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COBOURG WATER SYSTEM

ESTABLISHING NEW PRESSURE ZONE 3

Public Information Centre #1

Welcome to Public Information Centre #1 to **Establish New Water Pressure Zone 3** Environmental Assessment.

We want to hear from you.

Please fill out the comment sheet provided at today's Public Information Centre and leave it in one of the boxes provided.

If you would like to be included in the project's mailing list fill out your information in the form provided.

Additional information is available on the project website at www.cobourg.ca/reportsandstudies



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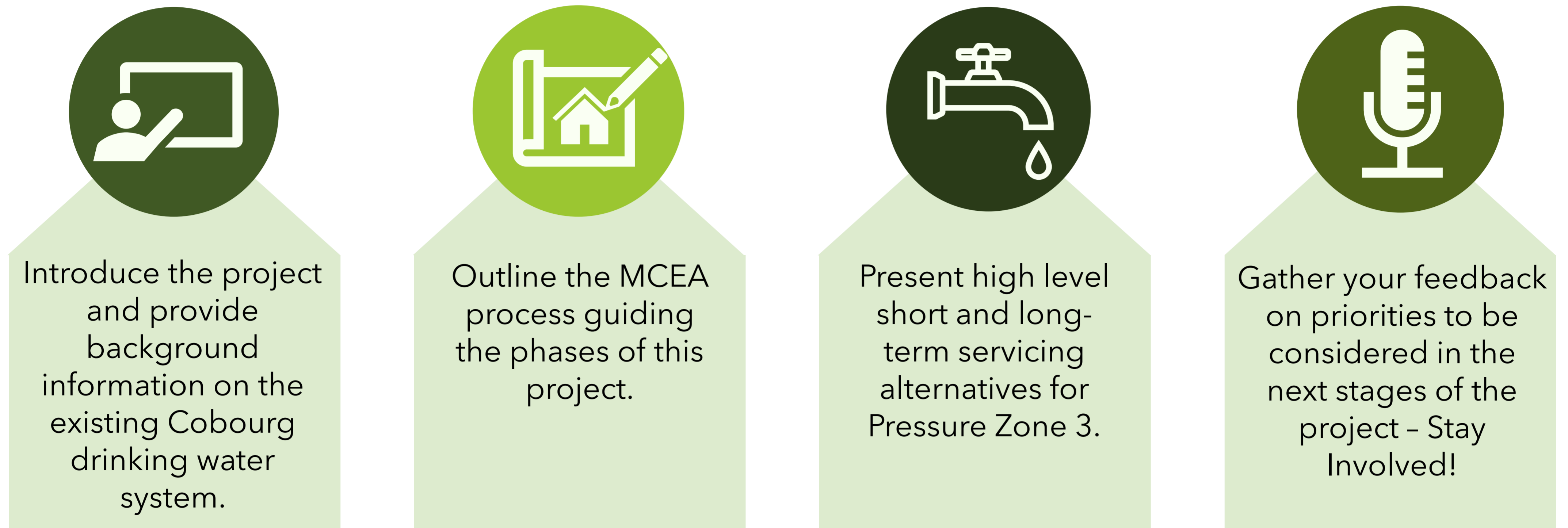
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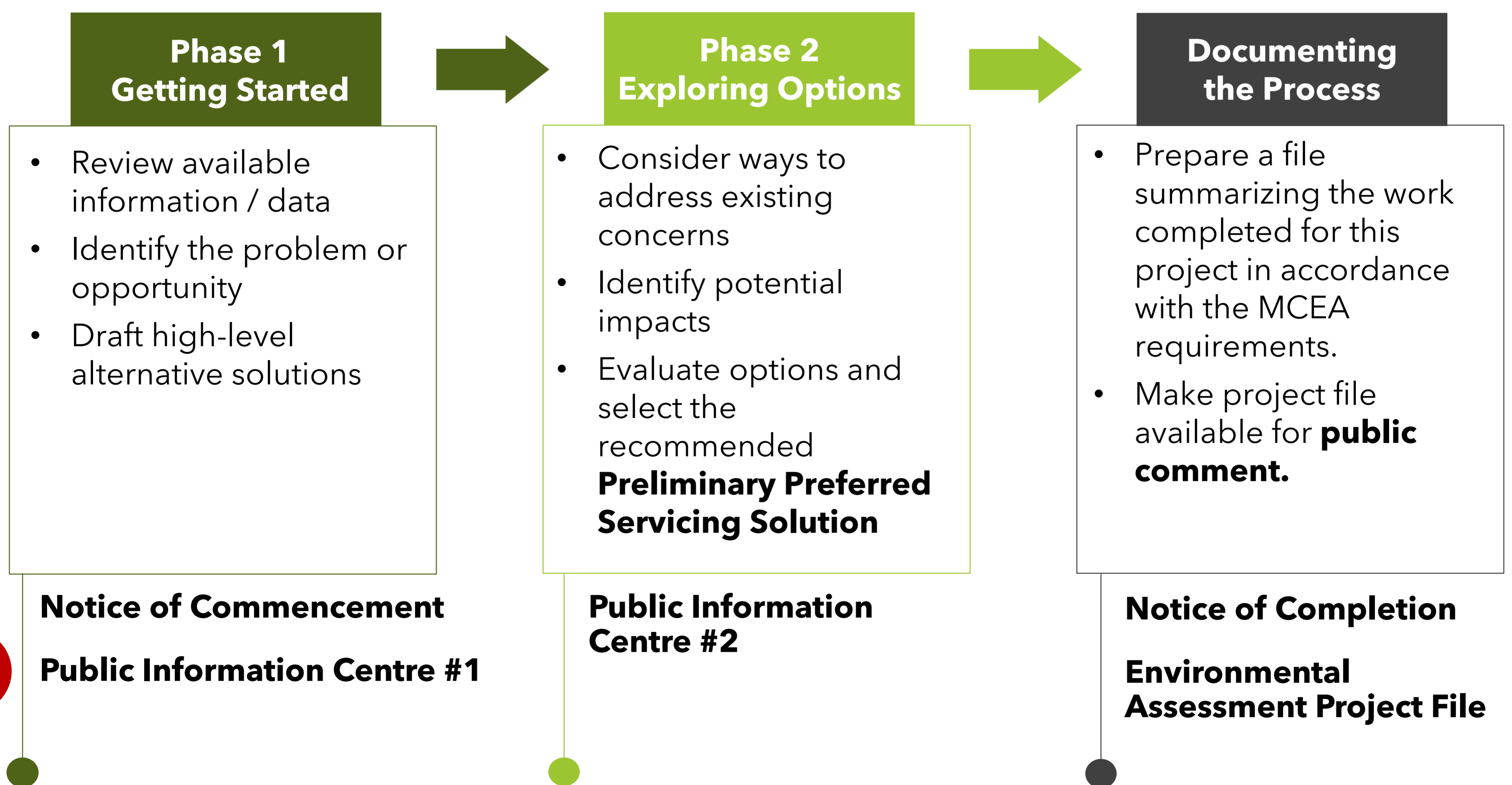
Why Are We Here? / MCEA Process

Lakefront Utility Service Inc. (LUSI) has initiated a Schedule "B" Municipal Class Environmental Assessment (MCEA) to develop a servicing strategy for a new water pressure zone (Zone 3) in the northeast area of Cobourg within the boundaries of the Cobourg East Community (CEC).

The objectives of this **Public Information Centre #1** are to:



This project is being completed according to the Municipal Class Environmental Assessment (MCEA) process. The process involves consultation and engagement with the public, agencies, local developers, and Indigenous communities along with the evaluation of different solutions to select a preferred option that balances environmental impacts, technical feasibility and long-term community benefit.



WE ARE
HERE



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Problem Opportunity Statement & Study Area

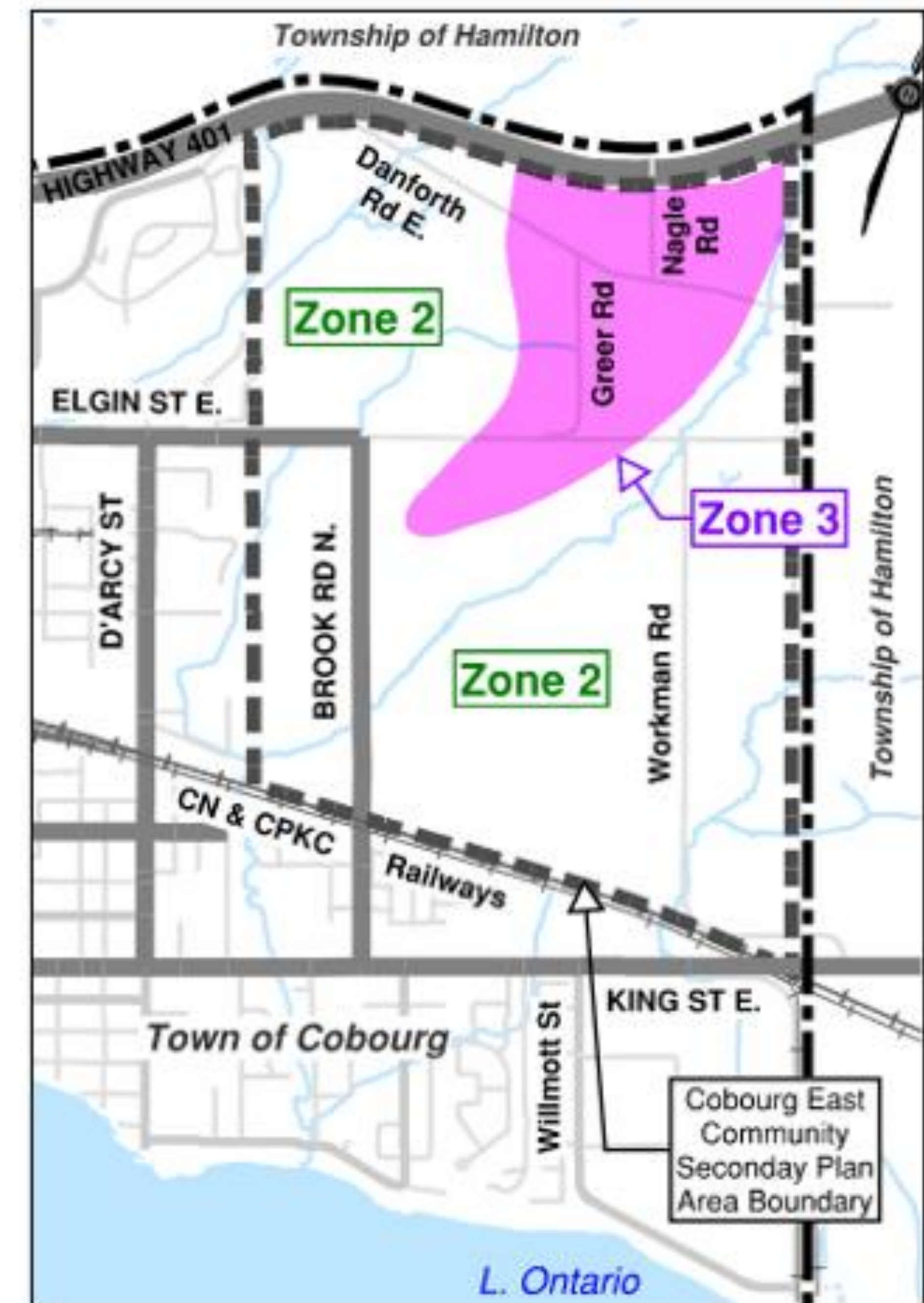
The Problem:

The Cobourg Water System Master Plan (2021) identified a 100ha area in the northeast portion of the Cobourg East Community (CEC) Secondary Plan Area where ground elevations exceed 120 metres, which is the physical limit for reliable service from Pressure Zone 2 of the existing water system. To support long-term growth in the CEC (as envisioned in the Secondary Plan) and ensure that future residents and businesses in this high-elevation area receive the same reliable water pressure and fire protection as the rest of the community, a new pressure zone (Zone 3) must be established.

The Opportunity:

Key water and sanitary sewer infrastructure is currently being installed in the CEC, and the Town is updating the Cobourg East Community (CEC) Secondary Plan, integrating studies to establish the road network plan that will support long-term growth in the area. This provides an opportunity for Lakefront Utility Services Inc. (LUSI) to develop a coordinated strategy for providing water service in the Pressure Zone 3 area. This strategy will provide a roadmap for establishing a Zone 3 water pumping station and water storage facilities located on 'high ground' that will improve system resiliency and meet the long-term needs of growth in the CEC.

Study Area:



Zone 3: Area above 120 m elevation



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Existing Cobourg Drinking Water System

Existing Drinking Water System:

Cobourg Water Treatment Plant

- Located at 6 D'Arcy St.
- Rated capacity of 36,368 m³/d

Pumping Facilities

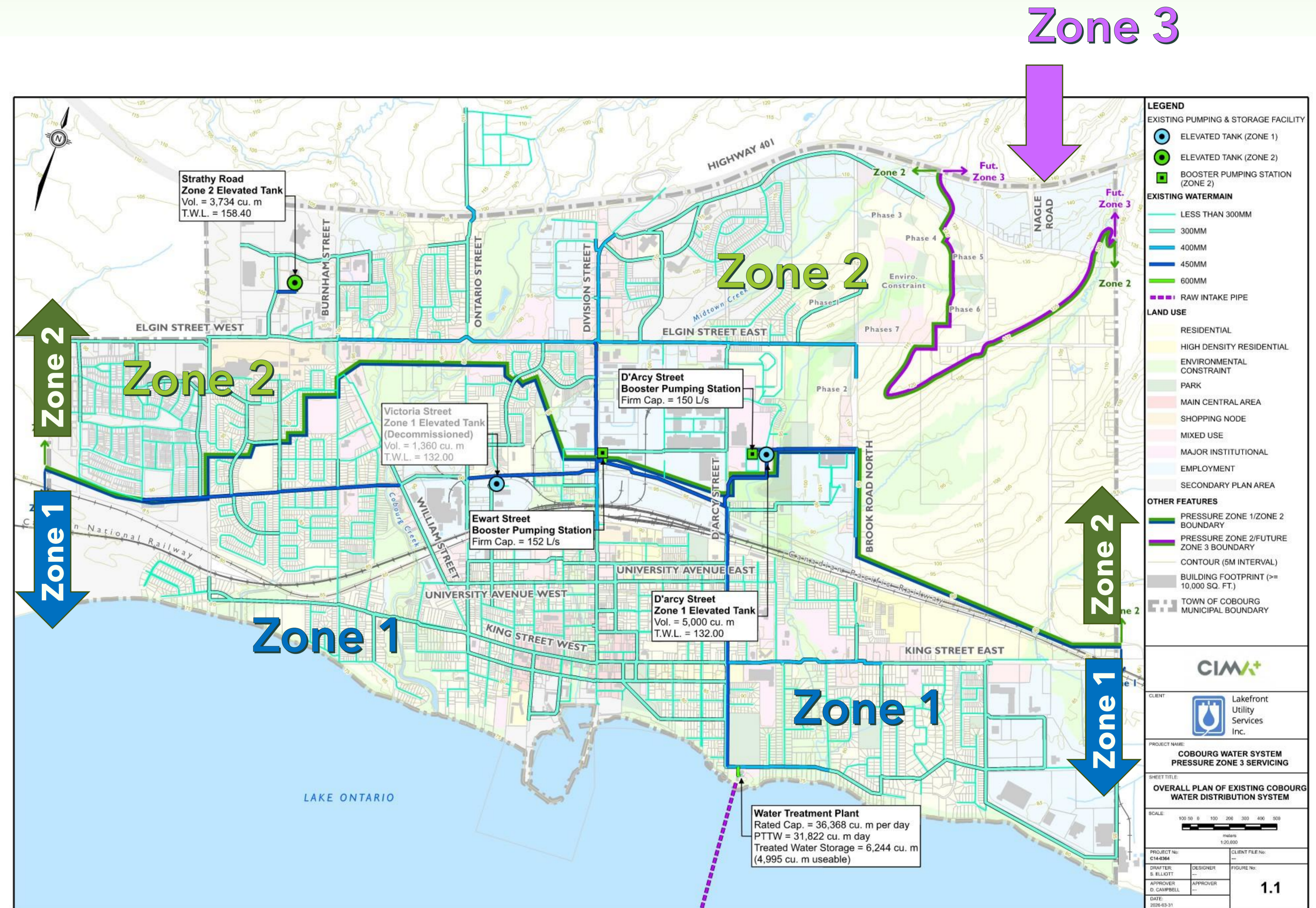
- Two pressure zones.
- High lift pumps at the WTP pump into Zone 1
- Two booster pumping stations, Ewart St. and D'Arcy St pump into Zone 2

Storage Facilities

- Zone 1 elevated tank, D'Arcy St.
- Zone 2 elevated tank, Strathy Rd.

Distribution System

- Over 170 km of trunk and local distribution watermains (100 mm - 600 mm diameter)





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Public Information Centre #1 Prior System Level Planning

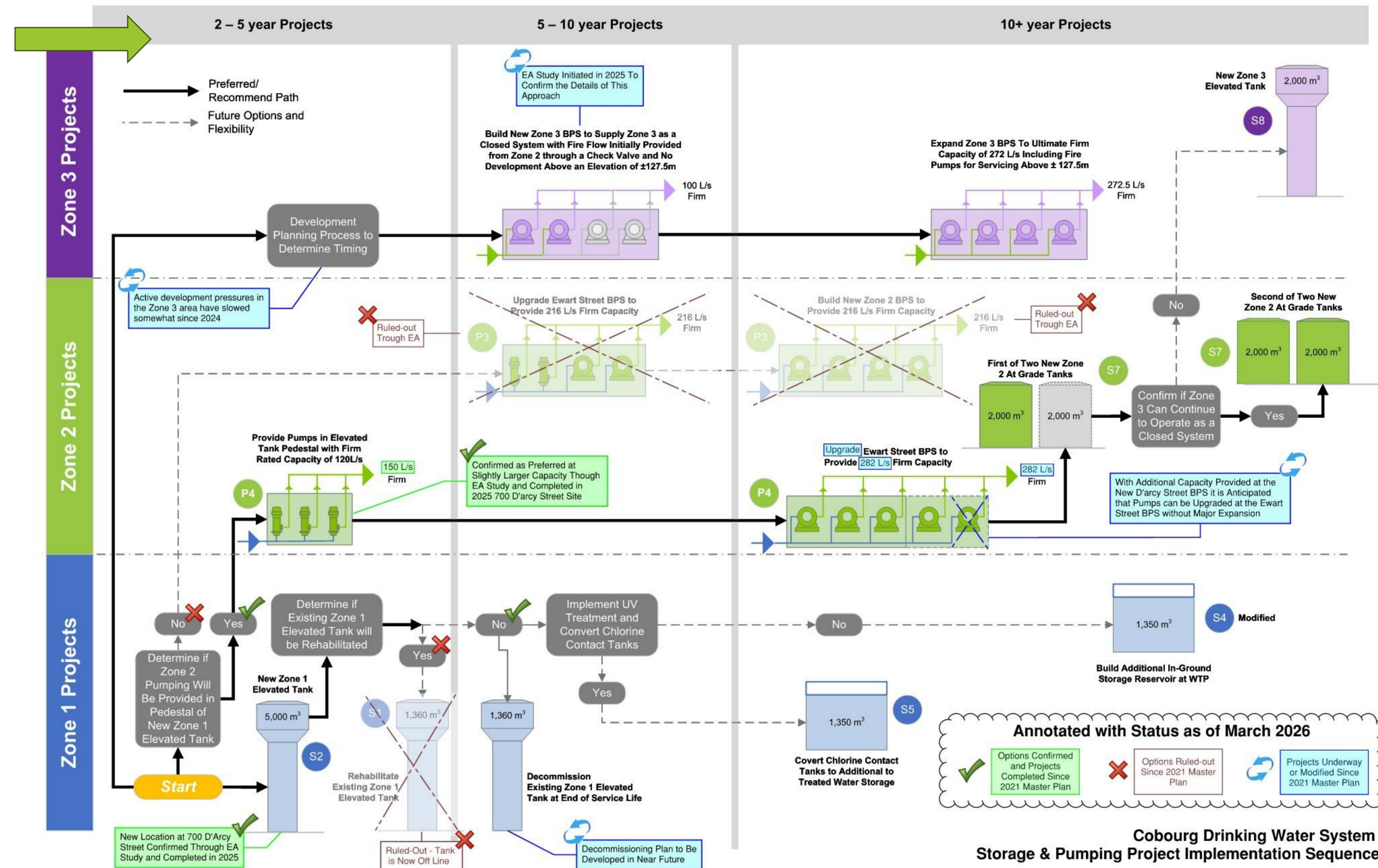
Master Plan (2021) Pumping and Storage Implementation Sequence

The Cobourg Water System Master Plan (2021) included an **implementation strategy for pumping and storage projects** required to meet the long-term needs of the system.

Based on the decision points included in the strategy **options have been refined as key projects are implemented**. The annotated version of the figure on this slide illustrates the status of various projects and options.

For Pressure Zone 3 the strategy included:

- Phased implementation of a new Booster Pumping Station (BPS) to supply Zone 3:
 - Phase 1: smaller pumps to meet day-to-day needs in the lower elevation areas of Zone 3
 - Phase 2: additional larger pumps to meet the needs of all of Zone 3
- The possibility of various water storage facilities on the high-ground in the Zone 3 area that would meet the future needs of Zone 2 and Zone 3





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COBOURG WATER SYSTEM ESTABLISHING NEW PRESSURE ZONE 3 Public Information Centre #1 Completed Studies

Highway 401 Nagle Road Interchange Planning, Preliminary Design and Class Environmental Assessment (Transportation Environmental Study Report)

In **2025** the Town of Cobourg and MTO completed a study following MTO's Planning, Preliminary Design Class Environmental Assessment process to identify the preferred location and configuration of new Highway 401 interchange to service the future growth in Cobourg East Community Secondary Plan Area (approximately 3,600 jobs and 17,000 people). The need for a new Highway 401 interchange at Nagle Road was identified as component of the future transportation network in the Cobourg East Community Secondary Plan (2005).

Recommended Nagle Road Interchange Plan

The **recommended interchange plan** includes (figure right):

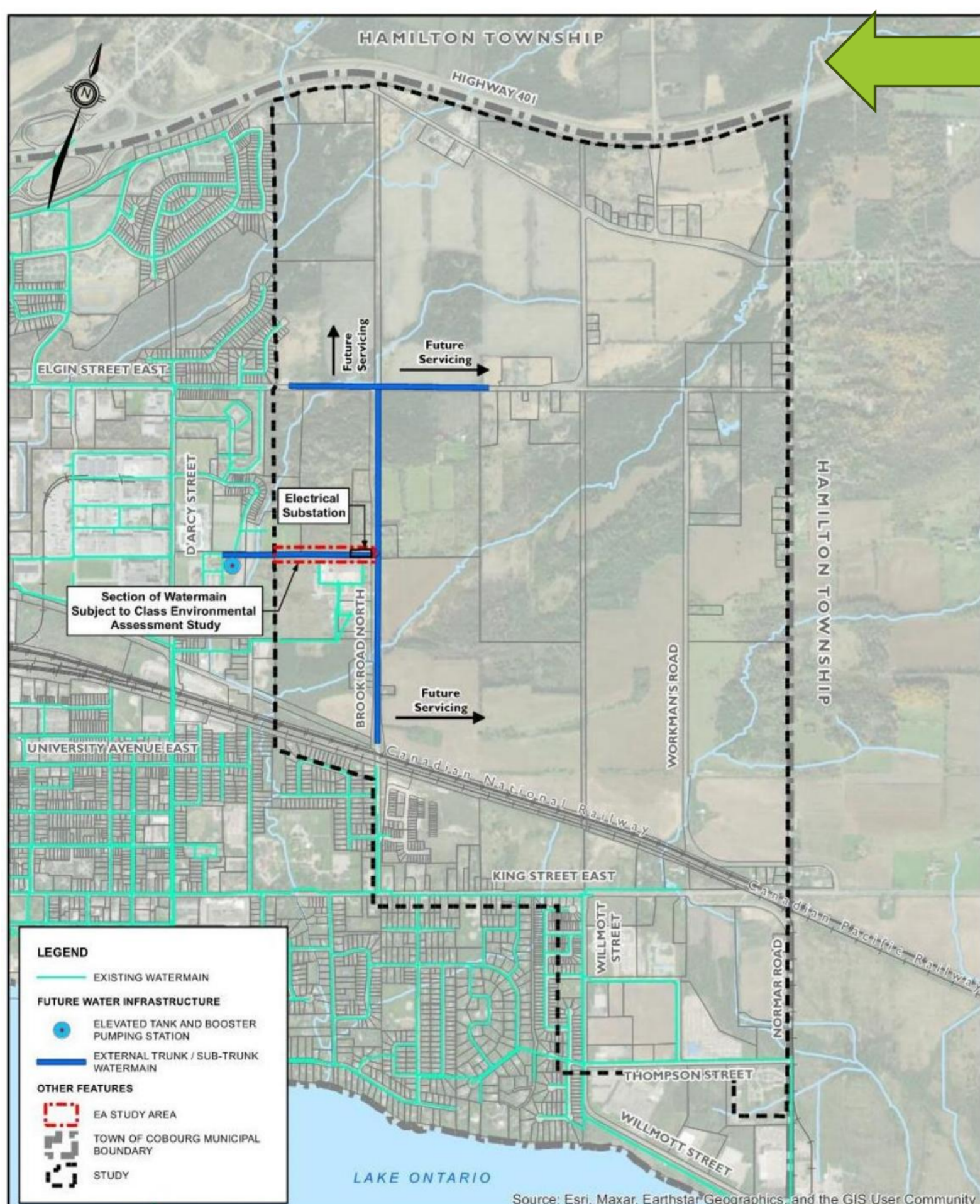
- Replacing the existing Nagle Road bridge with a wider bridge, ultimately with space for 4-lanes plus cyclists and pedestrians
- A new Highway 401 interchange at Nagle Road with a Parclo A2 / Diamond configuration
- Widening of Nagle Road from two lanes to four lanes
- Realignment of Danforth Road to intersect Nagle Road 400m south of the interchange
- Potential for phased construction to the ultimate configuration.



Cobourg East Community Secondary Plan Area Municipal Servicing Environmental Assessment

A MCEA Study was **completed in 2023** to investigate water and wastewater (sanitary sewer) servicing infrastructure solutions to support future development of lands within the Cobourg East Community Secondary Plan Area. Construction of sewers and watermains identified through this study has occurred in phases starting in 2024 with completion expected in 2027.

Preferred Water Servicing Solution



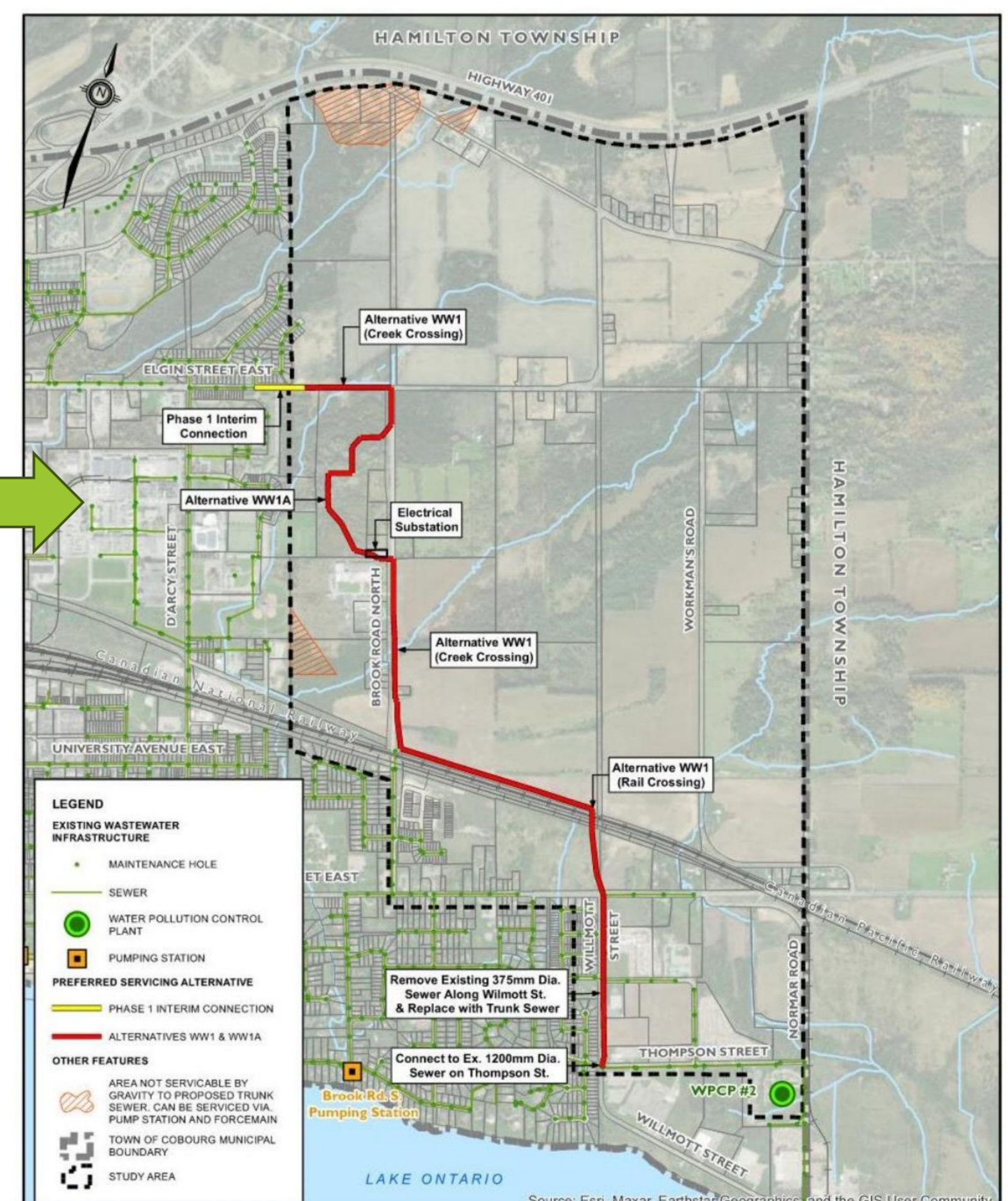
The **preferred water servicing solution** (figure to left):

- Connects the CEC area to the new D'Arcy Street Zone 2 booster pumping station
- Extends Zone 2 trunk watermains into the CEC area along the existing road network

The preferred **wastewater servicing solution** (figure to right):

- Extends a trunk sanitary sewer from the existing trunk sewer on Thompson Street north to Elgin Street
- This allows sewage flows from the CEC area to be conveyed to WPCP #2
- Future sub-trunk sewers extending north and east will from the trunk sewer will service the rest of the CEC area

Preferred Wastewater Servicing Solution





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Public Information Centre #1 Ongoing Studies

Cobourg East Community Secondary Plan Update:

The Cobourg East Secondary Plan Update an ongoing planning initiative led by the Town of Cobourg and County of Northumberland to plan for growth expected in the Cobourg East area. Through this process, the original Secondary Plan (adopted in 2005 and updated in 2018) is being refreshed to address substantial growth anticipated through 2051. The secondary plan update is being undertaken alongside a Schedule "C" Municipal Class Environmental Assessment (MCEA) to provide a more refined plan for the required arterial roads.

More information can be found at: <https://www.cobourg.ca/our-government/plans-reports-and-studies/cobourg-east-community-secondary-plan/>

How the Second Plan Update Fits with the Zone 3 Water Servicing MCEA:

1. Ensuring Capacity for Full Build-Out

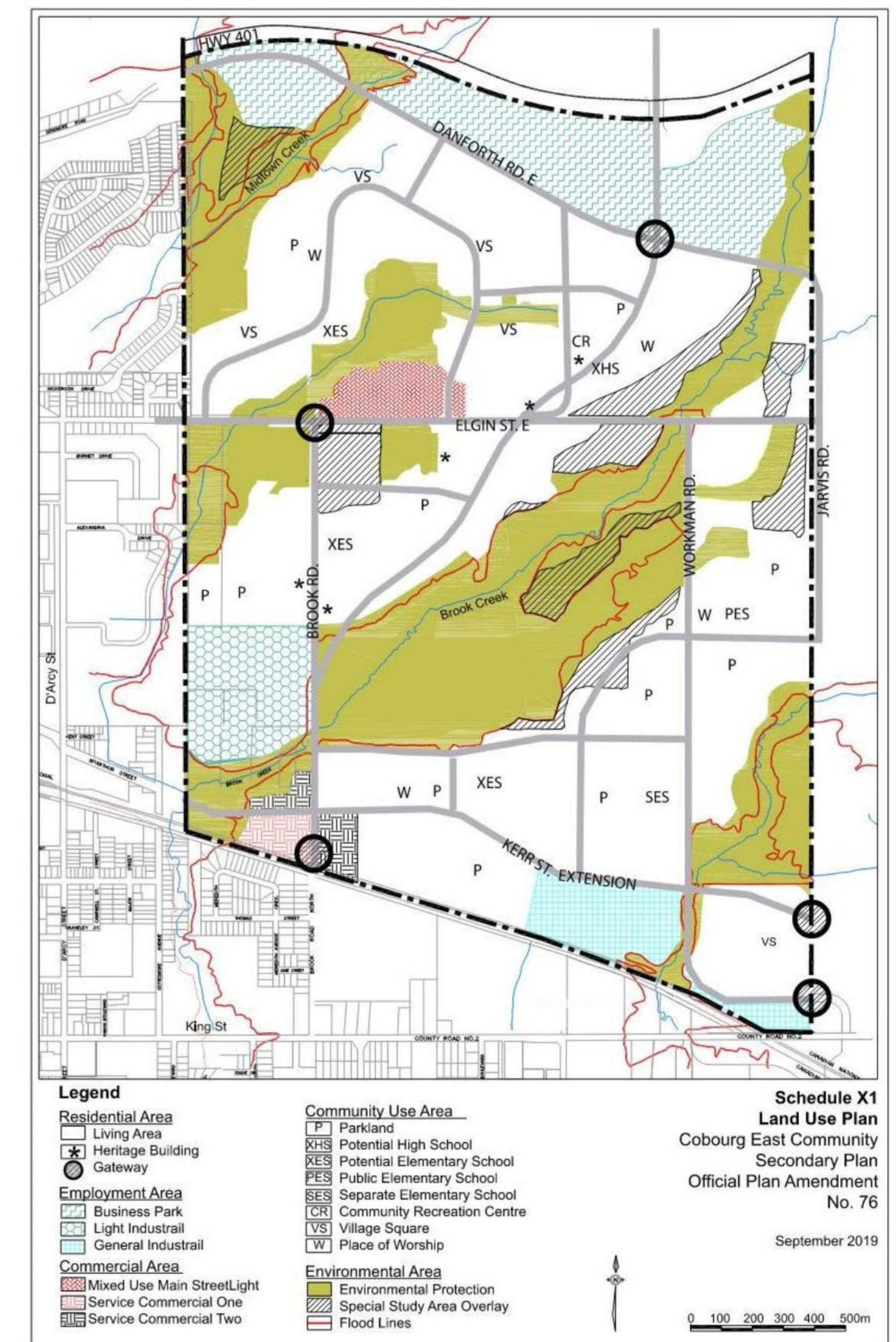
The secondary plan update will refine the land use and development plan for Cobourg East including the portion within the Zone 3 service area. The refined land use plan will determine needs of the development in Zone 3, which will inform the final recommended sizing for key water infrastructure:

- The flow rate for a new pumping station
- The volume for new storage facilities

2. Defining the Road Network

The Schedule "C" MCEA process will provide more refined planning for the future road network this will include setting future alignments for Danforth Road, Elgin Street East and the interconnection of Brook Road North and Nagle Road. The refined road network plan will inform the routing of future watermains in Zone 3.

Existing Cobourg East Community Secondary Land Use Plan (Schedule X1 2005)





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Zone 3 Opportunities and Constraints

Opportunities

- **Supports Planned Growth in Northeast Cobourg**
 - Pressure Zone 3 will eventually support approximately 2,500 people as the Cobourg East Secondary Plan Area builds out.
- **Reliable Water Pressure and Fire Protection**
 - Zone 3 infrastructure will enable the Town to provide reliable water pressure to an area that currently can't be adequately serviced from Zone 2 due to high elevation.
- **Ability to Optimize the System**
 - The EA evaluates alternative solutions to identify the most efficient locations for a BPS, extra storage capacity, and key watermains.
- **Integration with Broader Community Planning**
 - The Zone 3 EA process aligns with other ongoing infrastructure plans like the Cobourg East Secondary Plan Update and the Nagle Road Interchange Study.

Constraints

- **Coordination with Ongoing Developments**
 - Must account for the staging of development, changing water demands, and compatibility with planned infrastructure.
- **Cost and Long-Term Financial Responsibility**
 - Large-scale infrastructure (BPS, Storage Tanks) have high initial capital costs and create future operation and maintenance costs.
- **Infrastructure Footprint - Land Acquisition**
 - The proposed infrastructure will need to be located on a suitable site and agreements with landowners will need to be negotiated.
- **Potential Environmental Impacts**
 - Any preferred solution must balance natural environment considerations.



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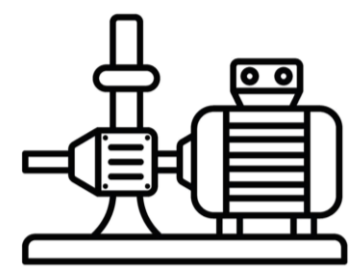
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Zone 3 Servicing Short Term & Long Term Approach (1)

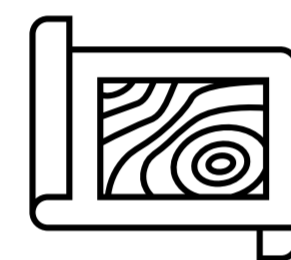
Short Term

Long Term



Phase 1 of Zone 3 Pumping Station

Smaller pumps with capacity for day-to-day needs of the lower elevation portion of Zone 3 (near the boundary)



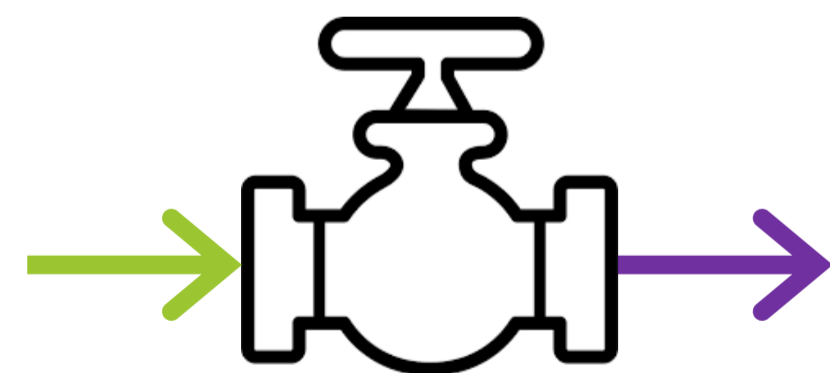
At One of Two Locations

Option 1: Lower Elevation

Near the zone boundary within the active Cobourg Trails subdivision development

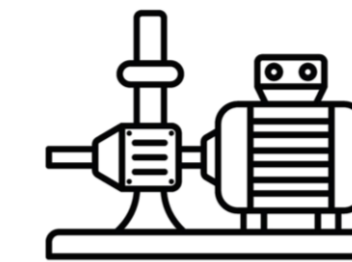
Option 2: Higher Elevation

East of Nagle Road at location where future water storage facilities could also be built



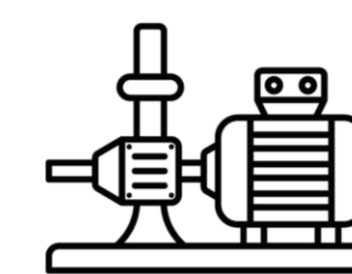
Check Valves at Zone Boundary

Valves that will allow water from Zone 2 into Zone 3 at lower pressure to provide interim fire flow for the lower elevation parts of Zone 3.



Phase 2 of Zone 3 Pumping Station

Expanded with larger pumps for the day-to-day needs of the entire zone (up to 145m) plus fire flow requirements



Addition of Storage Facilities

Approximately 4,000 m³ of new water storage on the high-ground east of Nagle Road to meet overall system needs

Combination of Potential Storage Options

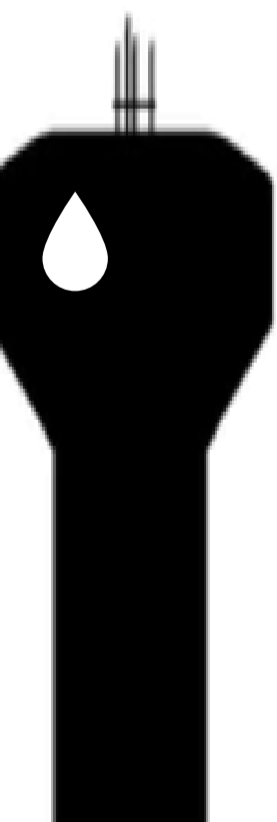
Zone 2 at Grade Tanks

1x or 2x tanks located on high ground to provide additional 'floating' gravity storage for Zone 2



Zone 3 at Elevated Tank

1x tank located on high ground to provide additional 'floating' gravity storage for Zone 3





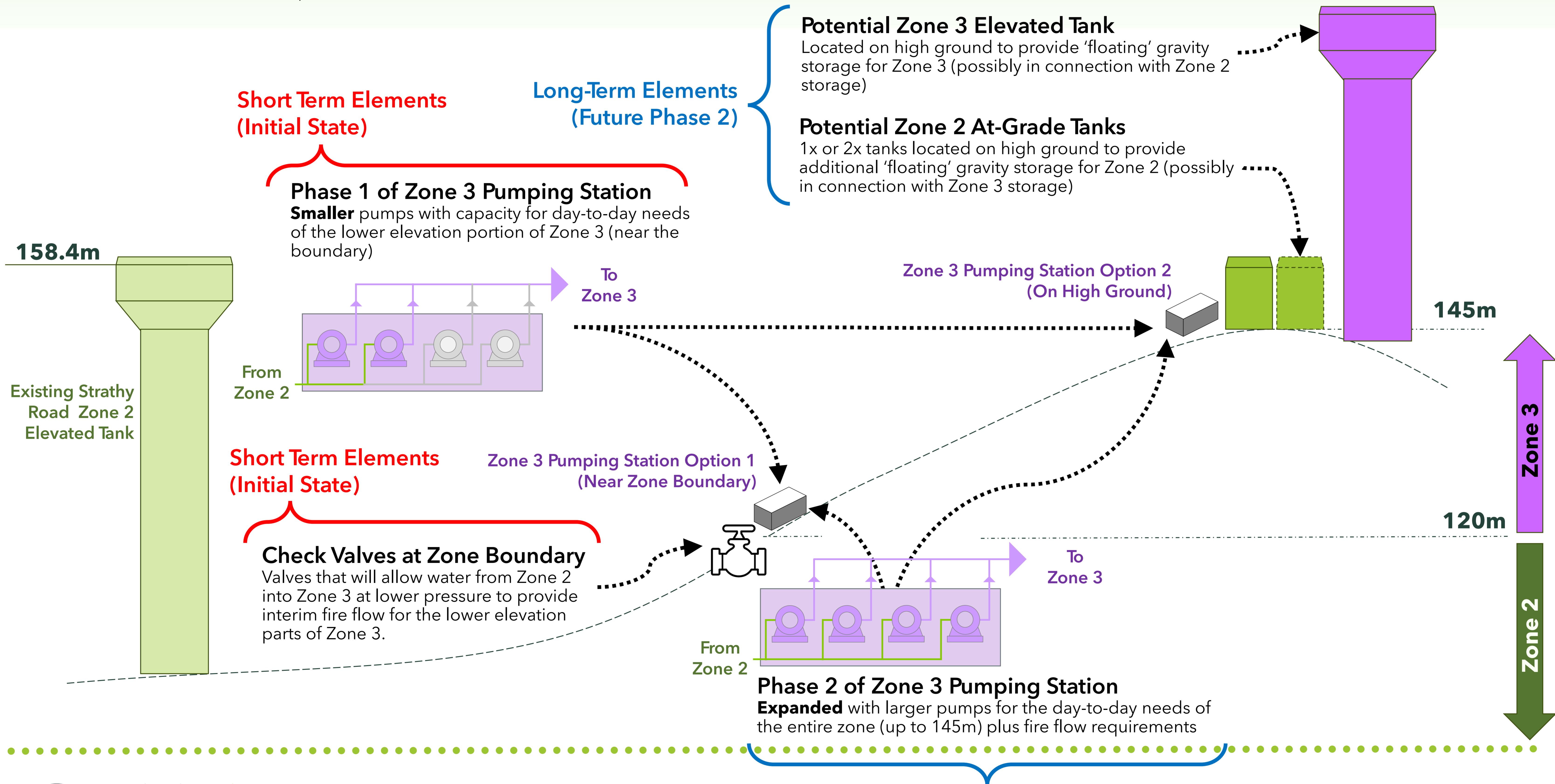
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Zone 3 Servicing Short Term & Long Term Approach (2)





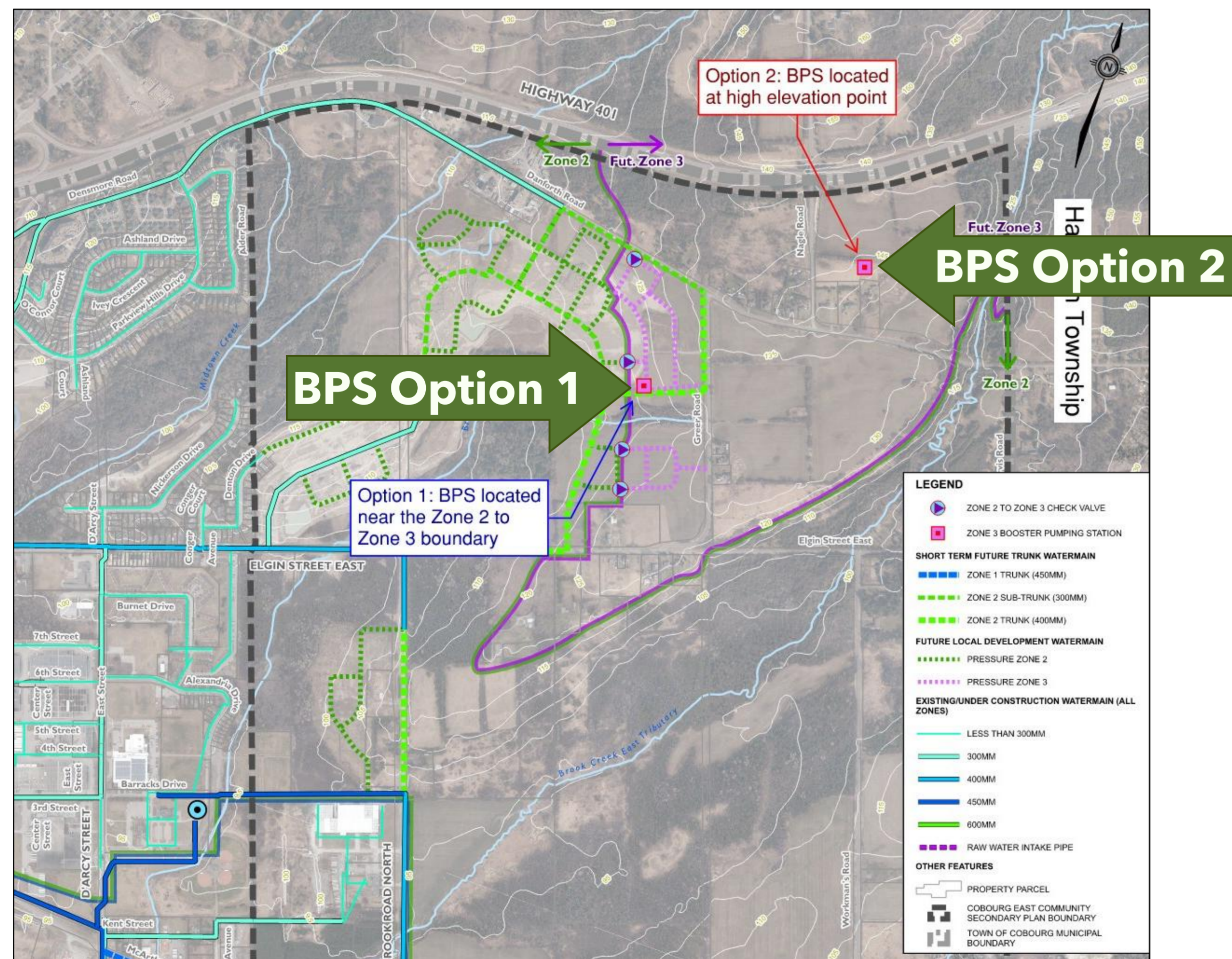
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Zone 3 Alternatives - Short Term (Phase 1)

- A pumping station initially equipped with smaller pumps to meet the day-to-day needs of near-term development in Zone 3 (i.e. development located along the boundary between Zone 2 and Zone 3).
- Two pumping station location options are being review:
 - **Option 1:** Within the Cobourg Trails subdivision where active development is occurring; or
 - **Option 2:** On the high-ground east of Nagle Road where future storage facilities could also be located.
- Check valves along the Zone 2/Zone 3 boundary that would allow fire flow to initially be provided to the lower elevation parts of Zone 3 from Zone 2



Typical Pumps in a BPS Facility



Existing BPS Facility at Ewart Street

Booster Pumping Station:

- A booster pumping station (BPS) in a municipal drinking water distribution system is designed to increase water pressure and within specific parts of a water system.
- New booster pumping stations are typically required to provide more flow in existing pressure zones or to service areas at higher elevation that cannot be adequately served by the pressure within existing zones.
- As communities expand, new developments can creation of new pressure zones to maintain acceptable operating pressures, provide sufficient fire flows, and meet regulatory standards.
- For the Zone 3 area in Cobourg (above 120m) a new BPS is required because the 2x existing Zone 2 BPS facilities are designed to work with the level the Strathy Road elevated tank, which was designed to provide acceptable pressures for an elevation range of between 90m and 122m
- If pressure zones cover an elevation range that is more than about 30m the pressures at the low elevation will be too high (over 80psi) or pressures at the top elevation will be too low (below 40psi).



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Zone 3 Alternatives - Long Term (Phase 2)

- Expanding pumping capacity at the Zone 3 booster pumping station to meet ultimate demands of the entire Zone 3 at full build-out.
- Adding Zone 2 and/or Zone 3 storage on the high-ground east of Nagle Road to provide floating storage for Zone 3 and expand total system storage volume to meet long-term needs.
- Establishing trunk watermains within the Zone 3 area to interconnect facilities along future road allowances.

At-Grade Storage Facilities:

At-grade storage facilities are water storage structures constructed at or near ground elevation. They primarily function as balancing and operational storage rather than direct pressure-providing assets unless located above the area they service.



Elevated Storage Facilities:

Elevated storage facilities (elevated tanks aka water towers) are raised structures designed to store water at an elevation sufficient to provide system pressure through gravity.



Potential Storage Combinations



2x Zone 2 Tanks



1x Zone 2 Tank +
Smaller Zone 3
Elevated Tank



Larger Zone 3
Elevated Tank



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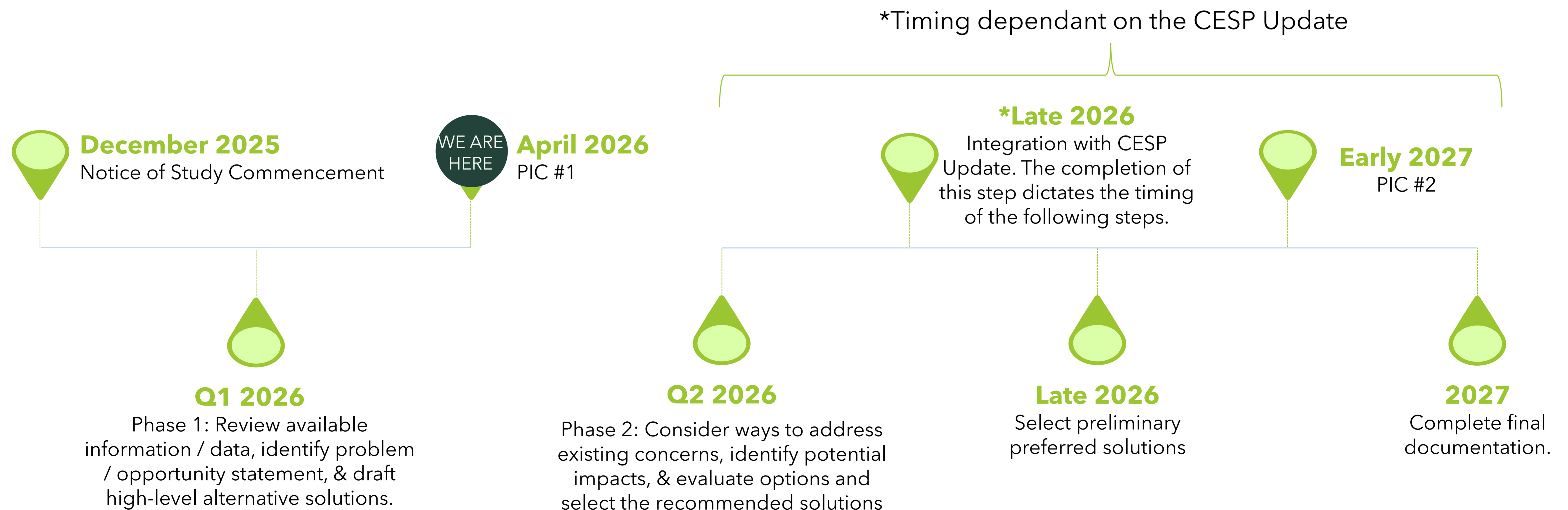
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Next Steps and General Project Timeline

After this PIC, the Project Team will:

- Review and consider input received during the Public Information Centre #1.
- Develop and evaluate alternatives.
- Integrate servicing plan alternatives with the CESP update.
- Select the preliminary preferred servicing strategies.
- Hold Public Information Centre #2 to present preliminary recommendations.





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To submit your questions or comments at any time during the project, please contact:



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