Appendix A.1

Contact / Distribution List

Elgin Area Primary Water Supply System Master Plan - Distribution / Contact List

Project Name: Elgin Area Primary Water Supply System Master Plan
Updated: September 15 2025

Project Manager: Marcy McKillop (Elgin Area Primary Water Supply System);Benny Wan(AECOM)

Category	Contact Name	Title/Department	Email
Provincial Agencies			
MECP	Southwest Region	EA Notifications	eanotification.swregion@ontario.ca
Ministry of Citizenship and Multiculturalism	Karla Barboza	Team Lead(A), Heritage Heritage Planning Unit Programs and Services	karla.barboza@ontario.ca
Ministry of Indigenous Affairs	Lise Chabot	Manager, Ministry Partnerships Unit	lise.Chabot@ontario.ca
Environmental Assessment and Permissions Branch			enviropermissions@ontario.ca
Ministry of Natural Resources and Forestry			SR.Planning@ontario.ca
Ministry of Indigenous Affairs	**Lise Chabot**	**Manager, Ministry Partnerships Unit**	lise.Chabot@ontario.ca
Environmental Assessment and Permissions Branch			enviropermissions@ontario.ca
HONI			SecondaryLandUse@HydroOne.com
Ministry of Municipal Affairs and Housing	**Erick Boyd**	**Manager (Acting)**	erick.boyd@ontario.ca
Municipal			
Middlesex London Health Unit	Stephen Turner	Director, Environmental Health & Infectious Diseases	stephen.turner@mlhu.on.ca
Middlesex London Health Unit	Dr. Alexander Summers	Medical Officer of Health	alexander.summers@mlhu.on.ca
Southwestern Public Health			info@swpublichealth.ca
Southwestern Public Health			executiveleadership@swpublichealth.ca
Lake Erie Source Protection Region c/o Grand River Conservation Authority	Kaitlyn Roseburgh	Source Protection Program Coordinator	krosebrugh@grandriver.ca
Lake Erie Source Protection Region c/o Grand River Conservation Authority	Shari Dahmer, M. Sc.	Source Protection Program Manager	sdahmer@grandriver.ca
Regional Water Supply	All Staff	All Staff	All Staff
OCWA - EAPWSS	Greg Henderson	Senior Operations Manager	ghenderson@ocwa.com
OCWA - EAPWSS	Nick Wilson	Senior Operations Manager	nwilson@ocwa.com
OCWA - LHPWSS & EAPWSS	Jackie Mueller	Regional Hub Manager	jmuller@ocwa.com
OCWA - LHPWSS & EAPWSS	Austin Sherwin	Technical Project Specialist	asherwin@ocwa.com
City of London	Kelly Scherr	CAO (Water Boards) & Deputy City Manager	kscherr@london.ca
City of London	Ashley Rammeloo	Director - Water, Wastewater & Stormwater	arammelo@london.ca

Elgin Area Primary Water Supply System Master Plan - Distribution / Contact List

Category	Contact Name	Title/Department	Email
City of London	Dan Huggins	Water Quality Manager	dhuggins@london.ca
City of London	Brad Weber	Division Manager - Sewer Operations	bweber@london.ca
City of London	Connor Bailey	Division Manager - Water Operations	
City of St. Thomas	Chris Andrew	ORO - Manager of Sewer and Water	candrew@stthomas.ca
City of St. Thomas	Kevin De LeeBeeck	Director of Environmental & Infrastructure Services/ City Engineer	kdeleebeeck@stthomas.ca
City of St. Thomas	Justin Lawrence	Director of Industrial Development	jlawrence@stthomas.ca
Township of Malahide	Jason Godby	Director of Public Works	jgodby@malahide.ca
Township of Malahide	Sam Gustavson	Water/Waste Water Operations Manager	sgustavson@malahide.ca
Township of Malahide	Nathan Dias	CAO	ndias@malahide.ca
Town of Aylmer	Rob Johnson	Director of Public Works/ Alternate CEMC	rjohnson@town.aylmer.on.ca
Town of Aylmer	Connor Bailey	Manager of Water Operations	cbailey@town.aylmer.on.ca
Town of Aylmer	Andy Grozelle	CAO	agrozelle@town.aylmer.on.ca
Township of Southwold	Paul Van Vaerenbergh	Public Works Superintendent	roads@southwold.ca
Township of Southwold	Jeff Carswell	CAO	projects@southwold.ca cao@southwold.ca
Township of Southwold	Aaron VanOorspronk	Director of Infrastructure & Development	development@southwold.ca
Township of Southwold	Mike Taylor	Manager of Environmental Services	enviroservices@southwold.ca
Elgin County	Mat Vaughan	Director of Planning and Development Services	mvaughan@elgin.ca
Municipality of Bayham	Ed Roloson	Manager of Capital Projects-Water/Wastewater Operations	eroloson@bayham.on.ca
Municipality of Bayham	Thomas Thayer	CAO	tthayer@bayham.on.ca
Municipality of Bayham	Steve Adams	Manager of Public Works/Drainage Superintendent	
Municipality of Central Elgin	Trevor Martin	Water/Wastewater Superintendent	tmartin@centralelgin.org
Municipality of Central Elgin	Alex Piggott	Manager of Environmental Services	apiggott@centralelgin.org
Municipality of Central Elgin	Geoff Brooks	Director of Infrastructure & Community Services	gbrooks@centralelgin.org
Municipality of Central Elgin	Carey Herd	CAO/Clerk	cao@centralelgin.org
Dutton-Dunwich	Tara Krestschmer	Clerk	tkretschmer@duttondunwich.on.ca
Dutton-Dunwich	Ryan McGahan	Water/Wastewater	rmcgahan@duttondunwich.on.ca
Dutton-Dunwich	vacant	CAO/Treasurer	
Conservation Authority			
Kettle Creek Conservation Authority	Jeff Lawrence		jeff@kettlecreekconservation.on.ca
Kettle Creek Conservation Authority	Jennifer Dow		jennifer@kettlecreekconservation.on.ca
Kettle Creek Conservation Authority	Maisa Fumagali		maisa@kettlecreekconservation.on.ca
Kettle Creek Conservation Authority	Elizabeth VanHooren	General Manager/Secretary Treasurer	elizabeth@kettlecreekconservation.on.ca
Upper Thames River Conservation Authority	Karen Winfield	Planning and Regulations Resource Specialist	winfieldk@thamesriver.ca
Lower Thames Valley Conservation Authority	Valerie Towsley	Watershed Resource Planner	valerie.towsley@ltvca.ca
Long Point Region Conservation Authority	Leigh-Anne Mauthe	Supervisor of Planning Services	lmauthe@lprca.on.ca

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Category	Contact Name	Title/Department	Email
Catfish Creek Conservation Authority	Christopher Wilkinson	General Manager / Secretary-Treasurer	generalmanager@catfishcreek.ca
Elgin Area Primary Water Suppy Board Members			
	John Adzija	Elgin	councilloradzija@southwold.ca
	Pete Barbour	Elgin	pcbarbour@live.com; pbarbour@town.aylmer.on.ca
	Jim Herbert	Elgin	jherbert@stthomas.ca
	Steve Hillier	Elgin	shillier@london.ca
	Elizabeth Peloza	Elgin	epeloza@london.ca
	Steve Peters	Elgin	speters@stthomas.ca
	Susan Stevenson	Elgin	sstevenson@london.ca
	Gary Clarke	Elgin	gclarke@stthomas.ca
	Timothy Emerson	Elgin	temerson@bayham.on.ca
	Ken Loveland	Elgin	kloveland@duttondunwich.on.ca
	Hadleigh McAlister	Elgin	hmcalister@london.ca
	Paul Van Meerbergen	Elgin	pvanmeerbergen@london.ca
	Norman Watson	Elgin	nwatson@centralelgin.org
	Mark Widner	Elgin	mwidner@malahide.ca
Contacts Added after Notice of Public Information Centre			
Municipality of South Huron		Chief Administrative Officer	cao@southhuron.ca
Municipality of Bluewater		Chief Administrative Officer	cao@municipalityofbluewater.ca
			whatsupdock229@icloud.com
Elgin County			pdutchak@elgin.ca
Upper Thames River Conservation Authority			funkm@thamesriver.ca
Malahide		Water Operations Manager	sgustavson@malahide.ca
Aylmer and Port Burwell Area Secondary Water Supply Systems			ndias@malahide.ca
Aylmer and Port Burwell Area Secondary Water Supply Systems			aadams@malahide.ca
Aylmer and Port Burwell Area Secondary Water Supply Systems			jgodby@malahide.ca
Aylmer and Port Burwell Area Secondary Water Supply Systems			aboylan@malahide.ca
Aylmer and Port Burwell Area Secondary Water Supply Systems			eroloson@bayham.on.ca
Aylmer and Port Burwell Area Secondary Water Supply Systems			cao@bayham.on.ca
Aylmer and Port Burwell Area Secondary Water Supply Systems			apiggott@centralelgin.org
Aylmer and Port Burwell Area Secondary Water Supply Systems			gbrooks@centralelgin.org
Aylmer and Port Burwell Area Secondary Water Supply Systems			rjohnson@town.aylmer.on.ca
Aylmer and Port Burwell Area Secondary Water Supply Systems			agrozelle@town.aylmer.on.ca

Elgin Area Primary Water Supply System Master Plan - Distribution / Contact List

Category	Contact Name	Title/Department	Email
Aylmer and Port Burwell Area Secondary Water Supply Systems			pbarbour@town.aylmer.on.ca
Aylmer and Port Burwell Area Secondary Water Supply Systems			nwatson@centralelgin.org
Aylmer and Port Burwell Area Secondary Water Supply Systems			cglinski@malahide.ca
Aylmer and Port Burwell Area Secondary Water Supply Systems			temerson@bayham.on.ca
Aylmer and Port Burwell Area Secondary Water Supply Systems			tmartin@centralelgin.org

Appendix A.2

Notice of Study Commencement

Elgin Area
Primary Water Supply System

Elgin Area Primary Water Supply System
Master Plan
Notice of Study Commencement

The Elgin Area Primary Water Supply System (EAPWSS), through its consultant AECOM has initiated a Municipal Class Environmental Assessment (MCEA) Master Plan study to develop and assess a range of water servicing strategies to accommodate near, mid and long-term future growth, while maintaining the reliability and sustainability of the utility. See Map for existing infrastructure and member municipalities.

This MCEA Master Plan Study will document existing conditions, water demand forecasts, water modelling, and engage key stakeholders, the general public and Indigenous Communities and provide recommendations for the regional water system to address system growth and infrastructure needs to maintain levels of service.

The Process

This study will be completed in accordance with the Ontario Environmental Assessment Act and will follow Approach #1 of the Municipal Engineers Association Municipal Class EA (as amended in 2020) Master Planning process. At the conclusion of the study, a suite of recommended water projects will be identified including the MCEA Schedule (Exempt, Schedule B or C) for any regional water supply system project(s). This Master Plan will be completed at a broad level of assessment,

therefore requiring more detailed investigations at project specific level for any recommended Schedule B or C projects.

The EAPWSS invites anyone with an interest in the study to have an opportunity to provide feedback and help inform the decision-making process. A Virtual Public Information Centre (PIC) will be held in June 2025, to introduce the study, present existing conditions, the alternative servicing strategies, evaluation criteria, and the recommended servicing strategies including the associated water projects and schedule. Invitation notices to the PIC will be emailed to those on the mailing list and will be posted on the Project Webpage:

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

For more information or if you want to be placed on our mailing list for updates, please contact us at:

Marcy McKillop, P.Eng
Environmental Services Engineer
Regional Water Supply
Lake Huron and Elgin Area Primary Water Supply Systems
235 North Centre Road, Suite 200
London ON, N5X 4E7
Tel:519-930-3505 x4976
Email: mmckillop@huronelginwater.ca

Paul Adams, CPT
Environmental Planner,
AECOM Canada ULC.
250 York Street, Suite 410
London ON, N6A 6K2
Tel: 519-636-6448
Email: paul.adams2@aecom.com

The personal information submitted in relation to this Master Plan is collected under the authority of the Municipal Act, 2001, S.O. 2001, c.25 and will be reviewed to provide subsequent Master Plan study development, communications and events. With the exception of personal information, all comments will form part of the public record for this Master Plan in accordance with the Municipal Class Environmental Assessment, which is a planning process approved under Ontario's *Environmental Assessment Act.*

Questions about this collection should be addressed to Marcy McKillop, Environmental Services Engineer at 235 North Centre Road, Suite 200, London, ON N5X 4E7. Tel: 519-930-3505 ext. 4976, email: mmckillop@huronelginwater.ca

This Notice was Issued on February 14th 2025.

<JGodby@malahide.ca>; Sam Gustavson <SGustavson@malahide.ca>; Nathan Dias <NDias@malahide.ca>; Robert Johnson <rjohnson@town.aylmer.on.ca>; Jennifer Reynaert <jreynaert@town.aylmer.on.ca>; roads@southwold.ca; cao@southwold.ca; development@southwold.ca; enviroservices@southwold.ca; mvaughan@elgin.ca; eroloson@bayham.on.ca; tthayer@bayham.on.ca; sadams@bayham.ca; tmartin@centralelgin.org; apiggott@centralelgin.org; gbrooks <gbrooks@centralelgin.org>; cao@centralelgin.org; tkretschmer@duttondunwich.on.ca; rmcgahan@duttondunwich.on.ca; jeff@kettlecreekconservation.on.ca; jennifer@kettlecreekconservation.on.ca; maisa@kettlecreekconservation.on.ca; Elizabeth VanHooren <elizabeth@kettlecreekconservation.on.ca>; winfieldk@thamesriver.ca; valerie.towsley@ltvca.ca; lmauthe@lprca.on.ca; generalmanager@catfishcreek.ca; councilloradzija@southwold.ca; pbarbour@town.aylmer.on.ca; jherbert@stthomas.ca; Hillier, Steve <shillier@london.ca>; Peloza, Elizabeth <epeloza@london.ca>; speters@stthomas.ca; sstevenson@london.ca; gclarke@stthomas.ca; temerson@bayham.on.ca; kloveland@duttondunwich.on.ca; hmcalister@london.ca; Van Meerbergen, Paul <pvanmeerbergen@london.ca>; nwatson@centralelgin.org; Mark Widner <MWidner@malahide.ca>
Cc: RWS All Staff <rws-staff@huronelginwater.ca>; Wan, Benny <Benny.Wan@aecom.com>; Adams, Paul (London ON) <Paul.Adams2@aecom.com>
Subject: Notice of Public Information Centre - Elgin Area Primary Water Supply System Master Plan

Good afternoon,

Please find attached the Notice of Public Information Centre for the Elgin Area Primary Water Supply System Master Plan.

Further updates will be provided on the Master Plan website.

Subsequent Master Plan notices will be issued by email. Please let me know of any changes to project contacts, so the project contact list can be updated.

Best regards,

Marcy McKillop, P.Eng. (she/her)
Environmental Services Engineer, Regional Water Supply

Lake Huron & Elgin Area Primary Water Supply Systems
235 North Centre Road, Suite 200
London, Ontario N5X 4E7
T: 519-930-3505 ext. 4976
E: mmckillop@huronelginwater.ca
https://huronelginwater.ca
www.facebook.com/RegionalWaterSupply

The Lake Huron and Elgin Area Primary Water Supply Systems serve 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.

From: Marcy McKillop
Sent: Friday, February 14, 2025 10:17 AM
To: karla.barboza@ontario.ca; lise.Chabot@ontario.ca; enviropermissions@ontario.ca; SR.Planning@ontario.ca; secondarylanduse@hydroone.com; erick.boyd@ontario.ca; stephen.turner@mlhu.on.ca; alexander.summers@mlhu.on.ca; cwalker@elginhealth.on.ca; tramsay@elginhealth.on.ca; krosebrugh@grandriver.ca; sdahmer@grandriver.ca; Greg Henderson; Nicholas Wilson <nwilson@ocwa.com>; Austin Sherwin; Jackie Muller <jmuller@ocwa.com>; Scherr, Kelly <kscherr@london.ca>; Rammeloo, Ashley <arammelo@london.ca>; Rozentals, Aaron <arozenta@london.ca>; Huggins, Daniel <dhuggins@london.ca>; Andrew, Chris <candrew@stthomas.ca>; kdeleebeeck@stthomas.ca; Lawrence, Justin <jlawrence@stthomas.ca>; Jason Godby <JGodby@malahide.ca>; Sam Gustavson (sgustavson@malahide.ca) <SGustavson@malahide.ca>; ndias@malahide.ca; rjohnson@town.aylmer.on.ca; cbailey@town.aylmer.on.ca; agrozelle@town.aylmer.on.ca; roads@southwold.ca; cao@southwold.ca; development@southwold.ca; enviroservices@southwold.ca; mvaughan@elgin.ca; eroloson@bayham.on.ca; tthayer@bayham.on.ca; sadams@bayham.ca; tmartin@centralelgin.org; apiggott@centralelgin.org; gbrooks@centralelgin.org; cao@centralelgin.org; tkretschmer@duttondunwich.on.ca; rmcgahan@duttondunwich.on.ca; Joe Gordon <joe@kettlecreekconservation.on.ca>; elizabeth@kettlecreekconservation.on.ca; winfieldk@thamesriver.ca; valerie.towsley@ltvca.ca; lmauthe@lprca.on.ca; generalmanager@catfishcreek.ca; councilloradzija@southwold.ca; pbarbour@town.aylmer.on.ca; jherbert@stthomas.ca; Hillier, Steve <shillier@london.ca>; Peloza, Elizabeth <epeloza@london.ca>; speters@stthomas.ca; sstevenson@london.ca; gclarke@stthomas.ca; temerson@bayham.on.ca; kloveland@duttondunwich.on.ca; hmcalister@london.ca; Van Meerbergen, Paul <pvanmeerbergen@london.ca>; nwatson@centralelgin.org; mwidner@malahide.ca
Cc: RWS All Staff; Wan, Benny <Benny.Wan@aecom.com>; Adams, Paul (London ON) <Paul.Adams2@aecom.com>
Subject: Notice of Commencement - Elgin Area Primary Water Supply System Master Plan

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Environmental Services Engineer, Regional Water Supply

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235 North Centre Road, Suite 200
London, Ontario N5X 4E7
T: 519-930-3505 ext. 4976
E: mmckillop@huronelginwater.ca
https://huronelginwater.ca
www.facebook.com/RegionalWaterSupply

The Lake Huron and Elgin Area Primary Water Supply Systems serve 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

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To: karla.barboza@ontario.ca; lise.Chabot@ontario.ca; enviropermissions@ontario.ca; SR.Planning@ontario.ca; secondarylanduse@hydroone.com; erick.boyd@ontario.ca; stephen.turner@mlhu.on.ca; alexander.summers@mlhu.on.ca; cwalker@elginhealth.on.ca; tramsay@elginhealth.on.ca; krosebrugh@grandriver.ca; sdahmer@grandriver.ca; Greg Henderson; Nicholas Wilson <nwilson@ocwa.com>; Austin Sherwin; Jackie Muller <jmuller@ocwa.com>; Scherr, Kelly <kscherr@london.ca>; Rammeloo, Ashley <arammelo@london.ca>; Rozentals, Aaron <arozenta@london.ca>; Huggins, Daniel <dhuggins@london.ca>; Andrew, Chris <candrew@stthomas.ca>; kdeleebeeck@stthomas.ca; Lawrence, Justin <jlawrence@stthomas.ca>; Jason Godby <JGodby@malahide.ca>; Sam Gustavson (sgustavson@malahide.ca) <SGustavson@malahide.ca>; ndias@malahide.ca; rjohnson@town.aylmer.on.ca; cbailey@town.aylmer.on.ca; agrozelle@town.aylmer.on.ca; roads@southwold.ca; cao@southwold.ca; development@southwold.ca; enviroservices@southwold.ca; mvaughan@elgin.ca; eroloson@bayham.on.ca; tthayer@bayham.on.ca; sadams@bayham.ca; tmartin@centralelgin.org; apiggott@centralelgin.org; gbrooks@centralelgin.org; cao@centralelgin.org; tkretschmer@duttondunwich.on.ca; rmcgahan@duttondunwich.on.ca; Joe Gordon <joe@kettlecreekconservation.on.ca>; elizabeth@kettlecreekconservation.on.ca; winfieldk@thamesriver.ca; valerie.towsley@ltvca.ca; lmauthe@lprca.on.ca; generalmanager@catfishcreek.ca; councilloradzija@southwold.ca; pbarbour@town.aylmer.on.ca; jherbert@stthomas.ca; Hillier, Steve <shillier@london.ca>; Peloza, Elizabeth <epeloza@london.ca>; speters@stthomas.ca; sstevenson@london.ca; gclarke@stthomas.ca; temerson@bayham.on.ca; kloveland@duttondunwich.on.ca; hmcalister@london.ca; Van Meerbergen, Paul <pvanmeerbergen@london.ca>; nwatson@centralelgin.org; mwidner@malahide.ca
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Environmental Services Engineer, Regional Water Supply

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London, Ontario N5X 4E7
T: 519-930-3505 ext. 4976
E: mmckillop@huronelginwater.ca
https://huronelginwater.ca
www.facebook.com/RegionalWaterSupply

The Lake Huron and Elgin Area Primary Water Supply Systems serve 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.

Appendix A.3

Public Information Centre

Elgin Area Primary Water Supply System
Master Plan
Notice of Public Information Centre

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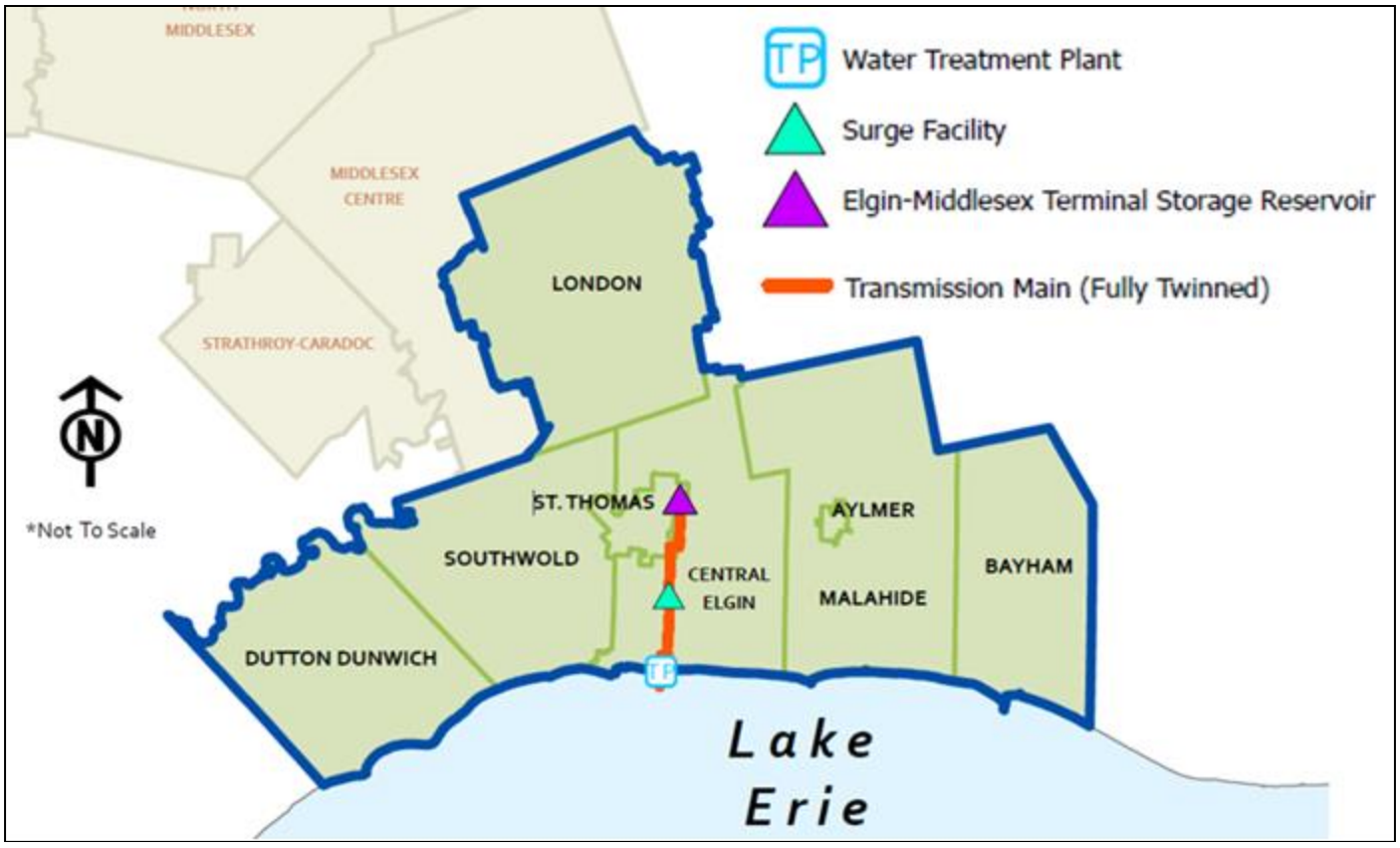
https://www.huronelginwater.ca/lake-huron-primary-water-supply-system-master-plan/



This MCEA Master Plan Study will document existing conditions, water demand forecasts, water modelling, and engage key stakeholders, the general public and Indigenous Communities and provide recommendations for the regional water system to address system growth and infrastructure needs to maintain levels of service.

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completed at a broad level of assessment, therefore requiring more detailed investigations at project specific level for any recommended Schedule B or C projects.

A Virtual Public Information Centre (PIC) will be held on June 25th 2025, to introduce the study, present existing conditions, the alternative servicing strategies, evaluation criteria, and the servicing strategies including the associated recommended projects and schedule.

Date: June 25th, 2025
Time: 6:00 pm
Format: Zoom Webinar Presentation followed by a question period

To Register for this PIC please send an email request to: Paul.Adams2@aecom.com.

For more information or if you want to be placed on our project contact list for updates, please contact us at:

Marcy McKillop, P.Eng.
Environmental Services Engineer
Regional Water Supply
Lake Huron and Elgin Area Primary Water Supply Systems
235 North Centre Road, Suite 200
London ON, N5X 4E7
Tel:519-930-3505 x4976
Email: mmckillop@huronelginwater.ca

Paul Adams, CPT
Environmental Planner,
AECOM Canada ULC.
250 York Street, Suite 410
London ON, N6A 6K2
Tel: 519-636-6448
Email: paul.adams2@aecom.com

The personal information submitted in relation to this Master Plan is collected under the authority of the *Municipal Act*, 2001, S.O. 2001, c.25 and will be reviewed to provide subsequent Master Plan study development, communications and events. With the exception of personal information, all comments will form part of the public record for this Master Plan in accordance with the Municipal Class Environmental Assessment, which is a planning process approved under Ontario's *Environmental Assessment Act.*

Questions about this collection should be addressed to Marcy McKillop, Environmental Services Engineer at 235 North Centre Road, Suite 200, London, ON N5X 4E7. Tel: 519-930-3505 ext. 4976, email: mmckillop@huronelginwater.ca

This Notice was Issued on June 3rd 2025.

Adams, Paul (London ON)

From: Thomas Thayer <cao@bayham.on.ca>
Sent: June 4, 2025 8:43 AM
To: Adams, Paul (London ON)
Subject: RE: Notice of Public Information Centre - Elgin Area Primary Water Supply System Master Plan

Hi, Paul –

I'd like to register for this.

Thanks,

Thomas Thayer, MSc, CMO, AOMC
Chief Administrative Officer
Bayham

From: Marcy McKillop [mailto:mmckillop@huronelginwater.ca]
Sent: June 3, 2025 5:08 PM
To: stephen.turner@mlhu.on.ca; alexander.summers@mlhu.on.ca; info@swpublichealth.ca; executiveleadership@swpublichealth.ca; krosebrugh@grandriver.ca; sdahmer@grandriver.ca; Greg Henderson <ghenderson@ocwa.com>; Nicholas Wilson <nwilson@ocwa.com>; Austin Sherwin <asherwin@ocwa.com>; Jackie Muller <jmuller@ocwa.com>; Scherr, Kelly <kscherr@london.ca>; Rammeloo, Ashley <arammelo@london.ca>; Rozentals, Aaron <arozenta@london.ca>; cbailey@london.ca; Huggins, Daniel <dhuggins@london.ca>; Andrew, Chris <candrew@stthomas.ca>; kdeleebeeck@stthomas.ca; Lawrence, Justin <jlawrence@stthomas.ca>; Jason Godby <JGodby@malahide.ca>; Sam Gustavson (sgustavson@malahide.ca) <SGustavson@malahide.ca>; ndias@malahide.ca; Robert Johnson <rjohnson@town.aylmer.on.ca>; Jennifer Reynaert <jreynaert@town.aylmer.on.ca>; roads@southwold.ca; cao@southwold.ca; development@southwold.ca; enviroservices@southwold.ca; mvaughan@elgin.ca; Ed Roloson <ERoloson@bayham.on.ca>; Thomas Thayer <cao@bayham.on.ca>; sadams@bayham.ca; tmartin@centralelgin.org; apiggott@centralelgin.org; gbrooks <gbrooks@centralelgin.org>; cao@centralelgin.org; tkretschmer@duttondunwich.on.ca; rmcgahan@duttondunwich.on.ca; jeff@kettlecreekconservation.on.ca; jennifer@kettlecreekconservation.on.ca; maisa@kettlecreekconservation.on.ca; Elizabeth VanHooren <elizabeth@kettlecreekconservation.on.ca>; winfieldk@thamesriver.ca; valerie.towsley@ltvca.ca; lmauthe@lprca.on.ca; generalmanager@catfishcreek.ca; councilloradzija@southwold.ca; pbarbour@town.aylmer.on.ca; jherbert@stthomas.ca; Hillier, Steve <shillier@london.ca>; Peloza, Elizabeth <epeloza@london.ca>; speters@stthomas.ca; sstevenson@london.ca; gclarke@stthomas.ca; Timothy Emerson <TEmerson@bayham.on.ca>; kloveland@duttondunwich.on.ca; hmcalister@london.ca; Van Meerbergen, Paul <pvanmeerbergen@london.ca>; nwatson@centralelgin.org; mwidner@malahide.ca
Cc: RWS All Staff <rws-staff@huronelginwater.ca>; Wan, Benny <Benny.Wan@aecom.com>; Adams, Paul (London ON) <Paul.Adams2@aecom.com>
Subject: Notice of Public Information Centre - Elgin Area Primary Water Supply System Master Plan

Adams, Paul (London ON)

From: Julie Welker <welkerj@thamesriver.ca>
Sent: June 4, 2025 10:29 AM
To: Adams, Paul (London ON)
Subject: Elgin Area Primary Water Supply Master Plan

Good morning Paul,

Can you please add my contact info to your virtual open house link?

Thanks in advance.

Julie

DRINKING WATER SOURCE PROTECTION
RISK MANAGEMENT SERVICES
Working together to protect drinking water sources

Julie Welker
Source Protection Coordinator
1424 Clarke Road, London, Ontario N5V 5B9
519.451.2800 ext. 255
welkerj@thamesriver.ca
www.sourceprotection.on.ca

Adams, Paul (London ON)

From: Sam Gustavson <SGustavson@malahide.ca>
Sent: June 5, 2025 8:18 AM
To: Marcy McKillop
Cc: Adams, Paul (London ON); Jason Godby
Subject: RE: Notice of Public Information Centre - Elgin Area Primary Water Supply System Master Plan

Good morning Marcy,

Thanks for providing this notice. The notice sent says the meeting is on June 25th but when you click the link to the master plan it say the meeting is on June 18th. Wasn't sure if this was an error and just wanted to bring to your attention.

Thanks,

Sam Gustavson
Water/Wastewater Operations Manager
Office: 519.773.5344 x226
Fax: 519.773.5334

Township of Malahide
87 John Street South
Aylmer, ON
N5H 2C3

Please consider the environment before printing this email

From: Marcy McKillop <mmckillop@huronelginwater.ca>
Sent: Tuesday, June 03, 2025 5:08 PM
To: stephen.turner@mlhu.on.ca; alexander.summers@mlhu.on.ca; info@swpublichealth.ca; executiveleadership@swpublichealth.ca; krosebrugh@grandriver.ca; sdahmer@grandriver.ca; Greg Henderson <ghenderson@ocwa.com>; Nicholas Wilson <nwilson@ocwa.com>; Austin Sherwin <asherwin@ocwa.com>; Jackie Muller <jmuller@ocwa.com>; Scherr, Kelly <kscherr@london.ca>; Rammeloo, Ashley <arammelo@london.ca>; Rozentals, Aaron <arozenta@london.ca>; cbailey@london.ca; Huggins, Daniel <dhuggins@london.ca>; Andrew, Chris <candrew@stthomas.ca>; kdeleebeeck@stthomas.ca; Lawrence, Justin <jlawrence@stthomas.ca>; Jason Godby

currently home to many First Nations, Inuit and Métis. We are grateful to have the opportunity to work and live in this territory.

Adams, Paul (London ON)

From:	Karen Winfield <winfieldk@thamesriver.ca>
Sent:	June 4, 2025 4:02 PM
To:	Adams, Paul (London ON); Marcy McKillop
Cc:	Julie Welker; Olivia Orsini; Laura Biancolin; Eric Gaskin; Cari Ramsey; Joe Gordon
Subject:	Webinar Registration Request (June 25th) - Elgin Area Primary Water Supply System Master Plan
Attachments:	EAPWSS Notice of PIC.pdf

Hi Paul,

Please register me for the June 25th PIC webinar for the Elgin Area Primary Water Supply System Master Plan.

Thank-you,

Karen Winfield
Planning & Regulations Resource Specialist
1424 Clarke Road London, Ontario, N5V 5B9
519.451.2800 Ext. 237
winfieldk@thamesriver.ca
www.thamesriver.ca

UPPER THAMES RIVER
CONSERVATION AUTHORITY

- All UTRCA emails are changing from **@thamesriver.on.ca** to **@thamesriver.ca**. Please update your address book and any distribution lists, to ensure emails from our new addresses reach you. We will continue to receive emails sent to our old email addresses.

From: Marcy McKillop <mmckillop@huronelginwater.ca>
Sent: Tuesday, June 3, 2025 5:07 PM
To: stephen.turner@mlhu.on.ca <stephen.turner@mlhu.on.ca>; alexander.summers@mlhu.on.ca

<alexander.summers@mlhu.on.ca>; info@swpublichealth.ca <info@swpublichealth.ca>; executiveleadership@swpublichealth.ca <executiveleadership@swpublichealth.ca>; krosebrugh@grandriver.ca <krosebrugh@grandriver.ca>; Shari Dahmer <sdahmer@grandriver.ca>; Greg Henderson <ghenderson@ocwa.com>; Nicholas Wilson <nwilson@ocwa.com>; Austin Sherwin <asherwin@ocwa.com>; Jackie Muller <jmuller@ocwa.com>; Scherr, Kelly <kscherr@london.ca>; Rammeloo, Ashley <arammelo@london.ca>; Rozentals, Aaron <arozenta@london.ca>; cbailey@london.ca <cbailey@london.ca>; Huggins, Daniel <dhuggins@london.ca>; Andrew, Chris <candrew@stthomas.ca>; kdeleebeeck@stthomas.ca <kdeleebeeck@stthomas.ca>; Lawrence, Justin <jlawrence@stthomas.ca>; Jason Godby <JGodby@malahide.ca>; Sam Gustavson (sgustavson@malahide.ca) <SGustavson@malahide.ca>; ndias@malahide.ca <ndias@malahide.ca>; Robert Johnson <rjohnson@town.aylmer.on.ca>; Jennifer Reynaert <jreynaert@town.aylmer.on.ca>; roads@southwold.ca <roads@southwold.ca>; cao@southwold.ca <cao@southwold.ca>; development@southwold.ca <development@southwold.ca>; enviroservices@southwold.ca <enviroservices@southwold.ca>; mvaughan@elgin.ca <mvaughan@elgin.ca>; eroloson@bayham.on.ca <eroloson@bayham.on.ca>; tthayer@bayham.on.ca <tthayer@bayham.on.ca>; sadams@bayham.ca <sadams@bayham.ca>; tmartin@centralelgin.org <tmartin@centralelgin.org>; apiggott@centralelgin.org <apiggott@centralelgin.org>; gbrooks <gbrooks@centralelgin.org>; cao@centralelgin.org <cao@centralelgin.org>; tkretschmer@duttondunwich.on.ca <tkretschmer@duttondunwich.on.ca>; rmcgahan@duttondunwich.on.ca <rmcgahan@duttondunwich.on.ca>; jeff@kettlecreekconservation.on.ca <jeff@kettlecreekconservation.on.ca>; jennifer@kettlecreekconservation.on.ca <jennifer@kettlecreekconservation.on.ca>; maisa@kettlecreekconservation.on.ca <maisa@kettlecreekconservation.on.ca>; Elizabeth VanHooren <elizabeth@kettlecreekconservation.on.ca>; Karen Winfield <winfieldk@thamesriver.ca>; valerie.towsley@ltvca.ca <valerie.towsley@ltvca.ca>; lmauthe@lprca.on.ca <lmauthe@lprca.on.ca>; generalmanager@catfishcreek.ca <generalmanager@catfishcreek.ca>; councilloradzija@southwold.ca <councilloradzija@southwold.ca>; pbarbour@town.aylmer.on.ca <pbarbour@town.aylmer.on.ca>; jherbert@stthomas.ca <jherbert@stthomas.ca>; Hillier, Steve <shillier@london.ca>; Peloza, Elizabeth <epeloza@london.ca>; speters@stthomas.ca <speters@stthomas.ca>; sstevenson@london.ca <sstevenson@london.ca>; gclarke@stthomas.ca <gclarke@stthomas.ca>; temerson@bayham.on.ca <temerson@bayham.on.ca>; kloveland@duttondunwich.on.ca <kloveland@duttondunwich.on.ca>; hmcalister@london.ca <hmcalister@london.ca>; Van Meerbergen, Paul <pvanmeerbergen@london.ca>; nwatson@centralelgin.org <nwatson@centralelgin.org>; mwidner@malahide.ca <mwidner@malahide.ca>
Cc: RWS All Staff <rws-staff@huronelginwater.ca>; Wan, Benny <Benny.Wan@aecom.com>; Adams, Paul (London ON) <Paul.Adams2@aecom.com>
Subject: Notice of Public Information Centre - Elgin Area Primary Water Supply System Master Plan

Good afternoon,

Please find attached the Notice of Public Information Centre for the Elgin Area Primary Water Supply System Master Plan.

Further updates will be provided on the Master Plan website.

Subsequent Master Plan notices will be issued by email. Please let me know of any changes to project contacts, so the project contact list can be updated.

Best regards,

Please use caution when clicking links or opening attachments unless you recognize the sender and know the content is safe.

Good afternoon,

Please find attached the Notice of Public Information Centre for the Elgin Area Primary Water Supply System Master Plan.

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Best regards,

Marcy McKillop, P.Eng. (she/her)
Environmental Services Engineer, Regional Water Supply

Lake Huron & Elgin Area Primary Water Supply Systems
235 North Centre Road, Suite 200
London, Ontario N5X 4E7
T: 519-930-3505 ext. 4976
E: mmckillop@huronelginwater.ca
https://huronelginwater.ca
www.facebook.com/RegionalWaterSupply

The Lake Huron and Elgin Area Primary Water Supply Systems serve 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.

From: Marcy McKillop
Sent: Friday, February 14, 2025 10:17 AM
To: karla.barboza@ontario.ca; lise.Chabot@ontario.ca; enviropermissions@ontario.ca; SR.Planning@ontario.ca; secondarylanduse@hydroone.com; erick.boyd@ontario.ca; stephen.turner@mlhu.on.ca; alexander.summers@mlhu.on.ca; cwalker@elginhealth.on.ca; tramsay@elginhealth.on.ca; krosebrugh@grandriver.ca; sdahmer@grandriver.ca; Greg Henderson; Nicholas Wilson <nwilson@ocwa.com>; Austin Sherwin; Jackie Muller <jmuller@ocwa.com>; Scherr, Kelly <kscherr@london.ca>; Rammeloo, Ashley <arammelo@london.ca>; Rozentals, Aaron <arozenta@london.ca>; Huggins, Daniel <dhuggins@london.ca>; Andrew, Chris <candrew@stthomas.ca>; kdeleebeeck@stthomas.ca; Lawrence, Justin <jlawrence@stthomas.ca>; Jason Godby <JGodby@malahide.ca>; Sam Gustavson (sgustavson@malahide.ca) <SGustavson@malahide.ca>; ndias@malahide.ca; rjohnson@town.aylmer.on.ca; cbailey@town.aylmer.on.ca; agrozelle@town.aylmer.on.ca; roads@southwold.ca; cao@southwold.ca; development@southwold.ca; enviroservices@southwold.ca; mvaughan@elgin.ca; eroloson@bayham.on.ca; tthayer@bayham.on.ca; sadams@bayham.ca; tmartin@centralelgin.org; apiggott@centralelgin.org; gbrooks@centralelgin.org; cao@centralelgin.org; tkretschmer@duttondunwich.on.ca; rmcgahan@duttondunwich.on.ca; Joe Gordon <joe@kettlecreekconservation.on.ca>; elizabeth@kettlecreekconservation.on.ca; winfieldk@thamesriver.ca; valerie.towsley@ltvca.ca; lmauthe@lprca.on.ca; generalmanager@catfishcreek.ca; councilloradzija@southwold.ca; pbarbour@town.aylmer.on.ca;

jherbert@stthomas.ca; Hillier, Steve <shillier@london.ca>; Peloza, Elizabeth <epeloza@london.ca>; speters@stthomas.ca; sstevenson@london.ca; gclarke@stthomas.ca; temerson@bayham.on.ca; kloveland@duttondunwich.on.ca; hmcalister@london.ca; Van Meerbergen, Paul <pvanmeerbergen@london.ca>; nwatson@centralelgin.org; mwidner@malahide.ca
Cc: RWS All Staff; Wan, Benny <Benny.Wan@aecom.com>; Adams, Paul (London ON) <Paul.Adams2@aecom.com>
Subject: Notice of Commencement - Elgin Area Primary Water Supply System Master Plan

Good morning,

Please find attached the Notice of Commencement for the Elgin Area Primary Water Supply System Master Plan.

Further updates will be provided on the Master Plan website.

Subsequent Master Plan notices will be issued by email. Please let me know of any changes to project contacts, so the project contact list can be updated.

Best regards,

Marcy McKillop, P.Eng. (she/her)
Environmental Services Engineer, Regional Water Supply

Lake Huron & Elgin Area Primary Water Supply Systems
235 North Centre Road, Suite 200
London, Ontario N5X 4E7
T: 519-930-3505 ext. 4976
E: mmckillop@huronelginwater.ca
https://huronelginwater.ca
www.facebook.com/RegionalWaterSupply

The Lake Huron and Elgin Area Primary Water Supply Systems serve 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.

Adams, Paul (London ON)

From: Bailey, Connor <cbailey@london.ca>
Sent: June 4, 2025 9:05 AM
To: Adams, Paul (London ON)
Subject: EAPWSS PIC

Hi Paul!

Can you register me for the PIC on June 25th?

Adams, Paul (London ON)

From: CAO <CAO@elgin.ca>
Sent: June 5, 2025 8:41 AM
To: Adams, Paul (London ON)
Subject: Elgin Area Primary Water Supply System Master Plan

Good morning Paul,

I would like to be registered for the upcoming PIC.
Thank you,

Blaine

Blaine G. Parkin, P.Eng. (he/him/his)
Chief Administrative Officer / Clerk

519-631-1460 ext. 105 (Main Office)

519-868-0299 (Cell)

www.elgincounty.ca

450 Sunset Drive, St. Thomas, ON N5R 5V1

Adams, Paul (London ON)

From: Jennifer Dow <jennifer@kettlecreekconservation.on.ca>
Sent: June 5, 2025 9:45 AM
To: Adams, Paul (London ON)
Subject: EAPWSS Master Plan PIC registration

Hello,
Please accept this email as a request to register for the EAPWSS Master Plan PIC scheduled for June 25, 2025 at 6:00PM.

Thank you,
Jennifer Dow

Water Resources Supervisor
Kettle Creek Conservation Authority
Tel: (519) 631-1270 ext.228
Fax: (519) 631-5026
www.kettlecreekconservation.on.ca

Kettle Creek Conservation Authority

Adams, Paul (London ON)

From: Valerie Towsley <Valerie.Towsley@ltvca.ca>
Sent: June 4, 2025 9:26 AM
To: Adams, Paul (London ON)
Subject: Notice of Public Information Centre - Elgin Area Primary Water Supply System Master Plan

Good morning Paul

Please include the LTVCA on the contact list for future updates on this project. Any crossings/undercrossings of watercourses/drains or any works near water will require a permit from this office within the LTVCA's jurisdiction. Our Regulatory mapping can be found here: LTVCA Regulated Mapping Tool

Please also add my name to the June 25th webinar list. Thanks.

*Please note my work hours may be different than yours, please do not feel obligated to respond until you are on work time.

Valerie Towsley
Watershed Resource Planner
Lower Thames Valley Conservation Authority
100 Thames Street
Chatham, ON N7L 2Y8
519-354-7310 ext.226
valerie.towsley@ltvca.ca
www.ltvca.ca

'Common sense and sense of humor are the same thing, moving at different speeds. A sense of humor is just common sense dancing.' William James (1842-1910)

Adams, Paul (London ON)

From: Anckaert, Patrick <panckaert@stthomas.ca>
Sent: June 4, 2025 6:59 AM
To: Adams, Paul (London ON)
Subject: Elgin Primary Water Supply System Master Plan PIC

Hi Paul,

Please register me for this thanks.

Patrick Anckaert, P.Eng.
Senior Project Manager, Industrial Development

Mobile: 226-378-3671
Email: panckaert@stthomas.ca
545 Talbot Street, PO Box 520
St. Thomas, ON N5P 3V7

www.stthomas.ca

Adams, Paul (London ON)

From: Kamerman, Karel <kkamerman@stthomas.ca>
Sent: June 4, 2025 10:40 AM
To: Adams, Paul (London ON)
Subject: EAPWSS Virtual PIC

Hi Paul,

Please register me for the June 25th PIC.

Thank you,

Karel

Karel Kamerman
Environmental Compliance Coordinator

Phone: 519-631-1680 x4224
Email: kkamerman@stthomas.ca
545 Talbot Street, PO Box 520
St. Thomas, ON N5P 3V7

www.stthomas.ca

Elgin Area
Primary Water Supply System

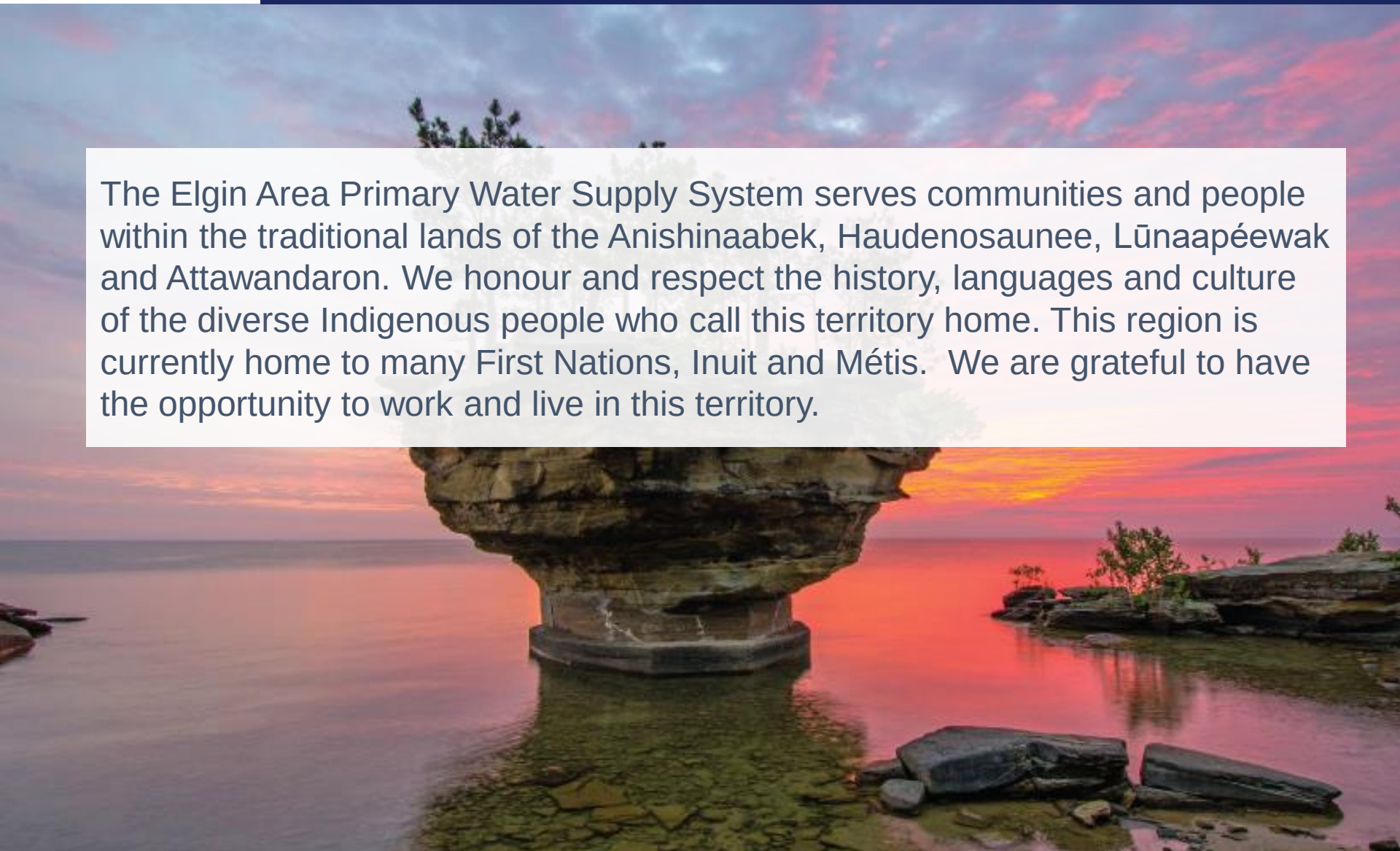
Elgin Area Primary Water Supply System Master Plan

Public Information Centre

June 25th, 2025, 6 p.m.

Elgin Area
Primary Water Supply System

Land Acknowledgement



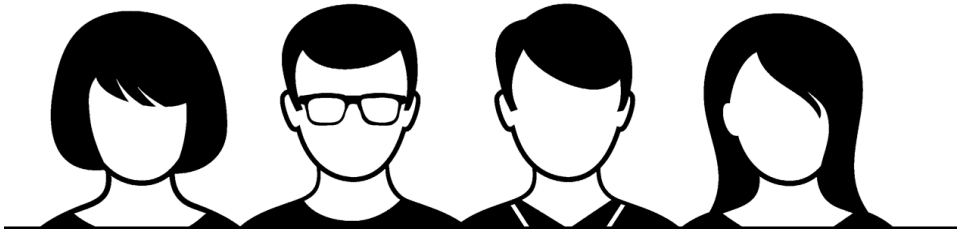
The Elgin Area Primary Water Supply System serves communities and people within the traditional lands of the Anishinaabek, Haudenosaunee, Lūnaapéewak and Attawandaron. We honour and respect the history, languages and culture of the diverse Indigenous people who call this territory home. This region is 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

Elgin Area
Primary Water Supply System

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/

Elgin Area
Primary Water Supply System

Agenda

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

Elgin Area
Primary Water Supply System

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

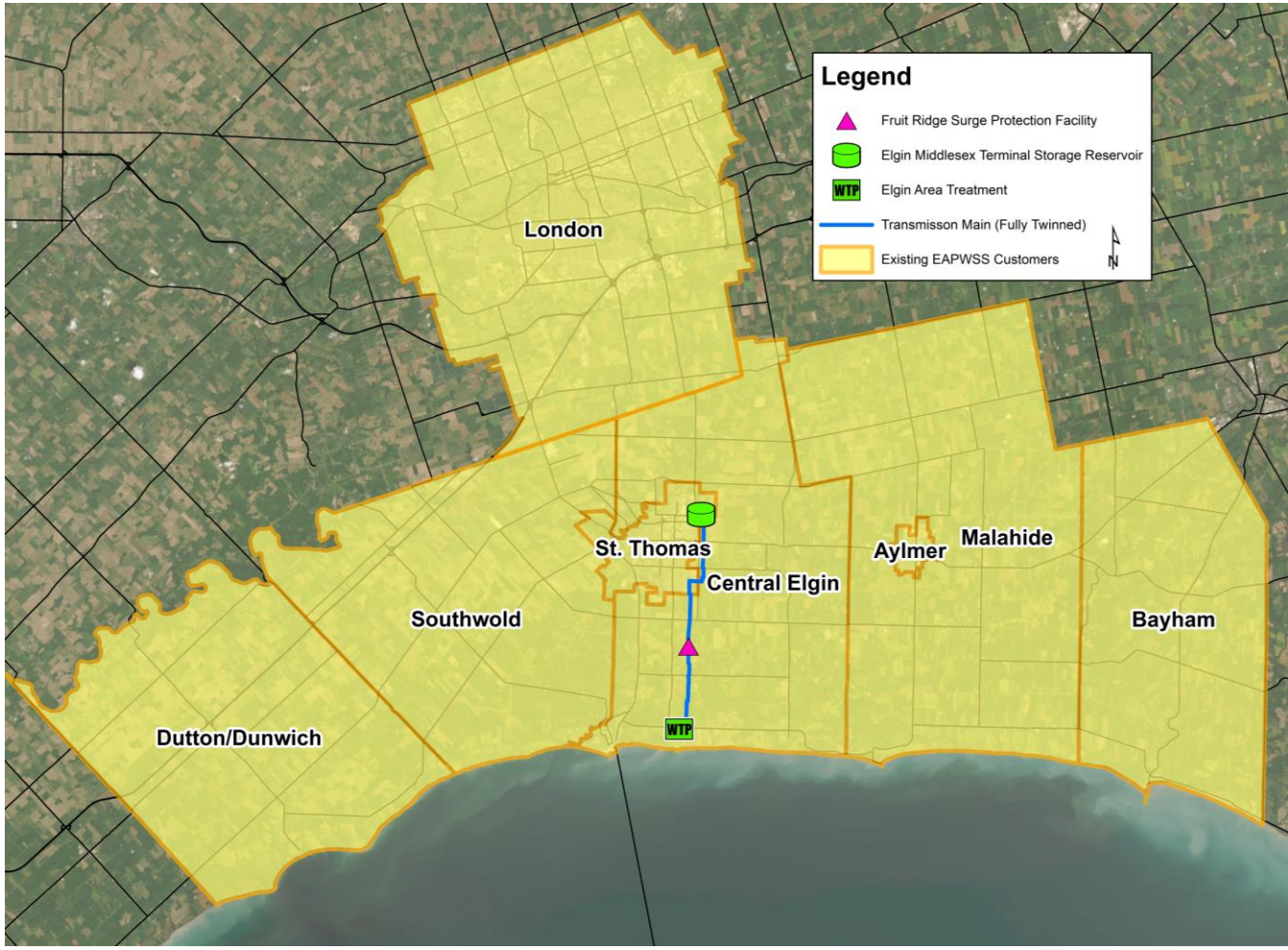
- The Elgin Area Primary Water Supply System has elected to follow the Municipal Class Environmental Assessment process for this Master Plan
- This study is following the Master Plan Approach #1 process.
- Master Plans using Approach #1 follow Phases 1 and 2 of Municipal Class Environmental Assessment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

Elgin Area
Primary Water Supply System

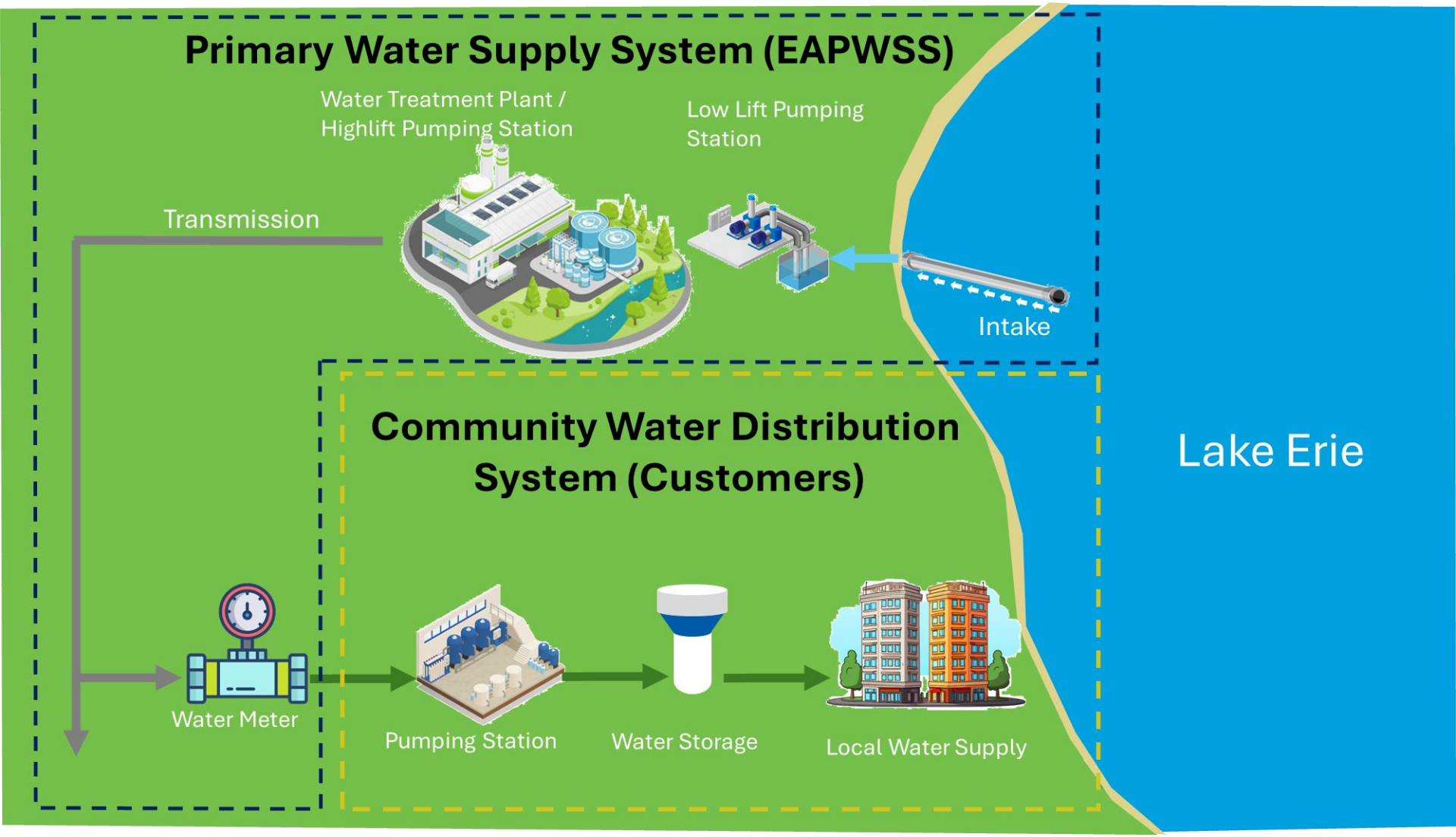
System Overview

- 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



Elgin Area
Primary Water Supply System

Typical Water Supply System

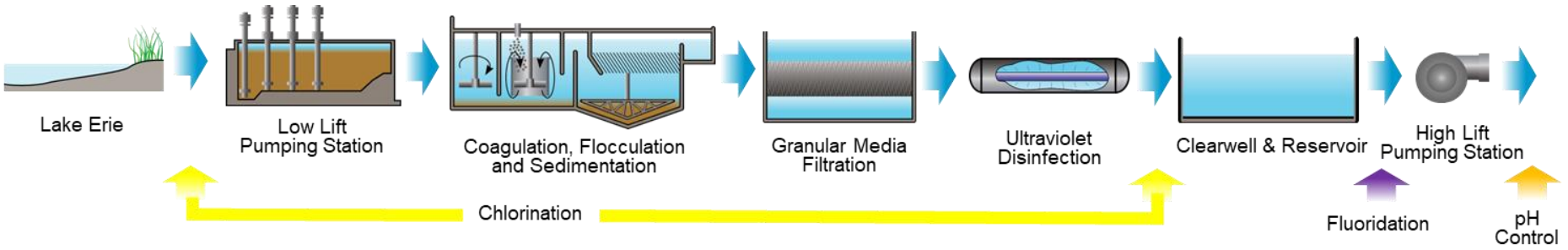


Elgin Area
Primary Water Supply System

Elgin Area Water Treatment Plant

Elgin Area
Primary Water Supply System

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

Elgin Area
Primary Water Supply System

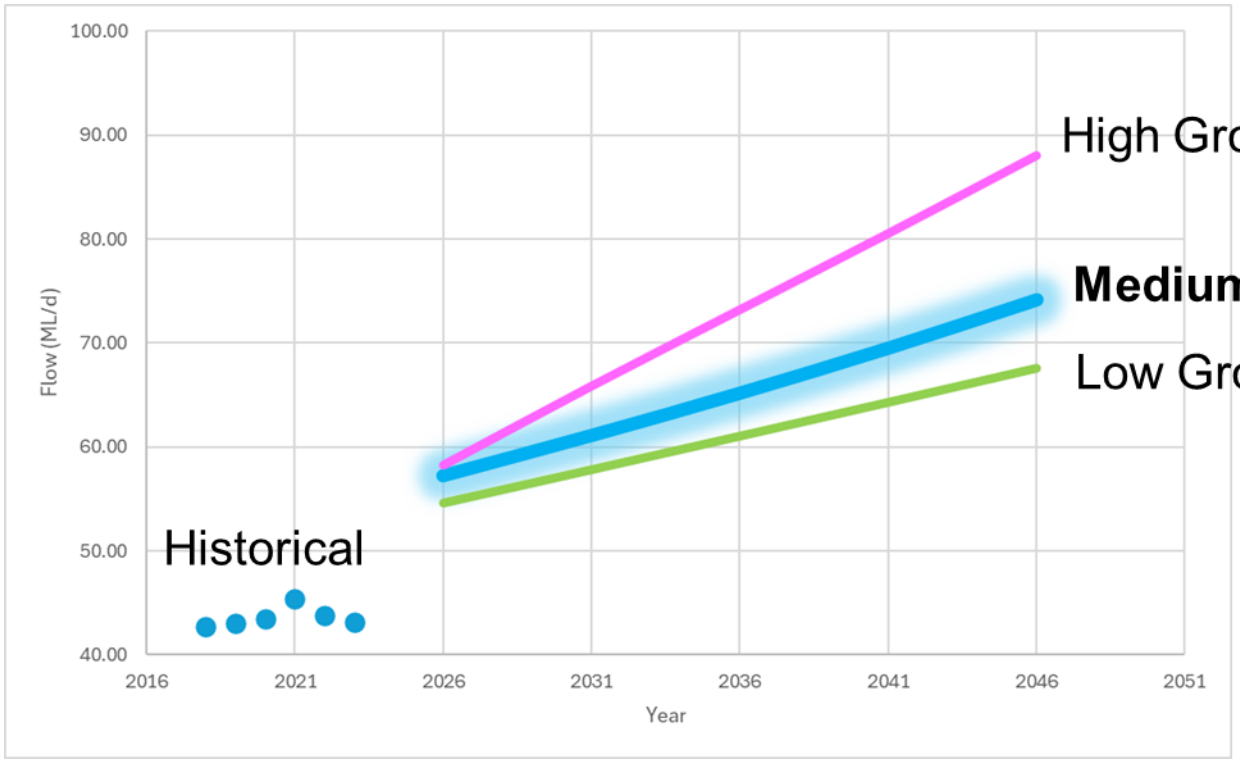
Problem Opportunity Statement

- 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.

Elgin Area
Primary Water Supply System

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

Elgin Area
Primary Water Supply System

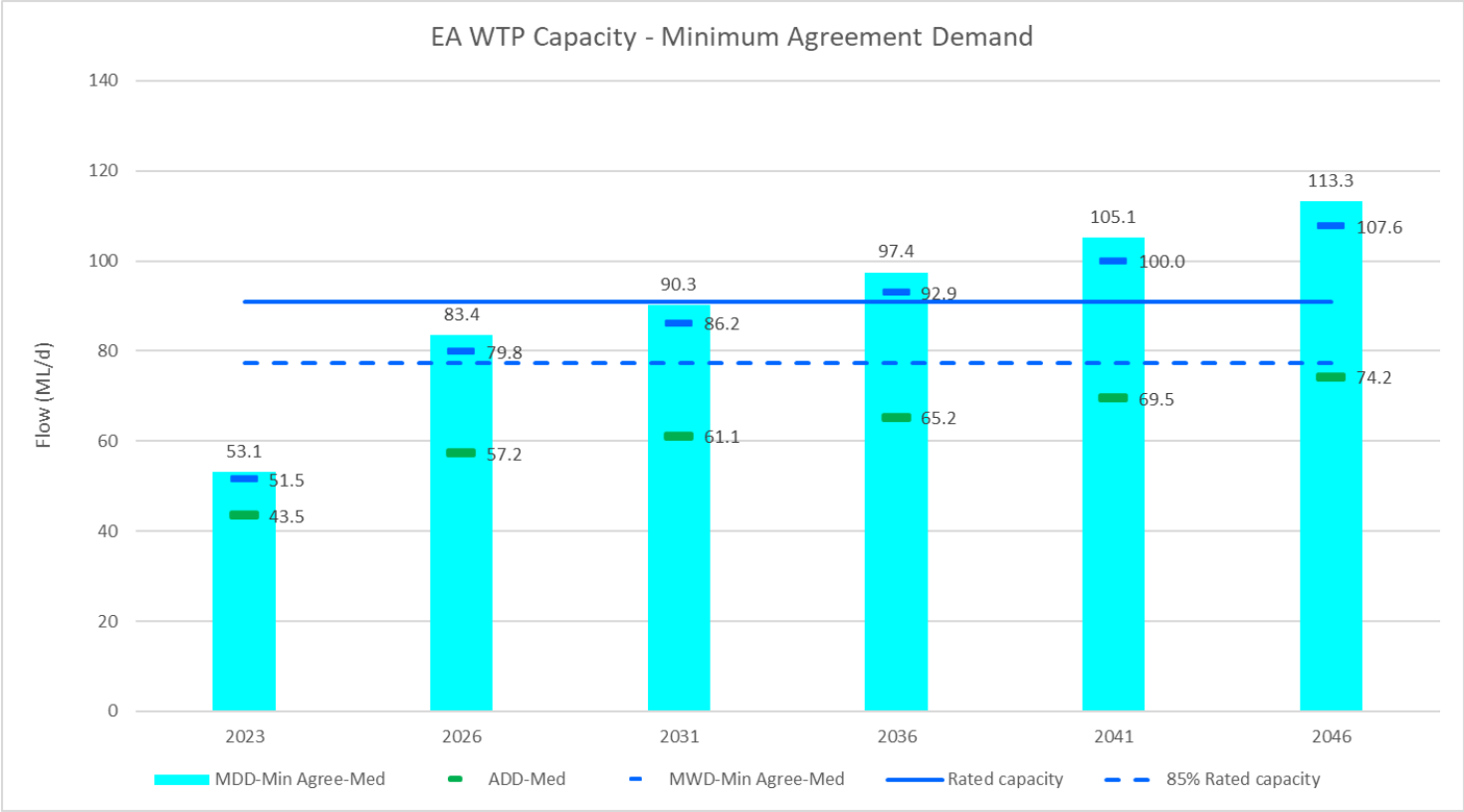
System Assessment

- Treatment
- Pumping
- Transmission
- Storage

Elgin Area
Primary Water Supply System

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.



Elgin Area
Primary Water Supply System

System Assessment – Pumping

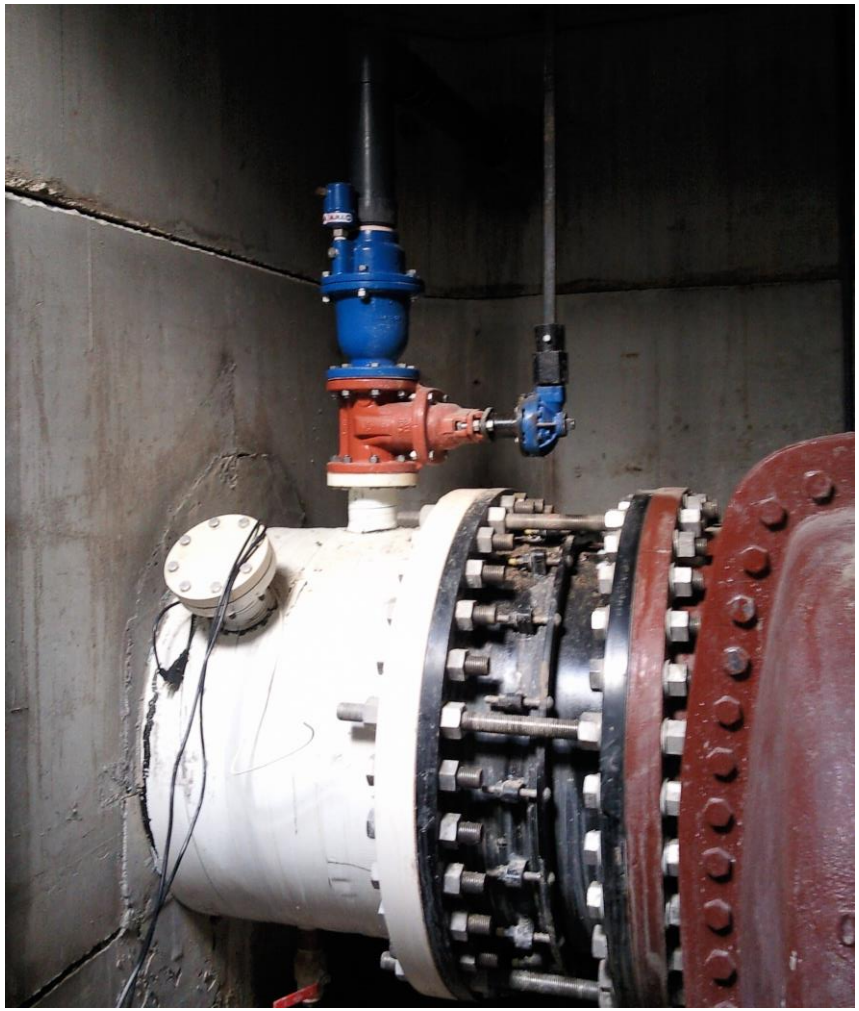
Elgin Area Water Treatment Plant Pumps:

- 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

Elgin Area
Primary Water Supply System

System Assessment – Transmission

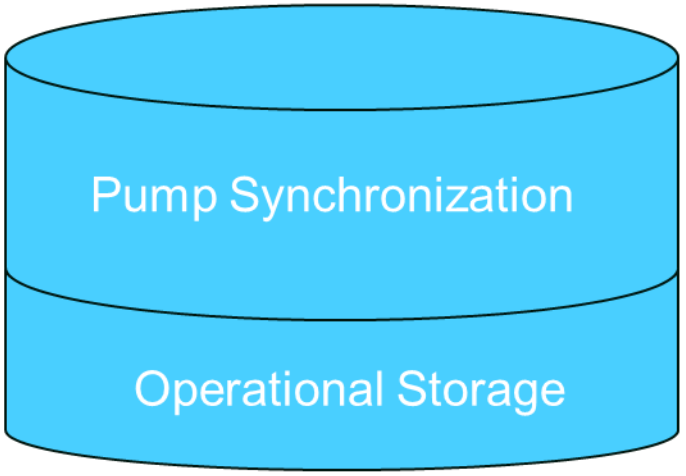
- Elgin Area Water Treatment Plant to Elgin Terminal Reservoir transmission mains:
- Transmission main upgrades are not required for projected growth; however, age and condition will most likely dictate that small sections of the transmission main that are proactively replaced
- The Elgin Area Transmission 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.



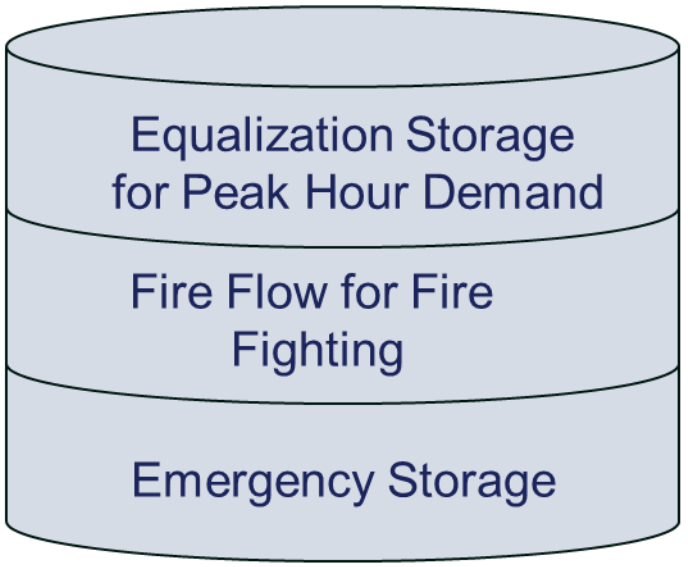
Storage Evaluation

- 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

Elgin Area
Primary Water Supply System

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.

Elgin Area
Primary Water Supply System

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

Elgin Area
Primary Water Supply System

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.

Elgin Area
Primary Water Supply System

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.

Elgin Area
Primary Water Supply System

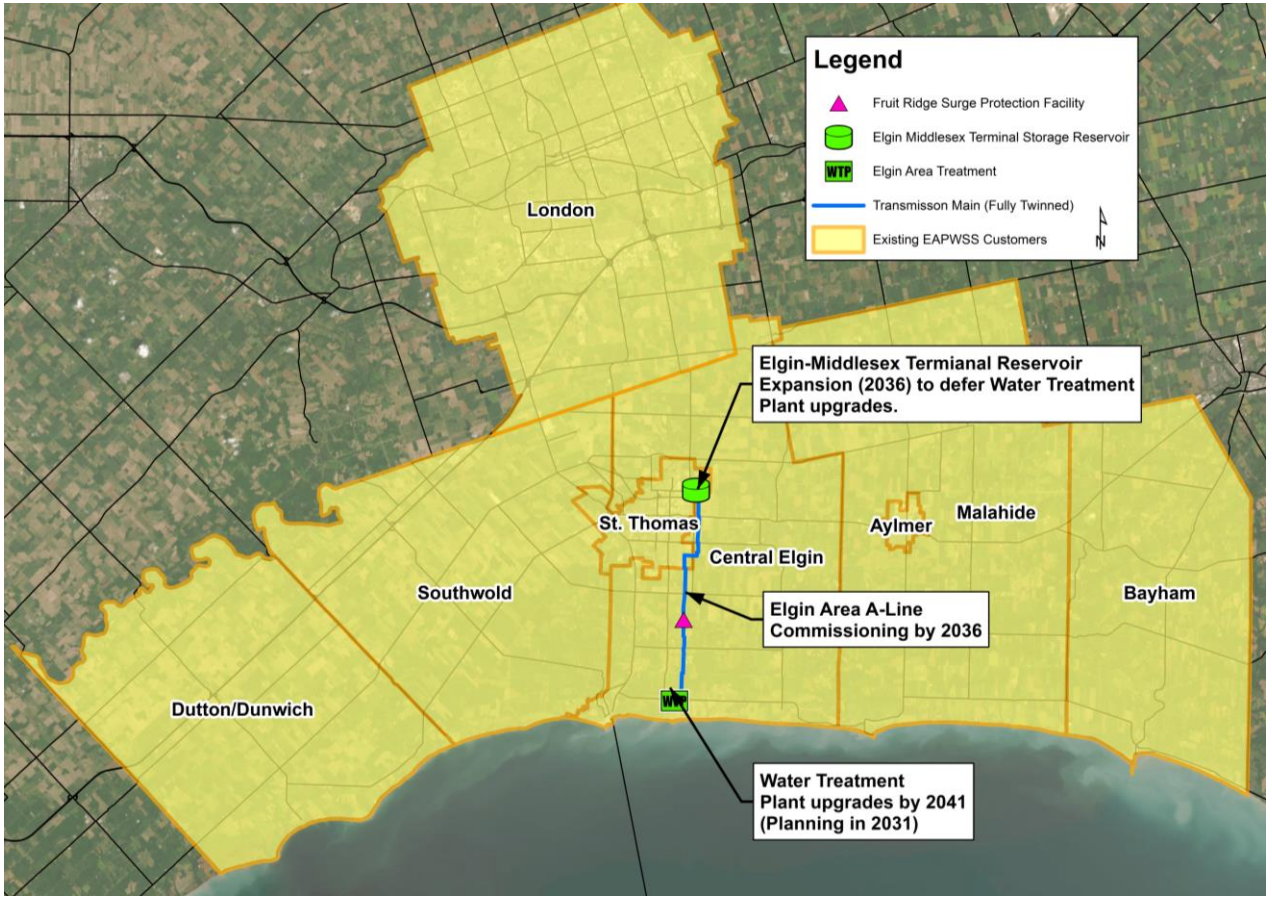
Evaluation of Water System Improvement Alternatives – Evaluation Summary

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.

Elgin Area
Primary Water Supply System

Recommended Water System Improvements

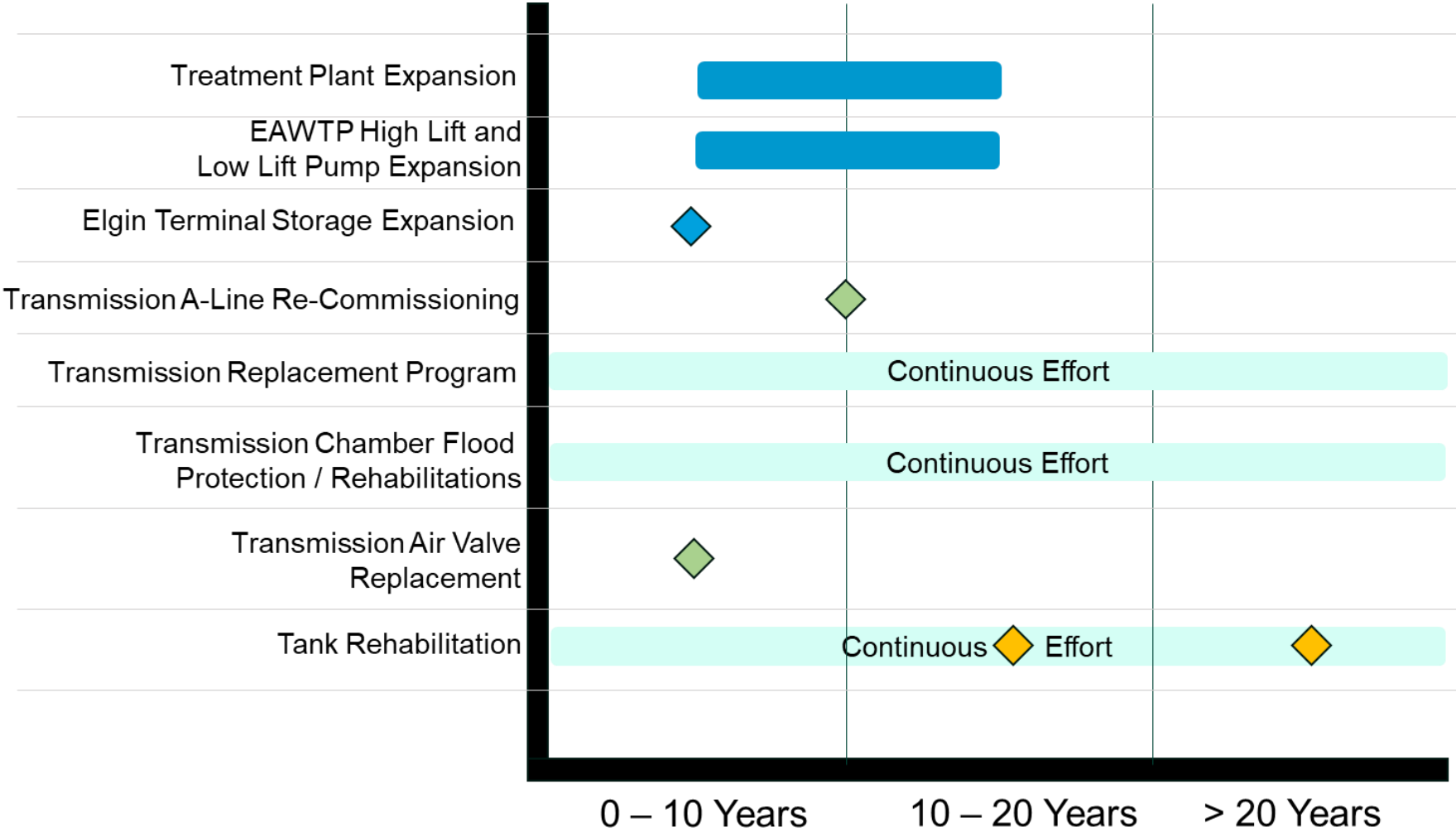
- Treatment Processes:
  - ** Treatment Plant Expansion
  - Ultraviolet Disinfection and Backwash Replacements (in progress)
  - Clarifier and Filter Upgrades
  - Tank/Channel Rehabilitations
- Pumping:
  - ** Low Lift Pump Station Upgrades / Possible New Facility
  - ** High Lift Pump Station Upgrades / 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

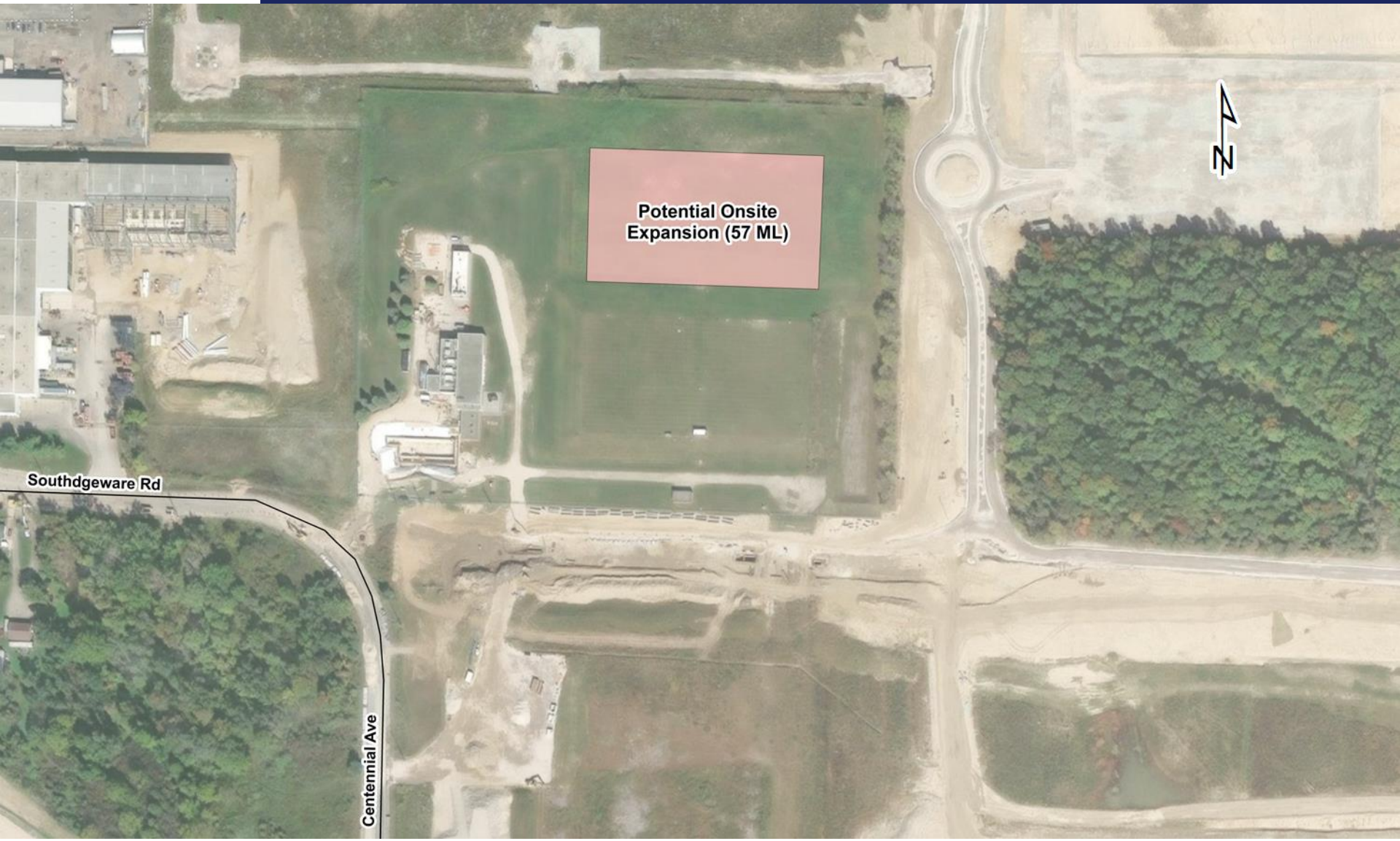
Elgin Area
Primary Water Supply System

Recommended Capital Program



Elgin Area
Primary Water Supply System

Water System Improvements – Elgin Terminal Reservoir Expansion



Elgin Area
Primary Water Supply System

Water System Improvements – Water Treatment Plant Upgrades

Elgin Area
Primary Water Supply System

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)

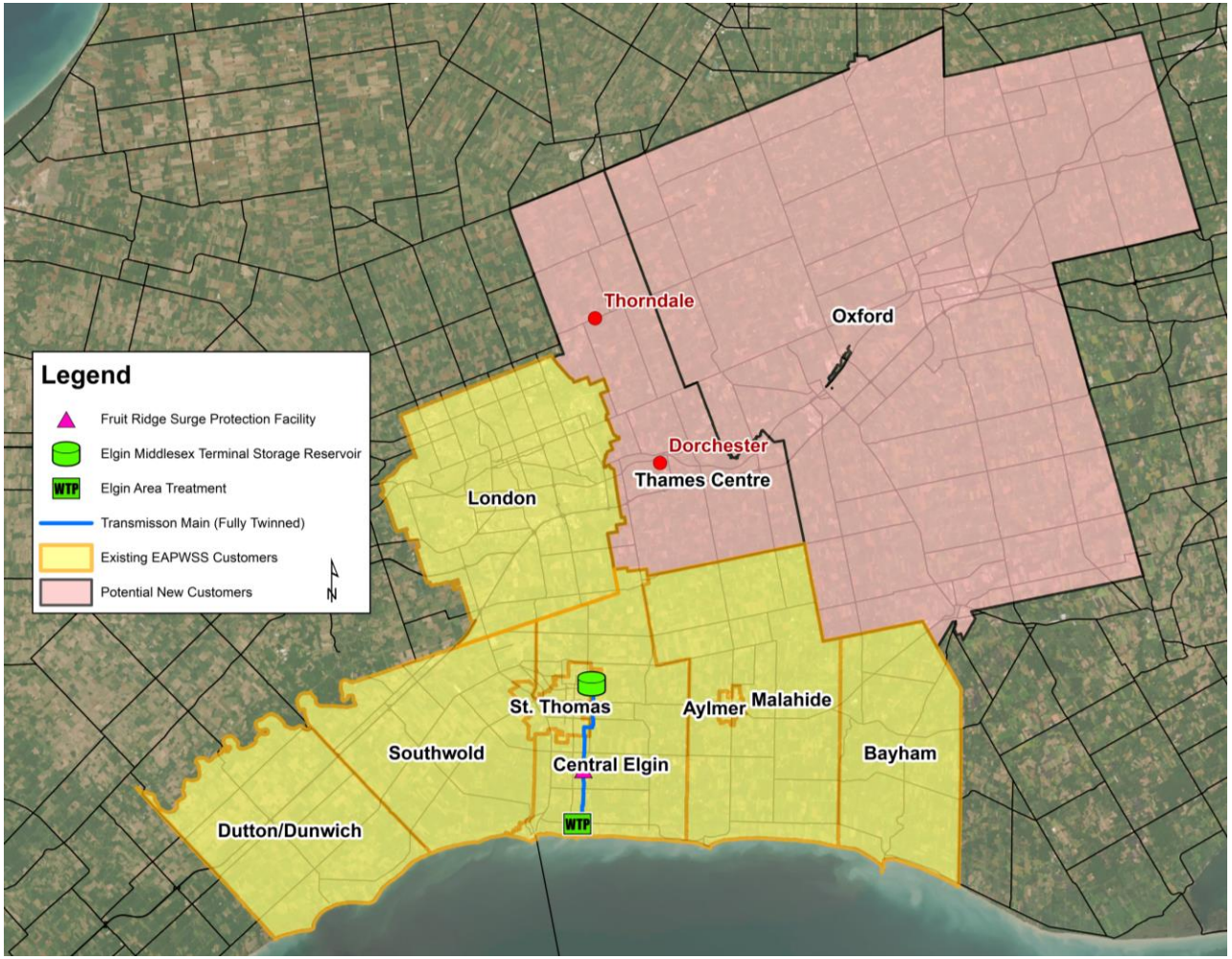
Potential New Customers

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

Elgin Area
Primary Water Supply System

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.**

Marcy McKillop, P.Eng.
Environmental Services Engineer
Regional Water Supply
Lake Huron and Elgin Area Primary Water Supply Systems
235 North Centre Road, Suite 200
London ON, N5X 4E7
Tel:519-930-3505 x4976
Email: mmckillop@huronelginwater.ca

Paul Adams, CPT
Environmental Planner,
AECOM Canada ULC.
250 York Street, Suite 410
London ON, N6A 6K2
Tel: 519-636-6448
Email: paul.adams2@aecom.com

Appendix A.4

Indigenous Community Consultation

Elgin Area
Primary Water Supply System

February 24, 2025

Six Nations Elected Council
2489 Chiefswood Road
P.O. Box 5000
Ohsweken, ON
N0A 1M0

Subject: Elgin Area Primary Water Supply System Master Plan

Shekon/ She:koli/ Segoli/ Sgę́:nǫ?/ Sgë:nö'/ Cwe:'n Lonny Bomberry,

Please find attached the Notice of Commencement for the Elgin Area Primary Water Supply System Master Plan to develop and evaluate a range of water servicing strategies to accommodate near, mid and long-term growth. The Master Plan is being completed in accordance with the Municipal Engineers Association Municipal Class Environmental Assessment Master Planning process.

We recognize and acknowledge that the watersheds of southwestern Ontario have been home to the Attawandaron, Anishininaabeg, Haudenosaunee, and Lūnaapéewak throughout time. We understand our duty and responsibility for providing full, accurate, and up-to-date information about this project.

We are committed to working with communities to facilitate participation in the Master Plan. We would like to incorporate your input, and we welcome the opportunity for shared dialogue. Your participation could include a virtual meeting, hosted by the Elgin Area Primary Water Supply System, and providing input on project documents.

Office 519.930.3505 ext. 4976
Fax 519.474.0451
mmckillop@huronelginwater.ca
www.huronelginwater.ca

Elgin Area Primary Water Supply System
235 North Centre Road, Suite 200
London, ON N5X 4E7

We have elected to send this letter and attached notice by email only. Please feel free to call or email me using the contact details below if you have any questions or require additional information.

Sincerely,

Marcy McKillop, P.Eng.
Environmental Services Engineer
Elgin Area Primary Water Supply System

Encl.

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Elgin Area
Primary Water Supply System

February 24, 2025

Bkejwanong Territory (Walpole Island)
R. R. # 3
117 Tahgahoning Road
Walpole Island, ON
N8A 4K9

Subject: Elgin Area Primary Water Supply System Master Plan

Aanii Chief Thomas,

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Elgin Area
Primary Water Supply System

Elgin Area Primary Water Supply System
Master Plan
Notice of Study Commencement

The Elgin Area Primary Water Supply System (EAPWSS), through its consultant AECOM has initiated a Municipal Class Environmental Assessment (MCEA) Master Plan study to develop and assess a range of water servicing strategies to accommodate near, mid and long-term future growth, while maintaining the reliability and sustainability of the utility. See Map for existing infrastructure and member municipalities.

This MCEA Master Plan Study will document existing conditions, water demand forecasts, water modelling, and engage key stakeholders, the general public and Indigenous Communities and provide recommendations for the regional water system to address system growth and infrastructure needs to maintain levels of service.

The Process

This study will be completed in accordance with the Ontario Environmental Assessment Act and will follow Approach #1 of the Municipal Engineers Association Municipal Class EA (as amended in 2020) Master Planning process. At the conclusion of the study, a suite of recommended water projects will be identified including the MCEA Schedule (Exempt, Schedule B or C) for any regional water supply system project(s). This Master Plan will be completed at a broad level of assessment,

therefore requiring more detailed investigations at project specific level for any recommended Schedule B or C projects.

The EAPWSS invites anyone with an interest in the study to have an opportunity to provide feedback and help inform the decision-making process. A Virtual Public Information Centre (PIC) will be held in June 2025, to introduce the study, present existing conditions, the alternative servicing strategies, evaluation criteria, and the recommended servicing strategies including the associated water projects and schedule. Invitation notices to the PIC will be emailed to those on the mailing list and will be posted on the Project Webpage:

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

For more information or if you want to be placed on our mailing list for updates, please contact us at:

Marcy McKillop, P.Eng
Environmental Services Engineer
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Lake Huron and Elgin Area Primary Water Supply Systems
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Paul Adams, CPT
Environmental Planner,
AECOM Canada ULC.
250 York Street, Suite 410
London ON, N6A 6K2
Tel: 519-636-6448
Email: paul.adams2@aecom.com

The personal information submitted in relation to this Master Plan is collected under the authority of the Municipal Act, 2001, S.O. 2001, c.25 and will be reviewed to provide subsequent Master Plan study development, communications and events. With the exception of personal information, all comments will form part of the public record for this Master Plan in accordance with the Municipal Class Environmental Assessment, which is a planning process approved under Ontario's *Environmental Assessment Act.*

Questions about this collection should be addressed to Marcy McKillop, Environmental Services Engineer at 235 North Centre Road, Suite 200, London, ON N5X 4E7. Tel: 519-930-3505 ext. 4976, email: mmckillop@huronelginwater.ca

This Notice was Issued on February 14th 2025.

Elgin Area
Primary Water Supply System

February 24, 2025

Caldwell First Nation
14 Orange Street
Leamington, ON
N8H 1P5

Subject: Elgin Area Primary Water Supply System Master Plan

Aanii Chief van Oirschot,

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Elgin Area
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This Notice was Issued on February 14th 2025.

Elgin Area
Primary Water Supply System

February 24, 2025

Chippewas of the Thames First Nation
R.R. #1
320 Chippewa Road
Muncey, ON
N0L 1Y0

Subject: Elgin Area Primary Water Supply System Master Plan

Aanii Chief Miskokomon,

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We would also like to understand any potential interest in a future community connection to the Elgin Area Primary Water Supply System.

To support the Master Plan, we kindly request you review and complete the survey at the link below and provide your response by **March 7th, 2025**. One consolidated response from each community would be appreciated.

The survey is available here: https://form.jotform.com/250303424192042

Office 519.930.3505 ext. 4976
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mmckillop@huronelginwater.ca
www.huronelginwater.ca

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Environmental Services Engineer
Elgin Area Primary Water Supply System

Encl.

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Elgin Area
Primary Water Supply System

February 24, 2025

Eelŭnaapéewi Lahkéewiit (Delaware Nation at Moraviantown)
R.R. # 3
14760 School House Line
Thamesville, ON
N0P 2K0

Subject: Elgin Area Primary Water Supply System Master Plan

Koolamalsi Chief Logan,

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Environmental Services Engineer
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Elgin Area Primary Water Supply System
235 North Centre Road, Suite 200
London, ON N5X 4E7

Elgin Area
Primary Water Supply System

February 24, 2025

Haudenosaunee Development Institute
16 Sunrise Court – Suite 600
P.O. Box 714
Ohsweken, ON
N0A 1M0

Subject: Elgin Area Primary Water Supply System Master Plan

Sge:no/She:koli/Shekon Tracey General,

Please find attached the Notice of Commencement for the Elgin Area Primary Water Supply System Master Plan to develop and evaluate a range of water servicing strategies to accommodate near, mid and long-term growth. The Master Plan is being completed in accordance with the Municipal Engineers Association Municipal Class Environmental Assessment Master Planning process.

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235 North Centre Road, Suite 200
London, ON N5X 4E7

We have elected to send this letter and attached notice by email only. Please feel free to call or email me using the contact details below if you have any questions or require additional information.

Sincerely,

Marcy McKillop, P.Eng.
Environmental Services Engineer
Elgin Area Primary Water Supply System

Encl.

Office 519.930.3505 ext. 4976
Fax 519.474.0451
mmckillop@huronelginwater.ca
www.huronelginwater.ca

Elgin Area Primary Water Supply System
235 North Centre Road, Suite 200
London, ON N5X 4E7

Elgin Area
Primary Water Supply System

February 24, 2025

Kettle and Stony Point First Nation
6247 Indian Lane
Kettle and Sonty Point First Nation, ON
N0N 1J1

Subject: Elgin Area Primary Water Supply System Master Plan

Aanii Chief Bressette,

Please find attached the Notice of Commencement for the Elgin Area Primary Water Supply System Master Plan to develop and evaluate a range of water servicing strategies to accommodate near, mid and long-term growth. The Master Plan is being completed in accordance with the Municipal Engineers Association Municipal Class Environmental Assessment Master Planning process.

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Elgin Area
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February 24, 2025

Mississauga of the Credit First Nation
2789 Mississauga Road
Hagersville, ON
N0A 1H0

Subject: Elgin Area Primary Water Supply System Master Plan

Aanii Abby Laforme,

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Elgin Area
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February 24, 2025

Munsee-Delaware Nation
R.R. #1
289 Jubilee Road
Muncey, ON
N0L 1Y0

Subject: Elgin Area Primary Water Supply System Master Plan

Koolamalsi Chief Thomas,

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We would also like to understand any potential interest in a future community connection to the Elgin Area Primary Water Supply System.

To support the Master Plan, we kindly request you review and complete the survey at the link below and provide your response by **March 7th, 2025**. One consolidated response from each community would be appreciated.

The survey is available here: https://form.jotform.com/250303424192042

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Elgin Area
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February 24, 2025

Oneida Nation Council of Chiefs

Subject: Elgin Area Primary Water Supply System Master Plan

Sheko:li Loyane Day,

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Elgin Area
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February 24, 2025

Oneida Nation of the Thames
2212 Elm Avenue
Southwold, ON
NOL 2G0

Subject: Elgin Area Primary Water Supply System Master Plan

Sheko:li Chief Cornelius,

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Elgin Area
Primary Water Supply System

June 5, 2025

Aamjiwnaang First Nation
978 Tashmoo Avenue
Sarnia, ON
N7T 7H5

Subject: Elgin Area Primary Water Supply System Master Plan

Aanii Chief Nahmabin,

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Elgin Area
Primary Water Supply System

June 5, 2025

Bkejwanong Territory (Walpole Island)
R. R. # 3
117 Tahgahoning Road
Walpole Island, ON
N8A 4K9

Subject: Elgin Area Primary Water Supply System Master Plan

Aanii Chief Thomas,

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Elgin Area
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June 5, 2025

Caldwell First Nation
14 Orange Street
Leamington, ON
N8H 1P5

Subject: Elgin Area Primary Water Supply System Master Plan

Aanii Chief van Oirschot,

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Elgin Area
Primary Water Supply System

June 5, 2025

Chippewas of the Thames First Nation
R.R. #1
320 Chippewa Road
Muncey, ON
N0L 1Y0

Subject: Elgin Area Primary Water Supply System Master Plan

Aanii Chief Miskokomon,

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Elgin Area
Primary Water Supply System

June 5, 2025

Eelŭnaapéewi Lahkéewiit (Delaware Nation at Moraviantown)
R.R. # 3
14760 School House Line
Thamesville, ON
N0P 2K0

Subject: Elgin Area Primary Water Supply System Master Plan

Koolamalsi Chief Logan,

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June 5, 2025

Kettle and Stony Point First Nation
6247 Indian Lane
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Elgin Area
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June 5, 2025

Haudenosaunee Development Institute
16 Sunrise Court – Suite 600
P.O. Box 714
Ohsweken, ON
N0A 1M0

Subject: Elgin Area Primary Water Supply System Master Plan

Sge:no/She:koli/Shekon Tracey General,

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Mississauga of the Credit First Nation
2789 Mississauga Road
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Munsee-Delaware Nation
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June 5, 2025

Oneida Nation Council of Chiefs

Subject: Elgin Area Primary Water Supply System Master Plan

Sheko:li Alfred Day

Loyane - Shonuhses

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2212 Elm Avenue
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London, ON N5X 4E7

We have elected to send this letter and attached notice by email only. Please feel free to call or email me using the contact details below if you have any questions or require additional information.

Sincerely,

Marcy McKillop, P.Eng.
Environmental Services Engineer
Elgin Area Primary Water Supply System

Encl.

Office 519.930.3505 ext. 4976
Fax 519.474.0451
mmckillop@huronelginwater.ca
www.huronelginwater.ca

Elgin Area Primary Water Supply System
235 North Centre Road, Suite 200
London, ON N5X 4E7

Elgin Area
Primary Water Supply System

June 5, 2025

Six Nations Elected Council
2489 Chiefswood Road
P.O. Box 5000
Ohsweken, ON
N0A 1M0

Subject: Elgin Area Primary Water Supply System Master Plan

Shekon/ She:koli/ Segoli/ Sgę́:nǫ?/ Sgë:nö'/ Cwe:'n Lonny Bomberry,

Please find attached the Notice of Public Information Centre for the Elgin Area Primary Water Supply System Master Plan. The Master Plan is being completed in accordance with the Municipal Engineers Association Municipal Class Environmental Assessment Master Planning process, to develop and evaluate a range of water servicing strategies to accommodate near, mid and long-term growth.

We recognize and acknowledge that the watersheds of southwestern Ontario have been home to the Attawandaron, Anishininaabeg, Haudenosaunee, and Lūnaapéewak throughout time. We understand our duty and responsibility for providing full, accurate, and up-to-date information about this project.

We are committed to working with communities to facilitate participation in the Master Plan. We would like to incorporate your input, and we welcome the opportunity for shared dialogue. Your participation could include a virtual meeting, hosted by the Elgin Area Primary Water Supply System, and providing input on project documents.

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Adams, Paul (London ON)

From:	Marcy McKillop <mmckillop@huronelginwater.ca>
Sent:	June 5, 2025 5:15 PM
To:	Al Day
Cc:	Ryan Armstrong; Adams, Paul (London ON)
Subject:	RE: Lake Huron Primary Water Supply System - Master Plan - Notice of Public Information Centre

Good afternoon Al,

Feel free to contact me tomorrow/Friday at 226-688-8176 and we can further discuss the Master Plan for the Lake Huron Primary Water Supply System.

Best regards,

Marcy McKillop, P.Eng. (she/her)
Environmental Services Engineer, Regional Water Supply

Lake Huron & Elgin Area Primary Water Supply Systems
235 North Centre Road, Suite 200
London, Ontario N5X 4E7
T: 519-930-3505 ext. 4976
E: mmckillop@huronelginwater.ca
https://huronelginwater.ca
www.facebook.com/RegionalWaterSupply

The Lake Huron and Elgin Area Primary Water Supply Systems serve 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.

From: Al Day <lutahawit@execulink.com>
Sent: Thursday, June 5, 2025 5:02 PM
To: Marcy McKillop <mmckillop@huronelginwater.ca>
Cc: Ryan Armstrong <rarmstrong@huronelginwater.ca>; 'Adams, Paul (London ON)' <Paul.Adams2@aecom.com>
Subject: RE: Lake Huron Primary Water Supply System - Master Plan - Notice of Public Information Centre

Good Afternoon Marcy

On behalf of the On^yota a:ka Lotiyaneshu, how do I become more informed and involved with process?

Thank you
Al

From: Marcy McKillop <mmckillop@huronelginwater.ca>
Sent: June 5, 2025 9:03 AM
To: Al Day <lutahawit@execulink.com>
Cc: Ryan Armstrong <rarmstrong@huronelginwater.ca>; Adams, Paul (London ON) <Paul.Adams2@aecom.com>
Subject: Lake Huron Primary Water Supply System - Master Plan - Notice of Public Information Centre

Sheko:li Loyane Day,

Please find attached a letter regarding the Notice of Public Information Centre for the Lake Huron Primary Water Supply System Master Plan.

Yaw^ko,

Marcy McKillop, P.Eng. (she/her)
Environmental Services Engineer, Regional Water Supply

Lake Huron & Elgin Area Primary Water Supply Systems
235 North Centre Road, Suite 200
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From: Marcy McKillop
Sent: Tuesday, February 25, 2025 4:52 PM
To: Al Day <lutahawit@execulink.com>
Cc: Ryan Armstrong <rarmstrong@huronelginwater.ca>; Adams, Paul (London ON) <Paul.Adams2@aecom.com>
Subject: Lake Huron Primary Water Supply System - Master Plan - Notice of Commencement

Sheko:li Loyane Day,

Please find attached a letter regarding the Notice of Commencement for the Lake Huron Primary Water Supply System Master Plan.

Yaw^ko,

Marcy McKillop, P.Eng. (she/her)
Environmental Services Engineer, Regional Water Supply

Lake Huron & Elgin Area Primary Water Supply Systems
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Appendix A.5

Agency Consultation

Ministry of the Environment, Conservation and Parks

Environmental Assessment Branch

1st Floor
135 St. Clair Avenue W
Toronto ON M4V 1P5
Tel.: 416 314-8001
Fax.: 416 314-8452

Ministère de l'Environnement, de la Protection de la nature et des Parcs

Direction des évaluations environnementales

Rez-de-chaussée
135, avenue St. Clair Ouest
Toronto ON M4V 1P5
Tél. : 416 314-8001
Téléc. : 416 314-8452

February 19, 2025

Marcy McKillop, P.Eng
Environmental Services Engineer
Regional Water Supply
Lake Huron and Elgin Area Primary Water Supply Systems
mmckillop@huronelginwater.ca

BY EMAIL ONLY

Re: **Elgin Area Primary Water Supply System Master Plan**
Elgin Area primary Water Supply System
Municipal Class Environmental Assessment, Master Plan (Phases 1-2)
Acknowledgement of Notice of Commencement

Dear Marcy McKillop,

This letter is in response to the Notice of Commencement for the above noted Master Plan. The Ministry of the Environment, Conservation and Parks (MECP) acknowledges that the Elgin Area Primary Water Supply System (proponent) has indicated that the study is following the approved environmental planning process for a Master Plan following Phases 1-2 under the Municipal Class Environmental Assessment (Class EA).

The **updated (August 2022)** attached "Areas of Interest" document provides guidance regarding the ministry's interests with respect to the Class EA process. Please address all areas of interest in the EA documentation at an appropriate level for the EA study. Proponents who address all the applicable areas of interest can minimize potential delays to the project schedule. **Further information is provided at the end of the Areas of Interest document**

relating to recent changes to the Environmental Assessment Act through Bill 197, Covid-19 Economic Recovery Act 2020.

The Crown has a legal duty to consult Aboriginal communities when it has knowledge, real or constructive, of the existence or potential existence of an Aboriginal or treaty right and contemplates conduct that may adversely impact that right. Before authorizing the projects identified in this Master Plan, the Crown must ensure that its duty to consult has been fulfilled, where such a duty is triggered. Although the duty to consult with Aboriginal peoples is a duty of the Crown, the Crown may delegate procedural aspects of this duty to project proponents while retaining oversight of the consultation process.

The proposed Master Plan projects may have the potential to affect Aboriginal or treaty rights protected under Section 35 of Canada's *Constitution Act* 1982. Where the Crown's duty to consult is triggered in relation to the proposed projects**, the MECP is delegating the procedural aspects of rights-based consultation to the proponent through this letter.** The Crown intends to rely on the delegated consultation process in discharging its duty to consult and maintains the right to participate in the consultation process as it sees fit.

Based on information provided to date and the Crown`s preliminary assessment the proponent is required to consult with the following communities who have been identified as potentially affected by the proposed Master Plan projects:

- Aamjiwnaang First Nation
- Bkejwanong (Walpole Island)
- Caldwell First Nation
- Chippewas of Kettle and Stony Point
- Chippewas of the Thames First Nation
- Oneida Nation of the Thames
- Munsee Delaware
- Delaware Nation
- Mississaugas of the Credit First Nation
- Six Nations of the Grand River (both elected and HCCC/HDI)
- both the elected council and HCCC claim to represent the Six Nations Community. The HCCC is the traditional council and the SNGR elected was established by Canada pursuant to the Indian Act, 1924.

Steps that the proponent may need to take in relation to Aboriginal consultation for the proposed projects are outlined in the "Code of Practice for Consultation in Ontario's Environmental Assessment Process". Additional information related to Ontario's Environmental Assessment Act is available online at: www.ontario.ca/environmentalassessments.

Please also refer to the attached document "A Proponent's Introduction to the Delegation of Procedural Aspects of consultation with Aboriginal Communities" for further information, including the MECP's expectations for EA report documentation related to consultation with communities.

The proponent must contact the Director of Environmental Assessment Branch (EABDirector@ontario.ca) under the following circumstances after initial discussions with the communities identified by the MECP:

- Aboriginal or treaty rights impacts are identified to you by the communities;
- You have reason to believe that your proposed projects may adversely affect an Aboriginal or treaty right;
- Consultation with Indigenous communities or other stakeholders has reached an impasse; or
- A Section 16 Order request is expected based on impacts to Aboriginal or treaty rights

The MECP will then assess the extent of any Crown duty to consult for the circumstances and will consider whether additional steps should be taken, including what role you will be asked to play should additional steps and activities be required.

Please also ensure a copy of the final notice is sent to the ministry's Southwestern Region EA notification email account (eanotification.swregion@ontario.ca) after the draft report is reviewed and finalized.

Should you or any members of your project team have any questions regarding the material above, please contact me at monika.macki@ontario.ca.

Sincerely,

Monika Macki

Monika Macki
Regional Environmental Planner – Southwestern Region
Project Review Unit, Environmental Assessment Branch

Enclosed: Areas of Interest

Attached: Client's Guide to Preliminary Screening for Species at Risk

A Proponent's Introduction to the Delegation of Procedural Aspects of Consultation with Aboriginal Communities

AREAS OF INTEREST (v. August 2022)

It is suggested that you check off each section after you have considered / addressed it.

Planning and Policy

- Applicable plans and policies should be identified in the report, and the proponent should describe how the proposed Master Plan projects adhere to the relevant policies in these plans.
    - Projects located in MECP Central or Eastern Region may be subject to the **Oak Ridges Moraine Conservation Plan (2017)** or the **Lake Simcoe Protection Plan (2014)**.
    - Projects located in MECP Central, Southwest or West Central Region may be subject to the **Niagara Escarpment Plan (2017)**.
    - Projects located in MECP Central, Eastern, Southwest or West Central Region may be subject to the **Greenbelt Plan (2017)**.
    - Projects located in MECP Northern Region may be subject to the **Growth Plan for Northern Ontario (2011).**

- The **Provincial Policy Statement (2024)** contains policies that protect Ontario's natural heritage and water resources. Applicable policies should be referenced in the report, and the proponent should describe how the proposed projects are consistent with these policies.

- In addition to the provincial planning and policy level, the report should also discuss the planning context at the municipal and federal levels, as appropriate.

Source Water Protection

The *Clean Water Act*, 2006 (CWA) aims to protect existing and future sources of drinking water. To achieve this, several types of vulnerable areas have been delineated around surface water intakes and wellheads for every municipal residential drinking water system that is located in a source protection area. These vulnerable areas are known as a Wellhead Protection Areas (WHPAs) and surface water Intake Protection Zones (IPZs). Other vulnerable areas that have been delineated under the CWA include Highly Vulnerable Aquifers (HVAs), Significant Groundwater Recharge Areas (SGRAs), Event-based modelling areas (EBAs), and Issues Contributing Areas (ICAs). Source protection plans have been developed that include policies to address existing and future risks to sources of municipal drinking water within these vulnerable areas.

Projects that are subject to the Environmental Assessment Act that fall under a Class EA, or one of the Regulations, have the potential to impact sources of drinking water if they occur in designated vulnerable areas or in the vicinity of other at-risk drinking water systems (i.e. systems that are not municipal residential systems). MEA Class EA projects may include

activities that, if located in a vulnerable area, could be a threat to sources of drinking water (i.e. have the potential to adversely affect the quality or quantity of drinking water sources) and the activity could therefore be subject to policies in a source protection plan. Where an activity poses a risk to drinking water, policies in the local source protection plan may impact how or where that activity is undertaken. Policies may prohibit certain activities, or they may require risk management measures for these activities. Municipal Official Plans, planning decisions, Class EA projects (where the project includes an activity that is a threat to drinking water) and prescribed instruments must conform with policies that address significant risks to drinking water and must have regard for policies that address moderate or low risks.

- In October 2015, the MEA Parent Class EA document was amended to include reference to the Clean Water Act (Section A.2.10.6) and indicates that proponents undertaking a Municipal Class EA project must identify early in their process whether a project is or could potentially be occurring with a vulnerable area. **Given this requirement, please include a section in the report on source water protection.**

    - The proponent should identify the source protection area and should clearly document how the proximity of the project to sources of drinking water (municipal or other) and any delineated vulnerable areas was considered and assessed. Specifically, the report should discuss whether or not the project is located in a vulnerable area and provide applicable details about the area.

    - If located in a vulnerable area, proponents should document whether any project activities are prescribed drinking water threats and thus pose a risk to drinking water (this should be consulted on with the appropriate Source Protection Authority). Where an activity poses a risk to drinking water, the proponent must document and discuss in the report how the project adheres to or has regard to applicable policies in the local source protection plan. This section should then be used to inform and be reflected in other sections of the report, such as the identification of net positive/negative effects of alternatives, mitigation measures, evaluation of alternatives etc.

- While most source protection plans focused on including policies for significant drinking water threats in the WHPAs and IPZs it should be noted that even though source protection plan policies may not apply in HVAs, these are areas where aquifers are sensitive and at risk to impacts and within these areas, activities may impact the quality of sources of drinking water for systems other than municipal residential systems.

- In order to determine if these Master Plan projects are occurring within a vulnerable area, proponents can use Source Protection Information Atlas, which is an online mapping tool available to the public. Note that various layers (including WHPAs, WHPA-Q1 and WHPA-Q2, IPZs, HVAs, SGRAs, EBAs, ICAs) can be turned on through the “Map Legend” bar on the left. The mapping tool will also provide a link to the appropriate source protection plan in order to identify what policies may be applicable in the vulnerable area.

- For further information on the maps or source protection plan policies which may relate to their project, proponents must contact the appropriate source protection authority. **Please consult with the local source protection authority to discuss potential impacts on drinking water. Please document the results of that consultation within the report and include all communication documents/correspondence.**

More Information

For more information on the *Clean Water Act*, source protection areas and plans, including specific information on the vulnerable areas and drinking water threats, please refer to Conservation Ontario's website where you will also find links to the local source protection plan/assessment report.

A list of the prescribed drinking water threats can be found in section 1.1 of Ontario Regulation 287/07 made under the *Clean Water Act*. In addition to prescribed drinking water threats, some source protection plans may include policies to address additional "local" threat activities, as approved by the MECP.

Climate Change

The document "Considering Climate Change in the Environmental Assessment Process" (Guide) is now a part of the Environmental Assessment program's Guides and Codes of Practice. The Guide sets out the MECP's expectation for considering climate change in the preparation, execution and documentation of environmental assessment studies and processes. The guide provides examples, approaches, resources, and references to assist proponents with consideration of climate change in EA. Proponents should review this Guide in detail.

- **The MECP expects proponents of Class EA projects to:**

    1. Consider during the assessment of alternative solutions and alternative designs, the following:
        a. the project's expected production of greenhouse gas emissions and impacts on carbon sinks (climate change mitigation); and
        b. resilience or vulnerability of the undertaking to changing climatic conditions (climate change adaptation).
    2. Include a discrete section in the report detailing how climate change was considered in the EA.

How climate change is considered can be qualitative or quantitative in nature and should be scaled to the project's level of environmental effect. In all instances, both a project's impacts on climate change (mitigation) and impacts of climate change on a project (adaptation) should be considered.

- The MECP has also prepared another guide to support provincial land use planning direction related to the completion of energy and emission plans. The "Community Emissions Reduction Planning: A Guide for Municipalities" document is designed to educate stakeholders on the municipal opportunities to reduce energy and greenhouse gas emissions, and to provide guidance on methods and techniques to incorporate consideration of energy and greenhouse gas emissions into municipal activities of all types. We encourage you to review the Guide for information.

Air Quality, Dust and Noise

- If there are sensitive receptors in the surrounding area of these Master Plan projects, a quantitative air quality/odour impact assessment will be useful to evaluate alternatives, determine impacts and identify appropriate mitigation measures. The scope of the assessment can be determined based on the potential effects of the proposed alternatives, and typically includes source and receptor characterization and a quantification of local air quality impacts on the sensitive receptors and the environment in the study area. The assessment will compare to all applicable standards or guidelines for all contaminants of concern. **Please contact this office for further consultation on the level of Air Quality Impact Assessment required for these projects if not already advised.**

- If a quantitative Air Quality Impact Assessment is not required for a project, the MECP expects that the report contain a qualitative assessment which includes:

    - A discussion of local air quality including existing activities/sources that significantly impact local air quality and how the project may impact existing conditions;
    - A discussion of the nearby sensitive receptors and the project's potential air quality impacts on present and future sensitive receptors;
    - A discussion of local air quality impacts that could arise from this project during both construction and operation; and
    - A discussion of potential mitigation measures.

- As a common practice, "air quality" should be used an evaluation criterion for all road projects.

- Dust and noise control measures should be addressed and included in the construction plans to ensure that nearby residential and other sensitive land uses within the study area are not adversely affected during construction activities.

- The MECP recommends that non-chloride dust-suppressants be applied. For a comprehensive list of fugitive dust prevention and control measures that could be applied, refer to *Cheminfo Services Inc. Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities* report prepared for Environment Canada. March 2005.

- The report should consider the potential impacts of increased noise levels during the operation of the completed project. The proponent should explore all potential measures to mitigate significant noise impacts during the assessment of alternatives.

Ecosystem Protection and Restoration

- Any impacts to ecosystem form and function must be avoided where possible. The report should describe any proposed mitigation measures and how project planning will protect and enhance the local ecosystem.

- Natural heritage and hydrologic features should be identified and described in detail to assess potential impacts and to develop appropriate mitigation measures. The following sensitive environmental features may be located within or adjacent to the study area:
    - Key Natural Heritage Features: Habitat of endangered species and threatened species, fish habitat, wetlands, areas of natural and scientific interest (ANSIs), significant valleylands, significant woodlands; significant wildlife habitat (including habitat of special concern species); sand barrens, savannahs, and tallgrass prairies; and alvars.
    - Key Hydrologic Features: Permanent streams, intermittent streams, inland lakes and their littoral zones, seepage areas and springs, and wetlands.
    - Other natural heritage features and areas such as: vegetation communities, rare species of flora or fauna, Environmentally Sensitive Areas, Environmentally Sensitive Policy Areas, federal and provincial parks and conservation reserves, Greenland systems etc.

We recommend consulting with the Ministry of Natural Resources and Forestry (MNRF), Fisheries and Oceans Canada (DFO) and your local conservation authority to determine if special measures or additional studies will be necessary to preserve and protect these sensitive features. In addition, for projects located in Central Region you may consider the provisions of the Rouge Park Management Plan if applicable.

Species at Risk

- The Ministry of the Environment, Conservation and Parks has now assumed responsibility of Ontario's Species at Risk program. Information, standards, guidelines, reference materials and technical resources to assist you are found at https://www.ontario.ca/page/species-risk.

- The Client's Guide to Preliminary Screening for Species at Risk (Draft May 2019) has been attached to the covering email for your reference and use. Please review this document for next steps.

- For any questions related to subsequent permit requirements, please contact SAROntario@ontario.ca.

Surface Water

- The report must include enough information to demonstrate that there will be no negative impacts on the natural features or ecological functions of any watercourses within the study area. Measures should be included in the planning and design process to ensure that any impacts to watercourses from construction or operational activities (e.g. spills, erosion, pollution) are mitigated as part of the proposed undertaking.

- Additional stormwater runoff from new pavement can impact receiving watercourses and flood conditions. Quality and quantity control measures to treat stormwater runoff should be considered for all new impervious areas and, where possible, existing surfaces. The ministry's Stormwater Management Planning and Design Manual (2003) should be referenced in the report and utilized when designing stormwater control methods. **A Stormwater Management Plan should be prepared as part of the Class EA process** that includes:

    - Strategies to address potential water quantity and erosion impacts related to stormwater draining into streams or other sensitive environmental features, and to ensure that adequate (enhanced) water quality is maintained
    - Watershed information, drainage conditions, and other relevant background information
    - Future drainage conditions, stormwater management options, information on erosion and sediment control during construction, and other details of the proposed works
    - Information on maintenance and monitoring commitments.

- Ontario Regulation 60/08 under the *Ontario Water Resources Act* (OWRA) applies to the Lake Simcoe Basin, which encompasses Lake Simcoe and the lands from which surface water drains into Lake Simcoe. If the proposed sewage treatment plant is listed in Table 1 of the regulation, the report should describe how the proposed Master Plan projects and its mitigation measures are consistent with the requirements of this regulation and the OWRA.

- Any potential approval requirements for surface water taking or discharge should be identified in the report. A Permit to Take Water (PTTW) under the OWRA will be required for any water takings that exceed 50,000 L/day, except for certain water taking activities that have been prescribed by the Water Taking EASR Regulation – *O. Reg. 63/16*. These prescribed water-taking activities require registration in the EASR instead of a PTTW. Please review the Water Taking User Guide for EASR for more information. Additionally, an

Environmental Compliance Approval under the OWRA is required for municipal stormwater management works.

Groundwater

- The status of, and potential impacts to any well water supplies should be addressed. If the Master Plan projects involve groundwater takings or changes to drainage patterns, the quantity and quality of groundwater may be affected due to drawdown effects or the redirection of existing contamination flows. In addition, project activities may infringe on existing wells such that they must be reconstructed or sealed and abandoned. Appropriate information to define existing groundwater conditions should be included in the report.

- If the potential construction or decommissioning of water wells is identified as an issue, the report should refer to Ontario Regulation 903, Wells, under the OWRA.

- Potential impacts to groundwater-dependent natural features should be addressed. Any changes to groundwater flow or quality from groundwater taking may interfere with the ecological processes of streams, wetlands or other surficial features. In addition, discharging contaminated or high volumes of groundwater to these features may have direct impacts on their function. Any potential effects should be identified, and appropriate mitigation measures should be recommended. The level of detail required will be dependent on the significance of the potential impacts.

- Any potential approval requirements for groundwater taking or discharge should be identified in the report. A Permit to Take Water (PTTW) under the OWRA will be required for any water takings that exceed 50,000 L/day, with the exception of certain water taking activities that have been prescribed by the Water Taking EASR Regulation – *O. Reg. 63/16*. These prescribed water-taking activities require registration in the EASR instead of a PTTW. Please review the Water Taking User Guide for EASR for more information.

- Consultation with the railroad authorities is necessary wherever there is a plan to use construction dewatering in the vicinity of railroad lines or where the zone of influence of the construction dewatering potentially intercepts railroad lines.

Excess Materials Management

- In December 2019, MECP released a new regulation under the Environmental Protection Act, titled "On-Site and Excess Soil Management" (O. Reg. 406/19) to support improved management of excess construction soil. This regulation is a key step to support proper management of excess soils, ensuring valuable resources don't go to waste and to provide clear rules on managing and reusing excess soil. New risk-based standards referenced by

this regulation help to facilitate local beneficial reuse which in turn will reduce greenhouse gas emissions from soil transportation, while ensuring strong protection of human health and the environment. The new regulation is being phased in over time, with the first phase in effect on January 1, 2021. For more information, please visit https://www.ontario.ca/page/handling-excess-soil.

- The report should reference that activities involving the management of excess soil should be completed in accordance with O. Reg. 406/19 and the MECP's current guidance document titled "Management of Excess Soil – A Guide for Best Management Practices" (2014).

- All waste generated during construction must be disposed of in accordance with ministry requirements.

Contaminated Sites

- Any current or historical waste disposal sites should be identified in the report. The status of these sites should be determined to confirm whether approval pursuant to Section 46 of the EPA may be required for land uses on former disposal sites. We recommend referring to the MECP's D-4 guideline for land use considerations near landfills and dumps.
    - Resources available may include regional/local municipal official plans and data; provincial data on large landfill sites and small landfill sites; Environmental Compliance Approval information for waste disposal sites on Access Environment.

- Other known contaminated sites (local, provincial, federal) in the study area should also be identified in the report (Note – information on federal contaminated sites is found on the Government of Canada's website).

- The location of any underground storage tanks should be investigated in the report. Measures should be identified to ensure the integrity of these tanks and to ensure an appropriate response in the event of a spill. The ministry's Spills Action Centre must be contacted in such an event.

- Since the removal or movement of soils may be required, appropriate tests to determine contaminant levels from previous land uses or dumping should be undertaken. If the soils are contaminated, you must determine how and where they are to be disposed of, consistent with *Part XV.1 of the Environmental Protection Act* (EPA) and Ontario Regulation 153/04, Records of Site Condition, which details the new requirements related to site assessment and clean up. Please contact the appropriate MECP District Office for further consultation if contaminated sites are present.

Servicing, Utilities and Facilities

- The report should identify any above or underground utilities in the study area such as transmission lines, telephone/internet, oil/gas etc. The owners should be consulted to discuss impacts to this infrastructure, including potential spills.

- The report should identify any servicing infrastructure in the study area such as wastewater, water, stormwater that may potentially be impacted by the Master Plan projects.

- Any facility that releases emissions to the atmosphere, discharges contaminants to ground or surface water, provides potable water supplies, or stores, transports or disposes of waste must have an Environmental Compliance Approval (ECA) before it can operate lawfully. Please consult with MECP's Environmental Permissions Branch to determine whether a new or amended ECA will be required for any proposed infrastructure.

- We recommend referring to the ministry's environmental land use planning guides to ensure that any potential land use conflicts are considered when planning for any infrastructure or facilities related to wastewater, pipelines, landfills or industrial uses.

Mitigation and Monitoring

- Contractors must be made aware of all environmental considerations so that all environmental standards and commitments for both construction and operation are met. Mitigation measures should be clearly referenced in the report and regularly monitored during the construction stage of the Master Plan projects. In addition, we encourage proponents to conduct post-construction monitoring to ensure all mitigation measures have been effective and are functioning properly.

- Design and construction reports and plans should be based on a best management approach that centres on the prevention of impacts, protection of the existing environment, and opportunities for rehabilitation and enhancement of any impacted areas.

- The proponent's construction and post-construction monitoring plans must be documented in the report, as outlined in Section A.2.5 and A.4.1 of the MEA Class EA parent document.

Consultation

- The report must demonstrate how the consultation provisions of the Class EA have been fulfilled, including documentation of all stakeholder consultation efforts undertaken during the planning process. This includes a discussion in the report that identifies concerns that were raised and **describes how they have been addressed by the proponent** throughout

the planning process. The report should also include copies of comments submitted on the Master Plan by interested stakeholders, and the proponent's responses to these comments (as directed by the Class EA to include full documentation).

- Please include the full stakeholder distribution/consultation list in the documentation.

Class EA Process

- There are several different approaches that can be used to conduct a Master Plan, examples of which are outlined in Appendix 4 of the Class EA. **The Master Plan should clearly indicate the selected approach for conducting the plan**, by identifying whether the levels of assessment, consultation and documentation are sufficient to fulfill the requirements for Schedule B or C projects. Please note that any Schedule B or C projects identified in the plan would be subject to Part II Order Requests under the Environmental Assessment Act, although the plan itself would not be. **Please include a description of the approach being undertaken (use Appendix 4 as a reference).**

- Any identified projects should also include information on the MCEA schedule associated with the project.

- The report should provide clear and complete documentation of the planning process in order to allow for transparency in decision-making.

- The Class EA requires the consideration of the effects of each alternative on all aspects of the environment (including planning, natural, social, cultural, economic, technical). The report should include a level of detail (e.g. hydrogeological investigations, terrestrial and aquatic assessments, cultural heritage assessments) such that all potential impacts can be identified, and appropriate mitigation measures can be developed. Any supporting studies conducted during the Class EA process should be referenced and included as part of the report.

- Please include in the report a list of all subsequent permits or approvals that may be required for the implementation of the preferred alternative, including but not limited to, MECP's PTTW, EASR Registrations and ECAs, conservation authority permits, species at risk permits, MTO permits and approvals under the *Impact Assessment Act*, 2019.

- Ministry guidelines and other information related to the issues above are available at http://www.ontario.ca/environment-and-energy/environment-and-energy. We encourage you to review all the available guides and reference any relevant information in the report.

Amendments to the EAA through the Covid-19 Economic Recovery Act, 2020

Once the EA Report is finalized, the proponent must issue a Notice of Completion providing a minimum 30-day period during which documentation may be reviewed and comment and input can be submitted to the proponent. The Notice of Completion must be sent to the appropriate MECP Regional Office email address.

The public can request a higher level of assessment on any of the Schedule B or Schedule C projects identified in the Master Plan if they are concerned about potential adverse impacts to constitutionally protected Aboriginal and treaty rights. In addition, the Minister may issue an order on his or her own initiative within a specified time period. The Director (of the Environmental Assessment Branch) will issue a Notice of Proposed Order to the proponent if the Minister is considering an order for the project(s) within 30 days after the conclusion of the comment period on the Notice of Completion. At this time, the Director may request additional information from the proponent. Once the requested information has been received, the Minister will have 30 days within which to make a decision or impose conditions on your project(s).

Therefore, the proponent cannot proceed with the Master Plan projects until at least 30 days after the end of the comment period provided for in the Notice of Completion. Further, the proponent may not proceed after this time if:

- a Section 16 Order request has been submitted to the ministry regarding potential adverse impacts to constitutionally protected Aboriginal and treaty rights, or
- the Director has issued a Notice of Proposed order regarding the project(s).

Please ensure that the Notice of Completion advises that outstanding concerns are to be directed to the proponent for a response, and that in the event there are outstanding concerns regarding potential adverse impacts to constitutionally protected Aboriginal and treaty rights, Section 16 Order requests on those matters should be addressed in writing to:

Minister of the Environment, Conservation and Parks
Ministry of the Environment, Conservation and Parks
777 Bay Street, 5th Floor
Toronto ON M7A 2J3
minister.mecp@ontario.ca

and

Director, Environmental Assessment Branch
Ministry of Environment, Conservation and Parks
135 St. Clair Ave. W, 1st Floor
Toronto ON, M4V 1P5
EABDirector@ontario.ca

Ontario

A PROPONENT'S INTRODUCTION TO THE DELEGATION OF PROCEDURAL ASPECTS OF CONSULTATION WITH ABORIGINAL COMMUNITIES

DEFINITIONS

The following definitions are specific to this document and may not apply in other contexts:

Aboriginal communities – the First Nation or Métis communities identified by the Crown for the purpose of consultation.

Consultation – the Crown's legal obligation to consult when the Crown has knowledge of an established or asserted Aboriginal or treaty right and contemplates conduct that might adversely impact that right. This is the type of consultation required pursuant to s. 35 of the *Constitution Act, 1982*. Note that this definition does not include consultation with Aboriginal communities for other reasons, such as regulatory requirements.

Crown – the Ontario Crown, acting through a particular ministry or ministries.

Procedural aspects of consultation – those portions of consultation related to the process of consultation, such as notifying an Aboriginal community about a project, providing information about the potential impacts of a project, responding to concerns raised by an Aboriginal community and proposing changes to the project to avoid negative impacts.

Proponent – the person or entity that wants to undertake a project and requires an Ontario Crown decision or approval for the project.

I. PURPOSE

The Crown has a legal duty to consult Aboriginal communities when it has knowledge of an existing or asserted Aboriginal or treaty right and contemplates conduct that may adversely impact that right. In outlining a framework for the duty to consult, the Supreme Court of Canada has stated that the Crown may delegate procedural aspects of consultation to third parties. This document provides general information about the Ontario Crown's approach to delegation of the procedural aspects of consultation to proponents.

This document is not intended to instruct a proponent about an individual project, and it does not constitute legal advice.

II. WHY IS IT NECESSARY TO CONSULT WITH ABORIGINAL COMMUNITIES?

The objective of the modern law of Aboriginal and treaty rights is the *reconciliation* of Aboriginal peoples and non-Aboriginal peoples and their respective rights, claims and interests. Consultation is an important component of the reconciliation process.

The Crown has a legal duty to consult Aboriginal communities when it has knowledge of an existing or asserted Aboriginal or treaty right and contemplates conduct that might adversely impact that right. For example, the Crown's duty to consult is triggered when it considers

issuing a permit, authorization or approval for a project which has the potential to adversely impact an Aboriginal right, such as the right to hunt, fish, or trap in a particular area.

The scope of consultation required in particular circumstances ranges across a spectrum depending on both the nature of the asserted or established right and the seriousness of the potential adverse impacts on that right.

Depending on the particular circumstances, the Crown may also need to take steps to accommodate the potentially impacted Aboriginal or treaty right. For example, the Crown may be required to avoid or minimize the potential adverse impacts of the project.

III. THE CROWN'S ROLE AND RESPONSIBILITIES IN THE DELEGATED CONSULTATION PROCESS

The Crown has the responsibility for ensuring that the duty to consult, and accommodate where appropriate, is met. However, the Crown may delegate the procedural aspects of consultation to a proponent.

There are different ways in which the Crown may delegate the procedural aspects of consultation to a proponent, including through a letter, a memorandum of understanding, legislation, regulation, policy and codes of practice.

If the Crown decides to delegate procedural aspects of consultation, the Crown will generally:

- Ensure that the delegation of procedural aspects of consultation and the responsibilities of the proponent are clearly communicated to the proponent;
- Identify which Aboriginal communities must be consulted;
- Provide contact information for the Aboriginal communities;
- Revise, as necessary, the list of Aboriginal communities to be consulted as new information becomes available and is assessed by the Crown;
- Assess the scope of consultation owed to the Aboriginal communities;
- Maintain appropriate oversight of the actions taken by the proponent in fulfilling the procedural aspects of consultation;
- Assess the adequacy of consultation that is undertaken and any accommodation that may be required;
- Provide a contact within any responsible ministry in case issues arise that require direction from the Crown; and
- Participate in the consultation process as necessary and as determined by the Crown.

IV. THE PROPONENT'S ROLE AND RESPONSIBILITIES IN THE DELEGATED CONSULTATION PROCESS

Where aspects of the consultation process have been delegated to a proponent, the Crown, in meeting its duty to consult, will rely on the proponent's consultation activities and documentation of those activities. The consultation process informs the Crown's decision of whether or not to approve a proposed project or activity.

A proponent's role and responsibilities will vary depending on a variety of factors including the extent of consultation required in the circumstance and the procedural aspects of consultation the Crown has delegated to it. Proponents are often in a better position than the Crown to discuss a project and its potential impacts with Aboriginal communities and to determine ways to avoid or minimize the adverse impacts of a project.

A proponent can raise issues or questions with the Crown at any time during the consultation process. If issues or concerns arise during the consultation that cannot be addressed by the proponent, the proponent should contact the Crown.

a) What might a proponent be required to do in carrying out the procedural aspects of consultation?

Where the Crown delegates procedural aspects of consultation, it is often the proponent's responsibility to provide notice of the proposed project to the identified Aboriginal communities. The notice should indicate that the Crown has delegated the procedural aspects of consultation to the proponent and should include the following information:

- a description of the proposed project or activity;
- mapping;
- proposed timelines;
- details regarding anticipated environmental and other impacts;
- details regarding opportunities to comment; and
- any changes to the proposed project that have been made for seasonal conditions or other factors, where relevant.

Proponents should provide enough information and time to allow Aboriginal communities to provide meaningful feedback regarding the potential impacts of the project. Depending on the nature of consultation required for a project, a proponent also may be required to:

- provide the Crown with copies of any consultation plans prepared and an opportunity to review and comment;
- ensure that any necessary follow-up discussions with Aboriginal communities take place in a timely manner, including to confirm receipt of information, share and update information and to address questions or concerns that may arise;

- as appropriate, discuss with Aboriginal communities potential mitigation measures and/or changes to the project in response to concerns raised by Aboriginal communities;
- use language that is accessible and not overly technical, and translate material into Aboriginal languages where requested or appropriate;
- bear the reasonable costs associated with the consultation process such as, but not limited to, meeting hall rental, meal costs, document translation(s), or to address technical & capacity issues;
- provide the Crown with all the details about potential impacts on established or asserted Aboriginal or treaty rights, how these concerns have been considered and addressed by the proponent and the Aboriginal communities and any steps taken to mitigate the potential impacts;
- provide the Crown with complete and accurate documentation from these meetings and communications; and
- notify the Crown immediately if an Aboriginal community not identified by the Crown approaches the proponent seeking consultation opportunities.

b) What documentation and reporting does the Crown need from the proponent?

Proponents should keep records of all communications with the Aboriginal communities involved in the consultation process and any information provided to these Aboriginal communities.

As the Crown is required to assess the adequacy of consultation, it needs documentation to satisfy itself that the proponent has fulfilled the procedural aspects of consultation delegated to it. The documentation required would typically include:

- the date of meetings, the agendas, any materials distributed, those in attendance and copies of any minutes prepared;
- the description of the proposed project that was shared at the meeting;
- any and all concerns or other feedback provided by the communities;
- any information that was shared by a community in relation to its asserted or established Aboriginal or treaty rights and any potential adverse impacts of the proposed activity, approval or disposition on such rights;
- any proposed project changes or mitigation measures that were discussed, and feedback from Aboriginal communities about the proposed changes and measures;
- any commitments made by the proponent in response to any concerns raised, and feedback from Aboriginal communities on those commitments;
- copies of correspondence to or from Aboriginal communities, and any materials distributed electronically or by mail;

- information regarding any financial assistance provided by the proponent to enable participation by Aboriginal communities in the consultation;
- periodic consultation progress reports or copies of meeting notes if requested by the Crown;
- a summary of how the delegated aspects of consultation were carried out and the results; and
- a summary of issues raised by the Aboriginal communities, how the issues were addressed and any outstanding issues.

In certain circumstances, the Crown may share and discuss the proponent's consultation record with an Aboriginal community to ensure that it is an accurate reflection of the consultation process.

c) Will the Crown require a proponent to provide information about its commercial arrangements with Aboriginal communities?

The Crown may require a proponent to share information about aspects of commercial arrangements between the proponent and Aboriginal communities where the arrangements:

- include elements that are directed at mitigating or otherwise addressing impacts of the project;
- include securing an Aboriginal community's support for the project; or
- may potentially affect the obligations of the Crown to the Aboriginal communities.

The proponent should make every reasonable effort to exempt the Crown from confidentiality provisions in commercial arrangements with Aboriginal communities to the extent necessary to allow this information to be shared with the Crown.

The Crown cannot guarantee that information shared with the Crown will remain confidential. Confidential commercial information should not be provided to the Crown as part of the consultation record if it is not relevant to the duty to consult or otherwise required to be submitted to the Crown as part of the regulatory process.

V. WHAT ARE THE ROLES AND RESPONSIBILITIES OF ABORIGINAL COMMUNITIES' IN THE CONSULTATION PROCESS?

Like the Crown, Aboriginal communities are expected to engage in consultation in good faith. This includes:

- responding to the consultation notice;
- engaging in the proposed consultation process;
- providing relevant documentation;

- clearly articulating the potential impacts of the proposed project on Aboriginal or treaty rights; and
- discussing ways to mitigates any adverse impacts.

Some Aboriginal communities have developed tools, such as consultation protocols, policies or processes that provide guidance on how they would prefer to be consulted. Although not legally binding, proponents are encouraged to respect these community processes where it is reasonable to do so. Please note that there is no obligation for a proponent to pay a fee to an Aboriginal community in order to enter into a consultation process.

To ensure that the Crown is aware of existing community consultation protocols, proponents should contact the relevant Crown ministry when presented with a consultation protocol by an Aboriginal community or anyone purporting to be a representative of an Aboriginal community.

VI. WHAT IF MORE THAN ONE PROVINCIAL CROWN MINISTRY IS INVOLVED IN APPROVING A PROPONENT'S PROJECT?

Depending on the project and the required permits or approvals, one or more ministries may delegate procedural aspects of the Crown's duty to consult to the proponent. The proponent may contact individual ministries for guidance related to the delegation of procedural aspects of consultation for ministry-specific permits/approvals required for the project in question. Proponents are encouraged to seek input from all involved Crown ministries sooner rather than later.

Client's Guide to Preliminary Screening for Species at Risk

Ministry of the Environment, Conservation and Parks

Species at Risk Branch, Permissions and Compliance

DRAFT - May 2019

Table of Contents

1.0 Purpose, Scope, Background and Context

1.1 Purpose of this Guide

This guide has been created to:

- help clients better understand their obligation to gather information and complete a preliminary screening for species at risk before contacting the ministry,
- outline guidance and advice clients can expect to receive from the ministry at the preliminary screening stage,
- help clients understand how they can gather information about species at risk by accessing publicly available information housed by the Government of Ontario, and
- provide a list of other potential sources of species at risk information that exist outside the Government of Ontario.

It remains the client's responsibility to:

- carry out a preliminary screening for their projects,
- obtain best available information from all applicable information sources,
- conduct any necessary field studies or inventories to identify and confirm the presence or absence of species at risk or their habitat,
- consider any potential impacts to species at risk that a proposed activity might cause, and
- comply with the *Endangered Species Act* (ESA).

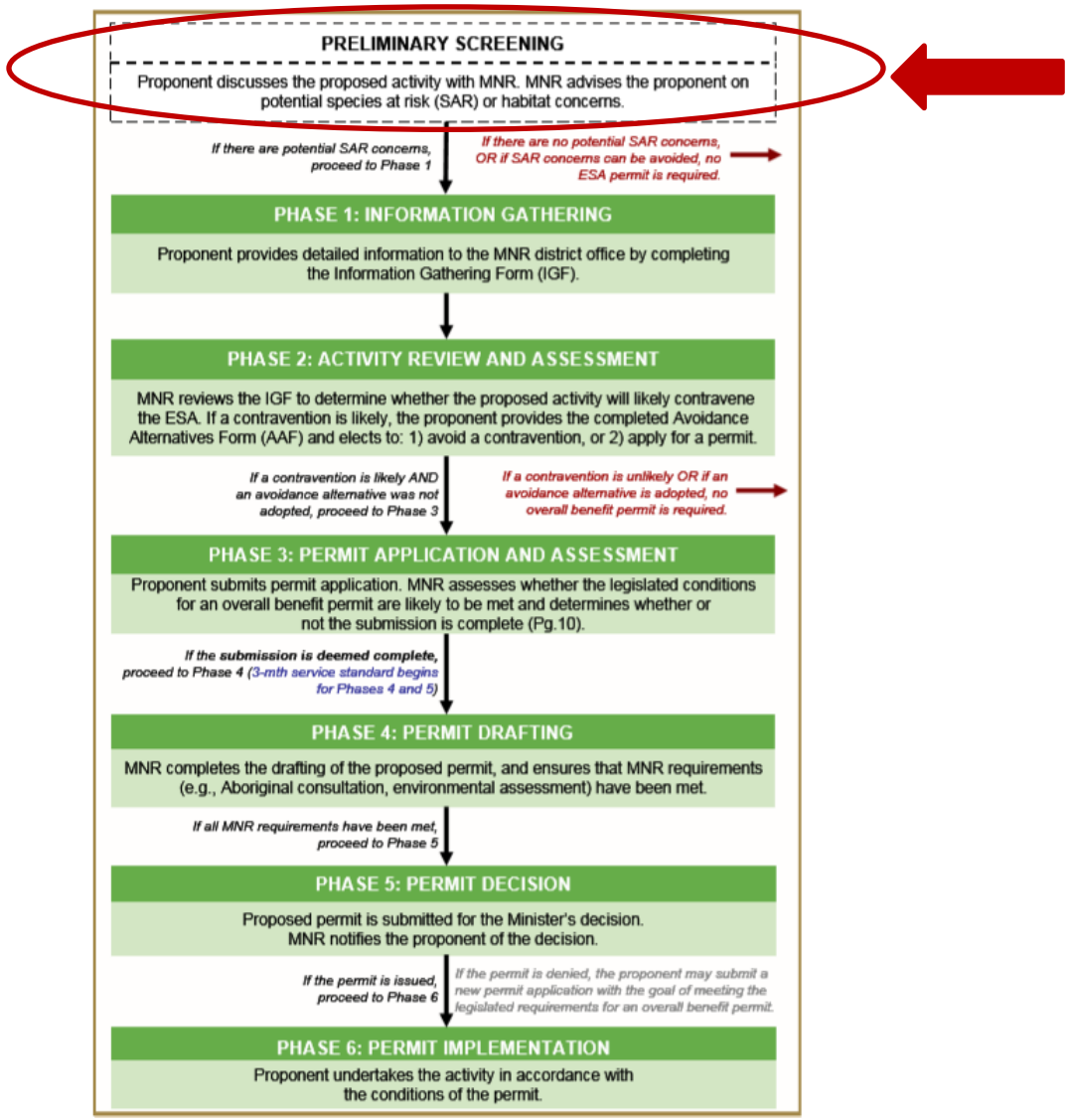
To provide the most efficient service, clients should initiate species at risk screenings and seek information from all applicable information sources identified in this guide, at a minimum, prior to contacting Government of Ontario ministry offices for further information or advice.

1.2 Scope

This guide is a resource for clients seeking to understand if their activity is likely to impact species at risk or if they are likely to trigger the need for an authorization under the ESA. It is not intended to circumvent any detailed site surveys that may be necessary to document species at risk or their habitat nor to circumvent the need to assess the impacts of a proposed activity on species at risk or their habitat. This guide is not an exhaustive list of available information sources for any given area as the availability of information on species at risk and their habitat varies across the province. This guide is intended to support projects and activities carried out on Crown and private land, by private landowners, businesses, other provincial ministries and agencies, or municipal government.

1.3 Background and Context

To receive advice on their proposed activity, clients must first determine whether any species at risk or their habitat exist or are likely to exist at or near their proposed activity, and whether their proposed activity is likely to contravene the ESA. Once this step is complete, clients may contact the ministry at SAROntario@ontario.ca to discuss the main purpose, general methods, timing and location of their proposed activity as well as information obtained about species at risk and their habitat at, or near, the site. At this stage, the ministry can provide advice and guidance to the client about potential species at risk or habitat concerns, measures that the client is considering to avoid adverse effects on species at risk or their habitat and whether additional field surveys are advisable. This is referred to as the "Preliminary Screening" stage. For more information on additional phases in the diagram below, please refer to the *Endangered Species Act Submission Standards for Activity Review and 17(2)(c) Overall Benefit Permits* policy available online at https://www.ontario.ca/page/species-risk-overall-benefit-permits



2.0 Roles and Responsibilities

To provide the most efficient service, clients should initiate species at risk screenings and seek information from all applicable information sources identified in this guide prior to contacting Government of Ontario ministry offices for further information or advice.

Step 1: Client seeks information regarding species at risk or their habitat that exist, or are likely to exist, at or near their proposed activity by referring to all applicable information sources identified in this guide.

Step 2: Client reviews and consider guidance on whether their proposed activity is likely to contravene the ESA (see section 3.4 of this guide for guidance on what to consider).

Step 3: Client gathers information identified in the checklist in section 4 of this guide.

Step 4: Client contacts the ministry at SAROntario@ontario.ca to discuss their preliminary screening. Ministry staff will ask the client questions about the main purpose, general methods, timing and location of their proposed activity as well as information obtained about species at risk and their habitat at, or near, the site. Ministry staff will also ask the client for their interpretation of the impacts of their activity on species at risk or their habitat as well as measures the client has considered to avoid any adverse impacts.

Step 5: Ministry staff will provide advice on next steps.

Option A: Ministry staff may advise the client they can proceed with their activity without an authorization under the ESA where the ministry is confident that:

- no protected species at risk or habitats are likely to be present at or near the proposed location of the activity; or
- protected species at risk or habitats are known to be present but the activity is not likely to contravene the ESA; or
- through the adoption of avoidance measures, the modified activity is not likely to contravene the ESA.

Option B: Ministry staff may advise the client to proceed to Phase 1 of the overall benefit permitting process (i.e. Information Gathering in the previous diagram), where:

- there is uncertainty as to whether any protected species at risk or habitats are present at or near the proposed location of the activity; or
- the potential impacts of the proposed activity are uncertain; or
- ministry staff anticipate the proposed activity is likely to contravene the ESA.

3.0 Information Sources

Land Information Ontario (LIO) and the Natural Heritage Information Centre (NHIC) maintain and provide information about species at risk, as well as related information about fisheries, wildlife, crown lands, protected lands and more. This information is made available to organizations, private individuals, consultants, and developers through online sources and is often considered under various pieces of legislation or as part of regulatory approvals and planning processes.

The information available from LIO or NHIC and the sources listed in this guide should not be considered as a substitute for site visits and appropriate field surveys. Generally, this information can be regarded as a starting point from which to conduct further field surveys, if needed. While this data represents best available current information, it is important to note that a lack of information for a site does not mean that species at risk or their habitat are not present. There are many areas where the Government of Ontario does not currently have information, especially in more remote parts of the province. The absence of species at risk location data at or near your site does not necessarily mean no species at risk are present at that location. On-site assessments can better verify site conditions, identify and confirm presence of species at risk and/or their habitats.

Information on the location (i.e. observations and occurrences) of species at risk is considered sensitive and therefore publicly available only on a 1km square grid as opposed to as a detailed point on a map. This generalized information can help you understand which species at risk are in the general vicinity of your proposed activity and can help inform field level studies you may want to undertake to confirm the presence, or absence of species at risk at or near your site.

Should you require specific and detailed information pertaining to species at risk observations and occurrences at or near your site on a finer geographic scale; you will be required to demonstrate your need to access this information, to complete data sensitivity training and to obtain a Sensitive Data Use License from the NHIC. Information on how to obtain a license can be found online at https://www.ontario.ca/page/get-natural-heritage-information.

Many organizations (e.g. other Ontario ministries, municipalities, conservation authorities) have ongoing licensing to access this data so be sure to check if your organization has this access and consult this data as part of your preliminary screening if your organization already has a license.

3.1 Make a Map: Natural Heritage Areas

The Make a Natural Heritage Area Map (available online at http://www.gisapplication.lrc.gov.on.ca/mamnh/Index.html?site=MNR_NHLUPS_NaturalHeritage&viewer=NaturalHeritage&locale=en-US provides public access to natural heritage information, including species at risk, without the user needing to have Geographic Information System (GIS) capability. It allows users to view and identify generalized species at risk information, mark areas of interest, and create and print a custom map directly from the web application. The tool also shows topographic information such as roads, rivers, contours and municipal boundaries.

Users are advised that sensitive information has been removed from the natural areas dataset and the occurrences of species at risk has been generalized to a 1-kilometre grid to mitigate the risks to the species (e.g. illegal harvest, habitat disturbance, poaching).

The web-based mapping tool displays natural heritage data, including:

- Generalized Species at risk occurrence data (based on a 1-km square grid),
- Natural Heritage Information Centre data.

Data cannot be downloaded directly from this web map; however, information included in this application is available digitally through Land Information Ontario (LIO) at https://www.ontario.ca/page/land-information-ontario.

3.2 Land Information Ontario (LIO)

Most natural heritage data is publicly available. This data is managed in a large provincial corporate database called the LIO Warehouse and can be accessed online through the LIO Metadata Management Tool at https://www.javacoeapp.lrc.gov.on.ca/geonetwork/srv/en/main.home. This tool provides descriptive information about the characteristics, quality and context of the data. Publicly available geospatial data can be downloaded directly from this site.

While most data are publicly available, some data may be considered highly sensitive (i.e. nursery areas for fish, species at risk observations) and as such, access to some data maybe restricted.

3.3 Additional Species at Risk Information Sources

- The Breeding Bird Atlas can be accessed online at http://www.birdsontario.org/atlas/index.jsp?lang=en
- eBird can be accessed online at https://ebird.org/home
- iNaturalist can be accessed online at https://www.inaturalist.org/
- The Ontario Reptile and Amphibian Atlas can be accessed online at https://ontarionature.org/programs/citizen-science/reptile-amphibian-atlas
- Your local Conservation Authority. Information to help you find your local Conservation Authority can be accessed online at https://conservationontario.ca/conservation-authorities/find-a-conservation-authority/

  Local naturalist groups or other similar community-based organizations
- Local Indigenous communities
- Local land trusts or other similar Environmental Non-Government Organizations
- Field level studies to identify if species at risk, or their habitat, are likely present or absent at or near the site.
- When an activity is proposed within one of the continuous caribou ranges, please be sure to consider the caribou Range Management Policy. This policy includes figures and maps of the continuous caribou range, can be found online at https://www.ontario.ca/page/range-management-policy-support-woodland-caribou-conservation-and-recovery

3.4 Information Sources to Support Impact Assessments

- Guidance to help you understand if your activity is likely to adversely impact species at risk or their habitat can be found online at https://www.ontario.ca/page/policy-guidance-harm-and-harass-under-endangered-species-act and https://www.ontario.ca/page/categorizing-and-protecting-habitat-under-endangered-species-act
- A list of species at risk in Ontario is available online at https://www.ontario.ca/page/species-risk-ontario. On this webpage, you can find out more about each species, including where is lives, what threatens it and any specific habitat protections that apply to it by clicking on the photo of the species.

4.0 Check-List

Please feel free to use the check list below to help you confirm you have explored all applicable information sources and to support your discussion with Ministry staff at the preliminary screening stage.

- ✓ Land Information Ontario (LIO)
- ✓ Natural Heritage Information Centre (NHIC)
- ✓ The Breeding Bird Atlas
- ✓ eBird
- ✓ iNaturalist
- ✓ Ontario Reptile and Amphibian Atlas
- ✓ List Conservation Authorities you contacted:_____

  _____
- ✓ List local naturalist groups you contacted:_____

  _____
- ✓ List local Indigenous communities you contacted:_____

  _____
- ✓ List any other local land trusts or Environmental Non-Government Organizations you contacted:_____

  _____
- ✓ List and field studies that were conducted to identify species at risk, or their habitat, likely to be present or absent at or near the site: _____

  _____
- ✓ List what you think the likely impacts of your activity are on species at risk and their habitat (e.g. damage or destruction of habitat, killing, harming or harassing species at risk):_____

  _____

Adams, Paul (London ON)

From: Adams, Paul (London ON)
Sent: September 26, 2025 12:38 PM
To: 'Macki, Monika (MECP)'
Subject: RE: Adams, Paul (London ON) shared the folder "MECP Review" with you

Thank you Monika,

I will make that edit prior to issuing the Notice of Master Plan. Have a great weekend.

Paul.

From: Macki, Monika (MECP) <Monika.MacKi@ontario.ca>
Sent: September 26, 2025 12:22 PM
To: Adams, Paul (London ON) <Paul.Adams2@aecom.com>
Subject: RE: Adams, Paul (London ON) shared the folder "MECP Review" with you

Thanks Paul,

The only comment I have is on p. 10 of the Elgin Area Primary Water Supply System report, for the project tables, the treatment plant expansion should be called a “Schedule” C instead of “Class” C, to align with the terminology in the MCEA.

Monika Macki
Environmental Resource Planner/Environmental Assessment Coordinator
Environmental Assessment Branch
Ministry of the Environment, Conservation and Parks
monika.macki@ontario.ca

From: Adams, Paul (London ON) <Paul.Adams2@aecom.com>
Sent: Wednesday, September 17, 2025 10:16 AM
To: Macki, Monika (MECP) <Monika.MacKi@ontario.ca>
Subject: Adams, Paul (London ON) shared the folder "MECP Review" with you

Adams, Paul (London ON) shared a folder with you

Hi Monika,

The following link will allow you to download both the Lake Huron Primary Water Supply System and the Elgin Area Primary Water Supply system Master Plans for MECP review prior to issuing the Notice of Master Plan for each study.

Regards,

Paul.

 MECP Review

 This link only works for the direct recipients of this message.

Open

AECOM

Appendix A.6

Adjacent Communities Survey

Legend

- Already serviced by another surface water treatment plant
- Serviced by Both LHPWSS and EAPWSS
- Potential FN Customers (Munsee-Delaware, Kettle and Stoney Point, COTTFN)
- Potential Customers to Contact
- Existing EAPWSS Customers
- Existing LHPWSS Customers
- Adjacent Municipalities

N

Port Albert
Wingham
Gorrie
Fordwich
Palmerston
Arthur
Caledon Village
Belgrave
Belwood
Hillsburgh
Erin
Moorefield
Drayton
Goderich
Blyth
Brussels
Listowel
Alma
Fergus
Elora
Huron East
Atwood
Central Huron
Clinton
Huron East
Rockwood
Acton
Monkton
Elmira
Milverton
Linwood
Bayfield
Seaforth
Eden Mills
Guelph
St. Jacobs
Dublin
Wellesley
Bluewater
Mitchell
West Perth
Waterloo
Kitchener
Aberfoyle
Morriston
Bluewater
Zurich
Hensall
New Hamburg
Carlisle
Cambridge
Stratford
New Dundee
Exeter
Tavistock
Grand Bend
South Huron
Plattsville
Huron Park
Ayr
Perth South
St. Marys
Blandford-Blenheim
Drumbo
St. George
Upperwash Beach
Kettle Point
Lucan Biddulph
Lucan
East Zorra-Tavistock
Paris
Princeton
Lambton Shores
North Middlesex
Ailsa Craig
Embro
Zorra
Thorndale
Woodstock
Brant
Brantford
Forest
Arkona
Ilderton
Middlesex Centre
Beachville
Burford
Mount Pleasant
Sweaburg
Thamesford
Ingersoll
Brights Grove
Scotland
Plympton-Wyoming
Warwick
London
Dorchester
Norwich
Norwich
Hagersville
Wyoming
Watford
Thames Centre
South West Oxford
Otterville
Teeterville
Waterford
Adelaide Metcalfe
Strathroy-Caradoc
Belmont
Jarvis
Petrolia
Delhi
Tillsonburg
Simcoe
Brooke-Alvinston
Alvinston
Springfield
Brigden
Melbourne
Oneida 41
Norfolk County
Nanticoke
Oil Springs
St. Thomas
Aylmer
Malahide
Port Dover
Vittoria
Southwest Middlesex
Southwold
Central Elgin
Bayham
Strafford ville
Langton
Fingal
Union
Sparta
Turkey Point
Newbury
Vienna
Port Stanley
Port Burwell
Dutton/Dunwich
Florence
Bothwell
Port Rowan
West Lorne
Dresden
Rodney
Thamesville
Highgate
Chatham-Kent
Ridgetown
Chatham

*Notwithstanding municipalities could be serviced by LHPWSS or EAPWSS.
Municipalities may also be serviced by other water systems, including LAWSS, West Elgin (Tri-County) DWS, etc.

Adjacent Communities Contacted

- Oxford County
- Tillsonburg
- Norfolk County
- Thames Centre

Adams, Paul (London ON)

From:	Andrew Henry <ahenry@huronelginwater.ca>
Sent:	February 7, 2025 11:43 AM
To:	al.meneses@norfolkcounty.ca; stephanie.davis@norfolkcounty.ca; andrew.grice@norfolkcounty.ca; mariana.balaban@norfolkcounty.ca
Cc:	Vania Bittencourt; mmckillop; Ryan Armstrong; nancy.patterson@norfolkcounty.ca
Subject:	Master Water Plan - Elgin Area Water Supply System

The Elgin Area Primary Water Supply System (EAPWSS) has retained the services of AECOM Canada ULC (AECOM) to complete a Master Plan for the utility. The Master Plan will follow the Municipal Class Environmental Assessment Master Plan Approach 1 planning process to establish near, mid and long term (20-year planning horizon) water treatment and transmission infrastructure requirements for the EAPWSS. A project website is available here: https://www.huronelginwater.ca/elgin-area-primary-water-supply-system-master-plan/

A formal Notice of Commencement will be issued in the near future. In the meantime, we are reaching out to you today to introduce the project team and provide you with a link to a short web-based survey to understand any potential interest in a future community connection to the EAPWSS.

To support the Master Plan, we kindly request you review and complete the survey at the link below and provide your response by **February 21th, 2025**. One consolidated response from each community would be appreciated.

The survey is available here: https://form.jotform.com/250303424192042

The EAPWSS and AECOM thank-you for your attention to this request. Please contact the project team below should you have any questions.

Marcy McKillop, P.Eng.
EAPWSS Environmental Services Engineer
519-930-3505 ext. 4976
mmckillop@huronelginwater.ca

Ryan Armstrong, C.E.T.
EAPWSS Asset Management Coordinator
519-930-3505 ext. 2714
rarmstrong@huronelginwater.ca

Best Regards,

Andrew J. Henry, P.Eng. (he/him)
Director, Regional Water

Lake Huron & Elgin Area Water Supply Systems

235 North Centre Rd., Suite 200
London, Ontario N5X 4E7
T: 519.930.3505 ext.1355
E: ahenry@huronelginwater.ca
https://huronelginwater.ca
www.facebook.com/RegionalWaterSupply

Our normal working hours may differ from yours. Please do not feel obligated to reply to this email outside your normal working hours.

The Lake Huron and Elgin Area Water Systems serve communities and people that are within the traditional territories of the Anishinaabek (un-Nish-in-ah-bek), the Haudenosaunee (Ho-DE-no-show-ne), the Attawandaron (Add-a-won-da-run) and the Lunaapéewak (Len-ah-pay-wuk) peoples. We honour and respect the history, languages and culture of the diverse Indigenous Peoples who call this territory home. This region is currently home to many First Nations, Inuit and Metis people, and we are grateful to have the opportunity to work and live in this territory.

Potential For Future Connections

Master Water Plan - External Consultation

Tuesday, February 18, 2025

The Lake Huron & Elgin Area Primary Water Supply Systems are currently going through the process of updating our Master Water Plans. Through this undertaking we are reaching out to neighbouring communities to understand if there might be interest and/or considerations for future connections to the utility's transmission system. This information is intended to support our near, medium, and long term planning and growth projections forecasting.

The information contained in this survey is for informational purposes only. Supplied information is not binding on the submitting party or the Lake Huron and Elgin Area Primary Water Supply Systems. No commitments or obligations on any party are established or implied through this external consultation survey.

Although the information submitted through this survey will be used for internal planning purposes only, parts of our final Master Water Plan will become public documents so please do not include private or confidential information through this survey form. Please reach out to the utility directly should you have confidentiality issues or considerations.

Name of Community: Brooke-Alvinston

As a source of potable drinking water, would your Community have a future need for and/or desire a connection to the regional Lake Huron or Elgin Area Primary Water Supply Systems? NO – Not Anticipated in Current Planning Horizon

Please Describe the Planning Horizon Being Considered: Medium Term – 10-20 Years

Current Planning Horizon End Date: 2035

Additional Information/Comments for Consideration:

We currently receive water from Lake Huron through the Lambton Are Water Supply System (LAWSS) that draws water from Lake Huron at their facility in Point Edward. Therefore we do not anticipate a future need for water that can not be supplied from this system. However, if the Lake Huron & Elgin Area Primary Water Supply Systems were to expand to reach our borders we may consider a connection to it (if it was feasible) to have a second supply source to ensure no service disruptions due to some significant unforeseen event.

Potential For Future Connections

Master Water Plan - External Consultation

Monday, February 10, 2025

The Lake Huron & Elgin Area Primary Water Supply Systems are currently going through the process of updating our Master Water Plans. Through this undertaking we are reaching out to neighbouring communities to understand if there might be interest and/or considerations for future connections to the utility's transmission system. This information is intended to support our near, medium, and long term planning and growth projections forecasting.

The information contained in this survey is for informational purposes only. Supplied information is not binding on the submitting party or the Lake Huron and Elgin Area Primary Water Supply Systems. No commitments or obligations on any party are established or implied through this external consultation survey.

Although the information submitted through this survey will be used for internal planning purposes only, parts of our final Master Water Plan will become public documents so please do not include private or confidential information through this survey form. Please reach out to the utility directly should you have confidentiality issues or considerations.

Name of Community: Town of St. Marys

As a source of potable drinking water, would your Community have a future need for and/or desire a connection to the regional Lake Huron or Elgin Area Primary Water Supply Systems? NO – Not Anticipated in Current Planning Horizon

Please Describe the Planning Horizon Being Considered: Long Term – More Than 20 Years

Current Planning Horizon End Date: 2050

Potential For Future Connections

Master Water Plan - External Consultation

Friday, February 7, 2025

The Lake Huron & Elgin Area Primary Water Supply Systems are currently going through the process of updating our Master Water Plans. Through this undertaking we are reaching out to neighbouring communities to understand if there might be interest and/or considerations for future connections to the utility's transmission system. This information is intended to support our near, medium, and long term planning and growth projections forecasting.

The information contained in this survey is for informational purposes only. Supplied information is not binding on the submitting party or the Lake Huron and Elgin Area Primary Water Supply Systems. No commitments or obligations on any party are established or implied through this external consultation survey.

Although the information submitted through this survey will be used for internal planning purposes only, parts of our final Master Water Plan will become public documents so please do not include private or confidential information through this survey form. Please reach out to the utility directly should you have confidentiality issues or considerations.

Name of Community: Perth South

As a source of potable drinking water, would your Community have a future need for and/or desire a connection to the regional Lake Huron or Elgin Area Primary Water Supply Systems? NO – Not Anticipated in Current Planning Horizon

Please Describe the Planning Horizon Being Considered: Medium Term – 10-20 Years

Current Planning Horizon End Date: 2025

Potential For Future Connections

Master Water Plan - External Consultation

Monday, March 3, 2025

The Lake Huron & Elgin Area Primary Water Supply Systems are currently going through the process of updating our Master Water Plans. Through this undertaking we are reaching out to neighbouring communities to understand if there might be interest and/or considerations for future connections to the utility's transmission system. This information is intended to support our near, medium, and long term planning and growth projections forecasting.

The information contained in this survey is for informational purposes only. Supplied information is not binding on the submitting party or the Lake Huron and Elgin Area Primary Water Supply Systems. No commitments or obligations on any party are established or implied through this external consultation survey.

Although the information submitted through this survey will be used for internal planning purposes only, parts of our final Master Water Plan will become public documents so please do not include private or confidential information through this survey form. Please reach out to the utility directly should you have confidentiality issues or considerations.

Name of Community: Munsee Delaware Nation

As a source of potable drinking water, would your Community have a future need for and/or desire a connection to the regional Lake Huron or Elgin Area Primary Water Supply Systems? YES – Potential Being Considered in Current Planning Horizon

Please Describe the Planning Horizon Being Considered: Near Term – Less Than 10 Years

Current Planning Horizon End Date: 2030

Regarding Serviced Area, What Portion of Your Community is Serviced by a Local Water Distribution System?

Current Serviced Area (%)	76%-100%

Regarding Supply, Is the Connection to the Lake Huron or Elgin Area Primary Water Supply System Envisioned to be: Sole Supply to Community

Combined Water Demand Projections for Your Community (residential, industrial, commercial, and institutional):

	2025	2030	2035	2040	2045
Water Demand (ML/day)	101.7				

Additional Information/Comments for Consideration:

Hi it is unknown at this time what the demand ML/day will be required for our Nation, projecting forward to 2045. We are in the process of getting our Capital Planning Study updated, and will know better after this data has been collected from the engineering company, tasked to complete the work.

Thanks
Kevin

Potential For Future Connections

Master Water Plan - External Consultation

Friday, February 14, 2025

The Lake Huron & Elgin Area Primary Water Supply Systems are currently going through the process of updating our Master Water Plans. Through this undertaking we are reaching out to neighbouring communities to understand if there might be interest and/or considerations for future connections to the utility's transmission system. This information is intended to support our near, medium, and long term planning and growth projections forecasting.

The information contained in this survey is for informational purposes only. Supplied information is not binding on the submitting party or the Lake Huron and Elgin Area Primary Water Supply Systems. No commitments or obligations on any party are established or implied through this external consultation survey.

Although the information submitted through this survey will be used for internal planning purposes only, parts of our final Master Water Plan will become public documents so please do not include private or confidential information through this survey form. Please reach out to the utility directly should you have confidentiality issues or considerations.

Name of Community: Oxford County

As a source of potable drinking water, would your Community have a future need for and/or desire a connection to the regional Lake Huron or Elgin Area Primary Water Supply Systems? YES – Potential Being Considered in Current Planning Horizon

Please Describe the Planning Horizon Being Considered: Long Term – More Than 20 Years

Current Planning Horizon End Date: 2047

Regarding Serviced Area, What Portion of Your Community is Serviced by a Local Water Distribution System?

Current Serviced Area (%)	51%-75%

Regarding Supply, Is the Connection to the Lake Huron or Elgin Area Primary Water Supply System Envisioned to be: Supplementary Supply for the Community

Percentage of Your Community's Water Demands Envisioned Taken from the Lake Huron or Elgin Area Primary Water Supply System (%): 30

Combined Water Demand Projections for Your Community (residential, industrial, commercial, and institutional):

	2025	2030	2035	2040	2045
Water Demand (ML/day)	32.5	34.5	36.4	38.8	41.3

Additional Information/Comments for Consideration:

Interested in supplementing one urban area currently 100% groundwater based outside of the current planning horizon of 2046.

Potential For Future Connections

Master Water Plan - External Consultation

Friday, April 4, 2025

The Lake Huron & Elgin Area Primary Water Supply Systems are currently going through the process of updating our Master Water Plans. Through this undertaking we are reaching out to neighbouring communities to understand if there might be interest and/or considerations for future connections to the utility's transmission system. This information is intended to support our near, medium, and long term planning and growth projections forecasting.

The information contained in this survey is for informational purposes only. Supplied information is not binding on the submitting party or the Lake Huron and Elgin Area Primary Water Supply Systems. No commitments or obligations on any party are established or implied through this external consultation survey.

Although the information submitted through this survey will be used for internal planning purposes only, parts of our final Master Water Plan will become public documents so please do not include private or confidential information through this survey form. Please reach out to the utility directly should you have confidentiality issues or considerations.

Name of Community: village of Dorchester / village of Thorndale

As a source of potable drinking water, would your Community have a future need for and/or desire a connection to the regional Lake Huron or Elgin Area Primary Water Supply Systems? YES – Potential Being Considered in Current Planning Horizon

Please Describe the Planning Horizon Being Considered: Medium Term – 10-20 Years

Current Planning Horizon End Date: 2030

Regarding Serviced Area, What Portion of Your Community is Serviced by a Local Water Distribution System?

Current Serviced Area (%)	51%-75%

Regarding Supply, Is the Connection to the Lake Huron or Elgin Area Primary Water Supply System Envisioned to be: Supplementary Supply for the Community

Percentage of Your Community's Water Demands Envisioned Taken from the Lake Huron or Elgin Area Primary Water Supply System (%): 30

Combined Water Demand Projections for Your Community (residential, industrial, commercial, and institutional):

	2025	2030	2035	2040	2045
Water Demand (ML/day)	650	660	680	700	725

Additional Information/Comments for Consideration:

Dorchester and Thorndale are two separate drinking water systems. There are currently no watermain or service connections outside these two urban boundaries.

Appendix A.7

Public Consultation

Adams, Paul (London ON)

From:	Sam Gustavson <SGustavson@malahide.ca>
Sent:	March 6, 2025 9:16 AM
To:	Marcy McKillop; Adams, Paul (London ON)
Cc:	Nathan Dias; Allison Adams; Jason Godby; Adam Boylan; Ed Roloson; Thomas Thayer; Alex Piggott; Geoff Brooks; Connor Bailey; Robert Johnson; Andy Grozelle; Pete Barbour; nwatson@centralelgin.org; Chester Glinski; temerson@bayham.on.ca; Trevor Martin
Subject:	Letter from AASWSS and PBASWSS- Notice of Commencement - Elgin Area Primary Water Supply System Master Plan
Attachments:	Letter to EAPWSS from AASWSS and PBASWSS MASTER WATER PLAN MCEA - Copy.pdf

Good morning Marcy and Paul,

I am reaching out today to forward the attached letter to you both on behalf of the Aylmer and Port Burwell Area Secondary Water Supply Systems. We would like to request that the Boards be included in all future correspondence related to the MCEA and be notified of the scheduled meeting time for the Virtual Public Information Centre (PIC) to be held in June 2025.

We appreciate the EAPWSS's attention to our request.

Kind regards,

Sam Gustavson
Water/Wastewater Operations Manager
Office: 519.773.5344 x226
Fax: 519.773.5334

Township of Malahide
87 John Street South
Aylmer, ON
N5H 2C3

notified that any review, printing, dissemination, distribution, disclosure, or copying of this communication, or any of its contents, is strictly prohibited.

From: Marcy McKillop <mmckillop@huronelginwater.ca>
Sent: Friday, February 14, 2025 10:17 AM
To: karla.barboza@ontario.ca; lise.Chabot@ontario.ca; enviropermissions@ontario.ca; SR.Planning@ontario.ca; secondarylanduse@hydroone.com; erick.boyd@ontario.ca; stephen.turner@mlhu.on.ca; alexander.summers@mlhu.on.ca; cwalker@elginhealth.on.ca; tramsay@elginhealth.on.ca; krosebrugh@grandriver.ca; sdahmer@grandriver.ca; Greg Henderson <ghenderson@ocwa.com>; Nicholas Wilson <nwilson@ocwa.com>; Austin Sherwin <asherwin@ocwa.com>; Jackie Muller <jmuller@ocwa.com>; Scherr, Kelly <kscherr@london.ca>; Rammeloo, Ashley <arammelo@london.ca>; Rozentals, Aaron <arozenta@london.ca>; Huggins, Daniel <dhuggins@london.ca>; Andrew, Chris <candrew@stthomas.ca>; kdeleebeeck@stthomas.ca; Lawrence, Justin <jlawrence@stthomas.ca>; Jason Godby <JGodby@malahide.ca>; Sam Gustavson <SGustavson@malahide.ca>; Nathan Dias <NDias@malahide.ca>; Robert Johnson <rjohnson@town.aylmer.on.ca>; cbailey@town.aylmer.on.ca; Jennifer Reynaert <jreynaert@town.aylmer.on.ca>; roads@southwold.ca; cao@southwold.ca; development@southwold.ca; enviroservices@southwold.ca; mvaughan@elgin.ca; eroloson@bayham.on.ca; tthayer@bayham.on.ca; sadams@bayham.ca; tmartin@centralelgin.org; apiggott@centralelgin.org; gbrooks <gbrooks@centralelgin.org>; cao@centralelgin.org; tkretschmer@duttondunwich.on.ca; rmcgahan@duttondunwich.on.ca; Joe Gordon <joe@kettlecreekconservation.on.ca>; elizabeth@kettlecreekconservation.on.ca; winfieldk@thamesriver.ca; valerie.towsley@ltvca.ca; lmauthe@lprca.on.ca; generalmanager@catfishcreek.ca; councilloradzija@southwold.ca; pbarbour@town.aylmer.on.ca; jherbert@stthomas.ca; Hillier, Steve <shillier@london.ca>; Peloza, Elizabeth <epeloza@london.ca>; speters@stthomas.ca; sstevenson@london.ca; gclarke@stthomas.ca; temerson@bayham.on.ca; kloveland@duttondunwich.on.ca; hmcalister@london.ca; Van Meerbergen, Paul <pvanmeerbergen@london.ca>; nwatson@centralelgin.org; Mark Widner <MWidner@malahide.ca>
Cc: RWS All Staff <rws-staff@huronelginwater.ca>; Wan, Benny <Benny.Wan@aecom.com>; Adams, Paul (London ON) <Paul.Adams2@aecom.com>
Subject: Notice of Commencement - Elgin Area Primary Water Supply System Master Plan

Good morning,

Please find attached the Notice of Commencement for the Elgin Area Primary Water Supply System Master Plan.

Further updates will be provided on the Master Plan website.

Subsequent Master Plan notices will be issued by email. Please let me know of any changes to project contacts, so the project contact list can be updated.

Best regards,

Marcy McKillop, P.Eng. (she/her)
Environmental Services Engineer, Regional Water Supply

Lake Huron & Elgin Area Primary Water Supply Systems
235 North Centre Road, Suite 200
London, Ontario N5X 4E7
T: 519-930-3505 ext. 4976
E: mmckillop@huronelginwater.ca
https://huronelginwater.ca
www.facebook.com/RegionalWaterSupply

87 John Street South
Aylmer ON N5H 2C3
Phone: 519-773-5344
Fax: 519-773-5334
Website: www.malahide.ca

Marcy McKillop, P.Eng
Environmental Services Engineer
Regional Water Supply
Lake Huron and Elgin Area Primary Water Supply Systems
235 North Centre Road, Suite 200
London ON, N5X 4E7
Tel:519-930-3505 x4976
Email: mmckillop@huronelginwater.ca

Paul Adams, CPT
Environmental Planner,
AECOM Canada ULC. 250 York Street, Suite 410
London ON, N6A 6K2
Tel: 519-636-6448
Email:
paul.adams2@aecom.com

Sent via email: mmckillop@huronelginwater.ca
paul.adams2@aecom.com

RE: Elgin Area Primary Water Supply System (EAPWSS) Master Plan Municipal Class Environmental Assessment (MCEA)

Re: Elgin Area Primary Water Supply System (EAPWSS) Master Plan Municipal Class Environmental Assessment (MCEA)

Dear Marcy,

We have received the Notice of Study Commencement for the EAPWSS Master Plan Municipal Class Environmental Assessment (MCEA) study.

As the EAPWSS is aware, the Township of Malahide acts as the administering municipality for the Joint Boards of Management for both the Aylmer Area Secondary Water Supply System (AASWSS) and the Port Burwell Area Secondary Water Supply System (PBASWSS), which both receive all their water from the EAPWSS.

The AASWSS Joint Board is comprised of three-member municipalities: the Town of Aylmer, the Municipality of Central Elgin, and the Township of Malahide.

Similarly, the PBASWSS Joint Board consists of three-member municipalities: the Municipality of Bayham, the Municipality of Central Elgin, and the Township of Malahide.

Accordingly, as the administering municipality acting on behalf of both the AASWSS and PBASWSS, we are requesting that each of the aforementioned water boards be included in all future correspondence related to the MCEA and be notified of the scheduled meeting time for the Virtual Public Information Centre (PIC) to be held in June 2025.

Sincerely,

Jason Godby
Director of Public Works

Cc: AASWSS Joint Board of Management Members
PBASWSS Joint Board of Management Members
Nathan Dias, CAO, Township of Malahide
Allison Adams, Manager of Legislative Services/Clerk, Township of Malahide
Sam Gustavson, Water/Wastewater Operations Manager, Township of Malahide

Adams, Paul (London ON)

From: Reitsma, Shayne <sreitsma@stthomas.ca>
Sent: July 28, 2025 9:28 AM
To: 'Marcy McKillop'
Cc: Adams, Paul (London ON); Armstrong, Ryan; Andrew Henry; Billy Haklander; Wan, Benny; Awde, Neil
Subject: RE: Elgin Area Primary Water Supply System Master Plan

Good morning,

Friday Aug 1 9-11 works for me.

Thanks,

-

ST. THOMAS
THE RAILWAY CITY

Shayne Reitsma, P. Eng.
Manager of Development and Compliance

Phone: 519-631-1680 ext 4151
Email: sreitsma@stthomas.ca
545 Talbot Street, PO Box 520
St. Thomas, ON N5P 3V7

www.stthomas.ca

From: Marcy McKillop <mmckillop@huronelginwater.ca>
Sent: Sunday, July 27, 2025 9:12 PM
To: Reitsma, Shayne <sreitsma@stthomas.ca>
Cc: '"paul.adams2@aecom.com"' <paul.adams2@aecom.com>; Armstrong, Ryan <rarmstro@london.ca>; Andrew Henry <ahenry@huronelginwater.ca>; Billy Haklander <bhakland@huronelginwater.ca>; Wan, Benny <benny.wan@aecom.com>; Awde, Neil <neil.awde@aecom.com>
Subject: RE: Elgin Area Primary Water Supply System Master Plan

Hi Shayne,

It looks like Andrew is unavailable on July 30.

Let us know if Friday, August 1 would work between 9 am and 11 am, or 2-4 pm. If so, please send a virtual Teams meeting invitation to me, Andrew Henry and Ryan Armstrong. Billy Haklander can be invited as optional.

Thank you,

-Marcy

From: Reitsma, Shayne <sreitsma@stthomas.ca>
Sent: Friday, July 25, 2025 3:06 PM
To: Marcy McKillop <mmckillop@huronelginwater.ca>
Cc: '"paul.adams2@aecom.com"' <paul.adams2@aecom.com>; Armstrong, Ryan <rarmstro@london.ca>; Andrew Henry <ahenry@huronelginwater.ca>; Billy Haklander <bhakland@huronelginwater.ca>; Wan, Benny <benny.wan@aecom.com>; Awde, Neil <neil.awde@aecom.com>
Subject: RE: Elgin Area Primary Water Supply System Master Plan

Good afternoon Marcy,

Sorry for the delay I am free July 30th 1-4pm however noting that I am a few days late on response if you need a different day let me know.

Thanks,

-

ST. THOMAS
THE RAILWAY CITY

Shayne Reitsma, P. Eng.
Manager of Development and Compliance

Phone: 519-631-1680 ext 4151
Email: sreitsma@stthomas.ca
545 Talbot Street, PO Box 520
St. Thomas, ON N5P 3V7

www.stthomas.ca

From: Marcy McKillop <mmckillop@huronelginwater.ca>
Sent: Friday, July 18, 2025 4:58 PM
To: Reitsma, Shayne <sreitsma@stthomas.ca>
Cc: De Leebeeck, Kevin <kdeleebeeck@cityofstthomas.onmicrosoft.com>; '"paul.adams2@aecom.com"' <paul.adams2@aecom.com>; Armstrong, Ryan <rarmstro@london.ca>; Andrew Henry <ahenry@huronelginwater.ca>; Billy Haklander <bhakland@huronelginwater.ca>; Wan, Benny <benny.wan@aecom.com>; Awde, Neil <neil.awde@aecom.com>
Subject: RE: Elgin Area Primary Water Supply System Master Plan

Good afternoon Shayne,

Thank you for your email. Let's have a virtual Teams meeting to further discuss.

Best availability for EAPWSS is Wednesday, July 30 from 10 am – 12 noon, or 1 pm – 4 pm.

Please confirm your availability.

Thank you,

Marcy McKillop, P.Eng., PMP (she/her)
Environmental Services Engineer, Regional Water Supply

Lake Huron & Elgin Area Primary Water Supply Systems
235 North Centre Road, Suite 200
London, Ontario N5X 4E7
T: 519-930-3505 ext. 4976
E: mmckillop@huronelginwater.ca
https://huronelginwater.ca
www.facebook.com/RegionalWaterSupply

The Lake Huron and Elgin Area Primary Water Supply Systems serve 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.

From: Reitsma, Shayne <sreitsma@stthomas.ca>
Sent: Wednesday, July 16, 2025 3:56 PM
To: '"paul.adams2@aecom.com"' <paul.adams2@aecom.com>; Marcy McKillop <mmckillop@huronelginwater.ca>
Cc: De Leebeeck, Kevin <kdeleebeeck@cityofstthomas.onmicrosoft.com>
Subject: Elgin Area Primary Water Supply System Master Plan

Good afternoon Marcy and Paul,

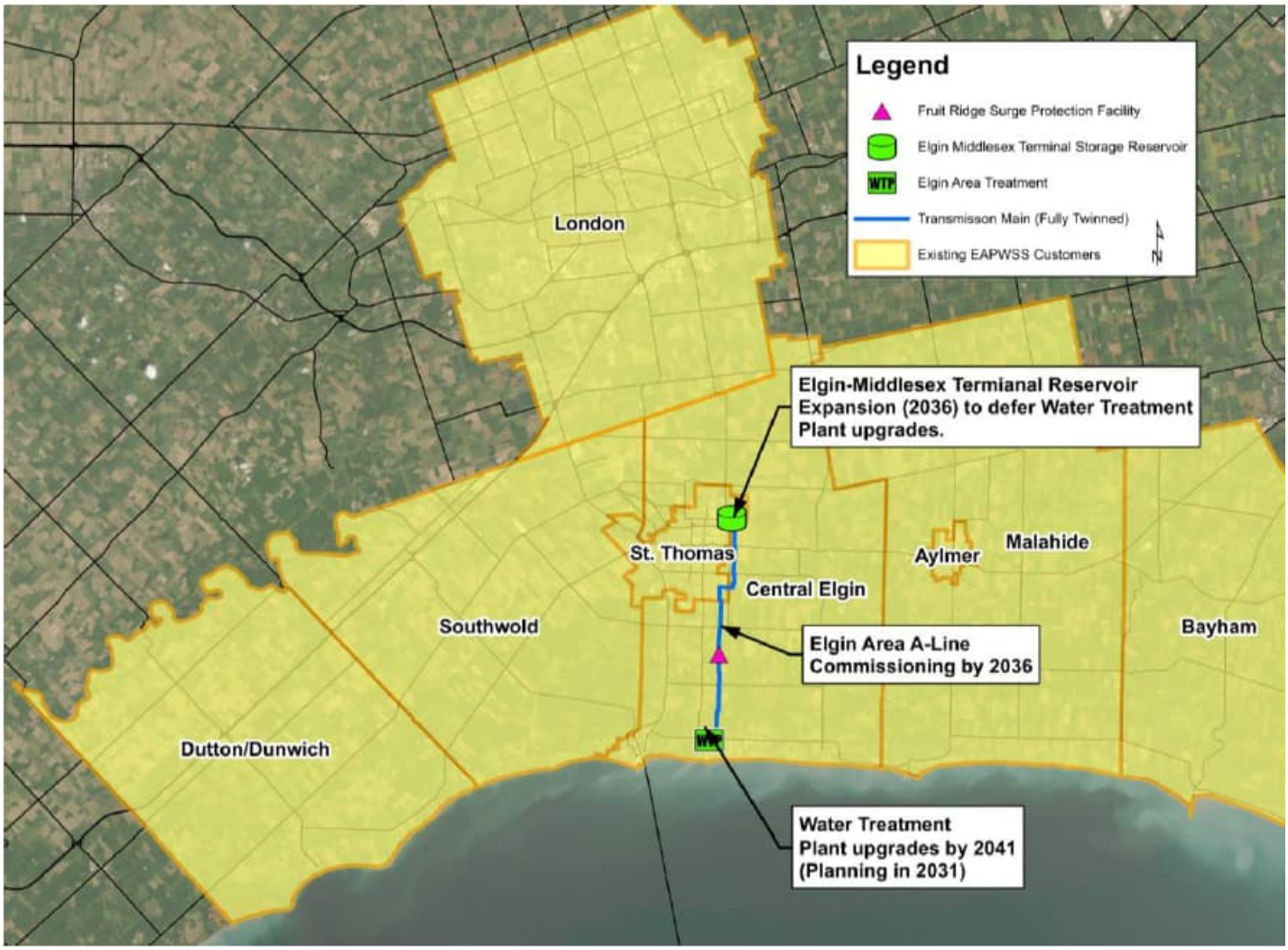
It was only today that I was able to get ahold of the slides you showed at your Public Meeting and I have a couple concerns with the proposed timeline your showing.

Page 25 of the PDF (Screen Shot below) has the Elgin-Middlesex reservoir expansion for 2036 along with a plant expansion for 2041.

With the provincial (Province of Ontario) agreements we have for the PowerCO site the City will need these upgrades much sooner than your current proposal. PowerCo plans to start operating in 2029.

Would we be able to set up a meeting to go over the timelines and what is needed to fulfill the provincial agreements?

Thanks,



-

Shayne Reitsma, P. Eng.
Manager of Development and Compliance

Phone: 519-631-1680 ext 4151
Email: sreitsma@stthomas.ca
545 Talbot Street, PO Box 520
St. Thomas, ON N5P 3V7

www.stthomas.ca

Adams, Paul (London ON)

From: Simons, Matthew
Sent: September 15, 2025 9:37 AM
To: Wan, Benny; Adams, Paul (London ON); Horne, Lucy; Grueneis, Karl; Tsang, Vincent
Subject: FW: Elgin Area Primary Water Supply System - Master Plan - City of St. Thomas Water Demand Projections

Matt Simons
Process Engineer
D: 519.963.5896
matthew.simons@aecom.com

From: Marcy McKillop <mmckillop@huronelginwater.ca>
Sent: September 10, 2025 10:08 AM
To: Wan, Benny <Benny.Wan@aecom.com>; Adams, Paul (London ON) <Paul.Adams2@aecom.com>
Cc: Ryan Armstrong <rarmstrong@huronelginwater.ca>; Awde, Neil <Neil.Awde@aecom.com>; Simons, Matthew <Matthew.Simons@aecom.com>
Subject: FW: Elgin Area Primary Water Supply System - Master Plan - City of St. Thomas Water Demand Projections

FYI

Please capture as Master Plan correspondence for the report appendix.

From: Marcy McKillop
Sent: Friday, September 5, 2025 5:21 PM
To: 'De Leebeeck, Kevin' <kdeleebeeck@cityofstthomas.onmicrosoft.com>
Cc: Andrew Henry <ahenry@huronelginwater.ca>; Billy Haklander <bhakland@huronelginwater.ca>; Reitsma, Shayne <sreitsma@stthomas.ca>; Lawrence, Justin <jlawrence@stthomas.ca>; Ryan Armstrong <rarmstrong@huronelginwater.ca>
Subject: RE: Elgin Area Primary Water Supply System - Master Plan - City of St. Thomas Water Demand Projections

Hi Kevin,

Thank you for your email. We can certainly meet again to discuss the Yarmouth Yards demand projections. The Master Plan is not intended to include any site-specific water demand data or details.

Please note that the EAPWSS requires supporting information to accompany any demand estimates, in particular estimates that exceed the MECP upper limit allowance of 55 m^3/ha.day for industrial developments.

Please clarify your request below regarding the additional 8.53 MLD. Is this considered in addition to the values shown in Table 3-6 below? Please confirm.

Our team has availability for a meeting on Monday between 9 am and 11 am if that works for you. Feel free to send me a virtual meeting invitation.

Best regards,

Marcy McKillop, P.Eng., PMP (she/her)
Environmental Services Engineer, Regional Water Supply

Lake Huron & Elgin Area Primary Water Supply Systems
235 North Centre Road, Suite 200
London, Ontario N5X 4E7
T: 519-930-3505 ext. 4976
E: mmckillop@huronelginwater.ca
https://huronelginwater.ca
www.facebook.com/RegionalWaterSupply

The Lake Huron and Elgin Area Primary Water Supply Systems serve 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.

From: De Leebeeck, Kevin <kdeleebeeck@cityofstthomas.onmicrosoft.com>
Sent: Friday, September 5, 2025 1:20 PM
To: Marcy McKillop <mmckillop@huronelginwater.ca>
Cc: Andrew Henry <ahenry@huronelginwater.ca>; Billy Haklander <bhakland@huronelginwater.ca>; Reitsma, Shayne <sreitsma@stthomas.ca>; Lawrence, Justin <jlawrence@stthomas.ca>
Subject: RE: Elgin Area Primary Water Supply System - Master Plan - City of St. Thomas Water Demand Projections

Hi Marcy,

Thank you for your response. However, I must reiterate that the City's concerns remain unresolved.

While using typical MECP ICI values for the remainder of lands within Yarmouth Yards may be reasonable, the forecasted timeline is not. As discussed PowerCo and Project Bravo are not typical ICI users, as acknowledged by Andrew during our recent meeting. These developments require special consideration beyond MECP averages, and the Tech. Memo excerpts provided below do not adequately reflect their impact.

You emphasized in Tuesday's meeting that the goal of the November 14, 2024 presentation was to reconcile population growth with water demand projections and to reach a consensus on projected water demand. It is clear that consensus was not reached with the City, particularly given that updated information was provided within 2 business days of that meeting. Since then, there has been no outreach from the EAPWSS or its consultant to clarify or discuss the updated water demand information provided. To suggest otherwise appears to be an attempt to justify the continued use of outdated or incomplete information. We are looking to move past this and focus on ensuring the Master Plan reflects accurate and current data.

Even under the high-growth scenario, the ADD projection for ICI in Yarmouth Yards falls short of capturing the scale and timing of anticipated demand. The current ICI projections do not support PowerCo and Project Bravo's combined demand until 2046, which is well beyond the timeline required (2026-2031), and excludes any other potential Yarmouth Yards development.

With that in mind can you please confirm there is operational flexibility within the EAPWSS treatment and transmission system to accommodate at least an additional 8.53 ML/d in the short-term (i.e. between 2026 and 2031)? If not, then I strongly suggest we engage in collaborative effort to revise the draft Master Plan using corrected demand data and adjust recommendations accordingly, prior to posting for public comment.

We remain open to working with the EAPWSS to ensure its Master Plan reflects accurate data and responds appropriately to known development demand.

Thanks,

Kevin De Leebeeck, MPA, P. Eng.
Director of Environmental & Infrastructure Services |
City Engineer

From: Marcy McKillop <mmckillop@huronelginwater.ca>
Sent: Wednesday, September 3, 2025 5:45 PM
To: De Leebeeck, Kevin <kdeleebeeck@cityofstthomas.onmicrosoft.com>
Cc: Andrew Henry <ahenry@huronelginwater.ca>; Billy Haklander <bhakland@huronelginwater.ca>; Reitsma, Shayne <sreitsma@stthomas.ca>
Subject: RE: Elgin Area Primary Water Supply System - Master Plan - City of St. Thomas Water Demand Projections

Hi Kevin,

The Elgin Area Primary Water Supply System Master Plan included consideration of low, moderate and high growth projections for each member municipality.

The approach for St. Thomas involved consideration of population/residential growth, as well as separate consideration of institutional-commercial-industrial (ICI) growth (specially for Yarmouth Yards). The team reviewed multiple sources of flows and projections for the Power Co site to best reconcile the data. Very limited information was available regarding Project Bravo. The approach for establishing water demands was not limited to relying upon a single estimate, and back-up and supporting data was reviewed, where available. The current MECP industrial water demand allowance of 35-55 m^3/ha.d was considered for ICI sources.

Based on our Teams meeting on November 14, the approach for deriving residential and ICI flow estimates for St. Thomas was presented, along with some discussion regarding reconciliation of flows. The Master Plan approach considers average day demand for the regional water system, with additional demand being met by each member municipality's distribution system.

We did not receive any clarification or supporting data for the estimates, provided by email on November 18, to allow for the effective reconciliation of the data.

The EAPWSS Master Plan does not present any separate water demands for either Power Co of Project Bravo. Instead, a total St. Thomas ICI allowance is provided which is intended to include the entire Yarmouth Yards industrial subdivision (Power Co, Project Bravo, and the remaining 229.2 ha of Yarmouth Yards) . A screenshot of an appendix of the EAPWSS Master Plan is provided below:

Table 3-6: Projected Demand for St. Thomas (Major ICI Developments)

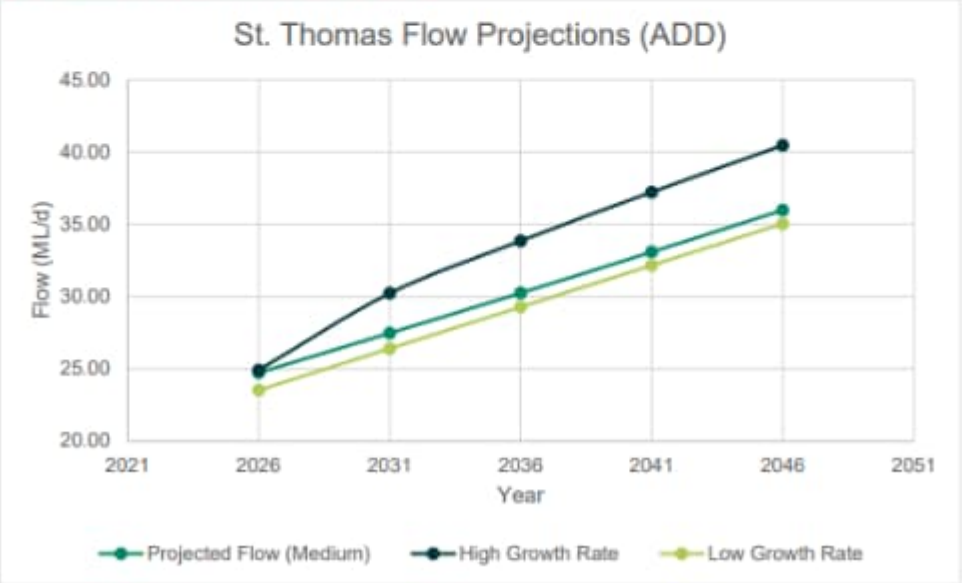
St. Thomas ICI Development	2026	2031	2036	2041	2046
ADD (ML/d)	11.27	13.27	15.27	17.27	19.27

By summing the water demands from population growth and the major ICI developments, the total ADD projection is shown in **Table 3-7** and **Figure 3-3.**

Table 3-7: Projected ADD for St. Thomas (Total)

	ADD (ML/d)				
	2026	2031	2036	2041	2046
Calculated Low Growth Flow Projection	23.52	26.40	29.28	32.16	35.05
Calculated Medium Growth Flow Projection	24.73	27.47	30.25	33.09	35.99
Calculated High Growth Flow Projection	24.91	30.23	33.85	37.23	40.46

Figure 3-3: St. Thomas Flow Projections (ADD)



Let me know if you would like to further discuss. Please keep in mind we revisit and update the EAPWSS Master Plan, including our water demand projections on a regular basis, at least every five years. The EAPWSS Master Plan report will be posted for review and comment this fall, anticipated for a 30-day review period from mid-October to mid-November.

As Andrew indicated during our call yesterday afternoon, operational flexibility allows us to manage and adjust the EAPWSS treatment and transmission system to meet any increased demands in the short-term.

Best regards,

Marcy McKillop, P.Eng., PMP (she/her)
Environmental Services Engineer, Regional Water Supply

Lake Huron & Elgin Area Primary Water Supply Systems
235 North Centre Road, Suite 200
London, Ontario N5X 4E7
T: 519-930-3505 ext. 4976
E: mmckillop@huronelginwater.ca
https://huronelginwater.ca
www.facebook.com/RegionalWaterSupply

The Lake Huron and Elgin Area Primary Water Supply Systems serve 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.

From: De Leebeeck, Kevin <kdeleebeeck@cityofstthomas.onmicrosoft.com>
Sent: Tuesday, September 2, 2025 2:07 PM
To: Marcy McKillop <mmckillop@huronelginwater.ca>
Cc: Andrew Henry <ahenry@huronelginwater.ca>; Billy Haklander <bhakland@huronelginwater.ca>
Subject: FW: Elgin Area Primary Water Supply System - Master Plan - City of St. Thomas Water Demand Projections

Hi Marcy,

Further to your comment in our meeting this afternoon that the numbers presented in November were the values carried forward in the Master Plan study. The message below following the November presentation provides updated flow demands for PowerCo & Project Bravo.

Please confirm that these updated values were used/carried forward in the Master Plan study.

Thanks,

Kevin De Leebeeck, MPA, P. Eng.
Director of Environmental & Infrastructure Services |
City Engineer

From: Kamerman, Karel
Sent: November 18, 2024 4:31 PM
To: Marcy McKillop <mmckillop@huronelginwater.ca>; De Leebeeck, Kevin <kdeleebeeck@stthomas.ca>
Cc: Andrew Henry <ahenry@huronelginwater.ca>; Billy Haklander <bhakland@huronelginwater.ca>; Ryan Armstrong <rarmstrong@huronelginwater.ca>; Bradley, Michael <mbradley@stthomas.ca>; Lawrence, Justin <jlawrence@stthomas.ca>; Pompilii, Lou <lPompilii@stthomas.ca>; Reitsma, Shayne <sreitsma@stthomas.ca>
Subject: RE: Elgin Area Primary Water Supply System - Master Plan - City of St. Thomas Water Demand Projections

Good afternoon,

We have been able to confirm some flow values for PowerCO and Project Bravo. Please see updated anticipated demands table below. Project Bravo property is anticipated to be approximately 100 ha in size.

Year	Avg. Day (m3/day)	Max Day (m3/day)
2026	14,580	25,515
2031	40,120	58,638
2036	48,460	74,883
2041	53,010	83,616
2046	54,330	85,926

As mentioned during the meeting last week, the water service population values provided in the survey are the anticipated number of service connections, rather than serviced population values.

Best Regards,

Karel

Karel Kamerman
Environmental Compliance Coordinator

Phone: 519-631-1680 x4224
Email: kkamerman@stthomas.ca
545 Talbot Street, PO Box 520
St. Thomas, ON N5P 3V7

www.stthomas.ca

From: Marcy McKillop <mmckillop@huronelginwater.ca>
Sent: Thursday, November 14, 2024 12:09 PM
To: De Leebeeck, Kevin <kdeleebeeck@stthomas.ca>
Cc: Andrew Henry <ahenry@huronelginwater.ca>; Billy Haklander <bhakland@huronelginwater.ca>; Ryan Armstrong <rarmstrong@huronelginwater.ca>; Bradley, Michael <mbradley@stthomas.ca>; Kamerman, Karel <kkamerman@stthomas.ca>; Lawrence, Justin <jlawrence@stthomas.ca>; Pompilii, Lou <lPompilii@stthomas.ca>; Reitsma, Shayne <sreitsma@stthomas.ca>
Subject: RE: Elgin Area Primary Water Supply System - Master Plan - City of St. Thomas Water Demand Projections

Hi Kevin,

As a follow-up to our meeting this morning, please find attached the presentation slides that I shared.

As discussed, any average day flow estimates for Project Bravo (along with development size/area) would be helpful if this source is anticipated to be a higher water user, similarly to Power Co.

Best regards,

Marcy McKillop, P.Eng. (she/her)
Environmental Services Engineer, Regional Water Supply

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From: Marcy McKillop
Sent: Monday, November 4, 2024 10:59 AM
To: De Leebeeck, Kevin <kdeleebeeck@stthomas.ca>
Cc: Andrew Henry <ahenry@huronelginwater.ca>; Billy Haklander <bhakland@huronelginwater.ca>; Ryan Armstrong <rarmstrong@huronelginwater.ca>; Bradley, Michael <mbradley@stthomas.ca>; Kamerman, Karel <kkamerman@stthomas.ca>; Lawrence, Justin <jlawrence@stthomas.ca>; Pompilii, Lou <lPompilii@stthomas.ca>; Reitsma, Shayne <sreitsma@stthomas.ca>
Subject: RE: Elgin Area Primary Water Supply System - Master Plan - City of St. Thomas Water Demand Projections

Hi Kevin,

We can accommodate the proposed meeting timing. Please confirm attendance from St. Thomas and if everyone on this email thread should be included in the Teams meeting.

I will send the Teams invitation later today.

Thanks,

-Marcy

From: De Leebeeck, Kevin <kdeleebeeck@stthomas.ca>
Sent: Monday, November 4, 2024 10:39 AM
To: Marcy McKillop <mmckillop@huronelginwater.ca>; Bradley, Michael <mbradley@stthomas.ca>; Kamerman, Karel <kkamerman@stthomas.ca>; Lawrence, Justin <jlawrence@stthomas.ca>; Pompilii, Lou <lPompilii@stthomas.ca>; Reitsma, Shayne <sreitsma@stthomas.ca>
Cc: Andrew Henry <ahenry@huronelginwater.ca>; Billy Haklander <bhakland@huronelginwater.ca>; Ryan Armstrong

<rarmstrong@huronelginwater.ca>
Subject: RE: Elgin Area Primary Water Supply System - Master Plan - City of St. Thomas Water Demand Projections

Hi Marcy,

The only time I can find where most St. Thomas staff are available the week of November 11th is on Thursday Nov. 14 from 11am-noon.

If you could kindly send a meeting invite to hold this time in our calendars, that would be great.

Thanks,

Kevin De Leebeeck, MPA, P. Eng.
Director of Environmental & Infrastructure Services |
City Engineer

From: Marcy McKillop <mmckillop@huronelginwater.ca>
Sent: Friday, November 1, 2024 3:40 PM
To: Bradley, Michael <mbradley@stthomas.ca>; Kamerman, Karel <kkamerman@stthomas.ca>; lpompilli@stthomas.ca; De Leebeeck, Kevin <kdeleebeeck@stthomas.ca>; Lawrence, Justin <jlawrence@stthomas.ca>
Cc: Andrew Henry <ahenry@huronelginwater.ca>; Billy Haklander <bhakland@huronelginwater.ca>; Ryan Armstrong <rarmstrong@huronelginwater.ca>
Subject: Elgin Area Primary Water Supply System - Master Plan - City of St. Thomas Water Demand Projections

Good afternoon,

The Elgin Area Primary Water Supply System initiated a Master Plan earlier this year to assess long term regional water supply needs. More information is available here: https://www.huronelginwater.ca/elgin-area-primary-water-supply-system-master-plan/

Our team is currently struggling to confirm and reconcile population and water demand projections for the City of St. Thomas for consideration in this Master Plan.

Please confirm City of St. Thomas staff availability for a virtual Teams meeting the week of November 11, 2024 to discuss.

Best regards,

Marcy McKillop, P.Eng. (she/her)
Environmental Services Engineer, Regional Water Supply

Lake Huron & Elgin Area Primary Water Supply Systems
235 North Centre Road, Suite 200
London, Ontario N5X 4E7
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https://huronelginwater.ca
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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.

Adams, Paul (London ON)

From:	mmckillop
Sent:	September 23, 2025 12:14 PM
To:	De Leebeeck, Kevin
Cc:	Andrew Henry; Billy Haklander; Reitsma, Shayne; Lawrence, Justin; Ryan Armstrong; John Walker
Subject:	RE: Elgin Area Primary Water Supply System - Master Plan - City of St. Thomas Water Demand Projections
Attachments:	table provided by st. thomas sept22.png

Good afternoon Kevin,

Thank you for your email.

I have attached the water demand data that was presented by St. Thomas at yesterday's meeting, which differs from the data presented below. Please confirm that the EAPWSS should treat the information provided in your email below as the updated/final data to replace/supersede previous data provided to date by St. Thomas. Please also confirm whether any further information will be provided to the EAPWSS to support the data below, to allow for effective review and reconciliation of data. The PowerCo estimates provided below differ significantly from previous estimates (prepared by various consulting engineers) for this site.

Please note that a letter will be provided by the EAPWSS to address communication to date, as well the items you listed below.

Please note that this email chain below will be captured/included in the Master Plan consultation record (in an Appendix of the Master Plan report). If there are any details you would prefer be redacted, please let me know by the end of the month.

Best regards,

Marcy McKillop, P.Eng., PMP (she/her)
Environmental Services Engineer, Regional Water Supply

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235 North Centre Road, Suite 200
London, Ontario N5X 4E7
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From: De Leebeeck, Kevin <kdeleebeeck@cityofstthomas.onmicrosoft.com>
Sent: Tuesday, September 23, 2025 9:19 AM
To: Marcy McKillop <mmckillop@huronelginwater.ca>
Cc: Andrew Henry <ahenry@huronelginwater.ca>; Billy Haklander <bhakland@huronelginwater.ca>; Reitsma, Shayne <sreitsma@stthomas.ca>; Lawrence, Justin <jlawrence@stthomas.ca>; Ryan Armstrong <rarmstrong@huronelginwater.ca>; John Walker <jwalker@huronelginwater.ca>
Subject: RE: Elgin Area Primary Water Supply System - Master Plan - City of St. Thomas Water Demand Projections

Hi Marcy,

Thank you for the discussion yesterday morning. One of the meeting outcomes was for the City to provide an expanded year-by-year version of the projected water demands that builds upon the information previously provided on November 18, 2024. This expanded version (below) is based on a review of language within the Tri-Party (Federal/Provincial/Municipal) agreements as well as the individual agreements between the City and both PowerCo and Project Bravo.

Please take note that:

- Project Bravo is comprised of two phases, each with a maximum daily flow commitment of 5MLD.
- The previously provided data for PowerCo did not include additional production cells beyond 2031. These have been included to help provide an understanding of both the short-term (2026-2031) demand and longer-term demand as PowerCo adds additional production cells.

The City's primary concern remains that the current ICI projections in the draft Master Plan do not adequately reflect the scale or timeline of demand required for these non-typical ICI developments. Note that we have assumed some risk by extending the timelines identified in these agreements based on current progress and expected trajectories. The risk and liability of further reduction or delayed timelines will need to be transferred to the EAPWSS.

To help moderate this risk, we kindly request:

- That Table 3.6 be updated to more accurately reflect the scale and time of the demand required for PowerCo, Project Bravo, and future developments within Yarmouth Yards, in consideration of the draft Master Plan recommendations remaining, namely the twinning of the terminal reservoir and initiating the water treatment plant expansion process before 2031;
- Confirmation that the EAPWSS treatment and transmission system has sufficient operational capacity to accommodate a minimum additional ICI demand of 8.53 MLD (average day) during the 2026-2031 timeframe, beyond what is currently presented in Table 3.6; and
- That the Schedule 'C' Municipal Class Environmental Assessment (EA) for the water treatment plant expansion be included as part of the 2026 EAPWSS capital budget.

		Existing with Growth		PowerCO (152.3 ha)		Project BRAVO (101.2 ha)		Remainder of Zone 3 (24		
Year	Population	Avg Day (m3/day)	Max Day (m3/day)	Avg Day (m3/day)	Max Day (m3/day)	Avg Day (m3/day)	Max Day (m3/day)	Ha Developed	Avg Day (m3/day)	
2023	39,235	11,771	20,598	-	-	-	-	-	-	
Jan 1, 2026	**48,600**	**14,580**	**25,515**	**-**	**-**	**-**	**-**	-	-	
Jan 1, 2027	*50,960*	*15,288*	*26,754*	*900*	*1,000*	*2,250*	*2,500*	*20*	*700*	
Jan 1, 2028	*53,320*	*15,996*	*27,993*	*3,600*	*4,000*	*4,500*	*5,000*	*40*	*1400*	
Jan 1, 2029	*55,680*	*16,704*	*29,232*	*7,200*	*7,900*	*4,500*	*5,000*	*60*	*2100*	
Jan 1, 2030	*58,040*	*17,412*	*30,471*	*9,000*	*9,900*	*6,750*	*7,500*	*80*	*2800*	
Jan 1, 2031	**60,400**	**18,120**	**31,710**	**10,800**	**11,900**	**9,000**	**10,000**	**100**	**4400**	
Jan 1, 2032	*61,560*	*18,468*	*32,319*	*12,600*	*13,900*	*9,000*	*10,000*	*120*	*4200*	
Jan 1, 2033	*62,720*	*18,816*	*32,928*	*14,400*	*15,900*	*9,000*	*10,000*	*140*	*4900*	
Jan 1, 2034	*63,880*	*19,164*	*33,537*	*14,400*	*15,900*	*9,000*	*10,000*	*160*	*5600*	
Jan 1, 2035	*65,040*	*19,512*	*34,146*	*14,400*	*15,900*	*9,000*	*10,000*	*180*	*6300*	
Jan 1, 2036	**66,200**	**19,860**	**34,755**	**18,000**	**19,800**	**9,000**	**10,000**	**200**	**8800**	
Jan 1, 2037	*67,180*	*20,154*	*35,270*	*21,600*	*23,800*	*9,000*	*10,000*	*210*	*7350*	
Jan 1, 2038	*68,160*	*20,448*	*35,784*	*21,600*	*23,800*	*9,000*	*10,000*	*220*	*7700*	
Jan 1, 2039	*69,140*	*20,742*	*36,299*	*21,600*	*23,800*	*9,000*	*10,000*	*230*	*8050*	
Jan 1, 2040	*70,120*	*21,036*	*36,813*	*21,600*	*23,800*	*9,000*	*10,000*	*240*	*8400*	
Jan 1, 2041	**71,100**	**21,330**	**37,328**	**21,600**	**23,800**	**9,000**	**10,000**	**245**	**10780**	
Jan 1, 2042	*71,980*	*21,594*	*37,790*	*21,600*	*23,800*	*9,000*	*10,000*	*245*	*8575*	
Jan 1, 2043	*72,860*	*21,858*	*38,252*	*21,600*	*23,800*	*9,000*	*10,000*	*245*	*8575*	
Jan 1, 2044	*73,740*	*22,122*	*38,714*	*21,600*	*23,800*	*9,000*	*10,000*	*245*	*8575*	
Jan 1, 2045	*74,620*	*22,386*	*39,176*	*21,600*	*23,800*	*9,000*	*10,000*	*245*	*8575*	
Jan 1, 2046	**75,500**	**22,650**	**39,638**	**21,600**	**23,800**	**9,000**	**10,000**	**245**	**10780**	
2024 Growth Study Update		Existing with Growth		PowerCO		Project BRAVO		Remainder of Zone		

We understand the other meeting outcome was for EAPWSS is to review this information with their consultant (AECOM) and schedule a follow-up meeting later this week. Our team has availability Thursday between 1pm and 3pm and Friday between 9am and 10am or between 11am and 12pm.

Thanks,

Kevin De Leebeeck, MPA, P. Eng.
Director of Environmental & Infrastructure Services |
City Engineer

From: De Leebeeck, Kevin
Sent: Thursday, September 18, 2025 8:23 AM
To: 'Marcy McKillop' <mmckillop@huronelginwater.ca>
Cc: Andrew Henry <ahenry@huronelginwater.ca>; Billy Haklander <bhakland@huronelginwater.ca>; Reitsma, Shayne <sreitsma@stthomas.ca>; Lawrence, Justin <jlawrence@stthomas.ca>; Ryan Armstrong <rarmstrong@huronelginwater.ca>; John Walker <jwalker@huronelginwater.ca>
Subject: RE: Elgin Area Primary Water Supply System - Master Plan - City of St. Thomas Water Demand Projections

Hi Marcy,

Thank you for your response and for providing your teams availability.

What further clarification or reconciliation does EAPWSS need? The City is not able to disclose the details of our agreements with PowerCo and Project Bravo other than reiterating that PowerCo and Project Bravo are not typical ICI users. This was acknowledged as an outcome of the November 14, 2024 “consensus” presentation meeting which resulted in updated water demand projections being promptly provided by the City, at the request of and in the format prescribed by EAPWSS, to reflect the non-typical ICI demand for these developments. This non-typical ICI user demand for these developments was again acknowledged during our meeting two weeks ago with you and Andrew. Despite this the ICI projections in the draft Master Plan has not

used the updated information provided by the City and does not adequately reflect the scale or timeline of demand required for these developments.

	PowerCO				Project BRAVO	
Year	Avg Day litres per second	Max Day Litres per second	Avg Day (m3/day)	Max Day (m3/day)	Avg Day (m3/day)	Max Day (m3/day)
2023	-	-	-	-	-	-
2026	-	-	-	-	-	-
2031	125	145	10,800	12,528	9,000	10,000
2036	125	145	10,800	12,528	9,000	10,000
2041	125	145	10,800	12,528	9,000	10,000
2046	125	145	10,800	12,528	9,000	10,000
Year	PowerCO				Project BRAVO	

The continued attempt by EAPWSS to use outdated information and to suggest that supporting data is missing, despite it being provided in November 2024, combined with the lack of follow-up from EAPWSS is concerning. The City is seeking confirmation that there is operational flexibility within the EAPWSS treatment and transmission system to accommodate an additional 8.53 MLD demand during the 2026-2031 timeframe above what is indicated in Table 3.6. If not, what revisions are being considered to the draft Master Plan to accommodate this short-term demand requirement?

Monday September 22 at 9am works on our end. I will send a meeting invite shortly to all on this thread.

Thanks,

Kevin De Leebeeck, MPA, P. Eng.
Director of Environmental & Infrastructure Services |
City Engineer

From: Marcy McKillop <mmckillop@huronelginwater.ca>
Sent: Wednesday, September 17, 2025 1:21 PM
To: De Leebeeck, Kevin <kdeleebeeck@cityofstthomas.onmicrosoft.com>
Cc: Andrew Henry <ahenry@huronelginwater.ca>; Billy Haklander <bhakland@huronelginwater.ca>; Reitsma, Shayne <sreitsma@stthomas.ca>; Lawrence, Justin <jlawrence@stthomas.ca>; Ryan Armstrong <rarmstrong@huronelginwater.ca>; John Walker <jwalker@huronelginwater.ca>
Subject: RE: Elgin Area Primary Water Supply System - Master Plan - City of St. Thomas Water Demand Projections

Hi Kevin,

Thank you for your email. Unfortunately, EAPWSS team members are unable to meet with St. Thomas this week due to some training commitments.

We have the following availability for a meeting next week:

- Monday, September 22, 9 am – 12 noon
- Tuesday, September 23, 10 am – 10:30 am, 3 – 4 pm

- Wednesday, September 24, 3- 4 pm

Feel free to send me a Teams meeting invitation for a time that works for you and your colleagues.

To date, the EAPWSS has not received any clarification or supporting data for the estimates (provided by email on November 18 and also the more recent estimates below), to confirm the nature of any changes in previous water demand estimates and allow for the effective reconciliation of the data. We would encourage St. Thomas to provide background information to support any water demand estimates.

We are unable to review and consider new water demand estimates for consideration as part of the Master Plan, unless adequate background data is provided to support the data.

Please note that the water demand projections presented in the Master Plan are not intended to be adopted or relied up with respect to EAPWSS water supply agreement(s). The update of any water supply agreements is a separate undertaking from the current Master Plan.

Best regards,

Marcy McKillop, P.Eng., PMP (she/her)
Environmental Services Engineer, Regional Water Supply

Lake Huron & Elgin Area Primary Water Supply Systems
235 North Centre Road, Suite 200
London, Ontario N5X 4E7
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The Lake Huron and Elgin Area Primary Water Supply Systems serve 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.

From: De Leebeeck, Kevin <kdeleebeeck@cityofstthomas.onmicrosoft.com>
Sent: Wednesday, September 17, 2025 11:04 AM
To: Marcy McKillop <mmckillop@huronelginwater.ca>
Cc: Andrew Henry <ahenry@huronelginwater.ca>; Billy Haklander <bhakland@huronelginwater.ca>; Reitsma, Shayne <sreitsma@stthomas.ca>; Lawrence, Justin <jlawrence@stthomas.ca>; Ryan Armstrong <rarmstrong@huronelginwater.ca>
Subject: RE: Elgin Area Primary Water Supply System - Master Plan - City of St. Thomas Water Demand Projections

> Some people who received this message don't often get email from kdeleebeeck@cityofstthomas.onmicrosoft.com. Learn why this is important

Hi Marcy,

We have not received a response or confirmation of a meeting time so I'm following up on my message regarding the EAPWSS Master Plan and the City's concerns with the current approach to ICI demand projections, specifically in relation to PowerCo and Project Bravo. To reiterate, the additional 8.53 MLD demand noted in our previous message is in addition to the ICI values shown in Table 3.6 and reflects the short-term (2026-2031) requirements for PowerCo and Project Bravo alone. Given the implications for infrastructure planning, we request clarification on the following:

- Is there operational flexibility within the EAPWSS treatment and transmission system to accommodate an additional 8.53 MLD demand during the 2026-2031 timeframe?
- If not, what revisions are being considered to the draft Master Plan to accommodate this short-term demand requirement? and are such revisions being captured before release for public comment?

Given the importance of this issue, we appreciate a response at your earliest convenience and continue to welcome the opportunity to meet.

Thanks,

Kevin De Leebeeck, MPA, P. Eng.
Director of Environmental & Infrastructure Services |
City Engineer

From: De Leebeeck, Kevin
Sent: Monday, September 8, 2025 3:30 PM
To: 'Marcy McKillop' <mmckillop@huronelginwater.ca>
Cc: Andrew Henry <ahenry@huronelginwater.ca>; Billy Haklander <bhakland@huronelginwater.ca>; Reitsma, Shayne <sreitsma@stthomas.ca>; Lawrence, Justin <jlawrence@stthomas.ca>; Ryan Armstrong <rarmstrong@huronelginwater.ca>
Subject: RE: Elgin Area Primary Water Supply System - Master Plan - City of St. Thomas Water Demand Projections

Hi Marcy,

Thank you for your response and for offering to meet.

Thanks for also clarifying that the current Master Plan approach has not made any accommodation for the projected water demands from PowerCo and Project Bravo – this remains the City's primary concern.

As noted previously, PowerCo and Project Bravo are not typical ICI users and require special attention beyond the MECP standard allowance of 55m^3/ha.day. This need for special consideration was acknowledged as an outcome of the November 14, 2024 presentation meeting and again during our recent meeting with you and Andrew. We continue to maintain that the current ICI projections in the draft Master Plan do not adequately reflect the scale or timeline of demand required for these developments.

If the EAPWSS required additional supporting information in relation to the updated estimates provided by the City on November 18, 2024, it is unclear why neither EAPWSS nor its consultant reached out to clarify or discuss. This lack of follow-up is concerning and continues to impact the assumptions informing the current draft.

To clarify your question, yes, the additional 8.53MLD is in addition to the ICI values shown in Table 3.6. This represents the combined short-term (2026-2031) demand associated with PowerCo and Project Bravo alone and does not account for any further potential development within Yarmouth Yards during that timeframe. Is there operational flexibility within the EAPWSS treatment and transmission system to accommodate this demand during the 2026-2031 timeframe?

Our objective remains to ensure that the Master Plan is grounded on accurate and current data so that it can serve as an effective and reliable guide for infrastructure planning. Based on your message the current approach has not achieved this and if this level of short-term demand cannot be accommodated within the operational flexibility of the EAPWSS treatment and transmission system, then it is imperative that the draft Master Plan be revised accordingly, both in terms of demand projections and related recommendations, prior to release for public comment.

We welcome the opportunity to meet and discuss. Unfortunately, we are not available Monday, but we are available Thursday September 11 between 8:30am and 10am. Please let me know what time works best and I will follow up with a virtual meeting invite.

Thanks,

Kevin De Leebeeck, MPA, P. Eng.
Director of Environmental & Infrastructure Services |
City Engineer

From: Marcy McKillop <mmckillop@huronelginwater.ca>
Sent: Friday, September 5, 2025 5:21 PM
To: De Leebeeck, Kevin <kdeleebeeck@cityofstthomas.onmicrosoft.com>
Cc: Andrew Henry <ahenry@huronelginwater.ca>; Billy Haklander <bhakland@huronelginwater.ca>; Reitsma, Shayne <sreitsma@stthomas.ca>; Lawrence, Justin <jlawrence@stthomas.ca>; Ryan Armstrong <rarmstrong@huronelginwater.ca>
Subject: RE: Elgin Area Primary Water Supply System - Master Plan - City of St. Thomas Water Demand Projections

Hi Kevin,

Thank you for your email. We can certainly meet again to discuss the Yarmouth Yards demand projections. The Master Plan is not intended to include any site-specific water demand data or details.

Please note that the EAPWSS requires supporting information to accompany any demand estimates, in particular estimates that exceed the MECP upper limit allowance of 55 m^3/ha.day for industrial developments.

Please clarify your request below regarding the additional 8.53 MLD. Is this considered in addition to the values shown in Table 3-6 below? Please confirm.

Our team has availability for a meeting on Monday between 9 am and 11 am if that works for you. Feel free to send me a virtual meeting invitation.

Best regards,

Marcy McKillop, P.Eng., PMP (she/her)
Environmental Services Engineer, Regional Water Supply

Lake Huron & Elgin Area Primary Water Supply Systems
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London, Ontario N5X 4E7
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From: De Leebeeck, Kevin <kdeleebeeck@cityofstthomas.onmicrosoft.com>
Sent: Friday, September 5, 2025 1:20 PM
To: Marcy McKillop <mmckillop@huronelginwater.ca>
Cc: Andrew Henry <ahenry@huronelginwater.ca>; Billy Haklander <bhakland@huronelginwater.ca>; Reitsma, Shayne <sreitsma@stthomas.ca>; Lawrence, Justin <jlawrence@stthomas.ca>
Subject: RE: Elgin Area Primary Water Supply System - Master Plan - City of St. Thomas Water Demand Projections

Hi Marcy,

Thank you for your response. However, I must reiterate that the City's concerns remain unresolved.

While using typical MECP ICI values for the remainder of lands within Yarmouth Yards may be reasonable, the forecasted timeline is not. As discussed PowerCo and Project Bravo are not typical ICI users, as acknowledged by Andrew during our recent meeting. These developments require special consideration beyond MECP averages, and the Tech. Memo excerpts provided below do not adequately reflect their impact.

You emphasized in Tuesday's meeting that the goal of the November 14, 2024 presentation was to reconcile population growth with water demand projections and to reach a consensus on projected water demand. It is clear that consensus was not reached with the City, particularly given that updated information was provided within 2 business days of that meeting. Since then, there has been no outreach from the EAPWSS or its consultant to clarify or discuss the updated water demand information provided. To suggest otherwise appears to be an attempt to justify the continued use of outdated or incomplete information. We are looking to move past this and focus on ensuring the Master Plan reflects accurate and current data.

Even under the high-growth scenario, the ADD projection for ICI in Yarmouth Yards falls short of capturing the scale and timing of anticipated demand. The current ICI projections do not support PowerCo and Project Bravo's combined demand until 2046, which is well beyond the timeline required (2026-2031), and excludes any other potential Yarmouth Yards development.

With that in mind can you please confirm there is operational flexibility within the EAPWSS treatment and transmission system to accommodate at least an additional 8.53 ML/d in the short-term (i.e. between 2026 and 2031)? If not, then I strongly suggest we engage in collaborative effort to revise the draft Master Plan using corrected demand data and adjust recommendations accordingly, prior to posting for public comment.

We remain open to working with the EAPWSS to ensure its Master Plan reflects accurate data and responds appropriately to known development demand.

Thanks,

Kevin De Leebeeck, MPA, P. Eng.
Director of Environmental & Infrastructure Services |
City Engineer

From: Marcy McKillop <mmckillop@huronelginwater.ca>
Sent: Wednesday, September 3, 2025 5:45 PM
To: De Leebeeck, Kevin <kdeleebeeck@cityofstthomas.onmicrosoft.com>
Cc: Andrew Henry <ahenry@huronelginwater.ca>; Billy Haklander <bhakland@huronelginwater.ca>; Reitsma, Shayne <sreitsma@stthomas.ca>
Subject: RE: Elgin Area Primary Water Supply System - Master Plan - City of St. Thomas Water Demand Projections

Hi Kevin,

The Elgin Area Primary Water Supply System Master Plan included consideration of low, moderate and high growth projections for each member municipality.

The approach for St. Thomas involved consideration of population/residential growth, as well as separate consideration of institutional-commercial-industrial (ICI) growth (specially for Yarmouth Yards). The team reviewed multiple sources of flows and projections for the Power Co site to best reconcile the data. Very limited information was available regarding Project Bravo. The approach for establishing water demands was not limited to relying upon a single estimate, and back-up and supporting data was reviewed, where available. The current MECP industrial water demand allowance of 35-55 m^3/ha.d was considered for ICI sources.

Based on our Teams meeting on November 14, the approach for deriving residential and ICI flow estimates for St. Thomas was presented, along with some discussion regarding reconciliation of flows. The Master Plan approach considers average day demand for the regional water system, with additional demand being met by each member municipality's distribution system.

We did not receive any clarification or supporting data for the estimates, provided by email on November 18, to allow for the effective reconciliation of the data.

The EAPWSS Master Plan does not present any separate water demands for either Power Co of Project Bravo. Instead, a total St. Thomas ICI allowance is provided which is intended to include the entire Yarmouth Yards industrial subdivision (Power Co, Project Bravo, and the remaining 229.2 ha of Yarmouth Yards) . A screenshot of an appendix of the EAPWSS Master Plan is provided below:

Table 3-6: Projected Demand for St. Thomas (Major ICI Developments)

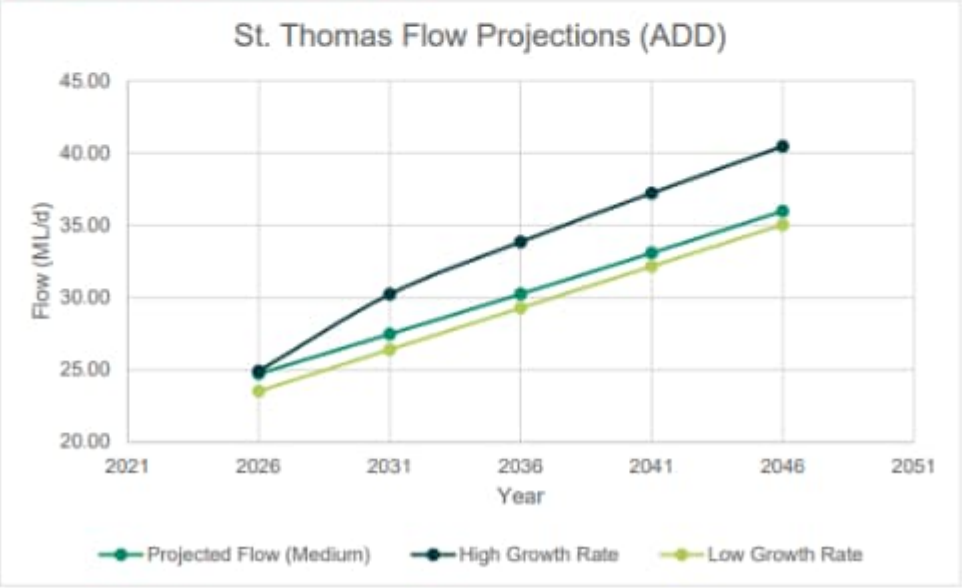
St. Thomas ICI Development	2026	2031	2036	2041	2046
ADD (ML/d)	11.27	13.27	15.27	17.27	19.27

By summing the water demands from population growth and the major ICI developments, the total ADD projection is shown in **Table 3-7** and **Figure 3-3.**

Table 3-7: Projected ADD for St. Thomas (Total)

	ADD (ML/d)				
	2026	2031	2036	2041	2046
Calculated Low Growth Flow Projection	23.52	26.40	29.28	32.16	35.05
Calculated Medium Growth Flow Projection	24.73	27.47	30.25	33.09	35.99
Calculated High Growth Flow Projection	24.91	30.23	33.85	37.23	40.46

Figure 3-3: St. Thomas Flow Projections (ADD)



Let me know if you would like to further discuss. Please keep in mind we revisit and update the EAPWSS Master Plan, including our water demand projections on a regular basis, at least every five years. The EAPWSS Master Plan report will be posted for review and comment this fall, anticipated for a 30-day review period from mid-October to mid-November.

As Andrew indicated during our call yesterday afternoon, operational flexibility allows us to manage and adjust the EAPWSS treatment and transmission system to meet any increased demands in the short-term.

Best regards,

Marcy McKillop, P.Eng., PMP (she/her)
Environmental Services Engineer, Regional Water Supply

Lake Huron & Elgin Area Primary Water Supply Systems

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E: mmckillop@huronelginwater.ca
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From: De Leebeeck, Kevin <kdeleebeeck@cityofstthomas.onmicrosoft.com>
Sent: Tuesday, September 2, 2025 2:07 PM
To: Marcy McKillop <mmckillop@huronelginwater.ca>
Cc: Andrew Henry <ahenry@huronelginwater.ca>; Billy Haklander <bhakland@huronelginwater.ca>
Subject: FW: Elgin Area Primary Water Supply System - Master Plan - City of St. Thomas Water Demand Projections

Hi Marcy,

Further to your comment in our meeting this afternoon that the numbers presented in November were the values carried forward in the Master Plan study. The message below following the November presentation provides updated flow demands for PowerCo & Project Bravo.

Please confirm that these updated values were used/carried forward in the Master Plan study.

Thanks,

Kevin De Leebeeck, MPA, P. Eng.
Director of Environmental & Infrastructure Services |
City Engineer

From: Kamerman, Karel
Sent: November 18, 2024 4:31 PM
To: Marcy McKillop <mmckillop@huronelginwater.ca>; De Leebeeck, Kevin <kdeleebeeck@stthomas.ca>
Cc: Andrew Henry <ahenry@huronelginwater.ca>; Billy Haklander <bhakland@huronelginwater.ca>; Ryan Armstrong <rarmstrong@huronelginwater.ca>; Bradley, Michael <mbradley@stthomas.ca>; Lawrence, Justin <jlawrence@stthomas.ca>; Pompilii, Lou <lPompilii@stthomas.ca>; Reitsma, Shayne <sreitsma@stthomas.ca>
Subject: RE: Elgin Area Primary Water Supply System - Master Plan - City of St. Thomas Water Demand Projections

Good afternoon,

We have been able to confirm some flow values for PowerCO and Project Bravo. Please see updated anticipated demands table below. Project Bravo property is anticipated to be approximately 100 ha in size.

Year	Avg. Day (m3/day)	Max Day (m3/day)
2026	14,580	25,515
2031	40,120	58,638
2036	48,460	74,883

2041	53,010	83,616
2046	54,330	85,926

As mentioned during the meeting last week, the water service population values provided in the survey are the anticipated number of service connections, rather than serviced population values.

Best Regards,

Karel

Karel Kamerman
Environmental Compliance Coordinator

Phone: 519-631-1680 x4224
Email: kkamerman@stthomas.ca
545 Talbot Street, PO Box 520
St. Thomas, ON N5P 3V7

www.stthomas.ca

From: Marcy McKillop <mmckillop@huronelginwater.ca>
Sent: Thursday, November 14, 2024 12:09 PM
To: De Leebeeck, Kevin <kdeleebeeck@stthomas.ca>
Cc: Andrew Henry <ahenry@huronelginwater.ca>; Billy Haklander <bhakland@huronelginwater.ca>; Ryan Armstrong <rarmstrong@huronelginwater.ca>; Bradley, Michael <mbradley@stthomas.ca>; Kamerman, Karel <kkamerman@stthomas.ca>; Lawrence, Justin <jlawrence@stthomas.ca>; Pompilii, Lou <lPompilii@stthomas.ca>; Reitsma, Shayne <sreitsma@stthomas.ca>
Subject: RE: Elgin Area Primary Water Supply System - Master Plan - City of St. Thomas Water Demand Projections

Hi Kevin,

As a follow-up to our meeting this morning, please find attached the presentation slides that I shared.

As discussed, any average day flow estimates for Project Bravo (along with development size/area) would be helpful if this source is anticipated to be a higher water user, similarly to Power Co.

Best regards,

Marcy McKillop, P.Eng. (she/her)
Environmental Services Engineer, Regional Water Supply

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From: Marcy McKillop
Sent: Monday, November 4, 2024 10:59 AM
To: De Leebeeck, Kevin <kdeleebeeck@stthomas.ca>
Cc: Andrew Henry <ahenry@huronelginwater.ca>; Billy Haklander <bhakland@huronelginwater.ca>; Ryan Armstrong <rarmstrong@huronelginwater.ca>; Bradley, Michael <mbradley@stthomas.ca>; Kamerman, Karel <kkamerman@stthomas.ca>; Lawrence, Justin <jlawrence@stthomas.ca>; Pompilii, Lou <lPompilii@stthomas.ca>; Reitsma, Shayne <sreitsma@stthomas.ca>
Subject: RE: Elgin Area Primary Water Supply System - Master Plan - City of St. Thomas Water Demand Projections

Hi Kevin,

We can accommodate the proposed meeting timing. Please confirm attendance from St. Thomas and if everyone on this email thread should be included in the Teams meeting.

I will send the Teams invitation later today.

Thanks,

-Marcy

From: De Leebeeck, Kevin <kdeleebeeck@stthomas.ca>
Sent: Monday, November 4, 2024 10:39 AM
To: Marcy McKillop <mmckillop@huronelginwater.ca>; Bradley, Michael <mbradley@stthomas.ca>; Kamerman, Karel <kkamerman@stthomas.ca>; Lawrence, Justin <jlawrence@stthomas.ca>; Pompilii, Lou <lPompilii@stthomas.ca>; Reitsma, Shayne <sreitsma@stthomas.ca>
Cc: Andrew Henry <ahenry@huronelginwater.ca>; Billy Haklander <bhakland@huronelginwater.ca>; Ryan Armstrong <rarmstrong@huronelginwater.ca>
Subject: RE: Elgin Area Primary Water Supply System - Master Plan - City of St. Thomas Water Demand Projections

Hi Marcy,

The only time I can find where most St. Thomas staff are available the week of November 11th is on Thursday Nov. 14 from 11am-noon.

If you could kindly send a meeting invite to hold this time in our calendars, that would be great.

Thanks,

Kevin De Leebeeck, MPA, P. Eng.
Director of Environmental & Infrastructure Services |
City Engineer

From: Marcy McKillop <mmckillop@huronelginwater.ca>
Sent: Friday, November 1, 2024 3:40 PM
To: Bradley, Michael <mbradley@stthomas.ca>; Kamerman, Karel <kkamerman@stthomas.ca>; lpompilli@stthomas.ca; De Leebeeck, Kevin <kdeleebeeck@stthomas.ca>; Lawrence, Justin <jlawrence@stthomas.ca>
Cc: Andrew Henry <ahenry@huronelginwater.ca>; Billy Haklander <bhakland@huronelginwater.ca>; Ryan Armstrong <rarmstrong@huronelginwater.ca>
Subject: Elgin Area Primary Water Supply System - Master Plan - City of St. Thomas Water Demand Projections

Good afternoon,

The Elgin Area Primary Water Supply System initiated a Master Plan earlier this year to assess long term regional water supply needs. More information is available here: https://www.huronelginwater.ca/elgin-area-primary-water-supply-system-master-plan/

Our team is currently struggling to confirm and reconcile population and water demand projections for the City of St. Thomas for consideration in this Master Plan.

Please confirm City of St. Thomas staff availability for a virtual Teams meeting the week of November 11, 2024 to discuss.

Best regards,

Marcy McKillop, P.Eng. (she/her)
Environmental Services Engineer, Regional Water Supply

Lake Huron & Elgin Area Primary Water Supply Systems
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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.

Elgin Area
Primary Water Supply System

September 25, 2025 FILE No. EA2019-24

The Corporation of the City of St. Thomas
545 Talbot Street, PO Box 520
St. Thomas, ON
N5P 3VP

Attention: Kevin De Leebeeck, MPA, P.Eng., City Engineer

Subject: **Elgin Area Primary Water Supply System Master Plan**

The Elgin Area Primary Water Supply System (EAPWSS) acknowledges the significance of the Yarmouth Yards industrial subdivision within the City of St. Thomas. As part of the current EAPWSS Master Plan, data from different sources were considered and water demand projections were assessed for this industrial development area, although details regarding selected sites/companies are not presented in the Master Plan.

In 2024, for the Yarmouth Yards development area, the EAPWSS reviewed St. Thomas' consulting engineering estimates of projected flows for the PowerCo site, as well as the demand estimates shared by the Province of Ontario. At the virtual meeting held on November 14, 2024, with City of St. Thomas representatives, EAPWSS representatives presented the overall approach adopted for the determination of water demand estimates, which for St. Thomas included residential water demand and separate consideration for the Yarmouth Yards industrial subdivision. The EAPWSS representatives indicated that only average day demands would be considered for the member municipalities and communities as part of the EAPWSS Master Plan, noting that other demands such as maximum and peak hour must be met by the respective member municipality. The average day projections for the member municipalities and communities, in the aggregate, are used to project average day and maximum day projections for the overall regional water system, including the water treatment plant.

Ultimately, the EAPWSS adopts the approach to derive and present water demands for the Master Plan, noting that not all municipalities will agree with the rationale and approach adopted. The EAPWSS also establishes the threshold for data quality to

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review, validate and reconcile any information or data submitted for consideration from various sources. While discrepancies may exist at the individual municipal level, the EAPWSS ultimately needs to understand projections at the overall/system level to determine regional infrastructure needs over the planning horizon.

The water demand projections presented in the Master Plan should not be interpreted as a commitment to meet any specific demands at a certain point in the future for any industry, commercial enterprise, or community within the municipality. Water supply agreements, including any updates or re-negotiation, are a separate undertaking from the Master Plan and capacity allocations to municipalities are not considered under any circumstances.

We acknowledge the requests made by St. Thomas in your email dated September 23, 2025. Responses are provided below:

- Update Master Plan Appendix Table 3.6 to reflect St. Thomas data: We are unable to revisit this table unless adequate supporting details can be provided to allow for effective reconciliation of data from various sources and in relation to their impacts at the regional level. The PowerCo estimates, in particular, provided by email on September 23, 2025, by St. Thomas, differ significantly from previous consulting engineering estimates, as well as the estimates that were provided to EAPWSS by the Province of Ontario and St. Thomas around the time when the Yarmouth Yards industrial development was first announced. In addition, the water demand estimates for Project Bravo, provided by the City to St. Thomas to date, also do not algin with information previously provided to the EAPWSS by the City of St. Thomas and the Province.

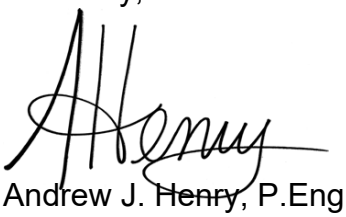
- Confirmation regarding EAPWSS treatment and transmission system: Refer to response above.

- A Schedule ‘C’ Municipal Class Environmental Assessment for an expansion of the Elgin Area Water Treatment Plant is not currently included in the 2026 capital budget. The EAPWSS will begin planning for the plant expansion, including supporting studies and preliminary engineering assessments, at a suitable time to ensure investments are made at the appropriate time. In order to commence a Class Environmental Assessment in 2026, the Joint Board of Management of the EAPWSS would need to provide specific and appropriate direction.

The EAPWSS remains committed to working cooperatively and collaboratively with all member municipalities, including the City of St. Thomas, as the region prepares for significant growth and development. The City of St. Thomas is encouraged to continue discussions with EAPWSS staff regarding water demand projections for the City of St. Thomas, including the requirement for supporting information to allow for effective review and reconciliation.

The EAPWSS is committed to revisiting the current Master Plan, as warranted, through either a Master Plan addendum or a new Master Plan as more information becomes available and to address any changing conditions, including revisiting the timing of infrastructure improvements and identifying funding opportunities. Notwithstanding, the EAPWSS continues to monitor system demands on a regular basis, which will be used to inform the Board of changing circumstances, as warranted.

Sincerely,



Andrew J. Henry, P.Eng.
Director, Regional Water
Lake Huron and Elgin Area Water Supply Systems

c.c. K. Scherr, Chief Administrative Officer

Appendix B.1

Technical Memorandum 1

Problem and Opportunity, Evaluation Criteria, Flow Projection Analysis

Elgin Area Primary Water Supply System Master Plan

Technical Memorandum 1 – Problem and Opportunity, Evaluation Criteria, Flow Projections

Regional Water Supply

60730275

January 2025

Delivering a better world

Prepared for:

Marcy McKillop, P.Eng. (she/her)
Environmental Services Engineer, Regional Water Supply
Lake Huron & Elgin Area Primary Water Supply Systems
235 North Centre Road, Suite 200
London, Ontario N5X 4E7

Prepared by:

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1. Introduction

1.1 Background

The Elgin Area Primary Water Supply System ('EAPWSS' or 'the utility') is a regional water supply system that delivers drinking water services to benefitting communities within its geographical service area, including 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, and Township of Southwold (Refer to **Figure 1**). Under the Provincial Transfer Order of 2000, the utility is required to prepare a Master Plan (Plan) for the system, forecasting future investment and expansion requirements over a twenty-year planning period. This Plan is updated on a five-year planning cycle. The utility's current Plan was completed in 2020 and accordingly is due to be updated to assess system growth and infrastructure needs. This ensures the EAPWSS is a data-driven, sustainable, and future-ready utility that continues provide safe and reliable drinking water to current and future communities.

1.2 Problem and Opportunity Statement

The growth in water demands forecast for the 2046 planning horizon requires review and assessment of the system's capacity and required investment for the sustainability and reliability of the utility's treatment, pumping, and transmission infrastructure.
Phase one of the five-phase Municipal Class Environmental Assessment (MCEA) planning process requires the EAPWSS, as the proponent of an undertaking, to first document factors leading to the need for an improvement and develop a clear statement of the identified problems and/or opportunities to be investigated. As such, the Problem and Opportunity Statement is the principal starting point in undertaking an MCEA and becomes the central theme integrated into the process and sets the scope outline for the utility's Plan update. The following is the utility's Master Plan MCEA Problem and 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, including servicing to new communities.
- Develop a recommended investment strategy for the near, mid, and long-term future growth projections that will support future infrastructure planning and budgeting.
- Consult benefitting communities, the public, Indigenous communities, agencies, and other interested parties, through the development of the Plan to identify the preferred alternatives that best meet long-term needs of the utility.
- 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 with consideration of; projected future demand and growth-related requirements, adequacy of the existing 750mm diameter transmission main (temporarily out of service), anticipated timing for returning the existing 750mm diameter transmission main to service and/or construction of an adequately sized secondary main and, investigate solutions to facilitate redundancy.
- Review and assess pressure control infrastructure to mitigate excessive and transient pressure incidents related to projected future demands and growth-related requirements.
- Review opportunities to enhance energy efficiency, conservation, and recovery across the system.

- Review the impacts of climate change on the utility's infrastructure and assess mitigation and adaptation opportunities in alignment with the utility's framework.
- Ensure alignment with and continuity between the Plan and the utility's other guiding plans including the Asset Management Policy and Plan, Financial Plan, Operational Plan, and various management systems.

Legend

- Already serviced by another surface water treatment plant
- Serviced by Both LHPWSS and EAPWSS
- Potential FN Customers (Munsee-Delaware, Kettle and Stoney Point, COTTFN)
- Potential Customers to Contact
- Existing EAPWSS Customers
- Existing LHPWSS Customers
- Adjacent Municipalities

N

Central Huron
Huron East
West Perth
Stratford
Perth South
St. Marys
Bluewater
South Huron
Lucan Biddulph
North Middlesex
Middlesex Centre
Lambton Shores
Adelaide Metcalfe
Strathroy-Caradoc
Southwest Middlesex
Dutton/Dunwich
Southwold
St. Thomas
Central Elgin
Malahide
Bayham
Tillsonburg
Norfolk County
Thames Centre
South-West Oxford

Belgrave, Palmerston, Arthur, Belwood, Hillsburgh, Goderich, Blyth, Brussels, Listowel, Moorefield, Drayton, Alma, Fergus, Elora, Atwood, Huron East, Clinton, Monkton, Milverton, Linwood, Elmira, Rockwood, Bayfield, Seaforth, Dublin, Mitchell, Eden Mills, Guelph, St. Jacobs, Wellesley, Waterloo, Kitchener, Aberfoyle, Morriston, Bluewater, Zurich, Hensall, Exeter, New Hamburg, Cambridge, New Dundee, Tavistock, Grand Bend, Huron Park, Plattsville, Ayr, Drumbo, St. George, Innerkip, Paris, Princeton, Embro, Woodstock, Brant, Brantford, Burford, Mount Pleasant, Thorndale, Thamesford, Beachville, Sweaburg, Ingersoll, Scotland, Norwich, Otterville, Teeterville, Waterford, Jarvis, Delhi, Simcoe, Springfield, Port Dover, Vittoria, Langton, Straffordville, Turkey Point, Vienna, Port Burwell, Port Rowan, Point, Upperwash Beach, Kettle Point, Forest, Arkona, Ilderton, Ailsa Craig, Brights Grove, Plympton-Wyoming, Wyoming, Watford, Petrolia, Oil Springs, Alvinston, Strathroy, London, Dorchester, Belmont, Melbourne, Oneida 41, Newbury, Florence, Bothwell, West Lorne, Dresden, Rodney, Thamesville, Highgate

*Notwithstanding municipalities could be serviced by LHPWSS or EAPWSS.
Municipalities may also be serviced by other water systems, including LAWSS, West Elgin (Tri-County) DWS, etc.

2. Evaluation Criteria

This section introduces the criteria used to evaluate the alternative servicing strategies used to address Problem and Opportunity Statement outlined in **Section 1.2**

2.1 Water Servicing Strategies Evaluation Criteria

Table 1: Servicing Strategies Evaluation Criteria

Category	Criteria	Indicators
Socio-Economic:	**Long Term Impacts to the Community**	Potential effects (Noise, Dust, Vibration, property access) related to disruptions to residences, agricultural, business, and travelling public during construction and operation. Potential effects on existing and approved / planned land uses. Degree of Property Acquisition / Easement requirements Conformance with approved local, and provincial plans and policies.
	Supports growth and development and Transportation Corridors	Ability to meet Municipality growth vision. Potential effects on transportation corridors.
Natural Environment	**Impacts to the Aquatic Environment**	Potential for impacts to Aquatic habitat and Species at Risk
	Impacts to the Terrestrial Environment	Potential for impacts to Terrestrial habitat and Species at Risk
	Source water Protection	Potential impacts to Groundwater Recharge Areas, Intake Protections Zones and Highly Vulnerable Aquifers.
	Climate Change	Potential for impacts to climate change (greenhouse gas emissions) Potential for climate change to impact the projects (climate change resiliency)
Economic	**Project Costs**	Capital Costs. Property Acquisition/Easement Costs (no costs / order of magnitude). Operation and Maintenance Costs.

Technical	**Meets Future Needs**	Addresses the existing system capacity constraints. Improvements to level of service utilization of the existing and future infrastructure. Meets the long-term capacity (treatment, transmission, storage and pumping) requirements to service the projected population growth to 2046.
	Drinking Water Quality	Ability to maintain or improve water quality.
	Maintenance of Service	Operation redundancy to improve services security and allow for safe and efficient maintenance activities. Potential to minimize increases to operational and/or maintenance complexity of the system.
	Constructability	Construction complexity including potential for utility conflicts.
	Legal Jurisdictional	Future regulatory requirements. Complexity of Approvals. Land Requirements.
Cultural Environment	**Archaeology**	Potential effects to cultural heritage resources.
	Built Heritage	Potential effects to built heritage resources.
	Cultural Heritage Landscapes	Potential effects to Cultural Heritage Landscapes.
	Indigenous Communities	Potential Impacts to Treaty Lands.

3. Flow Projection Analysis

The flow projections for the EAPWSS will provide a solid foundation for the master plan, supporting future planning and infrastructure improvements. The projections cover key milestones for the years 2026, 2031, 2036, 2041, and 2046, ensuring the system's ability to meet water demands through 2046. A combination of surveying municipalities for their future anticipated water demands as well as estimating water demands using population growth forecasts, development plans, and historical water consumption trends was completed as part of this analysis.

Projected flows to the year 2046 are highlighted in **Table 2** below, for the full Technical Memo - 'Flow Projection Analysis' refer to **Appendix A**:

Table 2: EAPWSS Flow Projections

Year	2026	2031	2036	2041	2046
Medium Growth Projected Flow (ML/d)	83.44	90.26	97.44	105.08	113.28

Appendix A

Flow Projection Memo

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Neil Awde
Paul Adams
Eppo Eerkes
Matt Simons

Project name:
Elgin Area Primary Water Supply System 2024 Master Plan Update

Project ref:
60730275

From:
Sophy Leung and Vincent Tsang

Date:
January 30 2025

Memo

Subject: Technical Memorandum – Flow Projections Analysis for Elgin Area Primary Water Supply System

1. Introduction

AECOM Canada ULC. has been retained by the Elgin Area Water Supply System (EAPWSS) to update its water master plan. As part of the master plan, a flow projection analysis was completed to review future water demands for local municipalities. The flow projections for the EAPWSS will provide a solid foundation for the master plan, supporting future planning and infrastructure improvements. The projections cover key milestones for the years 2026, 2031, 2036, 2041, and 2046, ensuring the system's ability to meet water demands through 2046.

The purpose of this technical memorandum is to provide recommended flow projections to be used in the EAPWSS 2024 Master Plan Update. In general, a combination of surveying municipalities for their future anticipated water demands as well as estimating water demands using population growth forecasts, development plans, and historical water consumption trends was completed as part of this analysis.

2. Data Collection

2.1 Historical Flow Data

Historical flow data from 2018 to 2023 has been collected and analyzed for the flow projections. The summary of treated water leaving Elgin Area Water Treatment Plant (EAWTP) is shown in **Table 2-1**.

Table 2-1: Treated Water Leaving EAWTP

	2018	2019	2020	2021	2022	2023
ADD (ML/d)	42.70	43.70	43.80	43.70	43.90	44.30
MDD (ML/d)	-	56.60	63.50	58.50	60.60	61.10
MDD Peaking Factor	-	1.30	1.45	1.34	1.38	1.38
Average MDD Peaking Factor (Include London Supply)*	1.37					
Average MDD Peaking Factor (Exclude London Supply)**	1.76					

* Min. and max. MDD peaking factors have been removed for the average MDD peaking factor calculation.
** Excluding the historical London flow which is considered as a constant supply throughout the year.

The summary of historical ADD of each municipality is shown in **Table 2-2**.

Table 2-2: Historical ADD of each Municipality

Municipalities	ADD (ML/d)						
	2018	2019	2020	2021	2022	2023	Average
Central Elgin	1.19	1.61	1.72	1.10	1.18	1.15	1.33
Southwold	1.53	1.62	0.92	1.63	1.85	2.27	1.64
St. Thomas	12.49	11.50	12.67	13.72	12.07	11.10	12.26
Malahide	0.32	0.17	0.22	0.37	0.30	0.34	0.29
Aylmer	3.82	4.44	4.16	4.55	4.65	4.72	4.39
Bayham	0.23	0.14	0.24	0.43	0.47	0.44	0.33
Dutton Dunwich	0.47	0.59	0.60	0.65	0.60	0.54	0.58
London	22.64	22.99	22.93	22.93	22.65	22.60	22.79
System Total	**42.70**	**43.06**	**43.46**	**45.39**	**43.78**	**43.16**	**43.59**
Treated Water Leaving EAWTP		**43.70**	**43.80**	**43.70**	**43.90**	**44.30**	**43.92**

2.2 Survey Data

To support the flow projection analysis, surveys were distributed to the municipalities that require water supply from EAPWSS. The surveys were sent to the following municipalities: Municipality of Central Elgin, Township of Southwold, City of St. Thomas, Township of Malahide, Municipality of Dutton-Dunwich, Town of Aylmer, Municipality of Bayham, and City of London for obtaining their projected average day demand (ADD) and maximum day demand (MDD). A summary of the status of survey responses and the water demand data collected is shown in **Table 2-3** and **Table 2-4**, respectively. The full survey responses are provided in **Appendix A**.

Elgin Area Primary Water Supply System 2024 Master Plan Update

Table 2-3: Status of Survey Responses from Municipalities

Municipalities	Survey Response Status
Central Elgin	Participated in the survey
Southwold	Participated in the survey
St. Thomas	Participated in the survey
Malahide	Participated in the survey providing information regarding the Aylmer and Port Burwell Secondary Water Systems. Included information for Aylmer, Central Elgin, Malahide and Bayham.
Aylmer	Did not participate in the survey
Bayham	Did not participate in the survey
Dutton-Dunwich	Did not participate in the survey
London	Did not participate in the survey; flow projections were provided separately

Table 2-4: Water Demands Summary from the Survey

Municipalities	Projected Water Demand (ML/d)				
	2026	2031	2036	2041	2046
Central Elgin	1.79	1.95	2.11	2.27	2.46
Southwold [1]	2.51	5.63	9.42	13.20	17.01
St. Thomas	14.58	27.84	36.18	44.03	45.35
Malahide [2]	0.39	Projected Flows Not Stated			
Aylmer [2]	5.01				
Bayham [2]	0.47				
Dutton-Dunwich	No Survey Information Provided				
London					

1. Stated flow assumed to not include Dutton-Dunwich flow.
2. Provided part of Malahide survey response

The flow projection methodology specific to each municipality, including those that did not participate in the survey, is further reviewed in Section 3.

3. Recommended Flow Projections for Each Municipality

This section presents low, medium, and high growth flow projections for each municipality served by EAPWSS. The methodologies for projecting flows for municipalities that did not participate in the survey are also outlined.

3.1 Flow Projections for Municipality of Central Elgin

Central Elgin participated in the survey. Average medium growth flow projections were provided in a m^3/year in the survey response but the low or high growth rates were not provided noting that they are not sure about the impact of industrial growth in the area. The medium growth flow projection rate is approximately 1.58% per year over the 20-year planning horizon. The 2026 medium growth projected flow of 1.79 ML/d is only 0.07ML/d greater than the highest year's ADD in the past 5 years. As such, the surveyed information was carried forward as the medium growth flow projection.

A low growth rate of 0.5% per year and high growth rate of 3% per year have been assumed based upon other municipalities' input. (ie Malahide provided low and high growth rates of 0.5% and 3% respectively while St. Thomas of 1.5% and 2.5% respectively. These growth rates were interpreted to be on an annual basis.)

The 2026 low growth flow projection has been calculated taking the average historical ADD from 2018 to 2023 and inflating that flow by 0.5% per year. Low growth flow projections beyond 2026 have been inflated by 0.5% per year.

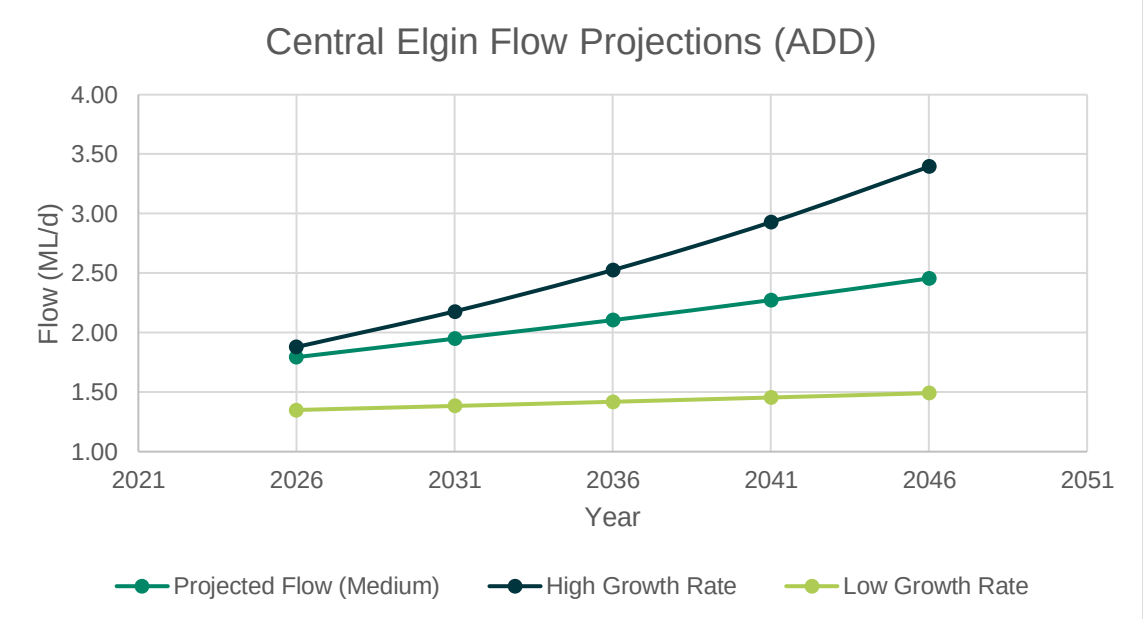
The 2026 high growth flow projection has been calculated by taking the maximum historical ADD and inflating that flow by 3% per year. Low growth flow projections beyond 2026 have been inflated by 3% per year.

A summary of water demands and the flow projections for ADD are shown in **Table 3-1** and **Figure 3-1.**

Table 3-1: Projected ADD for Central Elgin

	ADD (ML/d)				
	2026	**2031**	**2036**	**2041**	**2046**
Low Growth Flow Projections	1.35	1.38	1.42	1.45	1.49
Medium Growth Flow Projections	1.79	1.95	2.11	2.27	2.46
High Growth Flow Projections	1.88	2.18	2.53	2.93	3.39

Figure 3-1: Central Elgin Flow Projections (ADD)



3.2 Flow Projections for Township of Southwold

Southwold participated in the survey. The survey indicated that in 2046 a demand of 17.01 ML/d would be required; representing more than 10 times the last 5 years historical average ADD. It is anticipated that these rates are high due to the industrial development speculation in the St. Thomas area and were assumed to be inputed as maximum daily demands. Adjusting this to an average flow by unpeaking it with a 1.76 factor shown in **Table 2-1**, yields 9.68 ML/d which is still substantial and represents approximately 10% per year growth on average. As the high growth rate provided in the survey was 10%, the survey information will be used for the high growth flow

Elgin Area Primary Water Supply System Master Plan Update

projection, with the exception of the 2026 value as it is below the 5-year historical ADD average in which the maximum value of 2.23 ML/d will be used.

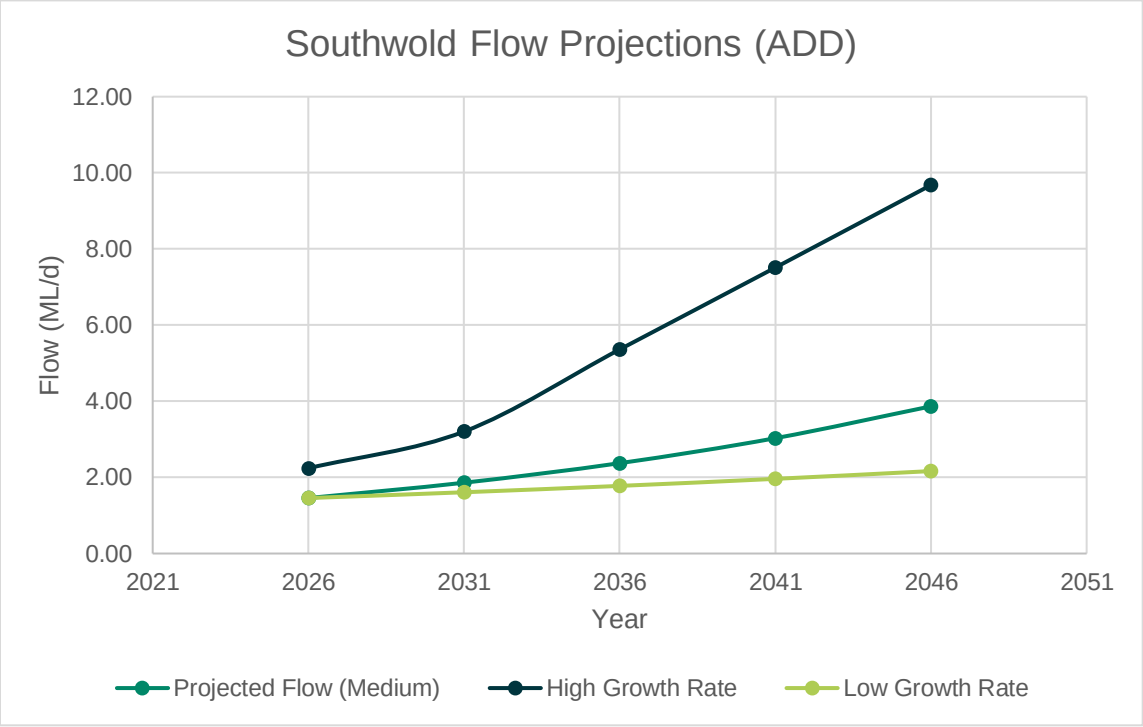
The low growth rate provided in the survey response was 2% per year. This will be applied from the 1.46 ML/d 2026 projected flow value outward.

For the medium growth flow projection, a growth rate of 5% per year was applied for the 20-year horizon from the 1.46 ML/d 2026 flow projection. A summary of water demands and the flow projections for Southwold's ADD are shown in **Table 3-2** and **Figure 3-2.**

Table 3-2: Projected ADD for Southwold

	ADD (ML/d)				
	2026	**2031**	**2036**	**2041**	**2046**
Low Growth Flow Projections	1.46	1.61	1.78	1.96	2.17
Medium Growth Flow Projections	1.46	1.86	2.37	3.03	3.87
High Growth Flow Projections	2.23	3.20	5.36	7.51	9.68

Figure 3-2: Southwold Flow Projections (ADD)



3.3 Flow Projections for City of St. Thomas

St. Thomas participated in the survey, however, it was not possible to use or validate the survey information provided by St. Thomas as the provided data was based on water service connections and not population as the survey intended. The proposed St. Thomas water demand projections for this Master Plan were presented to St. Thomas in fall of 2024 by EAPWSS. As a basis of these flow projections, various population and industrial development projections were reviewed.

Table 3-3: Population Projections from Different Resources

Population Projections Resources	2026	2031	2036	2041	2046
Population Projections in St. Thomas Wastewater Master Plan Update (WW MP) (2023)	45,372	48,637	51,902	55,166	58,431
Population Projections in Growth Analysis Study of the City of St. Thomas (2024)	48,600	60,400	66,200	71,100	75,500
49 Census Divisions Ministry of Finance (MOF) Population Projections*	47,952	50,586	53,364	56,340	59,549

* Population projections for the City of St. Thomas are not directly provided in the 49 Census Divisions MOF Population Projections. The population projections for St. Thomas have been estimated using the population ratio between St. Thomas and Elgin County based on the 2016 and 2021 census data, with a ratio of 44.47%.

Population data for 2021 to 2023 was obtained from multiple sources, including 2021 Census, WW MP 2023 and 49 Census Divisions MOF Population Projections. Using historical flow data, ADD per capita demands were calculated. The summary is shown in **Table 3-4.**

Table 3-4: ADD Per Capita Demands

Communities	2021	2022	2023
Historical Demands (ADD) (ML/d)	13.72	12.07	11.10
Population	42,840	43,379	45,518*
Population Sources	2021 census	WW MP 2023	49 Census Divisions MOF Population Projections
ADD Per Capita Demands (L/c/d)	320	278	244
Average of ADD Per Capita Demands (L/c/d)	281		

* Population projections for the City of St. Thomas are not directly provided in the 49 Census Divisions MOF Population Projections. The population projections for St. Thomas have been estimated using the population ratio between St. Thomas and Elgin County based on the 2016 and 2021 census data, with a ratio of 44.47%.

Based on historical population and water consumption data from 2021 to 2023, an average per capita demand of 281 Lpcd was applied to the medium and high growth projections for ADD. For low growth projections, an ADD of 270 Lpcd was adopted, aligning with the range outlined in Section 3.4.2 of the Ontario Design Guidelines for Drinking-Water Systems [Ministry of the Environment, Climate Change and Parks (MECP), 2008] which states that domestic water demand historically ranges from 270 to 450 Lpcd. The ADD projections based on population growth are presented in **Table 3-5**.

Table 3-5: Projected ADD for St. Thomas (Population Growth)

	Population References	Per Capita Demand (Lpcd)	ADD (ML/d)				
			2026	2031	2036	2041	2046
Low Growth Water Demands (ML/d)	WW MP 2023	270	12.25	13.13	14.01	14.89	15.78
Medium Growth Water Demands (ML/d)	49 Census Divisions MOF	281	13.46	14.20	14.98	15.82	16.72
High Growth Water Demands (ML/d)	Growth Analysis Study 2024	281	13.64	16.96	18.58	19.96	21.19

As per communications with EAPWSS, additional demand for the institutional, commercial and industrial (ICI) development in St. Thomas should be accounted for. A summary of the ADD for this ICI is presented in **Table 3-6**.

Table 3-6: Projected Demand for St. Thomas (Major ICI Developments)

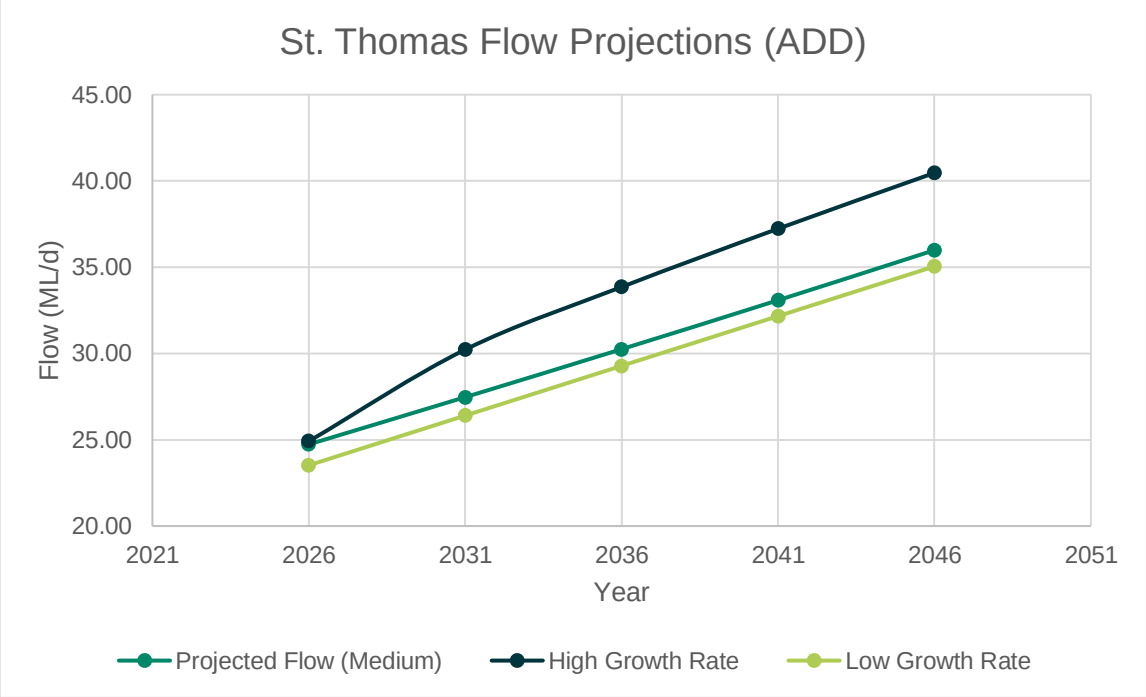
St. Thomas ICI Development	2026	2031	2036	2041	2046
ADD (ML/d)	11.27	13.27	15.27	17.27	19.27

By summing the water demands from population growth and the major ICI developments, the total ADD projection is shown in **Table 3-7** and **Figure 3-3.**

Table 3-7: Projected ADD for St. Thomas (Total)

	ADD (ML/d)				
	2026	2031	2036	2041	2046
Calculated Low Growth Flow Projection	23.52	26.40	29.28	32.16	35.05
Calculated Medium Growth Flow Projection	24.73	27.47	30.25	33.09	35.99
Calculated High Growth Flow Projection	24.91	30.23	33.85	37.23	40.46

Figure 3-3: St. Thomas Flow Projections (ADD)



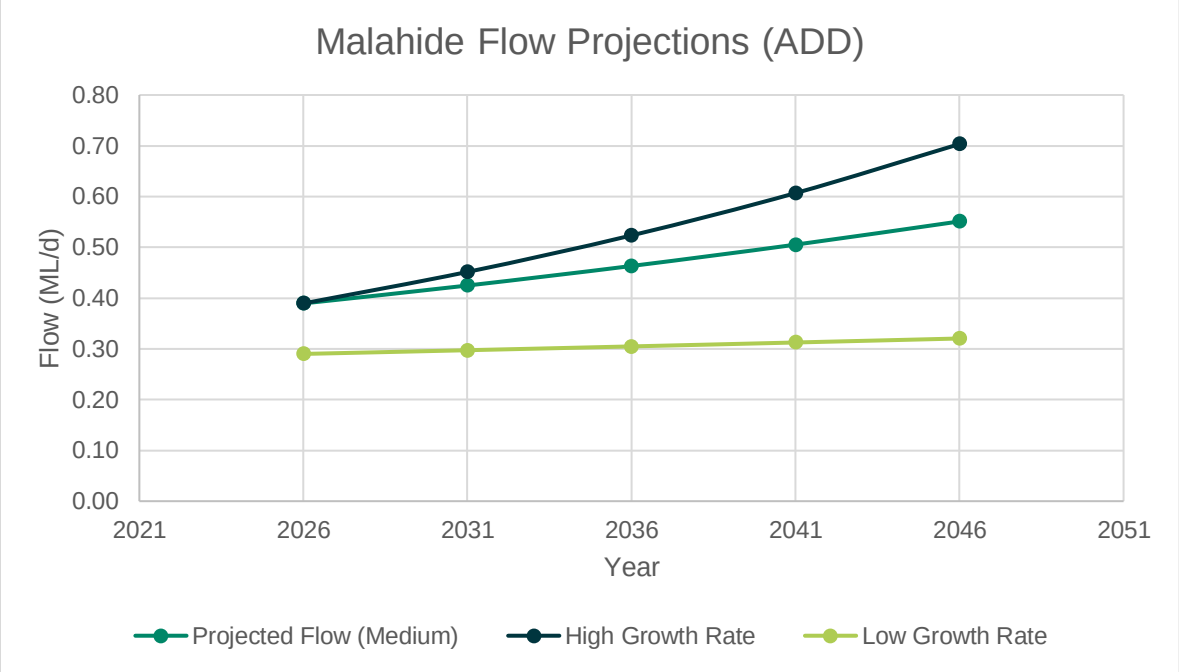
3.4 Flow Projections for Township of Malahide

Malahide participated in the survey and provided information for Aylmer, Malahide and Bayham. The survey response provided flow projections for 2026 in relation to medium growth. The high and low growth rates provided were 3% and 0.5% respectively. These growth rates were interpreted to be provided on an annual basis. The medium growth flow projection is based on a growth rate of 1.75% per year as this trends between the high and the low growth rates. The 5-year historical ADD average between 2018 and 2023 was used as the 2026 low growth flow projection. The summary of ADD projections is shown in **Table 3-8** and **Figure 3-4**.

Table 3-8: Projected ADD for Malahide

	ADD (ML/d)				
	2026	**2031**	**2036**	**2041**	**2046**
Low Growth Flow Projections	0.29	0.30	0.30	0.31	0.32
Medium Growth Flow Projections	0.39	0.42	0.46	0.51	0.55
High Growth Flow Projections	0.39	0.45	0.52	0.61	0.70

Figure 3-4: : Malahide Flow Projections (ADD)



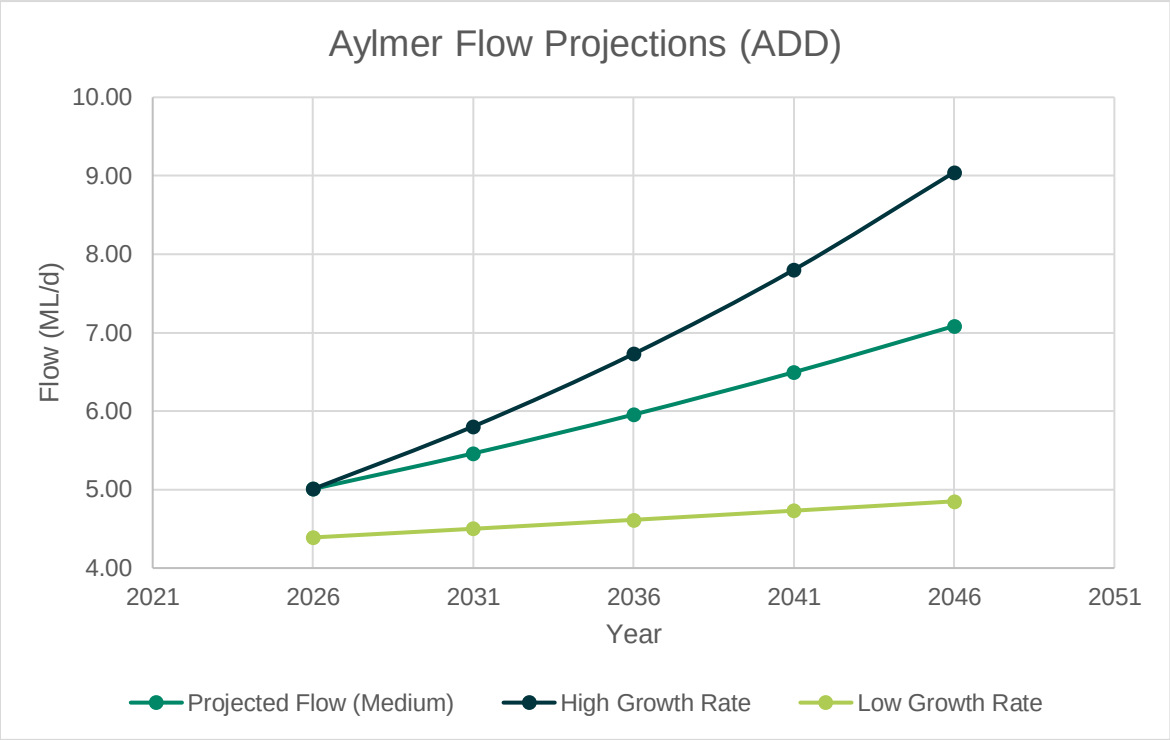
3.5 Flow Projections for Town of Aylmer

Aylmer did not participate in the survey, however Malahide provided information for Aylmer, Malahide and Bayham. The survey response provided flow projections for 2026 in relation to medium growth. The high and low growth rates provided were 3% and 0.5% respectively. These growth rates were interpreted to be provided on an annual basis. The medium growth flow projection is based on a growth rate of 1.75% per year as this trends between the high and the low growth rates. The 5-year historical ADD average between 2018 and 2023 was used as the 2026 low growth flow projection. The summary of ADD projections is shown in **Table 3-9** and **Figure 3-5.**

Table 3-9: Projected ADD for Aylmer

	ADD (ML/d)				
	2026	**2031**	**2036**	**2041**	**2046**
Low Growth Flow Projections	4.39	4.50	4.61	4.73	4.85
Medium Growth Flow Projections	5.01	5.46	5.96	6.50	7.08
High Growth Flow Projections	5.01	5.80	6.73	7.80	9.04

Figure 3-5: Aylmer Flow Projections (ADD)



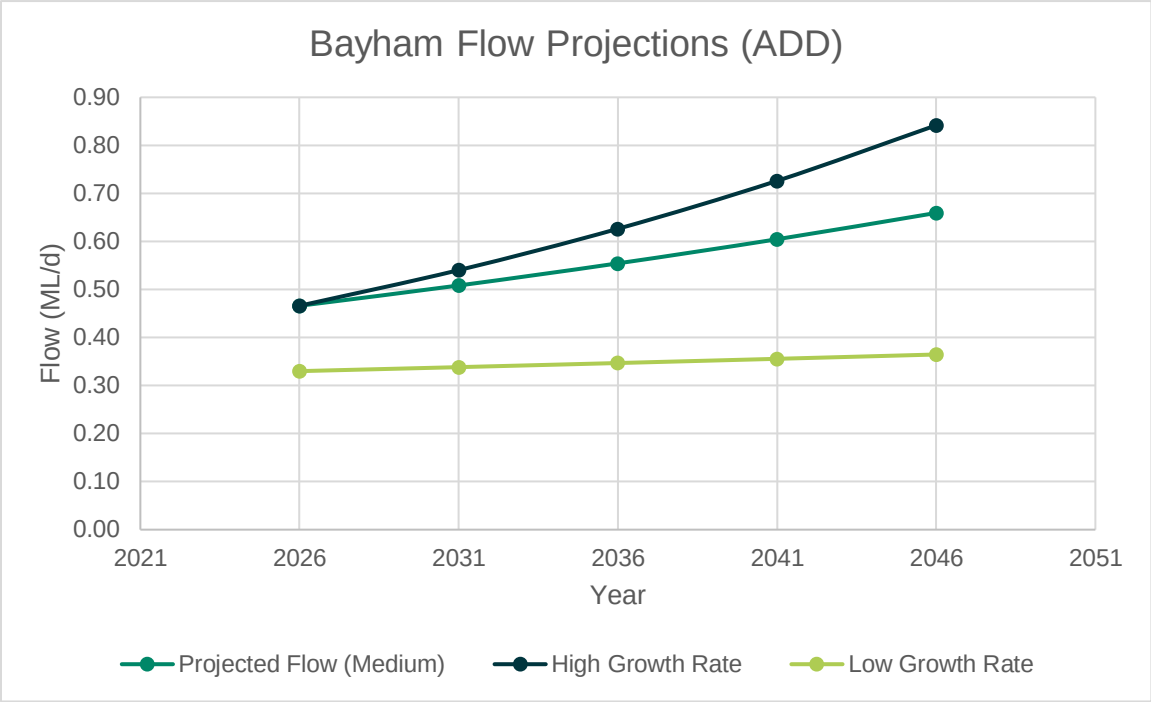
3.6 Flow Projections for Municipality of Bayham

Bayham did not participate in the survey, however Malahide provided information for Aylmer, Malahide and Bayham. The survey response provided flow projections for 2026 in relation to medium growth. The high and low growth rates provided were 3% and 0.5% respectively. These growth rates were interpreted to be provided on an annual basis. The medium growth flow projection is based on a growth rate of 1.75% per year as this trends between the high and the low growth rates. The 5-year historical ADD average between 2018 and 2023 was used as the 2026 low growth flow projection. The summary of ADD projections is shown in **Table 3-10** and **Figure 3-6.**

Table 3-10: Projected ADD for Bayham

	ADD (ML/d)				
	2026	**2031**	**2036**	**2041**	**2046**
Low Growth Flow Projections	0.33	0.34	0.35	0.36	0.36
Medium Growth Flow Projections	0.47	0.51	0.55	0.60	0.66
High Growth Flow Projections	0.47	0.54	0.63	0.73	0.84

Figure 3-6: Bayham Flow Projections (ADD)



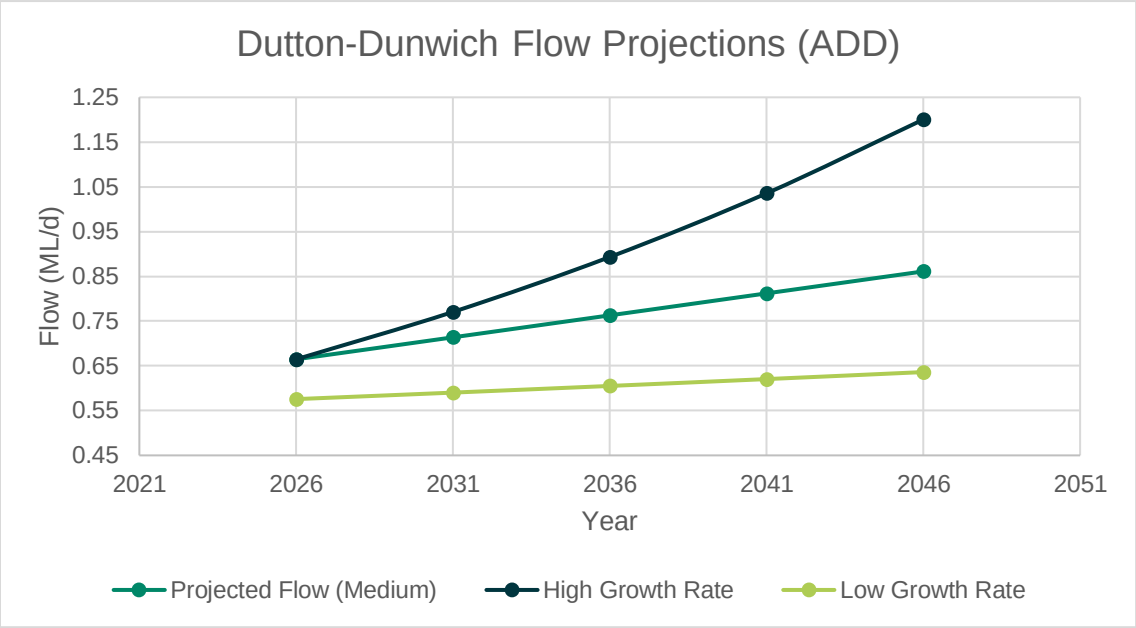
3.7 Flow Projections for Municipality of Dutton-Dunwich

Dutton-Dunwich did not participate in the survey. As a result, water demand projections for this municipality were developed using historical water consumption data for the medium growth flow projection. 0.5% per year and 3% per year were used for the low and high growth rates respectively. The 5-year historical ADD average between 2018 and 2023 was used as the 2026 low growth flow projection. Southwold's survey response confirmed that Dutton-Dunwich currently takes approximately 0.55 ML/d. A summary of water demands and the flow projections for ADD are shown in **Table 3-11** and **Figure 3-7.**

Table 3-11 Projected ADD for Dutton-Dunwich

	ADD (ML/d)				
	2026	**2031**	**2036**	**2041**	**2046**
Low Growth Flow Projections	0.58	0.59	0.61	0.62	0.64
Medium Growth Flow Projections	0.66	0.71	0.76	0.81	0.86
High Growth Flow Projections	0.66	0.77	0.89	1.04	1.20

Figure 3-7: Dutton-Dunwich Flow Projections (ADD)



3.8 Flow Projections for City of London

London did not participate in the survey however EAPWSS and the City of London have had correspondence regarding flow projections (see **Appendix B**).

The City of London receives water from both the EAPWSS and the Lake Huron Primary Water Supply System (LHPWSS). The City of London and the EAPWSS have a water agreement that the City of London is obligated to take 22.7 ML/d on an annual basis from EAPWSS. Therefore, the daily volume of water provided to the City of London from EAPWSS could vary due to water demands and operational activities as long as the average supply volume of 22.7 ML/d is not exceeded. The City of London has indicated that their Southeast (SE) Pressure Zone requires flows from EAPWSS but these flows are not projected to exceed the 22.7 ML/d water agreement value and as such they do not foresee taking additional flows from EAPWSS for normal operations at this time. Therefore, it is considered appropriate to continue to adopt the agreement volume (i.e., 22.7 ML/d) as the flow projection for the medium growth scenario for London. Details for the low and high growth scenarios for London are provided in **Appendix D**.

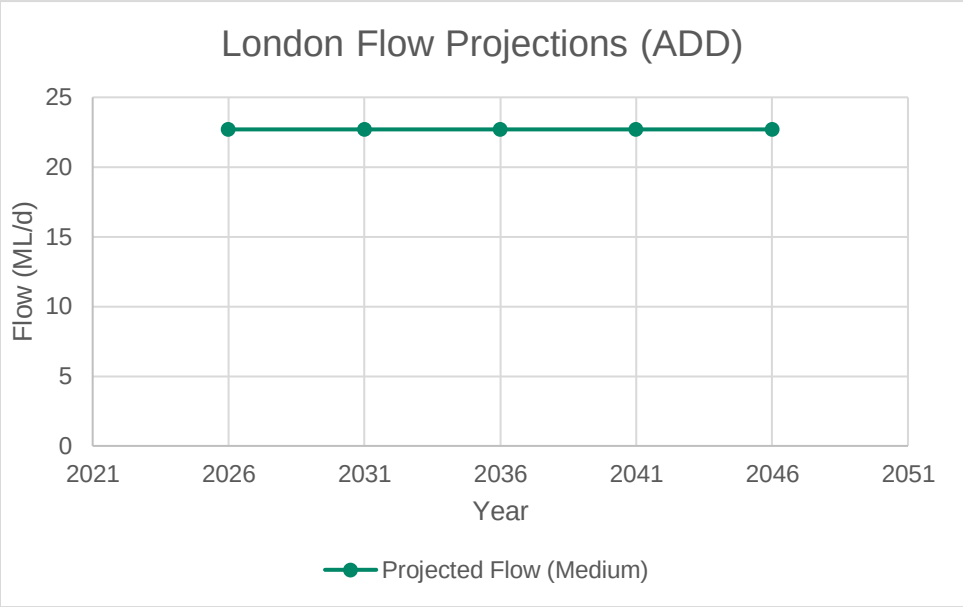
The ADD for London are shown in **Table 3-12** and **Figure 3-8.**

Table 3-12: Projected ADD for London (Medium Growth)

	ADD (ML/d)				
	2026	**2031**	**2036**	**2041**	**2046**
London Growth Flow Projection	22.7	22.7	22.7	22.7	22.7

Elgin Area Primary Water Supply System 2024 Master Plan Update

Figure 3-8: London Flow Projections (ADD)



Notwithstanding the above, the City of London has noted that during activities where LHPWSS water supply is limited that additional EAPWSS water supply may be required. The water provided to the City of London is transferred from the Elgin-Middlesex Pumping Station and Reservoir (EMPSR) located in St. Thomas. Water volumes are controlled changing the duration of operation as the pumps are fixed speed. There are 3 City of London pumps within EMPSR. These pumps and infrastructure downstream of them are owned by the City of London. The results are enclosed in **Appendix C**.

4. Recommended Flow Projections for Master Plan

Following the collection of survey data from municipalities and a comprehensive review of relevant reports and historical data, the overall flow projections are summarized within the tables and figures in this section. The growth flow projections at ADD are provided in **Table 4-1** and **Figure 4-1**. Peaking the municipalities flow projections, except London (London water demand is at 22.7 ML/d), by 1.76 per **Table 2-1**, provides the estimated MDD for the EAPWSS; these are shown in **Table 4-2** and **Figure 4-2.** These projections will form the basis for future planning and infrastructure decisions in the Master Plan. System demands with London under alternate scenarios (outside of current agreement) for flow projections are enclosed in **Appendix D** as supplementary information for reference.

Table 4-1: Water Demands (ADD) Summary for EAPWSS with London Medium Flow

Growth Projections	Demands ML/d				
	2026	2031	2036	2041	2046
Low Growth	54.61	57.82	61.05	64.30	67.57
Medium Growth	57.21	62.43	68.15	73.99	79.98
High Growth	58.26	65.88	73.21	80.54	88.03

Figure 4-1: EAPWSS ADD Flow Projections

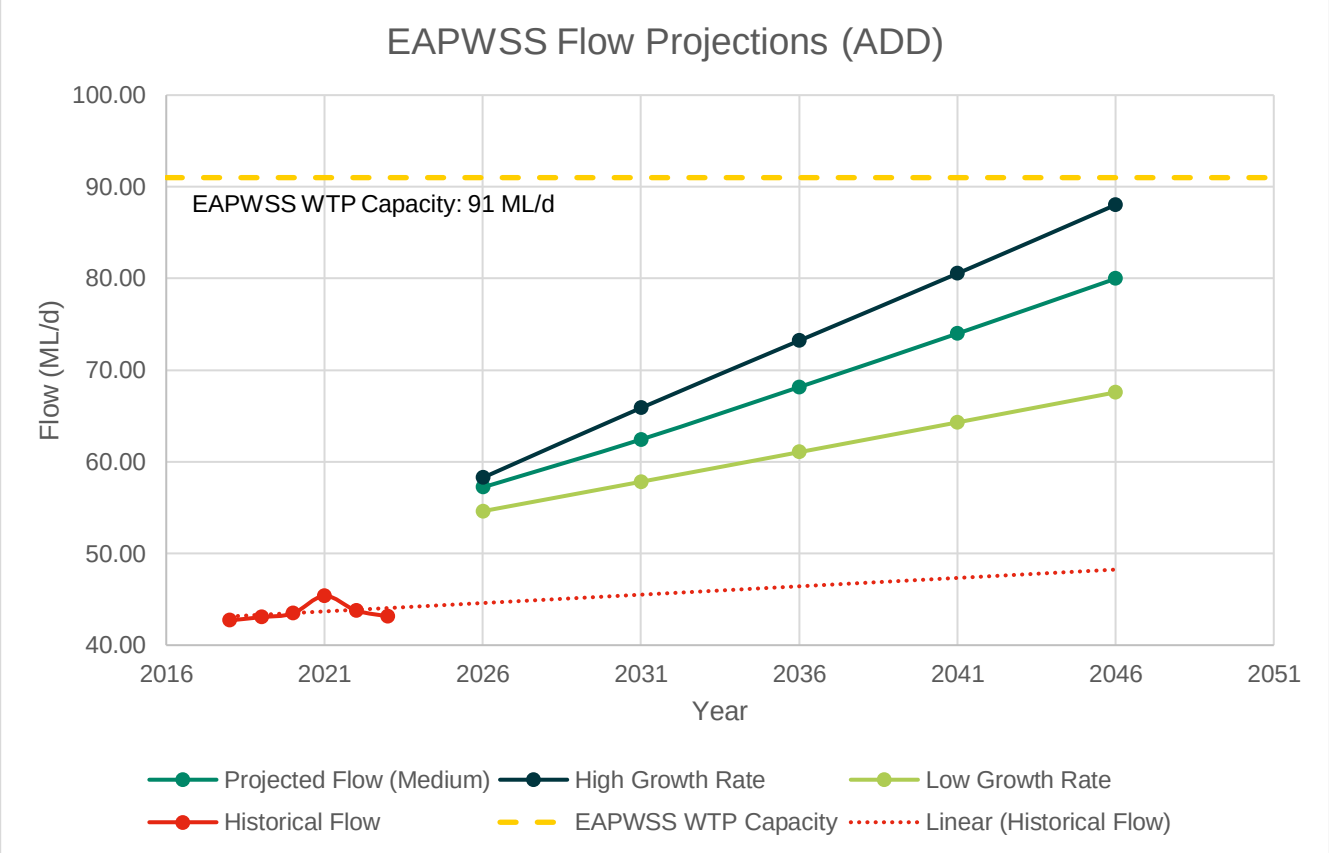
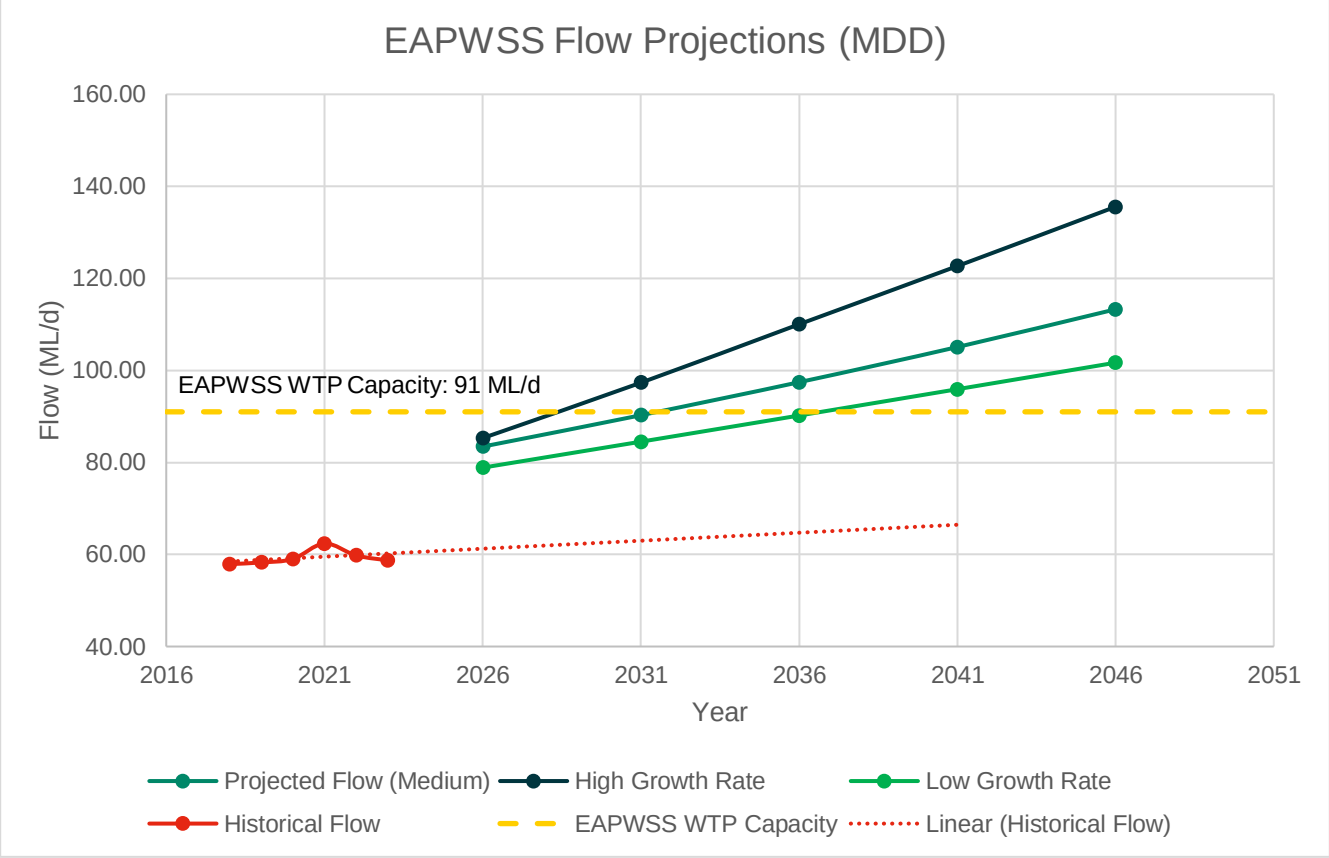


Table 4-2: Water Demands (MDD) Summary for EAPWSS

Growth Projections	Demands ML/d				
	2026	2031	2036	2041	2046
Low Growth	78.87	84.51	90.20	95.92	101.68
Medium Growth	83.44	90.26	97.44	105.08	113.28
High Growth	85.29	97.33	110.03	122.67	135.56

* MDD for municipalities except London estimated by the average MDD peaking factor (1.76) in **Table 2-1**.

Figure 4-2: EAPWSS MDD Flow Projections



5. Conclusions and Recommendations

The flow projections developed for EAPWSS provide a comprehensive assessment of future water demand scenarios based on a detailed analysis of survey data, historical consumption trends, and population growth projections.

To conduct the flow projections, the following work was performed:

- Reviewed Historical Water Consumption
    - The historical water consumption data includes both residential and Industrial, Commercial, and Institutional (ICI) usage.
- Reviewed survey data
    - Central Elgin: Applied survey data to flow projections. Applied average MDD peaking factor of 1.76 to calculate MDD.
    - Southwold: Reviewed survey data and applied average MDD peaking factor of 1.76 to it to calculate ADD. Used this projection for the high growth flow projection as it was approximately 10% per year growth.
    - St. Thomas: The survey data obtained was number of service connections and could not be used for the demand evaluation. Further analysis was conducted using population estimates from the 2023 Wastewater Master Plan, the 2024 Growth Analysis Study, and the 49 Census Divisions MOF Population Projections, including future developments. Applied per capita demands of 270 L/c/d and 281 L/c/d to calculate flow projections and MDD peaking factor of 1.76 was applied.
    - Malahide: Applied survey data to flow projections.
- Estimated flow projections for municipalities that did not participate in the survey:
    - Aylmer: Flow projections based on survey data from Malahide, who responded on behalf of the Aylmer and Port Burwell Secondary Water Supply Systems
    - Bayham: Flow projections based on survey data from Malahide, who responded on behalf of the Aylmer and Port Burwell Secondary Water Supply Systems
    - Dutton-Dunwich: Flow projections based on historical water consumption trendline and Southwold survey information
    - London: Flow projections provided by London separately
- Estimated flow projections for high, medium and low growth scenarios
    - With the City of London and EAPWSS water agreement in place and a City of London ADD of 22.7 ML/d, the flow projections for ADD in 2046 under low, medium and high growth scenarios are 67.57 ML/d, 79.98 ML/d and 88.03 ML/d, respectively.
    - Flows within this memorandum will be carried forward with future hydraulic modeling work part of the Master Plan project

Based on the flow projection analysis results presented in this technical memorandum, it is recommended the water servicing strategy and infrastructure upgrades options to be analyzed with the medium growth projection scenarios while the high and low growth scenarios will be used to review the implications to the recommended infrastructure upgrades.

We trust that the details presented herein area sufficient to meet the needs of EAPWSS. Should you have any questions, please feel free to contact the undersigned.

Yours sincerely,

Report Prepared by:	Report Reviewed by:
Sophy Leung Hydraulic Analysis Modeller AECOM Canada ULC.	Matt Simons, P.Eng. Process Engineer AECOM Canada ULC.

Appendix A – Survey Response (Summer 2025)

Appendix A

Municipality Name:	What is the current total water service population (residential + non-residential) and total water demands for your system? Clarify any areas or communities served, including customers in other mu...	What is the source of the information for the current total water service population (residential + non-residential) and total water demands for your system?	2026 or equivalent year: expected average day flow and / or maximum daily water demand (m3/d) for expected population.	2031 or equivalent year: expected average day flow and / or maximum daily water demand (m3/d) for expected population.	2036 or equivalent year: expected average day flow and / or maximum daily water demand (m3/d) for expected population.	2041 or equivalent year: expected average day flow and / or maximum daily water demand (m3/d) for expected population.	2046 or equivalent year: expected average day flow and / or maximum daily water demand (m3/d) for expected population.	What is the source of the information for the projected water service population / demand for your system?	High growth rate in relation to expected growth (+x%)	Low growth rate in relation to expected growth (+x%)	Please provide any additional information to support the development of the Master Plan.
Municipality of Central Elgin	316,412 m3 with 3,667 customers	Actual consumption and billing accounts;	654,780	711,480	768,398	829,870	896,259	Water wastewater rates study;	Not sure of the impacts of PowerCo to growth in the area	Not sure of the impacts of PowerCo to growth in the area	We will need to assess the impacts of the PowerCo site on development in Central Elgin. Plus, the Province is working on a feasible and servicing plan for the former St Thomas Physc hospital in Central Elgin. At this time, not many details are known for this site.
Township of Southwold	Residential: Estimated at 4990 people Non-Residential: 700 plus Students at Southwold Public School 1000-2000 employees at Amazon Fulfillment Centre 200+/- employees at NorthStar Windows Daily Demands: Average Daily 2023: 1763 cubic meters a day (20.41 l/s) From Water modeling Report (2020) Avg: 1590 cubic meters a day (18.4 l/s) Max Day: 3084 cubic meters a day (35.7 l/s) Peak Hour: 53.0 l/s Dutton-Dunwich: Buys 550 +/- cubic metres a day at Iona Interconnect Middlesex Centre has approximately 20 households connected to the Southwold Distribution System	Southwold Water System model Report ;	2561 cubic metres a day	5630 cubic metres a day	9420 cubic metres a day	13200 cubic metres a day	17010 cubic metres a day	Development Charge Background Study;Official Plan Update;Various Reports (STAWSS and Sanitary Study);	10% (we need to accommodate for industrial growth in Southwold Industrial Lands)	2%	Any studies or additional information can be provided upon request from development@southwold.ca
Corporation of the City of St. Thomas	In May 2024, the City had the following service connections: Residential (16,080) (includes ~50 homes in the Twp. of Southwold (Lynhurst Park Drive Subdivision)) Commercial/Institutional (670) Industrial (168) St. Thomas Annual Demand (m3/year) 2021 - 3,836,846 2022- 3,809,992 2023- 3,935,617 St. Thomas System Average Day (m3/day) 2021 - 10,512 2022 - 10,438 2023 - 10,783 St. Thomas System Max Day (m3/day) 2021 - 20,761 2022 - 20,846 2023 - 24,440	Calculated based on Actual Meter Reads, Billing Data and estimates of non-revenue water.;	Residential 19918 Commercial 870 Industrial 168 Avg. 14580 m3/day Max. 25515 m3/day	Residential 24959 Commercial 914 Industrial 177 Avg. 27837 m3/day Max. 51057 m3/day	Residential 27469 Commercial 932 Industrial 180 Avg. 36177 m3/day Max. 67302 m3/day	Residential 29625 Commercial 947 Industrial 183 Avg. 44027 m3/day Max. 82635 m3/day	Residential 31590 Commercial 960 Industrial 185 Avg. 45347 m3/day Max. 84945 m3/day	Calculated based on City of St. Thomas Growth Analysis Study April 2024, South Edgeware Booster Pumping Station Yarmouth Yards Industrial Development Park Design Report March 2024, and discussions with City of St. Thomas staff.;	2.5	1.5	

Appendix A

Municipality Name:	What is the current total water service population (residential + non-residential) and total water demands for your system? Clarify any areas or communities served, including customers in other mu...	What is the source of the information for the current total water service population (residential + non-residential) and total water demands for your system?	2026 or equivalent year: expected average day flow and / or maximum daily water demand (m3/d) for expected population.	2031 or equivalent year: expected average day flow and / or maximum daily water demand (m3/d) for expected population.	2036 or equivalent year: expected average day flow and / or maximum daily water demand (m3/d) for expected population.	2041 or equivalent year: expected average day flow and / or maximum daily water demand (m3/d) for expected population.	2046 or equivalent year: expected average day flow and / or maximum daily water demand (m3/d) for expected population.	What is the source of the information for the projected water service population / demand for your system?	High growth rate in relation to expected growth (+x%)	Low growth rate in relation to expected growth (+x%)	Please provide any additional information to support the development of the Master Plan.
The Township of Malahide - Administering Municipality for the Aylmer Secondary, Port Burwell Secondary Water Systems. The Malahide Dist. System receives all of its water from each secondary.	Total flow in 2023 for Aylmer Secondary was 1,783,661m3. Aylmer currently has approx. 2860 metered customers within their Dist. System. C.E has approx. 175 direct connections to Aylmer Secondary x 2.6 average household in CE= Est. Population of 455 people Total consumed in 2023 was 31,749 m3 of the 1,786,661m3 Town of Aylmer has approx. 2860 connections which receive from Aylmer Secondary and estimated population of 2860 x 2.6 avg. person per household estimate = 7436 people Total Consumed in 2023 was approx. 1,740,675m3 of the 1,783,661m3 Malahide has approx. 53 direct connections to the Aylmer Secondary. serving estimated population of 137.8 people. Malahide has additional connection east of Aylmer which receive water from Aylmer Dist. System as noted below. This water is accounted within the volume that entered Aylmer in 2023 which was 1,740,675m3. Water exiting Aylmer system supplies Malahide Dist. System to Ontario Police College (max population of 700 people) , Dingle St., Talbot St. East of Aylmer. Malahide received 65,463m3 from the Aylmer Dist. System. Estimated population of Malahide Customers is 89 x 2.6 (avg. person per household estimate) = population 231.4 people plus the potential 700 at OPC=931.4 people receiving water from Aylmer Dist. System.	Meter Reading Routes, Annual Water loss calculations for Aylmer and Port Burwell Secondary Supply Systems;	Anticipated volumes for the Aylmer Secondary assume 5% increase from 2023 flows therefore 1,783,661m3 in 2023 would be approximately 1,966,486m3 in 2026/ Anticipated volumes for the Port Burwell Secondary assume 5% increase from 2023 flows therefore 264,824m3 in 2023 would be approximately 291,967m3 in 2026	Unknown	Unknown	Unknown	Unknown	Annual Water Loss Calculations for Aylmer and Port Burwell Secondary Systems;	3%	0.5 % or less	Please contact Sam Gustavson at 519-773-5344 ext. 226 for any questions or clarification
The Township of Malahide - Administering Municipality for the Aylmer Secondary, Port Burwell Secondary Water Systems. The Malahide Dist. System receives all of its water from each secondary.	Total Consumed by Malahide from Aylmer Secondary in 2023 was 11,237m3 of the 1,786,661m3 Total Flow in 2023 for Port Burwell Area Secondary Water Supply System was 264,824m3. Supplies Water to Bayham Dist. System. Bayham estimates total of 850 connections by end of year within their dist. System. PB Secondary: Central Elgin has approx. 75 direct connections to PB secondary x 2.6 avg. household in C.E.= Est. population of 195 people Total consumed in 2023 was 10,417m3 of the 264,824m3 Bayham has approx. 850 connections x 2.6 person per household estimate =approx. population of 2210 which receive all water from secondary system- Total Consumed in 2023 was 162,009m3 of the total flow of 264,824m3 Malahide has approx. 595 connections x 2.6 (person per household estimate)= 1,547 people in Malahide Total consumed in 2023 from the PB Secondary was approx. 92,398m3. Malahide has approx. 595 connections receiving water from PB secondary. Estimated population of 595 x 2.6 (estimated persons per household)= 1,547 people served. Malahide has approx. 204 direct connections to the PB secondary. All other connection represent water received by Malahide Dist. System from PB secondary. Total Connections P.B.= 1,520 connections receiving water from PBASWSS Total Population Estimate= 3,952 (Malahide, Central Elgin, Bayham)										

Appendix C – City of London's Current Pumping Capacity at Elgin-Middlesex Terminal Reservoir

Table C-1 - City of London Pump Ratings at Elgin-Middlesex Terminal Reservoir (EMTR)

EMPSR London Pump	Pump Rated Point	Comments
Pump 4	485 L/s (41.9 ML/d) @ 61m TDH	Pumps transfer water from EMTR to Southeast Reservoir and Pumping Station (SERPS); normally under 12 hours a day. Typical transfer flow rate is 600 L/s (51.8 ML/d). While not a normal operation, Pump 4 and Pump 5 could be operated in parallel and convey greater than 91 ML/d by lowering the pressure sustaining setpoint on the reservoir inlet control valve at SERPS.
Pump 5	485 L/s (41.9 ML/d) @ 61m TDH	
Pump 6	845 L/s (73.0 ML/d) @ 77.5m TDH	Pump 6 is sized as an emergency pump to pump water directly from EMPS to the City of London water distribution system.

From **Table C-1**, it can be seen that the City of London pumping capacity at EMTR far exceeds the water agreement and moreover, that the entire existing EAPWSS capacity could be theoretically directed to the City of London.

There also exists the ability to backfeed from the City of London distribution system to EMTR for short durations. Previous testing of this operation has shown that flow rate of approximately 350 L/s (30.2 ML/d) is possible for backfeeding EMTR.

With the existing infrastructure in place, there exists flexibility for London to receive more or less flow than current operations.

Appendix B.2

Technical Memorandum #2

System Capacity Evaluation and Hydraulic Modelling Analysis

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Project name:
Elgin Area Primary Water Supply System 2024 Master Plan Update

Project ref:
60730275

From:
Eppo Eerkes, P.Eng.
Matt Simons, P.Eng.
Benny Wan, P.Eng.

Date:
September 12, 2025

Memo

Subject: Technical Memorandum No. 2 – System Capacity Evaluation and Hydraulic Modelling Analysis – EAPWSS Master Plan

1. Introduction

AECOM Canada ULC has been retained by Regional Water Supply (RWS) to update the Water Master Plan for the Elgin Area Primary Water Supply System (EAPWSS). The objective of this Technical Memorandum (TM) is to summarize the design and level of service criteria for the EAPWSS as well as the system assessment results and hydraulic modelling results for the water servicing options. The information presented herein will provide a foundation for the Water Master Plan and will support the planning process for Class Environmental Assessment for identifying preferred servicing alternative.

This TM outlines the service criteria and guidelines for the following:

- System demand forecasts
- Available storage capacity at terminal reservoir and water treatment plant and site capacity for additional storage
- Storage requirements methodology
- Fire flow guidelines
- Pipeline maximum flow velocity / head loss gradient
- Member community meter pressure requirements
- Capacity trigger to initiate infrastructure expansion
- Pipe pressure rating
- Water age target
- Useful life of infrastructure
- Redundancy
- Assumption for the System Analysis
- System capacity assessment
- Hydraulic modelling results

2. Abbreviations

The following abbreviations were used throughout the report.

Abbreviation	Description	Abbreviation	Description
ADD	Average day demand	LOLO	Low Low Alarm Level
AFO	Acoustic fibre optic	**L/s**	Litre per second
AWWA	American Water Works Association	**MDD**	Maximum day demand
CPP	Concrete pressure pipe	**MECP**	Ministry of Environment, Conservation and Parks
CT	Chlorine contact time	**ML**	Megalitres
DBP	Disinfection By-products	**ML/d**	Megalitres per day
EA	Environmental Assessment	**MWD**	Maximum week demand
EAPWSS	Elgin Area Primary Water Supply System	**NPSHr**	Required net positive suction head
EATM	Elgin Area Transmission Mains	**PS**	Pumping Station
EMPS	Elgin Middlesex Pumping Station	**RWS**	Regional Water Supply
ETR	Elgin Terminal Reservoir	**SCADA**	Supervisory control and data acquisition
HI	High Alarm Level	**TOC**	Total organic carbon
HIHI	High-High Alarm Level	**TM**	Technical Memorandum
HGL	Hydraulic grade line	**UV**	Ultraviolet
LIT	Level indicating transmitter	**WQFPU**	Water Treatment Plant Water Quality Facility Plan Update
LO	Low Alarm Level	**WTP**	Water treatment plant

3. System Demand Forecasts

A flow projection analysis was completed as part of TM1 to review future water demands for the municipalities that currently receive water from the EAPWSS. Flow projections were provided in 5-year increments for milestone years 2026, 2031, 2036, 2041, and 2046 under low, medium, and high growth scenarios. **Table 3-1** identifies the medium growth average day demand (ADD) forecasts outlined in TM1, which will be used within the model. Demand forecasts for each design year for each secondary system user will be allocated to all model nodes based on the proportion of current municipal demand at each meter.

Table 3-1: Water Demands Summary (ADD Medium Growth) for EAPWSS

ADD (ML/d)				
2026	**2031**	**2036**	**2041**	**2046**
57.21	61.09	65.17	69.51	74.16

According to the MECP Design Guidelines for Drinking Water Systems, Section 3.4.1, the drinking water system including the water treatment plant and treated water storage should be designed to satisfy the greater of the following demands:

- Maximum day demand plus fire flow (where fire protection is to be provided); or
- Peak hour demand

The above guidelines are intended for water supply in local distribution systems. Since the EAPWSS is responsible for providing water treatment and transmission only, therefore, providing fire flow and peak hour demand should be the responsibilities of the member communities. Member communities are encouraged/required by EAPWSS

to meet their water needs above average day within their distribution system - maximum day, peak hour, fire and emergency etc.

The EAPWSS only provides water supply at average day demand and be accommodative to meet some limited fluctuation in member community water needs above average day flow. Member communities are encouraged/required by EAPWSS to meet their water needs above average day within their distribution system - maximum day, peak hour, fire and emergency etc.

The water servicing strategy and infrastructure evaluations of EAPWSS will be based on ADD, historical maximum day demand (MDD) conveyed from the water treatment plant (WTP) and historical maximum week demand (MWD) peaking factors for supply to the various secondary systems.

The treatment and pumping component will be assessed under MDD condition. If deficiency is identified, the storage component will be evaluated against the MWD to confirm the serviceability. For the hydraulic modelling, the extended 7-day MWD simulation, which also captures the MDD, is adopted to ensure serviceability.

3.1 Member Community Supply Characteristics

Table 3-2 summarizes minimum, average and maximum member community supply characteristics based on SCADA data for meters on SCADA for the MWD or Mid-May 2023 that will be used in the hydraulic modeling. Much of this data was obtained through previous hydraulic modeling assignments. Where possible, the water transfer patterns for the MWD for each community from Mid-May 2023 will be used for Maximum Week scenarios. The member community supply, or “Call for Water”, is generally based on a water level reaching a pre-defined set point in the member community storage facilities. The minimum supply is defaulted at “0” and demand is as-needed.

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Table 3-2: Member Community Supply – Maximum Supply

Municipalities	Meter	Model Nodes	Minimum Supply (L/s)	Average Supply (L/s)	Maximum Supply (L/s)	Comment
Port Burwell Area Secondary Water Supply System	Port Burwell Chamber – Dexter Line – MV1	J4054	0	13.11	25.63	Taken from Mid-May, 2023
Central Elgin (Port Stanley)	Elgin Plant – Surge Building – 10 inch	PS_PRV1		TDB		SCADA N/A
Central Elgin (Port Stanley)	Elgin Plant – Surge Building – 4 inch	PS_PRV2		TBD		SCADA N/A
Central Elgin (Port Stanley)	Fruit Ridge	J4110		0.1		Meter not on SCADA
Central Elgin (Port Stanley)	John Wise Line	J4126		0.0		Meter not on SCADA
Central Elgin (Port Stanley)	Sparta Line	J94		0.0		Meter not on SCADA
City of St. Thomas	Albert Roberts PS	ARPS_N	0	99.74	175.65	Taken from Mid-May, 2023
Aylmer Area Secondary Water System	EMPS (Aylmer)	EMPS_N16	0	52.2	130.54	Taken from Mid-May, 2023
City of London	EMPS	EMPS_N14	0	289.4	561.1	Taken from Mid-May, 2023 Emergency pump is rated for 845 L/s
St. Thomas Area Secondary Water Supply System	EMPS (St. Thomas)	EMPS_N15	0	112.97	276.46	Taken from Mid-May, 2023

Municipalities	Meter	Model Nodes	Minimum Supply (L/s)	Average Supply (L/s)	Maximum Supply (L/s)	Comment
City of St. Thomas	South Edgeware Road PS, Pumps to be inside new PS* (To be commissioned in 2026)	To be Added	0	0	0	New Connection, to be reflected in future scenarios for the hydraulic model - not for the baseline / current model. Capacities to be taken from design and tender documents

* Note: As a background information, the planned South Edgeware Road PS will supply the Yarmouth Yards industrial area and backup to the St. Thomas secondary system. The new PS will include a new St. Thomas flow meter.

4. Regional Storage

The total, current and potential useable storage capacities of the EA WTP and ETR were reviewed based on available information, operational setpoints and as-built drawings. The total available capacity of the reservoirs is assessed and detailed in the following subsection.

Since the EAPWSS delivers drinking water to the communities it services; it is understood that providing equalization, fire storage and emergency storage is the responsibility of the member communities. The ETR is used for the operational use of EA WTP as its primary purpose. Flexibility use should be regarded as a secondary purpose and only if available storage at the time of the non-standard water use. Therefore, the required storage for the EAPWSS will consider the pumping synchronization and flexibility only. Storage evaluation methodology will be discussed further in Section 5.

4.1 Available Reservoir Capacity – Regional System

The total, current usable, and potential usable capacities of the EAPWSS terminal storage facilities are presented in **Table 4-1**. The concept of the total, current usable, and potential usable capacities of the EAPWSS storage facilities are illustrated in **Figure 4-1**.

1. The total capacity of each reservoir is identified based on the height between the bottom and top reservoir water levels multiplied by the total surface area for each facility.
2. The current useable capacity is determined based on the height between the current operating range using the LO and HI level setpoints provided by RWS multiplied by the total surface area for each facility.
3. The potential usable capacity is based on the height between the current operating range using the LOLO and HIHI level setpoints provided by RWS multiplied by the total surface area for each facility.

The LO, HI, LOLO, and HIHI are the low, high, low-low and high-high alarm levels in the terminal storage facilities of the regional system. These alarm levels indicate the filling operation of the terminal storage facilities and governed by the pump configurations and hydraulics. Therefore, they are provided for adoption in evaluating the current useable storage and potential useable storage capacities. ETR is planned for an expansion with two new cells to double the existing capacity. RWS is conducting the preliminary engineering work for the planned expansion.

Table 4-1: Existing and Future Storage Capacity Assessment

Facility	Total Capacity (ML)	Current Usable Capacity			Potential Usable Capacity		
		Low Level Setpoint (m)	High Level Setpoint (m)	Usable Capacity (ML)	Low Level Setpoint (m)	High Level Setpoint (m)	Usable Capacity (ML)
EA WTP (1, 2)	2.8	3.00(3)	4.50(3)	1.5	2.80(3)	4.65(3)	1.9
ETR (4)	57.7	3.20	5.50	20.3	3.00	5.70	23.8
Future ETR(5)	115.7	3.20	5.50	40.5	3.0	5.70	47.6

(1) Includes only storage in reservoir (ie clear well, suction conduit and pump well not included)
(2) Typically, EA WTP can achieve Chlorine Contact Time (CT) with UV in operation and Clear Well full. Notwithstanding this, some conditions exist where operations may be restricted due to CT requirements at that time (ie UV or clear well out-of-service).
(3) The low level setpoint (usable) is the LO, high level setpoint (usable) is the HI, low level setpoint(potential) is LOLO and high level setpoint (potential) is HIHI for EA WTP.
(4) Assumes both reservoir cells are in service. Similar to EA WTP, the low level setpoint (usable) is the LO, high level setpoint (usable) is the HI, low level setpoint(potential) is LOLO and high level setpoint (potential) is HIHI.
(5) As advised by RWS, the original conceptual plan is to expand ETR to 4 cells, i.e., doubling of the existing capacity.

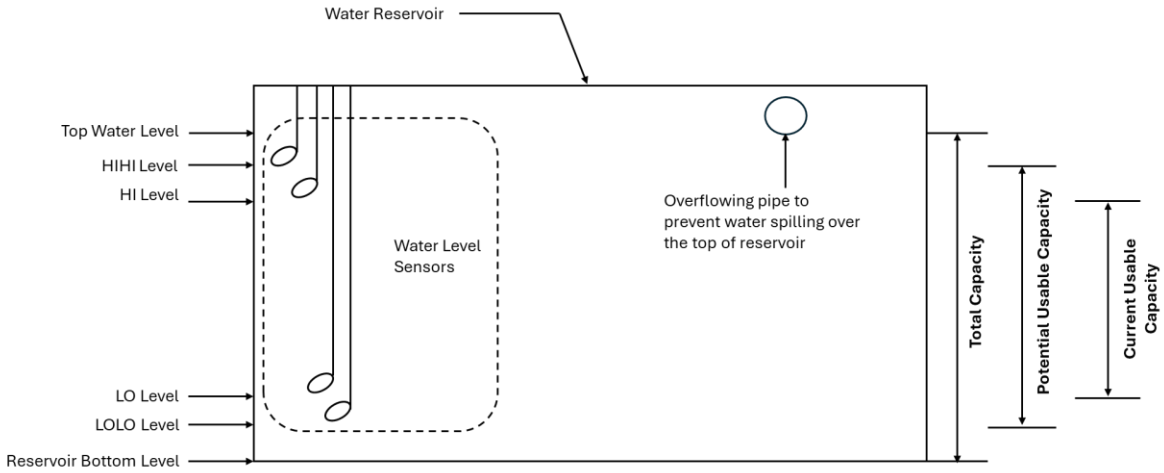

Figure 4-1 Illustration of Water Levels and Storage Capacity in a Typical Terminal Storage Facility

4.2 Municipal Storage

Backfeed from municipal storage facilities would depend on the hydraulic grade in the facilities and therefore, gravity flow might not be feasible. Furthermore, the municipal storage facilities are maintained separately by the member communities for meeting their local water distribution needs For the purposes of this Master Plan, municipal storage was not considered when assessing regional storage needs of the EAPWSS.

5. Storage Requirements Methodology

Since the EAPWSS is not a municipal distribution system but a water wholesaler to the communities it services, meeting equalization storage, fire storage and emergency storage is the responsibility of each member community. Therefore, the equalization storage, fire storage and emergency storage, as articulated in the MECP Design

Guidelines for Drinking Water Systems, are not applicable to the regional system. Further details of the storage components in the MECP Design Guidelines for Drinking Water Systems are shown in Appendix A.

The required storage for the EAPWSS should consider the pumping synchronization as the primary purpose and any remaining surplus storage for flexibility use as a secondary purpose. Equalization, fire and emergency storage are considered not applicable for the EAPWSS. In evaluating the storage requirements, the following two considerations are recommended to be applied. The pumping synchronization and flexibility storage are further explained in the sub-sections below.

- **Pumping Synchronization Storage:** Storage capacity to improve/assist the resiliency in operating the water transmission system. This is described further in Section 5.1.
- **Flexibility Use:** Storage capacity to provide water supply for the local area communities while the pumping synchronization storage volume is maintained. This is described further in Section 5.2.

5.1 Pumping Synchronization Storage

Pumping Synchronization Storage is applicable to water treatment plants and the pumping stations.

In the water treatment plant, one of the key considerations is the synchronization of input of treated water (from treatment processes) and output of treated water (to communities).

When the output of treated water is increased by pumping a higher flow to meet the higher water usage during daytime, it takes time for the input of treated water to catch up. The onsite storage of treated water at the water treatment plant should allow a minimum of 1hr pump ramp-up time for the input of treated water while output supply is maintained to the system at or below the design capacity of the water treatment plant.

Similarly, in any pumping station, when the input of treated water from a upstream pumping facility needs time to catch up with the increasing output of treated water, the storage in the pumping station should allow a minimum of 1hr pump ramp-up time for the upstream pumping station while the pumping facility continues to supply water to the system at the design capacity.

For all pumping facilities (WTP and PS), a minimum storage volume will be defined as the existing SCADA alarm setting for low-low limit. The minimum storage volume should be further reviewed and consider the water level associated with the net positive suction head (NPSH) requirements for the existing pump(s) at the facility as well as other operational factors including water quality, air entrainment, chlorine contact time, etc.

In summary, the pumping synchronization storage is equal to the capacity required to maintain low-low storage level limit plus the capacity for pump synchronization.

5.2 Flexibility Use

The flexibility use storage differs from the pumping synchronization storage. It is the surplus capacity after considering the pumping synchronization storage and considered as the secondary purpose of the terminal storage facilities of the regional system for non-standard water use (i.e., any other water uses apart from those mentioned under Section 5.1).

The flexibility use capacity will be determined by subtracting the potential useable capacity of the existing storage facility by the pumping synchronization storage as described above.

The flexibility use capacity will determine the service duration for non-standard water use. The service duration under non-standard water use will be evaluated based on the demand conditions (e.g. ADD, MWD or MDD) and the available storage capacity for flexibility use. The service duration will be reported as the available level of service under non-standard water use for each service area.

6. Pipeline Maximum Flow Velocity / Head Loss Gradient

6.1 Transmission Mains

Transmission main maximum velocity and head loss gradient are proposed to be used to evaluate the theoretical design capacity of each transmission main. For comparison, velocity and head loss gradient criteria used in other municipalities and guidelines are listed as follows:

- City of Toronto: 2.0 m/s (fire flow 3.0 m/s); head loss gradient 2 to 5 m/km
- Peel Region: 2.0 m/s
- City of Calgary: 2.0 m/s; velocities of 3.0 m/sec or more may be permitted provided an engineering review of the specific feedermain has been made including acknowledgement of transient, head loss and erosion
- City of London: 1.5 m/s (fire flow 2.4 m/s)
- City of Dallas: 2.4 m/s
- Niagara Region: 2.0 m/s
- 2020 EAPWSS Master Plan: No specific guidelines stated
- AWWA M32 (Computer Modeling of Water Distribution Systems): 2.0 m/s; head loss gradient 3.0 m/km
- AWWA M9 (Concrete Pressure Pipes): 2.1 m/s (or up to 3.0 m/s for short pipe lengths)
- AWWA M11 (Steel Pipes): No velocity criteria
- MECP Drinking Water Design Guidelines for Treated Water (pumped): 3.0 m/s

For the EAPWSS Master Plan, it is recommended to use the following velocity and head loss gradient values:

- Maximum velocity: 2.0 m/s (consistent with major municipalities in Ontario)
- Maximum head loss gradient: 3.0 m/km (consistent with AWWA M32)

The actual velocity values will be estimated during the hydraulic analysis of various alternatives.

6.2 PS Suction and Discharge Velocity

The velocity requirements for the suction and discharge sides of the water pumps as recommended by MECP Design Guidelines for Drinking Water Systems are shown in **Table 6-1** and **Table 6-2**.

Table 6-1: PS Suction Piping Velocities (MECP Water Drinking Water Design Guidelines Table 7-1)

Pipe diameter	Velocity
Up to 250 mm (10 in)	1.0 m/s (3 ft/s) or less
From 300 to 800 mm (12 to 32 in)	1.5 m/s (5 ft/s) or less
Greater than 800 mm (32 in)	2.0 m/s (6.5 ft/s) or less

Table 6-2: PS Discharge Piping Velocities (MECP Water Drinking Water Design Guidelines Table 7-2)

Pipe diameter	Velocity
Up to 250 mm (10 in)	1.0-1.5 m/s (3-5 ft/s)
From 300 to 800 mm (12 to 32 in)	1.2-2.0 m/s (4-6.5 ft/s)
Greater than 800 mm (32 in)	1.8-3.0 m/s (6-10 ft/s), max 3.0 m/s (10 ft/s)

7. Treatment Plant Evaluation

7.1 Intake Capacity

The MECP Design Guidelines for Drinking Water Systems stipulate that the intake capacity should be able to meet the maximum day demand for a 20-year design period, as a minimum. To further ensure adequate capacity is available in the water treatment plant intake for operational use, it is recommended that the capacity of the water treatment plant intake should not exceed the maximum velocity of 1.5 m/s and headloss gradient of 1.5m/km. In addition to the velocity and headloss gradient, the following paragraph, as quoted from Section 4.2.4 of MECP Design Guidelines for Drinking Water Systems, will also be considered in evaluating the intake capacity for the Elgin Area WTP:

"The designer should consider the potential occurrence of frazil ice on intakes when determining crib design and inlet velocities. Intake crib materials should be of low thermal conductivity, with racks of smooth materials. The design should provide for low entry velocities below 75 mm/s (3 in/s) and uniform acceleration of water from inlet to intake pipe."

7.2 Treatment Capacity

Prior to the initiation of the Master Plan Study, RWS retained Stantec to complete the "Elgin Area Water Treatment Plant Water Quality Facility Plan Update" (WQFPU) which provide opportunities for improvement of the WTP performance for capacity, compliance and best practices as well as a "Process Evaluation Trigger" memo to develop a framework to inform when and under which conditions a re-evaluation of plant treatment processes. AECOM will utilize these documents along with previous project experience at the EA WTP to discuss the EA WTP treatment capacity.

Figure 2-1 of the WQFPU provided the unit process capacity in comparison to MECP design guidelines. This figure identified a number of processes that are below the WTP capacity of rated at 91 ML/d. In the report, the capacity of the pre-disinfection, flocculation and sedimentation processes were revealed to be only 41.8 ML/d, 41.1 ML/d and 46.3 ML/d respectively. The filtration capacity did meet the 91 ML/d though. Moreover, as a part of the WQFPU, full plant scale capacity testing was undertaken and in Table 2-5 of the WQFPU, it states "it is expected that Elgin Area WTP can operate at the rated plant capacity under most operating conditions, and that filtration and other process upgrades since the last full-scale capacity testing was performed have improved the performance of the Elgin Area WTP." As such, 91 ML/d will be used as the maximum treatment capacity between the start of the flocculation process to the end of the filtration process.

8. Member Community Meter Pressure Requirements

The modelling evaluation of alternatives will include an evaluation of available pressure at member community meters. In general, a value of 20 psi (140 kPa) will be used to evaluate model results (excluding those that take from a EAPWSS reservoir). According to the MECP Design Guidelines for Drinking Water Systems, 20 psi of water system pressure represents the worst-case scenario in operating the water system (i.e. fire flow conditions). Based on a review of model results to date, most meters meet or exceed this target. However, it is noted that the utility does not guarantee or have a commitment to provide a minimum pressure to member communities at meters.

9. Capacity Trigger to Initiate Infrastructure Expansion

A capacity trigger to initiate the planning process for expansions to the treatment, pumping, transmission and storage have been established for the EAPWSS through the previous master plan. Values used in master plans for other jurisdictions are provided below for comparison.

- 2020 EAPWSS Master Plan: The planning process for an expansion is triggered when 85% of the rated capacity is projected to be reached.
- Niagara Region: The planning process for an expansion is triggered when 80% of the rated capacity is reached. The plant and facility expansion must be completed before the 90% capacity is reached.
- Peel Region: When 90% of the plant rated capacity is projected to be reached, an expansion to the treatment plant is required to be in service, noting that different treatment processes have specific design criteria that are applicable.

For this master plan, a value of 85% of the available capacity is recommended to be used as a trigger point when comparing to the water demand conditions as discussed in Section 3 to initiate capacity expansion for the above infrastructure types (e.g., water treatment plants and pumping facilities). This refers to the start of the overall project life cycle and involves design concepts, conceptual design, overall life cycle including planning, Class Environmental Assessment (if applicable), preliminary engineering and detailed design.

Redundancy considerations will be addressed as discussed in Section 13.

10. Pipe Pressure Rating

Pipe pressure ratings for each transmission main at the time of design are based on available record drawings and shop drawings. **Table 10-1** shows the pressure class of each EAPWSS feedermain based on the available record drawings. Shop drawings will be required to confirm the pressure rating for these mains.

Modelled pressure for the master planning scenarios will be compared against the available pressure rating. Pipe sections that show an operating pressure above 90% of the original design pressure rating will be flagged. It is important to note that this does not include the pressure rating of pipeline appurtenances such as valves or air valves.

Table 10-1: EAPWSS Transmission Main Pressure Class

Feedermain	Pressure Class Range (at time of design)	
	From	To
Elgin A-Line	C303 CPP Class 175	C303 CPP Class 100
Elgin B-Line	C200 – Steel	

11. Water Age / Turnover Target

Water age, which can be estimated with the hydraulic model, is an indicator of hydraulic residence time within the transmission system. This is often used as a surrogate for other water quality parameters such as chlorine residual or disinfection by-product (DBP) formation. Based on historical water quality in the system, DBPs have not been a concern which is not surprising as total organic compound (TOC) concentrations have been relatively low at the Elgin Area WTP. However, should TOC concentration rise, DBP formation would be more likely and would warrant more frequent and thorough monitoring. It is also noted that the system is actively monitored to provide minimum chlorine residuals at various locations and take-offs throughout the system.

The water age will be estimated and compared for critical alternative solutions to be evaluated with the goal to minimize water age.

A review of the maximum age guideline used in several jurisdictions indicated the following:

- City of London: 3 days
- AWWA: 3 days
- Region of Peel: Any section of the transmission should maintain one volumetric turnover in every two days

For the scenarios to be evaluated as part of the Master Plan, the following criteria are recommended to be applied to confirm the size of future transmission main(s) would not result in negative impacts to water quality.

- Average water age target of 3 days based on an average day scenario.
- Any section of the transmission should maintain a minimum of 1.0 turnover in every 2 days.
- Any areas of concern based on the water age assessment will be identified and recommended for further review using chlorine decay modelling, which can be incorporated into the hydraulic model as a separate study.

12. Useful Life of Infrastructure

To estimate the remaining useful life of the various infrastructure components in the EAPWSS, the typical industry standards excluding mid-life asset intervention (e.g, rehabilitation) were compared against the age of the infrastructure within the system, hence it was used as a consideration when formulating and prioritizing capital works.

When the age of the above noted asset exceeds the total useful life, project(s) such as condition assessment or replacement will be identified for the Master Plan.

13. Redundancy Considerations

Considerations for redundancy of critical components within the EAPWSS will be explored when developing alternative solutions to meet the design criteria (future demand) for future growth. In reviewing the redundancy of the water supply, service durations under non-standard water use will be identified in the hydraulic model when determining the need for twinning. When twinning is confirmed to be needed, the size of the twinning will consider the future flows, water age, flexibility use for any planned future maintenance activities that require temporary shutdown of any existing transmission mains.

Qualitative assessment on the system redundancy will be considered if system deficiency is identified from the system evaluation results. When formulating upgrades to mitigate the system deficiency, considerations will be given to system redundancy.

14. Assumption for the System Analysis

The EAPWSS Elgin feedermain 750 mm A-Line pipeline is currently off-line for rehabilitation. It is assumed for the master plan modelling and analysis that the EAPWSS Elgin feedermain A-Line will be offline and identify any corresponding system deficiency during analysis.

15. Capacity Assessment

Hydraulic capacity of the following infrastructure was compared with system demand forecasts for each planning year, including the following:

- Water treatment plants.
- Pumping stations.
- Transmission mains.

- Storage.

A sensitivity analysis was also completed for the water treatment plants and pumping station capacity assessment for the low, medium and high MDD forecast developed in TM1. This is shown on Table 15-3. These are discussed in the following sections.

15.1 Capacity Assessment – Elgin Area Water Treatment Plant Intake and Raw Water Pumping Station

According to the Drinking Water Works Permit, the size of the existing intake for EA WTP is 1500mm with a total capacity of 182,000 m3/d (182ML/d). In comparison with the projected water demands for the Elgin Area water service area, the existing intake will provide sufficient capacity to meet the future flow and no capacity upgrade is required. **Figure 15-1** shows the comparison of the flow projections vs. intake capacity.

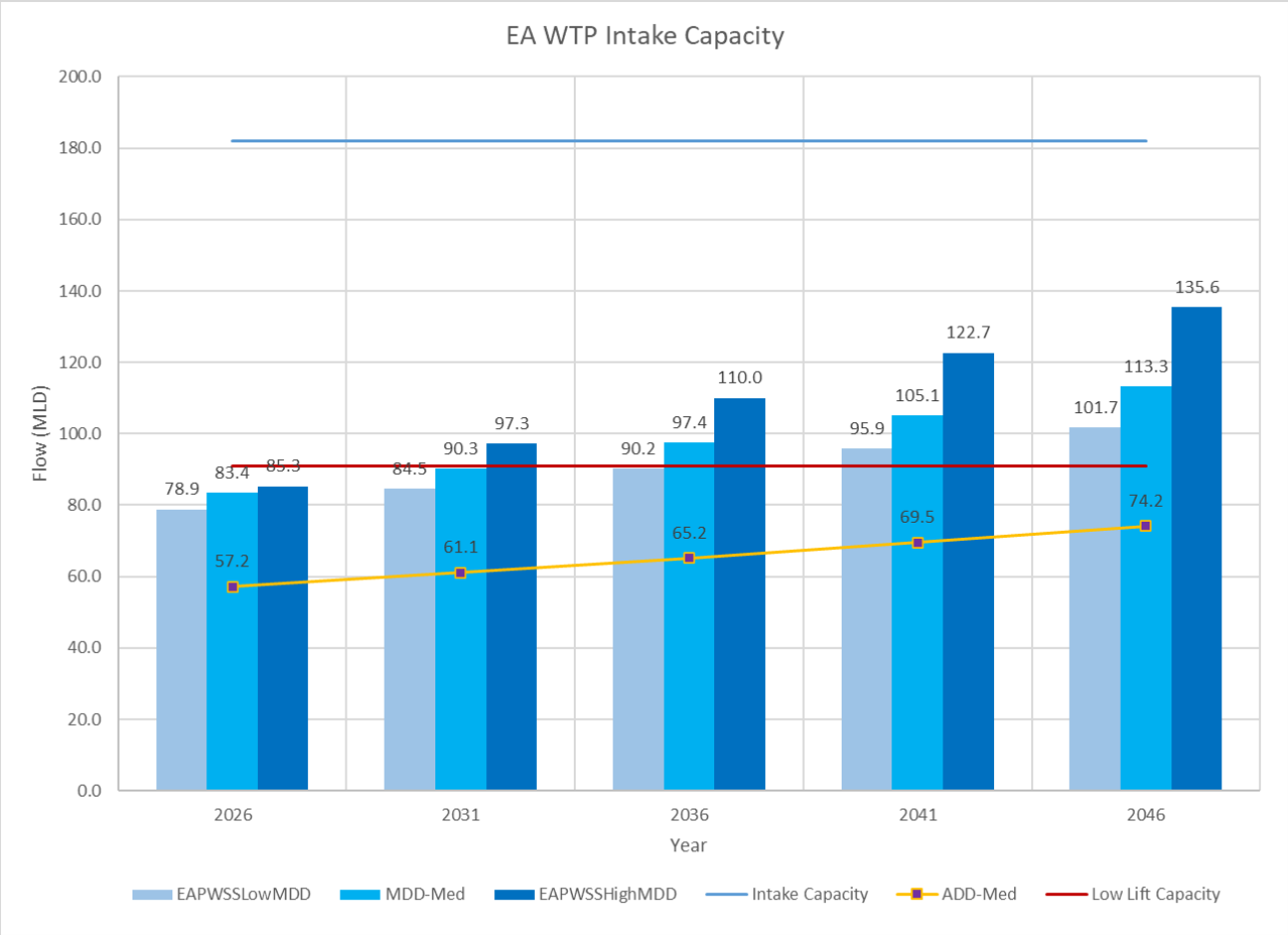

Figure 15-1 EA WTP Intake Capacity

For the raw water pumping capacity, the existing low lift firm capacity of 91 ML/d would be sufficient to meet the average day demand conditions for all planning horizon. However, the existing firm capacity would not be sufficient to meet the maximum day demand and therefore low lift pump capacity upgrades would be required.

15.2 Capacity Assessment – Elgin Area Water Treatment

Table 15-1 shows the range of capacities for the EA WTP for various processes. The capacity to be used for the hydraulic modelling was 91.0 ML/d, based on rated capacity as shown on the table.

Table 15-1: Water Treatment Plant Capacity Assessment – EA WTP

Process	Capacity (ML/d)
Rated capacity	91.0
Pre-disinfection / disinfection	41.8 / 76.8
Filtration	91.3
Sedimentation	46.3
Flocculation	41.1
Capacity Assumed for Master Plan	91.0
85% Capacity	77.4

The design basis for EA WTP capacity evaluation is typically the MDD condition. However, the MWD scenario was also reviewed, along with the modelling analysis to evaluate the capacity.

Typically, the planning process for upgrades should be initiated when 85% of the design capacity is reached. **Figure 15-2** shows low, medium and high system demand forecasts for each planning year along with the WTP capacity as discussed above, as well as 85% of this capacity. It is noted that for master plan purposes, the capacity assessment was based on providing the minimum London supply agreement of 22.7 ML/d.

Based on the figure, the following is concluded the WTP rated capacity as shown on **Table 15-1** based on the medium demand forecast:

- 85% of the WTP capacity will be reached for both the 2026 MDD and MWD condition.
- Full plant capacity will be reached by 2031 MDD and 2036 MWD.

Sensitivity analysis for low, medium and high MDD demand forecasts are presented on **Table 15-2**.

Table 15-2: Sensitivity Analysis – WTP Capacity Assessment (Low / Medium / High Demand Forecast)

Facility	Rated capacity					
	Year 85% Capacity Reached			Year 100% Capacity Reached		
	Low	Medium	High	Low	Medium	High
EA WTP	2026	<2026	<2026	2036	2031	<2031

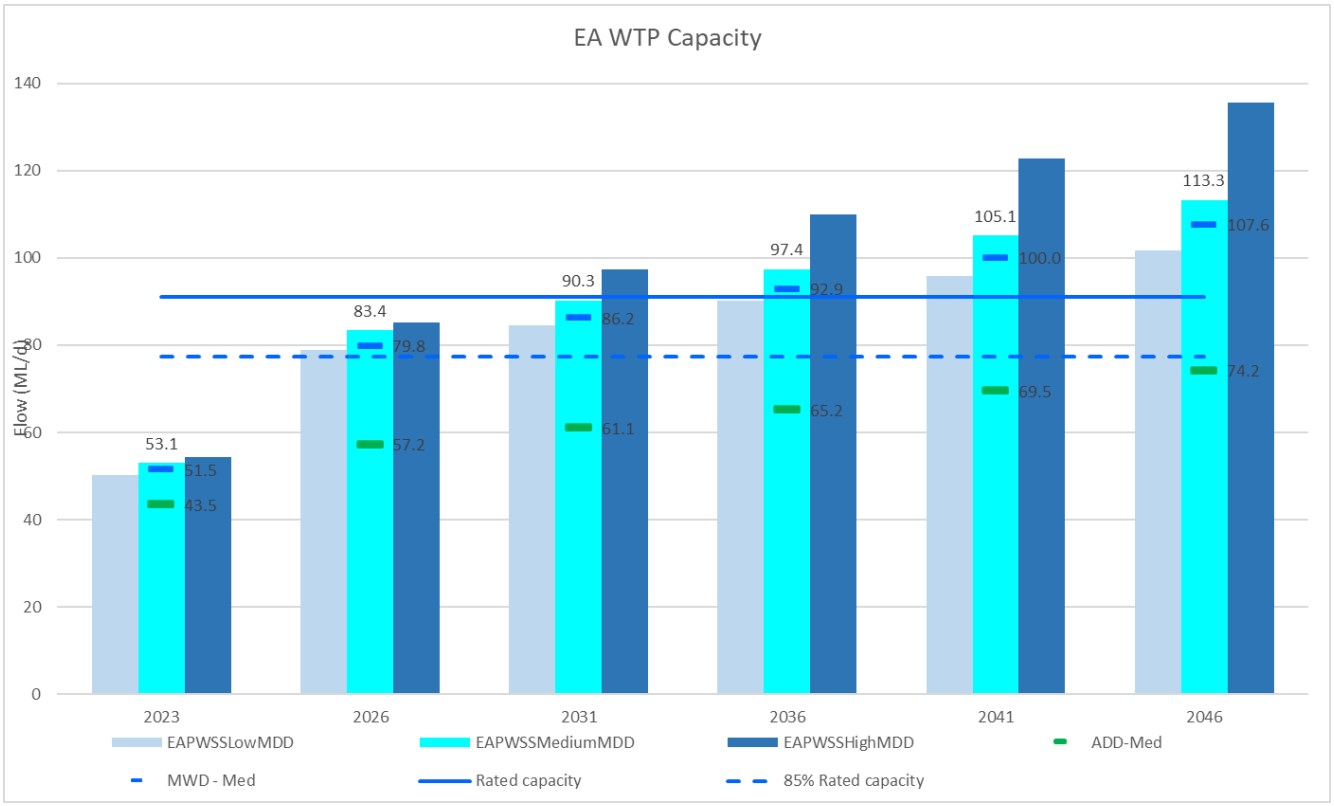

Figure 15-2 EA WTP Capacity Assessment

15.3 Capacity Assessment – Elgin Area Primary Water Supply System Surge Protection

Transients, also known as pressure surges or water hammer, occur when there is a sudden change in flow velocity within a water transmission system. These abrupt shifts in pressure can lead to pipe damage, pump failure, and system inefficiencies. Transients occur within a water system due to normal and emergency pump and / or valve operations.

Robust surge protection in a water transmission system is essential to maintaining pipeline integrity and ensuring stable operations. Key objectives of implementing surge protection include:

- Protect structural integrity by ensuring severe pressure fluctuations are mitigated.
- Reduce water quality risk by maintaining positive pressures within the system as much as possible.
- Improve operations to minimize recurring pressure fluctuations.

As part of the EA WTP High Lift Pump Replacements project in 2018, AECOM reviewed the Elgin Area WTP HLPS (EA HLPS), Fruitridge Surge Tank and 900mm dia. B-Line transmission mains and found that these components when working properly can provide adequate capacity for the full EA WTP rated plant capacity. When the EA WTP is expanded and 'A' Line transmission main is rehabilitated and brought back online, anticipated to be at the end of the master planning period, this surge protection system will need to be reassessed, and it is anticipated that more surge protection infrastructure will be required.

15.4 Capacity Assessment – Pumping Stations

The design basis for pumping station capacity evaluation is typically the MDD condition. However, the MWD scenario was also reviewed, along with the modelling analysis to evaluate the capacity. The capacity assessment results of pumping stations and transmission have also been reviewed in the hydraulic modelling section as shown in Section 15.

15.4.1 Elgin Area WTP HLPS

Figure 15-3 shows system low, medium and high demand forecasts for each planning year, along with the EA HLPS capacity as discussed above, as well as 85% of this capacity. These are shown for both the current B-Line (900 mm) only operation and operation with both the A-Line (750 mm) and B-Line in service. The A-Line is currently out of service. The assessment assumed that the current 750 mm A-Line size was used (no upsizing was evaluated):

Based on the figure, the following is concluded for the pumping capacity for the current B-Line only operation based on the medium demand forecast:

- 85% of the pump capacity will be reached for both the 2026 MDD and MWD condition.
- Full station capacity will be reached by 2031 MDD and 2036 for the MWD.

Based on the figure for the medium demand forecast, the following is concluded for the both the A-Line and B-Line in service:

- 85% of the pump capacity will be reached for both the 2036 MDD and MWD condition.
- Full station capacity will be reached by 2046 MDD and beyond 2046 for the MWD.

Sensitivity analysis for low, medium and high MDD demand forecasts are presented on **Table 15-3**.

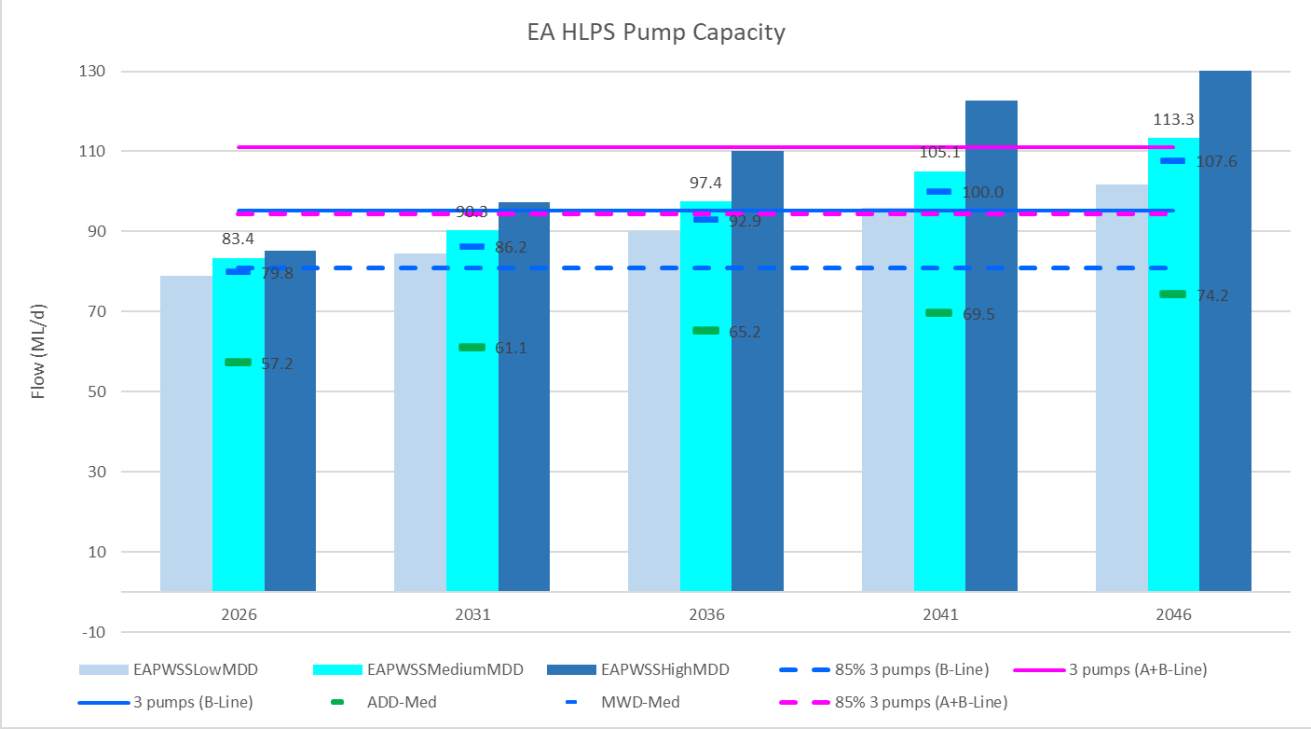

Figure 15-3 EA HLPS Capacity Assessment

Table 15-3: Sensitivity Analysis – PS Capacity Assessment (Low / Medium / High Demand Forecast)

Facility	Rated capacity					
	Year 85% Capacity Reached			Year 100% Capacity Reached		
	Low	Medium	High	Low	Medium	High
EA HLPS	2041	2036	2031	>2046	2046	2036

15.5 Capacity Assessment – Transmission Mains

The design basis for transmission main capacity evaluation was evaluated based on the EPS model results for the MWD for each planning year as discussed in Section 16. This was evaluated based on comparing the model results with the design criteria discussed in other sections, including velocity, headloss gradient and pipe pressure relative to the pressure rating. These values can fluctuate within transmission mains based on pumps in operation and system demands for each time step. These are discussed for the transmission mains in the following sections.

15.5.1 Elgin Area TM

Hydraulic model results as discussed in Section 16 for the EATM (A-Line and B-Line) show acceptable values for the velocity, headloss gradient and pressure rating targets for each planning horizon to the year 2046.

15.6 Capacity Assessment – Storage

Storage requirements for pump synchronization were assessed for 2026 and 2046 conditions, with the following considerations:

- Based on 1 hour time allowance to synchronize pumping rates.
- Assumes no inflow (supply) pumps in service.

Table 15-4 shows the results of the assessment for each EAPWSS storage facility. Based on the analysis, there are marginal storage deficits for the following facilities for pump synchronization. Other facilities have acceptable storage capacity:

- EA WTP Treated Water Storage.

This can be mitigated by one or more of the following alternatives:

- Reducing synchronization time from the 1 hour time period assumed for the analysis.
- Ensuring supply pumps are operating, which was assumed not to occur for the analysis.
- Utilizing the potential storage capacity, which can be accomplished by adjusting the low and high levels and are shown on Table 15-4.

Table 15-4: Storage Capacity Assessment – Pump Synchronization

Reservoir	Available Useful Storage (ML)	Potential Useful Storage (ML)	Pump Synchronization Storage			
			2026		2046	
			Required Storage (ML)	Remainder (ML)	Required Storage (ML)	Remainder (ML)
EAPWSSS						
EAWTP Treated Water Storage	2.23	2.75	3.0	-0.8	3.0	-0.8
Elgin Terminal Reservoir	20.24	23.76	4.0	16.2	4.1	16.2
Total EAPWSS	**22.46**	**26.50**	**7.05**	**15.41**	**7.10**	**15.36**

Storage capacity to provide for the demand growth scenarios were determined through hydraulic modelling results as discussed in Section 16. The storage levels during the 7-day MWD simulation were compared with the maximum and maximum operating levels discussed in Section 16.

16. Hydraulic Modelling Results

The hydraulic model was simulated for the MWD scenario for each planning year. The hydraulic analyses of different planning years were modelled with the evaluated water demand to determine available / required system capacity to supply growth.

The model utilized for the analysis is described in the above sections. Scenario(s) were created for each planning year (2026 - 2046) for both the Do Nothing and the upgrade scenarios as applicable and are discussed in the following sections. The following is a list of hydraulic modelling scenarios discussed in this section. In total 8 scenarios were assessed:

- 2026 (No Upgrades) - 2026 scenario with existing infrastructures / capacity
- 2031 (No Upgrades) - 2031 scenario with existing infrastructures / capacity
- 2036 (No Upgrades) - 2036 scenario with existing infrastructures / capacity
- 2036 (with Recommissioning of A-Line and the planned Twinning of ETR Capacity) -2036 scenario with existing infrastructures / capacity and the recommissioning of A-Line and the planned Twinning of ETR Capacity)
- 2041 (with A-Line Recommission and the planned Twinning of ETR Capacity only) – 2041 scenario with the 2036 upgrades mentioned above.
- 2041 (with A-Line Recommission and the planned Twinning of ETR Capacity and EA WTP Capacity Improvement) – 2041 scenario with the 2036 upgrades mentioned above and the EA WTP capacity improvement.
- 2046 (with 2041 Upgrades only) – 2046 scenario with the 2041 upgrades mentioned above.
- 2046 (with 2041 Upgrades except the ETR Twinning) – 2046 scenario with the 2041 upgrades mentioned above except the ETR Twinning.

EA HLPS was operated with 2 or 3 pumps, with pump speed set to remain within available WTP capacity.

16.1 Modelling Scenario 2026 (No Upgrades)

- There is sufficient WTP capacity at EA WTP to supply the forecasted demands (MDD and MWD) for this scenario as discussed in Section15.2
- EA HLPS operates with 2 or 3 pumps at reduced speed.
- The scenarios assume that EATM B-Line in operation only, with the A-Line offline. The model shows acceptable hydraulic results for the mains that are within the targets.
- The model shows that the terminal reservoir would operate within the level targets (with operation range 3 m – 5.7 m). **Figure 16-1** shows ETR levels for the simulation.
- The model shows acceptable pressure (> 20 psi) at meter nodes.
- The model shows generally acceptable results.
- No new capital works would be required for this scenario based on the modelling.

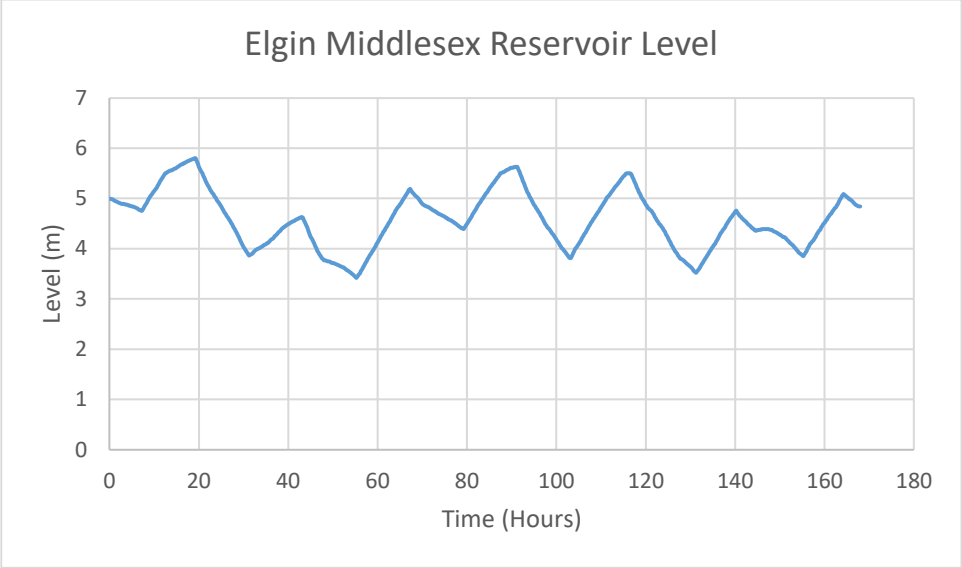

Figure 16-1 Elgin Terminal Reservoir Level - 2026 (No Upgrades)

16.2 Modelling Scenario 2031 (No Upgrades)

- There is sufficient WTP capacity to supply the forecasted demands for this scenario as discussed in Section 15.2.
- EA HLPS operates with 2 or 3 pumps at reduced speed to provide the WTP capacity.
- The scenarios assume that EATM B-Line in operation only, with the A-Line offline. The model shows acceptable hydraulic results for the mains that are within the targets.
- **Figure 16-2** shows ETR levels for the simulation (with operation range 2.5 m – 5.7 m). The model shows that the terminal reservoir would operate within the level targets.
- The model shows acceptable pressure (> 20 psi) at meter nodes.
- The model shows generally acceptable results.

- No new capital works would be required for this scenario based on the modelling.

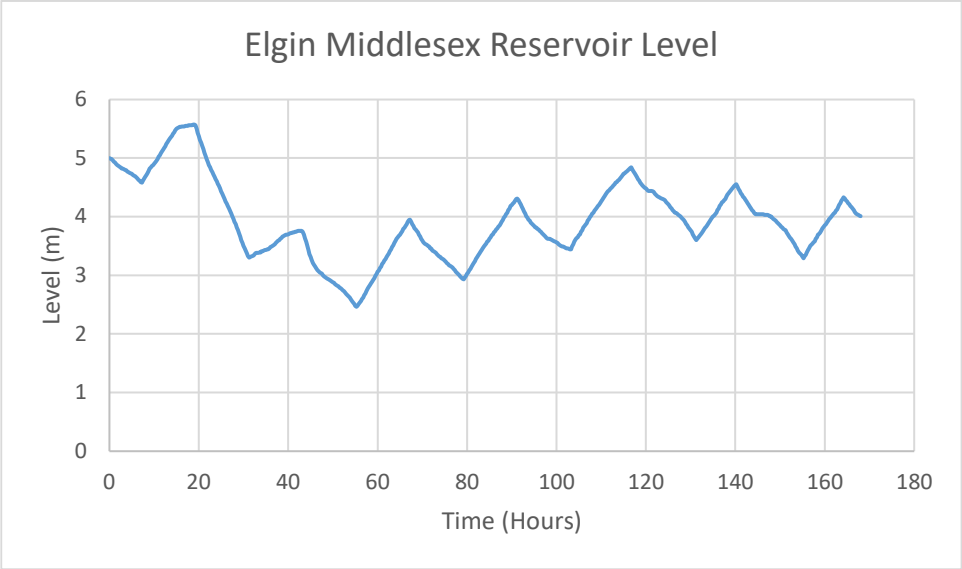

Figure 16-2 Elgin Terminal Reservoir Level - 2036 (No Upgrades)

16.3 Modelling Scenario 2036 (No Upgrades)

- There is insufficient WTP capacity at EA WTP to supply the forecasted demands for this scenario as discussed in Section 15.2. The average MWD is greater than WTP filtration capacity.
- EA HLPS operates with 3 pumps at reduced speed to match the rated WTP capacity to match the rated WTP capacity.
- The scenarios assume that EATM A-Line plus B-Line is in operation. The model shows that without the A-Line, ETR would completely empty during the simulation.
- The model shows acceptable hydraulic results for the mains, that are within the targets.
- The model shows that the terminal reservoir would drop below the low level target (with operation range 1 m - 5.7 m in the MWD condition). **Figure 16-3** shows ETR levels for the simulation.
- The model shows acceptable pressure (> 20 psi) at meter nodes.
- EA WTP requires an upgrade to adequately supply the system for this scenario.
- One alternative to upgrading the WTP in the year 2036 is to evaluate twinning ETR storage (provide an additional 57 ML storage capacity) to delay the requirement for a WTP upgrade. This was evaluated as discussed in the next section.

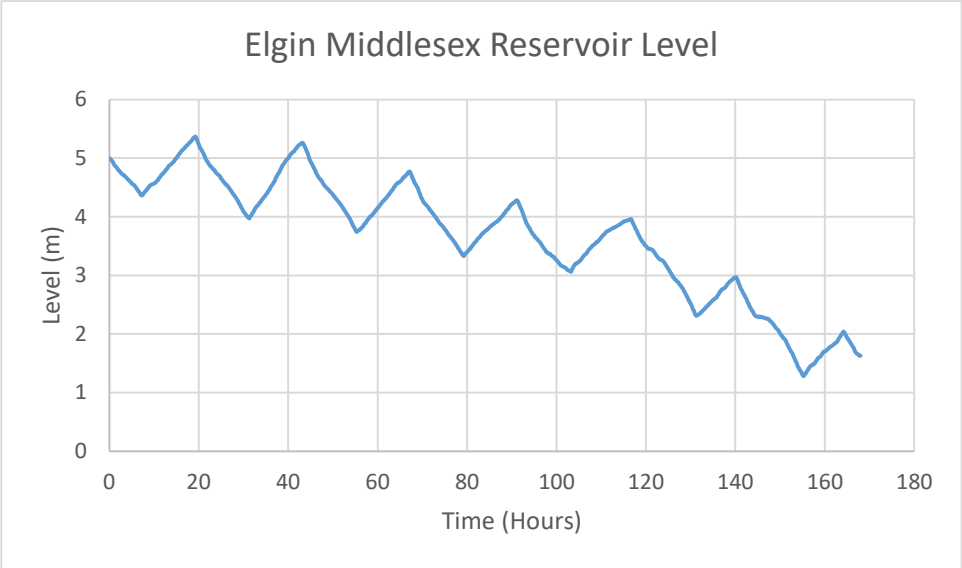

Figure 16-3 Elgin Terminal Reservoir Level - 2036 (No Upgrades)

16.4 Modelling Scenario 2036 (with A-Line Recommission and the planned Twinning of ETR Capacity)

- There is insufficient WTP capacity at EA WTP to supply the forecasted demands for this scenario as discussed in Section 15.2.
- EA HLPS operates with 3 pumps at reduced speed to match the rated WTP capacity.
- This scenario evaluated twinning ETR storage (additional 57 cu. m) to delay a WTP upgrade for 2036 as discussed in Section 16.3.
- The scenarios assume that EATM A plus B-Line are in operation. The model shows acceptable hydraulic results for the mains that are within the targets.
- **Figure 16-4** shows the ETR levels for the simulation. It shows that the ETR water level would drop, however would operate within the level targets (with operation range 3 m - 5.7 m). However, additional twinning of ETR storage capacity would increase the water age in the reservoir by 170% based on the model but maintain within the acceptable criteria mentioned in Section 11.
- The model shows acceptable pressure (> 20 psi) at meter nodes.
- The model shows generally acceptable results.
- No additional capital works would be required for this scenario.
- Additional storage capacity at ETR could address unforeseeable demand increases (e.g. St. Thomas).
- Additional available storage capacity could provide redundancy (for example, the existing ETR storage cells could be temporarily taken offline for inspection and maintenance).

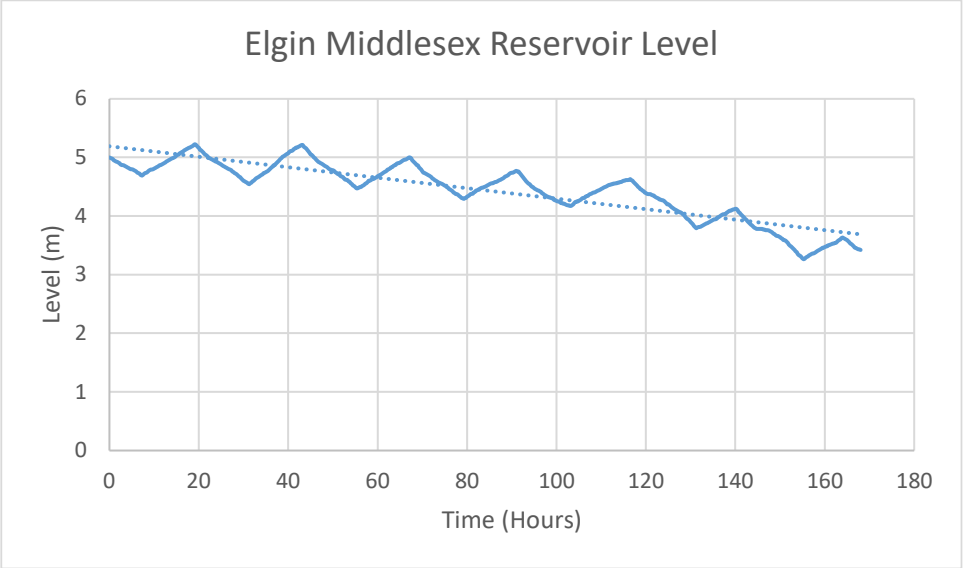

Figure 16-4 Elgin Terminal Reservoir Level - 2036 (with additional upgrades)

16.5 Modelling Scenario 2041 (with 2036 Upgrades only)

- There is insufficient EA WTP capacity at EA WTP to supply the forecasted demands for this scenario as discussed in Section 15.2. The average MWD greater than available WTP capacity.
- The scenario assumed ETR upgrade (twin reservoir) is in place as discussed in Section 16.4.
- EA HLPS operates with 3 pumps at reduced speed to provide the WTP capacity.
- The scenarios assume that EATM A plus B-Line are in operation. The model shows acceptable hydraulic results for the mains that are within the targets.
- The model shows that the terminal reservoir would drop below the low-level target (with operation range 1.5 m - 5 m), even with twinned reservoir. **Figure 16-5** shows ETR levels for the simulation.
- Based on the analysis, it is recommended to evaluate EA WTP expansion for 2041.
- The model shows acceptable pressure (> 20 psi) at meter nodes.

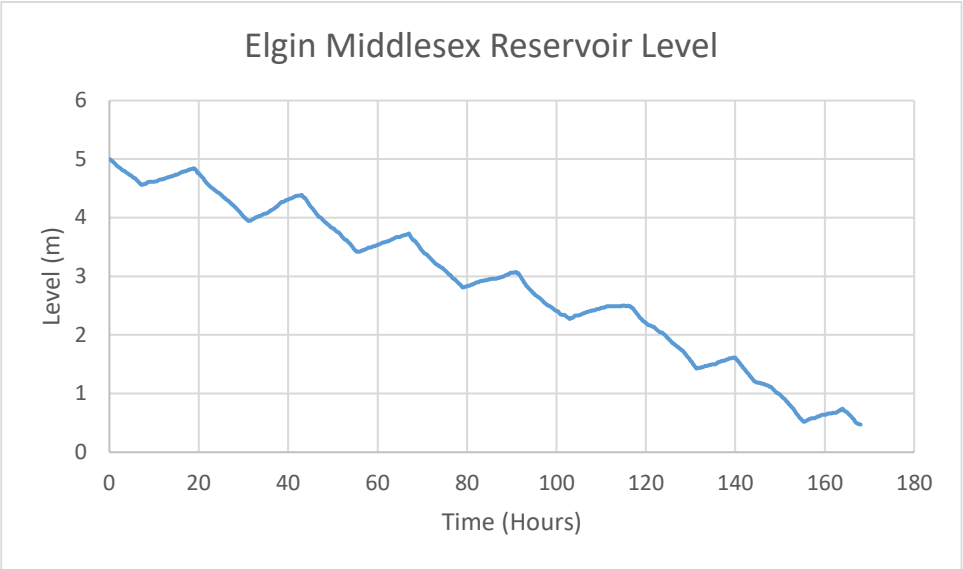

Figure 16-5 Elgin Terminal Reservoir Level – 2041 (with 2036 Upgrades only)

16.6 Modelling Scenario 2041 (with A-Line Recommission and the planned Twinning of ETR Capacity and EA WTP Capacity Improvement)

- There is insufficient EA WTP capacity at EA WTP to supply the forecasted demands for this scenario as discussed in Section 15.2. The previous section, which included ETR storage capacity twinning, show that the reservoir would drop to unacceptable levels.
- Therefore, this scenario evaluated a capacity expansion for the EA WTP.
- EA HLPS operates with 3 pumps to provide the upgraded WTP capacity.
- The model shows that the terminal reservoir would operate within the level targets (with operation range 3 m – 5.7 m). **Figure 16-6** shows ETR levels for the simulation.
- The scenarios assume that EATM A plus B-Line is in operation. The model shows acceptable hydraulic results for the mains that are within the targets.
- The model shows acceptable pressure (> 20 psi) at meter nodes.
- The model shows generally acceptable results.
- No additional capital works would be required for this scenario.

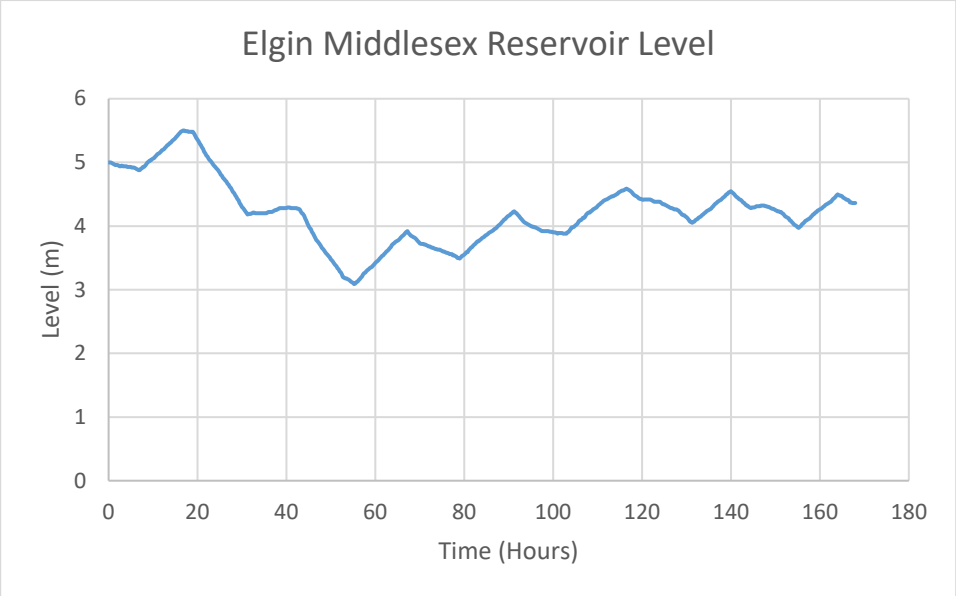

Figure 16-6 Elgin Terminal Reservoir Level - 2041 (with additional upgrades)

16.7 Modelling Scenario 2046 (with 2041 upgrades only)

The following discusses hydraulic modelling results for the 2046 Do Nothing scenario with 2041 upgrades in place as discussed in the previous section.

- Evaluated upgraded WTP capacity (2041).
- EA HLPS operates with 2 or 3 pumps at full speed.
- The scenarios assume that both the EATM A plus B-Line is in operation. The model shows acceptable hydraulic results for the mains that are within the targets.
- Assumed twinned ETR in place.

- The terminal reservoir (twinned) would operate within level targets (with operation range 4 m – 6.5 m), with the WTP upgrade in place. **Figure 16-7** shows ETR levels for the simulation.
- The model shows acceptable pressure (> 20 psi) at meter nodes.

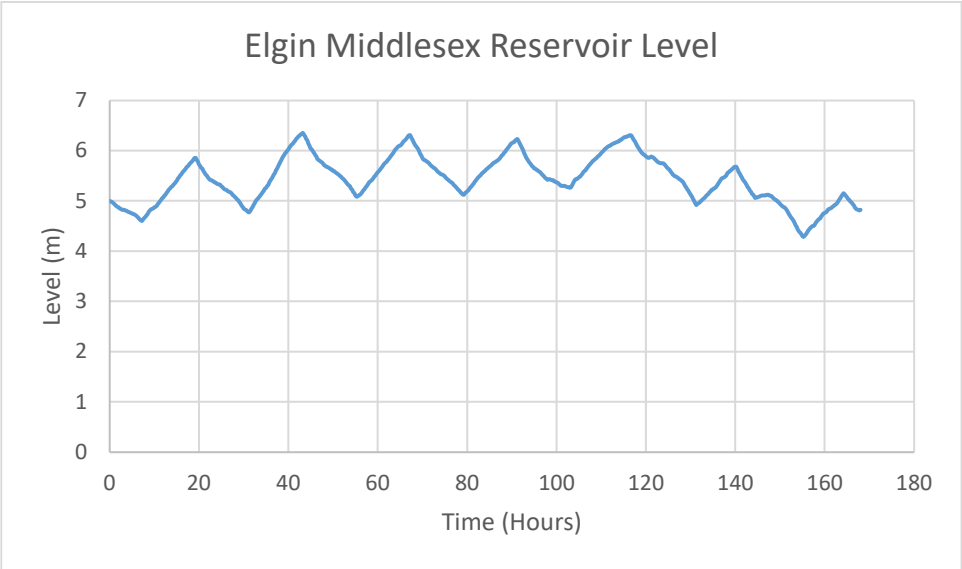

Figure 16-7 Elgin Terminal Reservoir Level - 2046 (with 2041 Upgrades only)

16.8 Modelling Scenario 2046 (with additional upgrades)

The following discusses hydraulic modelling results for the 2046 scenario with upgrades in place.

- This scenario included the EA WTP capacity upgrade modelled in 2041.
- The model shows that the terminal reservoir would operate within the level targets. **Figure 16-7** Elgin Terminal Reservoir Level - 2046 (with 2041 Upgrades only)shows ETR levels for the simulation.
- EA HLPS operates with 2 or 3 pumps at full speed.
- The scenarios assume that both the EATM A plus B-Line is in operation. The model shows acceptable hydraulic results for the mains that are within the targets.
- The model shows acceptable pressure (> 20 psi) at meter nodes.
- The model shows generally acceptable results.
- No new additional capital works would be required for this scenario.
- This scenario was also evaluated for Alternative 1 as discussed in Section 18 , which evaluated the WTP expansion (by 2041), however did not include ETR twinning. **Figure 16-8** shows ETR level, with an acceptable range (with operation range 4 m – 6.5 m). Therefore, expansion of the ETR would not be necessary for 2046 with the WTP upgrades in place. However, there are other considerations to constructing additional storage as discussed in Section 17.2.
- Beyond the planning horizon and if allowable based on demands, the existing ETR cells could be replaced by the expansion permanently should they be beyond their useable lifespan.

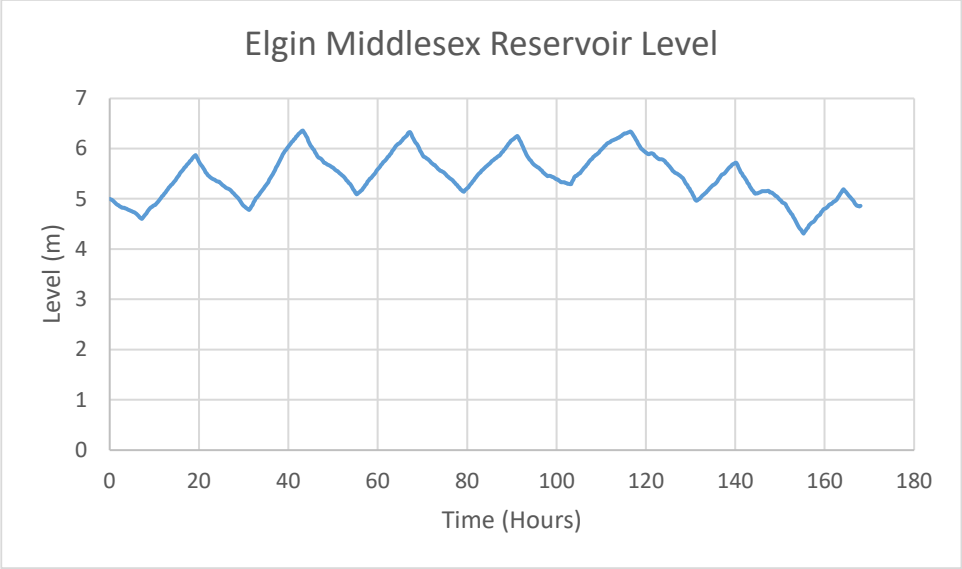

Figure 16-8 Elgin Terminal Reservoir Level - 2046 (with 2041 Upgrades Except ETR Twinning)

17. Conclusions

The following are conclusions based on the alternative evaluation and hydraulic modelling for the EAPWSS system for supply growth demands (medium forecasts).

The capacity assessments and modelling for the master planning assessment assumes a constant supply to London based on the current supply agreement. The implications to the implementation schedule for the recommended system improvements were evaluated and presented below in **Table 17-1**. The following subsections summarize the system capacity assessment based on medium (recommended) growth and the associated improvement works for maintaining sustainable water supply in the systems.

Table 17-1: Sensitivity Analysis Results for Low, Medium and High Growth Scenarios

Facility	Rated capacity					
	Year 85% Capacity Reached			Year 100% Capacity Reached		
	Low	Medium	High	Low	Medium	High
EA WTP	2026	<2026	<2026	2036	2031	<2031
EA HLPS	2041	2036	2031	>2046	2046	2036

17.1 Treatment

- EA WTP has sufficient capacity to accommodate the MWD and MDD until 2031. As discussed, additional storage at ETR required plant upgrades as discussed in Section 17.3.

- EA WTP existing intake provides sufficient capacity to meet the projected flows. No capacity upgrade is anticipated
- EA WTP low lift pump capacity will require capacity upgrade by Year 2036 to meet the projected flows.

17.2 Pumping

- EA HLPS capacity can accommodate growth for the MWD to 2046, however EA HLPS would have a capacity shortfall for MDD by 2041.

17.3 Storage

- Additional storage at ETR could be implemented to help delay the requirement for EA WTP expansion to beyond 2031. The following should be considered in evaluating additional storage at ETR:
    - Additional storage capacity at ETR could address unforeseeable demand increases (e.g. St. Thomas).
    - Additional available storage capacity could provide redundancy (for example, the existing ETR storage cells could be temporarily taken offline for inspection and maintenance).
    - Beyond the planning horizon and if allowable based on demands, the existing ETR cells could be replaced by the expansion permanently should they be beyond their useable lifespan.
    - Any planning for storage expansion at ETR should consider the impact and required mitigation of water relation or age (e.g. under an average day scenario).
- Based on the analysis, there are marginal storage deficits for EA WTP Treated Water facility. Flexibility storage requirements were not considered in the master plan, however should be considered as a policy level.

17.4 Transmission

- The EATM B-Line showed high headloss and velocity for the 2036 scenario without the A-Line in service and the main cannot adequately supply ETR 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.

18. Recommendations (Supply Growth Demands)

The following is recommended based on the hydraulic modelling for the EAPWSS system:

- Planning for the EA WTP expansion should be initiated in 2026-2031. Moreover, the flow and population growth should be reviewed in the next Master Plan Study within the 5 years (before 2030 if needed) in parallel to the ETR twinning. Based on the review in the next Master Plan Study, the EA WTP expansion should be reassessed.
- There are three (3) alternatives that could be considered to ensure sufficient supply capacity:
    1. The EA WTP expansion (2046 MDD required capacity) could be completed and in service by the year 2036.
    2. The EA WTP expansion could be delayed to the year 2041 if ETR expansion (twinning) is implemented by 2036.
    3. The completion of EA WTP expansion could be delayed to the year 2046 by temporarily reducing the minimum London supply agreement from EAPWSS until the EA WTP expansion is complete and supplement this with surplus supply from the LHPWSS system (note that this assumes no ETR expansion takes place). This would require further study and modelling, including impacts to the LHPWSS system.

- The required upgraded EA WTP capacity should account for demands at least 25+ years beyond the planning horizon.

- The EATM A-line, which is currently offline, should be in service by 2036 at the latest. An assessment needs to be completed as a follow up study whether the existing main can be used, or whether it should be upsized from the current 750 mm to accommodate future demands (2046 and beyond).

Figure 18-1 shows recommended works for the EAPWSS Master Plan.

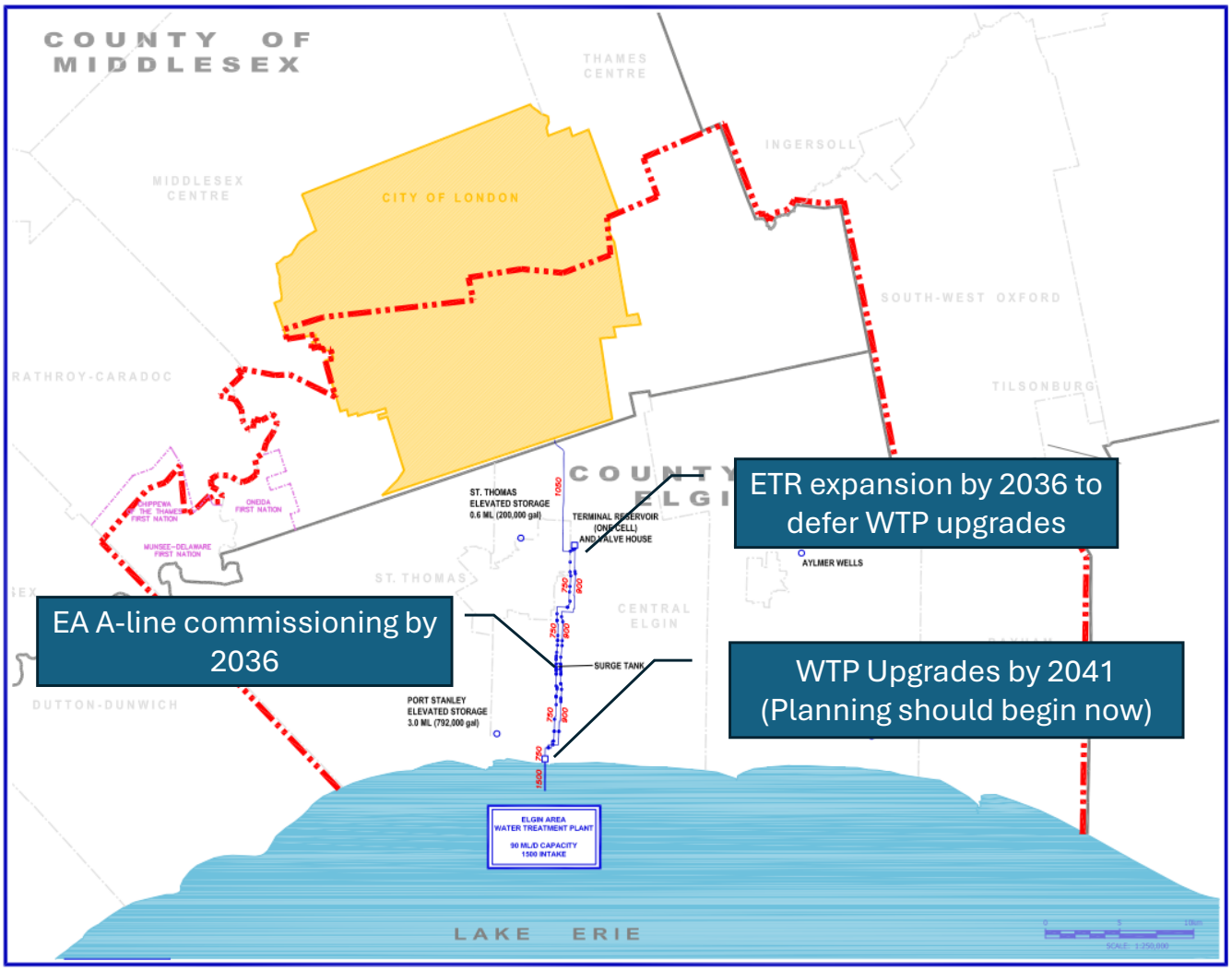

Figure 18-1 EAPWSS Master Plan Alternatives

18.1 Next Steps

The following are next steps that should be completed for the final EAPWSS EA evaluation:

- Finalize growth modelling scenarios and capital works requirements conducted herein.
- Evaluate redundancy and reliability alternatives and recommendations.
- Transient protection review and recommendations for further analysis for future scenarios.
- Evaluate potential member communities on a macro level (i.e. intra-basin transfer).
- Confirm the additional improvement works identified in the previous studies (i.e. condition assessment, previous EA)

18.2 Recommendations for Further Study

- The next Master Plan study should be performed in the next 5 years or sooner, if considered necessary. The EA WTP expansion should be reassessed in the next Master Plan Study after considering the flow and population growth with the ETR twinning work. The planning of the EA WTP expansion should be initiated in 2026-2031 through a separate study.

Appendix A – Extracted Description of Storage Components in the MECP Design Guidelines for Drinking Water Systems

The storage components in the MECP Design Guidelines for Drinking Water Systems are briefly described for reference:

- **Equalization Storage:** Provide sufficient water storage volume to account for flow differences between peak hour demand and maximum day demands. This storage is provided to allow pumps to operate at their design capacities, which is maximum day demand when storage facilities are available in the system. Equalization storage is suggested to be 25% of the maximum day demand according to MECP guidelines.
- **Fire Storage:** In the event of fire within the benefitting communities, additional water for fire rescue will be supplied by the municipal water storage facility. Operation of the pumping facility can be maintained at the design capacity, which is maximum day demand when a storage facility is available in the system. Fire flow requirements and fire duration are suggested by the MECP based on service population.
- **Emergency Storage:** Under any emergency conditions such as a power outage where pumping is interrupted, water service for member communities will be provided directly from storage. Service duration under such emergency conditions will vary depending on the water demand. MECP Guidelines recommend an flexibility storage volume equal to 25% of the sum of Equalization Storage and Fire Storage volumes.

Appendix B.3

Technical Memorandum #3

Evaluation of Alternatives

Elgin Area Primary Water Supply System

Technical Memorandum # 3 - Evaluation of Alternatives

60730329

July 2025

Delivering a better world

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AECOM: 2015-04-13

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Tables

1. Identification of Alternative Water Servicing Strategies

Having identified hydraulic capacity deficiencies in the existing system to service existing and future populations, there are six (6) alternative servicing strategies moving forward. These strategies are being screened based on the water modeling and the technical ability to provide water in the most efficient manner to existing and future customers to the 2046 planning horizon.

1.1 Alternative 1: Do Nothing – Maintain the Status Quo

Assumes no improvements will be made to the systems beyond those already planned or approved. Regular maintenance activities will continue. This alternative does not address the problem and opportunity statement, and therefore this alternative is not to be carried forward to evaluation. **Not Carried forward for additional study.**

1.2 Alternative 2: Limit Growth / Soley Optimize the Existing System with no new Infrastructure

Assumes no improvements will be made beyond those already planned or approved and includes measures to limit future growth in the service areas. While limiting growth would reduce the need for upgrades and improvements to the water service system, it does not address the problem and opportunity statement or recognize the Regional Water Supply does not have the jurisdiction to implement such measures on member Municipalities. This also contradicts Provincial Policy Statement on municipal growth and the official plan for the member Municipalities. Therefore, this alternative is not to be carried forward to evaluation. **Not Carried forward for additional study.**

1.3 Alternative 3: Water Conservation / Reduction in Use

This alternative only partially addresses the problem and opportunity statement. Water conservation and reduction in use can provide some treatment and distribution relief, but does not address future growth and would not be an adequate solution on its own. This alternative also does not recognize that the Regional Water Supply has limited jurisdictional control to implement conservation measures on member Municipalities. This strategy is encouraged as a best practice measure for community water systems. **Not Carried forward for additional study.**

1.4 Alternative 4: Water System Improvements up to Rated Capacity

This alternative partially addresses the problem and opportunity statement by providing the ability to accommodate some limited future growth through upgrades (including system optimization) to the current system up to the rated capacity. However, the rated capacity for the system is not sufficient to provide water to existing and future customers to the 2046 planning horizon. **Not Carried forward for additional study.**

1.5 Alternative 5: Water System Improvements Beyond the System Rated Capacity

This alternative addresses the problem and opportunity statement by providing the ability to accommodate future growth through an expansion of the system beyond the current rated capacity. The existing system rated capacity is not sufficient to provide water to customers to the 2046 planning horizon, so this alternative would be necessary to provide water to existing and future customers.**Carried forward to be studied further and develop alternative servicing solutions.**

1.6 Alternative 6: Alternative Supply Source for Selected Current Customers/Communities

This alternative would consider finding an alternative source of water for selected customers to supplement the current supply to accommodate future growth. This would require new water supply agreements and would be difficult to implement due to jurisdictional and intra-basin complexities. **Not Carried forward for additional study.**

2. Evaluation Criteria

A detailed qualitative assessment of each alternative for **Water servicing Strategy Number 5: Water System Improvement beyond the System Rated Capacity** was completed based on evaluation components and criteria. In this evaluation approach, trade-offs consider the advantages and disadvantages of each alternative to address the problem and opportunity statement with the least environmental effects and the most technical benefits which forms the rationale for the identification of the preferred alternative.

Each evaluation category was evaluated based on the following scoring system. Low impact is considered a preferred solution compared to moderate or high impact.

In order to evaluate the alternatives for Strategy Concept 4, a set of criteria were chosen which are categorized as follows in **Table 2-1.**

Table 2-1: Evaluation Criteria

Category	Criteria	Indicators
Socio-Economic: (Considerations to potential long and short term impacts to the communities the Utility services)	**Long Term Impacts to the Community in relation to the services provided by the utility**	Potential effects (Noise, Dust, Vibration, property access) related to disruptions to residences, agricultural, business, and travelling public during construction and operation. Potential effects on existing and approved / planned land uses. Degree of Property Acquisition / Easement requirements Conformance with approved local (communities the Utility services) , and provincial plans and policies.
	Supports growth and development	Ability to meet utility needs and strategic plan.
Cultural Environment (How the alternatives may impact existing Heritage Buildings or lands including potential archaeological sites.)	**Archaeology**	Potential effects to cultural heritage resources.
	Built Heritage	Potential effects to built heritage resources.
	Cultural Heritage Landscapes	Potential effects to Cultural Heritage Landscapes.
	Indigenous Communities	Potential Impacts to Treaty Lands.
Natural Environment	**Impacts to the Aquatic Environment**	Potential for impacts to Aquatic habitat and Species at Risk

Category	Criteria	Indicators
(Potential Impacts to the Natural Environment due to the construction, operation of new or updated infrastructure)	**Impacts to the Terrestrial Environment**	Potential for impacts to Terrestrial habitat and Species at Risk
	Source water Protection	Potential impacts to Groundwater Recharge Areas, Intake Protections Zones and Highly Vulnerable Aquifers in relation to current Source Water Protection Plans.
	Climate Change	Potential for impacts to climate change (greenhouse gas emissions) Potential for climate change to impact the projects and the ongoing operation (climate change resiliency)
Technical (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.)	**Meets Future Needs**	Addresses the existing system capacity constraints. Improvements to level of service utilization of the existing and future infrastructure. Meets the long-term capacity (treatment, transmission, storage and pumping) requirements to service the projected population growth to 2046. Alignment with Regional Water Supplies current Asset Management Policy
	Drinking Water Quality	Reliability of the water system (treatment, and transmission) Ability to maintain or improve water quality.
	Maintenance of Service	Operation redundancy to improve services security and allow for safe and efficient maintenance activities. Potential to minimize increases to operational and/or maintenance complexity of the system.
	Constructability	Construction complexity including potential for utility conflicts. Security of Utility Infrastructure
	Legal Jurisdictional	Future regulatory requirements. Complexity of Approvals. Land Requirements.
Economic (Costs to construct, maintain and operate the new	**Project and Operations Changes Costs**	Capital Costs. Property Acquisition/Easement Costs (no costs / order of magnitude).

Category	Criteria	Indicators
infrastructure for the distribution system)		Operation and Maintenance Costs (Day to Day costs and Contracted Operations Services costs). Life Cycle Costs

3. Water Servicing Strategy 5 Alternatives

3.1 Alternative 5A – Optimizing and Upgrading the Existing System with new Infrastructure

This alternative would optimize and upgrade the existing system beyond current rated capacity through various system improvements and new infrastructure.

3.2 Alternative 5B – New Water Treatment Plant

This alternative would replace the existing Water Treatment Plant with a new plant above the current rated capacity.

4. Evaluation of Strategy 5 Alternatives

A full evaluation matrix for Strategy 4 alternative is provided in **Table 4-1**. Based on the criteria and methodology applied as part of the evaluation process, the recommended alternative is **Alternative 5A – Optimizing and Upgrading the Existing System**.

A summary for the rationale for this recommendation includes:

- 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.

Table 4-1 – Elgin Area Primary Water Supply System - Evaluation of Water Servicing Strategy 5 Alternatives

Category	Criteria	Alternative 5A Optimize and Upgrading the Existing System *Optimize / upgrade existing system with new infrastructure beyond the rated capacity*	Alternative 5B New Water Treatment Plant *Replace existing water treatment plant with new plant*
Socio Economic (Considerations to potential long and short term impacts the communities and Utility Services)	**Long Term Impacts to the Community in relation to the utility.**	Low to Moderate Impacts to the community in relation to operations and construction. Low Impacts as no property acquisition is anticipated.	Moderate to high impacts to the community in relation to operations and construction. High Impact as highest amount of property acquisition is anticipated.
	Supports growth and development	Low Impact supports growth and future development within the existing customer service area and new customers under average and maximum week demand conditions.	Low Impact supports growth and future development within the existing customer service area and new customers under average and maximum week demand conditions.
Cultural Environment (How the alternatives may impact existing Heritage Buildings or lands including potential archaeological sites.)	**Archaeology**	Stage 1 AA has been completed within the fenced area of the site.	Potential Impacts to Archaeology. Stage 1 AA required.
	Built Heritage	Potential Impacts to Built Heritage. Cultural Heritage Evaluation Report will be required.	Potential Impacts to Built Heritage. Cultural Heritage Evaluation Report will be required.
	Cultural Heritage Landscapes	Potential Impacts to cultural heritage landscapes. Cultural Heritage Evaluation Report will be required.	Potential Impacts to cultural heritage landscapes. Cultural Heritage Evaluation Report will be required.
	Indigenous Communities	No or minimal Impacts to Indigenous Communities. Continued consultation required.	No or minimal Impacts to Indigenous Communities. Continued consultation required.
Natural Heritage (Potential Impacts to the Natural Environment due to the construction, operation of new or updated infrastructure)	**Impacts to the Aquatic Environment**	Moderate impacts to the aquatic environment. New Greenfield sites may have Species at Risk and other aquatic habitats.	Moderate to High impacts to the aquatic environment. New Greenfield sites may have Species at Risk and other aquatic habitats.
	Impacts to the Terrestrial Environment	Moderate impacts to the terrestrial environment. Greenfield site may have Species at Risk and other terrestrial habitats	Moderate to High impacts to the terrestrial environment. Greenfield site may have Species at Risk and other terrestrial habitats
	Source water Protection	Potential to be in Groundwater Recharge areas. Potential to be within Low Threat designated vulnerable areas. Potential to be within an Intake Protection Zone.	Potential to be in Groundwater Recharge areas. Potential to be within Low Threat designated vulnerable areas. Potential to be within an Intake Protection Zone.

Table 4-1 – Elgin Area Primary Water Supply System - Evaluation of Water Servicing Strategy 5 Alternatives

Category	Criteria	Alternative 5A Optimize and Upgrading the Existing System *Optimize / upgrade existing system with new infrastructure beyond the rated capacity*	Alternative 5B New Water Treatment Plant *Replace existing water treatment plant with new plant*
	Climate Change	Moderate to High Climate change impacts due to construction.	High Climate change impacts due to construction.
Technical (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.)	**Meets Future Needs**	Low Impact, Meets the current and future needs of the existing customers and new customers.	Low Impact, Meets the current and future needs of the existing customers and new customers.
	Drinking Water Quality	No change to potable water quality.	No change to potable water quality.
	Maintenance of Service	Low to Moderate Impact, slightly more complex maintenance requirements with additional customers and larger system.	Moderate Impact. The maintenance of the existing plant will be replaced by the maintenance of the new treatment plant
	Constructability	Moderate constructability issues.	Moderate to High Impact. The new plant would be more complex to design and construct than the expansion.
	Legal Jurisdictional	Low Impact. Fewer and more straightforward permitting and approvals.	Moderate Impact. The new treatment plant may require more stringent permitting and approvals.
Economic and Financial (Costs to construct, maintain and operate the new infrastructure for the distribution system)	**Project and Operations Changes Costs**	Low impact to Capital Costs Low Operation and Maintenance Costs. Low impact to land acquisition Costs.	Moderate to High Impacts to Capital Costs. Low to Moderate Operation and Maintenance costs. Moderate to High Impacts to Land acquisition cost.
		RECOMMENDED	**NOT RECOMMENDED**

Appendix B.4

Potential New Customers

Water Demand Forecast of Potential New Customers

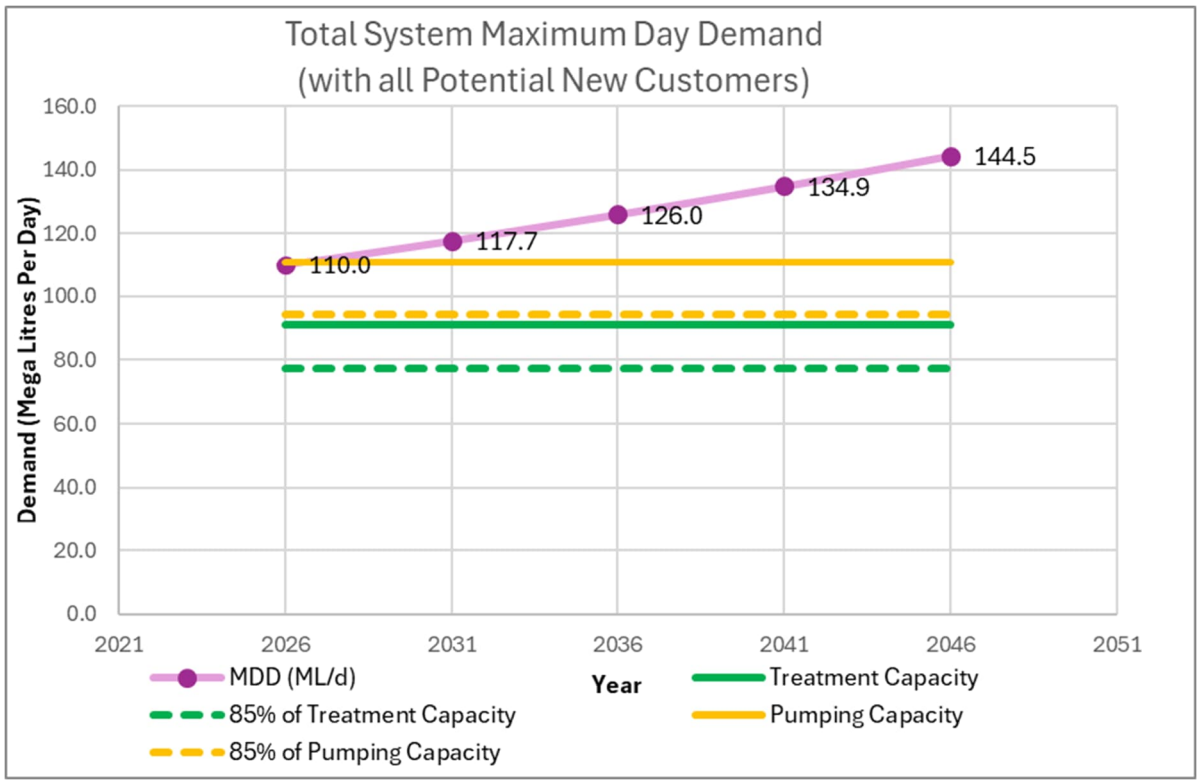
A survey was sent out to potential new customers. Some expressed their interest in obtaining water supply from the Elgin Area Primary Water Supply System. The projected water demands of these potential new customers are summarized in **Table 1**. These values were used in the high-level servicing evaluation in subsequent section. The Municipality of Adelaide-Metcalfe and the Municipality of Southwest Middlesex (within the Municipality of Thames Centre) expressed interest in a potential connection for full or partial supply but no survey data was available. The projected water demands for these communities should be reviewed in the next water master plan study.

Table 1 - Summary of Maximum Day Demand of Elgin Area Primary Water Supply System after Considering Potential New Customers:

Potential New Customers	2026 Maximum Day Demand (Million Litres per day)	2031 Maximum Day Demand (Million Litres per day)	2036 Maximum Day Demand (Million Litres per day)	2041 Maximum Day Demand (Million Litres per day)	2046 Maximum Day Demand (Million Litres per day)
Oxford	9.75	10.35	10.92	11.64	12.39
Villages of Dorchester and Thorndale (Within the Municipality of Thames Centre)	16.85	17.11	17.63	18.14	18.79
Elgin Area Primary Water Supply System	83.44	90.26	97.44	105.08	113.28
Total Demand	110.04	117.72	125.99	134.86	144.46

Furthermore, the projected Maximum Day Demand of Elgin Area Primary Water Supply System by considering all the projected Maximum Day Demand of the potential new customers is shown in **Figure 1.**

Figure 1-Total System Maximum Day Demand of Elgin Area Primary Water Supply System with All Potential New Servicing Communities



It is noted that Elgin Area Water Treatment Plant rated treatment capacity (91 Million Litres per Day) will be exceeded by the total Maximum Day Demand in 2026 when considering either of the potential new servicing communities. For Elgin Area High Lift Pumping Station, the total pumping capacity with 3 pumps in operation and A-Line and B-Line in service is 111 Million Litres per Day, the total Maximum Day Demand will be close to the Elgin Area High Lift Pumping Station pumping capacity in 2026 and exceed it in 2031 as shown by **Figure 1**.

Therefore, if these two potential new customers are to be serviced, it is recommended to be serviced by the Lake Huron Primary Water Supply System. For details, please refer to the Lake Huron Primary Water Supply System Master Plan under separate cover.