



LAMBTON AREA WATER SUPPLY SYSTEM (LAWSS) WATER MASTER PLAN UPDATE

PUBLIC INFORMATION CENTRE (PIC) 1

December 14, 2020

Online Presentation

What is the Purpose of this Online PIC?

- Introduce you to the Lambton Area Water Supply System (LAWSS) Water Master Plan Update Municipal Class Environmental Assessment (MCEA) study, including Sarnia-St Clair Township Grid Reinforcement and Transmission Main Twinning project.
- Provide an overview of the MCEA planning process and Study Area.
- Describe the rationale for the Master Plan Update.
- Provide an overview of existing conditions and challenges affecting the existing LAWSS system including problems and opportunities.
- Identify possible solutions or strategies that will be formally presented at PIC 2.
- Gather feedback on the above items and inform of next steps.

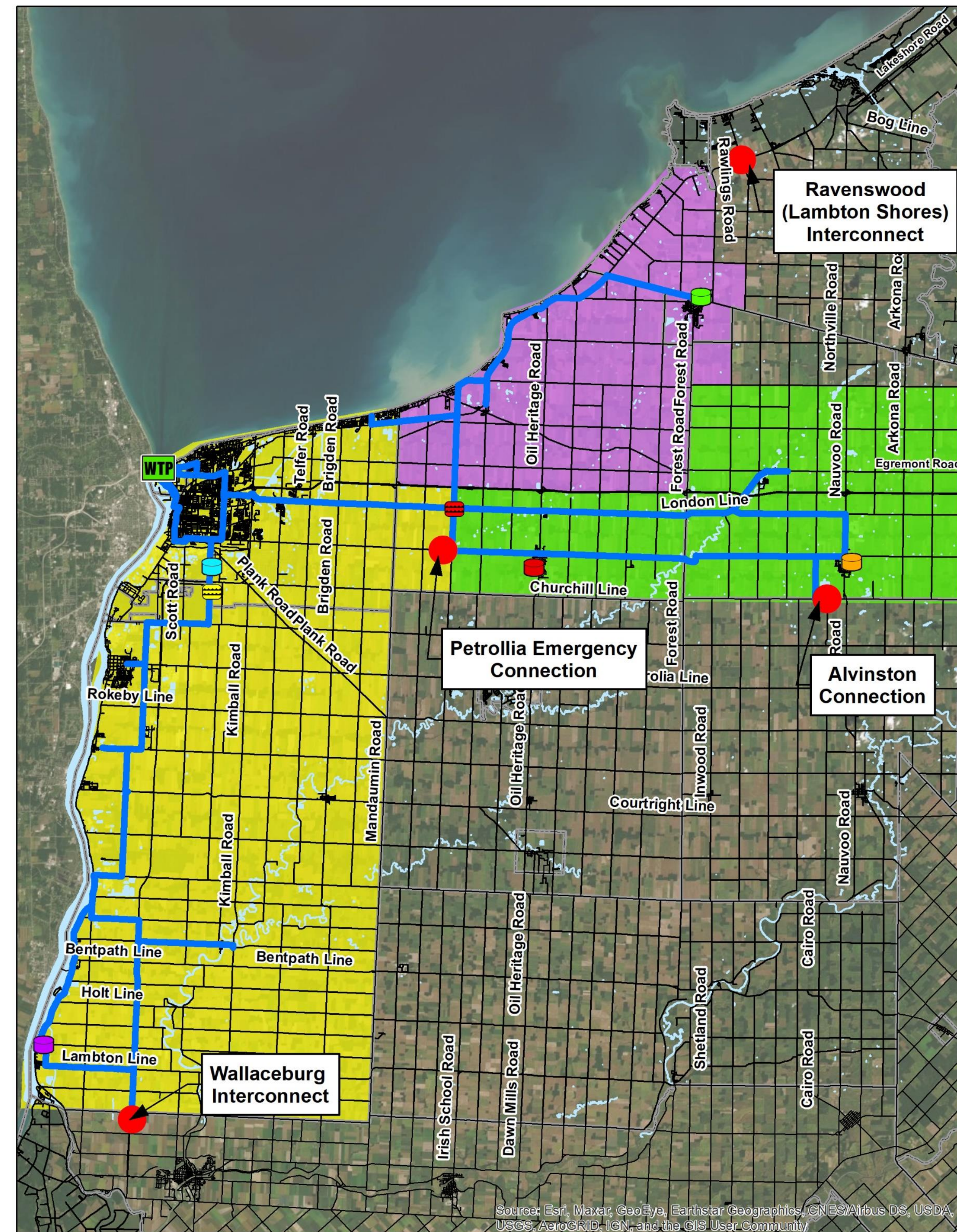


We want your input! Please review the presentation material and fill out the comment form by January 8, 2021. All comments will be considered and responded to by the Study Team.

Lambton Area Water Supply System

- The LAWSS is owned by its member municipalities and operated by the Ontario Clean Water Agency (OCWA) on behalf of the LAWSS joint Board of Management.
- LAWSS currently supplies water to over 100,000 customers within three supply subsystems:

Zone 1	Zone 2	Zone 3
<ul style="list-style-type: none"> Point Edward Sarnia St. Clair Chatham-Kent 	<ul style="list-style-type: none"> Lambton Shores (Forest) Plympton / Wyoming 	<ul style="list-style-type: none"> Watford / Warwick Plympton / Wyoming Petrolia Alvinston

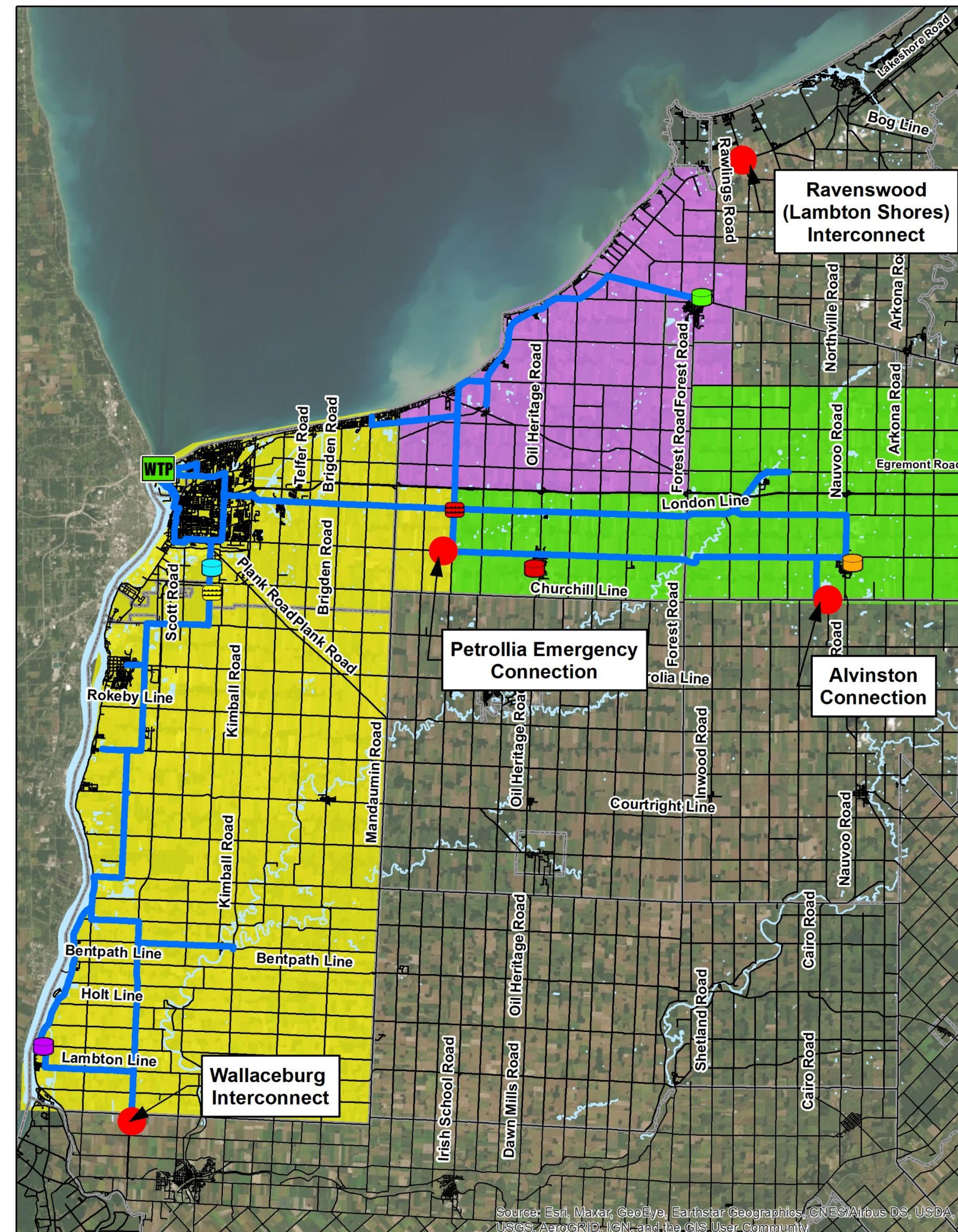


Legend

- Interconnect Points
 - WTP LAWSS WTP
 - Wyoming Standpipe
 - Forest Standpipe
 - Watford Standpipe
 - Indian Road Tower
 - Port Lambton Standpipe
 - West Lambton Pumping Station
 - East Lambton Reservoir and Pumping Station
 - Existing LAWSSS Watermains
 - Municipal Boundaries
- LAWSS Zones**
- ZONE 1
 - ZONE 2
 - ZONE 3

Lambton Area Water Supply System

- LAWSS existing infrastructure includes:
 - Lambton Water Treatment Plant
 - East Lambton Pumping Station and Reservoir
 - West Lambton Pumping Station and Reservoir
 - Indian Road Elevated Storage Tank
 - Forest Standpipe
 - Watford Standpipe
 - Port Lambton Standpipe
 - Over 250 km of watermain/transmission main of various sizes



Legend

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- ZONE 1
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How Does LAWSS Plan for Future Growth?

- In January 2015, Lambton Area Water Supply System (LAWSS) completed the Lambton Area Water Supply Master Plan, as a strategic planning tool to provide direction to the long-term management and operational policies with regards to their water infrastructure by identifying servicing policies, key study projects and operational changes.
- The recent 2019 LAWSS 20-year Growth Plan reviewed the current water supply system with the purpose of identifying and addressing any data gaps, evaluating the system performance and capacity, and establishing demands for hydraulic modelling. Modelling results outlined several areas of improvements and provided a list of alternatives to mitigate noted issues.
- The 2015 Master Plan and 2020 Growth Plan provide the starting point for this MCEA Master Plan Study.
- LAWSS member municipalities provided input to and confirmed respective growth projections-water demands.

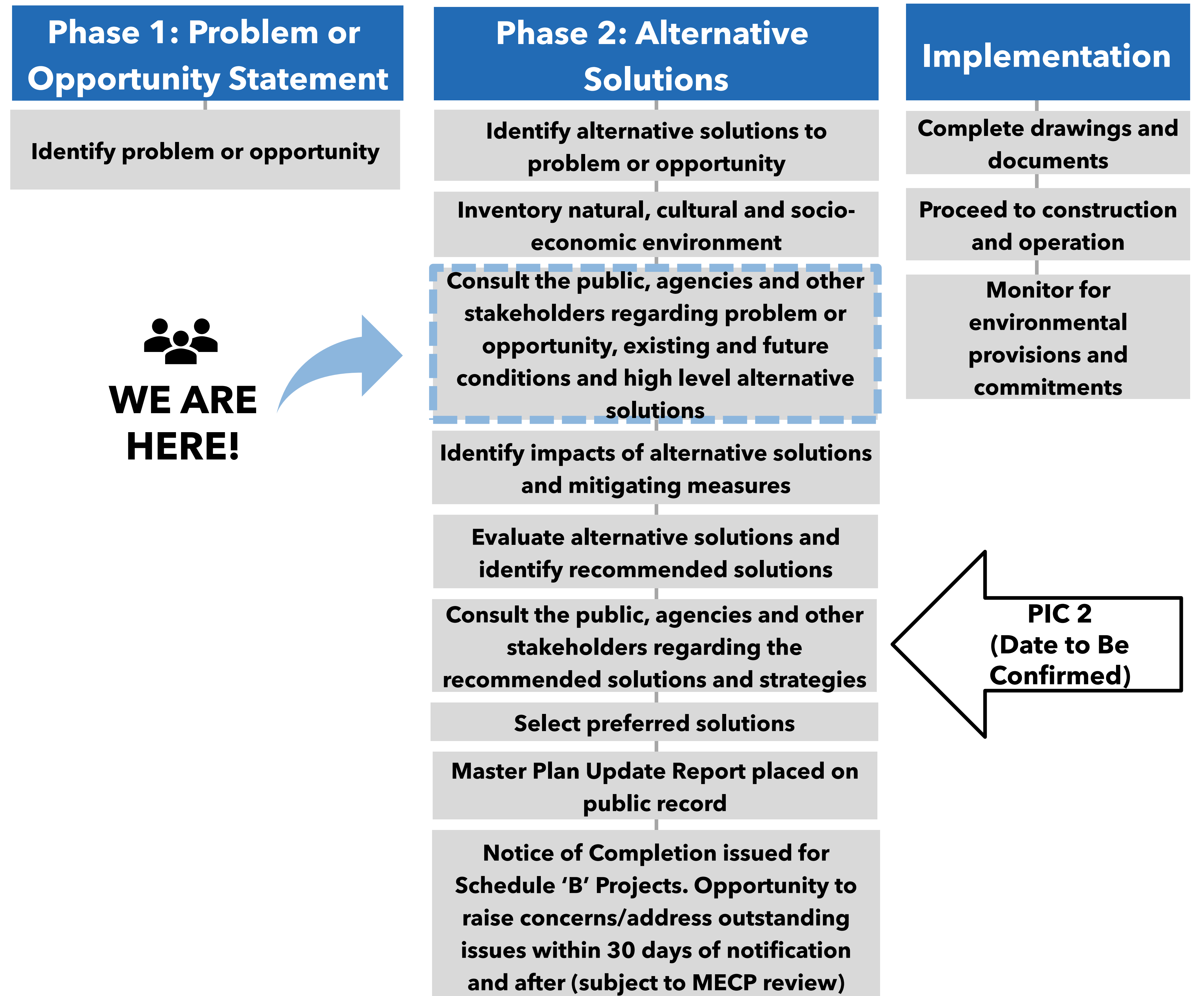


Why This MCEA Study and Why Now?

- LAWSS is initiating a MCEA Master Plan study to review and update the 2015 servicing strategy and identify capital project upgrades needed to provide sustainable municipal water and accommodate future growth over the next 20 years and beyond.
- The study is growth focused and provides an efficient and cost-effective maintenance and expansion program for the LAWSS municipal potable water supply system that will also support capital works planning.
- The proposed servicing strategy – capital upgrades will ensure sustainable water supply to its members and customers over the next 20 years and beyond, as well as new potential customers in Lambton County.
- The study will allow for and ensure that there is a clear road map in place for the implementation of the proposed capital works that can be easily updated.
- Engagement and consultation with LAWSS users, regulatory agencies and Indigenous Communities is essential to confirming how to best move forward with infrastructure planning.

The Process

- The Master Plan Update will be filed under Approach #2 for MCEA Master Planning. This means it will address the requirements of the first two phases of the MCEA planning process.
- The Master Plan Update will fulfill requirements for select Schedule 'B' water supply improvement projects under the MCEA process.
- At the end of Phase 2, a Master Plan Update Report will be prepared for public review and comment to document the planning process followed.



Water Supply System Assessment

Lambton Water Treatment Plant

- ✓ Sufficient capacity to meet projected growth.

Zone 1

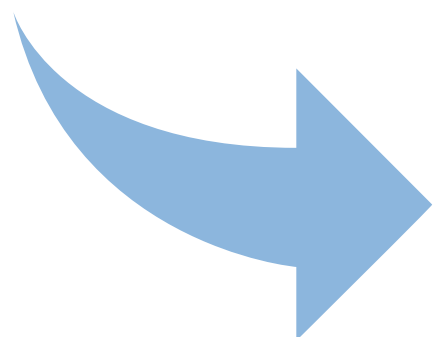
- ✓ Sufficient storage capacity to meet growth.
- ✓ Sufficient pumping capacity to meet growth.

Zone 2

- ✓ Sufficient storage capacity with pumping to meet growth.
- ✓ Sufficient capacity to meet growth and fire flow.

Zone 3

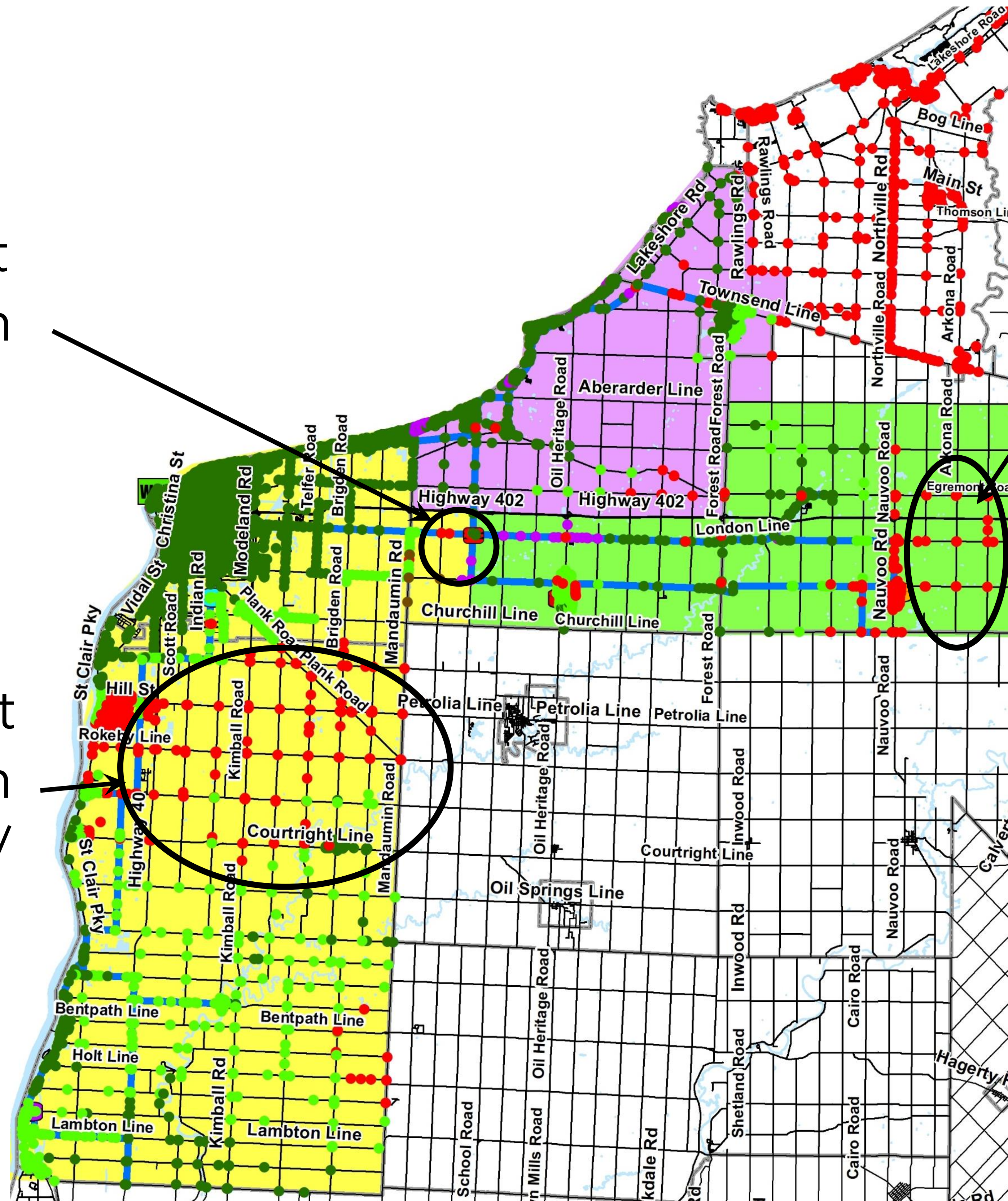
- ✓ Sufficient storage capacity to meet growth.
- ✓ Sufficient pumping capacity to meet growth.



Planning Horizon	Projected MDD (ML/d)	Available Treatment Capacity (ML/d)
2016	99.6	181.8
2017	96.1	181.8
2018	98.2	181.8
2019	99.4	181.8
2026	109.1	181.8
2031	116.0	181.8
2036	122.9	181.8
2041	129.9	181.8

Water Supply System Issues

- Zone **1** Issue #1 : East Lambton Pump Station (ELPS) Fill Constraint / Low Pressures
- Zone **1** Issue #3: West Lambton Pump Station (WLPS) Fill Constraint / Low Pressures



- Zone **3** Issue #2: Watford Standpipe Fill Constraint / Low Pressures

MCEA Phase 1: Problem/Opportunity Statement

Problem:

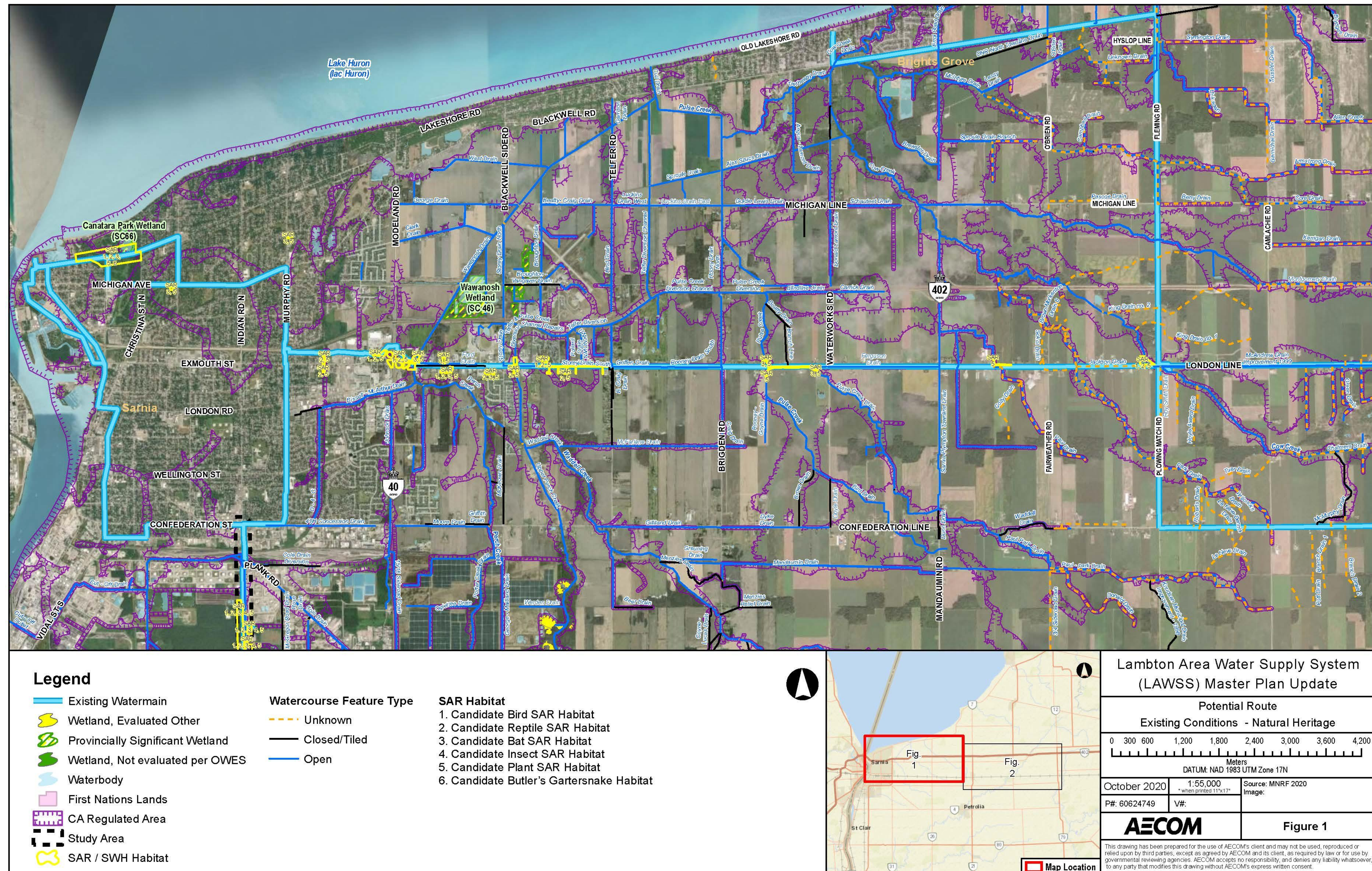
- Moderate near and long term growth is expected in specific areas of the LAWSS distribution system. As such, there is a need for improving water servicing in a sustainable manner that can be logically phased. Additional infrastructure and improvements to the existing system must be in place in a timely and orderly manner to service approved growth.
- A detailed cost phasing and implementation plan is required to allow the LAWSS Joint Management Board to develop a capital works program and budget.

Opportunities:

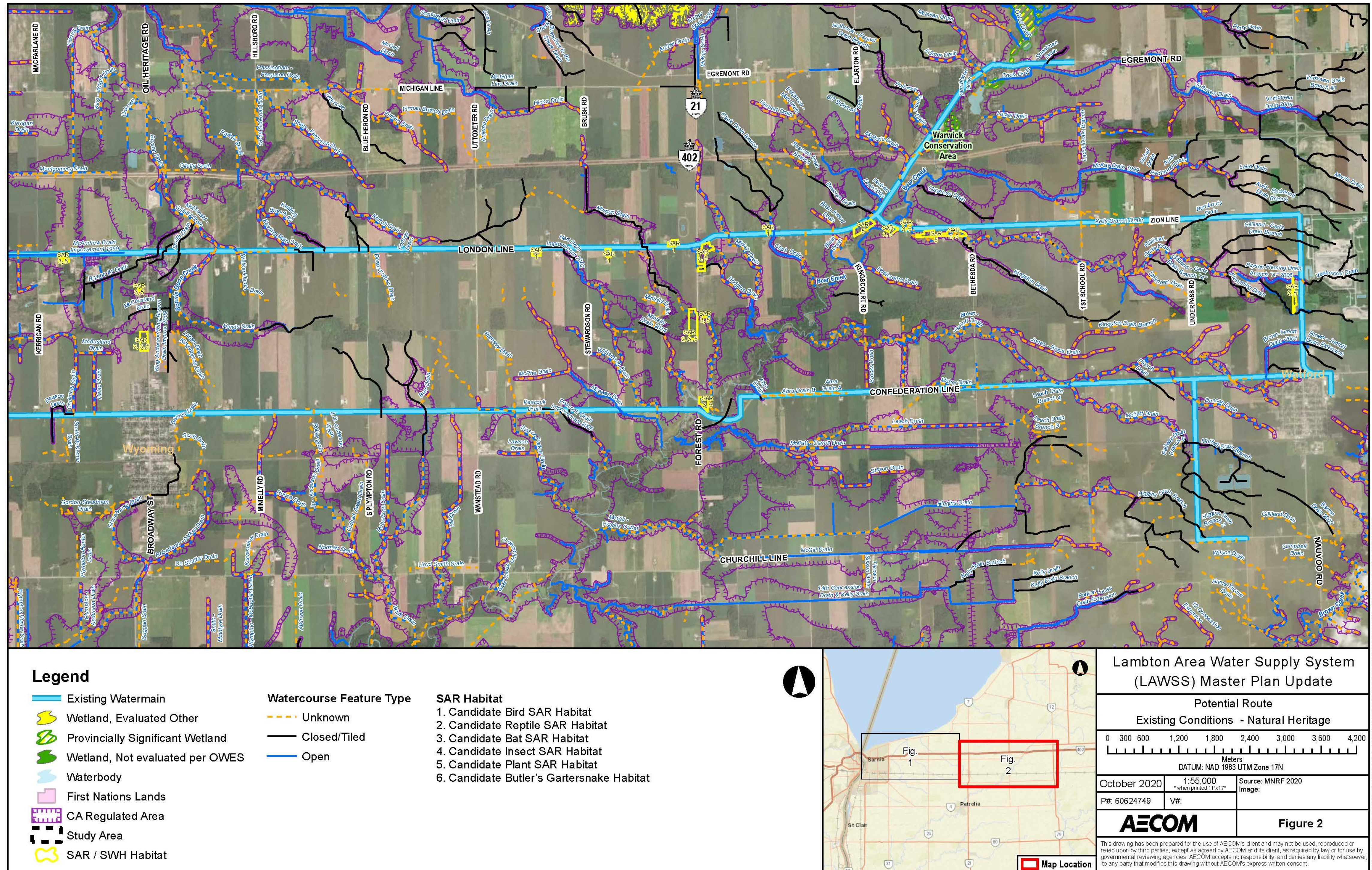
- To develop a water utility-infrastructure master plan or “road map” that will support future capital works planning including funding opportunities and meet the needs of existing and future water customers.
- There is also the potential to reconfigure the West Lambton Pumping Station/Reservoir and avoid expensive rehabilitation.



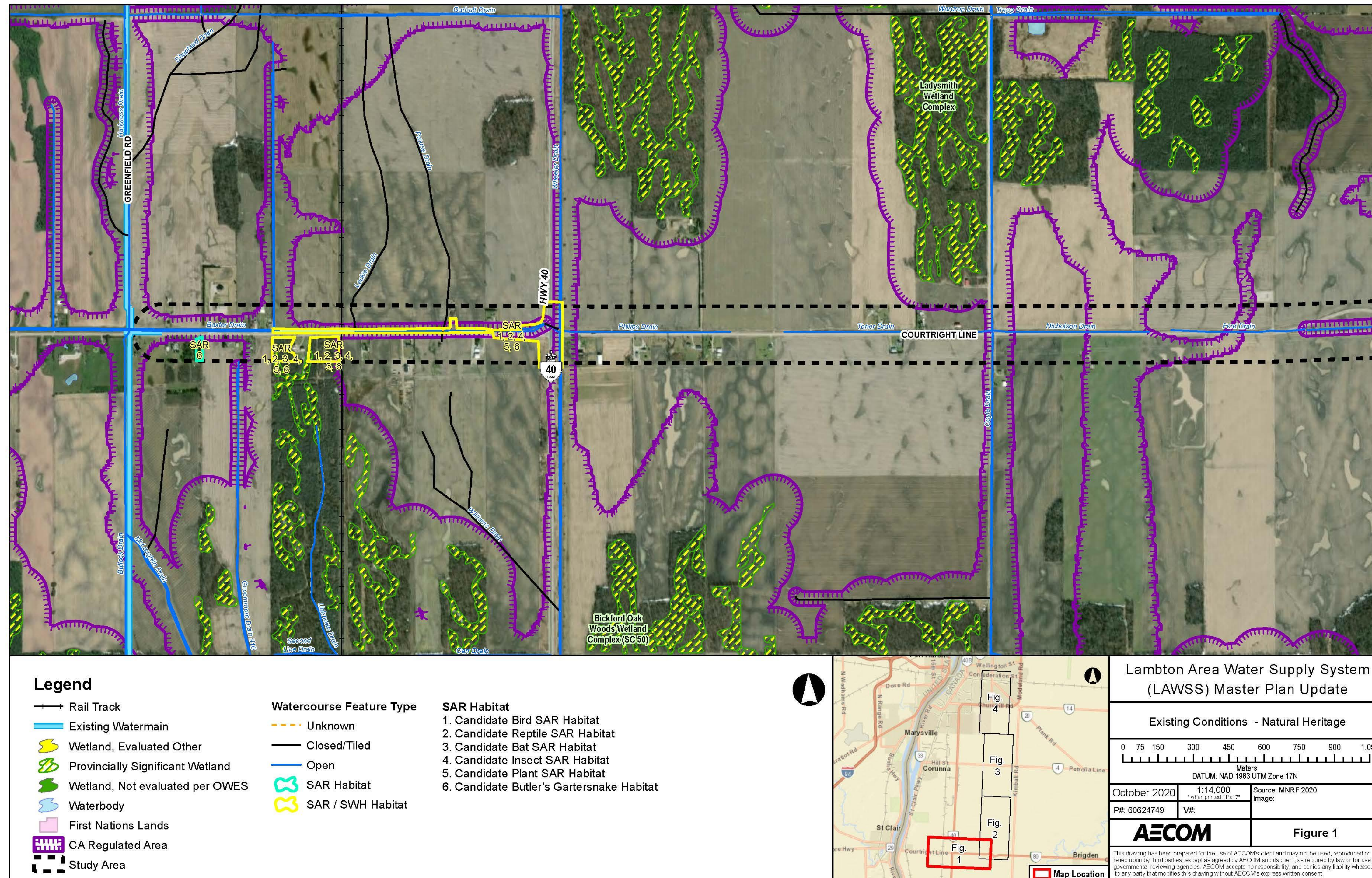
Existing Conditions: Natural Environment



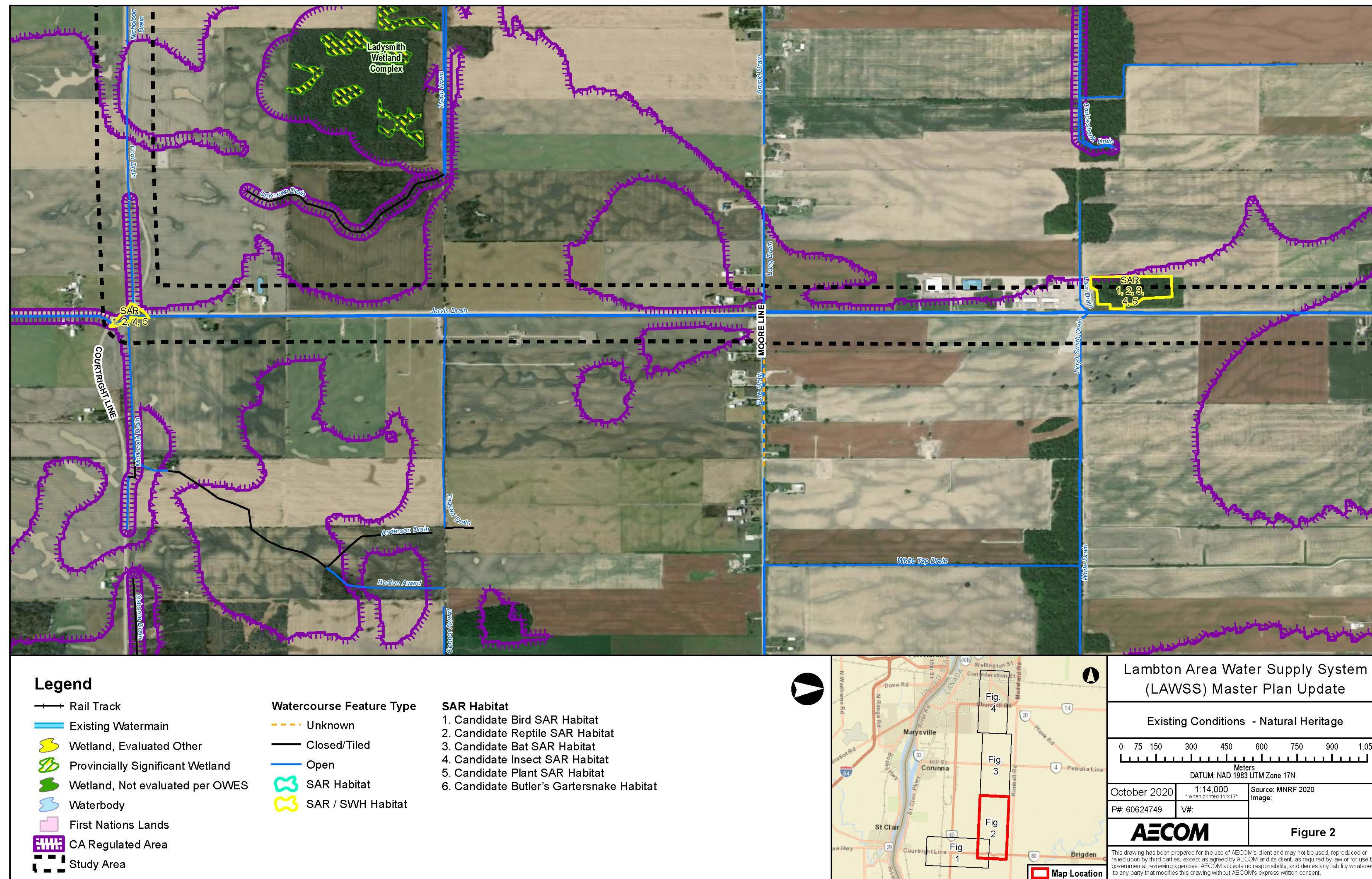
Existing Conditions: Natural Environment



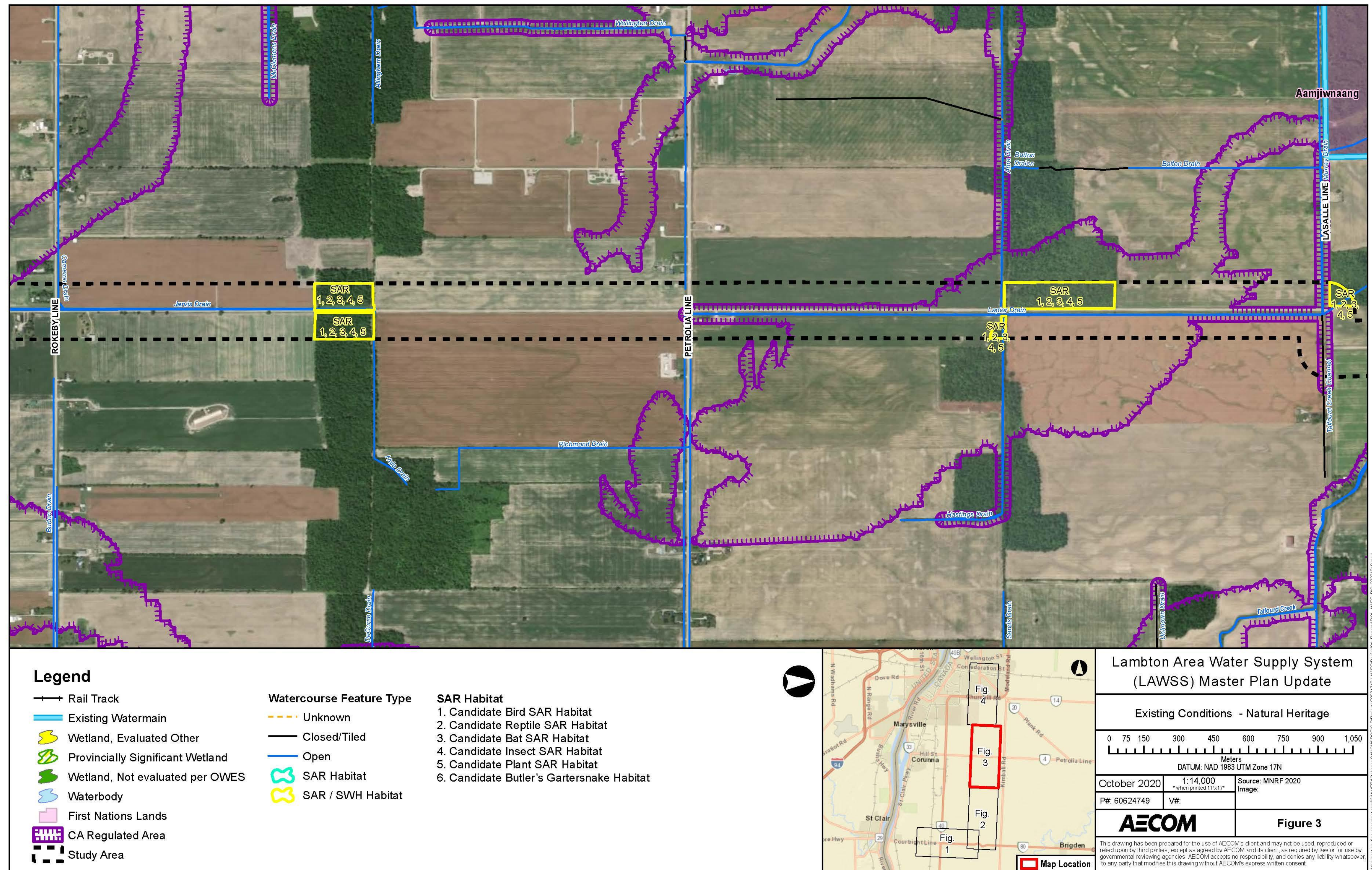
Existing Conditions: Natural Environment



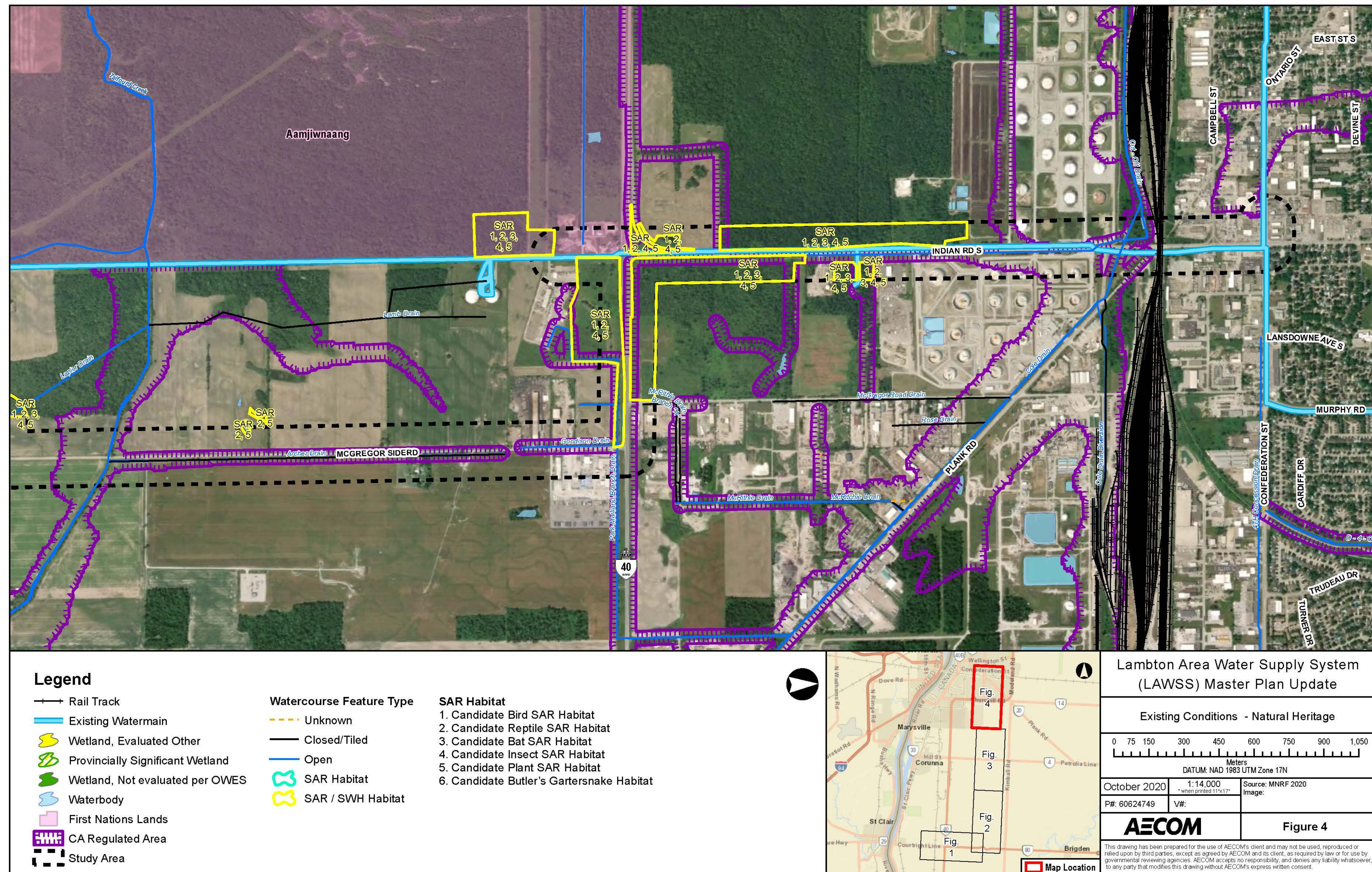
Existing Conditions: Natural Environment



Existing Conditions: Natural Environment



Existing Conditions: Natural Environment



Existing Conditions: Archaeology and Cultural Heritage

Stage 1 Archaeological Assessment

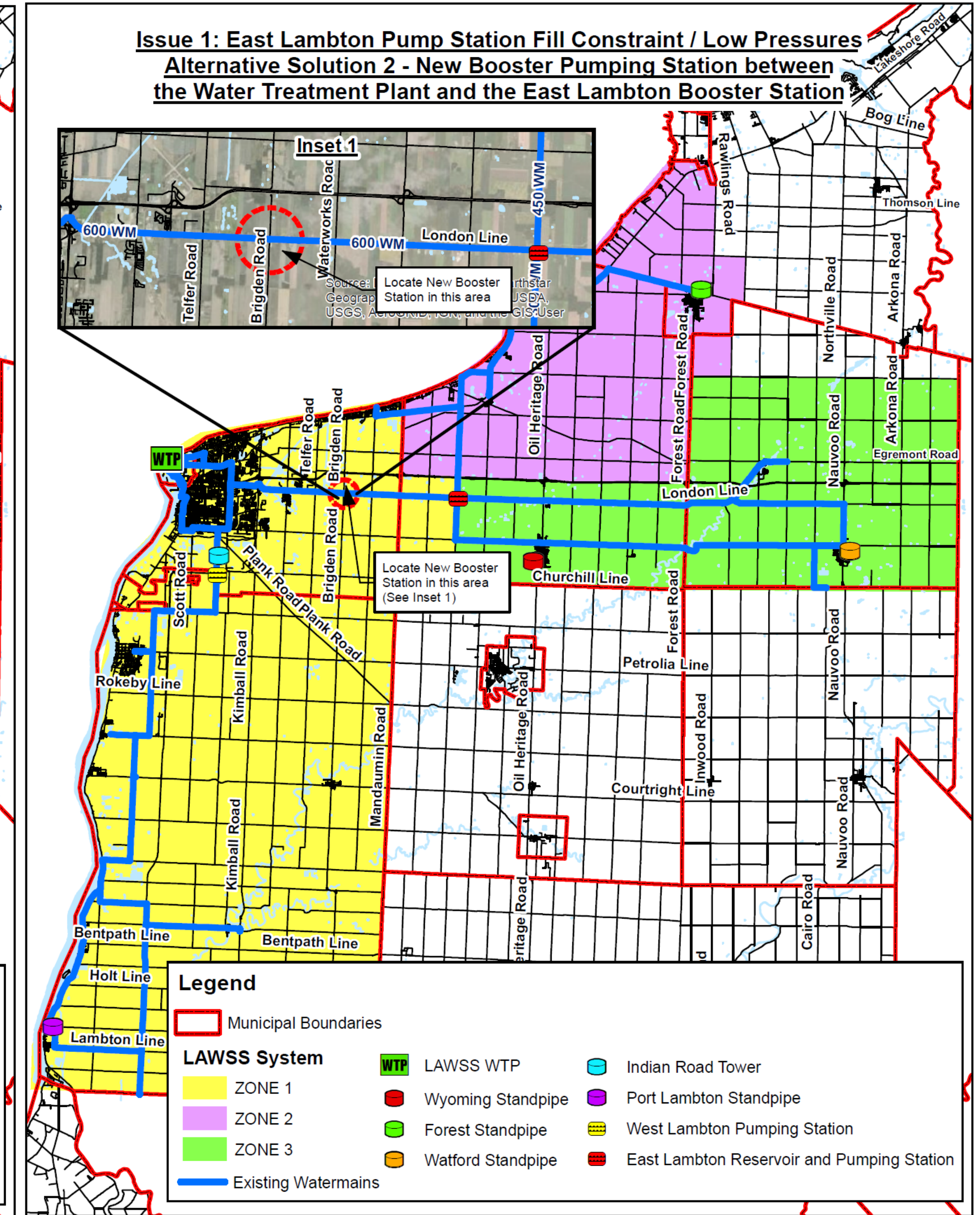
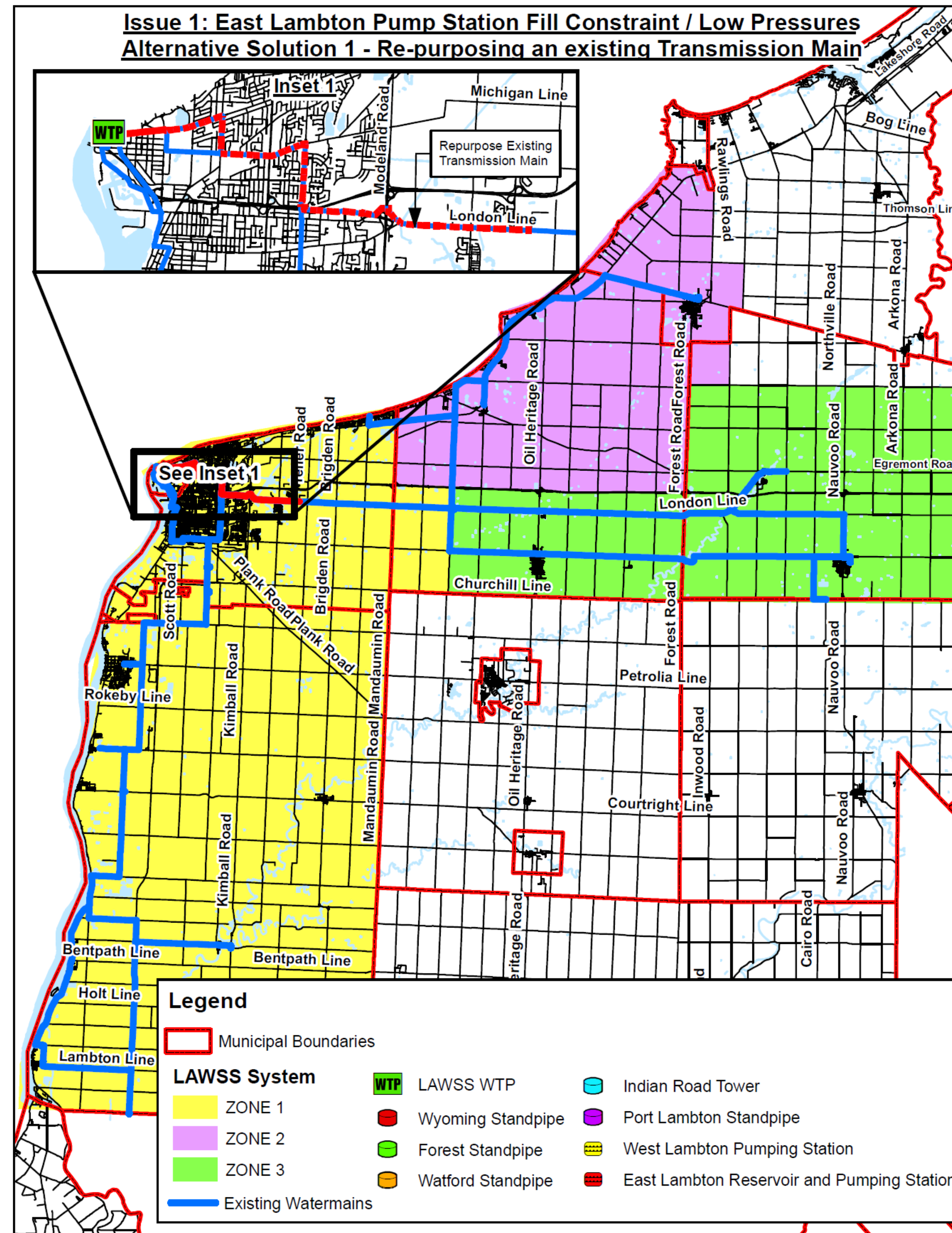
- A Stage 1 archaeological assessment will be completed to support the evaluation of alternative solutions and will identify known archaeological sites, areas subject to previous assessments, and will evaluate the potential for archaeological resources to be present on potentially undisturbed land.
- The Stage 1 archaeological assessment will involve:
 - A review of archaeological literature assessment reports, management plans pertaining to the study area and vicinity.
 - An examination of the Provincial Archaeological Sites Database.
 - Review of historic maps, literature and archival materials as they relate to possible archaeological concerns.
 - Provide, if required, recommendations for further archaeological investigations.

Cultural Heritage Resources

- Cultural Heritage Resources will be identified through the process outlined in the Ministry of Heritage, Sport Tourism, and Cultural Industries (MHSTCI) Criteria for Evaluation Potential for Built Heritage Resources and Cultural Heritage Landscapes.
- A Cultural Heritage Report: Existing Conditions (CHR) may also be undertaken to identify municipally, provincially, and federally recognized properties, as well as to identify potential cultural heritage resources or properties within, or adjacent to the Project Construction Area(s), in order to evaluate the potential impacts that infrastructure may have on cultural heritage resources.

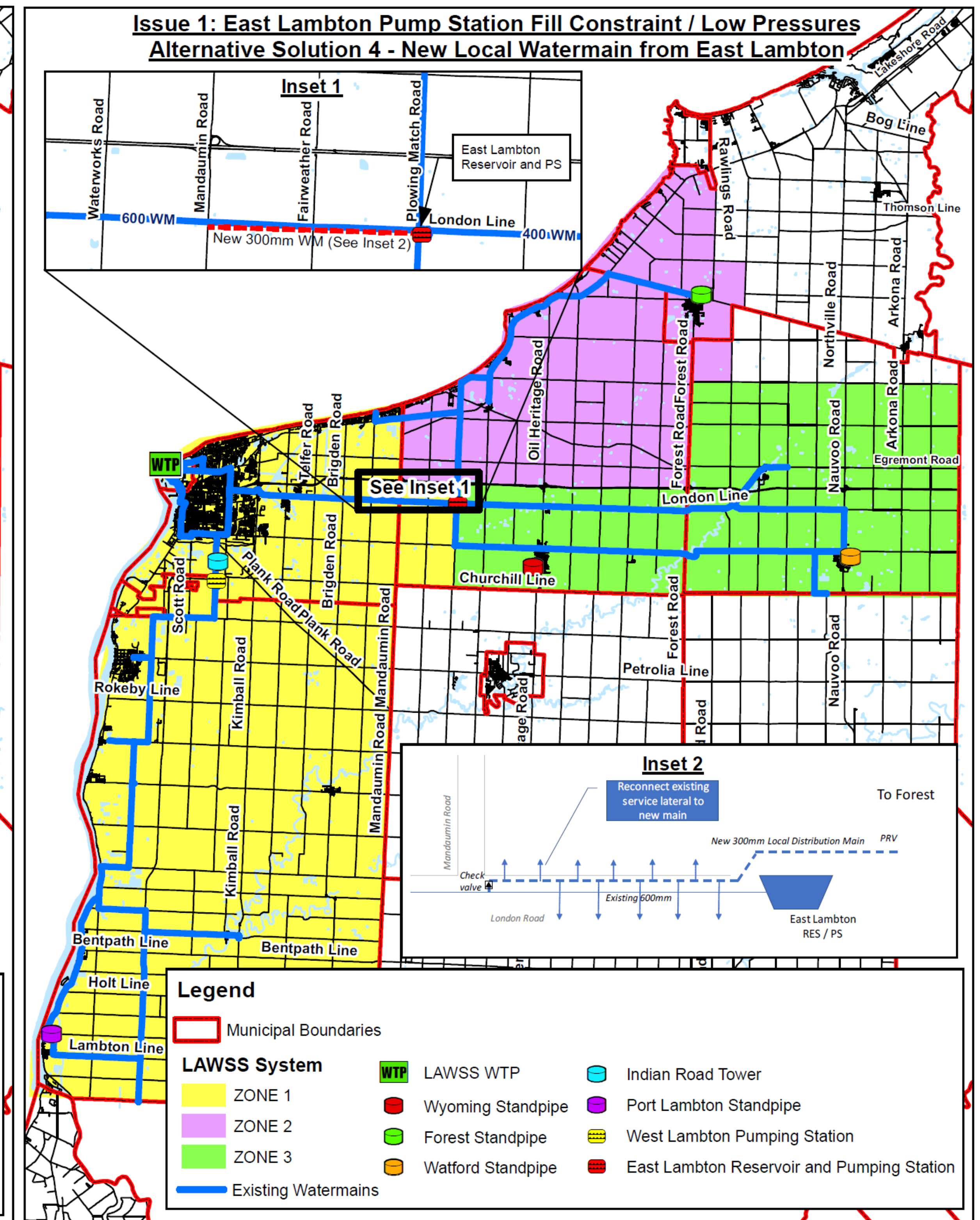
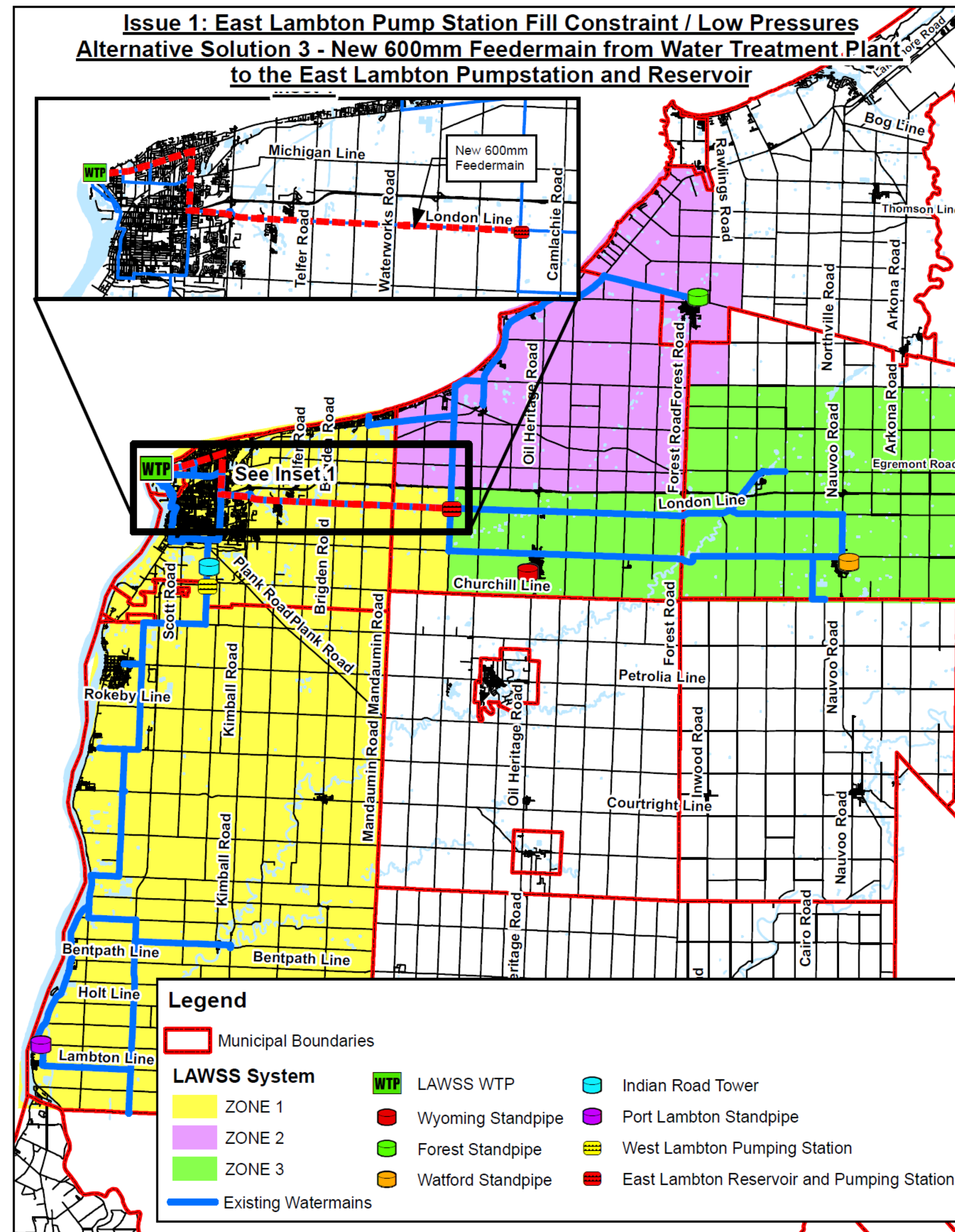
Zone 1 - Issue #1: Potential Solutions

- **Alternative 1:** Re-purposing an Existing Transmission Main.
- **Alternative 2:** New Booster Pumping Station between the Water Treatment Plant and the East Lambton Booster Station.



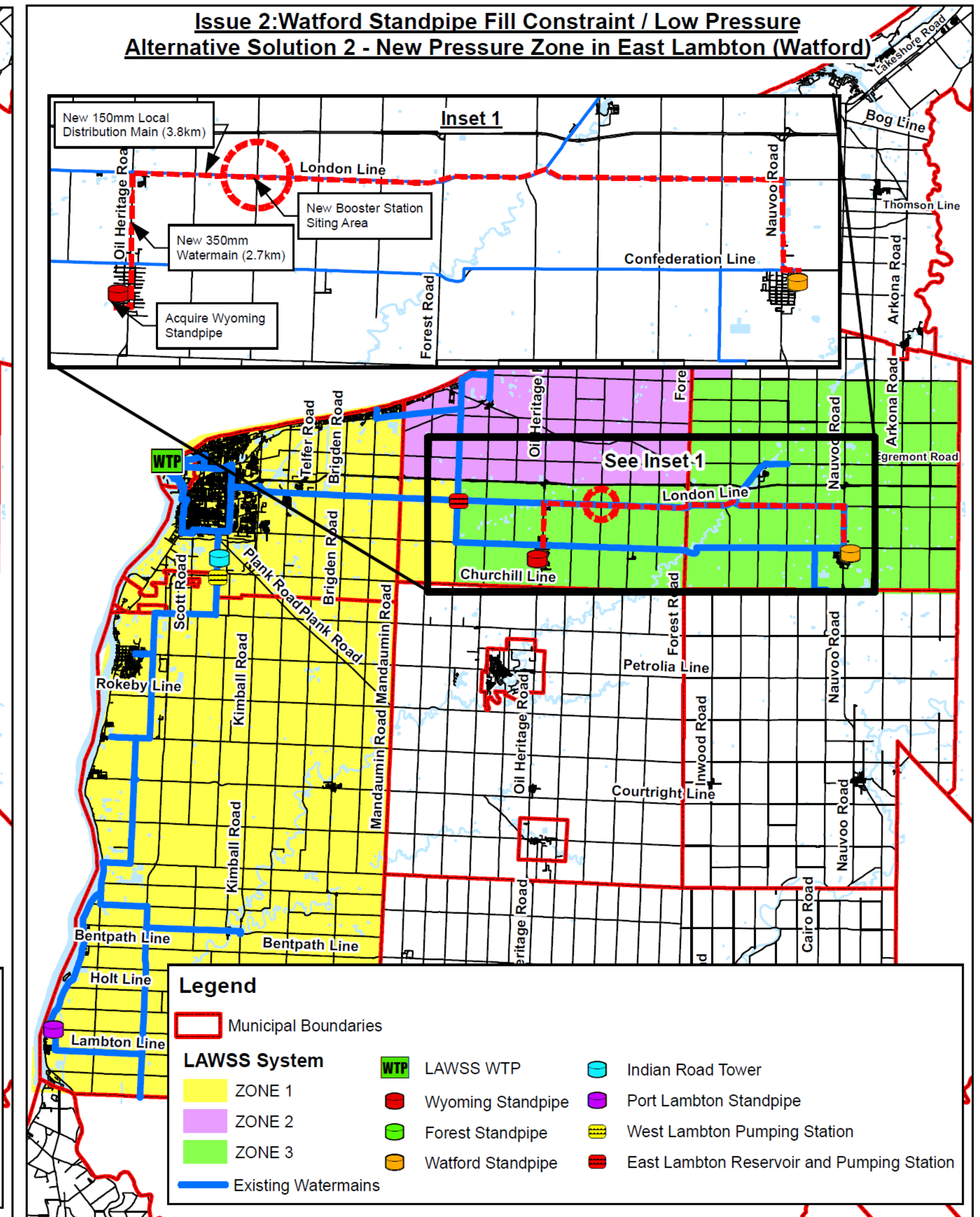
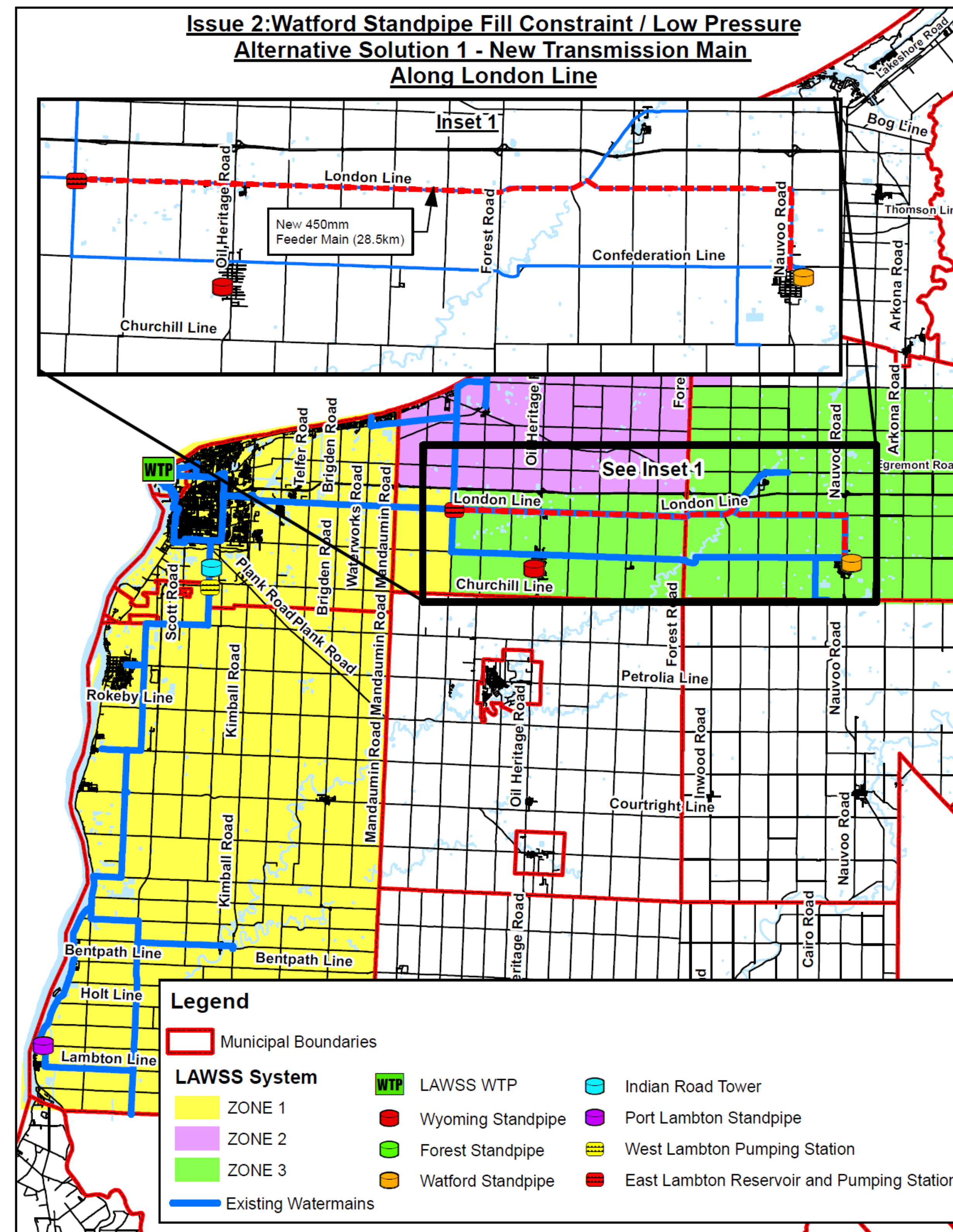
Zone 1 - Issue #1: Potential Solutions

- **Alternative 3:** New 600mm Feedermain from Water Treatment Plant to the East Lambton Pump Station and Reservoir
- **Alternative 4:** New Local Watermain from East Lambton



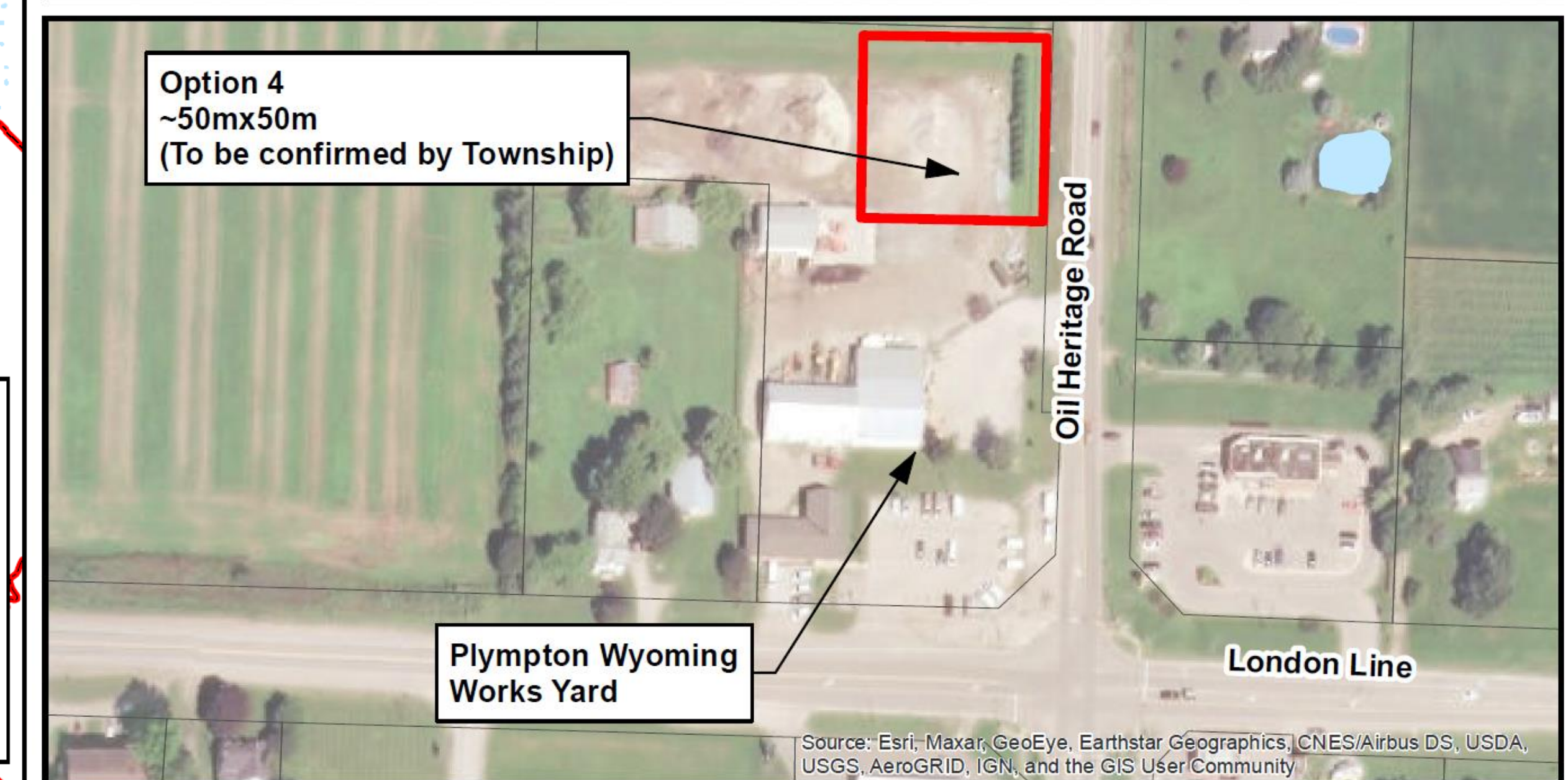
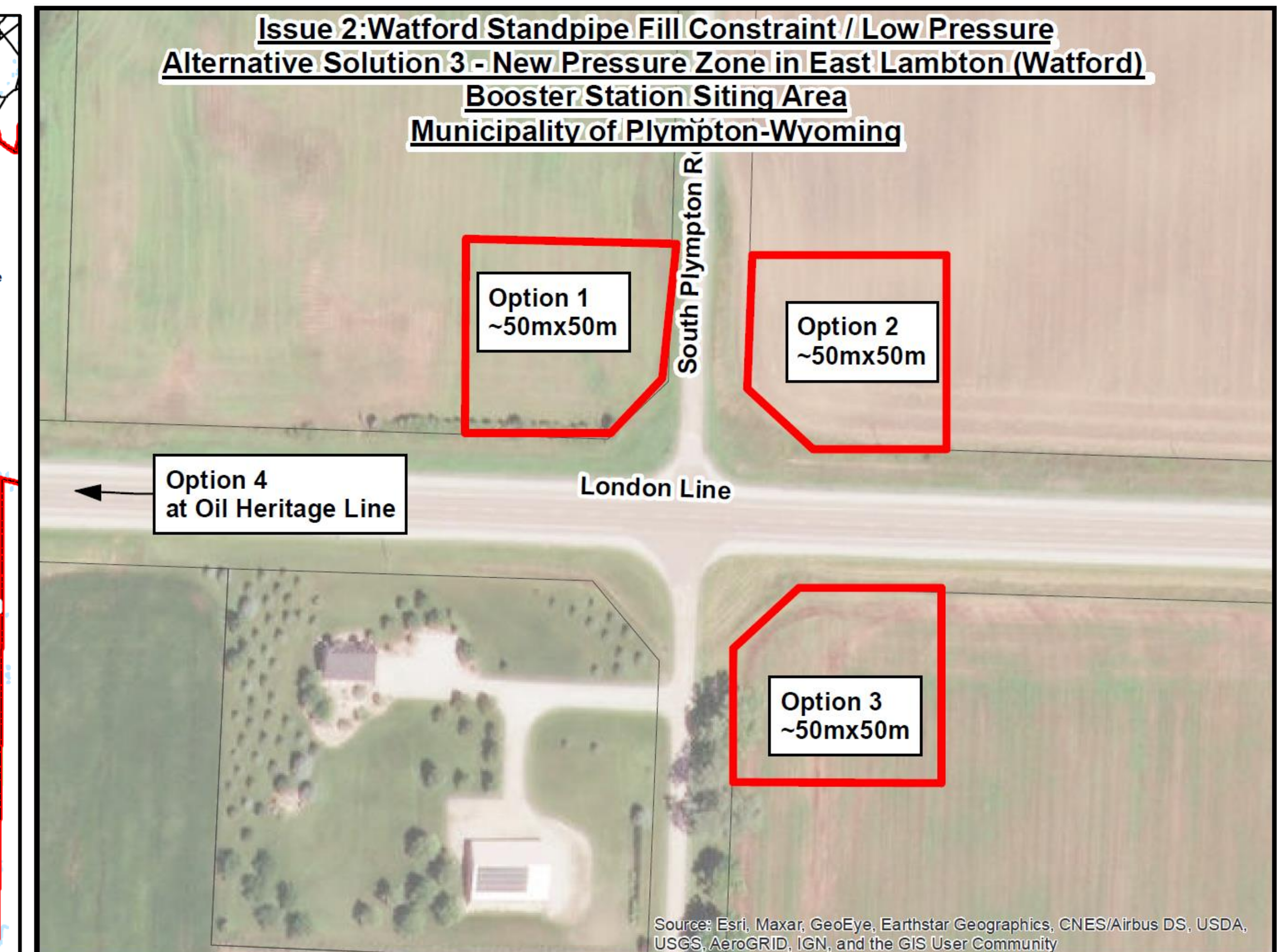
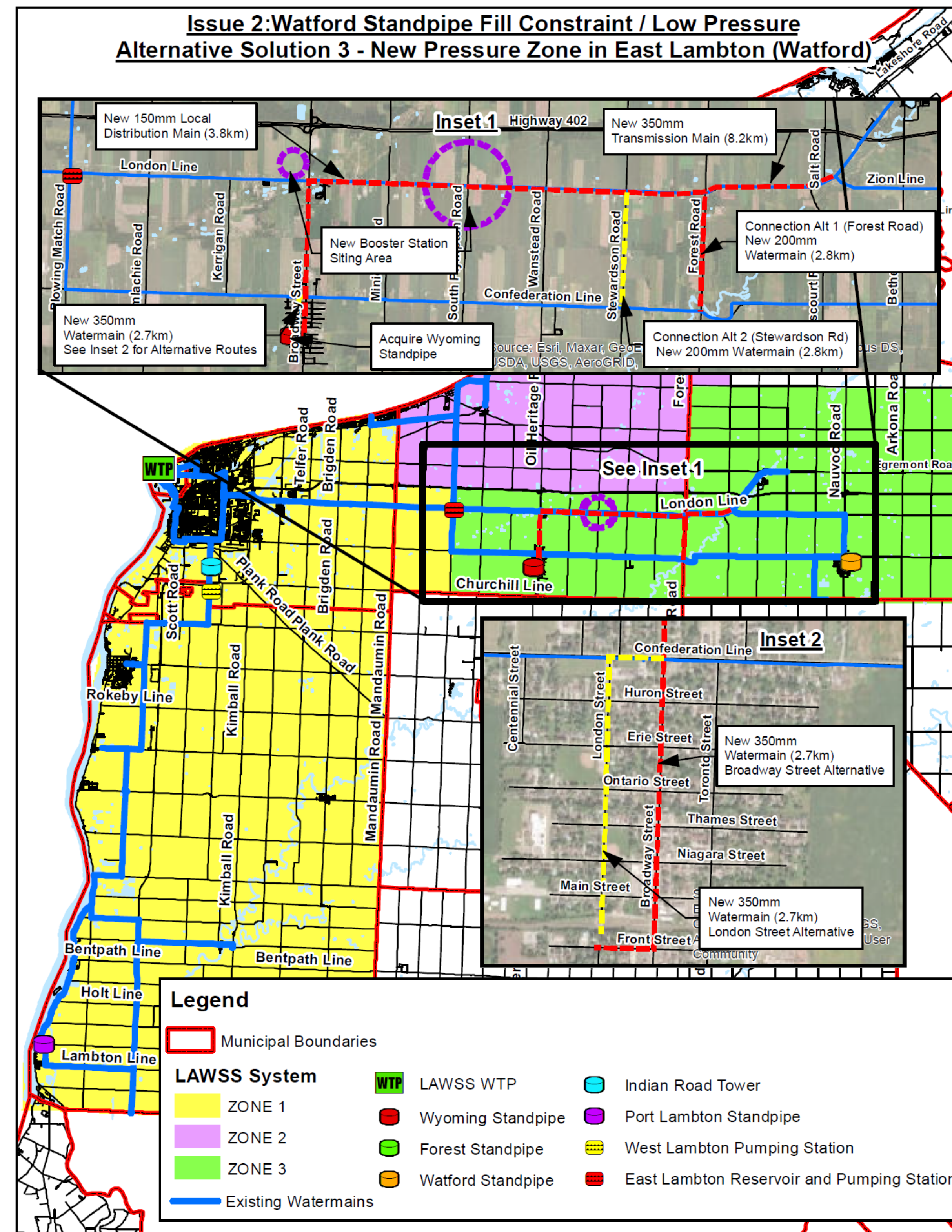
Zone 3 - Issue #2: Potential Solutions

- **Alternative 1:** New Transmission Line Along London Line.
- **Alternative 2:** New Pressure Zone in East Lambton (Watford).



Zone 3 - Issue #2: Potential Solutions

- **Alternative 3:** New Pressure Zone in East Lambton (Watford). This includes siting a new Booster Pumping Station Siting Area in the Municipality of Plympton-Wyoming

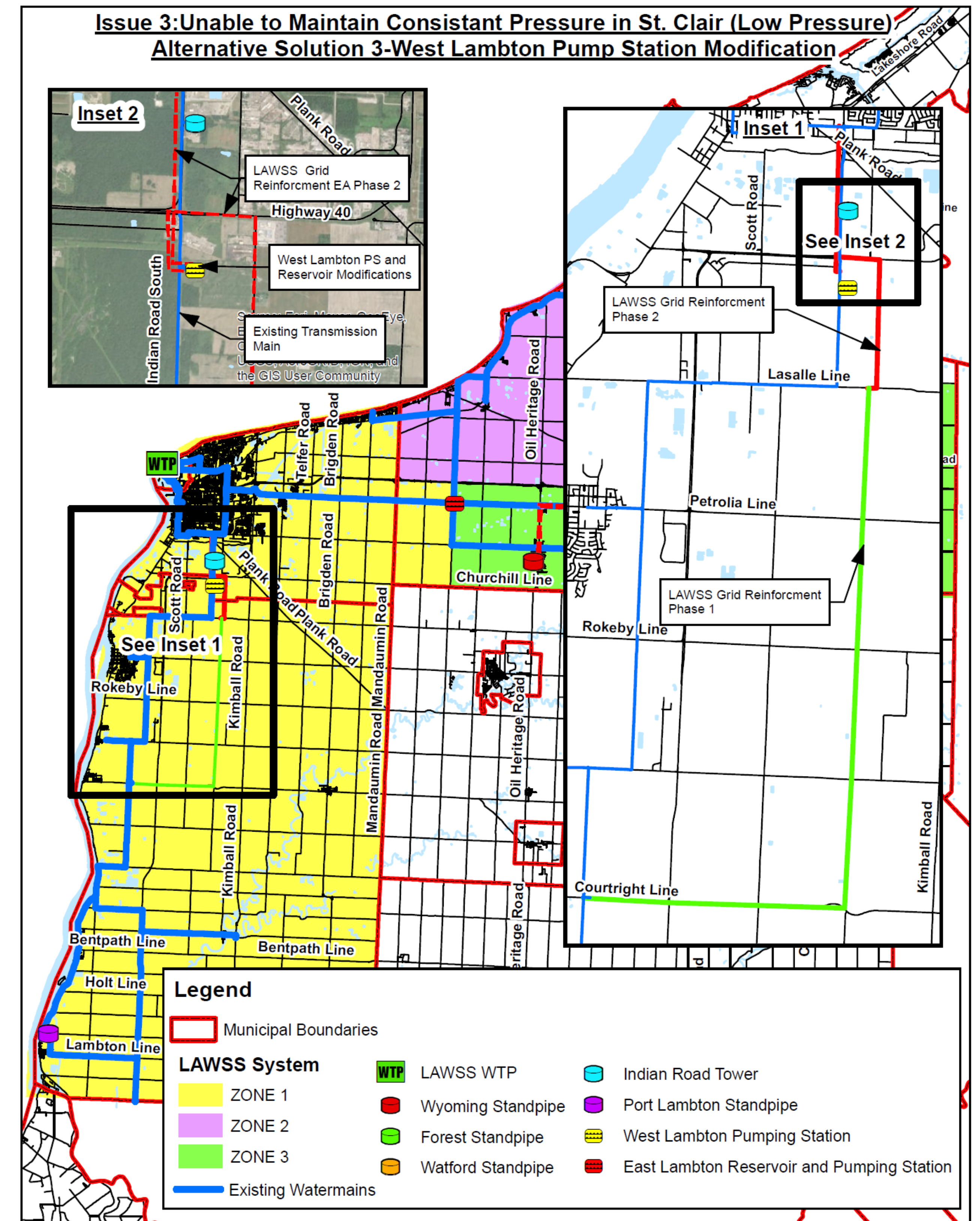


Zone 1 - Issue #3: Potential Solution

- West Lambton Pump Station Modification.
- St. Clair will be operated as separate pressure zone (i.e. Zone 1B).

Grid Reinforcement and Transmission Main Twinning

- The Grid Reinforcement & Transmission Main Twinning MCEA study was completed in 2011 and has not yet been built.
- A MCEA Addendum is being completed as part of the 2020 LAWSS Water Master Plan Update.
- The MCEA Addendum will confirm-update the proposed improvements and effectively extend the deadline for project initiation for another 10 years in keeping with the MCEA 10-year "Lapse of Time" before construction commencement.
- The scope of the Addendum only applies to what has changed from the original 2011 MCEA Phases 1 & 2 Report.
- The previously recommended (2011) route has been confirmed (provides redundancy) and watermain sizing and interconnection opportunities are being reviewed.









Evaluation Criteria

- Draft criteria have been identified that will be used to evaluate the potential alternative solutions and select the preferred alternative – water supply strategy for system (infrastructure) improvements.

What do you think?
Did we miss anything?
Let us know by filling
out and submitting the
comment form



Factor		Criteria
	Land Use	Conformance with approved local, county and provincial plans and policies
		Potential effects on existing and approved / planned land uses
	Technical	Potential compatibility with system - requirement for system upgrades
		Potential constructability and minimum utility conflicts
		Ability to meet long-term water servicing requirements including flow, pressure and fire flow for the servicing area
	Natural Environment	Potential effects on terrestrial species and habitat
		Potential effects on aquatic species and habitat
		Potential effects on Species at Risk (SAR) and SAR habitat
		Potential effects on surface water and groundwater
		Potential to encounter soil and water contamination
	Socio-Economic	Potential for project to impact climate change and for climate change to impact the project
		Potential effects (noise, vibration, dust, access to property) related to disruption to residences, agricultural, businesses and travelling public during construction and operation
	Cultural Environment	Degree of property acquisition / easement requirements
		Potential effects on archaeological resources
	Cost	Potential effects to built heritage resources and cultural heritage landscapes
		Cost of construction (including property acquisition)
		Cost of operations / maintenance

What Happens Next?

December 2020	<ul style="list-style-type: none"> •Review-consider comments from PIC 1. •Evaluate alternative solutions. •Identify the recommended water servicing strategy – improvement projects.
Winter 2021	<ul style="list-style-type: none"> •Host PIC 2 to present and obtain feedback for the preferred water supply improvements •Review – consider PIC 2 feedback. •Confirm recommended infrastructure projects-near term and long term water supply strategy.
Winter/ Spring 2021	<ul style="list-style-type: none"> •Prepare Master Plan Update Report for 30 day comment period.



THANK YOU FOR PARTICIPATING

- Stay informed! Visit the project website: **www.laws.org/master-plan**
- Keep in touch! Join our mailing list – leave us an email or mailing address to receive future MCEA notifications.
- Comments? We encourage you to fill out a comment form. All comments will be reviewed and considered by the Study Team.
- To submit additional questions, comments or to be added to the project mailing list, please contact:

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