

# Agenda

## Elgin Area Primary Water Supply System

### Joint Board of Management

The 4th Meeting of the Elgin Area Primary Water Supply System Joint Board of Management  
October 6, 2022, 5:00 PM  
Virtual Meeting

	Pages
<b>1. Call to Order</b>	
1.1. Disclosures of Pecuniary Interest	
<b>2. Adoption of Minutes</b>	
2.1. Minutes of the 3rd Meeting held on June 2, 2022	3
<b>3. Consent Items</b>	
3.1. Kelly Scherr, Chief Administrative Officer - Quarterly Compliance Report (2nd Quarter: April - June)	9
3.2. Kelly Scherr, Chief Administrative Officer - Environmental Management System and Quality Management System	11
3.3. Quarterly Operating Financial Status - 2nd Quarter 2022	32
3.4. Kelly Scherr, Chief Administrative Officer - Capital Status Report	36
3.5. Kelly Scherr, Chief Administrative Officer - Disconnecting from Work Policy	42
<b>4. Items for Discussion</b>	
4.1. Kelly Scherr, Chief Administrative Officer - 2023 Operating and Capital Budgets (Previously Distributed)	

4.2.	Kelly Scherr, Chief Administrative Officer - Electronic Monitoring Policy	44
4.3.	Kelly Scherr, Chief Administrative Officer - 2022 Asset Management Plan Update Project Completion	52
4.4.	Kelly Scherr, Chief Administrative Officer - EA2172 Terminal Reservoir Isolation Valve Repairs	81

**5. Deferred Matters/Additional Business**

**6. Upcoming Meeting Dates**

January 19, 2023

**7. Adjournment**

# Elgin Area Primary Water Supply System

## Report

The 3rd Meeting of the Elgin Area Primary Water Supply System Joint Board of Management  
June 2, 2022

Attendance: Meeting held remotely on Thursday, June 2, 2022, commencing at 5:00 PM.

PRESENT: M. van Holst (Acting Chair), D. Crevits, S. Hillier, E. Peloza, S. Peters, R. Weisler and S. Wookey and J. Bunn (Committee Clerk)

ALSO PRESENT: B. Bryans, B. Haklander, A. Henry, M. McKillop and K. Scherr

### 1. Call to Order

#### 1.1 Disclosures of Pecuniary Interest

That it BE NOTED that no pecuniary interests were disclosed.

### 2. Adoption of Minutes

#### 2.1 Minutes of the 2nd Meeting held on March 3, 2022

PETERS AND HILLIER

That the minutes of the 2nd meeting of the Elgin Area Primary Water Supply System Joint Board of Management, from the meeting held on March 3, 2022, **BE NOTED AND FILED. CARRIED**

**Motion Passed**

### 3. Consent Items

#### 3.1 Quarterly Compliance Report (1st Quarter 2022: January - March)

WOOKEY AND HILLIER

That, on the recommendation of the Chief Administrative Officer, the report dated June 2, 2022, with respect to the general, regulatory and contractual obligations of the Elgin Area Primary Water Supply System, for January to March 2022, **BE RECEIVED. CARRIED**

**Motion Passed**

3.2 Environmental Management System and Quality Management System

WOOKEY AND HILLIER

That, on the recommendation of the Chief Administrative Officer, the report dated June 2, 2022, with respect to the Environmental Management System and Quality Management System for the Elgin Area Primary Water Supply System, **BE RECEIVED. CARRIED**

**Motion Passed**

3.3 Quarterly Operating Financial Status - 1st Quarter 2022

WOOKEY AND HILLIER

That, on the recommendation of the Chief Administrative Officer, the report dated June 2, 2022, with respect to the Quarterly Operating Financial Status of the Elgin Area Water Supply System, **BE RECEIVED. CARRIED**

**Motion Passed**

3.4 Elgin Area Treatment and Transmission Assets - State of the Infrastructure Report

WOOKEY AND HILLIER

That, on the recommendation of the Chief Administrative Officer, the report dated June 2, 2022, with respect to information regarding the state of the infrastructure of Elgin Area treatment and transmission assets, **BE RECEIVED. CARRIED**

**Motion Passed**

3.5 2021 Audited Financial Statement and Auditor's Report

WOOKEY AND HILLIER

That, on the recommendation of the Chief Administrative Officer, the 2021 Audited Financial Statement and Auditor's Report for the Elgin Area Primary Water Supply System, as appended to the report dated June 2, 2022, **BE RECEIVED AND ACCEPTED. CARRIED**

**Motion Passed**

3.6 Water System Operation - Contract Status Update

WOOKEY AND HILLIER

That, on the recommendation of the Chief Administrative Officer, the report dated June 2, 2022, with respect to the status of the contract with the Ontario Clean Water Agency as the contracted operating authority, **BE RECEIVED. CARRIED**

**Motion Passed**

3.7 Municipal Act - Board Structure

WOOKEY AND HILLIER

That, on the recommendation of the Chief Administrative Officer, the report dated June 2, 2022, with respect to the Municipal Act and Board Structure, **BE RECEIVED. CARRIED**

**Motion Passed**

3.8 Video Surveillance Policy

WOOKEY AND HILLIER

That, on the recommendation of the Chief Administrative Officer, the Video Surveillance Policy, as appended to the report dated June 2, 2022, **BE APPROVED. CARRIED**

**Motion Passed**

**4. Items for Discussion**

4.1 EA4183 Elgin Water Treatment Plant UV Replacement - Consultant Award

HILLIER AND WOOKEY

That, on the recommendation of the Chief Administrative Officer, the following actions be taken with respect to the report, dated June 2, 2022,

related to EA4183 Elgin Water Treatment Plant UV Replacement – Consultant Award:

- a) the proposal from AECOM Canada Ltd., for the completion of the engineering design for the Elgin Water Treatment Plant Ultraviolet Disinfection System Replacement, in the amount of \$429,390.50, including contingency (excluding HST), **BE ACCEPTED**; it being noted that AECOM Canada Ltd. submitted a proposal which meets the Request for Proposal requirements and was evaluated as having the best value;
- b) the Chair and the Chief Administrative Officer **BE AUTHORIZED** to execute a consulting services agreement with AECOM Canada Ltd. for the completion of the design for the Elgin Water Treatment Plant Ultraviolet Disinfection System Replacement project; and,
- c) the above-noted report **BE RECEIVED. CARRIED**

**Motion Passed**

4.2 EA4137 Elgin Water Treatment Plant Low Lift Pumping Station Service Water Connection

PETERS AND CREVITS

That, on the recommendation of the Chief Administrative Officer, the following actions be taken with respect to the report, dated June 2, 2022, related to EA4137 Elgin Water Treatment Plant Low Lift Pumping Station Service Water Connection:

- a) the existing engineering assignment with GM Blue Plan Engineering, for additional design services, based on an approved scope of work at an estimated cost of \$11,550, including contingency (excluding HST), **BE EXTENDED**;
- b) the Chair and the Chief Administrative Officer **BE AUTHORIZED** to execute a consulting services agreement with GM Blue Plan Engineering for the completion the Low Lift Pumping Station Service Water Connection for the Elgin Area Primary Water Supply System; and,
- c) the above-noted report **BE RECEIVED. CARRIED**

**Motion Passed**

4.3 EA4184 Water Quality Facility Plan Update - Consultant Award

WOOKEY AND HILLIER

That, on the recommendation of the Chief Administrative Officer, the following actions be taken with respect to the report dated June 2, 2022, related to EA4184 Water Quality Facility Plan Update – Consultant Award:

- a) the proposal from Stantec Consulting Limited, for the Water Quality Facility Plan Update, in the amount of \$143,658.90, including contingency (excluding HST), **BE ACCEPTED**;
- b) the Chair and the Chief Administrative Officer **BE AUTHORIZED** to execute a consulting services agreement with Stantec Consulting Limited for the completion of the Water Quality Facility Plan Update for the Elgin Area Primary Water Supply System; and,
- c) the above-noted report **BE RECEIVED. CARRIED**

**Motion Passed**

4.4 2022 Capital Budget Supplementary Approval - EMPS Building-Related Assets

CREVITS AND HILLIER

That, on the recommendation of the Chief Administrative Officer, the capital projects, related to the Elgin-Middlesex Pump Station (EMPS) building and building-related assets **BE APPROVED**, as appended to the report dated June 2, 2022; it being noted that the EMPS Reserve Fund will be used as the source of funding:

- a) EMPS Boiler Replacement (\$15,000);
- b) EMPS HVAC Replacement (\$25,000); and,
- c) EMPS Motor Control Centre Replacement (MCC) (\$50,000).  
**CARRIED**

**Motion Passed**

4.5 EA4186 Sodium Hydroxide Assessment Study - Contract Award

WOOKEY AND HILLIER

That, on the recommendation of the Chief Administrative Officer, the following actions be taken with respect to the report dated June 2, 2022,

related to EA4186 Sodium Hydroxide Assessment Study – Contract Award:

- a) the proposal from R.V. Anderson Associates Ltd., for undertaking the Sodium Hydroxide Assessment Study, in the amount of \$26,775.00 (excluding HST), **BE ACCEPTED**;
- b) the Chair and the Chief Administrative Officer **BE AUTHORIZED** to execute a consulting services agreement with R.V. Anderson Associates Ltd. for the completion of a Sodium Hydroxide Assessment Study for the Elgin Area Water Supply System; and,
- c) the above-noted report **BE RECEIVED. CARRIED**

**Motion Passed**

**5. Deferred Matters/Additional Business**

None.

**6. Next Meeting Date**

October 6, 2022

**7. Adjournment**

The meeting adjourned at 5:32 PM.



**To:** Chair and Members, Board of Management  
Elgin Area Primary Water Supply System

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

**Subject:** Quarterly Compliance Report (2<sup>nd</sup> Quarter 2022: April - June)

## RECOMMENDATION

That the Quarterly Compliance report with respect to the general, regulatory and contractual obligations of the Elgin Area 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 2<sup>nd</sup> quarter of 2022.

## 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 is it a complete list of all applicable regulatory and contractual obligations.

## DISCUSSION

### Regulatory Issues

**Recent Regulatory Changes:** At the time of drafting this report, there are no new regulatory changes for this reporting period which may significantly impact the Elgin Area Primary Water Supply System (EAPWSS).

**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 EAPWSS.

**Quarterly Water Quality Reports:** The [Water Quality Quarterly Report](#) for the period of April 1 – June 30, 2022 was completed by the operating authority, and is posted on the Water Systems' website for public information.

Note: In order to better comply with the *Accessibility for Ontarians with Disabilities Act, 2005*, the detailed tables of water quality test results which were previously appended to this Report have been removed. The full list and 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 (AWQI):** There were no AWQI reported by the operating authority or adverse laboratory results reported by the third-party accredited laboratory during this quarter.

**Compliance Inspections:** There were no compliance inspections conducted during the reporting period.

## **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 2022 second quarter Contract Report was received from OCWA on July 29, 2022, and was discussed at the quarterly administration meeting between Board staff and OCWA on August 11, 2022. Copies of the monthly Operations and Maintenance Reports, and quarterly Contract Reports are available at the Board’s Administration Office in London upon request.

**Prepared by:** Erin McLeod  
Quality Assurance & Compliance Manager

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

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

**To:** Chair and Members, Board of Management  
Elgin Area 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 Elgin Area Primary Water Supply System **BE RECEIVED** for information.

## **BACKGROUND**

### **Environmental Management System (EMS)**

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

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

### **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. 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.

OCWA received full scope DWQMS re-accreditation in October 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.

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 EAPWSS and the Lake Huron Primary Water Supply System (LHPWSS).

A Management Review meeting was held on June 22, 2022. The meeting minutes are included as [Appendix A](#) for the information of the Board.

### Internal Audits

Pursuant to the international ISO 14001 EMS standard and the provincial DWQMS, 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. Internal audits also ensure that the ongoing operation of the EAPWSS conforms to the EMS and QMS as implemented. As required by the standards, internal audits are performed a minimum of once every calendar year.

An EMS internal audit was conducted on April 25 & 28, 2022. An internal audit summary report is included as [Appendix B](#) for the information of the Board.

A DWQMS internal audit was conducted on June 14 & 16, 2022. An internal audit summary report is included as [Appendix C](#) for the information of the Board.

An environmental compliance internal audit was conducted on August 22-25, 2022. An internal audit summary report is included as [Appendix D](#) for the information of the Board.

### **External Audits**

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

There were no external audits conducted during the 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 undertaking corrective and preventive actions, preferably identifying and preventing problems before they occur. The Internal Audit process and Management Review are the two main drivers for proactively identifying potential problems and opportunities for improvement for the 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.

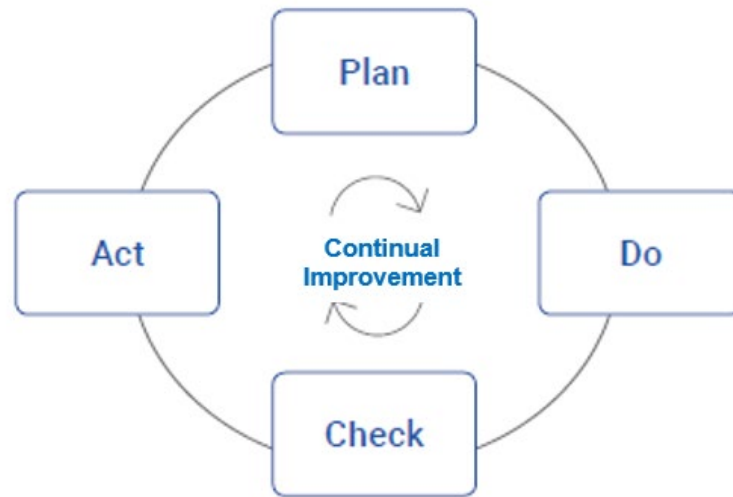


Figure 1: Plan-Do-Check-Act improvement process

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:

- Eighteen (18) new action items were added as a result of the EMS internal audit
- Two (2) new action items were added as a result of the management of change process for the electronic logbooks (e-logs)
- Two (2) new action items were added as a result of the management of change process for the new computerized maintenance management system (Maximo)
- Ten (10) new action items were added as a result of the DWQMS internal audit
- Two (2) new action items were added as a result of the management review meeting on June 22, 2022.

As of September 2, 2022, there are currently twenty-five (25) 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 EAPWSS continues to be suitable, adequate and effective. Activities by OCWA continue to address the need for change, and the management systems are being revised and refined as required.

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

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

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

### Attachments:

[Appendix A](#) – Management Review Meeting Minutes (June 22, 2022)  
[Appendix B](#) – EMS Internal Audit Summary Report (April 25 & 28, 2022)  
[Appendix C](#) – DWQMS Internal Audit Summary Report (June 14 & 16, 2022)  
[Appendix D](#) – Environmental Compliance Internal Audit Summary Report (August 22-25, 2022)

## **APPENDIX A: MANAGEMENT REVIEW MEETING MINUTES (JUNE 22, 2022)**

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

**Date:** June 22, 2022

**Time:** 1:00pm

**Location:** Virtual – Microsoft Teams

**Attendees:** Andrew Henry (RWS), Erin McLeod (RWS), Allison McGuckin (RWS), Blair Tully (OCWA), Allison McCann (OCWA), Denny Rodrigues (OCWA), Greg Henderson (OCWA), Randy Lieber (OCWA)

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

#### **-----Meeting Notes-----**

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

The minutes from the previous meeting (April 1, 2022) are posted to SharePoint. The minutes were approved. No concerns

### **2. Appointment of EMS/QMS Representative**

Due to recent staffing changes, including a change in the OCWA Compliance Manager position, the current appointment was discussed. There was no decision made during this Management Review meeting.

**Post meeting note:** An email confirmation was provided from the OCWA Regional Manager on June 24, 2022 appointing Allison McCann, Compliance Manager as the EMS/QMS Representative.

### **3. Results of the Board Meetings (June 2, 2022)**

#### **Huron Board Meeting**

- Quarterly Compliance Report - the report was received for information
- EMS/QMS Report - the report was received for information
- Oneida Nation of the Thames water supply connection was discussed.

Note: There was a discussion on supply chain issues, resulting in higher than anticipated budgets and seeking alternative strategies. Any opportunity to secure supply chains should be noted.



**Elgin Board Meeting (March 3, 2022):**

- Quarterly Compliance Report – the report was received for information. General discussion of the proposed administrative penalties for environmental contraventions
- EMS/QMS Report - the report was received for information. General discussion on harmful algae blooms including 2022 predictive modelling.

**4. Monitoring and Measurement Results**

**a) 2020 Energy Reporting (LHPWSS & EAPWSS)**

**LHPWSS**

In 2020, the total treated water volume, electricity and greenhouse gas (GHG) emissions have been stable and natural gas and energy intensity is down from the previous year. We may see a further reduction in electricity usage once all the high lift pumps are installed.

**EAPWSS**

In 2020, the total treated water volume, electricity and GHG emissions have been stable and natural gas and energy intensity is down from the previous year.

Discussion occurred and Andrew Henry would like to see a comparison of natural gas to ambient temperature.

**5. Environmental Objectives (LHPWSS & EAPWSS)**

**LHPWSS**

The 5-year trends for electricity efficiency and chemical efficiency were reviewed and discussed. Updates to the environmental programmes were reviewed and discussed. The overall electricity efficiency trend at the plant improving since the Winter of 2022 and the chemical efficiency is declining.

**General Discussion:**

- High Lift Pump (HLP) commissioning in the Winter 2022 with numerous start/stop events may have impacted electricity efficiency.
- Clearwells out of service – in 2021 the south clearwell was out of service in Winter 2022 the north clearwell was out of service. These events caused additional backwashing of the filters which used more electricity.
- Every winter there is a seasonal spike. Smaller pumps should create more steady seasonal fluctuations and improve electricity efficiency.
- Upgrading the windows in the plant with more efficient tinted glass should improve building energy efficiency.

**Post meeting note:** OCWA provided additional information through email on June 24, 2022. London was repairing a valve on their main transmission main and altered their flows during this project in the Winter of 2022. The Huron WTP had one clearwell in

service limiting the plant capacity at 170MLD. Operations required two pumps to be running more often to meet demand and generally these pumps were throttled which requires more electricity demand.

**Environment Management Program Discussion:**

- HLP #3 has been disinfected and will be manually started next week followed by SCADA (Supervisory Control and Data Acquisition) testing. HLP #2 is scheduled to be disinfected on July 4, 2022.
- Low Lift Pump #3 is being rebuilt by the end of 2022.
- Lighting project – lighting was noted where it was upgraded in 2020, 2021 and in 2022 there is one expenditure request. OCWA is hopeful there is more to come – lighting upgrades at McGillivray and some more areas in the plant.
- Coagulation project has been postponed with a proposed April 2023 completion date.
- Closed loop chlorine project has been put on hold until the completion of the HLP project.
- Thermal Insulating roof replacement at Chlorine building scheduled for later in 2022.

**EAPWSS**

The 5-year trends for electricity efficiency and chemical efficiency were reviewed and discussed. Updates to the environmental programmes were reviewed and discussed. The overall electricity efficiency trend at the plant is improving however, the last two winters have seen the electricity climbing. The chemical efficiency has been consistent over the last 5 years.

**General Discussion:**

- New HLP's have been operational since mid 2020.
- Increases in electrical consumption are potentially from the centrifuge operation at the RMF, due to high raw water turbidity and more loads of residuals leaving the facility in 2021.  
Note: consider tracking the electricity from the RMF compared to the plant in the future.
- There are noticeable peaks in the chemical consumption for the fall/winter.

**Environment Management Program Discussion:**

- Backwash pump replacement project has been delayed.
- Biofilters – University of Toronto is scheduling a meeting in July 2022 to discuss the future of the biofiltration pilot study.
- Low lift pump study - AECOM provided a draft tech memo. Pending further review.
- Thermal Insulating roof replacement at Chlorine building scheduled for later in 2022.

**Considerations:**

- Elgin – consider a representative chlorine measurement location for the RMF
- Huron – consider trending the weight of the residuals leaving the RMF against raw water turbidity.

## **6. Elgin EMS Internal Audit (April 25 & 29, 2022)**

There were no Non-Conformances and eighteen (18) Opportunities for Improvement identified during the audit. The audit findings were discussed, with action items finalized to address them.

## **7. Huron EMS Internal Audit (May 10-11, 2022)**

There were no Non-Conformances and ten (10) Opportunities for Improvement identified during the audit. The audit findings were discussed, with action items finalized to address them.

## **8. Huron QMS Internal Audit (June 7-8, 2022)**

There were two (2) Non-Conformances and six (6) Opportunities for Improvement identified during the audit. The audit findings were discussed, with action items finalized to address them.

## **9. Elgin QMS Internal Audit (June 14 & 16, 2022)**

There was one (1) Non-Conformance and six (6) Opportunities for Improvement identified during the audit. The audit findings were discussed, with action items finalized to address them.

## **10. Effectiveness of the QMS Risk Assessment Process (LHPWSS & EAPWSS)**

The full 36-month re-assessments are scheduled for June 24 & 28, 2022.

## **11. Results of the Emergency Response Testing (LHPWSS & EAPWSS)**

### **LHPWSS**

- Completed test of HMC-8 Critical Shortage of Staff in January 2022
- HMC-4 Spills Reporting test and training scheduled for June 23, 2022
- HMC-7 Communications – test scheduled for late 2022.

### **EAPWSS**

- Completed test of EMC-8 Critical Shortage of Staff in January 2022
- Completed test of EMC-3 Power Failure in June 2022
- HMC-7 Communications – test scheduled for late 2022.

## **12. QMS Operational Plan Currency, Content and Updates (LHPWSS & EAPWSS)**

The QMS Operational Plans were reviewed and updated in May 2022 and re-endorsed by top management. There were minor administrative changes and the new Schedule C Director's Direction Form was added.

### **13. Environmental & Quality Policy (LHPWSS & EAPWSS)**

The Environmental & Quality Policy was presented for the annual review and hasn't required any updating since 2018.

The following changes were suggested:

- There is a new Asset Management Policy that was created within the last year and it references ISO14001 and DWQMS. The Environmental & Quality Policy should acknowledge and consider the Asset Management Policy.
- Update the OCWA General Manager title to Regional Manager.

**ACTION ITEM:** Revise the Environmental & Quality Policy to include a reference to the Asset Management Policy. The Policy is to be signed by the new OCWA Regional Manager. Board re-endorsement of the revised Policy with the QMS Operational Plan in January 2023. Assigned to Erin McLeod, Deadline January 31, 2023.

### **14. Overall Decision on the Suitability, Adequacy and Effectiveness of the EMS/QMS (LHPWSS & EAPWSS)**

A discussion took place on the management systems as a whole, reflecting back over the past year. Top management confirmed that the management systems continue to be suitable, adequate and effective. The following observations support this conclusion.

Audit results: Internal audits continue to identify issues, including non-conformances, and recommend opportunities for improvement. Incremental continual improvement is evident.

MECP Inspection results: The annual MECP Inspection ratings for the 2021-2022 reporting year were 100% for both the LHPWSS & EAPWSS. This is the second year in a row with 100% ratings

Objectives and targets: Overall the trends generally continue to improve for the EMS objectives and targets. Continual improvement is anticipated in the trends. Planned capital projects are anticipated to continue the improvement and optimization.

System uptime/downtime: There have been a few alum system upsets and unplanned power failures this past year but these events have not impacted our ability to supply customers.

Customer Satisfaction: Overall the Board and municipal staff (ie. customers) seem to be satisfied with management system results.

Water quality: No recent Adverse Water Quality Incidents (AWQIs) and the operating authority met all contractual water quality performance criteria in 2021 (ie. full incentive payment received).

Top Management wanted to recognize the effort and dedication that everyone in OCWA and Regional Water has applied to ensure both systems were effective over the last year through Covid; from personnel changes to supply chain concerns. Targets and an uninterrupted supply of safe potable water has been achieved during challenging circumstances, repairs, and significant events.

#### **15. Status of Action Items Identified Between Reviews – Management of Change**

- e-Logbooks (Elgin & Huron)
- Maximo (Elgin & Huron)
- Residuals Disposal Location (Huron)

Checklists have been completed and uploaded to SharePoint. Action items are now on the action item tracking spreadsheet.

#### **16. Corrective Action Forms (CAF)**

- Huron Loss of Alum Incident (Oct. 10, 2021)

CAF was completed and uploaded to SharePoint. Action items are now on the action item tracking spreadsheet.

#### **17. Status of Action Items from Previous Management Reviews (LHPWSS & EAPWSS)**

A summary of the open action items from the CAF Tracking spreadsheet was provided and the items were discussed and approved.

The following changes were requested and granted by Top Management:

- The coagulation upgrade project – commissioning is now scheduled for fall 2022 with project completion tentatively scheduled for spring 2023. Approval was given to revise the deadlines for the open action items to end of March 2023.
- High Lift Pump Project – it is anticipated that the HLP project will be completed in the fall 2022. Approval was given to revise the deadlines for the open action items to end of October 2022.
- OCWA's corporate training database is not scheduled to be implemented until spring 2023. Approval was given to revise the deadline for this action item to end of June 2023.

#### **18. Other Business**

- OCWA staff was interested to know if the Global Adjustment exposure had changed from last year.



# Elgin Area

Primary Water Supply System

**Report No.:** EA-2022-03-02

**Report Page:** 12 of 21

**Meeting Date:** October 6, 2022

**File No.:**

**ACTION ITEM:** Provide OCWA with the Global Adjustment exposure comparison of 2021 to 2022. Assigned to – Andrew Henry; Deadline – July 8, 2022.

**Next Meeting: September 7, 2022**

## **APPENDIX B: EMS INTERNAL AUDIT SUMMARY REPORT (APRIL 25 & 28, 2021)**

### **Audit Purpose:**

The purpose of the audit was to verify conformance with the ISO 14001:2015 Environmental Management Systems standard for the Elgin Area Primary Water Supply System (EAPWSS). Internal audits ensure the EMS is being continually improved.

Non-conformances and opportunities for improvement are listed below.

### **Auditor Qualifications:**

- Erin McLeod has completed an ISO 14001:2004 training course as well as the ISO 14001:2015 transition training.
- Allison McGuckin has completed an ISO 14001:2015 training course in Internal Auditing. See certificates in Appendix C.

### **Methodology:**

The Internal Audit was conducted as outlined in procedure EA-ADMIN-1200 Internal Audit of the EMS. The internal audit was comprised of a conformance review of the facilities and limited to the operation of the water supply system by the contracted operating authority, Ontario Clean Water Agency (OCWA), since the last Internal Audit conducted April 13-16, 2021.

*Note:* The audit was conducted through a review of a sampling of documents, limited interviews and observations by the auditors to demonstrate conformance with the ISO 14001:2015 Environmental Management Systems standard. The review and audit should not be construed as a complete and comprehensive review of all aspects/risks and all documents.

### **Findings:**

The following is a summary of the audit findings, including positive findings and opportunities for improvement. There were no non-conformances identified during this audit. The detailed audit checklists are attached for further information.

- Appendix A: EF-ADMIN-1200 EMS Audit Checklist (Erin McLeod)
- Appendix B: EF-ADMIN-1200 EMS Audit Checklist (Allison McGuckin)

### **Definitions:**

- A non-conformance (NC) is a non-fulfilment of a requirement.
- An opportunity for improvement (OFI) describes a requirement that can be more effectively addressed.

### **Sites Visited:**

- Elgin-Middlesex Pumping Station and Terminal Reservoir
- Fruitridge Surge Facility
- Elgin Area Water Treatment Plant

**Interviews Conducted:**

- Wally Friesen - Operator
- Simon Flanagan – Sr. Operations Manager
- Denny Rodrigues – Safety, Process and Compliance Manager
- Blair Tully – Regional Manager
- Glenn McEown – Team Lead, Operations & Compliance

## **Summary of Findings**

### **Positive Findings**

Continual improvement was evident on the tour. Infrastructure improvement projects were underway including the Alum Tank Replacement Project, and EMPS Valve Replacement Project.

Top management and staff interviewed provided clear evidence of their commitment to the EMS and had various suggestions for continual improvement opportunities (eg. related to electricity and chemical usage monitoring/trending; public education).

Previous Management Review Meeting Minutes demonstrates cohesive communication between all parties through discussions that emphasise continual improvement efforts and completion of OFI's identified in previous EMS Audits.

### **Opportunities for Improvement (OFIs)**

#### **5.3 Organization Roles, Responsibilities and Authorities**

OFI #1 Consider the role of the CMMS Specialist in relation to the EMS, as this position is not addressed in EA-ADMIN-100 (Structure and Responsibilities) and does not appear in the organizational chart contained within.

#### **6.1.2 Environmental Aspects**

OFI #2 On the EMS Aspects Assessment consider clarifying what area the following buildings are captured under: Surge Building, Fruitridge Surge Facility, Security Trailer.

OFI #3 The following environmental aspects are not currently captured on the EMS Aspects Assessment:

- Natural gas consumption (heaters) at the south storage building;
- Refrigerants at the Sodium Hydroxide Building and Residuals Management Facility (RMF) (eg. air handling units on roofs);
- Hazardous waste generated at the Chlorine Building (because this also includes a liquid chemical area).



## **7.2 Competence**

OFI #4 Consider clarifying the training requirements in ECP-1 (Emergency Management) as the EMS QMS Orientation training includes the contents of the site specific emergency contingency plans.

## **7.5 Documented Information**

OFI #5 Operational dechlorination monitoring is being recorded on an uncontrolled form. Form EF-PROC-1900 (Water Quality Monitoring of Planned Discharge) is available in SharePoint but not being used.

OFI #6 The hard copy of the Environmental & Quality Policy posted at the EMPS is a designated controlled document, but not listed in EA-ADMIN-200 (Document & Record Control).

OFI #7 There are two process procedures that have been assigned the same document number: EA-PROC-2900 (Maintenance on Critical Systems) and EA-PROC-2900 (Valve House Calcium Thiosulfate Handling & Dilutions).

OFI #8 There are two different versions of each of the following procedures in the SharePoint library: EA-PROC-710 (Chlorine Gas Changeover – Cylinder), and ESOP-1-07 (Unauthorized Entry or Vandalism).

OFI #9 Consider updating documentation (eg. ECP-2 Essential Suppliers & Services List; SDS Binder in Main WTP; Chemical Ordering Binder for RMF) for the RMF polymers as the names have changed. Zetag and Magnafloc are now Norfloc products.

OFI #10 Elgin EMS Aspects & Impacts Assessment posted in the lunchroom and EA-PROC-2600 (Sodium Bisulphite Delivery) in the RMF chemical binder were not the current versions.

## **8.1 Operational Planning and Control**

OFI #11 Hazardous Waste Management: Consider clarifying the process for storage, handling and disposal of hazardous waste from the EMPS site. EA-PROC-100 (Storage, Handling & Disposal of Hazardous and Liquid Industrial Wastes) does not address waste generated at remote locations or the compliance requirements for transporting them to the WTP site.

OFI #12 Hazardous Waste Management: Consider adding instructions to EA-PROC-200 (Waste Manifest Completion) to verify that the proper waste class is registered in the Hazardous Waste Information Network (HWIN) portal prior to pick-up.

OFI #13 Consider posting signage on the outdoor compressed gas storage area (ie. propane storage area beside RMF).

*[Note: Regulatory requirements associated with compressed gas cylinders are found in Ontario Fire Code, section 5.6.]*

OFI #14 The Chemical Ordering Sheets for the RMF are not being fully completed as required. The date the chemicals are received on site is not consistently being recorded or tracked.

## **8.2 Emergency Preparedness and Response**

OFI #15 Safety Data Sheets: No SDS could be found for several products stored in the North Storage Room:

- Glycerol / Glycerine (AlphaChem)
- Ancool 3760 PG (Anchem)
- Chlorine Pucks (Aquarius)

OFI #16 Safety Data Sheets: Consider making SDS available at EMPS for sodium bisulphite (Jutzi), sodium hypochlorite, and dichlorination pucks (Chlor-Away). During the audit, these products were on site for a valve replacement project.

### **9.1.2 Evaluation of compliance**

OFI #17: The 2022 and 2023 Audit Schedules do not identify the overdue and upcoming required compliance audits. Consider identifying the compliance audits by audit criteria.

## **10.2 Non-conformity and Corrective Action**

OFI #18 Review open action items for prioritization, as some high priority items identified on Corrective Action Forms (CAFs) are overdue.

### **Other Observations:**

The operating authority was advised of two issues for the “Don’t Walk By” health and safety initiative:

- In the South Storage Building, the access path to the exit was impeded by stored materials.
- Two (2) self-contained breathing apparatus (SCBA) air tanks located in the stairwell off the main lobby were not secured.

## **APPENDIX C: DWQMS INTERNAL AUDIT SUMMARY REPORT (JUNE 14 & 16, 2022)**

### **Audit Purpose:**

The purpose of the audit was to verify conformance with the Ontario Drinking Water Quality Management Standard (DWQMS) Version 2.0 for the Elgin Area Primary Water Supply System (EAPWSS). Internal audits ensure the QMS is being continually improved.

Non-conformances and opportunities for improvement are listed below.

### **Auditor Qualifications:**

- Erin McLeod and Allison McGuckin completed training courses in DWQMS Internal Auditing. The training certificates are attached in Appendix C.

### **Methodology:**

The Internal Audit was conducted as outlined in QMS Procedure EA-ADMIN-1200 (Internal Audit) and was comprised of a conformance review of the facilities and limited to the operation of the water supply system by the contracted operating authority, Ontario Clean Water Agency (OCWA), since the last Internal Audit conducted October 20-21, 2021

*Note:* The audit was conducted through a review of a sampling of documents, limited interviews and observations by the auditors to demonstrate conformance with the DWQMS. The review and audit should not be construed as a complete and comprehensive review of all aspects/risks and all documents.

### **Findings:**

The following is a summary of the audit findings, including non-conformances and opportunities for improvement. The detailed audit checklist is attached for further information.

- Appendix A: LF-ADMIN-1201 QMS Audit Checklist (Erin McLeod)
- Appendix B: LF-ADMIN-1201 QMS Audit Checklist (Allison McGuckin)

### **Definitions:**

- A non-conformance (NC) is a non-fulfilment of a requirement.
- An opportunity for improvement (OFI) describes a requirement that can be more effectively addressed.
- An observation is a comment or remark provided to share the conditions found on the day of the audit, typically related to an “out of scope” finding.

### **Areas Visited:**

- Elgin Water Treatment Plant, 43665 Dexter Line, Central Elgin
- Elgin-Middlesex Pumping Station (EMPS) - Valve House and Terminal Reservoir, 490 South Edgeware Road, Central Elgin

### **Interviews Conducted:**

- Greg Henderson - Senior Operations Manager, OCWA
- Denny Rodrigues – Senior Operations Manager (Huron WTP), OCWA – Current QMS Representative
- Allison McCann - Safety, Process and Compliance (SPC) Manager, OCWA
- Glenn McEown – Team Lead, Operations & Compliance, OCWA
- Vasile Nanu – Team Lead, Maintenance & Distribution, OCWA
- Blair Tully – General Manager, OCWA
- Erin McLeod - Quality Assurance & Compliance Manager, RWS
- Cody Blay – Operator, OCWA
- Ashwin Mer – Operator, OCWA

### **Summary of Findings**

#### **Positive Findings**

- Staff interviewed were engaged, knowledgeable, and provided thorough explanations about the work they were doing.
- All calibration records requested were readily available and scheduled as required
- Continual improvement projects were underway (e.g., alum tank replacement project, recent EMPS P045 valve replacement, sodium hydroxide assessment study, Water Quality Facility Plan update, etc.)

#### **Non-Conformances (NCs)**

##### **Element 3 – Commitment and Endorsement**

NC#1: The Operational Plan is to be re-endorsed every four (4) years or when there is a change to Top Management which includes members of the Elgin Area Joint Board of Management (EAJBOM). The Operational Plan has not been endorsed since January 2015.

#### **Opportunities for Improvement (OFIs)**

##### **Element 4 - Quality Management System Representative**

OFI#1: EA-ADMIN-100 (Structure and Responsibilities) and the QMS Operational Plan identify the QMS Representative as the Compliance Manager however, the Operations Manager is the current QMS Representative due to a recent change in staffing. Consider whether EA-ADMIN-100 and the Operational Plan need to be updated to include a separate section for the QMS Representative, or if the QMS Representative will be maintained with the Compliance Manager role.

##### **Element 5 - Document and Records Control**

OFI#2: Consider updating the “Signature Specimen” (ie. legend) of operator’s signatures and initials to reflect current staffing.

### **Element 8 – Risk Assessment Outcomes**

OFI#3: Consider the following clarifications for the QMS Risk Assessment:

- Consider if raw water iron and manganese events can be better captured, as these are currently listed under source water “chemical spill”.
- The Low Lift chlorine system is not currently identified.
- For risks associated with the EMPS Reservoir, staff indicated there are additional controls such as the ability to backfeed from London, and reduce the daily volumes into London.
- Failures associated with one chemical system are inconsistently listed as both a “mandatory Critical Control Point (CCP)” and an “additional CCP identified for the facility”.
- Not all processes associated with achieving primary or secondary disinfection are identified as being mandatory CCP in accordance with the procedure. Examples: UV, WTP Reservoir, Valve House chlorine analyzer. Consider documenting the rationale.

### **Element 9 - Organizational Structure, Roles, Responsibilities and Authorities**

OFI#4: Consider updating the organizational chart within EA-ADMIN-100 (Structure and Responsibilities) to reflect the current number of Operators / Sr. Operators.

### **Element 10 - Competencies**

OFI#5: Consider setting a timeframe to complete a Maintenance Competency Form (EF-ADMIN-1403) for new maintenance operators.

### **Element 13 - Essential Supplies and Services**

OFI#6: The Chemical Ordering Sheets in the binder in the control room are not always being fully completed as required. The date the chemicals are ordered/received on site is not always being recorded.

### **Element 14 - Review and Provision of Infrastructure**

OFI#7: Consider aligning the timing of OCWA’s annual capital recommendation submission with the Annual Asset Plan submission, and the owner’s risk/opportunity and business case review process, to ensure budget deadlines will be met.

### **Element 16 - Sampling, Testing and Monitoring**

OFI#8: Consider calibrating the laboratory pH probe daily and documenting on the Operators Daily Lab Sheet (EF-ADMIN-2050).

### **Element 18 – Emergency Management**

OFI#9: The Emergency Contact & Essential Suppliers & Services List (V26.0) in SharePoint does not reflect recent staffing changes and the version posted in the control room was out of date (V25.0).

## **APPENDIX D: ENVIRONMENTAL COMPLIANCE INTERNAL AUDIT SUMMARY REPORT (AUGUST 22-25, 2022)**

### **Audit Purpose:**

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

### **Auditor Qualifications:**

Allison McGuckin has completed an ISO 14001:2015 Internal Auditor training course and an Environmental Compliance 101 course and is deemed competent to complete environmental compliance auditing. (see Certificates in Appendix A).

### **Methodology:**

The internal audit was conducted as outlined in Compliance Procedure (EA-ADMIN-1600) of the EMS Manual. The audit checklists were generated using the internal EF-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 an environmental compliance review of the EAPWSS.

Operational documents and records maintained by the Operating Authority for the period of December 2, 2020 through August 25, 2022 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
- Waste Generation
- Spills and Notifications
- Water Taking and Transfer
- Water Discharge and Watercourse Alterations

**Other Criteria –EF-ADMIN-1600 Compliance Audit Checklist**

- Permit To Take Water

**Interviews Conducted:**

- Allison McCann, Safety, Process & Compliance Manager (OCWA)
- Glenn McEown, Operations & Compliance Team Lead (OCWA)

**Areas Visited:**

- Elgin Water Treatment Plant, 43665 Dexter Line, Central Elgin

**Findings**

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

**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):**

- N/A

**Regulatory Opportunities for Improvement (OFIs):**

**OFI #1**

The Operating Authority retained the copies of three waste manifests: #MX605131-6, MX605130-8 and MX157875-0 that were received on August 3, 2022. The white copy (1) for all three manifests were mailed to the Ministry of the Environment, Conservation and Parks (MECP) on August 11, 2022. There is an opportunity for improvement to ensure copy 1 is mailed to the MECP within 3 days of receiving the manifest.

**Observations:**

- Staff interviewed were accessible and knowledgeable during the audit.
- During the tour it was noted that the WTP and all storage areas were clean and very organized.

**To:** Chair and Members, Board of Management  
Elgin Area Primary Water Supply System

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

**Subject:** Quarterly Operating Financial Status – 2<sup>nd</sup> Quarter 2022

### RECOMMENDATION

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

### BACKGROUND

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

A high-level summary of incurred expenses and revenues for the water supply system is attached to this report as Appendix A for the second quarter 2022 (April 1 to June 30) as well as a comparative accumulation of expensed for the year to date.

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



## DISCUSSION

For the information and reference of the Board, the following highlights of the attached summary 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 2021 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 \$115,000 higher than the previous year largely due COVID-related delays in receiving and payment of invoices in 2021. When adjusted, the comparative expense for 2022 is only marginally lower than that of the previous year.
- Salaries, wages, and benefits expenditures include all direct labour costs for administrative staff including benefits. Variations over the same period in 2021 are attributed to annual salary adjustments, and new staff hired. In addition, the 2021 YTD amount shown is understated as the pandemic delayed accounting entries related to salaries, wages, and benefits.
- 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 2022 pre-payments and other cost accounting adjustments, the costs to date are lower than the same period in 2021.
- Vehicles and Equipment expenditures include costs associated with vehicles, computers, and office equipment for administrative staff. The costs to date are lower than the same period in 2021.
- 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. The increased cost when compared to the same period in 2021 is attributed to increased insurance costs and security services added.
- Debt Principal and Interest payments occur twice per year; in the first and third quarter.

- Contributions to the Reserve Funds occur at the end of the fiscal year 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:** Archana Gagnier  
Budget and Finance Analyst

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

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

**Attachments:** Operating Financial Status Summary – 2nd Quarter 2022

## Quarterly Financial Summary Report

Elgin Area Water Supply system  
2nd Quarter 2022 (April 1 to June 30)  
(\$,000's)

	Approved 2022 Budget	Q2 - 2022	2022 Year to Date	Year To Date Variance	2021 Year To Date
<b>Total Revenue</b>	<b>14,765</b>	3,824	6,343	8,422	5,780
<u>Expenditures:</u>					
Contracted Operating Services	4,684	1,148	2,158	2,526	2,077
Contracted Administrative Services	183	46	91	92	90
Electricity	1,050	276	463	587	348
Salaries, Wages, Benefits	961	262	406	555	293
Administration and Other Expenditures	522	48	287	235	296
Vehicles and Equipment	74	14	25	49	31
Purchased Services & Professional Fees	996	112	335	661	180
Debt Principle Payments	2,338	0	1,153	1,185	1,131
Interest on Long-Term Debt	186	2	99	87	128
Contributions to Reserve Funds	3,771	231	0	3,771	0
<b>Total Expenditures</b>	<b>14,765</b>	<b>2,139</b>	<b>5,017</b>	<b>9,748</b>	<b>4,574</b>

**To:** Chair and Members, Board of Management  
Elgin Area 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 regarding Elgin Area Primary Water Supply System capital projects:

- a) That this report regarding the status capital projects be **RECEIVED** for information;
- b) That projects EA3011 Plant Interior Person Door, EA3012 Interior Lighting Upgrades, EA4107 Concrete Crack Injection, and EA4171 Backwash Drain Valve be **CLOSED** with surplus funding in the approximate amount of **\$50,492** be released to the Reserve Funds; and,
- c) That projects EA1026 Office Space Expansion, EA3016 Safety Showers Upgrade, EA4073 Plant Instrumentation, EA4136 Service Water Piping Replacement and EA4187 EMPS – Utility Pole Replacement be **CLOSED** with additional funding in the approximate amount of **\$36,300** be drawn from the Reserve Funds.

### DISCUSSION

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

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

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

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

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

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

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

**Prepared by:** Archana Gagnier  
Budget and Finance Analyst

**Submitted by:** Billy Haklander, P. Eng., LL.M  
Capital Programs Manager

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

**Attachments:** Appendix A - Capital Project Status Summary

## APPENDIX A: CAPITAL PROJECT STATUS SUMMARY

### A.1 Ongoing Capital Projects

PROJECT NO.	PROJECT	APPROVED BUDGET	EXPENDED TO DATE *	STATUS
EA2172	Terminal Reservoir Isolation Valve Replacement	\$90,000	\$167,867	Project ongoing
EA2177	Asset Management Plan 2021	\$150,000	\$102,586	Project ongoing
EA3010	IT Asset Replacement Program	\$431,000	\$209,259	Project ongoing
EA3013	Plant Reservoir Drain Repairs	\$100,000	\$40,640	Project ongoing
EA3014	LLP 2&3 Replacement Study	\$50,000	\$25,164	Project ongoing
EA3017	Exterior WTP Building Seals	\$60,000	\$15,572	Project ongoing
EA3018	Cyber Intrusion Detection System	\$10,000	\$0	Project ongoing
EA3020	Roof Replacement	\$325,000	\$262,343	Project ongoing
EA3024	EMPS Boiler Replacement	\$15,000	\$0	Project ongoing
EA3025	EMPS HVAC Replacement	\$25,000	\$0	Project ongoing
EA3026	EMPS Motor Control Centre Replacement	\$50,000	\$0	Project ongoing
EA4020	Financial Plan Update 2021	\$50,000	\$5,147	Project ongoing
EA4022	Security Upgrades	\$675,000	\$272,064	Project ongoing
EA4039	Record Drawings & Documents	\$255,000	\$174,045	Ongoing annual project
EA4055	Pipeline Condition Assessment	\$950,000	\$669,068	Project ongoing
EA4095	WTP Interior Renovations	\$581,500	\$360,794	Ongoing multi-year project

PROJECT NO.	PROJECT	APPROVED BUDGET	EXPENDED TO DATE *	STATUS
EA4114-21	Annual Maintenance (2021)	\$100,000	\$71,490	Annual program
EA4114-22	Annual Maintenance (2022)	\$100,000	\$37,867	Annual program
EA4129	Server Room Fire Suppression	\$30,000	\$0	Project to be initiated
EA4132	Alum Storage Tanks	\$825,000	\$543,472	Project ongoing
EA4135	Hydraulic/Transient Model Update & Monitoring Study	\$92,000	\$47,974	Project ongoing
EA4137	Low Lift Service Water Connection	\$550,000	\$53,515	Ongoing multi-year project
EA4138	Parking Lot Asphalt Resurfacing	\$50,000	\$0	Project ongoing
EA4152	PLC Replacements	\$40,000	\$0	Project ongoing
EA4153	Filter Backwash Upgrades	\$2,459,000	\$48,229	Project ongoing
EA4156	High Lift Pump Replacement	\$4,851,000	\$2,832,661	Project ongoing
EA4161	Evaluate Pre-Treatment Hydraulics	\$50,000	\$40,976	Project ongoing
EA4162	Crop Yield Monitoring – 2013 Pipeline Twinning	\$661,000	\$202,062	Ongoing multi-year project
EA4166	SCADA/PLC – Software Review and Upgrade	\$500,000	\$18,661	Project ongoing
EA4172	Dedicated Raw Water Sample Line	\$90,000	\$0	Project ongoing
EA4175	Pilot – Unchlorinated Filtration	\$25,000	\$0	Project ongoing
EA4176	Plant Drain Chlorine Sample Line	\$80,000	\$60,741	Project ongoing
EA4177	Railings and guarding	\$250,000	\$228,111	Ongoing multi-year project

PROJECT NO.	PROJECT	APPROVED BUDGET	EXPENDED TO DATE *	STATUS
EA4180	Filter Capacity Evaluation	\$37,000	\$0	Project ongoing
EA4183	UV Replacement	\$500,000	\$0	Project ongoing
EA4184	Water Quality Facility Plan	\$290,000	\$4,056	Project ongoing
EA4185	Construction Site Trailer Pad	\$25,000	\$0	Project ongoing
EA4186	Sodium Hydroxide Assessment Study	\$30,000	\$4,199	Project ongoing
EA4188	Lighting/Breaker Panel Replacement	\$50,000	\$40,139	Project ongoing
EA4189	RMF Mixing Pump Replacement	\$100,000	\$0	Project ongoing
EA4190	RMF Total Chlorine Residual Compliance	\$50,000	\$0	On Hold
EA4191	Roof Drain Replacements	\$25,000	\$22,669	Project ongoing
EA4192	Flocc Tank Influent Distribution Upgrades	\$100,000	\$22,965	Project ongoing
EA4193	Standby Generator TSSA	\$290,000	\$13,212	Project ongoing
<b>TOTAL</b>		<b>\$16,067,500</b>	<b>\$6,597,548</b>	

**A.2(a) Completed Projects – Release Surplus to Reserve Funds (\$50,492)**

PROJECT NO.	PROJECT	APPROVED BUDGET	EXPENDED TO DATE *	STATUS
EA3011	Plant Interior Door Replacement	\$60,000	\$57,536	Project complete
EA3012	Interior LED Lighting Upgrades	\$75,000	\$74,957	Project complete
EA4107	Concrete Crack Injection	\$120,000	\$103,284	Project complete
EA4171	Backwash Drain Valve Actuator Replacement	\$125,000	\$93,731	Project complete



PROJECT NO.	PROJECT	APPROVED BUDGET	EXPENDED TO DATE *	STATUS
<b>TOTAL</b>		<b>\$380,000</b>	<b>\$329,508</b>	

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

PROJECT NO.	PROJECT	APPROVED BUDGET	EXPENDED TO DATE *	STATUS
<b>TOTAL</b>		<b>\$ 0</b>	<b>\$ 0</b>	

**A.3 Completed Projects – Additional Funding Required (\$36,300)**

PROJECT NO.	PROJECT	APPROVED BUDGET	EXPENDED TO DATE *	STATUS
EA1026	Office Space Expansion	\$200,000	\$205,316	Project completed
EA3016	Safety Showers Upgrade	\$60,000	\$60,078	Project completed
EA4073	Plant Instrumentation	\$576,608	\$591,350	Project completed
EA4136	Service Water Piping Replacement	\$75,000	\$88,359	Project completed
EA4187	EMPS – Utility Pole Replacement	\$15,000	\$17,805	Project completed
<b>TOTAL</b>		<b>\$926,608</b>	<b>\$962,908</b>	

\* Expended as of August 31, 2022

**To:** Chair and Members, Board of Management  
Elgin Area Primary Water Supply System

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

**Subject:** Disconnecting from Work Policy

### RECOMMENDATION

That the Board of Management for the Elgin Area Water Supply System **RECEIVE** this report regarding the requirement for a Disconnecting from Work Policy for information.

### PREVIOUS AND RELATED REPORTS

None

### BACKGROUND

As of December 2, 2021, the *Employment Standards Act, 2000* (“ESA”) was amended to require employers with 25 or more employees, excluding Crown Corporations and agencies, to implement a Disconnecting from Work Policy as of June 2, 2022. The intent of the amendment is to ensure that employees are adequately advised of employer obligations to not require employees to engage in work-related communications outside of normal working hours, including emails, telephone calls and video calls, except in specified circumstances such as an emergency.

### DISCUSSION

The staff of the Regional Water Division, which are seconded and report to the Board of Management for the Elgin Area Water Supply System, are considered employees of the Corporation of the City of London for the purposes of the *Employment Standards Act*. The City of London has implemented a Disconnecting from Work Policy, effective June 2, 2022, which applies to all employees of the Corporation of the City of London.

In certain circumstances, two or more employers may be treated as one employer under the Employment Standards Act for the purposes of establishing the requirement and scope of the Policy. Notwithstanding, and given the current understanding of the policy requirements under the Employment Standards Act, Board staff believe that the Policy as implemented by the Corporation of the City of London (the “City”) is adequate for the circumstances and related to the activities of the regional water system.

The City's Disconnecting from Work Policy affirms the ability of an employee to disconnect from work outside of the employee's normal working hours. Exceptions are provided in the Policy in various circumstances, including but not limited to:

- Overtime, on-call, or standby according to applicable Collective Agreements or established procedures
- Unforeseen circumstances requiring contact with an employee such as an emergency or urgent operational circumstances requiring immediate attention

Established protocols and procedures for the Elgin Area Water Supply System, including the regional water system's Incident and Emergency Management System, related to notifications of emergencies and responding to urgent issues specifically require initial notification to employees by face-to-face or live voice-to-voice (i.e. telephone calls) communication. Initial notification of an emergency via voicemail or email is not adequate given the nature and circumstances of the water system's operation.

## **CONCLUSION**

It is the recommendation of Board staff that this information be received by the Board for information and reference, noting that it is the understanding of Board staff that the implementation of the Disconnecting from Work Policy implemented by the Corporation of the City of London adequately covers the operation of the regional water system.

**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  
Elgin Area Primary Water Supply System

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

**Subject:** 2023 Operating and Capital Budgets

### RECOMMENDATION

That the following actions be taken by the Board of Management for the Elgin Area Water Supply System with regard to the 2023 Operating and Capital Budgets:

- a) The Board **APPROVE** the 2023 Operating Budget in the total amount of \$15,679,000 as presented.
- b) The Board **APPROVE** the 2023 Capital Budget in the total amount of \$10,645,000 as presented.
- c) The Board **RECEIVE** the 2024 to 2032 Capital Forecast for information.
- d) The Board **APPROVE** the 2023 rate for water of \$0.9649 per cubic meter: and,
- e) The Board **RECEIVE** the 2021 to 2027 Flow and Financial Analysis for information

### EXECUTIVE SUMMARY

The proposed operating and capital budgets present a balanced cost and revenue projection for 2023, maintains the principles of the water system's Financial Plan approved in 2016, and is consistent with the projections provided in the 2022 budget. The proposed water rate for 2023 of 96.49 cents (\$0.9649) per cubic meter of water will adequately address capital, operating and administrative requirements as currently projected. The proposed rate represents a percent-increase of 2.5% over the 2022 rate.

The Financial Plan is a key element in the long-term strategic approach that addresses both infrastructure and operating needs for the utility while ensuring fiscal responsibility to maintain a reliable and sustainable water supply to the benefiting municipalities and consumers.

Cost projections presented in the 2023 budget include the anticipated operating costs for the water utility within the current and extended term with the contracted operating authority, the Ontario Clean Water Agency, which now end December 31, 2027.

The 2023 Capital Budget builds on the water system's Asset Management Plan approved in 2016 and utilizes the Customer Level of Service framework and Risk Mitigation strategy previously approved by the Board. This includes the utilization of the business case process to better quantify anticipated costs, savings, and service impacts to the water supply system for options considered.

The projects and initiatives in the 2023 Capital Budget are presented in this report within two primary groupings; Maintain Level of Service (Maintain LOS) projects that serve to ensure that services are provided at the current level of service, and Improved Level of Service (Improved LOS) which address enhancements to levels of service, support growth of the system and increasing water demands, address regulatory changes, or increase efficiency. A proposed capital project may touch, in part, on all these aspects, however they are presented within this report according to their respective primary driver.

With the assumption of ownership of the Elgin-Middlesex Pump Station (EMPS) building and building-related assets by the Board of Management earlier this year, projects for the Elgin-Middlesex Pump Station building and building-related assets are now separately identified in the Capital Budget and solely use the dedicated reserve fund established for the EMPS building.

The projected future capital expenditures include allocations for anticipated scheduled asset investments outlined in the Asset Management Plan (listed as "*AMP Investments*"). These are listed for projection and planning purposes and are not associated with specific projects at this time. As the business cases are completed in each category, the AMP Investments will be eliminated in the projections in favour of specific asset improvements and refurbishments.

## **PROPOSED 2023 OPERATING BUDGET**

### **2023 Water Rate**

It is proposed in this budget that the water rate for the wholesale of water to the benefiting municipalities be set at \$0.9649 per cubic meter (96.49¢ per cubic meter). In responding to regulatory, operational and inflationary pressures, this proposed 2023 rate represents a 2.5% increase from the current rate.

The proposed percent rate increase for the 2023 budget is lower than the projections previously reported to the Board in the 2022 Budget, which projected a 3% increase, but consistent with the 2016 Financial Plan. The proposed deviation was determined to be acceptable while continuing to address needed contributions to Reserve funds between 2023 and 2027.

## 2023 Budget Volume

Allowing for the current rate of population and minimal water demand growth within the benefiting municipalities, as well as anticipated impacts of continued water conservation, the proposed 2023 water volume included in the budget of 15.986 million cubic meters represents a 2.14% increase compared with the 2022 budgeted volume, and approximately 0.28% lower than the anticipated 2022 total supplied volumes.

Approved 2022 budget volume	15,650,000 m <sup>3</sup>
Anticipated 2022 year-end volume	16,031,416 m <sup>3</sup>
Proposed 2023 volume	15,986,000 m <sup>3</sup>

A conservative estimate of volume was utilized for the 2023 budget due to revised long-term projected consumption in Elgin County but remains reflective of long-term system consumption patterns throughout the region. The City of London continues to take the minimum contracted block-volume of water daily of approximately 22.7 million litres.

Water demand projections and anticipated capital works are reviewed annually as part of the budget development process to ensure capital investments are appropriately coordinated and timed. The long-term volume projections will be reviewed again during future revisions to the Master Water Plan and Asset Management Plan and compared to the long-term growth projections for each municipality. Further, the recently adopted business case process as part of the Asset Management Plan promotes a risk mitigation and level of service strategy which further addresses the appropriate timing of necessary projects.

## Operating Costs

The two single largest operating costs for the water supply system are the contract costs for the operation and maintenance of the water supply system, and the purchase of power for the system. The 2023 budgeted direct operating costs are approximately \$6.708 million, reflecting a 17% net increase compared to the 2022 budget. Energy saving initiatives, including the installation of new high lift pumps, have significantly contributed to the anticipated decrease in energy costs which offset the increased contractual operating costs.

Of the \$6.708 million, energy currently comprises approximately 15.7% of operating expenditures (down from 18.4% from the 2021 actual usage).

The Service Fee currently paid to the Board's contracted operating authority, the Ontario Clean Water Agency (OCWA), is comprised of a set fee for service (reflecting labour, material and chemical costs, etc.) paid by the Board for the operation, maintenance and repair of the water treatment facilities, including the recently constructed Residuals Management Facility. As electricity can be highly variable on a year-over-year basis, the risk of market volatility has summarily been assumed by the Board and mitigated through the Board's energy procurement strategy, as well as conservation and efficiency programs.

The Board previously received and accepted an energy, conservation and pump optimization study report which reviewed possible cost saving and efficiency measures related to the procurement and usage of electrical energy and the associated pumping strategy for the system. The proposed 2023 Capital Budget and forecasted capital plan continues to incorporate energy efficiency projects and opportunities, where feasible, with further energy efficiency projects to be considered in future.

### **Administration and Other Expenses**

The Administration and Other Expenditures projected for the 2023 budget of approximately \$2.950 million represents a \$195 thousand net increase over the 2022 budget amount. This net increase is due to numerous changes to the water supply system, summarized as follows:

- Management & Administrative Personnel: projections for personnel costs have been adjusted as a result of increases reflective of Collective Agreements and cost of living increases. The budget also includes the addition of a Control Systems Coordinator (½ FTE shared with the Lake Huron Water System) to address the increased workload associated with the Supervisory Control and Data Acquisition (SCADA) and computer networks across the region.
- Significant increases to the Board's property cyber insurance, Directors & Officers insurance, property insurance, and general liability insurance.
- The increased costs to Information Technology due to cyber security measures, implemented technology, and IT/OT asset replacements.
- The migration of plant instrumentation replacements from the Capital Budget to the Operating Budget.

### **Process Optimization**

There continues to be a focus on process optimization in order to improve treatment and transmission system performance, efficiency, and effectiveness with the intention of lowering long-term costs of operation and capital investments. This has the added potential to increase treatment capacity without the corresponding construction of new treatment processes (i.e., expanding the treatment plant).

Staff have undertaken several of the preliminary studies and investigations outlined in the previous Water Quality Facility Plan completed in 2012. Further leveraging in-house resources and partnerships with the Natural Sciences and Research Council of Canada (NSERC) Industrial Research Chairs at the universities of Waterloo and Toronto have allowed the apportionment of operating costs for optimization to be reduced without impacting the optimization program as a whole.

An update to the Water Quality Facility Plan approved in the 2022 Capital Budget has been initiated and will incorporate recent assessments related to treatment capacity, impacts of Climate Change and adaptive capacity, and unit process treatment efficacy.

## **PROPOSED 2023 CAPITAL BUDGET**

The proposed 2023 Capital Budget incorporates several projects to address capital improvements and critical reinvestment in the water supply system's assets, as well as regulatory requirements, ongoing and proposed Board initiatives. Project specific summaries are provided in Appendix A of this report for the Board's information.

### **Financial Plan and Asset Management Plan**

The previous Asset Management Plan and Financial Plan approved by the Board in 2016 provided an assessment of anticipated capital projects, based on condition assessments, operational assessments provided by our contracted operating authority, and previously undertaken studies which were available at that time. In the development of the 2023 Capital Budget, a business case is created for each project which outlines the scope of the issue that needs to be addressed, options which can reasonably be considered, cost estimates, and the identification of project dependencies. The business case process is linked with our Customer Level of Service framework and Risk Mitigation strategy to better prioritize and direct funds in a more strategic fashion and in consideration of financial constraints which may be experienced.

Within this framework a capital project may be "lifecycle" in nature and required to maintain an existing level of service, and/or a "service improvement" investment which may address elements like:

- Enhancement to the level of service (including safety and security, system resiliency, and working conditions).
- Support of system growth or growth in water demands.
- Address regulatory changes; and/or,
- Increase efficiency.

The level of capital investment will vary from year-to-year, most especially for projects related to system growth or supporting water demand growth. The Asset Replacement Reserve is used for lifecycle projects (maintain LOS), while the New Capital Reserve is used for system improvements. A given project, in principle, may address multiple elements within the Customer Level of Service framework (energy efficiency, health & safety, regulatory, performance, etc.), and therefore may require the utilization of both the Asset Replacement Reserve (lifecycle) and the New Capital Reserve (service improvement and growth) as sources of funding.

It is important to note that the anticipated projects outlined in the Asset Management Plan tend to be based on risk mitigation in the first five-year planning period, and systemic or age-related in nature for the remaining 25+ year planning period. In addition, the financial information presented in the Asset Management Plan is considered an "unconstrained" financial projection; meaning without consideration of such things as other operational needs and financial constraints (e.g., borrowing capacity) experienced by the water supply system.



The Financial Plan is utilized to incorporate the needs identified in not only the Asset Management Plan, but also the Master Water Plan (growth study) and other planning studies undertaken by the system, as well as the evolving operational and administrative needs of the system, to better constrain the financial requirements and implications to the system. During the development of the annual budget the projections in the Financial Plan are measured and adjusted according to actual conditions, which will consequently affect the capital plan in each fiscal year.

The projected capital plan (2024 to 2032) includes an allocation for anticipated systemic but unspecified asset investments starting in 2024 (identified as “*AMP Investments*”). This reflects the age-related projections included in the previously approved Asset Management Plan. As condition assessments and risk assessments are completed, business cases will be undertaken to identify and prioritize the expenditures and replace these *AMP Investments* allocations in the long-term plan.

An updated Asset Management Plan is currently under review and anticipated to be completed before the end of 2022. This new Asset Plan will be presented to the Board at a future meeting and incorporated into an updated Financial Plan expected in early 2023.

## **2023 Capital Plan**

The current Financial Plan previously approved by the Board recommends an average target year-end balance for the Asset Replacement Reserve in the order of \$4.0 million. Although the actual investment and rate of commitment may vary year to year, the current capital plan maintains the long-term average investment rate as outlined in the approved Asset Management Plan and Financial Plan.

In contrast, the New Capital Reserve is intended to grow significantly over time to provide a sufficient base for funding of large growth-related projects in future. The balance of generational investment equity (utilization of reserves established by current users versus debt incurred and paid by future users) has yet to be fully quantified and will be addressed in future Master Water Plan and Financial Plan studies.

While there are no significant growth-related expenditures within the current budget forecast period (e.g., plant expansion or pipeline twinning), the results of the Asset Management Plan and Financial Plan currently being undertaken, and future iterations of the Master Water Plan anticipated in 2024 are likely to have an impact on the long-term financial requirements to address growth-related projects. This may include such projects as the expansion of the terminal reservoir near St. Thomas or partial expansion of pre-treatment processes to address pending growth in the region.

Staff continue to be satisfied that the issue of generational equity can be addressed within a reasonable timeframe.

***Lifecycle Projects*** (Maintain Level of Service)

Proposed projects in the 2023 Capital Budget which primarily address maintaining the system's level of service are:

- Plant Reservoir Drain Repairs
- Roof Replacement
- Lighting/Breaker Panel Replacement
- Roof Drain Replacement
- St. Thomas Flow Meter Replacement
- Parking Lot Asphalt Resurfacing
- Backwash Drain Valve Actuator Replacement

In addition to the above-noted capital projects, the 2023 Capital Budget includes EA4114 Annual Maintenance which funds, in part, maintenance and repair projects undertaken by the contracted operating authority, the Ontario Clean Water Agency. All maintenance and repairs of the system's assets are the obligation of the contracted operating authority to undertake in accordance with the Service Agreement. For activities of maintenance and repair where the value of the material and any contracted specialty service exceed \$30,000 (adjusted annually by CPI (Consumer Price Index), the Board is responsible for the value of the work more than the \$30,000 (as adjusted). To facilitate this work, the Capital Budget includes an Annual Maintenance project which is utilized to fund this contractual obligation of the Board.

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

Proposed projects in the 2023 Capital Budget for which the primary driver is service improvement are:

- Security Upgrades
- Railings and Guarding
- Asset Condition Field Assessment
- UV Replacement
- Electric Vehicle Charging Stations

A summary of the capital projects is provided in Appendix A of this report.

**EMPS Building and Building-Related Assets**

The Elgin-Middlesex Pump Station at the Elgin Terminal Reservoir houses the pumps, piping, control systems, pressure surge controls and associated piping related secondary pumping systems for the City of London, the St. Thomas Secondary Water System, and the Aylmer Secondary Water System. The Elgin Board recently agreed to own and maintain the common building and building-related assets and entered into a long-term Joint Use and Occupancy Agreement with the secondary water systems and the City of London.

The agreement confirms the ownership and responsibilities related to the occupancy and use of the common building and, among other things, establishes a fee for occupancy on a square meter basis. The annual fee collected provides an annual contribution to a dedicated reserve fund which is now utilized by the Elgin Area Water System for the maintenance and repair of the building and building-related assets. All capital projects directly related to the Elgin-

Middlesex Pump Station building and building-related assets are now specifically identified in the capital plan and the corresponding dedicated reserve fund identified in the Sources of Finance for the Capital Budget.

Due to the immediate need to address a backlog of necessary capital investments in the EMPS building and related assets, the EMPS Reserve Fund will experience an initial deficit and require a loan to address the expenditures in 2023. Rather than issuing a separate debenture, staff have proposed an inter-reserve loan of \$600,000 from the Asset Replacement Reserve. The loan will be repaid over a three-year period starting in 2024 including interest.

The cost of operating the pumps and associated equipment of the secondary water systems continues to be born by the occupants.

### **CAPITAL FORECAST**

Several capital projects are projected beyond the 2023 Capital Budget year, which will have an impact on the financial forecast and future water rates for the water system. Some of these capital projects were anticipated in previous budget forecasts and are now inclusive of approved Asset Management Plan and Financial Plan. As previously noted, staff undertake a business case assessment for each project to confirm the costs, timing, and priority of the project, consistent with our Customer Level of Service framework and Risk Mitigation strategy.

### **FLOW AND FINANCIAL ANALYSIS**

Included in the budget package is a projection of annual volumes and finances beyond 2023 and provides a summary analysis of one option for rate increases and the use of debt (if any). This projection has incorporated the principles and recommendations from the previous Financial Plan but has been adjusted to reflect the current anticipated volume projections and corresponding revenues. These projections will be further revised when the Financial Plan, which currently being developed, is finalized and approved by the Board early in 2023.

The projected operating expenses beyond 2023 assumes that the future cost of operating the system is consistent with the amended operating agreement with the Ontario Clean Water Agency that begins on January 1, 2023. Significant changes in the global supply chain that may occur after January 1, 2023, including the cost and availability of chemicals and consumables for the water treatment processes, may have a considerable impact on future operating costs.

The Flow and Financial Analysis Summary presented in the 2023 Budget currently projects an annual 2.5% rate increase starting in 2023, consistent with the percent increases identified in the previously approved Financial Plan. This water rate projection, however, may be subject to change and revision as the update to the Financial Plan is completed in early 2023 which incorporates the updated Master Water Plan, undertaken in 2019, as well as the Asset Management Plan being completed this year.

## **Reserve Funds**

Conceptually, the Asset Replacement Reserve is required to provide a stable funding source for capital programs designed to replace, maintain, and extend the life of existing assets to their full potential. Accordingly, the contribution to the Asset Replacement Reserve fund year-over-year should be relatively consistent, on average over the long-term, with minor variations accounted for as the capital program is implemented.

Conversely, the New Capital Reserve Fund is intended for growth-related capital programs and various system and performance improvement initiatives. As these programs tend to be periodic in nature, the reserve fund balance in the New Capital Reserve may significantly increase or significantly decrease in any given year depending on the programs undertaken.

The Emergency Reserve Fund is intended to fund unplanned and unanticipated emergency-related projects such as pipeline failures, tank ruptures and treatment process failures. In accordance with the Board's direction, the target balance of the Emergency Reserve Fund is established at \$2 million, wherein contributions will be discontinued when the Emergency Reserve Fund balance reaches the target value.

## **Debentures**

There are several debentures previously approved by the Board and issued by the City of London on the water system's behalf, are nearing the end of their term within the current forecast period. These debentures are:

- Debt authorized in 2011 for the Residuals Management Facility (EA4023) in the amount of \$19 million was partially issued in 2016 (\$7 million) with payments beginning in September 2016 (2.3% for a 10-year term) and a further debt issuance in 2017 (\$4.5 million) with payments beginning in September 2017 (2.48% for a 10-year term)

A new debenture is anticipated to be required for the proposed UV Disinfection System (EA4183), currently estimated to be in the order of \$4 million in debt in 2024. The financial forecast provided in this budget includes an estimate of principal and interest payments for this debenture, with payments starting in 2025.



# Elgin Area

Primary Water Supply System

## ***Acknowledgement***

The preparation of the 2023 Operating and Capital budgets were undertaken by the Regional Water Division staff, with the assistance by the City of London Financial Services.

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

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

**Attachments:** Appendix A – 2023 Capital Project Summary  
2023 Operating and Capital Budgets, and Nine-Year Capital Forecast

**Report No.:** EA-2022-03-05

**Report Page:** 10 of 24

**Meeting Date:** October 6, 2022

**File No.:**

## **APPENDIX A:**

### **Lifecycle Projects (Maintain LOS)**

EA3013 – Plant Reservoir Drain Repairs: This project is to repair the reservoir drainage system at the water treatment plant. Several sinkholes have formed above the drain in and around the property and pose a health and safety risk to personnel and has the potential to further damage the drain and the adjacent reservoir.

EA3020 – Roof Replacement (multi-year program): A condition assessment completed in 2012 identified several rooves at the water treatment plant that required advanced repairs or replacement. A recently updated assessment confirmed that the chemical building roof is now in poor condition and requires complete replacement. 2023 is the final year of the multi-year replacement program.

EA4138 – Parking Lot Asphalt Resurfacing: The existing laneway and parking area at the water treatment plant has experienced longstanding deterioration due to successive years of construction and age-related wear. This project proposes to rehabilitate the existing asphalt laneway and parking area and address longstanding deficiencies in available parking spaces.

EA4171 – Backwash Drain Valve Actuators (multi-year program): A previous condition assessment has determined that the existing drain valve actuators are failing and require replacement. The actuators were installed twenty-five years ago, experience periodic failures and no longer supported by the manufacturer. 2023 is the final year of the replacement program.

EA4188 – Lighting/Breaker Panel Replacement (multi-year program): The 110v/220v lighting and breaker panels throughout the facility are original to plant construction and subject to periodic failures. The equipment is no longer supported by the manufacturer and spare parts are difficult to acquire. A systemic approach to the replacement of these low voltage panels is recommended. 2023 is the final year of the replacement program.

EA4191 – Roof Drain Replacement (multi-year program): The cast iron drains throughout the facility are original to plant construction and are starting to show signs of blockage and leakage due to the extent of corrosion. This project proposes to replace drains throughout the facility over a five-year period starting in 2022.

St. Thomas Flow Meter Replacement: The existing flow meter for the City of St. Thomas at the Elgin Middlesex Pumping Station was installed in 2001 and is showing indications of failure. This project is to replace the meter to support operations and ensure accurate customer billing.

### **Service Improvement Projects**

(Enhance LOS, Growth, Regulatory Changes, Efficiency, etc.)

EA4022 – Security Upgrades (multi-year program): The previously completed Security Audit and Threat Risk Vulnerability Assessment provided policy, resource, and site-specific recommendations to mitigate security and safety risks at all facilities. The project proposed is a multi-year allowance to undertake security-related modifications to all facilities, based on the criticality assessment and recommendations of the security specialist.

EA4177 – Railings and Guarding (multi-year program): A previous inspection by the Ministry of Labour has identified several of the water treatment facility's railings and guards which do not comply with current safety standards. This project proposes to replace the rails and guarding within the facility over a six-year period with the final year of the program completed in 2024.

EA4183 – UV Replacement: The existing UV disinfection system at the water treatment plant is at the end of its service life and requires replacement. The existing system is considered "first generation" technology and is energy inefficient and often problematic to control. This project proposes to replace the existing UV system with new energy efficient technology.

Asset Condition Field Assessment: One of the key outcomes of the Asset Management Policy is to build a future-ready utility that is data rich as well as knowledge rich. A corporate asset information strategy must be developed to ensure accessibility to a fully integrated asset data registry to support good governance and leverage operational efficiencies. The integrated asset data registry has been implemented through our computerized maintenance management system (Maximo); however, asset condition data gaps remain on key infrastructure assets. Presently the independently and field-verified asset condition information is out of date having last been completed in 2013. This multi-year program proposes to fill the condition assessment data gaps such that informed, data-driven, and evidence-based asset planning and replacement investment decisions may be made.

Electric Vehicle Charging Stations: This study will consider the opportunity to install electric vehicle charging stations at the water treatment plant, who they should be accessible to, the installation location, provide security-related recommendation, and identify potential grant funding opportunities.



**Elgin Area**

Primary Water Supply System

**2023 Operating and Capital Budgets  
and Nine Year Capital Forecast**

**October 6, 2022**



# **Elgin Area Primary Water Supply System 2023 Budget**

---

## **Table of Contents**

	<b>PAGE #</b>
● Revenue and Expenditure Summary	1
● Administration and Other Expenditures	2
● 2023 Capital Plan with Forecast for 2024 to 2032	3-4
● Capital Plan Sources of Financing	5
● Reserve Fund Analysis and Continuity Schedules	6-9
● Flow and Financial Analysis Summary	10

---

**Elgin Area Primary Water Supply System**  
**2023 Budget**  
**Revenue and Expenditure Summary**  
(\$000's)

	<b>2022 Approved Budget</b>	<b>2023 Proposed Budget</b>	<b>Incr (Decr) Over 2022</b>	<b>% Budget Incr (Decr)</b>	<b>2022 Year End Projection</b>
<b>Revenues:</b>					
Volume Revenues <sup>(1)</sup>	14,734	15,426	692	4.7%	15,092
EMPS Occupancy	0	222	222		222
Other Revenues	31	31	0	0.0%	241
<b>Total Revenues</b>	<b>\$ 14,765</b>	<b>\$ 15,679</b>	<b>\$ 914</b>	<b>6.2%</b>	<b>\$ 15,555</b>
<b>Expenditures:</b>					
Operating Costs <sup>(2)</sup>	5,734	6,708	974	17.0%	5,395
Administration and Other Expenditures	2,756	2,951	195	7.1%	2,536
Debt Principal Repayments <sup>(3)</sup>	2,323	1,176	(1,147)	(49.4)%	2,323
Interest on Long Term Debt <sup>(3)</sup>	181	121	(60)	(33.3)%	164
Contribution to Reserve Funds	3,771	4,723	952	25.3%	4,913
<b>Total Expenditures</b>	<b>\$ 14,765</b>	<b>\$ 15,679</b>	<b>\$ 914</b>	<b>6.2%</b>	<b>\$ 15,331</b>

\*subject to rounding

**Notes:**

(1) A budgeted volume projection increase is anticipated in 2023 (from 15,650,500 m3 in 2022 to 15,986,000 m3 in 2023). Rates per m3 are proposed to increase by 2.5%.

(2) Part of the operating costs are direct to the Elgin Area system (i.e. electricity), while all other costs are fixed to the annual operating costs in the bid price from the Ontario Clean Water Agency and other contracted services.

(3) Refer to page 10 for more information on debt.

**Elgin Area Primary Water Supply System**  
**2023 Budget**  
**Administration & Other Expenditures**  
(\$000's)

<b>Administration &amp; Other Expenditures</b>	<b>2022 Approved Budget</b>	<b>2023 Proposed Budget</b>	<b>Incr (Decr) Over 2022</b>	<b>% Budget Incr (Decr)</b>	<b>2022 Year End Projection</b>
Management & Administrative Personnel	961	1,043	82	8.5%	821
Support and Overhead Costs <sup>(1)</sup>	183	185	2	1.0%	183
Payment in Lieu of Taxes	395	407	12	3.0%	394
Insurance (Director & Officers, General Liability)	341	392	51	15.5%	344
Financial/Office Expenses <sup>(2)</sup>	166	188	22	13.3%	138
Information Technology Maintenance & Fees <sup>(3)</sup>	210	276	66	31.4%	159
Process Optimization	105	75	(30)	(28.6)%	47
Purchased Services (Legal, Consulting, Locates, etc.)	395	384	(11)	(2.3)%	293
<b>Total Administration &amp; Other Expenditures</b>	<b>\$ 2,756</b>	<b>\$ 2,950</b>	<b>\$ 194</b>	<b>7.0%</b>	<b>\$ 2,379</b>

\* subject to rounding

**Notes:**

(1) Support and Overhead Costs reflect the costs charged by the Administering Municipality for various administrative functions (e.g. Finance, Purchasing, Human Resources, Risk Management, etc.).

(2) Financial/Office Expenses include administrative expenses such as leased space, training/seminars/conventions, computer leasing, and sampling and research initiatives.

(3) Costs and charges related to computers, software, network communications, and SCADA system maintenance including plant instrumentation

**Elgin Area Primary Water Supply System**  
**2023 Budget**  
**2023 Capital Plan with Forecast for 2024 to 2032**  
(\$000's)

		Project Total	Prior Years Budget	2022 Approved Budget	2023 Proposed Budget					
#	Description					2024	2025	2026	2027	2028 to 2032
EA1026	RW Office Expansion & Renovation	200	200							
EA2019xx	Master Plan Update	435	135			150				150
EA2177	Asset Management Plan 2021	450	150					150		150
EA3010	IT Asset Replacement Program	1,706	431			40	425	225	25	560
EA3011	Plant Interior Person Door Replacement	60	40	20						
EA3012	Interior LED Lighting Upgrades	75	75							
EA3013	Plant Reservoir Drain Repairs	200	100		100					
EA3016	Safety Showers Upgrade	60	60							
EA3017	Exterior WTP Building Seals	60	40	20						
EA3020	Roof Replacement	625	175	150	300					
EA4020	Financial Plan Update 2021	150	50					50		50
EA4022	Security Upgrades	1,150	500	100	250	100	100	100		
EA4039	Record Drawings & Documents	255	255							
EA4068	Pipeline & Chamber Upgrades	1,250				50	500	500	200	
EA4073	Plant Instrumentation	577	562	15						
EA4114xx	Annual Maintenance <sup>(1)</sup>	1,700	600	100	100	100	100	100	100	500
EA4132	Alum Storage Tanks	825	615	210						
EA4135	Hydraulic/Transient Model Update & Transient Monitoring	92	92							
EA4136	Service Water Piping Replacement	125	50	25		25		25		
EA4137	LL Service Water Connection	550	50	500						
EA4138	Parking Lot Asphalt Resurfacing	125		50	75					
EA4153	Back Wash Pump Replacement	2,459	200	2,259						
EA4166	SCADA/PLC - Software Review/Upgrade	500	500							
EA4171	Backwash Drain Valve Actuators	175	75	50	50					
EA4172	Dedicated Raw Water Sample Line	90	90							
EA4177	Railings and Guarding	350	200	50	50	50				
EA4183	UV Replacement	8,950		500	8,450					
EA4184	Water Quality Facility Plan	590		290					300	
EA4185	Construction Site Trailer Pad & Electrical Pedestal	25		25						
EA4186	Sodium Hydroxide Assessment Study	30		30						
EA4187	EMPS - Utility Pole Replacement	15		15						
EA4188	Lighting/Breaker Panel Replacement	100		50	50					

**Elgin Area Primary Water Supply System**  
**2023 Budget**  
**2023 Capital Plan with Forecast for 2024 to 2032**  
(\$000's)

		Project Total	Prior Years Budget	2022 Approved Budget	2023 Proposed Budget					
#	Description					2024	2025	2026	2027	2028 to 2032
EA4189	RMF Mixing Pump Replacement	100		100						
EA4190	RMF Total Chlorine Residual Compliance	50		50						
EA4191	Roof Drain Replacements	100		25	25	25	25			
EA4192	Flocc Tank Influent Distribution Upgrades	100		100						
EA4193	Elgin Standby Generator TSSA Repairs	290		290						
<i>Proposed</i>	Asset Condition Field Assessment	255			85	85	85			
<i>Proposed</i>	Electric Vehicle Charging Stations	60			10	50				
<i>Proposed</i>	St. Thomas Meter Replacement	150			150					
	<i>AMP Investments - Plant (allowance for planning)</i>	44,180					748	996	106	42,331
	<i>AMP Investments - Transmission (allowance for planning)</i>	1,722					508	495	506	213
<b>Elgin Capital Subtotal</b>		<b>\$ 70,961</b>	<b>\$ 5,245</b>	<b>\$ 5,024</b>	<b>\$ 9,695</b>	<b>\$ 675</b>	<b>\$ 2,491</b>	<b>\$ 2,641</b>	<b>\$ 1,237</b>	<b>\$ 43,954</b>

		Project Total	Prior Years Budget	2022 Approved Budget	2023 Proposed Budget					
#	Description					2024	2025	2026	2027	2028 to 2032
EA3024	EMPS - Boiler Replacement	15		15						
EA3025	EMPS - HVAC Replacement	375		25	350					
EA3026	EMPS - MCC Replacement	300		50	250					
<i>Proposed</i>	EMPS - Roof Replacement	350			350					
	<i>AMP Investments - EMPS Building (allowance for planning)</i>								200	2,050
<b>EMPS Capital Subtotal</b>		<b>\$ 1,040</b>	<b>\$ -</b>	<b>\$ 90</b>	<b>\$ 950</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 200</b>	<b>\$ 2,050</b>

<b>Total Capital &amp; Forecast</b>		<b>\$ 72,001</b>	<b>\$ 5,245</b>	<b>\$ 5,114</b>	<b>\$ 10,645</b>	<b>\$ 675</b>	<b>\$ 2,491</b>	<b>\$ 2,641</b>	<b>\$ 1,437</b>	<b>\$ 46,004</b>
-------------------------------------	--	------------------	-----------------	-----------------	------------------	---------------	-----------------	-----------------	-----------------	------------------

\* subject to rounding

**Notes:**

(1) Capital account for Board contributions to maintenance projects undertaken by the operating authority.

**Elgin Area Primary Water Supply System**  
**2023 Budget**  
**Capital Plan Sources of Financing**  
**(\$000's)**

<b>Funding Source</b>	<b>2022 Approved Budget</b>	<b>2023 Proposed Budget</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>
Asset Replacement Reserve Fund	2,065	3,294	307	2,021	2,260	918
Capital Reserve Fund	2,959	2,401	369	470	381	319
Emergency Reserve Fund	-	-	-	-	-	-
EMPS Building Reserve Fund	90	950	-	-	-	200
Debenture	-	4,000	-	-	-	-
Other Sources of Financing	-	-	-	-	-	-
<b>Total Capital Funding</b>	<b>\$ 5,114</b>	<b>\$ 10,645</b>	<b>\$ 675</b>	<b>\$ 2,491</b>	<b>\$ 2,641</b>	<b>\$ 1,437</b>

\* subject to rounding

**Elgin Area Primary Water Supply System**  
**2023 Budget**  
**Asset Replacement Reserve Fund Analysis and Continuity Schedule**  
(\$000's)

Asset Replacement Reserve Fund <sup>(1)</sup>	Actual	Projected					
	2021	2022	2023	2024	2025	2026	2027
Reserve Fund Opening Balance	3,969	6,647	3,739	2,878	4,023	4,052	4,038
<b>Sources:</b>							
Current Year Operating	3,377	1,900	3,000	1,200	1,800	2,000	900
Other Revenues - Inter-fund Repayment <sup>(4)</sup>			-	218	212	206	-
Transfer from Capital Reserve							
Net Interest Earnings - 1.0% <sup>(2)</sup>	71	52	33	33	39	39	40
<b>Total Sources</b>	<b>\$ 7,417</b>	<b>\$ 8,599</b>	<b>\$ 6,772</b>	<b>\$ 4,329</b>	<b>\$ 6,074</b>	<b>\$ 6,297</b>	<b>\$ 4,978</b>
<b>Uses:</b>							
Total Lifecycle Capital Projects	770	2,065	3,294	307	2,021	2,260	918
Less: Other Funding Sources		-	-	-	-	-	-
Less: Debenture Requirement							
Miscellaneous Transfers/Expenditures							
Less: Inter-fund Loan <sup>(4)</sup>			600	-	-	-	-
Net Current Year Fund Draws <sup>(3)</sup>	770	2,065	3,894	307	2,021	2,260	918
Prior Years Capital Expenditures <sup>(3)</sup>		2,795					
<b>Total Uses</b>	<b>\$ 770</b>	<b>\$ 4,860</b>	<b>\$ 3,894</b>	<b>\$ 307</b>	<b>\$ 2,021</b>	<b>\$ 2,260</b>	<b>\$ 918</b>
<b>Reserve Fund Ending Balance</b>	<b>\$ 6,647</b>	<b>\$ 3,739</b>	<b>\$ 2,878</b>	<b>\$ 4,023</b>	<b>\$ 4,052</b>	<b>\$ 4,038</b>	<b>\$ 4,059</b>

\* subject to rounding

**Notes:**

(1) The Asset Replacement Reserve Fund was established to fund projects of a lifecycle nature to maintain existing levels of service and has an average annual target ending balance of \$4.0M.

(2) Projected net interest earnings based on an average rate of anticipated sources and uses of funds.

(3) Drawdowns are based on full/committed capital needs and not intended to project the actual cash flow of funds being utilized in a particular year.

(4) Inter-fund lending between reserve funds to temporarily finance capital cash flow deficiencies. Inter-fund repayments include principal and interest.

**Elgin Area Primary Water Supply System**  
**2023 Budget**  
**New Capital Reserve Fund Analysis and Continuity Schedule**  
(\$000's)

Capital Reserve Fund <sup>(1)</sup>	Actual	Projected					
	2021	2022	2023	2024	2025	2026	2027
Reserve Fund Opening Balance	5,630	6,015	1,475	576	3,268	5,164	7,397
<b>Sources:</b>							
Current Year Operating	1,012	1,871	1,492	3,041	2,324	2,552	5,614
Net Interest Earnings - 1.0% <sup>(2)</sup>	110	37	10	19	42	62	100
<b>Total Sources</b>	<b>\$ 6,752</b>	<b>\$ 7,923</b>	<b>\$ 2,977</b>	<b>\$ 3,636</b>	<b>\$ 5,634</b>	<b>\$ 7,778</b>	<b>\$ 13,111</b>
<b>Uses:</b>							
Total System Improvement & Growth Projects	621	2,959	6,401	369	470	381	319
Less: Other Funding Sources		-	-	-	-	-	-
Less: Debenture Requirement <sup>(4)</sup>			(4,000)				
Less: Additional Capital Drawdowns	116						
Net Current Year Fund Draws <sup>(3)</sup>	737	2,959	2,401	369	470	381	319
Prior Years Capital Expenditures <sup>(3)</sup>		3,489					
<b>Total Uses</b>	<b>\$ 737</b>	<b>\$ 6,448</b>	<b>\$ 2,401</b>	<b>\$ 369</b>	<b>\$ 470</b>	<b>\$ 381</b>	<b>\$ 319</b>
<b>Reserve Fund Ending Balance</b>	<b>\$ 6,015</b>	<b>\$ 1,475</b>	<b>\$ 576</b>	<b>\$ 3,268</b>	<b>\$ 5,164</b>	<b>\$ 7,397</b>	<b>\$ 12,792</b>

\* subject to rounding

**Notes:**

- (1) The New Capital Reserve Fund was established to fund projects related to system growth, enhancing levels of service, or address issues which are regulatory or safety in nature.
- (2) Projected net interest earnings based on an average rate of anticipated sources and uses of funds.
- (3) Drawdowns are based on full/committed capital needs and not intended to project the actual cash flow of funds being utilized in a particular year.
- (4) Debenture required for the replacement of the UV Disinfection system and upgrades (EA4183)



**Elgin Area Primary Water Supply System**  
**2023 Budget**  
**Emergency Reserve Fund Analysis and Continuity Schedule**  
(\$000's)

Emergency Maintenance Reserve Fund <sup>(1)</sup>	Actual	Projected					
	2021	2022	2023	2024	2025	2026	2027
Reserve Fund Opening Balance	910	854	863	872	1,685	2,003	2,023
<b>Sources:</b>							
Current Year Operating	-	-	-	800	300	-	-
Net Interest Earnings - 1.0% <sup>(2)</sup>	18	9	9	13	18	20	20
<b>Total Sources</b>	<b>\$ 928</b>	<b>\$ 863</b>	<b>\$ 872</b>	<b>\$ 1,685</b>	<b>\$ 2,003</b>	<b>\$ 2,023</b>	<b>\$ 2,043</b>
<b>Uses:</b>							
Current Year Capital Expenditures	74						
Prior Years Capital Expenditures							
<b>Total Uses</b>	<b>\$ 74</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>Reserve Fund Ending Balance</b>	<b>\$ 854</b>	<b>\$ 863</b>	<b>\$ 872</b>	<b>\$ 1,685</b>	<b>\$ 2,003</b>	<b>\$ 2,023</b>	<b>\$ 2,043</b>

\* subject to rounding

**Notes:**

(1) The Emergency Reserve Fund was established to fund projects that arise on an emergency basis. This funding is to be in place outside of the Capital and Asset Replacement Reserve Funds and their defining guidelines. Contributions will stop once the reserve fund balance reaches \$2.0 million.

(2) Projected net interest earnings based on an average rate of anticipated sources and uses of funds.

**Elgin Area Primary Water Supply System**  
**2023 Budget**  
**EMPS Building Reserve Fund Analysis and Continuity Schedule**  
(\$000's)

EMPS Building Reserve Fund <sup>(1)</sup>	Actual	Projected					
	2021	2022	2023	2024	2025	2026	2027
Reserve Fund Opening Balance	-	-	142	24	37	56	82
<b>Sources:</b>							
Current Year Operating	-	231	231	231	231	231	231
Other Revenues - Inter-fund Loan <sup>(4)</sup>			600	-	-	-	-
Net Interest Earnings - 1.0% <sup>(2)</sup>	-	1	1	-	-	1	1
<b>Total Sources</b>	<b>\$ -</b>	<b>\$ 232</b>	<b>\$ 974</b>	<b>\$ 255</b>	<b>\$ 268</b>	<b>\$ 288</b>	<b>\$ 314</b>
<b>Uses:</b>							
Total EMPS Projects	-	90	950	-	-	-	200
Less: Other Funding Sources							
Less: Debenture Requirement							
Less: Additional Capital Drawdowns							
Net Current Year Fund Draws <sup>(3)</sup>	-	90	950	-	-	-	200
Prior Years Capital Expenditures <sup>(3)</sup>							
Miscellaneous Transfers/Expenditures							
Inter-fund Loan Repayments - Asset							
Replacement Reserve Fund <sup>(4)</sup>			-	218	212	206	-
<b>Total Uses</b>	<b>\$ -</b>	<b>\$ 90</b>	<b>\$ 950</b>	<b>\$ 218</b>	<b>\$ 212</b>	<b>\$ 206</b>	<b>\$ 200</b>
<b>Reserve Fund Ending Balance</b>	<b>\$ -</b>	<b>\$ 142</b>	<b>\$ 24</b>	<b>\$ 37</b>	<b>\$ 56</b>	<b>\$ 82</b>	<b>\$ 114</b>

\* subject to rounding

**Notes:**

(1) The EMPS Building Reserve Fund was established to fund capital costs strictly associated with the Elgin-Middlesex Pumping Station. Current year operating contributions are solely related to occupancy fees charged to the benefiting systems.

(2) Projected net interest earnings based on an average rate of anticipated sources and uses of funds.

(3) Drawdowns are based on full/committed capital needs and not intended to project the actual cash flow of funds being utilized in a particular year.

(4) Inter-fund lending between reserve funds to temporarily finance capital cash flow deficiencies. Inter-fund repayments include principal and interest.

**Elgin Area Primary Water Supply System  
Flow and Financial Analysis Summary  
(\$000's)**

Factors	Actual	Approved	Projected					
	2021	2022 Budget	2022 (Projected)	2023	2024	2025	2026	2027
Rate Increase <sup>(1)</sup>	4%	4%	4%	2.5%	2.5%	2.5%	2.5%	2.5%
Total Flow m <sup>3</sup>	15,841,673	15,650,500	16,031,416	15,986,000	15,993,701	16,001,409	16,009,125	16,016,848
Total Water Rate \$/m <sup>3</sup>	0.9052	0.9414	0.9414	0.9649	0.9891	1.0138	1.0391	1.0651
Flow Volume Revenues	14,340	14,734	15,092	15,426	15,819	16,222	16,636	17,060
Other Revenue	155	31	241	253	253	253	253	253
<b>Total Revenue</b>	<b>\$ 14,495</b>	<b>\$ 14,765</b>	<b>\$ 15,333</b>	<b>\$ 15,679</b>	<b>\$ 16,072</b>	<b>\$ 16,475</b>	<b>\$ 16,889</b>	<b>\$ 17,313</b>
Operating Costs <sup>(2)</sup>	5,663	5,734	5,395	6,708	6,200	6,640	6,864	6,026
Administrative Expenses	1,960	2,756	2,536	2,951	3,306	3,384	3,465	3,549
Debt Servicing Costs <sup>(3)</sup>	2,511	2,504	2,488	1,297	1,294	1,796	1,777	993
<b>Total Operating &amp; Administrative Expenses</b>	<b>\$ 10,134</b>	<b>\$ 10,994</b>	<b>\$ 10,419</b>	<b>\$ 10,956</b>	<b>\$ 10,800</b>	<b>\$ 11,820</b>	<b>\$ 12,106</b>	<b>\$ 10,568</b>
Asset Replacement Reserve Fund Contributions	3,377	1,900	1,900	3,000	1,200	1,800	2,000	900
Capital Reserve Fund Contributions	984	1,871	2,782	1,492	3,041	2,324	2,552	5,614
Emergency Reserve Fund Contributions	-	-	-	-	800	300	-	-
Other Contributions:								
EMPS Building Reserve Fund Contributions	-	-	231	231	231	231	231	231
<b>Total Expenses</b>	<b>\$ 14,495</b>	<b>\$ 14,765</b>	<b>\$ 15,332</b>	<b>\$ 15,679</b>	<b>\$ 16,072</b>	<b>\$ 16,475</b>	<b>\$ 16,889</b>	<b>\$ 17,313</b>

\* subject to rounding

**Notes:**

(1) Percent rate increases recommended are consistent with the approved Financial Plan which provide for prudent financial planning to accommodate inflation, new capital requirements, and adequate reserve fund balances.

(2) Operating expense projections reflect annual inflationary increases and anticipated adjustments in accordance with the service agreement with the contracted operating authority.

(3) Debentures:

- Debt authorized (2011) for the Residuals Management Plant (EA4023) in the amount of \$19 million with partial issuance in 2016 (\$7M) and payments beginning Sept/16 (all-in rate of 2.3% for a 10 year term), further debt issuance in 2017 in the amount of \$4.5M and payments beginning in Sept/17 (all-in rate of 2.48% for a 10 year term).
- New debenture anticipated in 2024 for UV Disinfection System (EA4183), with payments starting in 2025.
- Rates noted above could change depending upon market conditions at the time of debt issuance.

**To:** Chair and Members, Board of Management  
Elgin Area Primary Water Supply System

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

**Subject:** Electronic Monitoring Policy

### RECOMMENDATION

That on the recommendation of the Chief Administrative Officer, the Board of Management for the Elgin Area Water Supply System **APPROVE** the Electronic Monitoring Policy as appended to this report.

### PREVIOUS AND RELATED REPORTS

June 2, 2022      Video Surveillance Policy

### BACKGROUND

s of April 11, 2022, the *Employment Standards Act, 2000* (“ESA”) was amended to require employers with 25 or more employees, excluding Crown Corporations and agencies, to implement an Electronic Monitoring Policy as of October 11, 2022. The intent of the amendment is to ensure that employees are adequately advised that their activities in the workplace may be monitored by their employer by electronic means.

The Electronic Monitoring Policy required under the Employment Standards Act would apply to all employees of the employer, as well as all assignment employees, temporary help, and agency employees who are assigned to perform work for the employer.

### DISCUSSION

The staff of the Regional Water Division, which are seconded and report to the Board of Management for the Elgin Area Water Supply System, are considered employees of the Corporation of the City of London for the purposes of the *Employment Standards Act*. In addition, the Elgin Area Water Supply system utilizes various contracted services that may utilize the electronic systems owned by the Elgin Area Water Supply System, including but not limited to the contracted operating authority and contracted security services which operate at facilities owned by the Elgin Area Water Supply System.

Notwithstanding, and given the secondment nature of the employment of Regional Water staff, it is recommended that the Board adopt its own policy related to electronic monitoring for the purpose of public transparency as the systems and circumstances of employment may be different than other employees of the Corporation of the City of London.

Within the context of the ESA, “electronic monitoring” may include any and all forms of employee and assignment monitoring that is undertaken electronically, as well as any

electronic means by which an employer can directly or indirectly monitor the activities of an employee.

For the Regional Water System, electronic monitoring may include:

### **Fleet GPS**

Fleet vehicles provided through the City of London and utilized by Regional Water staff ("Fleet Vehicles") are equipped with Global Positioning System (GPS) Tracking. The purpose of this use of this system for Regional Water Fleet Vehicles is primarily for safety as staff are often driving long distances and working alone. In the event of a vehicle accident, the system will automatically notify the City's fleet services department and Regional Water management staff of the incident, including location.

Notwithstanding, the system also can collect vehicle data (fuel consumption rates, engine errors, etc.) as well as data that may be attributed to the driving behaviour of the employee. This may include but not limited to speeding, hard breaking, sharp turns, and rapid accelerations.

### **CCTV Security Cameras**

The Closed-Circuit Television (CCTV) security cameras were recently replaced and upgraded throughout the regional water system, and provide extensive remote monitoring coverage and capabilities of the water system's facilities. Because of the nature of the system, the work activities of employees, contractors and visitors can be monitored.

At the June 2, 2022 meeting of the Board, a **Video Surveillance Policy** was adopted and is specific to the utilization of the CCTV security cameras and appropriate protections of privacy. The proposed Electronic Monitoring Policy, appended to this report, is in addition to the Video Surveillance Policy previously approved.

### **Access Control Security Systems**

The Regional Water System uses both a high-security key system and HID card access system at the various facilities to manage, control and restrict access. Both systems utilize RFID-encoded keys or cards to manage location-specific and person-specific access including scheduled access restrictions and automatic expirations.

Access controls have been implemented at all facilities, including the Regional Water office located in north London.

While not directly intended to monitor employee activity, these systems can indirectly monitor employee locations and behaviours through the time-coded access logs, including attempted access to restricted locations.

## **Computer Systems**

All computer systems implemented by the Regional Water System utilizes user-specific access controls and identity authentication. Where necessary, multi-factor authentication protocols have been implemented which may utilize computers or devices not owned by the City of London (in its capacity as Administering Municipality) or the Elgin Area Water Supply System.

In most cases, the computer systems utilize activity logs that can be used to directly or indirectly monitor employee activities and work performed, either directly or indirectly, and at a minimum include log-in/out activities.

All email, whether drafted, sent, received or deleted by the user, including related cyber security and spam/phish management systems, are accessible and can be utilized to monitor employee activities.

Advanced systems, including the Supervisory Control and Data Acquisition (SCADA) system used for controlling the regional water system, utilize advanced error, alarm and activity logs which can be utilized to monitor employee activities. In addition, document management systems, such as the regional water systems' Microsoft Office-365 tenant, actively track employees access and utilization of documents, including user-specific revision histories.

In addition, access to the internet using Regional Water computers and computer networks is controlled and tracked and, in some cases, restricted. This includes computers and devices utilized by visitors which uses the Regional Water Systems' computer network to access the system through a guest WiFi system, as well as accessing systems from home office and remote locations using Regional Water computers.

It is specifically noted for the information and reference of the Board, that the amendment to the ESA regarding the requirement of an Electronic Monitoring Policy does not establish any new rights for employees not to be electronically monitored by their employer, nor does it create any new privacy rights for employees. The amendment to the Act also does not affect or limit an employer's ability to use information obtained through electronic monitoring of its employees, beyond what is currently embodied within other legislation including but not limited to the *Municipal Freedom of Information and Protection of Privacy Act*.

In addition, electronic monitoring and the applicable policy applies to employees working in any workplace including but not limited to vehicles, remote locations and working from home.

## CONCLUSION

For public transparency, it is the recommendation of Board staff that the Electronic Monitoring Policy attached to this report as Appendix A be approved by the Board.

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

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

**Attachments:** Appendix A – Electronic Monitoring Policy

## **APPENDIX A: ELECTRONIC MONITORING POLICY**

**Approved:**

**Revised:** n/a

**Last Reviewed Date:** 15 September 2022

**Policy Lead:** Director, Regional Water

### **1. Purpose**

The Elgin Area Primary Water Supply System (“EAPWSS”) prioritizes instituting practices which foster a workplace culture of mutual trust with and among employees.

The purpose of this Electronic Monitoring Policy (“Policy”) is to ensure that each employee understands how and why the EAPWSS utilizes certain electronic systems which may be used for electronic monitoring.

At all times, the EAPWSS will ensure that it remains compliant with applicable privacy laws, and other laws that also relate to the subject matter of this policy

### **2. Applicability**

This Policy applies to all staff of the Regional Water Division of the City of London which are seconded and report to the Board of Management for the Elgin Area Primary Water Supply System, as well as all assignment employees, temporary help, agency employees who are assigned to perform work for the EAPWSS.

The EAPWSS Video Surveillance Policy is a supplemental policy to this Policy, specific to the implementation and use of Closed-Circuit Television security cameras.

The Electronic Monitoring Policy of the Corporation of the City of London may also apply to employees accessing EAPWSS Systems utilizing computers, devices and network services provided through the Corporation of the City of London.

### **3. Definition of Electronic Monitoring**

Electronic monitoring includes all forms of employee monitoring that is performed electronically.

In this Policy, “electronic monitoring” means, the EAPWSS’ collection of information about an employee’s activities through electronic devices, electronic communication tools, software, or any other technology used in EAPWSS networks and systems or through systems/devices not owned by the EAPWSS, but to which the EAPWSS has access or obtains information regarding an employee’s activities and that are monitored electronically, including employee personal devices used for work purposes.



Examples of electronic monitoring systems include, but are not limited to, EAPWSS-owned hardware such as computers, laptops, tablets, mobile devices, key fobs, video or audio recording devices, GPS units, GPS vehicle tracking and/or EAPWSS-licensed and approved software including computer servers, network threat detection tools, email accounts, applications, programs, EAPWSS-shared drives or file shares, message boards, instant messaging systems, EAPWSS cloud storage locations and various other systems (“Systems”).

Given that technology changes rapidly, the EAPWSS reserves the right to amend these definitions and examples at any time, and they are not to be considered exhaustive.

#### 4. EAPWSS Specific Electronic Monitoring

In addition to the Electronic Monitoring identified in the Electronic Monitoring Policy of the Corporation of the City of London (referenced in its capacity as Administering Municipality for the EAPWSS in the provision of seconded/assigned employees), at present the EAPWSS engages the following types of electronic monitoring:

- GPS-enabled tracking of vehicles supplied through the Corporation of the City of London for use by authorized employees of the EAPWSS from the time that the vehicle is started to the time that it is parked and turned off;
- Closed-Circuit Television Security Cameras in accordance with the Video Surveillance Policy;
- Data associated with key card access controls and RFID-enabled security keys is collected every time an employee uses their assigned key card and/or RFID-enabled key to access an electronically controlled door;
- Network connectivity and activity is logged every time an employee logs into the network, and WiFi data is tracked until the employee logs off;
- Data associated with the access and utilization of the document management system, including accessing, modifying, and deleting files for the purposes of document controls and records management;
- Monitoring of employee email and text-based chat to ensure compliance with employee policies/licencing requirements and productivity;
- Data associated with accessing, monitoring, modifications, and operational changes made within the Supervisory Control and Data Acquisition System

#### 5. Purpose of Electronic Monitoring and Use of Information Obtained

The EAPWSS collects, uses, transfers and discloses information of its employees for reasons related to administration of the employment relationship, site safety and security,

as well as for the reasons specifically set out below. The information obtained through electronic monitoring may be used for the following reasons including, but not limited to:

- recruiting, training, recognizing, and retaining a highly qualified and motivated workforce;
- establishing and maintaining harmonious employer-employee relations;
- assessing overall employee productivity;
- disciplinary discovery, such as for workplace investigations concerning disciplinary issues;
- administration of the EAPWSS policies and procedures, including investigations related to alleged breaches of such policies and/or procedures;
- managing and promoting the EAPWSS business activities;
- complying with a subpoena, warrant or court order;
- ensuring security of Systems and all data contained or transmitted therein;
- employee and public safety and security; and
- meeting requirements imposed by law.

#### 6. In What Circumstances Employees May be Electronically Monitored

The EAPWSS may monitor employees during the employee's working hours, as well as anytime employees are utilizing EAPWSS Systems or personal devices for work-related purposes. Electronic monitoring may occur any time when the employee accesses and utilizes EAPWSS Systems, including but not limited to remote access and working from home, including times outside of normal working hours.

#### 7. No Expectation of Privacy

The way in which the EAPWSS seeks consent, including whether it is express or implied, may vary depending upon the sensitivity of the information and the method in which the information is being collected. In addition, in certain circumstances as permitted or required by law, the EAPWSS may collect, use or disclose personal information without the knowledge or consent of the individual.

The EAPWSS reserves the right to access any and all data hosted or stored on the EAPWSS's Systems at any time and without advance notice or consultation with the employee, for the purposes described in this Policy.

## 8. Retention and Safeguards

After the conclusion of the employment relationship, the EAPWSS may retain certain personal information that it obtained through electronic monitoring for a period not longer than seven years, unless otherwise required by applicable law.

Information obtained through electronic monitoring that is not personal information may be retained indefinitely, unless otherwise requested.

The EAPWSS will protect your information by security safeguards appropriate to the sensitivity of the information. Safeguards will vary depending on the sensitivity, format, location, and storage of the information.

## 9. Enforcement

If employees have any questions regarding this Policy or any questions about electronic monitoring that are not addressed in this Policy, they may contact the Director of Regional Water.

The EAPWSS will not tolerate any reprisal against an individual who exercises their rights under this Policy. Reprisal or threats of reprisal are considered a serious violation of an employee's rights, and will be dealt with accordingly.

## 10. Changes

This Policy may be amended in whole or in part or eliminated in its entirety at any time at the sole discretion of the EAPWSS, provided that any change or elimination complies with the *Employment Standards Act, 2000*.

If a change to this Policy is made, the revised Policy will be made available to all employees

**To:** Chair and Members, Board of Management  
Elgin Area Primary Water Supply System

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

**Subject:** 2022 Asset Management Plan Update Project Completion

### RECOMMENDATION

That, on the recommendation of the Chief Administrative Officer, the Board of Management for the Elgin Area Primary Water Supply System **ENDORSE** the 2022 Asset Management Plan Update.

### PREVIOUS AND RELATED REPORTS

December 3, 2020 Asset Management Maturity Assessment and Roadmap

March 4, 2021 Asset Management – Roadmap and Plan Update

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

March 3, 2022 Asset Management Plan – Levels of Service Framework

June 2, 2022 Elgin Area Treatment and Transmission Assets – State of the Infrastructure Report

### BACKGROUND

At the March 4, 2021 Board meeting, Board staff reported on the finalization of the Asset Management Maturity Assessment and Roadmap (AM Roadmap) and the Board authorized the execution of a consulting services agreement for the completion of the Asset Management Plan update. Further, a key recommendation of the AM Roadmap was the development of an Asset Management Policy which the Board subsequently approved at its meeting on October 7, 2021. With an established Asset Management Policy, the Board endorsed the Asset Management Plan Levels of Service Framework at its meeting on March 3, 2022 and received the State of the Infrastructure report at its June 2, 2022 meeting.

The Asset Management Plan update is a culmination of these initiatives and brings together the asset management direction, vision, and guiding principles of the utility for the next 5 years and beyond.

### DISCUSSION

The 2022 Asset Management Plan (2022 AMP) was written by Dillon Consulting Limited with input from Board staff and representatives of the contracted operator through several workshops, meetings, and reviews. The 2022 AMP update reflects the utility's continuous

efforts to improve our asset management planning and our level of asset management maturity. Notable enhancements incorporated into the 2022 AMP include:

- Enhanced comprehensive asset registry including digital technology assets;
- Improvements to risk calculation, refinement of asset specific risk scores, and introduction of process area risk profiles;
- Updated customer and technical levels of service, including recommended digital technology asset indicators;
- Enhanced asset management & lifecycle strategies, including updated Strategic Direction Statements;
- Unconstrained financial forecast including lifecycle and mid-life intervention cost estimates; and,
- Digital tools intended to facilitate the operationalization of the asset management plan.

The 2022 AMP also includes several recommendations intended to support the continuous improvement of our asset management practices, and the quality and accuracy of our asset-related data, including:

- Increasing performance data collection;
- Updating field-verified condition assessment information on a more regular basis; and,
- Enhancing and implementing Level of Service (customer and technical) metrics data measuring, tracking & reporting.

The 2022 AMP found the EAPWSS treatment, transmission, and digital assets to be in overall good condition with 51% of assets assessed to be in Very Good or Good condition, 29% of assets to be in Fair condition, and only 20% of assets considered to be in Poor or Very Poor condition.

Overall, the EAPWSS's 4,077 assets have an estimated replacement cost of \$194M (2022 dollars), split between \$109M for treatment assets, \$78M for transmission assets, and \$7M for digital technology assets.

There are three applicable risk zones based on the individual asset risk scoring: Low Risk (score 1-9), Moderate Risk (score 10-16), High Risk (score 17-25). The risk profiles for treatment, transmission, and digital technology assets identified 31% of the total assets to be considered as either moderate or high risk and might warrant higher priorities for implementation of lifecycle activities.

The EAPWSS's proposed investment decisions over the 25-year period of the 2022 AMP are guided by our Asset Management Policy, Strategic Direction Statements (Addressing Legislative Changes, Maintain Levels of Service, Support Growth and Demand, Increase Efficiency, Enhance Levels of Service), and relate to our levels of service for water quality, availability/reliability, and environmental acceptability. All proposed investments link back to these statements, measures, and the AM Policy.

The table below provides a summary of the total unconstrained annual expenditure forecast of \$92.4M over the planning period. The unconstrained annual expenditure is presented in 2022 dollars and represents capital investment, asset mid-life intervention costs, and asset lifecycle replacement costs.

<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>
\$6,192,001	\$990,100	\$875,315	\$4,131,883	\$1,967,028

<b>2027-2031</b>	<b>2032-2036</b>	<b>2037-2041</b>	<b>2042-2046</b>
\$3,387,751	\$2,873,097	\$2,641,330	\$6,738,673
<i>(Avg Per Year)</i>	<i>(Avg Per Year)</i>	<i>(Avg Per Year)</i>	<i>(Avg Per Year)</i>

Asset lifecycle replacement projects based on the assets expected end of useful life reflect 76% of the total projected costs over the next 25 years and have been assigned a replacement year based on the assets expected end of useful life. Depending on the asset condition, performance, working environment, intervention, and maintenance an asset's end of useful life will fluctuate. Systemic risk evaluations based on current asset data are completed as part of the business case development and review process to identify and prioritize these renewal needs.

The unconstrained 25-year financing strategy forecast in the AM Plan will help inform the Financial Plan Update currently being undertaken by Watson & Associates Economists Ltd. and has also been prepared such that it can be used in conjunction with the annual budget process. Healthy capital and replacement reserves will fund the forecasted capital lifecycle investments as well as growth and enhancement related projects. This will require proactively increasing the amounts transferred to reserve funds during the annual budget process through the approved water rates. While the annual funding requirement may fluctuate, a consistent yet increasing annual investment in capital is desirable such that annual excess funding can accrue in reserve funds.

In order to fund the recommended asset requirements over the forecast period using the EAPWSS's available funding sources (i.e., revenue generated from water rates) an increase in total revenue is required. Recommended annual rate increases will be presented in the Financial Plan Update, which will be the subject of a future report to the Water Board for endorsement.

The 2022 AMP supports all six (6) of the guiding principles as established by the Asset Management Policy. Further, the 25-year investment projection balances assets age, condition, performance, and risk, with the associated costs required to meet the target customer levels of service to the benefiting municipalities.

The 2022 Asset Management Plan Executive Summary is attached to this report as Appendix A which outlines the key findings and recommendations of the 2022 AMP update.

## PROJECT FINANCIAL STATUS

Summary of Expenditures Incurred to Date as of: August 30, 2022

<b>Expenditure</b>	<b>Projected</b>	<b>Incurred</b>
Detailed Design	\$146,119	\$102,586
<b>Total</b>	<b>\$146,119</b>	<b>\$102,586</b>

<b>Approved Budget</b>	<b>\$</b>	<b>150,000</b>
<b>Projected Variance</b>	<b>\$</b>	<b>3,881</b>

Presently this project is expected to be delivered within budget.

## CONCLUSION

The 2022 Asset Management Plan establishes our asset management strategies, risk profiles, and investment activities that will guide the EAPWSS toward achieving our target levels of service to member municipalities and respond to any changing service requirements from growth and enhancement over the next 25-year planning period. The Plan is an innovative approach to long-term asset management planning in alignment with global best practice standards for Asset Management such as ISO 55000, and Board staff recommend its endorsement.

**Prepared by:** Ryan Armstrong, C.E.T.  
Asset Management Coordinator

**Submitted by:** Billy Haklander, P. Eng., LL.M  
Capital Programs Manager

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

**Attachments:** Appendix 'A' – 2022 Asset Management Plan: Executive Summary





# Elgin Area

Primary Water Supply System

## ASSET MANAGEMENT PLAN 2022





# Executive Summary

---

The utility, the Elgin Area Primary Water Supply System (EAPWSS), undertakes an update to their Asset Management Plan (AM Plan) on a five (5) year cycle. The most recently completed AM Plan update was undertaken in 2016.

This project included the development of an Asset Management Policy, alignment of the existing level of service framework with ISO (International Organization for Standardization) 55000, assessment of risk ratings for asset components, addition of digital technology assets as a separate asset category and specific focus on lifecycle strategy for an aging transmission pipeline.

The goal of this project is to move Asset Management beyond the strategic level, such that assets may be assessed at a tactical level and asset management is further integrated into business practices.

The updated AM Plan provides the EAPWSS with a robust system wide approach that allows for operating, maintaining and renewing of physical assets in a cost effective manner to meet the target levels of service approved by the utility and delivered in alignment with the AM Policy.

## Overview of the AM Plan

---

The Introduction (**Section 1**) includes the overall objectives of the project, an overview of asset management in alignment with the AM policy and organizational objectives, discusses the utility and the services delivered, and provides an overview of the asset management planning process.

In the State of the Infrastructure (**Section 2**) we present the asset inventory and replacement value, the asset age distribution and expected useful life. For each of the process areas, we present a description of the services, description of the assets, asset condition and performance, risk profile and annual capital investments for asset renewal and mid-life interventions. Each process area is summarized in an asset card.

The asset categories included in the AM Plan are:

- Treatment Assets (**Section 2.2**);
- Transmission Assets (**Section 2.3**); and
- Digital Technology Assets (**Section 2.4**).

In Level of Service (**Section 3**), the new endorsed level of service framework is presented along with target levels of service for the three key parameters: quality;

availability/reliability; and environmental acceptability. The key drivers for investment are defined and alignment is shown with the LOS parameters and the AM Policy. The current level of service and asset performance is presented by process area as well as an overall aggregate summary, based on available information.

The asset management Strategy (**Section 4**) presents a risk strategy and lifecycle strategy for each asset category.

The Financial Strategy (**Section 5**) recommends the unconstrained capital investments required to meet the target levels of service.

The final chapter is Improvement and Monitoring (**Section 6**) which highlights the key recommendations from the AM Plan to: increase performance data collection; improve condition assessment information on a more regular basis; and to advance recommendations on strategy development and implementation.

## Asset Management Policy and Alignment

---

### Alignment with Organizational Objectives

---

The 2022 AM Plan has been developed in alignment with ISO 55000 and in alignment with the utility's organizational objectives, of which compliance is key. As stated in the AM Policy:

- **Alignment:** The asset management planning approach fosters integration with the Strategic Plan (currently under development), Master Water Plan, Operations Plan and Financial Plan. It is also in alignment with global best practice standards for Asset Management such as ISO 55000.
- **Compliance:** The asset management system, which includes the AM Policy, supporting strategies, and asset management plan satisfies compliance obligations including requirements and standards of ISO 14001, Drinking Water Quality Management Standard, the Environmental and Quality Policy, and any other contractually relevant obligations.

It is noted that although the utility is not subject to the requirements of **O. Reg. 588/17 Asset Management Planning for Municipal Infrastructure**, it has chosen to align with ISO 55000 which is a global best practice standard.

### Asset Management Policy

---

The AM Policy was a key deliverable of the AM Plan update and was developed through a series of workshops with all service areas to establish guiding principles and outcomes for implementation across the utility.

The AM Policy demonstrates EAPWSS' commitment to asset management by setting out the principles by which the utility intends to apply asset management to achieve its organizational objectives.

This AM Plan update was developed in alignment with the AM Policy approved October 7, 2021 (Report No.: EA-2021-03-09). The following are excerpts from the policy to highlight the guiding principles and the key outcomes.

### AM Policy – Guiding Principles

1. **Service Delivery:** Decision-making should be focused on delivering defined levels of service that reflect customer expectations, and balance risk and affordability.
2. **Long-Term Sustainability and Resilience:** Achieving services from infrastructure assets over the long term involves long-term planning that incorporates triple bottom line considerations, climate change awareness, and the development of resilience.
3. **Fiscal Responsibility and Asset Management Decision-Making:** Robust asset management decision-making processes are required to make the best use of available funds to deliver services for the benefit of the utility's customers.
4. **Whole-Life Perspective:** The utility shall consider the full financial impact of managing an asset from acquisition to disposal.
5. **Environmentally Conscious:** The utility shall minimize the impact of infrastructure on the environment and address the vulnerabilities and risks caused by climate change through lifecycle management.
6. **Transparency:** To make transparent infrastructure decisions, the utility shall be data-driven and evidence-based.

### AM Policy – Key Outcomes

- Integrate findings from the asset management plan into its **annual budgeting process using a business case approach**.
- Develop a corporate asset information strategy must be developed to ensure accessibility to a fully integrated **asset data registry to support good governance and leverage operational efficiencies**.
- Develop and maintain an asset risk register capturing **climate change impacts on infrastructure assets** to inform prioritization of capital projects.
- Asset management facilitates **evidence-based dialogue with the utility and its customers** about investment recommendations.
- **Sustainable levels of service** and asset lifecycle activities are used by the utility as **drivers for investment** and are foundational to its decision making.
- The utility strives for **continuous improvement in asset management planning and asset management systems** by applying best management practices.



## The Utility and the Services

The Elgin Area Primary Water Supply System strives to operate and to continually improve the sustainable, environmentally friendly utility that provides safe and reliable drinking water to current and future customers.

The utility delivers drinking water services which include water supply, treatment, and transmission services to benefiting municipalities. (Excerpt from AM Policy - Scope)

### Scope of Services

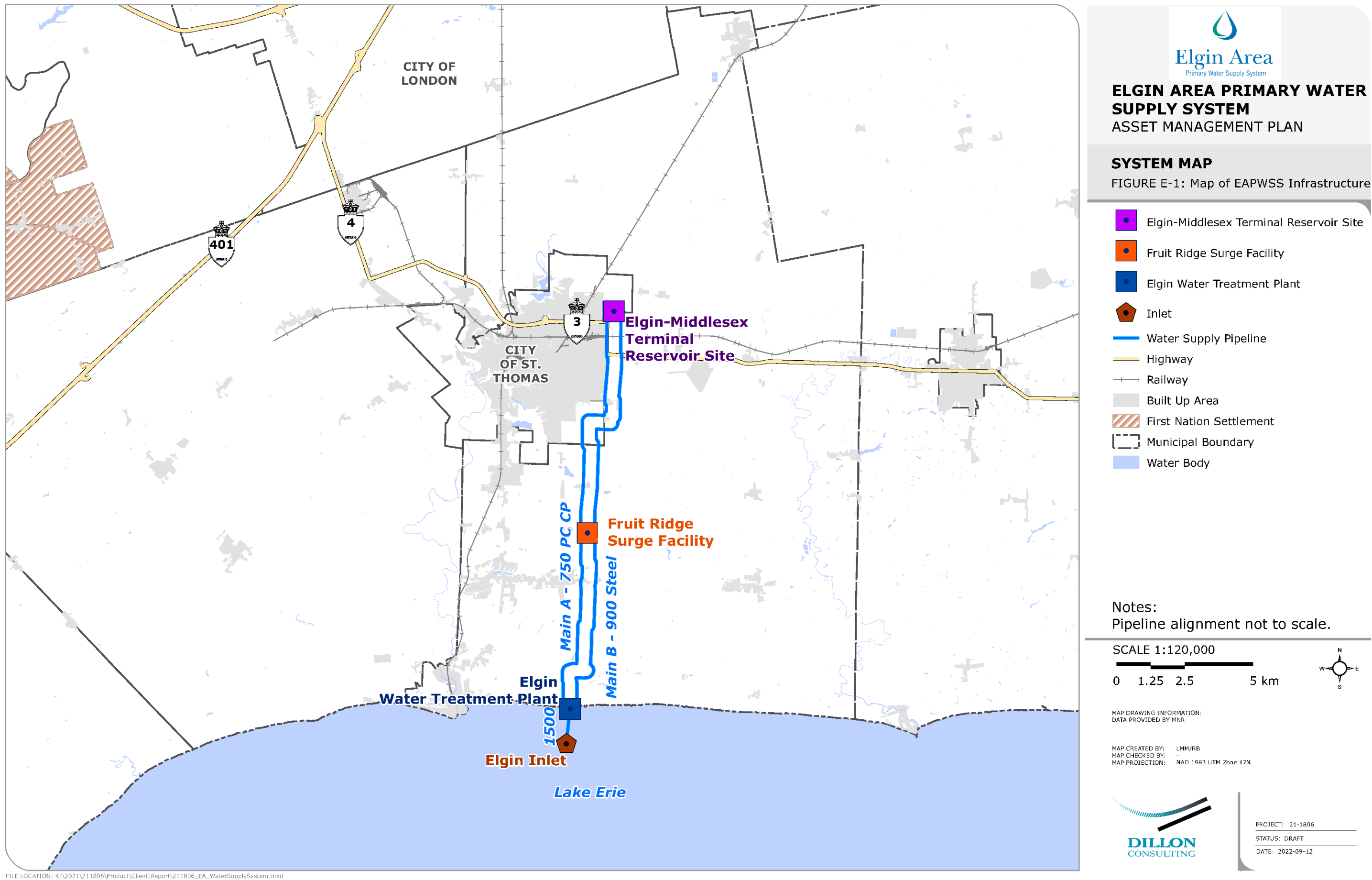
The EAPWSS delivers drinking water from Lake Erie, treated at the Elgin Area Water Treatment Plant near Port Stanley in Central Elgin, to eight municipalities through twinned primary transmission mains. The system is currently operated by the Ontario Clean Water Agency (OCWA) under an agreement that establishes contractual expectations for water quality and service delivery. The EAPWSS is governed by a Board of Management and administered using seconded staff from the City of London (Regional Water).

The assets that make up the regional water treatment and supply systems include:

- Water treatment plant and residuals management located near Port Stanley;
- 17.6 km primary transmission main (intake to reservoir) with 14.8 km fully twinned (750mm and 900mm);
- Fruit Ridge surge facility; and
- Terminal reservoir located near the City of St. Thomas.

See **Figure E-1** for map of EAPWSS infrastructure. (Note that the pipeline alignment is not to scale.)

Figure E-1: Map of EAPWSS Infrastructure (Appendix A)





The system serves a population of approximately 138,000 (2021). The existing water production capacity at the Elgin Area WTP is 91 ML/d.

As reported in the Water Master Plan (2020), population served was 138,208 (2018) in the baseline year and is projected to grow to 144,560 (2023) and 165,963 (2038) in the medium scenario. In 2018, the system delivered 22.7 ML/d for the City of London and 20.1 ML/d for the non-London municipalities.

As reported in the Annual Compliance Report (2021), the system delivered an average daily flow of 43.7 ML/d (48% capacity). The maximum daily flow was 58.5 ML/day (64.3% capacity). Water production and transmission is fairly steady over the baseline year (2018) in the Water Master Plan, which reported 43 ML/d average day and 57 ML/d maximum day demand in 2018.

The infrastructure assets deliver water to the following member municipalities (associated percentage of treated drinking water from EAPWSS):

- City of London (50.53%);
- City of St. Thomas (30.22%);
- Town of Aylmer (10.02%);
- Township of Southwold (3.60%);
- Municipality of Central Elgin (2.42%);
- Municipality of Dutton Dunwich (1.43%);
- Municipality of Bayham (0.96%); and
- Township of Malahide (0.82%).



## Asset Hierarchy

The asset hierarchy is organized by Treatment, Transmission and Digital Technology assets at the system level (Level 1) and reports on the assets by process area (Level 2). See **Table E-1**.

**Table E-1: Asset Hierarchy**

Level 1 (System)	Treatment	Transmission	Digital Technology
Level 2 (Process Area)	<ul style="list-style-type: none"> <li>• Raw Water Handling</li> <li>• Pre-Treatment</li> <li>• Filtration, Disinfection, and High Lift Pumping</li> <li>• Residuals Management</li> <li>• General Site, Building Services, Fleet and Security</li> <li>• Primary Power</li> </ul>	<ul style="list-style-type: none"> <li>• Surge Control</li> <li>• Reservoir and Pumping Station</li> <li>• Pipelines and Chambers</li> </ul>	<ul style="list-style-type: none"> <li>• SCADA</li> <li>• Various Process Area</li> <li>• Corporate</li> </ul>



## Overall Condition and Replacement Cost

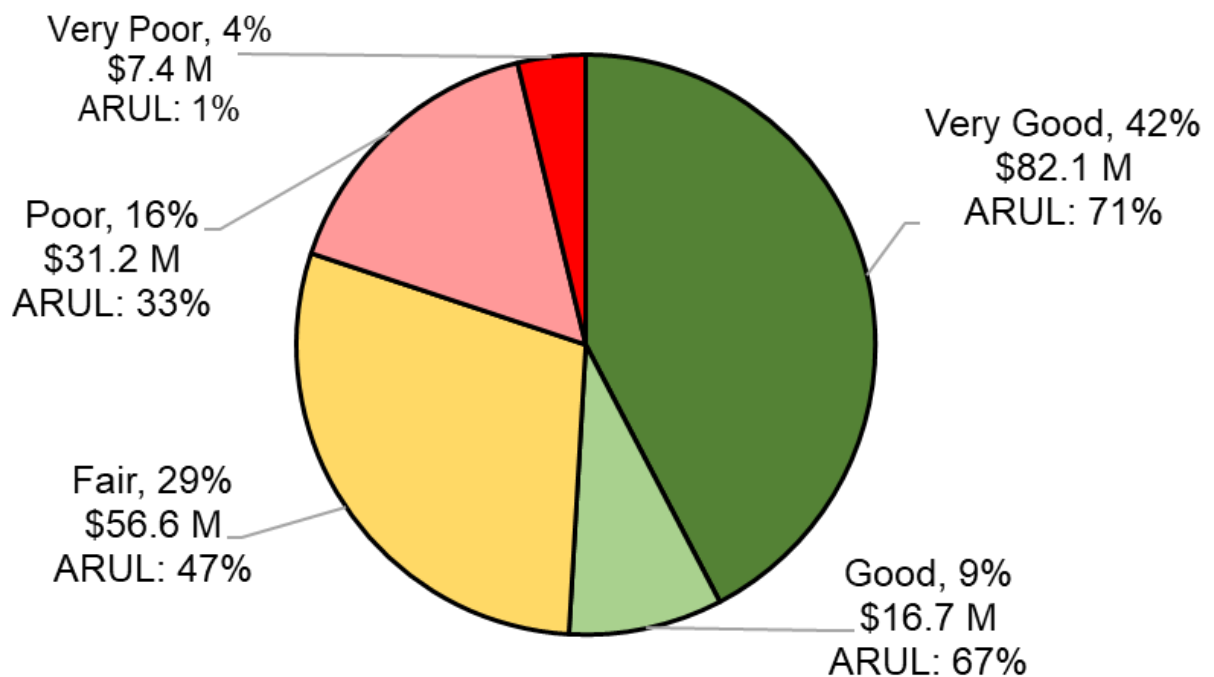
The total replacement cost of all EAPWSS assets, in 2022 dollars, is estimated at **\$194 million**. The treatment assets make up approximately **56%** of the EAPWSS's assets by value, with the transmission assets making up **40%** and digital technology assets **4%**.

The overall condition of the EAPWSS by replacement value is shown in **Figure E-2**.

The age-based condition presented below indicates that **20%** of the assets are considered Poor or Very Poor; however, this is based on the assets nearing the end of their useful life with the average remaining useful life of **33%** for Poor and **1%** for Very Poor. The estimated replacement value for Poor and Very Poor assets is **\$38.6 million**.

The overall data confidence (condition data) is estimated as Moderate.

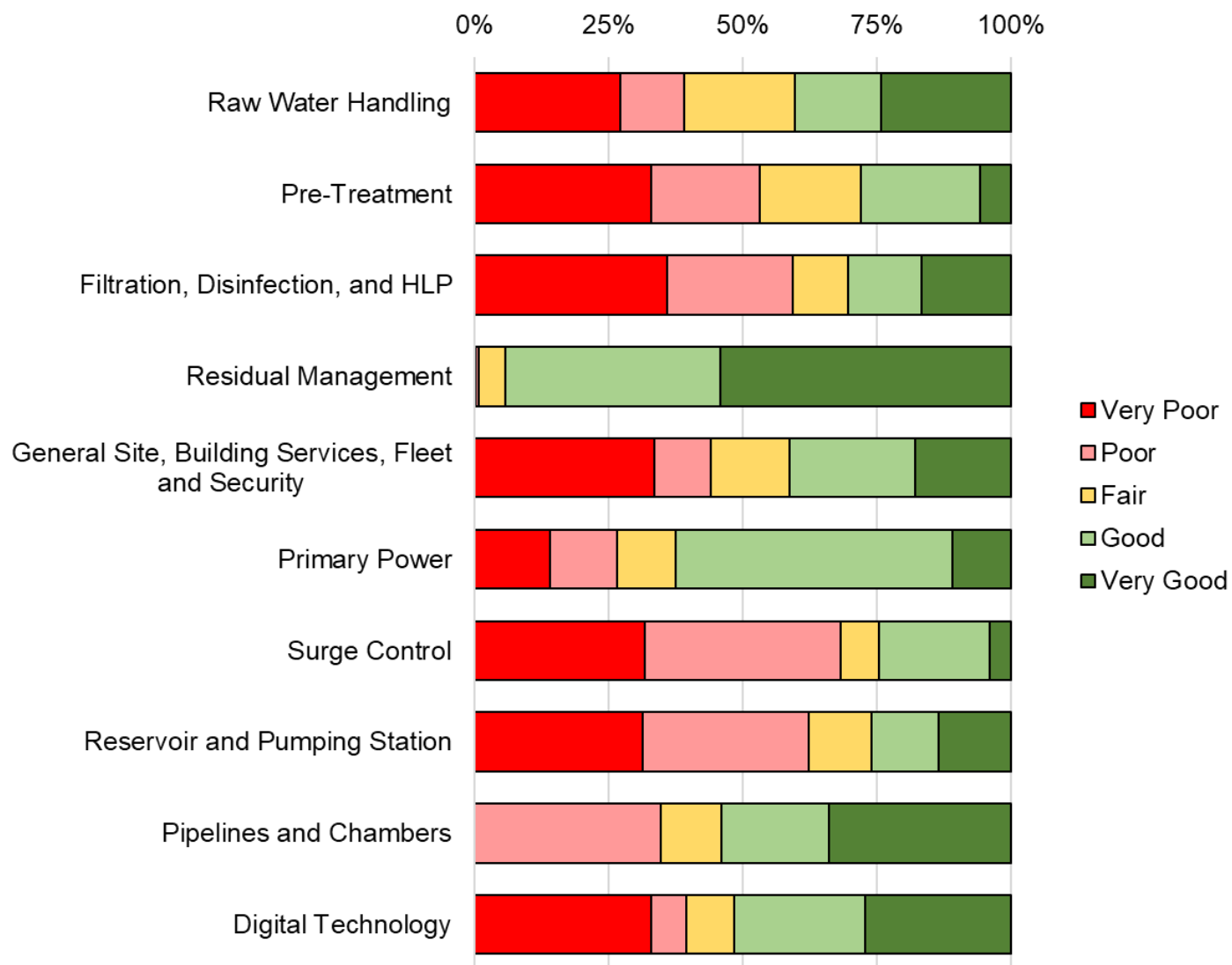
**Figure E-2: Overall Condition by Replacement Value**



The asset condition by process area is presented in **Figure E-3**, highlighting Residual Management as the best condition overall.



Figure E-3: Asset Condition by Process Area (by Count)

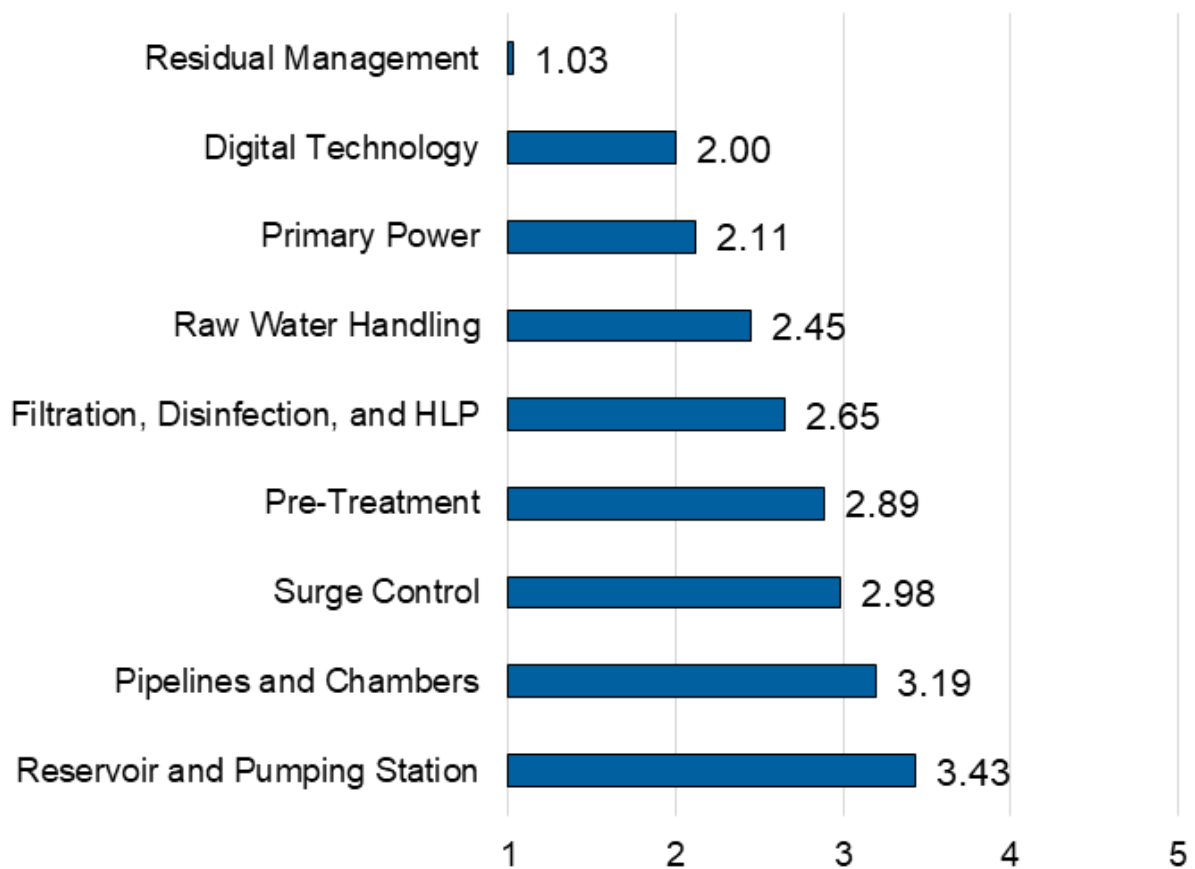


## Overall Performance

Asset performance is a measure of how well an asset is performing as part of its operational function, and this is assessed independently of other factors, such as age or condition. Performance can be observed through the operating and maintenance activities (qualitative); and measured with meters, sensors, testing, etc. (quantitative). Overall the assets are performing in the Fair (3.43) to Very Good (1.03) range, as presented in **Figure E-4** by process area.

**It is recommended that a formal performance rating methodology be employed for all assets, in parallel to the condition rating scale using ratings from 1 (Very Good) to 5 (Very Poor).**

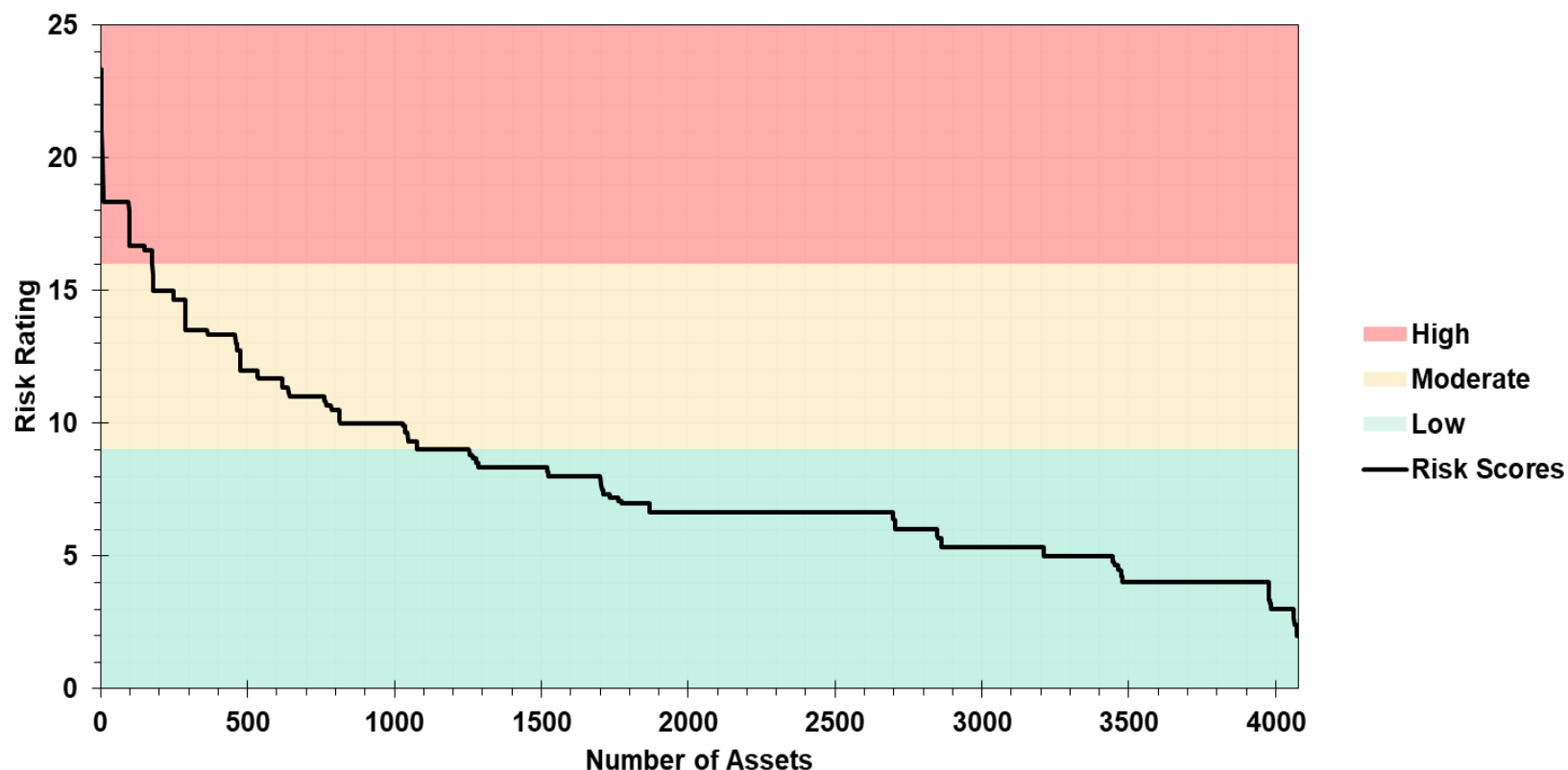
**Figure E-4: Overall Average Performance Score**



## Risk Profile

The Risk profile for all assets can be found in **Figure E-5**.

**Figure E-5: Risk Profile**



The relationship shown is fairly linear, with a sharp drop initially, indicating the EAPWSS has a broad range of risk across their assets and few High risk assets.

**This is a good position to be in as it allows the management of risk and replacement of assets to move forward at a steady rate.**

Of the 4,077 assets tracked within the EAPWSS's asset management data, 176 are classified as High risk and 31% as Moderate or High risk. These assets are considered high and moderate priorities for the implementation of lifecycle activities, possible replacement and enhanced monitoring. The remaining assets are considered Low risk.



## Levels of Service

As part of the AM Plan update, the 2014 Levels of Service (LOS) Framework was reviewed and revisions identified to update the LOS framework to be in alignment with global best practice standards for Asset Management such as ISO 55000. The revised LOS framework with target LOS was endorsed on March 3, 2022 (Report No. EA-2022-01-12).

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

- **Service Delivery:** Service delivery is the key purpose of infrastructure assets. Decision-making should be focused on delivering defined levels of service that reflect customer expectations and balance risk and affordability.
- **Environmentally Conscious:** The utility shall minimize the impact of infrastructure on the environment and address the vulnerabilities and risks caused by climate change through lifecycle management. This includes energy and resource optimization, meeting environmental standards such as ISO 14001 in our operation, considering end of product life disposal or reuse options, and whole lifecycle considerations at the time of repair, replacement or new build.

In the review of the current framework in light of ISO55000 guidance and in alignment with the new AM Policy, three Level of Service parameters and associated objectives were identified that reflects the outcomes that the utility delivers and the Customer Level of Service metrics. See **Table E-2**.

Table E-2: Levels of Service

Parameter	Objective	Customer Level of Service
Quality	Provide drinking water quality that meets or is superior to regulatory requirements	<ul style="list-style-type: none"> <li>• Meet target of no adverse water quality incidents</li> <li>• Satisfy MECP regulatory compliance requirements</li> <li>• Satisfy Superior Water Performance Criteria</li> <li>• Meet Plant Maintenance/ Performance Requirements</li> </ul>
Availability /Reliability	Deliver water to customers when demanded	<ul style="list-style-type: none"> <li>• Measurable flow when customer connection is open</li> </ul>
Availability /Reliability	Provide resilient water production	<ul style="list-style-type: none"> <li>• Chemical working volume greater than demand</li> <li>• Power supply greater than peak demand</li> <li>• Assets operate with % reserve capacity</li> </ul>
Availability /Reliability	Provide safe and secure operations	<ul style="list-style-type: none"> <li>• Physical Security</li> <li>• Computational (IT, IAS) Security</li> </ul>
Environmental Acceptability	Minimize water system impacts on the environment	<ul style="list-style-type: none"> <li>• Environmental sustainability best practices</li> <li>• Meet other regulatory compliance requirements</li> </ul>
Environmental Acceptability	Detect changes in source water quality and environmental impacts that affect the water system	<ul style="list-style-type: none"> <li>• Operations and services are continuous</li> </ul>

### Level of Service Targets

The purpose of setting targets for LOS is to define the objectives of the utility. Levels of Service are the service performance targets for the utility and used in the utility's decision-making process for operational activities and asset investments. These targets will be measured on a regular basis and any gaps in being able to meet LOS become a priority for action.

See questions for decision making in **Table E-3**.

Table E-3: Levels of Service (LOS) Priority for Action

Question	Response for Decision Making
1. Meet LOS now?	<ul style="list-style-type: none"> <li>• If No: Priority for action</li> <li>• If Yes: Look at Question 2</li> </ul>
2. Meet LOS in future?	<ul style="list-style-type: none"> <li>• If No: Priority for action</li> <li>• If Yes: Look at Question 3</li> </ul>
3. Is LOS staying the same?	<ul style="list-style-type: none"> <li>• If No: Priority for action</li> <li>• If Yes: No change in action</li> </ul>

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

The targets for LOS are presented in **Sections 3.2 to 3.4** of the AM Plan. The alignment of digital technology assets to provide monitoring and reporting data to support reporting on LOS achieved is presented in **Section 3.5**.

## Asset Management Strategy

The strategic direction statements have been updated to align with the LOS Framework. In describing the key drivers for meeting target LOS, these statements provide a definition as applicable for treatment services and transmission services and include an example of an activity for each. Clarity in each of these key drivers is important as funding for activities and projects comes from reserve funds for these purposes. In the development of business cases for new investments, the source(s) of funding is determined based on the key driver(s) for the project.

The key drivers for investment are defined as follows:

- **Address Legislative Changes:** investment required for compliance with new legally enforceable obligations;
- **Maintain LOS:** investment required to maintain the current LOS to the existing member municipalities;
- **Support Growth and Demand:** investment required to provide service for new customers with no net deterioration from the current LOS provided to existing member municipalities;

- **Increase Efficiency:** investment required to enable a demonstrable savings in operating expenses arising from the project;
- **Enhance LOS:** investment required to provide an identifiable, measurable and permanent change in the overall LOS to existing member municipalities above the standard previously provided.

The linkages between the key drivers and the LOS parameters are presented in **Table E-4**.

**Table E-4: Key Drivers linked to Level of Service**

Level of Service Parameters	Address Legislative Changes	Maintain LOS	Support Growth and Demand	Increase Efficiency	Enhance LOS
Quality	yes	yes		yes	yes
Availability & Reliability		yes	yes	yes	yes
Environmental Acceptability	yes	yes			yes

The linkages between the key drivers and the AM Policy (guiding principles and the key outcomes) are presented in **Table E-5** and **Table E-6**.

Asset management strategies presented in the AM Plan include the following:

- Strategy to Maintain LOS
- Risk Strategy
- Climate Change
- Lifecycle Strategy – Transmission
- Lifecycle Strategy – Treatment
- Lifecycle Strategy – Digital Assets

Table E-5: Key Drivers linked to AM Policy (Guiding Principles)

AM Policy (Guiding Principles)	Address Legislative Changes	Maintain LOS	Support Growth and Demand	Increase Efficiency	Enhance LOS
Service Delivery		yes			yes
Long-Term Sustainability and Resilience			yes		yes
Fiscal and Asset Management Decision-Making	yes			yes	
Whole-Life Perspective		yes			yes
Environmentally Conscious	yes	yes	yes		
Transparency	yes			yes	

Table E-6: Key Drivers linked to AM Policy (Key Outcomes)

AM Policy (Key Outcomes)	Address Legislative Changes	Maintain LOS	Support Growth and Demand	Increase Efficiency	Enhance LOS
Annual Budgeting Process, Business Case Approach		yes	yes	yes	yes
Asset Data Registry, Good Governance & operational efficiencies					yes
Climate Change, Risk Management Approach	yes	yes			
Evidence Based Dialogue					yes
Sustainable LOS, Investment Drivers		yes			yes
Continuous Improvement				yes	yes



## Financial Strategy

The capital funding projections provide a window into spending over the next 25 years, presented in 2022 dollars.

Included in the capital funding projections are the projects identified in the 2023 capital plan, new projects proposed in various planning documents confirmed with input from the utility, the asset replacement schedule and the mid-life intervention costs.

The projections will inform the Financial Plan update being completed by Watson and Associates Ltd. (Watson) as a separate project. The Financial Plan update should be referenced for a more complete financial analysis and strategy.

### Capital Funding Projections (25 Years)

The capital funding projections are presented in **Table E-7** with the corresponding estimated cost in 2022 dollars and year(s) that the investment will take place. The estimated cost of each project includes the remaining budget for projects that are underway with multi-year funding. For more detailed funding projections, year by year investment projections are presented in **Section 5**.

**Table E-7: Capital Funding Projections (25 Years)**

Project Name	Remaining Project Cost (\$2022)	Investment Year(s)
Security Upgrades (EA4022)	\$650,000	2022 to 2026
Hydraulic/Transient Model Update & Transient Monitoring (EA4135)	\$70,000	2035
Parking Lot Asphalt Resurfacing (EA4138)	\$125,000	2022 to 2023
Backwash Drain Valve Actuators (EA4171)	\$100,000	2022 to 2023
Water Quality Facility Plan (EA4184)	\$590,000	2024
Construction Site Trailer Pad & Electrical Pedestal (EA4185)	\$25,000	2022
Sodium Hydroxide Assessment Study (EA4186)	\$30,000	2022
Elgin Standby Generator TSSA Repairs (EA4193)	\$290,000	2022
Asset Management Plan	\$750,000	2026, every 5 years

Project Name	Remaining Project Cost (\$2022)	Investment Year(s)
Financial Plan	\$250,000	2026, every 5 years
Master Water Plan Update	\$750,000	2024, every 5 years
Asset Condition Field Assessment	\$255,000	2023 to 2025
Electric Vehicle Charging Stations	\$60,000	2023 to 2024
Climate Change Risk Assessment Recommendation #5	\$50,000	2024
Optimization Opportunities (1-5 year)	\$5,557,106	2025 to 2029
Optimization Opportunities (6-10 years)	\$6,775,509	2030 to 2034
Mid-Life Intervention Costs	\$5,940,548	2022 to 2046
Lifecycle Replacement Costs	\$70,092,415	2022 to 2046
<b>Total</b>	<b>\$92,360,577</b>	

The total capital funding projection is **\$92.36 million**, which includes confirmed capital projects; projects in the planning stage (reports, proposed projects, optimization opportunities); and costs for mid-life interventions and lifecycle replacement over a 25-year period.

### Lifecycle Replacement Costs and Mid-Life Interventions

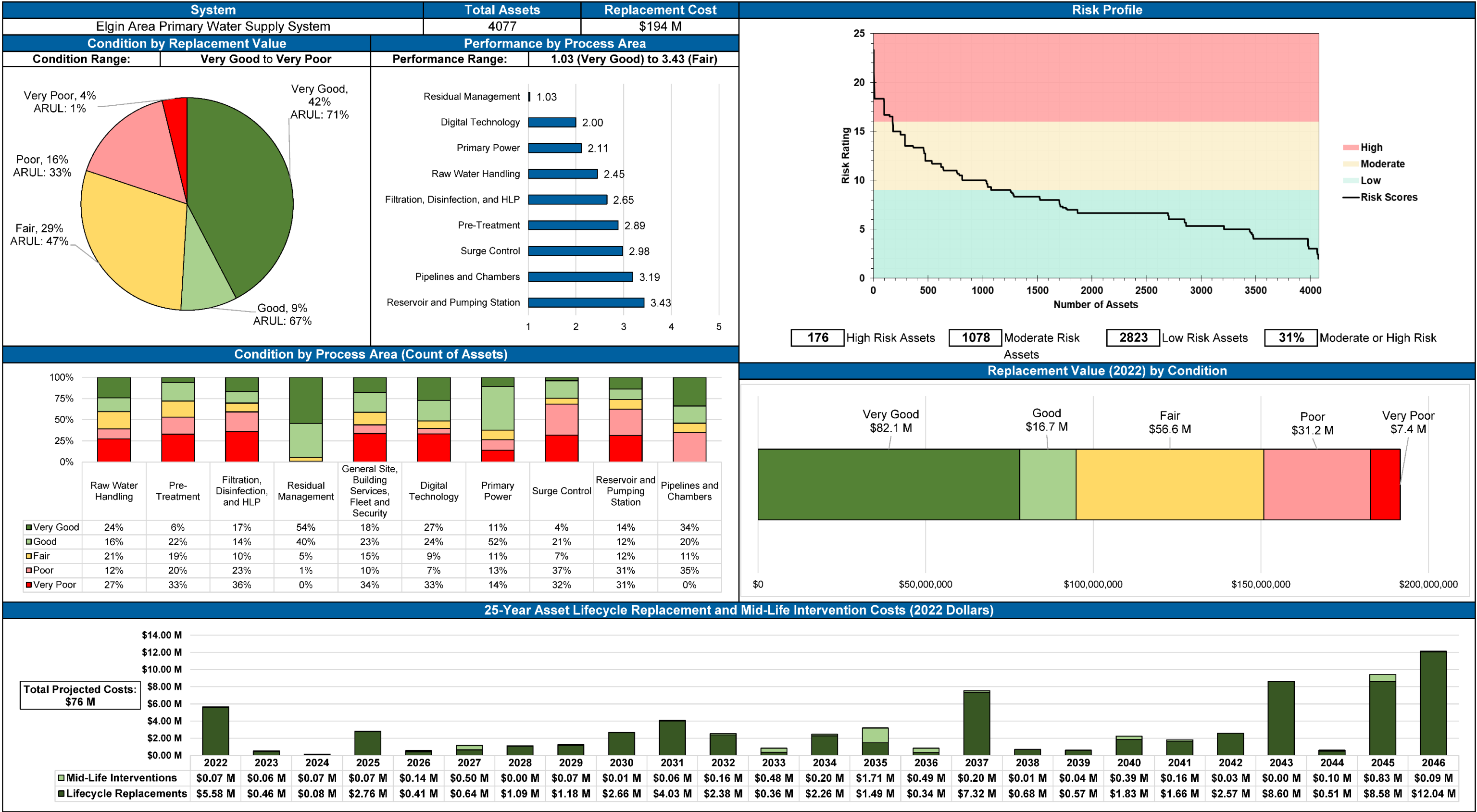
The projected lifecycle replacement costs and mid-life interventions for all assets (Treatment, Transmission and Digital Technology) is **\$76 million** in current dollars over the 25-year period. See **Table E-8**.

A summary of the overall condition, performance, risk profile and investment projections for the lifecycle replacement costs and mid-life interventions for all assets is presented in **Figure E-6: Asset Card – Elgin Area Primary Water Supply System**.

Table E-8: Mid-Life and Lifecycle Replacement Projections (25 Years) Rounded

Year	Mid-Life Cost	Replacement Cost	Total Cost
2022	\$70,700	\$5,576,300	\$6,192,000
2023	\$57,000	\$463,200	\$990,100
2024	\$70,000	\$80,300	\$875,300
2025	\$73,000	\$2,762,500	\$4,131,900
2026	\$144,000	\$411,600	\$1,967,000
2027	\$504,000	\$641,400	\$2,557,100
2028	\$1,000	\$1,092,700	\$2,205,100
2029	\$69,300	\$1,178,200	\$2,509,000
2030	\$10,500	\$2,658,400	\$4,024,000
2031	\$56,000	\$4,032,500	\$5,643,600
2032	\$163,100	\$2,376,500	\$3,894,600
2033	\$484,000	\$360,900	\$2,200,300
2034	\$202,700	\$2,260,400	\$3,968,200
2035	\$1,710,200	\$1,487,400	\$3,267,600
2036	\$492,100	\$342,600	\$1,034,700
2037	\$198,100	\$7,323,700	\$7,521,700
2038	\$5,200	\$684,800	\$690,000
2039	\$38,200	\$571,100	\$759,300
2040	\$390,500	\$1,834,200	\$2,224,700
2041	\$155,100	\$1,655,900	\$2,010,900
2042	\$29,900	\$2,566,400	\$2,596,400
2043	\$1,000	\$8,598,300	\$8,599,300
2044	\$96,300	\$507,200	\$753,500
2045	\$829,100	\$8,581,200	\$9,410,300
2046	\$89,000	\$12,044,800	\$12,333,900
<b>Total</b>	<b>\$5,941,000</b>	<b>\$70,092,000</b>	<b>\$76,033,000</b>

Figure E-6: Asset Card – Elgin Area Primary Water Supply System



## Improvement and Monitoring

### 2022 Improvements Completed

Asset management is a journey of continuous improvement. Improvements incorporated in the 2022 Update included:

- Development of an Asset Management policy and alignment of the AM Plan with the policy;
- Update of LOS framework to align with ISO55000 and setting targets for LOS;
- Alignment of asset registry hierarchy by process area;
- Assessment of risk ratings for asset components in the asset registry to develop risk profile for each process area and overall risk profile;
- Addition of Digital Technology as a separate asset category to highlight value of IT/OT and data and analytics in sustaining reliable operations and achieving target LOS;
- Addition of security assets and fleet asset as part of the process area: General Site, Building Services, Fleet and Security;
- Focus on lifecycle strategy for ageing transmission systems including identification of activities aligned with lifecycle management strategic outcomes as an example for other asset categories; and
- Alignment of key drivers for funding capital projects with LOS parameters and AM Policy (e.g., guiding principles and key outcomes).

This project addresses many of the initiatives in the AM Assessment and Roadmap (2020) report (Roadmap). See **Table E-9**.

**Table E-9: Roadmap Initiatives Addressed**

Description of Initiative	How it was addressed
[S2] Implement AM Policy	<ul style="list-style-type: none"> <li>• AM Policy developed and adopted by the utility</li> <li>• AM Plan developed in alignment with the policy</li> </ul>
[S3] Develop AM Plans by major asset classes	<ul style="list-style-type: none"> <li>• AM Plan developed which includes treatment, transmission and digital technology assets</li> </ul>
[P3] LOS Framework Development	<ul style="list-style-type: none"> <li>• Updated LOS Framework, set LOS targets</li> <li>• Align digital technology assets to monitoring and measuring LOS metrics</li> </ul>

## Recommendations

---

This section focuses on recommendations that were identified through the AM Plan update project, based on experience with limited or outdated data; gaps or barriers to reporting on levels of service and performance; or seeking to apply global best practices to advance asset management at the utility. In moving forward, also refer to the Roadmap for activities and projects to advance asset management practices.

The key recommendations from the AM Plan focus on:

- increasing performance data collection in support of monitoring level of service metrics, risks, and asset condition/performance;
- updating condition assessment information on a more regular basis tied to decision making windows for accurate line-of-sight; and
- advancing recommendations on strategy development and implementation.

The “next steps” for operationalizing asset management at the utility are presented in the following categories.

### Data Collection and Monitoring

Data collection and monitoring is an essential part of asset management. Two of the key recommendations can be addressed by improvements to data collection and monitoring (i.e. increasing performance data collection) and updating condition assessment information on a more regular basis.

- [R1] Increase Performance Data Collection
- [R2] Update Condition Assessment Information
- [R3] Increase Level of Service Data Collection
- [R4] Improve Asset Data Collection in CMMS
- [R5] Enhance Tracking of Digital Technology Assets

### Level of Service Tracking

The LOS framework and targets presented to the Board of Management for the EAWPSS in March 2022 require regular monitoring, tracking and reporting.

- [R6] Operationalize the LOS Framework

### Risk Mitigation

The delivery of service from the infrastructure that make up the systems in each process area is a balancing act of cost (investment) and risk (of under-performance). As risk is the effect of uncertainty on objectives, risk mitigation is creating more certainty in

meeting levels of service through performance of the assets. See **Section 4.3 – Risk Strategy** for more details.

- [R7] Reduce Uncertainty in Data Confidence (Asset Condition)
- [R8] Reduce Uncertainty in Climate Change Impacts
- [R9] Operationalize the Risk Strategy

### Strategy Implementation

As stated in **Section 6.3 – Risk Mitigation**, the implementation of AM strategies is a key recommendation for risk mitigation as well as achieving the LOS targets.

- [R10] Develop AM Strategies (Transmission Strategy, Treatment Strategy, Digital Technology Strategy)

### Financial Considerations

As the budgeting cycle at the utility incorporates longer term decision-making, there is a greater onus to be forward thinking and to refer regularly to the long-term projections for capital renewal and mid-life improvements in the AM Plan.

The projections are based on replacement at end of useful life, and as such, are estimates. Good maintenance practices can improve condition and extend the useful life, but not indefinitely.

- [R11] Establish Process for Budgeting Renewal and Mid-Life Capital Investments
- [R12] Update Business Case to align with AM Policy and LOS Framework

### Next AM Plan Update

With a recommended 5-year renewal cycle, the next AM Plan update in 2027 would be based on available asset data as of December 31, 2026.

- [R13] Preparing for 2027 Update
- [R14] Recommended Improvements
- [R15] Recommended Schedule





## Acknowledgements

---

The consulting team would like to express our appreciation to the EAPWSS staff and OCWA for their cooperation and input to this update. We acknowledge their commitment and flexibility to contribute to this project despite the challenges brought into daily operations as a result of the COVID-19 global pandemic.

### Project Team

- Andrew Henry, Director, Regional Water
- Billy Haklander, Capital Programs Manager
- Ryan Armstrong, Asset Management Coordinator
- Marcy McKillop, Environmental Services Engineer
- Archana Gagnier, Finance & Budget Analyst
- Brittany Bryans, Environmental Service Engineer
- David Scott, Capital Projects Coordinator
- Erin McLeod, Quality Assurance and Compliance Manager
- John Walker, Operations Manager
- Lisa McVittie, Security Manager
- Rich Aycock, Information Technology Security Supervisor
- Walter Martin, Control Systems Coordinator
- Allison McGuckin, Compliance Coordinator
- Blair Tully, Regional Manager Huron and Elgin, OCWA
- Ahmed Morsy, Asset Maintenance Specialist, OCWA

## About This Report

---

Dillon Consulting Limited was retained by the Elgin Area Primary Water Supply System to conduct an update to their Asset Management Plan.

### Consulting Team

- Darla Campbell, Project Manager
- Jason Johnson, Deputy Project Manager
- Matthew Murdock, Lifecycle and Risk
- Kristina Lee, Project Coordinator
- Catherine Liscumb, Analyst
- Austen Underhill, Analyst
- Jamee DeSimone, Climate Change Advisor
- Vanessa Chau, Asset Management Policy
- Pete Samson, Controls and Automation, Eramosa



**To:** Chair and Members, Board of Management  
Elgin Area Primary Water Supply System

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

**Subject:** EA2172 Terminal Reservoir Isolation Valve Repairs

### RECOMMENDATION

That, on the recommendation of the Chief Administrative Officer, the following actions be taken concerning Terminal Reservoir Isolation Valve Repairs (EA2172) project:

- a) The Board of Management for the Elgin Area Primary Water Supply System **APPROVE** an increase in the project budget by \$95,000 for a total approved budget of \$185,000, the additional funds being drawn from the Asset Replacement Reserve Fund; and,
- b) The Board of Management for the Elgin Area Primary Water Supply System **RECEIVE** this status report for information.

### PREVIOUS AND RELATED REPORTS

March 5, 2020      EA2172 Terminal Reservoir Isolation Valve Replacement

### BACKGROUND

Project EA4131 Cell 1 Isolation Valve was previously approved by the Board as part of the 2017 capital budget. The project was required to facilitate repairs to an outlet valve from cell #1 of the terminal reservoir located northeast of St. Thomas. The valve is located at a junction between the transmission pipeline at the inlet to cell #1 of the terminal reservoir, and the discharge header to the St. Thomas Secondary Water System. This valve is critical to the safe operation of the regional water system's daily operation, as well as bypass operations in the event of an emergency.

The valve and components were initially purchased at a cost of approximately \$65,000, but work was delayed due to significant challenges posed in undertaking the repair without considerably impacting the benefiting municipalities and the emergency repairs to the reservoir that were being undertaken at the time.

### DISCUSSION

As this valve is crucial to the operation of the benefiting municipalities downstream of the station, a substantial amount of planning was necessary for the work. As part of the work plan developed by the contracted operating authority, the Ontario Clean Water Agency (OCWA), OCWA was required to complete a test shutdown to identify any areas of concern prior to the actual replacement. During this testing phase, it was determined that it was impossible to fully

stop the flow of water into this chamber and it was determined that there was an additional valve that was not closing and leaking back to the valve isolation chamber. After investigating the surrounding piping, it was found that the main suction header valve within the St. Thomas pumping station was leaking and making it impossible to affect the repair to the reservoir isolation valve.

At that time, OCWA requested an expansion of the scope for project EA2172 to include the repair of the suction header valve. The replacement valve was authorized and procured under the emergency provisions of the Boards Procurement Bylaw in order to complete the necessary repairs. The work on both valves was completed April 25<sup>th</sup>, 2022.

It should be noted that the work that was completed has also eliminated the leak from the St. Thomas Secondary System back into the terminal reservoir. Upon discovery of this lead, and prior to the completion of the repair, Board staff monitored and estimated the credit amount to the St. Thomas Secondary Water System on a quarterly basis.

At the time of writing this report, there is about \$15,000 worth of work remaining to install a coupling into the chamber to stop a minor leak.

### **SUMMARY OF PROJECTED COSTS**

The following summary of estimated costs is provided for:

Purchase and installation of original valve	\$86,408
Coupling install	\$15,000
Purchase and installation of suction header valve	<u>\$ 81,460</u>
<b>Total Projected Costs</b>	<b>\$182,868</b>
<b>Approved Budget</b>	<b>\$90,000</b>
<b>Projected Budget Surplus/Deficit</b>	<b>(\$92,868)</b>
<b>Additional Funding Request</b>	<b>\$95,000</b>

## CONCLUSION

The replacement of the suction header valve has removed the leaking by-pass condition at the site and has enabled Board staff to accurately account for water transmitted to the St. Thomas Secondary Water Supply System. The repairs to both the reservoir isolation valve and suction header valve have been completed, with the installation of a coupling planned for the fall of 2022 to complete the work.

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

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

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