

Agenda

Lake Huron Primary Water Supply System

Joint Board of Management

2nd Meeting of the Lake Huron Primary Water Supply System Joint Board of Management

March 4, 2021, 2:00 PM

Virtual Meeting - during the COVID-19 Emergency

City Hall is open to the public, with reduced capacity and physical distancing requirements.

	Pages
1. Call to Order	
1.1. Disclosures of Pecuniary Interest	
2. Adoption of Minutes	
2.1. Minutes of the 1st Meeting held on Thursday, December 3, 2020	3
3. Consent Items	
3.1. Kelly Scherr, Chief Administrative Officer - Quarterly Compliance Report (4th Quarter 2020: October - December)	7
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4. Items for Discussion	
4.1. Kelly Scherr, Chief Administrative Officer - Operations and Maintenance Services Agreement - Negotiation of Term Extension	52

4.2. Kelly Scherr, Chief Administrative Officer - LH1230 Huron High Lift Pump Replacements - Tender Award

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5. Deferred Matters/Additional Business

6. Upcoming Meeting Dates

June 3, 2021

October 7, 2021

December 2, 2021

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 3, 2020

Attendance: Meeting held remotely on Thursday, December 3, 2020, commencing at 2:01 PM.

PRESENT: M. van Holst (Chair), C. Burghardt-Jesson, A. DeViet, D. Faubert, J. Fergusson, A. Hemming, S. Hillier, S. Lehman, J. Vanderheyden, P. van Meerbergen, P. Walden, J. Wilcox and B. Willard and J. Bunn (Committee Clerk)

ALSO PRESENT: R. Aycock, A. Henry, H. Lysynski and K. Scherr

1. Call to Order

1.1 Disclosures of Pecuniary Interest

That it BE NOTED that no pecuniary interests were disclosed.

1.2 Election of Chair and Vice Chair for the term ending November 30, 2022

VAN MEERBERGEN AND WILLARD

That M. van Holst **BE ELECTED** Chair, for the term ending November 30, 2022. **CARRIED**

Motion Passed

BURGHARDT-JESSON AND VANDERHEYDEN

That A. DeViet **BE ELECTED** Vice Chair, for the term ending November 30, 2022. **CARRIED**

Motion Passed

2. Adoption of Minutes

2.1 Minutes of the 4th Meeting held on Thursday, October 8, 2020

VAN MEERBERGEN AND HILLIER

That the minutes of the 4th meeting of the Lake Huron Primary Water Supply System Board of Management, held on October 8, 2020, **BE NOTED AND FILED. CARRIED**

Motion Passed

3. Consent Items

3.1 Quarterly Compliance Report (3rd Quarter 2020: July - September)

FERGUSON AND VANDERHEYDEN

That, on the recommendation of the Chief Administrative Officer, the report dated December 3, 2020, with respect to the general, regulatory and contractual obligations of the Lake Huron Primary Water Supply System, for July to September 2020, **BE RECEIVED. CARRIED**

Motion Passed

3.2 Environmental Management System and Quality Management System

FERGUSON AND VANDERHEYDEN

That, on the recommendation of the Chief Administrative Officer, the report dated December 3, 2020, 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 Report - 3rd Quarter 2020

FERGUSON AND VANDERHEYDEN

That, on the recommendation of the Chief Administrative Officer, the report dated December 3, 2020, with respect to the Quarterly Operating Financial Status of the Lake Huron Water Supply System, **BE RECEIVED. CARRIED**

Motion Passed

3.4 Cyber Security

FERGUSON AND VANDERHEYDEN

That, on the recommendation of the Chief Administrative Officer, the report dated December 3, 2020, with respect to the Cyber Security program for the Lake Huron Primary Water Supply System, **BE RECEIVED. CARRIED**

Motion Passed

4. **Items for Discussion**

4.1 2020 Strategic Plan

FAUBERT AND HEMMING

That, on the recommendation of the Chief Administrative Officer, the report dated December 3, 2020, with respect to the 2020 Strategic Plan for the Lake Huron Water Supply System, **BE RECEIVED**; it being noted that the Board Members are encouraged to provide comments on the proposed Areas of Focus and Draft Strategic Initiatives and participate in the upcoming virtual Stakeholder Engagement sessions. **CARRIED**

Motion Passed

4.2 Asset Management Maturity Assessment and Roadmap

DEVIET AND WILLARD

That, on the recommendation of the Chief Administrative Officer, the report dated December 3, 2020, with respect to the Asset Management Maturity Assessment and Roadmap, **BE RECEIVED. CARRIED**

Motion Passed

4.3 LH1276 Backwash Check Valve Installation Project

WILCOX AND VAN MEERBERGEN

That, on the recommendation of the Chief Administrative Officer, the following actions be taken with respect to LH1276 Backwash Check Valve Installation Project:

a) the approved budget for LH1276 Backwash Check Valve Installation Project **BE INCREASED** by \$100,000, for a total budget of \$200,000, with the additional funds being provided from the Asset Replacement Reserve Fund; and,

b) the report dated December 3, 2020, with respect to this matter, **BE RECEIVED. CARRIED**

Motion Passed

5. Deferred Matters/Additional Business

None.

6. Next Meeting Date

March 4, 2021

7. Adjournment

The meeting adjourned at 2:48 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 2020: 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 2020.

EXECUTIVE SUMMARY

Since the previous report to the Board, there are no new regulatory changes that may significantly impact the Lake Huron Primary Water Supply System (LHPWSS).

The Water Quality Quarterly Report for the period of October 1 – December 31, 2020 was posted on the water system's website at https://huroneginwater.ca/wp-content/uploads/2021/01/2020-Q4-Huron-Final_acc.pdf

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

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, 2020 was completed by the operating authority, and is posted on

the Water Systems' website at https://huronginwater.ca/wp-content/uploads/2021/01/2020-Q4-Huron-Final_acc.pdf

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, the 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*.

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: As reported in the previous quarter, the Ministry of the Environment, Conservation and Parks (MECP) conducted a physical inspection of the LHPWSS on September 22, 2020. The final inspection report was received from the MECP on January 25, 2021 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 2020 fourth quarter Contract Report was received from OCWA on January 29, 2021 and was scheduled to be discussed at the quarterly administration meeting between Board staff and OCWA on February 11, 2021. Copies of the monthly Operations and Maintenance Reports, or 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 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: 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 ISO14001:2015 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 December 1, 2020. The meeting minutes are attached to this report 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.

Two (2) Environmental Compliance Audits were conducted during this reporting period. One audit was conducted November 23-24, 2020 and a summary of this audit's findings is included in Appendix B of this report (full report is available on request). One (1) non-compliance and three (3) opportunities for improvement were identified during the audit. Another audit was conducted December 10-14, 2020 and a summary of this audit's findings is included in Appendix C of this report (full report is available on request). Two (2) non-compliances were identified during the audit. The audit findings will be discussed at the next Management Review meeting.

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 internal audits, subsequent management reviews, and corrective action processes.

There were no external audits conducted during this reporting period.

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 taking corrective and preventive actions, preferably preventing problems before they occur. The Internal Audit process and Management Review are the two main drivers for identifying potential problems and opportunities for improvement for the EAPWSS 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 EAPWSS'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.

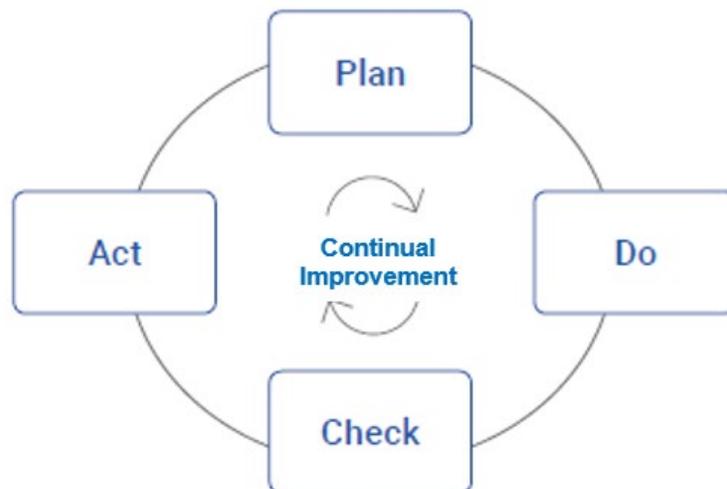


Figure 1: Plan-Do-Check-Act improvement process

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 external QMS surveillance audit performed by SAI Global in September 2020.
- Eleven (11) new action items were added as a result of the external EMS re-certification audit performed by SAI Global in October 2020.
- One (1) new action item was added as a result of the Management Review Meeting on December 1, 2020.

As of February 8, 2021, there are currently fifteen (15) 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 Christine Jansen, Compliance Coordinator

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

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

Attachments: **Appendix A** – Management Review Meeting Minutes (December 1, 2020)
Appendix B – Environmental Compliance Audit Summary Report (November 23-24, 2020)
Appendix C – Environmental Compliance Audit Summary Report (December 10-14, 2020)

APPENDIX A: MANAGEMENT REVIEW MEETING MINUTES (DECEMBER 1, 2020)

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

Date: December 1, 2020
Time: 9:00am
Location: Virtual – Microsoft Teams
Invitees: Andrew Henry (RWS), Erin McLeod (RWS), Christine Jansen (RWS), Blair Tully (OCWA), Denny Rodrigues (OCWA), Simon Flanagan (OCWA), Greg Henderson (OCWA)
Please Bring: All required handouts will be provided in a separate meeting package.

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 (September 1, 2020)

Minutes from the previous meeting are posted to SharePoint. Minutes were reviewed and approved.

2. LHPWSS – Drinking Water Quality Management System (DWQMS) External Audit (September 21, 2020)

No nonconformances (NC) and one opportunity for improvement (OFI) was found during the external audit.

The OFI was related to document control in SharePoint.

The OFI was discussed and action items were finalized to address it.

3. EAPWSS – DWQMS External Audit (September 22, 2020)

No nonconformances (NC) and one opportunity for improvement (OFI) was found during the external audit.

The OFI was related to risk assessment.

The OFI was discussed and action items were finalized to address it. The discussion included looking at an opportunity for integrating risk assessments from different management systems in the future, as several of the same risks are considered multiple times.

4. LHPWSS – Environmental Management System (EMS) External Audit (October 14-16, 2020)



No NCs and six (6) OFIs were found during the external audit.

The OFIs were related to environmental aspects, competence, documentation, operational planning and control, emergency preparedness and internal auditing. The OFIs were discussed and action items were finalized to address them.

Discussions included several items that will require further discussion including the implementation of new software in 2021 for training, determining the capabilities of Maximo (multiple tasks on workorders to ensure test results returned from lab, supporting operational round checks, etc.), detailing consideration of life-cycle perspective during projects, and determining how security personnel will interact with contractors while on site. These items will also impact the EAPWSS.

5. EAPWSS – EMS External Audit (October 21-23, 2020)

No NCs and seven (7) OFIs were found during the external audit.

The OFIs were related to risks & opportunities, environmental aspects, competence, documentation, operational planning and control, internal auditing and corrective action tracking.

The OFIs were discussed and action items were finalized to address them.

6. LHPWSS & EAPWSS Env. Compliance Internal Audit (October 6-9, 2020)

No NC or OFIs were found during the compliance audits.

Positive findings found during the audits related to the proactive submission of NPRI reporting before the regular deadline despite an extension due to the pandemic.

7. Environmental Performance

The following incidents required reporting to the Spills Action Centre (SAC) and the completion of a Corrective Action Forms (CAF).

Elgin Residuals Management Facility (RMF) – Total Chlorine Residual (TCR) exceedance (May 6, 2020)

- Action items associated with this report added to CAF tracking

Elgin Low Lift (LL) – TCR discharge from LL drain well (August 24, 2020)

- Action items associated with this report added to CAF tracking

Elgin RMF – TCR exceedance (August 26, 2020)

- Action items associated with this report added to CAF tracking

8. Staff Suggestions

LHPWSS – WaterTrax data entry log sheets

- Operations staff suggested that the log sheets used for their rounds be changed so that only the tests required during that time appear on the data entry form (ie.



different tests are required at different times of the day but current log sheet contains all tests on one sheet).

- The issue was investigated, and the solution found was to create different log sheets for different times of the day.
- The new log sheets will help reduce errors with blanks in the sheets and results being put in the wrong spots.
- OCWA would like to proceed with the new log sheets at LHPWSS but would like to keep the current process at EAPWSS for now. This can be reviewed in future once the LHPWSS have been implemented and proven effective.

No EAPWSS staff suggestions have been brought forward for consideration.

9. Compliance Obligations Update

AWWA Standard - Disinfection of Water Treatment Plants (C653-20) Source:

American Water Works Association (AWWA)

Date Posted/Notice Received: Effective date September 1, 2020

Comments Due: N/A

Summary:

“Major changes made to the standard in this revision include the following:

1. The scope was updated to include the use of disinfection on all portions of a facility if no primary disinfection is provided (Sec. 1.A, Sec. 1.1, Sec. 4.2).
2. Definitions for potable water, reclaimed water, and wastewater were added (Sec. 3).
3. Sec. 4.3 Forms of Chlorine for Disinfection was updated to align with C652.” C652 is Disinfection of Water Storage Facilities.

Notes:

OCWA has updated the relevant Process Forms within the EMS/QMS documentation.

Cyanobacteria and their Toxins in Recreational Water: Guideline Technical Document for Public Consultation

Source: Health Canada

Date Posted/Notice Received: September 1, 2020 (email)

Comments Due: November 20, 2020

Summary:

“This guideline technical document evaluated the available information on cyanobacteria and their toxins with the intent of updating/recommending guideline value(s) for cyanobacteria toxins, total cyanobacteria cell counts, total cyanobacteria biovolume, and chlorophyll-a in recreational water. The purpose of this consultation is to solicit comments on the proposed guideline values, on the

approach used for their development, and on the potential economic costs of implementing the guidelines.”

The proposed guideline values are the following maximum acceptable concentrations; these values can be used alone or in combination: Total microcystins: 10 µg/L; Total cyanobacteria: 50 000 cells/mL; Total cyanobacterial biovolume: 4.5 mm³/L; Total



chlorophyll a: 33 µg/L.

Proposed amendments to the Director's Technical Rules made under section 107 of the Clean Water Act, 2006

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

Date Posted/Notice Received: August 11, 2020

Comments Due: November 9, 2020

Summary:

"The Ministry is proposing to update the Director's Technical Rules for assessing vulnerability and risks under the Clean Water Act. These rules are used by source protection authorities and municipalities to help develop and implement watershed-based assessment reports and source protection plans that protect local drinking water supplies. Among other things, the proposed changes will clarify the Tables of Drinking Water Threats contained in the rules, which set out the circumstances under which prescribed activities pose a drinking water threat, to support plan implementation and a better understanding of the risks to drinking water. An attached document - "2020 Proposed Amendments to Technical Rules: Assessment Report-Clean Water Act" - contains more details on the proposed updates to the Director's Technical Rules, including the Tables of Drinking Water Threats."

Hazardous Waste Digital Reporting Service Modernization Source: Ministry of the Environment, Conservation and Parks (MECP)

Date Posted/Notice

Received: September 18, 2020

Comments Due: November 2, 2020

Summary:

MECP recently consulted on the [Modernizing Hazardous Waste Reporting in Ontario discussion paper](#) to gather early feedback on proposed regulatory changes needed to modernize and transition hazardous waste digital reporting services to the Resource Productivity & Recovery Authority (the Authority). As the last step MECP is now seeking feedback on the proposed regulatory changes.

Proposed regulatory changes:

1. Amend O.Reg. 347 under the EPA to transition the delivery of hazardous waste digital reporting services to the Authority and change registration and reporting requirements to support electronic service delivery.
2. Create a new regulation under the Resource Recovery and Circular Economy Act (RRCEA) to carry over fee exemptions for certain activities related to hazardous waste. See also the separate proposal re: [Hazardous Waste Fee Exemption Framework](#).

Proposed guideline technical document for dicamba in drinking water

Source: Health Canada

Date Posted/Notice Received: October 26, 2020

Comments Due: December 21, 2020

Summary:

The existing guideline technical document on dicamba, developed in 1987, established a maximum acceptable concentration (MAC) of 0.12 mg/L (120 µg/L). This document proposes a MAC of 0.11 mg/L (110 µg/L) for dicamba in drinking water.



Notes: 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.

Proposed guideline technical document for bromoxynil in drinking water Source:
Health Canada

Date Posted/Notice Received: November 30, 2020

Comments Due: January 29, 2021

Summary:

The existing guideline technical document on bromoxynil, developed in 1987, recommended a maximum acceptable concentration (MAC) of 0.005 mg/L (5 µg/L) for bromoxynil in drinking water. This document proposes a MAC of 0.03 mg/L (30 µg/L).

Notes: The current Ontario MAC is 0.005 mg/L. Test results for bromoxynil in treated water are non-detect for both the EAPWSS and LHPWSS.

Health Canada has finalized documents which were previously reported on during the consultation phase:

[Guidelines for Canadian Drinking Water Quality - Summary Table](#)

10. Results of Board Meetings (October 8, 2020)

The EMS/QMS Reports and Quarterly Compliance Reports were received for information. The next board meetings will take place on December 3, 2020.

11. Status of Action Items

There are nine open action items for each of the LHPWSS and EAPWSS. The action items were reviewed with updates provided.

12. Other Business

- Action Item (LHPWSS): A management of change form is to be completed for the implementation of the security at LHPWSS. Assigned to Denny Rodrigues and Erin McLeod. Deadline March 31, 2021. Items to be considered in the discussion include:
 - Document control in the security trailer needs to be discussed – determine whether guards can be given read-only access to certain SharePoint libraries to avoid hard-copy document control issues in the future.
 - Procedures need to be updated to include references to new security protocols (delivery procedures, etc.).
- Action item (EAPWSS): A management of change form is to be completed for the reconciliation of the ownership at the Elgin-Middlesex Pump Station. Assigned to Denny Rodrigues and Erin McLeod. Deadline: March 31, 2021.

APPENDIX B: ENVIRONMENTAL COMPLIANCE AUDIT REPORT SUMMARY (NOVEMBER 23-24, 2020)

Summary

Audit Purpose:

The purpose of the audit was to verify compliance with select environmental legislation at the Lake Huron Primary Water Supply System (LHPWSS). Internal audits ensure the progress and activity of the Environmental Management System (EMS) is tracked.

Auditor Qualifications:

Christine Jansen has completed an ISO 14001:2015 Internal Auditor training course and is deemed competent to complete auditing of management systems.

Methodology:

The internal audit was conducted as outlined in procedure LH-ADMIN-1600 (Compliance) of the EMS Manual. The audit checklists were generated using the internal LF-ADMIN-1600 Compliance Audit Checklist and the Nimonik Environmental Criteria Software and are attached as Appendix B of this report. The audit was comprised of a facility tour and a compliance review of the LHPWSS. The audit was limited to the operation of the water supply system by the contracted Operating Authority, Ontario Clean Water Agency (OCWA), for the period of their operating tenure, starting July 1, 2012.

Operational documents and records maintained by the Operating Authority for the period February 23, 2018 through November 23, 2020 were reviewed in conjunction with this compliance evaluation.

Note:

The audit was conducted through a review of a sampling of documents, limited interviews, and observations by the auditor to demonstrate compliance obligations are being met as outlined in the EMS. The review and audit should not be construed as a complete and comprehensive review of all aspects and all documents.

Checklist criteria generated by Nimonik Environmental Criteria Software:

Environmental Compliance – Provincial

- Air Emissions
- Spills and Notification
- Waste Generation (Excludes 3Rs)
- Water Discharge and Watercourse Alteration
- Water Taking and Transfer
- Ozone Depleting Substances

Other Criteria – LF-ADMIN-1600 Compliance Audit Checklist

- Permit to Take Water

Interviews Conducted:

- Denny Rodrigues, Compliance Manager

Areas Visited:

- Lake Huron Water Treatment Plant (WTP), 711155 Bluewater Hwy, Municipality of South Huron

Findings

The following is a summary of the findings including non-compliance issues, opportunities for improvement, recommendations, and observations for the LHPWSS.

Definitions:

- A non-compliance (NC) is a non-fulfilment of a regulatory requirement.
- An opportunity for improvement (OFI) describes a regulatory requirement that can be more effectively addressed.
- An observation is a comment or remark provided to share the conditions found (i.e. on the day of the audit tour).

Regulatory Non-Compliance (NC):

- Waste Generation - O. Reg. 347 S.23(2)(b)(ii): Manifest Number PY69998-1 - Waste picked up 21/11/19 (copy 2), copy 1 mailed out 03/12/19. A total of 7 business days before Copy 1 was mailed out to director.

Regulatory Opportunities for Improvement (OFIs):

- There is an opportunity to compile an inventory of the equipment containing refrigerants in the LHPWSS. Inventory may include the type of equipment, location of equipment, maintenance/inspection information, etc.
- There is an opportunity to update the Environmental Aspects & Impacts Assessment to better clarify the control procedures for equipment containing refrigerants.
- There is an opportunity to improve the management of records relating to the maintenance/inspection of equipment containing refrigerants, so they are complete and more readily accessible.

Observations:

- Hazardous Waste binder is kept well organized and is easy to follow.

APPENDIX C: ENVIRONMENTAL COMPLIANCE AUDIT REPORT SUMMARY (DECEMBER 10-14, 2020)

Summary

Audit Purpose:

The purpose of the audit was to verify compliance with select environmental legislation at the Lake Huron Primary Water Supply System (LHPWSS). Internal audits ensure the progress and activity of the Environmental Management System (EMS) is tracked.

Auditor Qualifications:

Christine Jansen has completed an ISO 14001:2015 Internal Auditor training course and is deemed competent to complete auditing of management systems.

Methodology:

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Operational documents and records maintained by the Operating Authority for the period February 23, 2018 through November 23, 2020 were reviewed in conjunction with this compliance evaluation.

Note:

The audit was conducted through a review of a sampling of documents, limited interviews, and observations by the auditor to demonstrate compliance obligations are being met as outlined in the EMS. The review and audit should not be construed as a complete and comprehensive review of all aspects and all documents.

Checklist criteria generated by Nimonik Environmental Criteria Software:

Environmental Compliance – Provincial

- Petroleum Products – Fuel Oil
- Dangerous Goods Transportation
- Propane Storage & Handling
- OHS: Employers Duties
- OHS: Boilers & Pressure Vessels
- Fire Protection and Prevention
- WHMIS – Occ. Health/Safety Act

Other Criteria – EF-ADMIN-1600 Compliance Audit Checklist

- Municipal Drinking Water License
- Drinking Water Works Permit

Interviews Conducted:

- Denny Rodrigues, Safety, Process & Compliance Manager (OCWA)
- Randy Lieber, Senior Operations Manager (OCWA)
- John Walker, Operations Manager (RWS)
- Erin McLeod, Quality Assurance & Compliance Manager (RWS)

Areas Visited:

- Lake Huron Water Treatment Plant (WTP), 711155 Bluewater Hwy, Municipality of South Huron
- McGillivray Booster Pumping Station, 9064 McGillivray Drive, Brinsley
- Exeter-Hensall Pumping Station, 39590 Huron St., Exeter
- Komoka-Mt. Brydges Pumping Station (PS#4), 13964 Medway Road, Arva

Findings

The following is a summary of the findings including non-compliance issues, opportunities for improvement, recommendations, and observations for the LHPWSS.

Definitions:

- A non-compliance (NC) is a non-fulfilment of a regulatory requirement.
- An opportunity for improvement (OFI) describes a regulatory requirement that can be more effectively addressed.
- An observation is a comment or remark provided to share the conditions found (i.e. on the day of the audit tour).

Regulatory Non-Compliance (NC):

- O. Reg. 220/01 Boilers & Pressure Vessels, S.10(7): Owner and the operator who receive the inspection report and the insurer who issues it retains the inspection report for six years from the date of the inspection. During the audit, expired inspection reports dating back to 2014 could not be readily produced.
- O. Reg. 220/01 Boilers & Pressure Vessels, S.5, S.10(1), (3): Current certificate of inspection has been issued for all boiler, pressure vessel, fitting, piping in use stating equipment has passed inspection & Owner of boiler or pressure vessel that is in operation or use has it inspected at the intervals in the code adoption document, and provides defect info to inspector. During the audit, it was noted that expired inspection



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certificates were posted for the Air Receiver in the HL Sub Basement (expired April 2, 2020) and the Other Pressure Vessel in the Boiler Room (expired November 28, 2019).

Regulatory Opportunities for Improvement (OFIs):

- N/A

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 2020

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 as a result of 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 of a previous or future fiscal years.

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 2020 (October 1 to December 31) as well as a comparative accumulation from January 1 to December 31 (Year to date).

Note: The reported expenditures and revenues may be subject to adjustments as a result of the preparation of the 2020 financial statements and completion of the annual audit.

DISCUSSION

For the information and reference of the Board, the following highlights of the attached summary provides 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 2019 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 is currently tracking approximately \$773,000 lower than the 2020 budget estimate, and \$259,000 lower than the previous year, largely due to increased volumes supplied to the region and energy efficiency measures.
- Salaries, wages and benefits expenditures include all direct labour costs for administrative staff including benefits. Variations over the same period in 2019 are attributed to annual salary adjustments, staff vacancies, and marginally lower total staffing costs as a result of the pandemic.
- Administration and Other Expenses relates to various overhead operating expenses, including subscriptions and memberships, office supplies and property taxes. While the reported expenditures will be adjusted as part of the year-end process, accounting for 2021 pre-payments and other cost accounting adjustments, the costs to date are lower than the approved budget and than the same period in 2019.
- Vehicles and Equipment expenditures include costs associated with vehicles, computers and office equipment for administrative staff. Additional costs have been incurred related to travel and vehicles due to the pandemic.
- Purchased Services and Professional Fees largely relates to allowances for ad hoc professional consulting and legal services, office lease, telephone charges, network and SCADA maintenance, printing services, and pipeline locate costs.
- Debt Principle and Interest payments occur twice per year; in the first and third quarter.



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- Contributions to the Reserve Funds occur at the end of the fiscal year as part of the year-end audit preparation process, 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: Ademola Bajomo
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 – 4th Quarter 2020

Quarterly Financial Summary Report
Lake Huron Water Supply System
4th Quarter 2020 (October 1 2020 to December 31 2020)
(\$,000's)

	Approved 2020 Budget	Q4-2020	2020 Year to Date	Year To Date Variance	2019 Year To Date
Total Revenue	22,798	7,634	23,715	-917	22,865
<u>Expenditures:</u>					
Contracted Operating Services	6,845	1,780	6,662	183	6,490
Contracted Administrative Services	313	78	306	7	213
Electricity	3,750	992	2,977	773	3,236
Salaries, Wages, Benefits	708	213	691	17	664
Administration and Other Expenditures	363	81	360	3	498
Vehicles and Equipment	42	29	50	-8	33
Purchased Services & Professional Fees	698	83	783	-85	616
Debt Principle Payments	1,248	8	1,248	0	1,226
Interest on Long-Term Debt	168	-7	146	22	186
Contributions to Reserve Funds	8,663	10,494	10,494	-1,831	9,704
Total Expenditures	22,798	13,751	23,715	-921	22,865



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 regard to Lake Huron Primary Water Supply System capital projects:

- a) That this report regarding the status of capital projects **BE RECEIVED** for information; and,
- b) That projects LH1209 HLP#5 Valve Replacement, LH1227 Pipe Conveyance System, LH1233 Control Panel/Wire Cleanup, LH1244 Building Exterior Condition Assessment, and LH1262 WTP UPS Replacement **BE CLOSED**, with the surplus funds in the approximate amount of \$232,351 be released to the Board's Reserve Funds; and,
- c) That project LH1386 Chemical Delivery Panel **BE CLOSED**, with additional funds in the approximate amount of \$18,367 be drawn from the Capital Reserve Fund.

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 \$30,000 (indexed annually to inflation), the project is considered Capital Maintenance and the contracted operating authority would fund the first \$30,000 (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.



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- 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: Ademola Bajomo
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: 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	\$300,000	\$113,935	Project ongoing
LH1020	2021 Financial Plan	\$50,000	\$0	Project to be initiated
LH1021	Huron Low Lift Pump 6 Refurbishment	\$40,000	\$32,324	Project ongoing
LH1025	Bluewater Hwy Property Purchase	\$600,000	\$546,122	Property purchased. Building demolition spring 2021
LH1105	Computerized Maintenance Management System	\$180,000	\$156,754	Project ongoing
LH1106	Ilderton Meter Chamber	\$100,000	\$0	Project to be initiated
LH1107	SCADA/PLC Software Review & Upgrade	\$500,000	\$0	Project to be initiated
LH1207	Concrete Crack Injection	\$120,000	\$91,218	Ongoing multi-year project
LH1216	Closed Loop Chlorine Control	\$100,000	\$10,914	Project on hold pending LH1230 completion
LH1219	Filter Backwash Turbidity Meters	\$250,000	\$135,440	Project ongoing
LH1229	Security Upgrades	\$700,000	\$220,109	Project ongoing
LH1230	High Lift Pump Replacement	\$13,557,000	\$1,131,600	Project ongoing
LH1232	Arva Victaulic Repair	\$175,000	\$26,824	Project ongoing
LH1239	Sluice Gate Repairs	\$150,000	\$84,102	Project ongoing
LH1242	Hydraulic/Transient Model Update and Monitoring	\$330,000	\$152,020	Project ongoing
LH1243	McGillivray Electrical Upgrades	\$685,000	\$0	Project initiated



PROJECT NO.	PROJECT	APPROVED BUDGET	EXPENDED TO DATE *	STATUS
LH1255	Crop Yield Monitoring – 2012 Rupture	\$110,000	\$63,929	Project ongoing
LH1256	Crop Yield Monitoring – 2014 Pipeline Twinning	\$1,500,000	\$1,119	Project ongoing
LH1257	Chamber 63 Access Culvert	\$75,000	\$45,505	Project on hold pending UTRCA approval
LH1258	McGillivray Control Panel Replacement	\$150,000	\$22,564	Project ongoing
LH1260	Flash Mixer Upgrade	\$1,437,000	\$176,300	Project ongoing
LH1261	PLC Replacements	\$40,000	\$0	Project to be initiated
LH1263	LLP Motor Replacement	\$475,000	\$240,440	Project completed. Awaiting final invoice
LH1264	Vehicle Door Replacements	\$150,000	\$75,075	Project ongoing
LH1265	RMF Settling Tank Repairs	\$85,000	\$19,714	Project ongoing
LH1266	Huron Plant UV Disinfection	\$1,200,000	\$0	Project on hold pending LH1426 outcome
LH1267	Plant Interior Door Replacement	\$40,000	\$15,067	Project ongoing
LH1268	Obsolete Equipment Removal	\$100,000	\$35,919	Project ongoing
LH1269	Settled Water TSS Analyzer	\$75,000	\$0	Project to be initiated
LH1270	Interior LED Lighting Upgrades	\$100,000	\$50,314	Project ongoing
LH1271	Non-Revenue Meter Replacement	\$75,000	\$55,528	Project ongoing
LH1272	Service Water Pipe Replacement	\$50,000	\$48,875	Project ongoing
LH1273	(PS3) Exeter-Hensall Pump Control Upgrades	\$50,000	\$3,580	Project ongoing



PROJECT NO.	PROJECT	APPROVED BUDGET	EXPENDED TO DATE *	STATUS
LH1274	SCADA Control Modifications	\$100,000	\$2,160	Project ongoing
LH1275	Sewage Ejector Replacement	\$100,000	\$76,166	Project completed. Awaiting final invoice
LH1276	Backwash Check Valve Replacement	\$200,000	\$89,988	Project ongoing
LH1277	IT Asset Replacement Program	\$425,000	\$202,434	Project ongoing
LH1278	Safety Showers Upgrade	\$60,000	\$25,556	Project ongoing
LH1279	Cyber Intrusion Detection System	\$10,000	\$0	Project initiated
LH1284	Huron Flocc Gear Drive	\$150,000	\$69,381	Project ongoing
LH1303	Easement Maintenance	\$185,000	\$116,729	Project ongoing
LH1316-20	Annual Maintenance (2020)	\$85,000	\$93,277	Annual program. Awaiting final invoice
LH1316-21	Annual Maintenance (2021)	\$125,000	\$0	Annual program
LH1317	Distressed Pipe Replacement	\$1,400,000	\$590,405	Project ongoing
LH1327	Strathroy Transmission Main	\$22,000,000	\$14,838,658	Project complete. Final Invoice to be issued.
LH1338	Huron WTP Instrumentation	\$835,000	\$769,737	Annual program
LH1347	Pipeline Chamber Upgrades	\$500,000	\$451,306	Project ongoing
LH1353	WTP Modifications	\$350,000	\$95,011	Multi-year project
LH1369	Filter Media Rebuild	\$2,105,000	\$2,073,733	Project completed. Awaiting final invoice
LH1373	IT Upgrades	\$750,000	\$734,001	Project ongoing
LH1380	Clarifier Upgrades	\$120,000	\$5,031	Project ongoing
LH1385	1996 Crop Yield Monitoring	\$450,000	\$330,141	Project ongoing



PROJECT NO.	PROJECT	APPROVED BUDGET	EXPENDED TO DATE *	STATUS
LH1388	Coagulation Optimization Study	\$50,000	\$0	Project on hold
LH1425	Huron Erosion Control	\$1,000,000	\$277,920	Project ongoing
LH1426	Microbial Inactivation and Storage EA	\$500,000	\$21,895	Project ongoing
LH1429	South Water Conduit Emergency Repairs	\$560,000	\$0	Project ongoing
LH1433	Asset Management Plan 2021	\$150,000	\$0	Project ongoing
LH1900	Record Drawings & Documents	\$491,000	\$404,207	Ongoing multi-year project
TOTAL		\$56,250,000	\$24,823,027	

A.2(a) Completed Projects – Release Surplus to Reserve Funds

PROJECT NO.	PROJECT	APPROVED BUDGET	EXPENDED TO DATE *	STATUS
LH1209	HLP#5 Valve Replacement	\$365,000	\$149,148	Project completed
LH1227	Pipe Conveyance System	\$30,000	\$27,908	Project completed
LH1233	Control Panel/Wire Cleanup	\$25,000	\$23,907	Project complete.
LH1244	Building Exterior Condition Assessment	\$85,000	\$78,817	Project completed
LH1262	WTP UPS Replacement	\$200,000	\$192,869	Project completed
TOTAL		\$705,000	\$472,649	



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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

PROJECT NO.	PROJECT	APPROVED BUDGET	EXPENDED TO DATE *	STATUS
LH1386	Chemical Delivery Panel	\$75,000	\$93,367	Project completed
TOTAL		\$75,000	\$93,367	

Notes:

* Expended as of December 31, 2020

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 – Roadmap and Plan Update

RECOMMENDATION

That the following actions be taken with regards to the Asset Management Roadmap and Plan Update for the Lake Huron Primary Water Supply System:

- a) The Board of Management for the Lake Huron Primary Water Supply system **DELEGATE** authority to the Chief Administrative Officer to administratively-award a consulting services assignment, following a public procurement process which complies with the Procurement Bylaw, for the completion of the Asset Management Plan Update provided the proposal from the successful proponent meets the Request for Proposal terms and conditions and is within the budget previously approved by the Board;
- b) The Board of Management for the Lake Huron Primary Water Supply system **AUTHORIZE** the Chair and Chief Administrative Officer to execute a consulting services agreement with the successful consulting firm for the completion of the Asset Management Plan Update subject to the delegation of authority as outlined above; and,
- c) The Board of Management for the Lake Huron Primary Water Supply System **RECEIVE** this report regarding the Asset Management Roadmap and Plan Update for information.

PREVIOUS AND RELATED REPORTS

December 3, 2020 Asset Management Maturity Assessment and Roadmap

BACKGROUND

In December 2020, Board staff reported on the development of the Asset Management Maturity Assessment and Roadmap (AM Roadmap) that outlines the Lake Huron Primary Water Supply System's (LHPWSS) current level of maturity and capabilities related to Asset Management Planning, as well as illustrating a clear pathway for the improvement of asset management processes by prioritizing areas of focus.

The AM Roadmap was expected to be finalized by mid-December 2020 such that Request for Proposals (RFP) for the 2021 Asset Management Plan Update (AM Plan) could be issued in December 2020 and a preferred proposal recommended to the Board for acceptance at the March 2021 Board meeting.

DISCUSSION

AM Roadmap

Due to delays resulting from the ongoing pandemic, the final submission of the AM Roadmap was submitted by Totex Infrastructure Partners Inc. (Totex) in early February. The report concluded that, based on the assessments carried out by Totex, LHPWSS has achieved higher scores and level of maturity in the Global Institute of Asset Management (IAM) focus areas compared to several other comparable utilities across North America where the focus, up until now, has often been on the operational elements of asset management.

For LHPWSS to achieve the desired level of ambition in asset management capability that is aligned with ISO 55000, the summary recommendations from the Totex report are as follows:

Recommendation 1: Develop the Strategic Asset Management (AM) Policy as per the update to the LHPWSS asset management improvement plan defined by the AM Roadmap.

Recommendation 2: Implement the improvement initiatives outlined in the AM Report, commencing in 2021, based on the agreed priorities and timing to deliver business benefits resulting from targeted capability development and alignment with the ISO 55000 international standard.

Recommendation 3: Define and formalize the AM governance roles and responsibilities and increase the necessary resources to manage the continued successful development and operation of LHPWSS AM capability both now and into the future.

The report noted that the desire to continue to deliver stakeholder Level of Service outcomes, through a more developed, refined and evidenced, risk based and whole life management of the assets, requires dedicated resources to implement and manage on an ongoing basis. These resources are focused in three areas:

- An externally facing view towards stakeholder (customer and consumer) requirements and constraints;
- A more asset analytic view focusing on the current and future performance of individual asset classes; and,
- The effective definition, management, and analysis of asset-related information.

This increase in resource is required to both implement any changes and to undertake the work on an ongoing basis following implementation. The increase in resource to improve asset management capability will also give LHPWSS more of a critical mass of people. Board staff are reviewing the AM Roadmap recommendations and resources and expects to incorporate these aspects into the ongoing development of the Strategic Plan as applicable.

Refer to Appendix A for further details and recommendations of the AM Roadmap.

AM Plan

The 2016 Asset Management Plan was endorsed by the Board in October 2016. It incorporated the customer levels of service framework, risk mitigation strategies, condition assessments and evaluation, and the 2015 Master Water Plan.

Following the AM Roadmap, the 2021 AM Plan will develop a Strategic AM Policy, incorporate the details of the recently-approved 2020 Master Water Plan, and further move towards the next tier of asset management by aligning with the ISO 55000 framework. This AM Plan will also provide a valuation of the assets and recommended asset investments for the 2021 Financial Plan Update (to be undertaken concurrently by another consultant) such that appropriate funding for asset reinvestments are in place, infrastructure life is maximized appropriately, and additional costs of premature replacement are avoided.

Board staff issued the RFP for the AM Plan in mid-February to four pre-qualified consulting firms. In mid-March, Proposals are to be received by Board staff to evaluate with the assistance of the City of London's Purchasing Division. In accordance with the City of London's Procurement of Goods and Services Policy (*used as a guide*), consulting assignments greater than \$100,000 require Board approval.

Due to the delays experienced as a result of the ongoing pandemic, and with the next Board meeting scheduled for June 2021, staff are requesting the Board to delegate the authority to award the consulting assignment to the Chief Administrative Officer, subject to the award not exceeding the budget previously approved by the Board. Staff also request that the Board authorize the Chair and Chief Administrative Officer the authority to execute a consulting services agreement with the successful consulting firm for the completion of the AM Plan provided their proposal meets the Request for Proposal terms and conditions.

The approved budget for this consulting services assignment is \$150,000.

CONCLUSION

The completion of the Asset Management Roadmap will enable LHPWSS to prioritize key improvement initiatives to be consistent with best practices for asset management planning and enable alignment with global asset management best practices and standards such as ISO 55000. A key initiative of the roadmap is an updated AM Plan following the principles of asset management planning outlined in the AM Report.

Proposals for consulting services to complete the 2021 AM Plan are expected to be submitted to Board staff in mid-March. Board staff are requesting the Board to delegate authority to the Chief Administrative Officer to award the consulting services assignment and authorize the Chair and Chief Administrative Officer to execute the necessary agreement to complete the update of the Asset Management Plan.

Prepared by: Billy Haklander, P.Eng., LL.M.
Environmental Services Engineer

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

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

Attachments: Appendix A: Executive Summary – Asset Management Assessment & Roadmap

APPENDIX A: ASSET MANAGEMENT ASSESSMENT & ROADMAP

EXECUTIVE SUMMARY

The purpose of the AM Maturity E-Diagnostics Assessment and Roadmap project was to enable LH&EAPWSS to prioritize key improvement initiatives to be consistent best practices for asset management planning and enable future accreditation to global asset management best practices standards such as ISO 55000. Notwithstanding, the Asset Management approach utilized by the Institute of Asset Management (IAM) is consistent with the approach implemented by the LH&EAPWSS in the 2016 Asset Management Plans, and any roadmap developed will complement this and feed into continual improvement and long-term implementation of an advanced Asset Management approach.

The AM Maturity E-Diagnostics Assessment and Roadmap utilizes the globally recognized approaches for the assessment of Asset Management maturity: the internationally recognized 42 Subjects' of Asset Management as defined by the Global Forum for Maintenance and Asset Management (GFMAM) and ISO 55000.

Objectives

The primary objectives of this assessment were to:

- Provide a 'top-down' strategic Asset Management assessment of LH&EAPWSS based on the Global Institute of Asset Management (IAM) 'IAM 6 box' of Asset Management as shown in the figure below:



- Provide a view on the gaps in LH&EAPWSS' Asset Management approach to achieving alignment with and compliance to ISO 55000; as per ISO 55000 maturity framework as shown below:



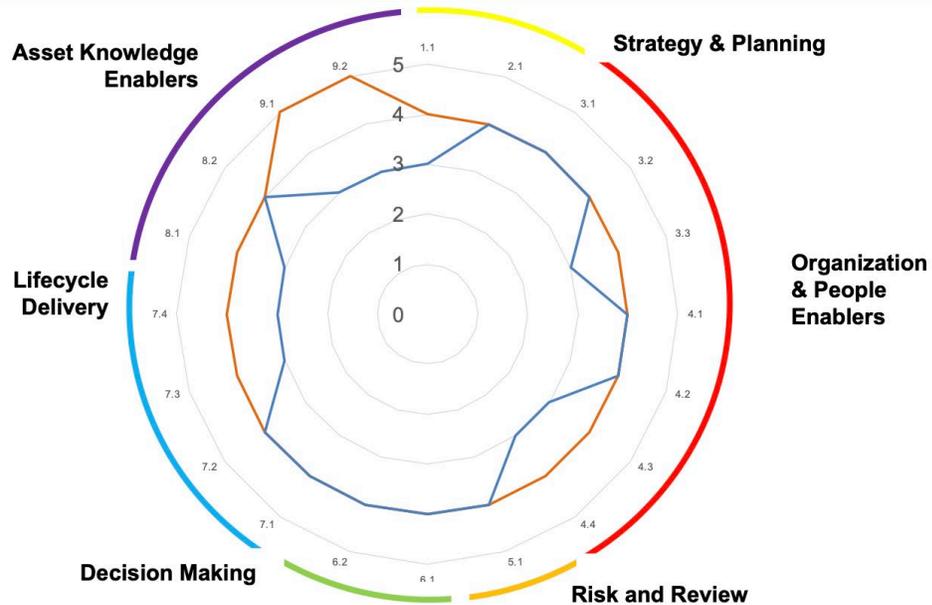
Figure 2 ISO 55001 Maturity Scale

- Identify key recommendations that enable development of an Improvement Roadmap to achieve short and medium-term goals for improving LH&EAPWSS' Asset Management capabilities to meet overall business goals and alignment with ISO 55000.

Current and Future State

The agreed current position and best practice knowledge provided by the Totex team then formed the basis to discuss and agree on the overall ambition and timescales for the implementation of improved AM capability. The diagram below shows the current assessment and the level of ambition across each of the assessment areas:

Summary Radar Results



The identified current assessment is noted as the blue line on the diagram (or LH&EAPWSS current state of maturity), the red line indicates the advancement areas that were identified as those being candidates for improvement.

Initiative identification and Roadmap Development

Opportunities for improvement to close the gaps are available whose tangible benefits include savings in capital programs and lifecycle costs, service level improvements, and productivity improvements through technology and process optimization.

Based on the improvement opportunities a number of improvement initiatives were developed, incorporating the LH&EAPWSS' agreed priorities, to help move towards good, and where it is proven cost effective, best practice asset management capability. These initiatives provide the necessary guidance and direction to enable them to achieve the vision for AM practices. The content and timing of these initiatives are based on a combination of the LH&EAPWSS' AM priorities along with TIP's experience implementing asset management programs with other comparable organizations. A phased approach of implementation over the short term, medium term, and long term is recommended.

A staged prioritization approach was applied to enable the identification and prioritization of improvement initiatives across the entire LH&EAPWSS organization, aimed at addressing the gap between current and future asset management competencies and capabilities, as follows:

- 1** Identify those improvement areas that most departments / asset classes want to improve.
- 2** – Align to the LH&EAPWSS' existing strategic priorities and current initiatives.
- 3** – Ensure a practical and realistic sequence of improvement initiatives. There are some initiatives that require others to proceed first. An example of this would be in the area of technology, where the Asset Information Strategy should be agreed prior to proceeding with the implementation systems and data improvements.
- 4** - Balance the initiatives planned to be carried out in parallel in the short and medium terms, with the available resources and investment.

The resulting Asset Management Roadmap as presented below that will underpin the Corporate Asset Management Program within Lake Huron & Elgin Area Water Supply to meet all asset management compliance requirements including ISO 55000, over the next six years as summarized in the diagram below.

When implemented, the initiatives are expected to contribute significantly in the delivery of value from AM practices.

Timing	2021				2022				2023				2024				2025				2026			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Strategy and Planning	S1 - Strategic Plan				S2 - AM Policy				S3 - AM Plans				S4 - AM Strategies											
	P1 - AM Governance				P2 - Compliance with Legal Req's				P3 - Levels of Service				P4 - Value Framework				P5 - Service Valuations							
					P6 - Communication Strategy				P7 - People, Skills and Competencies				P8 - Knowledge Retention and Succession Planning											
Risk and Review									R1 - Asset Condition / Risk Methodologies								R2 - Contingency and Resiliency Planning							
																	R3 - Reliability Centered Maintenance							
Decision Making					DM2 - Whole Lifecycle Planning/Costing				DM3 - Value Based Asset Investment Strategy				DM1 - Risk Based Decision Method - All Assets											
					DM4 - Long Range Financial Plan																			
Lifecycle Delivery									LD3 - Improve Plan Reporting				LD2 - Improve Plan Delivery				LD1 - Design Standards							
									LD4 - Review Delivery Contracts															
Asset Knowledge Enablers	A1 - Asset Information Strategy																							
	A2 - Systems Update and Implementation (Prioritized - Maximo Current)				A3 - Data Governance and Improvement Plan (Prioritized)				A4 - Performance Management Strategy and Implementation				A5 - Expand Audit / Management Review											

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Conclusions and Recommendations

Based on the assessments carried out, LH&EAPWSS has achieved higher current scores in the Global Institute of Asset Management (IAM) 6 box focus areas compared to several other asset managers of a wide range of asset types across North America, where the focus, up until now, has often been on the operational elements of asset management.

As with other organizations with deteriorating asset bases, asset managers are asked to provide a more robust case for funding requests. There is a need to continually improve the understanding of the linkages between investment and stakeholder outcomes, with regard to maintaining and improving service. Further development of the Levels of Service (LoS) framework will enable a fully integrated approach that links detailed technical, functional and operational LoS to stakeholder and customer LoS. This in turn requires a more data centric and evidenced understanding of the current and future performance of the asset base and how this impacts the risk to the delivery of the required (LoS). These improvements enable more effective management and decision making about future investment in the asset bases throughout its whole lifecycle.

The improvement initiatives detailed within this report will, in our view, yield significant benefits to LH&EAPWSS. Evidence for this exists in other asset management

organizations, which have leveraged similar recommendations and incorporated similar improvement initiatives into their organization.

Resourcing the Change

The desire to continue to deliver stakeholder LoS outcomes, through a more developed, refined and evidenced, risk based and whole life management of the assets, requires dedicated resources to implement and manage on an ongoing basis. These resources are focused in three areas:

- An externally facing view towards stakeholder requirements and constraints.
- A more asset analytic view focusing on the current and future performance of individual asset classes.
- The effective definition, management, and analysis of information.

This increase in resource is required to both implement any changes and to undertake the work on an ongoing basis following the implementation of the change. The increase in resource to improve asset management capability may also give LH&EAPWSS more of a critical mass of people.

Recommendations

The recommendations from the project, for LH&EAPWSS to achieve the desired level of ambition in asset management capability that is aligned with ISO 55000, are as follows:

Recommendation 1: Develop the Strategic Asset Management Policy as per the update to the LH&EAPWSS asset management improvement plan defined by the AM Roadmap.

Recommendation 2: Implement the AM Roadmap improvement initiatives commencing in 2021 based on the agreed priorities and timing to deliver business benefits resulting from targeted capability development and alongside this achieve alignment with ISO 55000.

Recommendation 3: Define and formalize the AM governance roles and responsibilities and increase the resources in agreed areas in order to manage the continued successful development and operation of LH&EAPWSS AM capability both now and into the future.

Through this project it is estimated by TIP in order to implement the agreed initiatives within the timescales shown, the resources and external costs equivalents summarized from Section 3.6, are:

- Resources: 2,600 person days over 6 years equates to 2 FTE



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- External Costs*: \$2,650k over 6 years equates to \$441k per year

*All costs as shown are approximate to +/-20%

The costs are to show level of effort and provide reference for budgeted costs should it be deemed necessary to bring in external resources.

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 September 22, 2020. The final inspection report was issued by the MECP on January 25, 2021. The inspection covered the period from November 1, 2019 through October 31, 2020.

The final inspection report issued by the MECP contained an inspection rating of 100.00% for the inspection period. There were no non-compliances or recommended best management practices identified by the Ministry Inspector. No action is required by either the operating authority or owner.

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.

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 the inspection rating for the LHPWSS since 2015:

Inspection Year	Final Inspection Rating	# of Non-compliances	Type of Inspection	Operating Authority
2015-2016	100.00% ¹	1	Focused	OCWA
2016-2017	100.00%	0	Focused	OCWA
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

¹ The non-compliance identified was outside of the scope of the focused inspection, therefore it did not contribute to a lowered inspection rating.

Correspondence and Communications

Prior to issuing the final inspection report, the MECP issued a draft copy to the owner 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: LH1425 Shoreline Erosion Project – Update

RECOMMENDATION

That, on the recommendation of the Chief Administrative Officer, the following actions be taken with respect to LH1425 Shoreline Erosion Protection project:

- a) The Board of Management for the Lake Huron Primary Water Supply system **APPROVE** an increase to the project budget by \$250,000 for a total budget of \$1,250,000, it being noted that the funds will be provided from the Emergency Reserve Fund; and,
- b) The Board of Management for the Lake Huron Primary Water Supply System **RECEIVE** this report for information.

PREVIOUS AND RELATED REPORTS

March 5, 2020	Huron Erosion Control
October 8, 2020	LH1425 Shoreline Erosion Protection – Tender Award

BACKGROUND

The significant increase in the water level of Lake Huron, coupled with the severity of the winter storms and lack of ice cover, has caused significant erosion along the Lake Huron shoreline in the area of the water treatment plant. Although the raw water pipeline from the intake structure to the plant is buried below the lakebed, the erosion at the shoreline exposed a normally buried chamber that is used to access the intake pipe for maintenance purposes. This location also serves as the access point for the chlorine line into the pipe interior and ultimately the intake crib located 2 kilometers offshore for the zebra and quagga mussel control system.

GM BluePlan from London and Baird Engineering from Toronto were engaged to undertake an assessment of the erosion control requirements for the long-term protection of the critical infrastructure and the shoreline in the area of the water treatment plant. The project required further consultation and approvals from the conservation authority, as well as provincial and federal agencies, in order to complete the specifications and obtain necessary approvals for the long-term protection measures. Concurrently with this, Baird Engineering completed the detailed design and then oversaw the tendering process and contract award for the project.



DISCUSSION

Baird Engineering completed the detailed design in July 2020 and prepared the tender in early August. Tender #20-113 was issued on August 24, 2020 with four (4) contractors submitting compliant bids on the closing date of September 21, 2020.

The submitted tenders were evaluated by Baird Engineering and Board staff to ensure compliance with tender submission requirements. On that basis, the bid submitted by J-Aar Excavating Limited in the amount of \$768,762.79 (excluding HST) was approved by the Board at the October 8, 2020 meeting.

Since the project was awarded, the contractor has had extreme difficulty in obtaining the stones supplied in the specification. After working closely with the engineer, an alternate acceptable stone specification was developed, and a quarry located that could provide the materials which met the modified specification.

Due to the amount of additional stone that is required, the engineering work needed to complete the redesign to accommodate the new stone and specifications for the erosion control, as well as the additional construction work needed to install the modified design, additional costs have been encumbered in excess of the approved budget.

Baird Engineering, with the assistance of GM Blueplan, has updated the project cost estimates for the work and projected an additional \$250,000 will be required to complete the necessary construction.

PROJECT FINANCIAL STATUS

The following is a summary of projected and incurred expenditures to date for the project:

Expenditure	Projected	Incurred
Engineering, Construction Supervision and Contract Administration	\$ 270,000	\$ 175,203
Construction	\$ 980,000	\$ 66,655
Total	\$1,250,000	\$ 241,858

Current approved budget: \$1,000,000



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CONCLUSION

Rising lake levels and winter storms had previously exposed a chamber at the shoreline at the water treatment plant. The Board authorized the construction of the necessary works at the October 8, 2020 meeting of the Board, however the specifications and design needed to be altered to address the lack of availability of materials which met the original tender specifications. Authorizing the additional funds will ensure the work is completed properly and meet the long-term erosion protection needs of the facility and protect the buried infrastructure at the shoreline.

Prepared by: John Walker, CD, B.Sc.
Regional Water Supply Operations Manager

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

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



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

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

Subject: Operations and Maintenance Services Agreement – Negotiation of Term Extension

RECOMMENDATION

That, on the recommendation of the Chief Administrative Officer, the Board of Management for the Lake Huron Water Supply System **AUTHORIZE** the Director of Regional Water to negotiate the terms and conditions for a draft term extension agreement with the Ontario Clean Water Agency for a five-year period allowable under the current Operations and Maintenance Services Agreement.

PREVIOUS AND RELATED REPORTS

January 19, 2012	Water System Operation – Contract Aware (Concurrent Meeting)
March 3, 2016	Operations and Maintenance Services Agreement – Contract Term
December 1, 2016	Operations and Maintenance Services Agreement – Negotiation of Term Extension
June 8, 2017	Operations and Maintenance Services Agreement – Negotiation of Term Extension

BACKGROUND

On January 19, 2012 the Board of Management for the Lake Huron Primary Water Supply System (LHPWSS), concurrently and jointly with the Board of Management for the Elgin Area Primary Water Supply System (EAPWSS), awarded the contract for the management, operation and maintenance of both the Lake Huron and Elgin Area Water Supply Systems to the Ontario Clean Water Agency. The Ontario Clean Water Agency began operating the regional water system on July 1, 2012 for an initial five-year term, with an allowable five-year term extension at the option of the Board.

At the June 8, 2017 meeting of the Board of Management for the Lake Huron Primary Water Supply System, the Board authorized the execution of the Operation and Maintenance Services Amending Agreement No.1 with the Ontario Clean water Agency for a five-year period, ending December 31, 2022. Pursuant to Section 2.1 of the amended agreement, the Operations and Maintenance Services Agreement with the Ontario Clean Water Agency may be extended for an additional five-year period at the discretion of the Board.



DISCUSSION

The Operations and Maintenance Services Agreement with the Ontario Clean Water Agency began on July 1, 2012 for an initial five-year term, and was previously extended (first extension) with the amending agreement approved by the Board at the June 8, 2017 meeting. The current agreement expires on December 31, 2022 if not extended for the additional five-year term afforded to the Board.

While the term of the Services Agreement may be extended pursuant to the existing agreement, the Service Fee charged by the Ontario Clean Water Agency is subject to negotiation. In addition, staff propose that a review of the agreement be undertaken in partnership with the Ontario Clean Water Agency for the purpose of identifying clauses which may require further clarification and/or amendment. Proposed amendments and clarifications of the Service Agreement would be non-material in nature, and subject to the approval of the Board.

In accordance with Clause 2.1 (Term) of the agreement, the Board must give notice of its wish to renew the agreement to the Ontario Clean Water Agency at least nine (9) months in advance of the end of the term of the agreement (on or before March 31, 2022). In practical terms, should the Board wish to undertake a public procurement process for the contract operation of the water supply system, the procurement process will take at least eighteen (18) months to complete, including the potential transition to another contracted operator if the Ontario Clean Water Agency is not successful.



Lake Huron
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CONCLUSION

The Board currently enjoys a collaborative and mutually beneficial partnership with the current contract with the Ontario Clean Water Agency. At present, staff believe that the negotiation of a second allowable term extension may be beneficial to all parties.

If approved by the Board, staff would immediately begin negotiations with the Ontario Clean Water Agency for the terms and conditions of the term extension allowed within the current agreement, and bring forward a draft amending agreement at a future meeting of the Board for the Board's consideration and approval. Should negotiations not be successful, there should be sufficient time remaining in the existing contract term to undertake a public procurement process for the contracted operation of the system.

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

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

Attachments: none

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

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

Subject: LH1230 Huron High Lift Pump Replacements – Tender Award

RECOMMENDATION

That, on the recommendation of the Chief Administrative Officer, the following actions be taken with respect to the Lake Huron Primary Water Supply System High Lift Pump Replacements (LH1230) project:

- a) The Board of Management for the Lake Huron Primary Water Supply System **AUTHORIZE** the Chair and Chief Administrative Officer to execute an agreement with Kenaidan Contracting Ltd. (Kenaidan) for the construction of the High Lift Pump Replacements in the amount of \$8,300,351.48, excluding HST;
- b) The Board of Management for the Lake Huron Primary Water Supply system extend the existing engineering assignment with AECOM for contract administration and construction supervision services at an estimated cost of \$852,310 (excluding HST); and,
- c) The Board of Management for the Lake Huron Primary Water Supply System **RECEIVE** this report for information.

PREVIOUS AND RELATED REPORTS

October 5, 2017	2018 Operating & Capital Budgets
October 4, 2018	LH1230 High Lift Pump Replacements Project – Engineering Award
January 31, 2019	LH1230 High Lift Pump Replacement Project – IESO Master Program Agreement and Project Incentive Contract
October 3, 2019	LH1230 High Lift Pump Replacements Project Pump Purchase
October 8, 2020	LH1230 High Lift Pump Replacements - Motor Control Centre & Valve Pre-purchase

BACKGROUND

The Energy Audit and Pump Optimization Study identified an opportunity for significant energy savings and the optimization of pump operations with the replacement of the high lift pumps. These pumps are more than fifty years old, original to the plant construction and nearing the end of their useful life. Specifically, the existing five-pump configuration would be changed with a six-pump configuration:

- two existing pumps would remain (to be replaced in future)
- three existing pumps would be removed, with two new high capacity pumps and two smaller capacity pumps installed.

As a utility directly connected to the provincial electrical transmission system, the Lake Huron Primary Water Supply System (LHPWSS) is eligible under the Independent Electricity Systems Operator's (IESO) Industrial Accelerator Program for financial incentives for energy efficiency projects.

On March 21, 2019, the Board Chair and acting Chief Administrative Officer signed an Incentive Contract with the IESO for financial incentives associated with the above-noted project which requires that the four pumps be in-service by December 31, 2022.

The estimated total financial incentives from the IESO are \$1.32M.

Detailed engineering for the high lift pump replacement began in November 2018, and the pump pre-selection process was completed in October 2019. With the construction part of the project approved as part of the 2019 Capital Budget, the tender for construction and pump installation was issued in late 2020 with construction anticipated to be completed by the fall of 2022.

DISCUSSION

Construction Tender

Given the criticality of this regionally significant infrastructure, Board staff initiated a public request for qualifications process (RFQUAL#20-17) for general contractors on September 29, 2020. Proposals from the seven (7) contractors that submitted documents by the closing time and date on October 30, 2020 were evaluated by Board Staff and its engineering consultant (AECOM) with the support of the City of London's Purchasing & Supply Division. The top four (4) high scoring contractors that were invited to the Tender stage were as follows:

- Dielco
- Kenaidan Contracting Ltd.
- Maple Reinders Constructors Ltd.; and
- Stone Town Construction Limited.

AECOM finalized the detailed design in early December 2020 and the Tender for construction (RFT#21-07) was issued to the pre-qualified contractors on December 23, 2020. All pre-qualified contractors submitted compliant bids on the closing time and date on February 1, 2021. The pre-tender construction cost estimate of the proposed works prior to tender close was \$10,861,047 (excluding HST).

The acceptable bids received are summarized as follows:

Contractor	Tender Bid (excluding HST)
Kenaidan Contracting Ltd.	\$8,300,351.48
Dielco Industrial Contractors Ltd.	\$8,343,505.48
Stone Town Construction Limited	\$8,484,914.48
Maple Reinders Constructors Ltd.	\$8,491,458.48

On this basis, the bid submitted by Kenaidan in the amount of \$8,300,351.48 (excluding HST) was accepted, noting that the submitted bid met the tendered requirements.

Contract Administration and Construction Supervision

While finalizing the Tender documents, Board staff requested that AECOM provide a work plan and fee schedule for contract administration and construction supervision services. Due to the nature of the construction work and criticality of the equipment, a significant amount of time has been allocated to on-site inspection and validation. The estimated cost to undertake the contract administration and construction supervision services associated with the project as submitted in their proposed work plan is \$852,310, including a 20% contingency and excluding HST. Board staff have reviewed the proposal and recommend that the existing engineering assignment with AECOM be extended accordingly.

Isolation Valves

As previously reported to the Board in October 2020, the selection of a combined control/check valve to replace two valves on each pump discharge presents an opportunity to install a dedicated isolation valve for each pump discharge; something that the plant current does not have. Isolation valves on each pump discharge will enable the complete isolation of the combination valve and the high lift pump for maintenance and repair purposes. The lack of the isolation valve on the existing pumps requires the complete isolation of half of the discharge header (three pumps) in order to facilitate the repair to one pump, effectively limiting the pump capacity of the plant to half of its rated capacity.

Board staff directed AECOM to proceed with the selection of pump discharge isolation valves for inclusion in the project. On December 24, 2020, three (3) valve suppliers were requested to submit proposals to be evaluated through a Request for Proposals (RFP) process consistent with standard procurement practices utilized by the City of London in accordance with their Purchasing Policy (*used as a guide*).

The isolation valve pre-selection RFP was issued on December 24, 2020 to Devine and Associates (Devine), Floval Equipment (Floval) and Syntec Process Equipment (Syntec). Proposals were received by Floval and Syntec by the closing date of January 15, 2021 at 12:00 pm. Floval Equipment did not submit a bid due to their inability to provide a cost-effective valve based on the requirements provided. It is noted that similar terms and conditions were included on other equipment pre-selection contracts.

The technical and financial information received from both bidders were evaluated and compared in detail. Both isolation valves proposed by the suppliers met the technical criteria, achieved the minimum required operating efficiencies and would be manufactured within the timeframe required by the project. A comparison of the capital cost bid is presented in the table below:

Vendor	Capital Cost Bid (excluding HST)
Devine	\$366,577
Syntec	\$254,978

Based on the submitted information, Board staff accepted Syntec's proposal for the design, fabrication, supply, delivery, supervision of installation and commissioning of the four (4) isolation valves. On this basis, Board staff issued a Letter of Intent and purchase order in the amount of \$254,978.00 (excluding HST) for the valves.

PROJECT FINANCIAL STATUS

The following is a summary of projected and incurred expenditures to date for the project:

Expenditure	Projected	Incurred
Engineering	\$ 613,878	\$ 589,548
Construction Supervision & Contract Administration	\$ 852,310	\$ -
Construction	\$ 8,300,352	\$ 432,870
Additional Services	\$ 50,000	\$ 3,457
Total	\$ 9,766,540	\$ 1,025,875
Approved Budget	\$ 13,557,000	
Projected Variance	\$ 3,790,460	

As noted previously, the estimated total financial incentives from the IESO for this project is \$1.32M. This funding is based on the energy savings to be realized upon completion of the project, and not a proportionate share of costs. As such, the risks associated with construction costs reside with the LHPWSS and as a result, the cost-avoidance from the realized lower bids improves the LHPWSS' over all bottom-line for this project (i.e. lesser impact to the Reserve Funds and/or debentures).

ANTICIPATED SCHEDULE

In an effort to meet the strict timelines of the overall project, purchase orders for the pumps, motor control centres, isolation and combination control/check valves were issued to suppliers in advance of the installation contract and will be novated to the general contractor upon award.

In response to the COVID-19 pandemic, supplier factories have had to adjust the machining, assembly, and testing schedules resulting in a loss of production efficiency. The combined effect has led to an overall schedule change; however, construction and pump installation are expected to be complete by August 2022 and well before the in-service date (December 31, 2022) stipulated in the Incentive Contract with the IESO.

CONCLUSION

The High Lift Pump Replacements project provides a significant opportunity for energy savings and qualifies for an estimated \$1.32M in financial incentives through Independent Electricity Systems Operator's Industrial Accelerator Program.

On February 1, 2021, Kenaidan submitted a bid in the amount of \$8,300,351.48 that was compliant with the tender process, specifications, and project requirements, and well within the approved budget for the project. Therefore, Board staff recommend that the Chair and Chief Administrative Officer be authorized to execute an agreement with Kenaidan for the construction of the High Lift Pump Replacements.

To meet the in-service deadline date associated with IESO's financial incentives, purchase orders for the pumps, motor control centres, isolation and combination control and check valves were issued to suppliers in advance of the installation contract and are to be subsequently novated to the general contractor.

Board staff also recommend that the Board extend the existing engineering assignment with AECOM to provide the contract administration and construction supervision services associated with the project.

Prepared by: Billy Haklander, P.Eng., LL.M
Environmental Services Engineer

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

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