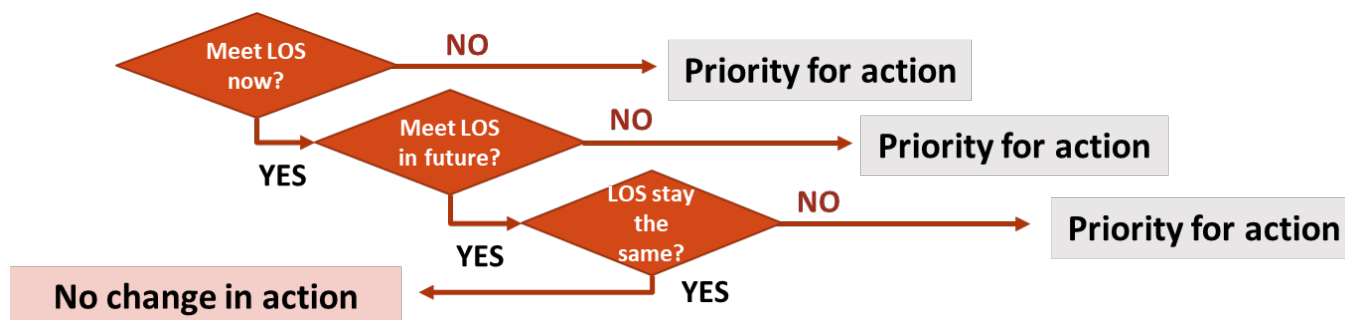
Since the 2014 LOS framework was originally endorsed, there have been much advancement and maturity in asset management practices, including a new international standard (ISO 55000). For example, the terminology related to Levels of Service (LOS) identified ten “parameters” for consideration, which was previously called “values”.

Level of Service is defined in ISO 55000 as **the parameter, or a combination of parameters, that reflect the social, political, environmental and economic outcomes that the organization delivers**. The parameters can include safety, customer satisfaction, quality, quantity, capacity, reliability, responsiveness, environmental acceptability, cost, and availability.

In the figure below, the **Customer LOS** is defined as what service the customer receives while the **Technical LOS** is defined as what service the utility delivers. The Technical LOS is further measured by a combination of what level of service the asset is capable of providing as well as the current operational performance of the assets.



The purpose of setting targets for LOS is to define the objectives of the utility. Levels of Service are the service performance targets for the utility and used in the utility’s decision-making process for operational activities and asset investments. These targets will be measured on a regular basis and any gaps in meeting the established LOS become a priority for action. See the flow chart for decision making in the figure below.



In Asset Management, risk is the “effect of uncertainty on objectives”. Asset risk is any issue preventing you in achieving the target Levels of Service. Establishing clearly defined objectives in the Levels of Service for the utility is a foundational practice in asset management. Not only does it help to communicate expectations to the utility’s customers, but it also provides clarity in risk management for the utility to prioritize actions, including financial investments in infrastructure. Priorities are quantified by the size of the gaps between target LOS and current and future risks.

In the review of the current framework, and when considering the ISO 55000 guidance in alignment with the new Asset Management Policy, the following three Level of Service parameters and associated objectives were identified by Board staff that reflects the outcomes that the utility delivers:

- **Quality:**
 - to provide drinking water quality that meets or is superior to regulatory requirements.
- **Availability/Reliability:**
 - to deliver water to customers when demanded
 - to provide resilient water production
 - to provide safe and secure operations
- **Environmental Acceptability:**
 - to minimize water system impacts on the environment
 - to detect changes in source water quality and environmental impacts that affect the water system

In Appendix A, each LOS parameter is presented along with its associated objective(s), the Customer and Technical LOS, and proposed target(s).



Once the Asset Management Plan is finalized, it is the intent of Board staff to provide the Board with periodic updates on the effectiveness of the Asset Management strategy in the form of the **State of Infrastructure Report**, along with a high-level summary of Levels of Service actually delivered compared with the established targets. The LOS targets, intended to be goals for the organization, are subject to further refinement in future reports to the Board.

CONCLUSION

By endorsing the updated Level of Service Framework in accordance with the new Asset Management Policy and in alignment with ISO 55000 standard, the Water Board continues to advance asset management practices at the utility. The revised Level of Service Framework will inform the ongoing updates to the Asset Management Plan that will be presented at a future Water Board meeting.

This report was written with the assistance of Ryan Armstrong, Asset Management Coordinator, Regional Water Supply and Dillon Consulting Limited.

Prepared by: Billy Haklander, P.Eng., LL.M
Capital Programs Manager, Regional Water Supply

Submitted by: Andrew Henry, P. Eng.,
Director, Regional Water Supply

Recommended by: Kelly Scherr, P.Eng., MBA, FEC
Chief Administrative Officer

Attachments: Appendix A – 1: LOS – Quality
Appendix A – 2: LOS – Availability/Reliability
Appendix A – 3: LOS – Environmental Acceptability

APPENDIX A - 1: LEVEL OF SERVICE (QUALITY)

Objective	Customer Level of Service	Technical Level of Service	Target
Provide drinking water quality that meets or is superior to regulatory requirements	Meet target of no adverse water quality incidents	# of adverse water quality incidents	0
	Satisfy MECP regulatory compliance requirements	# of non-compliances identified in MECP inspection reports	0
		MECP Inspection score	100%
	Satisfy Superior Water Performance Criteria	# of superior water performance criteria met (Schedule B)	9 of 9
	Meet Plant Maintenance/ Performance Requirements	Planned maintenance completed in month scheduled	100%
		Preventative maintenance covered by Standard Operating Procedure (SOP) completed	100%
		Condition of critical assets maintained at good or very good	100%
		Chemical supply availability	100%

MECP: Ministry of the Environment, Conservation and Parks

Superior water performance criteria (Schedule B of the operating agreement) include:

- Turbidity
- Total Aluminum
- pH
- Primary & Secondary disinfection
- Free Chlorine Residuals
- THMs
- HAAs
- Geosmin
- Microbiological (E. coli & total coliforms)

APPENDIX A - 2: LEVEL OF SERVICE (AVAILABILITY/RELIABILITY)

Objective(s)	Customer Level of Service	Technical Level of Service	Target
Deliver water to customers when demanded	Measurable flow when customer connection is open	# of service interruptions where duration exceeds commitments of the Water Supply Agreements	0
		% of time reservoirs are above low level	100%
Water Production is Resilient	Chemical working volume greater than demand	# inventory days > delivery period	100%
	Power supply greater than peak demand	Peak energy usage < rated capacity	100%
	Assets operate with % reserve capacity	Peak hour production < rated capacity + emergency strategic allowance by %	100%
Intake capacity is available (observed lake level within design min)		100%	
Safe and Secure Operations	Physical Security	# of physical security incidents	0
	Computational (IT, IAS) Security	# of unpatched vulnerabilities of critical or high severity (based on CVSS ratings)	0
		% of unidentified devices (not included in asset inventory)	0
		# of cyber security incidents	0

IT: Information Technology

IAS: Intelligent Autonomous Systems

CVSS: Common Vulnerability Scoring System

APPENDIX A - 3: LEVEL OF SERVICE (ENVIRONMENTAL ACCEPTABILITY)

Objective(s)	Customer Level of Service	Technical Level of Service	Target	
Minimize water system impacts on the environment	Environmental sustainability best practices	Energy intensity (ekWh/ML treated)	= < baseline	
		Energy efficiency (kWh/ML treated)	= < baseline	
		Total GHG emissions (Kg/ML treated)	= < baseline	
		Backup generator use (total # hr runtime/# hr of planned routine maintenance)	1	
		Improve chemical efficiency (kg chemicals/ML treated)	= < baseline	
		% Process Water Loss (compare treated water leaving plant with raw water coming into plant)	5% or less	
		% Non-Revenue Water Loss (compare water invoiced with treated water leaving plant)	5% or less	
		Solids landfilled from Residuals Management Facility (m3 solids landfilled/ML treated/yr)	= < baseline	
	Meet other regulatory compliance requirements	Chlorine residual in discharge water (# of non-compliances)	0	
		TSS Discharge (# of non-compliances)	0	
		# of reportable spills to Spills Action Centre	0	
		# of non-compliance in permit to take water reports	0	
	Detect changes in source water quality and environmental impacts that affect the water system	Operations and services are continuous	# of incidents where source water quality is outside normal operating range (e.g., dissolved oxygen, turbidity, presence of cyanobacteria) (Note 1)	0
			Progress on implementation of Climate Change Vulnerability Assessment projects	on schedule

Note 1: This target relates to the asset LOS (i.e., system design) and early detection of any changes in source water quality is a leading indicator for asset management strategies, such as adjustments to Standard Operating Procedures (SOP) and/or upgrades to assets or processes.



To: Chair and Members, Board of Management
Lake Huron Primary Water Supply System
From: Kelly Scherr, P.Eng., MBA, FEC
Chief Administrative Officer
Subject: Oneida Nation of the Thames Water Supply

RECOMMENDATION

That, on the recommendation of the Chief Administrative Officer, the Board of Management for the Lake Huron Water Supply System take the following actions:

- a) That the Board of Management for the Lake Huron Water Supply System **ENDORSE** the request by the Oneida Nation of the Thames to connect to the Lake Huron Water Supply System;
- b) That the Board of Management for the Lake Huron Water Supply System **AUTHORIZE** Board staff to enter into discussions with the Oneida Nation of the Thames for the purpose of negotiating a Water Supply Agreement;
- c) That the Board of Management for the Lake Huron Water Supply System **AUTHORIZE** Board staff to undertake necessary administrative activities with the Oneida Nation of the Thames and Indigenous Services Canada, if and as required, for the coordination and planning for the connection; and,
- d) That the Board of Management for the Lake Huron Water Supply System **RECEIVE** this report for information.

PREVIOUS AND RELATED REPORTS

None

BACKGROUND

The Oneida Nation of the Thames (Oneida Nation), whose community is located immediately west of the city of London, has been under a long-term boil water advisory since 2019 and intermittently before 2019. In response, Oneida Nation engaged First Nations Engineering Services Ltd. to undertake a Water Feasibility Study to assess reasonable options available to Oneida Nation to address the 20-year needs of the community.

The current population of the community is 2,225 with a projected population of 3,236 by 2041.

The community’s existing water supply is comprised of an infiltration gallery beneath the east bank of the Thames River, a low lift pump station and control building, a greensand filter treatment plant with pre-chlorination, sodium hypochlorite disinfection, and an elevated storage reservoir.

In addition to recommended modifications and upgrades to the Oneida Nation distribution system, the feasibility study undertaken included an assessment of various supply-related alternatives, including but not limited to:

- The implementation and utilization of holding tanks and trucked water;
- Upgrades to the existing infiltration gallery and water treatment facilities;
- The construction of a new water treatment plant;
- A connection to either the Lake Huron Water Supply system; and,
- A connection to the Elgin Area Water Supply System via Southwold Township

The current (2021) maximum day demand and average day demand of the Oneida Nation community is 2,182 cubic meters per day and 873 cubic meters per day, respectively.

DISCUSSION

The Water Feasibility Study undertaken by Oneida Nation, in part, concluded and recommended a connection to the Lake Huron Water Supply System as the best alternative for the long-term water supply to the community. Accordingly, Oneida Nation has requested to connect to the Lake Huron Water Supply System. The endorsement of the request by the Board of Management is necessary for Oneida Nation to undertake further discussions and submission of the funding application to Indigenous Services Canada.

Proposed Connection

Given the location of the Oneida Nation community, it is proposed that the existing transmission pipeline, which currently terminates at community of Mount Brydges, be extended west along Glendon Drive and then a route southerly to a connection point located near Muncey Road and Jubilee Drive.

The anticipated pipeline route as projected in Oneida Nation's Water Feasibility Study, attached to this report, illustrates a possible route for the proposed connection to the Oneida Nation community. The final route selected will be dependent upon further consultations during the preliminary design.

The existing transmission pipeline, which currently services the communities of Kilworth, Komoka and Mount Brydges from a pump station located at the Terminal Reservoir near the village of Arva, was originally designed to accommodate a possible future to Southwest Middlesex and service as far as Glencoe. The addition of Oneida Nation will not adversely impact the designed future capacity of the transmission pipeline given that the relative sizes of the communities are well within the design limitations of the existing transmission pipeline.

Oneida Nation anticipates that it will be undertaking the design of necessary modifications and upgrades to the Oneida Nation water distribution system starting in the spring of 2022 in preparation for construction in 2023.

The design, construction, and operation of the connecting water transmission pipeline and associated appurtenances by the Lake Huron Water Supply System would be subject to entering into a Water Supply Agreement with Oneida Nation. Once the Water Supply Agreement has been approved and signed by all parties, Board staff can expedite the procurement of necessary services for the engineering design and construction of the transmission pipeline and connection to the Oneida Nation water distribution system.

Water Supply Agreement

When a municipality requests to connect to the regional water system, the standard approach for the Lake Huron Water Supply System is to enter into a Water Supply Agreement with the municipality. The Water Supply Agreement undertakes to clarify and clearly identify roles and responsibilities related to such things as:

- Duties and obligations of the Lake Huron system in providing water to the community, including water quality, quantity, flow control, operation and maintenance, and monthly reporting
- Duties and obligations of the connecting community, including access to Huron-owned infrastructure, as well as payment for water supplied to the community
- Mutual indemnifications between the Lake Huron system and the connecting community, consequential damages, and uncontrollable circumstances

The Water Supply Agreement would further stipulate that the connecting municipality would be responsible for paying to the Lake Huron Water Supply System:

- Costs associated with the construction of any transmission pipeline and associated appurtenances required to connect to the water distribution system of the municipality; and,
- A buy-in charge is reflective of the immediate utilization of existing assets in the municipality's maximum day of usage. The buy-in charge currently approved by the Board is \$441 per cubic meter of the maximum day consumption.

The feasibility study completed by Oneida Nation estimates the capital cost of the transmission pipeline and connection at approximately \$20.6 million.

Benefiting Communities

The focus of this report to the Board, and the related water supply connection, is primarily focused on the request to supply Oneida Nation with drinking water supplied by the Lake Huron Water Supply System. Notwithstanding, and once the overall project is approved, there may be an opportunity for other communities along and near the selected route to connect either immediately or some at some point in the future. Depending on the final route selected, potential beneficiary communities may include Melbourne, Christina, Middlemiss, Chippewas of the Thames First Nation, and Munsee Delaware Nation.



Once the Water Supply Agreement is approved, Board staff will begin preliminary design activities including approaching nearby municipalities and communities to determine their interest in a possible connection to the proposed pipeline. If additional municipalities choose to commit to a connection, immediately or in future, the total cost of the pipeline construction project would be allocated between the beneficiaries.

Appointment of Board Members

Each benefiting municipality of the Lake Huron Water Supply System is entitled to appoint a Member or Members to the Board of Management, pursuant to the Transfer Order issued by the Province of Ontario and the subsequent amending Bylaw approved by the Board. Further, the Board is entitled to alter the number of Board Members and related governance should additional communities join the regional water system.

Contingent on Oneida Nation executing a Water Supply Agreement, and subject to the consent of Oneida Nation, the appointment of Board Members can be altered by bylaw to include the appointment of a Member by Oneida Nation. This will be the subject of a future report to the Board.

CONCLUSION

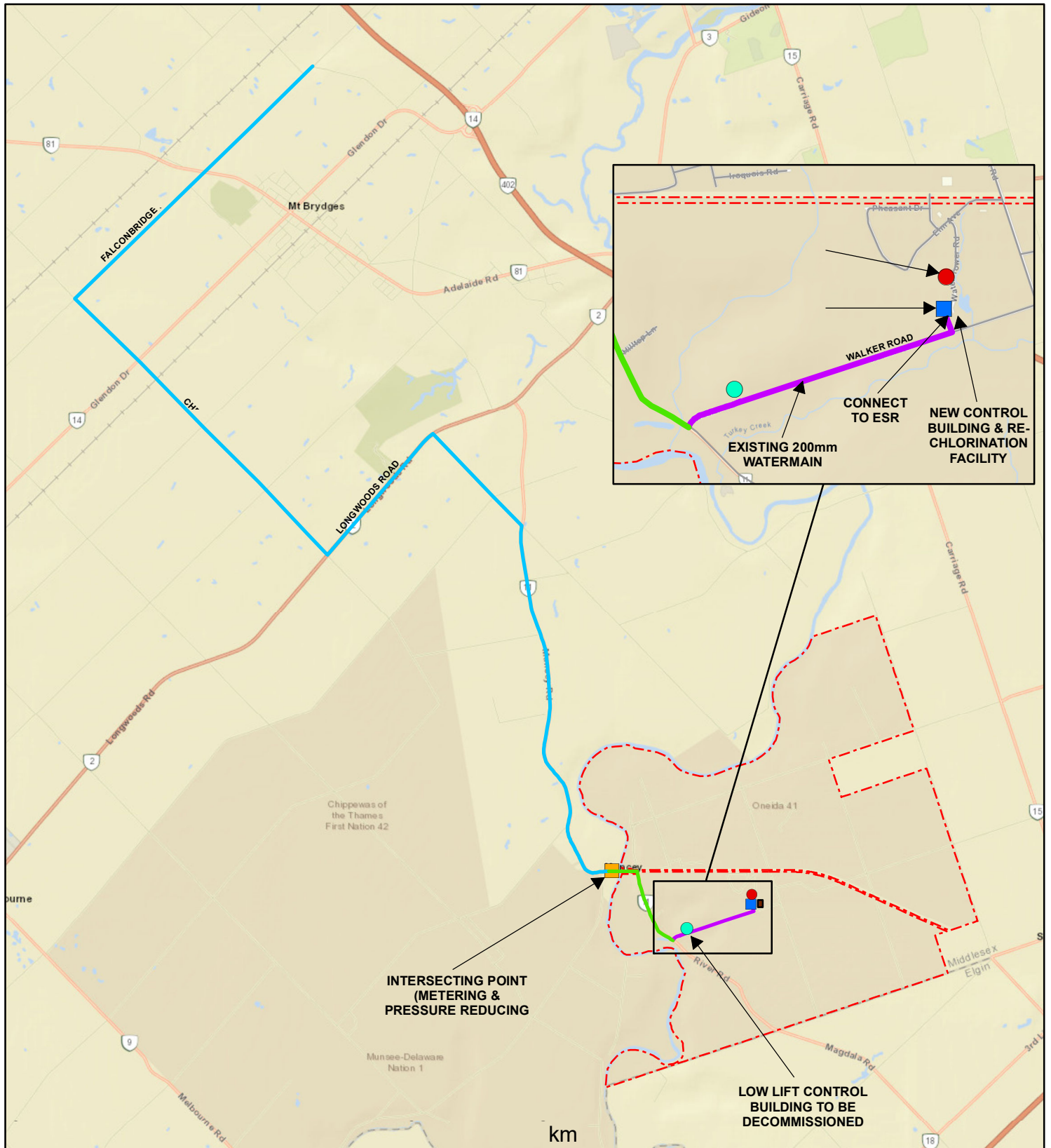
This endeavour is a significant initiative of Oneida Nation, and Board staff believe that it is in the best interest of the Lake Huron Water Supply System to facilitate the planning and construction of the related infrastructure. As a necessary first step, Board staff are please to recommend the endorsement of the request to supply drinking water to Oneida Nation from the Lake Huron Water Supply System.

In order facilitate the process, it is further recommended that a Water Supply Agreement be negotiated with Oneida Nation and presented to the Board at a future meeting for approval. Once all parties have approved and signed the Water Supply Agreement, Board staff can undertake necessary activities for the design, construction and operation of a new transmission pipeline to Oneida Nation, including the coordination of activities with Oneida Nation and Indigenous Services Canada.

Submitted by: Andrew Henry, P. Eng.,
Director, Regional Water Supply

Recommended by: Kelly Scherr, P.Eng., MBA, FEC
Chief Administrative Officer

Attachments: Lake Huron Supply MTSA Route, First Nations Engineering Services Inc.



LEGEND

- Oneida Nation of The Thames
- Oneida Nation MTSA Route
- Off-Reserve MTSA Route
- Existing 200mm Watermain
- Water Treatment Plant
- Elevated Storage Reservoir
- Low Lift Control Building

Date: 2021-04-20
Revision: 1
Drawn By: MB Checked By: JP
<div style="display: flex; align-items: center; justify-content: center;"> 48 <div style="text-align: center;"> N 48 </div> </div>

Title: LAKE HURON SUPPLY MTSA ROUTE	
Project No: 40061	Figure: 5.2
Project: Water Feasibility Study	
Client: ONEIDA NATION OF THE THAMES	



RE: CEAP Risks

Dear Colleagues,

Page A-56 of London's Draft Climate Emergency Action Plan mentions the following risks associated with the regional water supply under Area of Focus 8 - Adapting and Making London More Resilient:

*“London's drinking water is supplied from both Lake Huron and Lake Erie. This dual supply gives London built-in resiliency; however, London's distance from these supplies is also a key vulnerability. The City's drinking water travels 50km from Lake Huron and 25km from Lake Erie before entering the City's water system. The supply relies on treatment plants, large pumps, and an underground network of large water mains that are **susceptible to disruption during extreme weather events**. Although significant redundancies are built into the system, climate change driven extreme events pose a risk to the City of London's drinking water supply.”*

*“Climate change can also impact the quality of the raw water taken from Lake Huron and Lake Erie. Large storms can trigger a sudden decrease of the quality of the raw water making the water more difficult to treat. Increasing large storm events **can cause temporary interruptions to the City's water supply**.”*

Should we therefore request that staff prepare a report to address these potential disruptions and interruptions? If so, I could suggest the following motion:

That staff BE DIRECTED to prepare a report to address the potential disruptions and interruptions to the water supply mentioned in the City of London's Draft Climate Emergency Action Plan.

Sincerely,

Michael van Holst