Elgin Area
Primary Water Supply System

Elgin Area Primary Water Supply System Master Plan

Public Information Centre

June 25th, 2025, 6 p.m.

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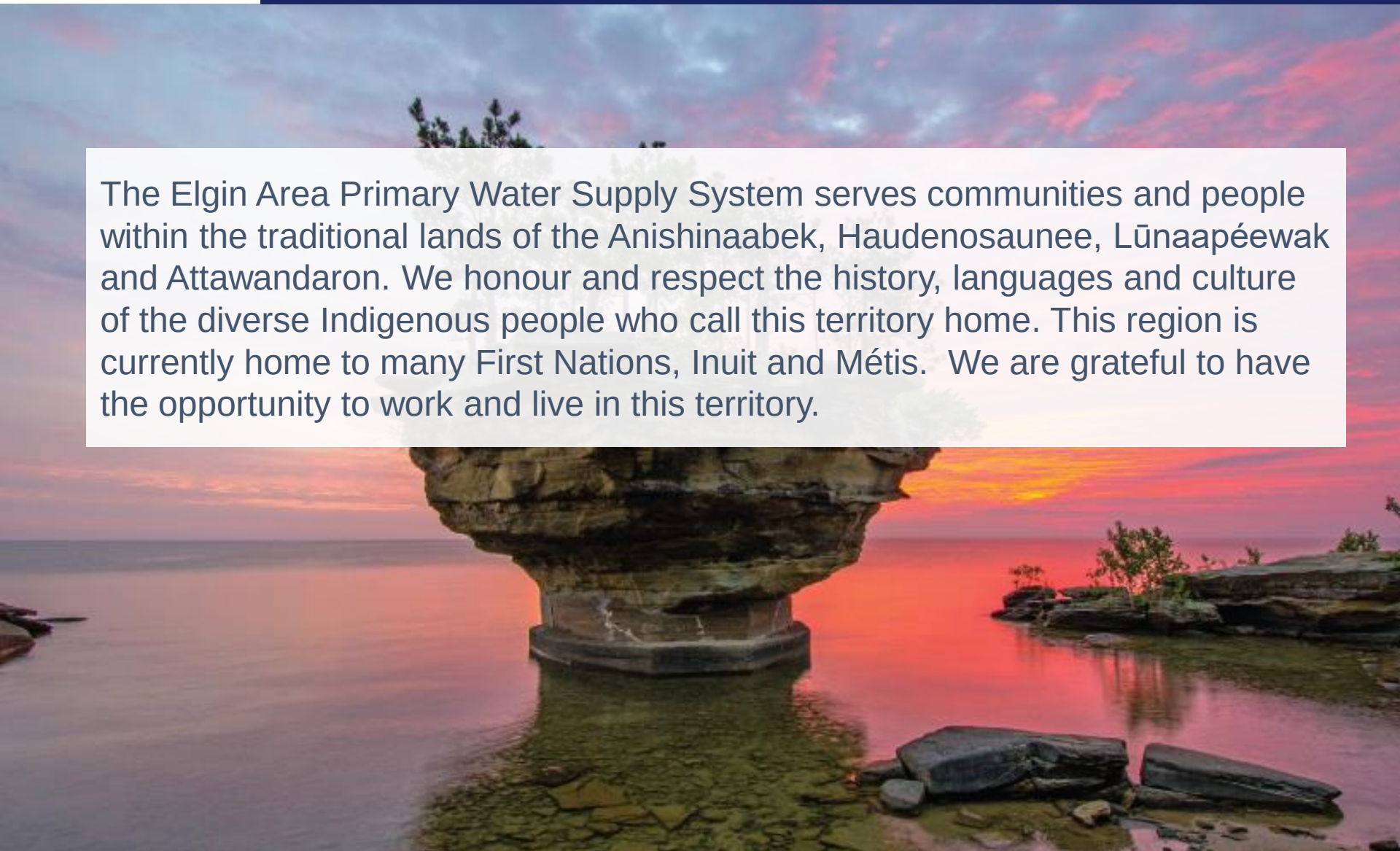
Land Acknowledgement



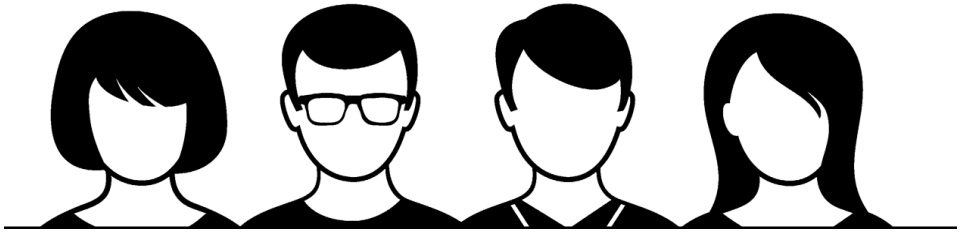
The Elgin Area Primary Water Supply System serves communities and people within the traditional lands of the Anishinaabek, Haudenosaunee, Lūnaapéewak and Attawandaron. We honour and respect the history, languages and culture of the diverse Indigenous people who call this territory home. This region is currently home to many First Nations, Inuit and Métis. We are grateful to have the opportunity to work and live in this territory.

Project Team Introductions

Marcy McKillop
Elgin Area Primary Water Supply System
Environmental Services Engineer

Ryan Armstrong
Elgin Area Primary Water Supply System
Asset Management Coordinator

Billy Haklander
Elgin Area Primary Water Supply System
Senior Manager – Capital Programs



Benny Wan
AECOM
Senior Technical Director – Hydraulic Modelling

Paul Adams
AECOM
Environmental Assessment Planner

Matt Simons
AECOM
Process Engineer

Tracey McKenna
AECOM
Public Information Centre Facilitator

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Background

- Elgin Area water treatment, transmission and storage facilities were originally constructed in the 1960's by the Ontario Water Resources Commission
- The province operated and maintained this infrastructure until 2000 when ownership of the regional water system was transferred to the municipalities served by the infrastructure, through the *Water and Sewage Systems Transfer Act*
- The Transfer Order establishes that each municipality that benefits from the regional water system has an undivided interest in the system
- No division of shareholdings or capacity allocation of the system between the municipalities served.

- Multi-barrier approach to drinking water protection

Engagement Guidelines

- All attendees cameras and microphones will be disabled for the duration of the Public Information Centre, including the Q&A session. The chat function has been disabled.
- Please use the Q&A button to submit a question at any time. All questions will be treated as anonymous.

- All questions will be answered after the presentation, during the Q&A Session. The facilitator may combine similar questions during the Q&A session. Feel free to submit any follow-up questions as needed.
- This meeting is being recorded and will be posted online by June 27 at:

https://www.huronelginwater.ca/elgin-area-water-supply-system-master-plan/

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Agenda

- Introductions and purpose.
- Presentation (approximately 45 minutes).
- Questions and answer period.

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Public Information Centre Purpose

- Meet the Project Team.
- Introduce the Master Plan.
- Overview of the Municipal Class Environmental Assessment process.
- Review Problem and Opportunity.
- Present Servicing Strategy Options.
- Review Recommendations.
- Obtain Feedback.

Municipal Class Environmental Assessment

- The Elgin Area Primary Water Supply System has elected to follow the Municipal Class Environmental Assessment process for this Master Plan
- This study is following the Master Plan Approach #1 process.
- Master Plans using Approach #1 follow Phases 1 and 2 of Municipal Class Environmental Assessment Process

- A Master Plan Report identifying all required projects, including Schedule B and C projects, will be prepared for public review and comment.
- The Master Plan is updated every 5 years.

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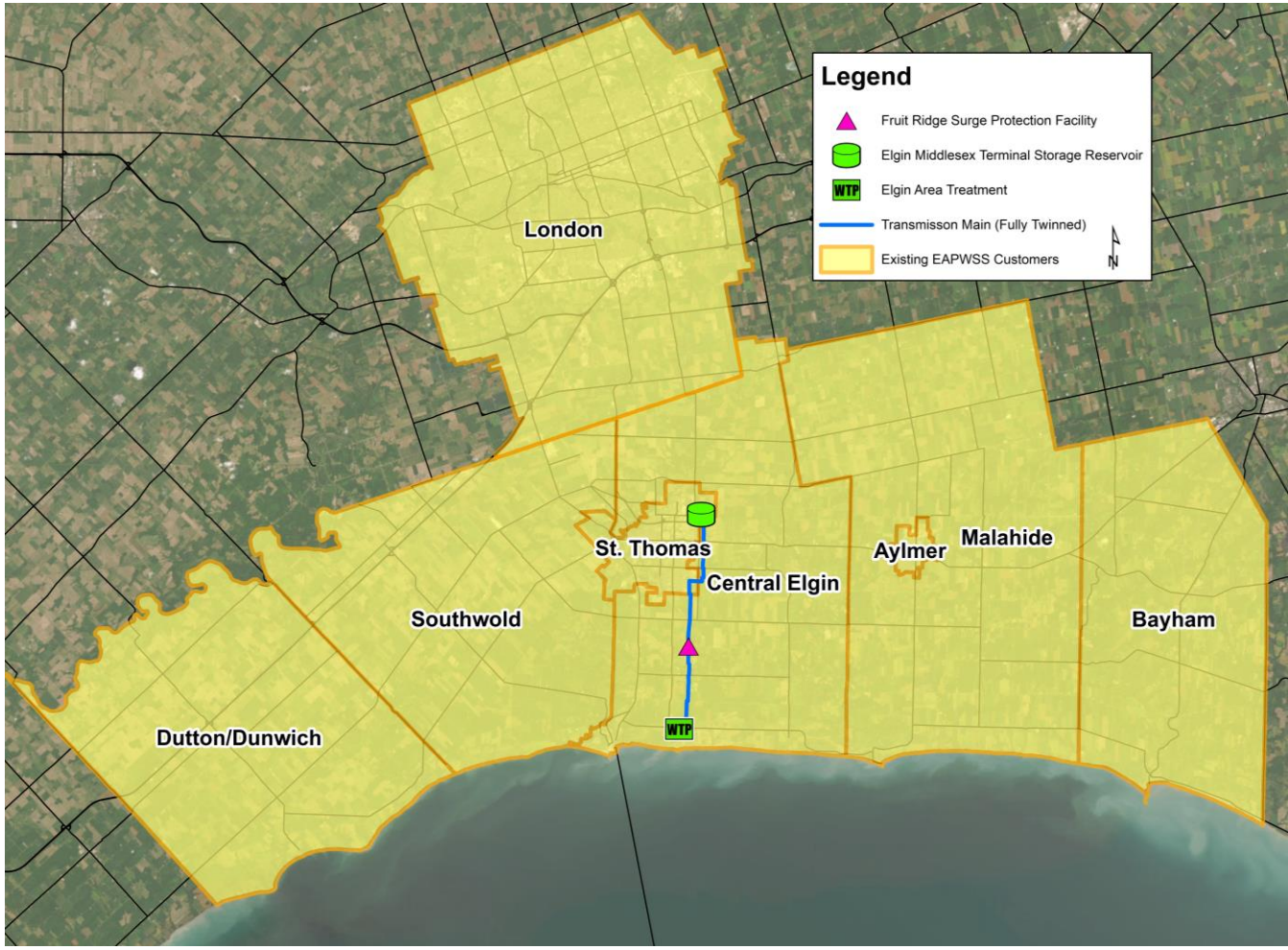
System Overview

- The Elgin Area Primary Water Supply provides drinking water to:
  - The City of London,
  - Town of Aylmer
  - Municipality of Bayham
  - Municipality of Central Elgin
  - Municipality of Dutton Dunwich
  - Township of Malahide
  - City of St. Thomas
  - Township of Southwold



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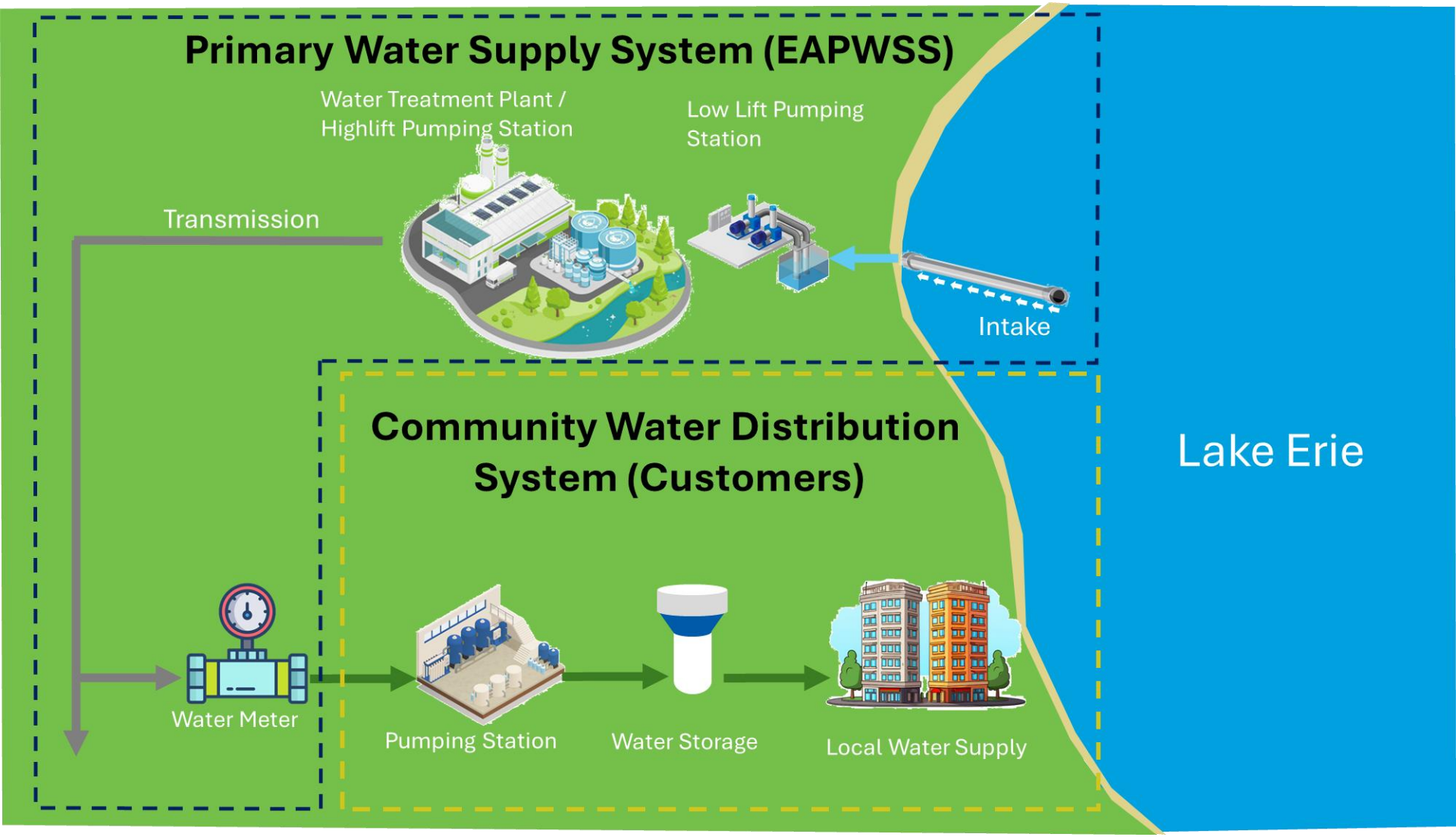
Typical Water Supply System



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Elgin Area Water Treatment Plant

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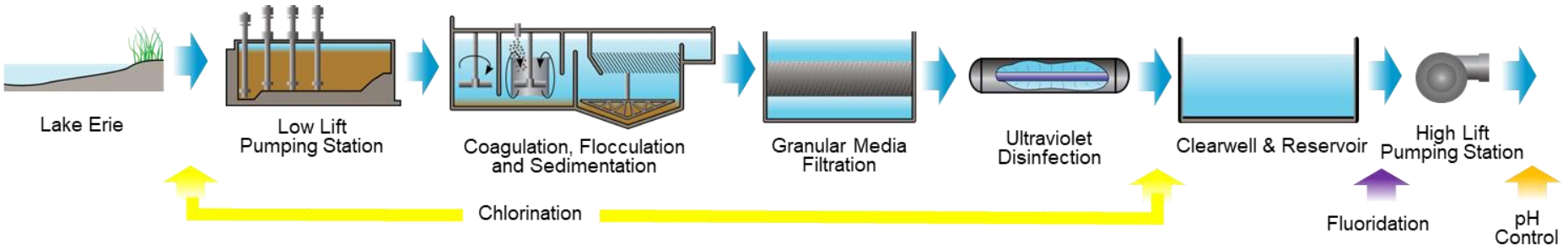
Water Treatment Process



- The Elgin Area Water Treatment Plant has a rated capacity of 91 ML/d. It is a conventional water treatment plant with coagulation, flocculation, sedimentation, dual media filtration, ultraviolet disinfection, chlorination, fluoridation and pH control.
- Solids captured in the sedimentation process and backwashes of granular media filtration are collected at an onsite residue management facility, dewatered and disposed of at a landfill.
- The treatment system and water quality is continuously monitored using analyzers and computerized Supervisor Control and Data Acquisition (SCADA) system.
- A range of chemicals are used in various treatment processes.
- The facility is operated and maintained in accordance with Municipal Drinking Water License and provincial regulations

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Problem Opportunity Statement

- Develop and assess a range of water system strategies considered to support existing servicing and account for reasonably expected near, mid, and long-term future growth projections to the **planning horizon of 2046**, including servicing to new communities.
- Determine operational challenges based on the system hydraulics review related to projected future demands and growth-related requirements for treatment, pumping, transmission infrastructure.
- Review and confirm the utility's operational storage needs.
- Assess primary transmission pipeline capacity and redundancy.

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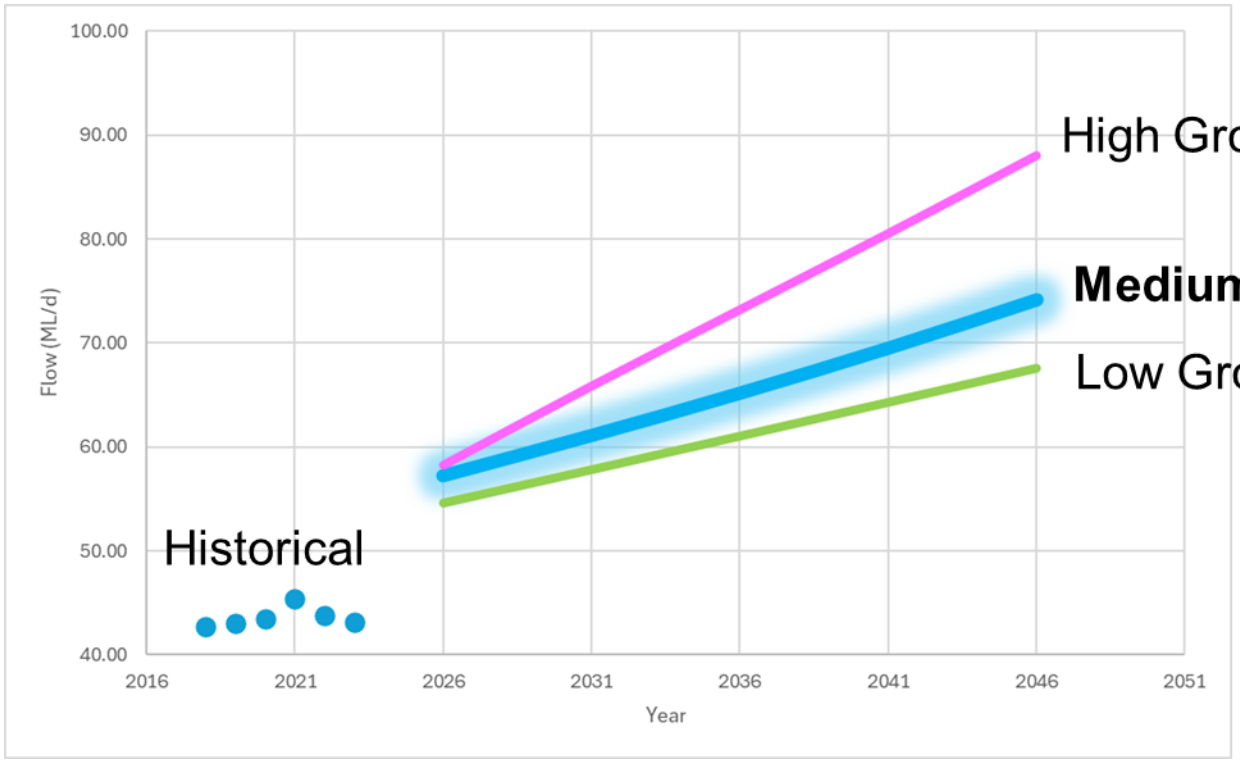
System Demand Forecast – Growth Scenarios

Year	2026	2031	2036	2041	2046
Average Day Demand Projected Flow – Medium Growth Scenario (in Millon Litres per day)	57	61	65	70	74



Confirm supply capability in EAPWSS to meet projected growth in water supply

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System Assessment

- Treatment
- Pumping
- Transmission
- Storage

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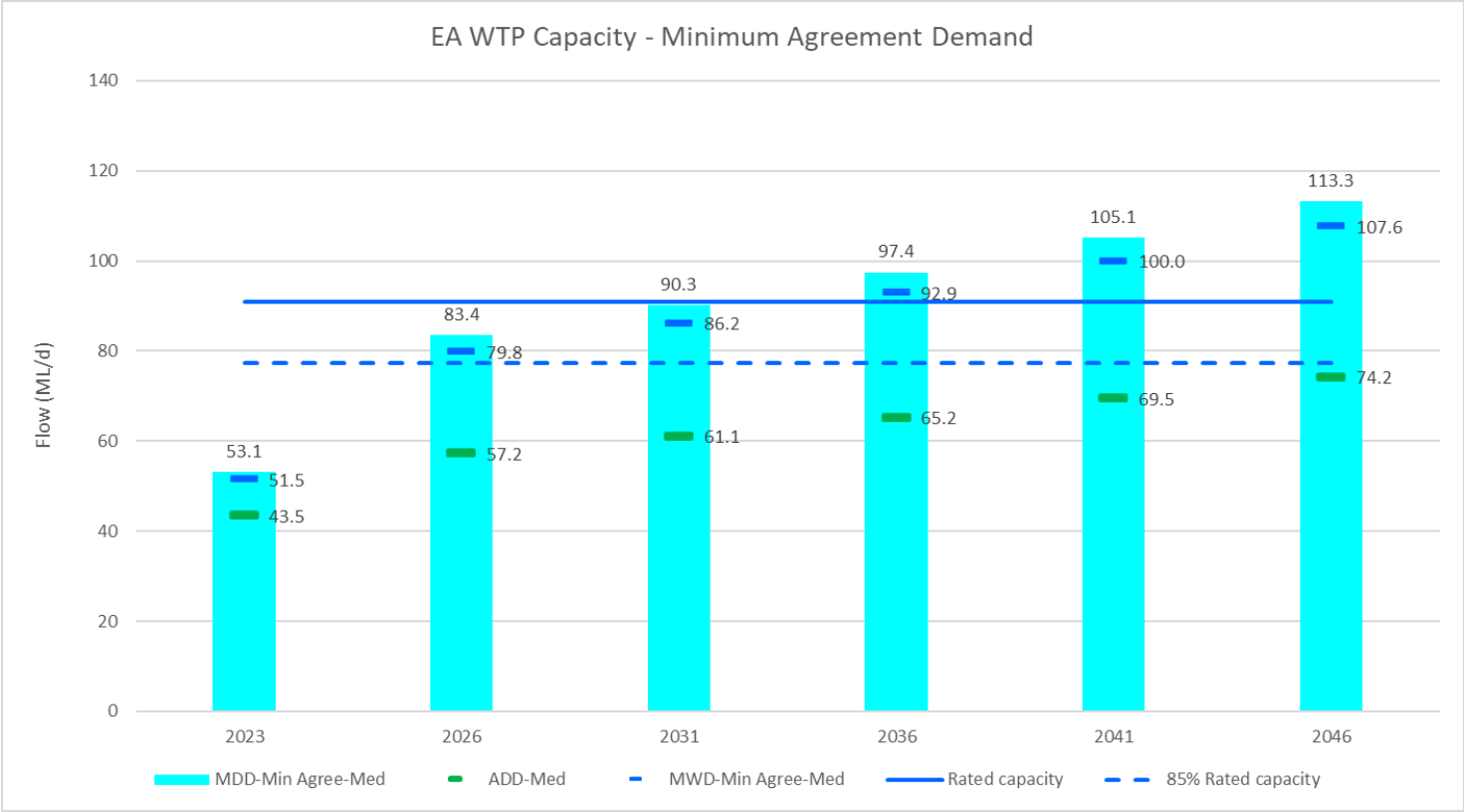
System Assessment – Treatment

- 85% of the rated capacity of the treatment plant of 91 ML/d is projected to be reached by 2026.
- Treatment capacity is projected to be reached by 2031.
- Intake pipe capacity is sufficient to meet all demand conditions.
- A previous study indicated that much of the plant's concrete will reach its expected life at the end of the study period (Year 2046). Condition assessment and rehabilitation may be required.



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System Assessment – Pumping

Elgin Area Water Treatment Plant Pumps:

- Low lift pumping capacity will be reached by 2031
- High lift pumping capacity will be reached by 2036
- Surge protection facilities is capable to meet the current Water Treatment Plant rated capacity
    - Surge protection will be revisited for the pumping expansion

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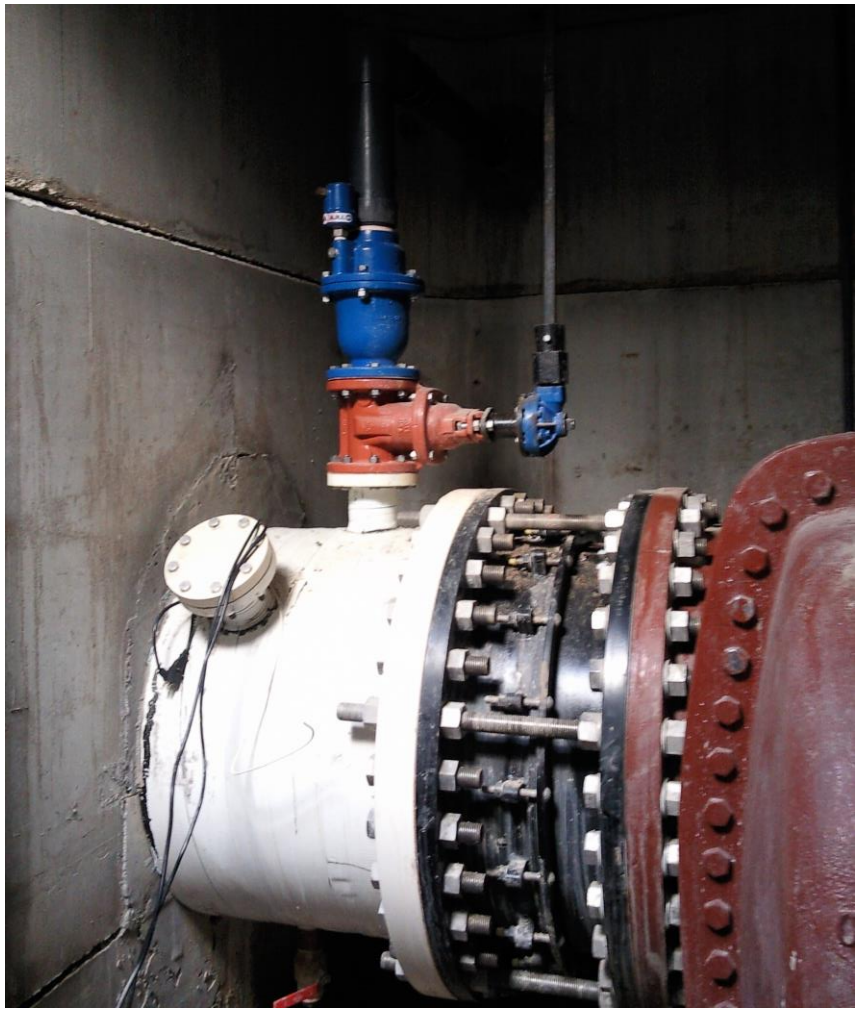
System Assessment – Transmission

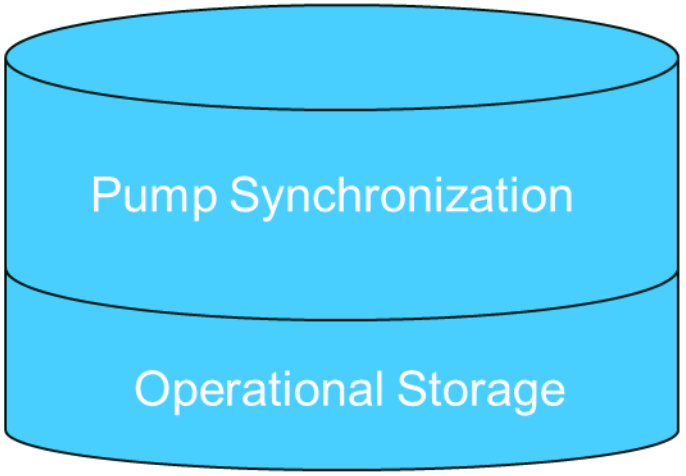
- Elgin Area Water Treatment Plant to Elgin Terminal Reservoir transmission mains:
- Transmission main upgrades are not required for projected growth; however, age and condition will most likely dictate that small sections of the transmission main that are proactively replaced
- The Elgin Area Transmission B-Line showed high headloss and velocity for the 2036 scenario without the A-Line in service and the main cannot adequately supply Elgin Terminal Reservoir on its own. With both the A-Line and B-Line in service, the mains will have sufficient capacity to supply demands within the planning horizon.
- It is recommended that planning beyond the 20-year planning horizon be completed to develop a comprehensive pipeline strategy considering reliability, redundancy and risk
- Other transmission mains in the system will have sufficient capacity to supply demands within the planning horizon.



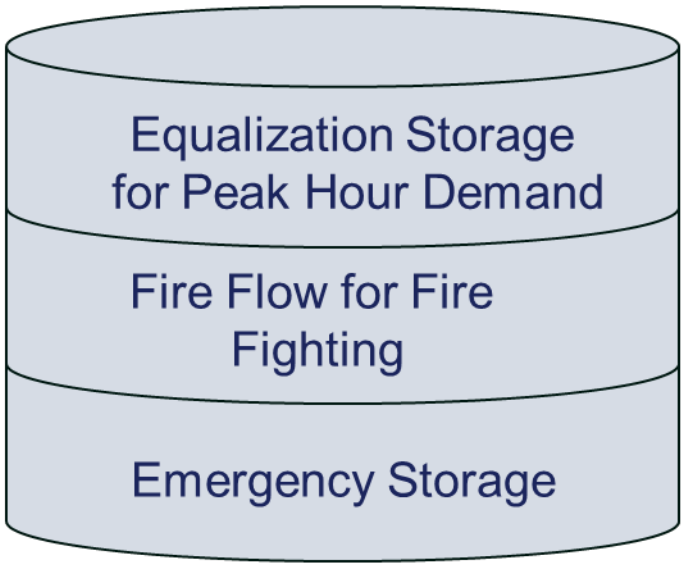
Storage Evaluation

- The Elgin Area Primary Water Supply System operates as a utility supplying water to customers/communities, and storage is required for flexibility of the utility's operations

- Communities ensure sufficient distribution storage is available to meet Ministry of the Environment Guidelines



Elgin Area Primary Water Supply Storage



Community Water Distribution System Storage

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System Assessment – Storage

- There are marginal storage deficits for the Elgin Area Water Treatment Plant Treated Water facility.
- Additional storage at Elgin Terminal Reservoir could be considered to help delay the requirement for Elgin Area Water Treatment Plant expansion to beyond 2031.

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Alternative Water Servicing Strategies

Planning Alternative	Screening Result	Alternatives for Further Study
1. Do Nothing • Does not address the problem opportunity statement.	Not Carried Forward.	Screened from additional study.
2. Limit Growth / Soley Optimize the Existing System (with no new Infrastructure) • While limiting growth and only optimizing the existing system would reduce the need for upgrades and improvements to the water distribution systems it does not address the problem and opportunity Statement, recognize the Regional Water Supply does not have the jurisdiction to implement such measures on member Municipalities or meet the need for new customers.	Not Carried Forward.	Screened from additional study.
3. Water Conservation/Reduction in Use • Partially addresses the Problem and Opportunity Statement. • Water conservation provides some relief for water treatment and distribution but does not consider future growth and would not be an adequate solution on its own. • Municipalities to continue the water conservation efforts	Not Carried Forward.	Screened from additional study. Encouraged as a best practice for community water systems

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Alternative Water Servicing Strategies cont'd

Planning Alternative	Screening Result	Alternatives for Further Study
4. Water System Improvements (to Rated Capacity) • Partially Addresses the Problem and Opportunity Statement. • Provides ability to accommodate **some limited** future growth through an upgrade to the current system rated capacity	Not Carried Forward.	Screened from additional study.
5. Water System Improvements (Beyond Rated Capacity) • Addresses the Problem and Opportunity Statement. • Provides ability to accommodate future growth through an expansion beyond the current system rated capacity.	**Carried Forward.**	**To be studied further.**
6. Alternate Supply Source for Selected Current Customers/Communities • Difficult to implement due to jurisdictional and intra-basin complexities • Requires new water supply agreement(s)	Not Carried Forward.	Screened from additional study.

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Evaluation Criteria

Water servicing alternatives for Strategy No.5 were evaluated against the following criteria

Factor	Criteria	Description
Socio-Economic	• Long Term Impacts to the Community in relation to the utility. • Supports growth and development	• Considerations to potential long- and short-term impacts for the utility, as well as the communities served
Cultural Environment	• Archaeological Resources. • Cultural Heritage landscapes and built heritage resources.	• Disturbance to archaeological sites, cultural heritage landscapes and built cultural heritage resources.
Natural Heritage	• Aquatic environment. • Terrestrial environment. • Species at Risk. • Source water protection.	• Potential Impacts to the Natural Environment due to the construction, operation of new or updated infrastructure. • Intake Protection Zone considerations.
Technical	• Meets future needs. • Drinking water quality. • Maintenance of Service. • Constructability • Legal Jurisdictional	• The ability of the alternatives to meet the current and future needs of the water distribution system and how it can be integrated with the existing system
Economic and Financial	• Project and Operations Changes Costs.	• Costs to construct, maintain and operate the new infrastructure for the distribution system.

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Evaluation of Water System Improvement Alternatives – Evaluation Summary

Water System Improvement Alternative	Evaluation Result	Rationale
Alternative 5A – Optimizing and Upgrading Existing System (with new infrastructures) *Upgrade existing infrastructure(s) beyond system rated capacity through various improvements. Optimization of existing system is also included.*	**Carried Forward** 	• Moderate impacts to Natural Heritage • Moderate Impacts to/from Climate Change • Meets the need of current and potential new customers. • Moderate construction complexity. • Straight forward permitting and approvals • Moderate capital cost.
Alternative 5B – New Water Treatment Plant *Replace existing water treatment plant with new plant above the current rated capacity*	**Not Carried Forward** 	• Property acquisition may be required. • Moderate to high impacts to Natural Heritage. • High impacts to/from Climate Change. • Meets the need of current and potential new customers. • Moderate to High construction complexity. • More stringent permitting and approvals. • Highest capital cost.

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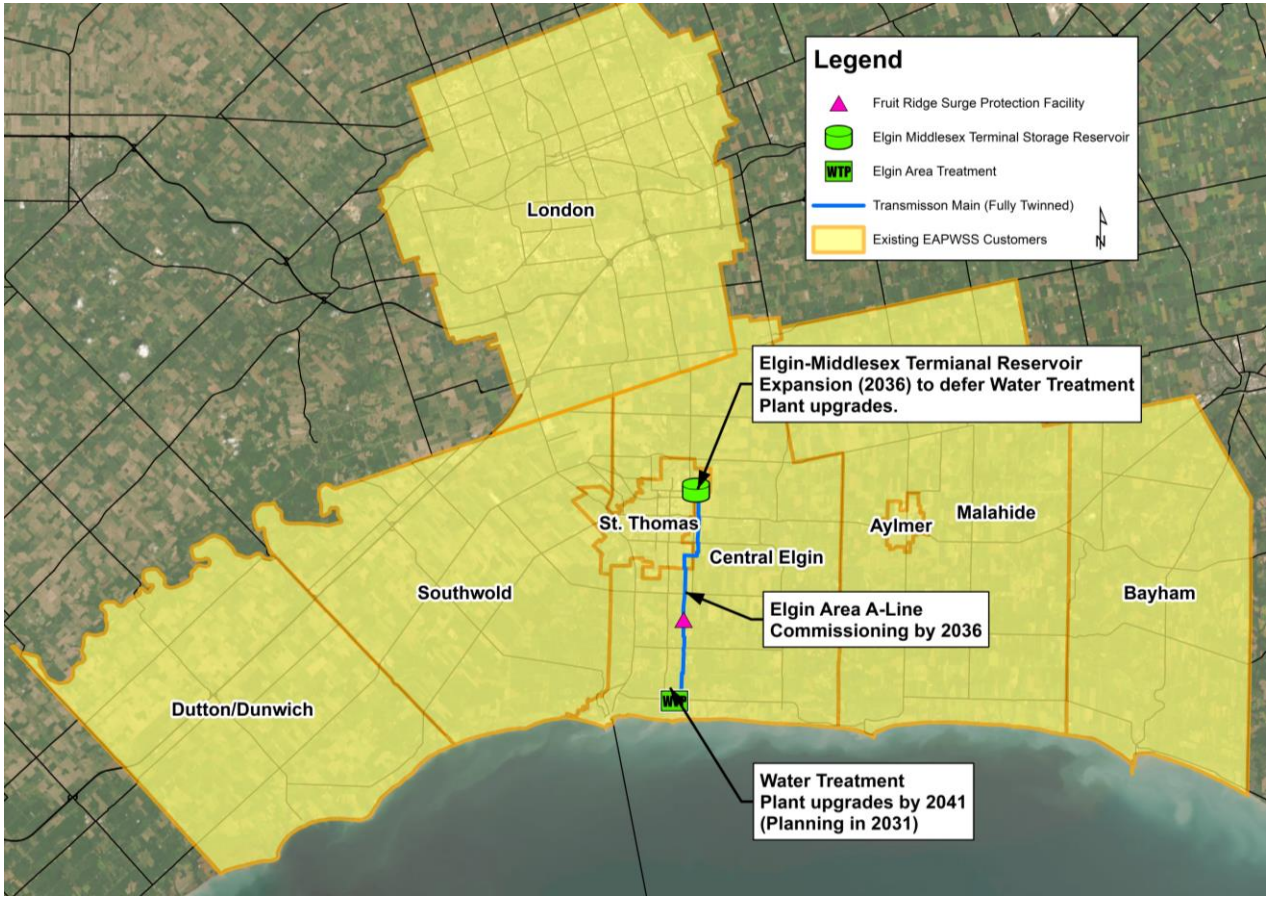
Recommended Water System Improvements

- Treatment Processes:
  - ** Treatment Plant Expansion
  - Ultraviolet Disinfection and Backwash Replacements (in progress)
  - Clarifier and Filter Upgrades
  - Tank/Channel Rehabilitations
- Pumping:
  - ** Low Lift Pump Station Upgrades / Possible New Facility
  - ** High Lift Pump Station Upgrades / Possible New Facility
- Transmission:
  - Rehabilitation and recommissioning of ‘A’ Transmission Main
  - Chamber Flood Protection and Rehabilitations
  - Air Release Valve Replacements
- Storage:
  - Elgin Terminal Reservoir Expansion
  - ** Elgin Area Water Treatment Plant On-Site Reservoir Expansion
  - Tank Rehabilitations



** Need & Approach Confirmation with Schedule ‘C’ Class Environmental Assessment for Treatment Plant Expansion

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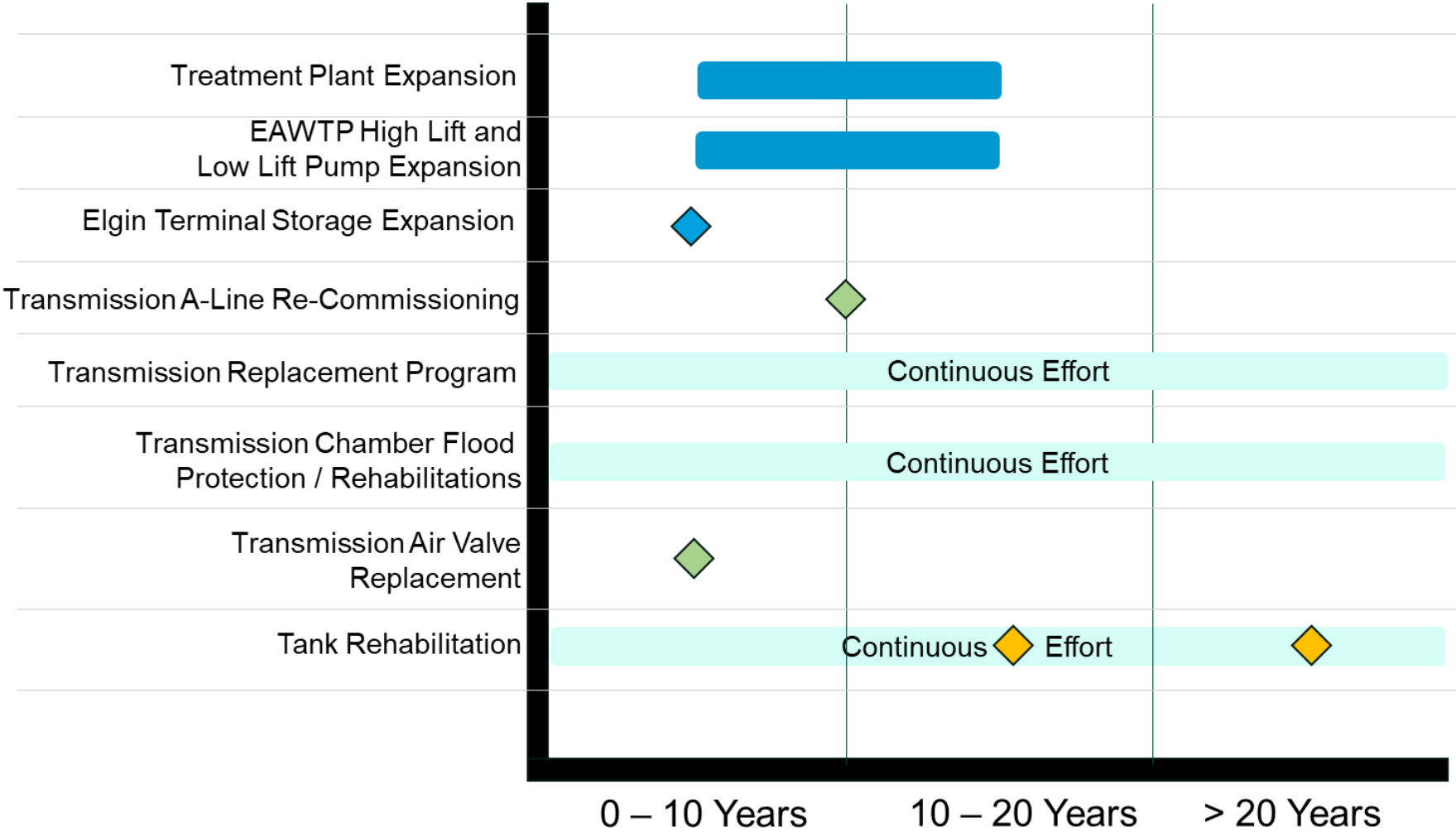
Recommended Capital Program



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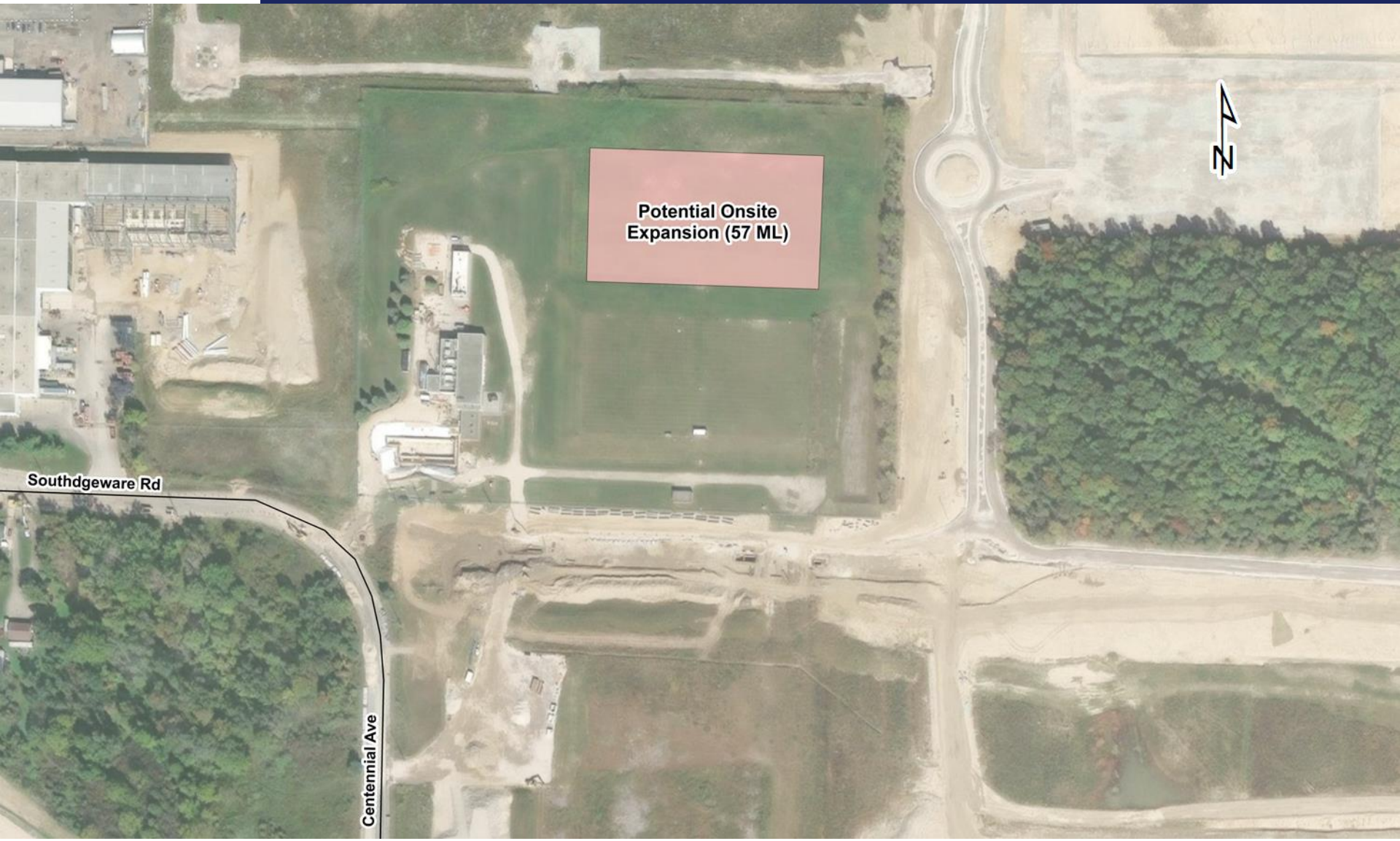
Water System Improvements – Elgin Terminal Reservoir Expansion



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Water System Improvements – Water Treatment Plant Upgrades

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Recommended Water System Improvements – Future Studies and Review

Treatment:

- Optimization of Coagulant and Polymer Dosing Strategy
- Optimization of Powder Activated Carbon Dosing Strategy
- Raw Water Quality Monitoring Program
- Taste and Odour Management Study
- Cold Water Stress Test
- Pilot-plant feasibility study
- Feasibility Study for Coagulation, Flocculation and Clarifier Capacity Upgrades
- Feasibility Study for Filter Capacity Upgrades, including Filter-to-Waste and Backwash Sequence Capability
- **Schedule 'C' Class Environmental Assessment** for Treatment Plant Expansion

Pumping, Storage and Transmission :

- Ongoing Monitoring of Primary Transmission Mains
- System Reliability and Redundancy Review
- Water Loss Review
- Reservoir Expansion Feasibility Study
- Transient Hydraulic Modeling Update
- Feasibility of Low Lift and High Lift Pumping Station Upgrades / Possible New Facilities (to be included with Treatment Plant Expansion **Schedule 'C' Class Environmental Assessment**).

System Wide:

- Water Quality Facility Plan Update
- Asset Management Plan Update
- Ongoing Condition Assessment
- Climate Change Resiliency and Adaptation Plan
- Financial Plan Update
- 50 Year Roadmap Study
- Interim Flow Projection Update (2027)
- Next Master Plan (2029)

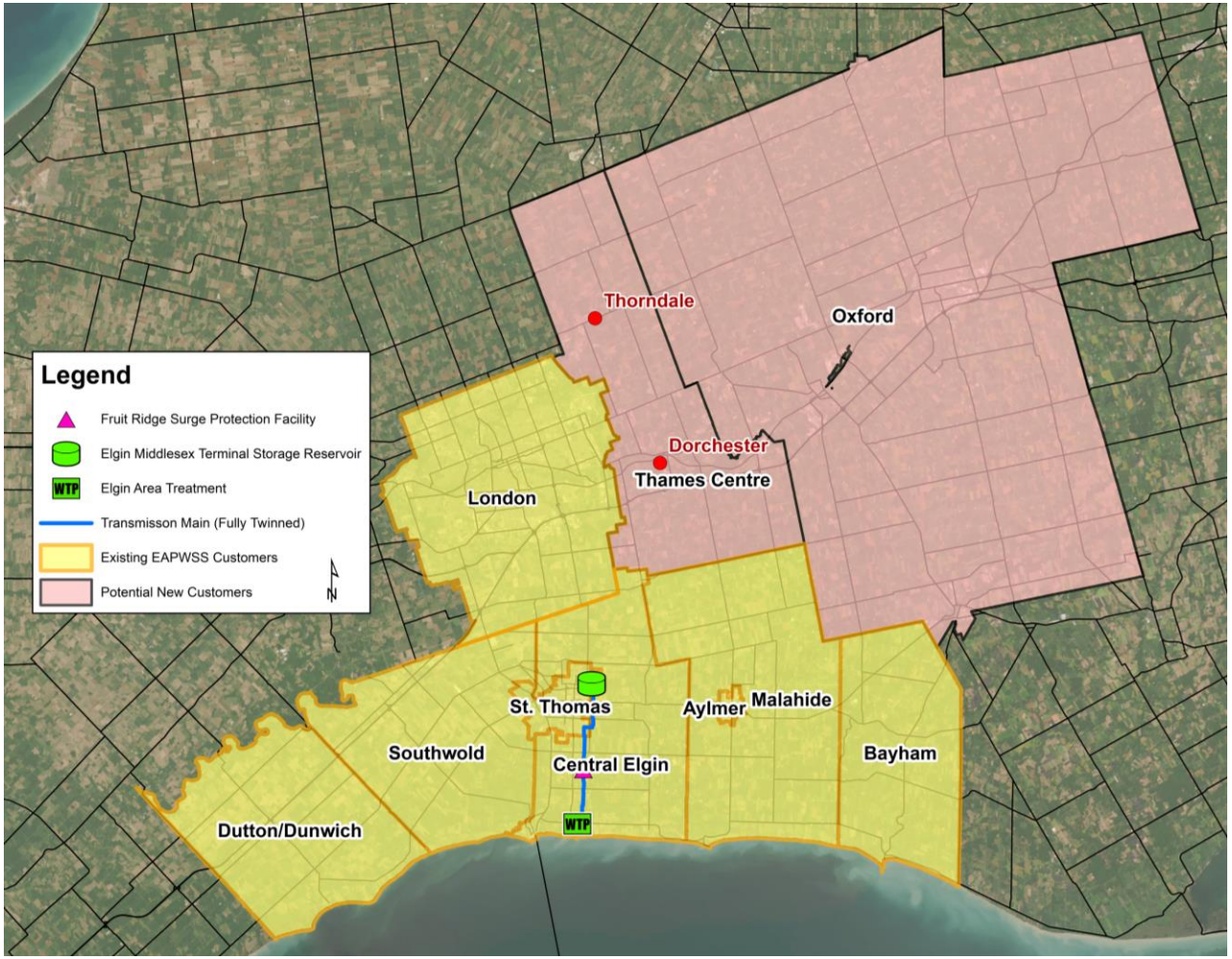
Potential New Customers

The following communities expressed interest in potential water supply from the Elgin Area Primary Water Supply System:

- Oxford County
- Municipality of Thames Centre (Dorchester and Thorndale)

Additional requirements to accommodate new customers:

- Extension of secondary systems for connection to new communities
- Potential storage capacity increase
- Operational adjustments



* Water demands for these communities were not included in the overall system assessments

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Next Steps

June/July 2025
Collect input from PIC

Receive and consider input from the public, agencies and stakeholders to confirm the preferred alternatives.

Summer 2025
Master Plan Report

Prepare Master Plan Report to fully document the process including all consultation / engagement.

Fall 2025
30-Day Review Period

Report will be available for Public Review for 30-Days on the project website

If no issues are raised within the 30-day review, the Elgin Area Primary Water Supply System can proceed to future studies and/or detailed design and construction of the recommended works as outlined in the Master Plan Report.

Stay Connected

Visit our project website:

https://www.huronelginwater.ca/elgin-area-water-supply-system-master-plan/

where you can:

- Ask questions and leave comments for the project team.
- View the latest project materials.
- Access a recording of this meeting.

You can also reach us any time with comments or questions, using the contact information below. This presentation can be made available in alternative formats upon request.

Please Provide and Questions and/or Comments related to the Public Information Centre by **July 11th, 2025.**

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