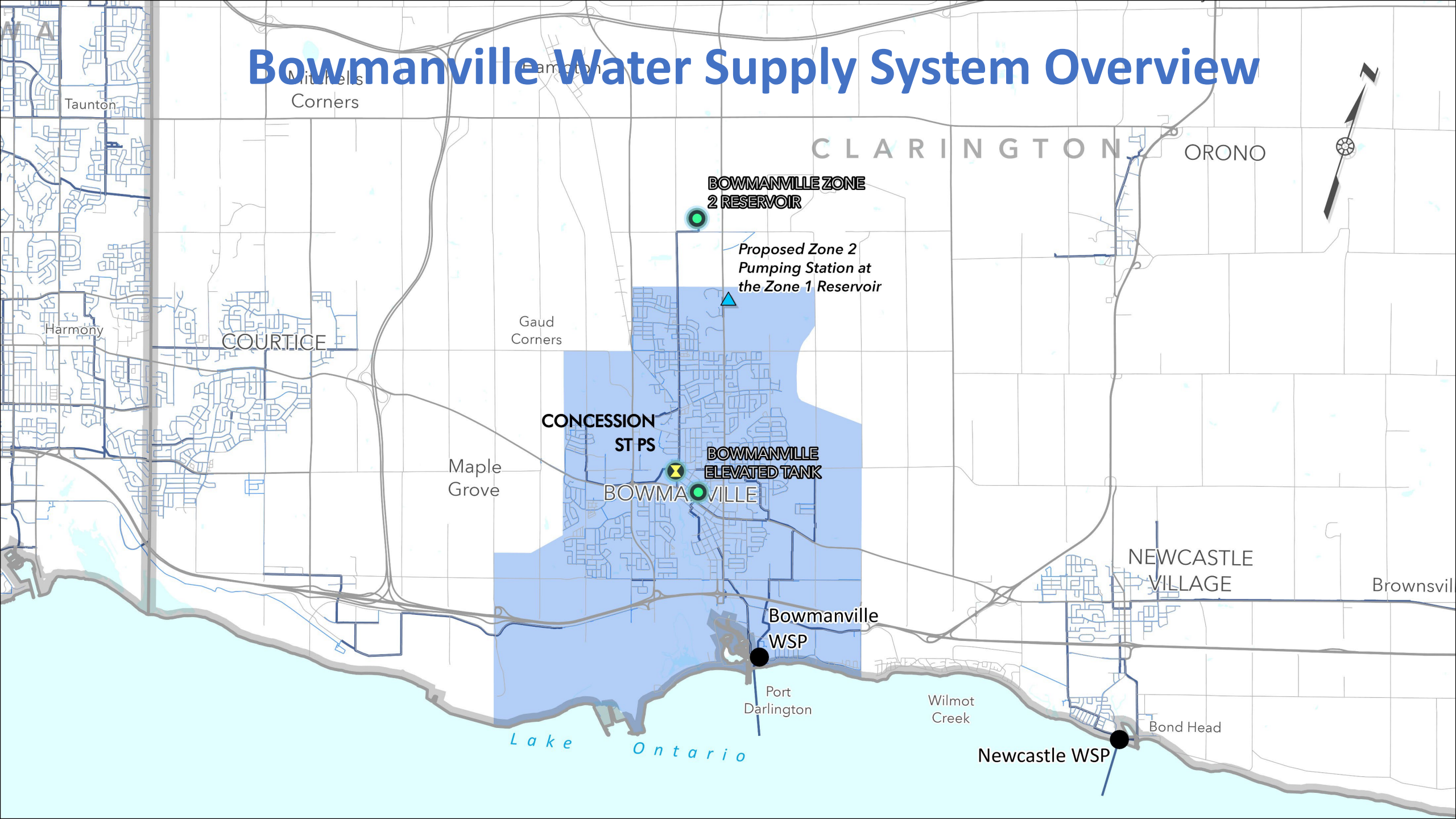
Bowmanville Water Supply and Distribution System Upgrades, Expansion and Improvements

Works Committee Meeting – June 4, 2025

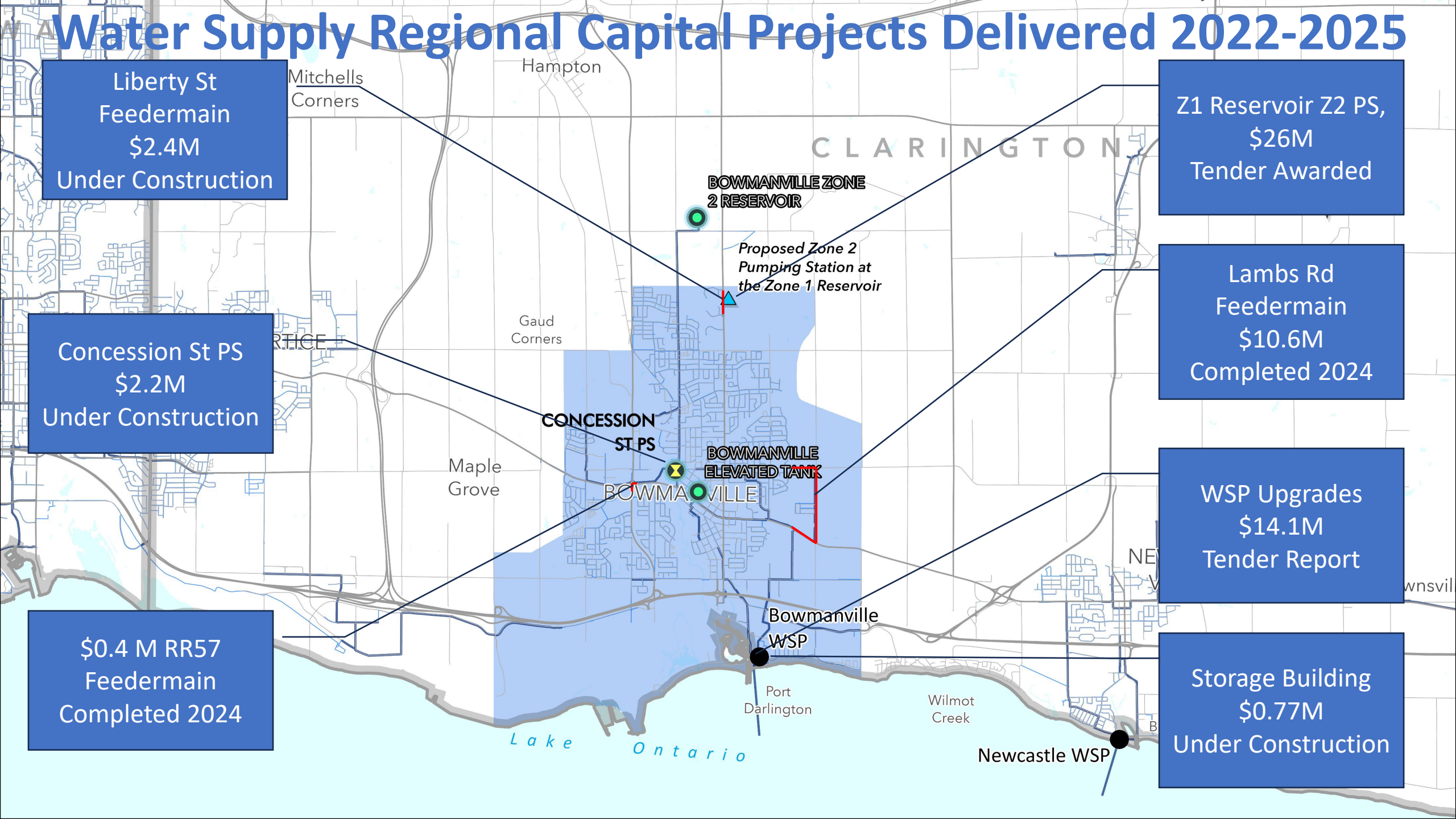
Goals of Today's Presentation

- To provide an overview of past, current and future water supply system capital projects in Bowmanville
- To provide a summary of Bowmanville Water Supply Plant upgrades and improvements (subject of Report# 2025-W-23)

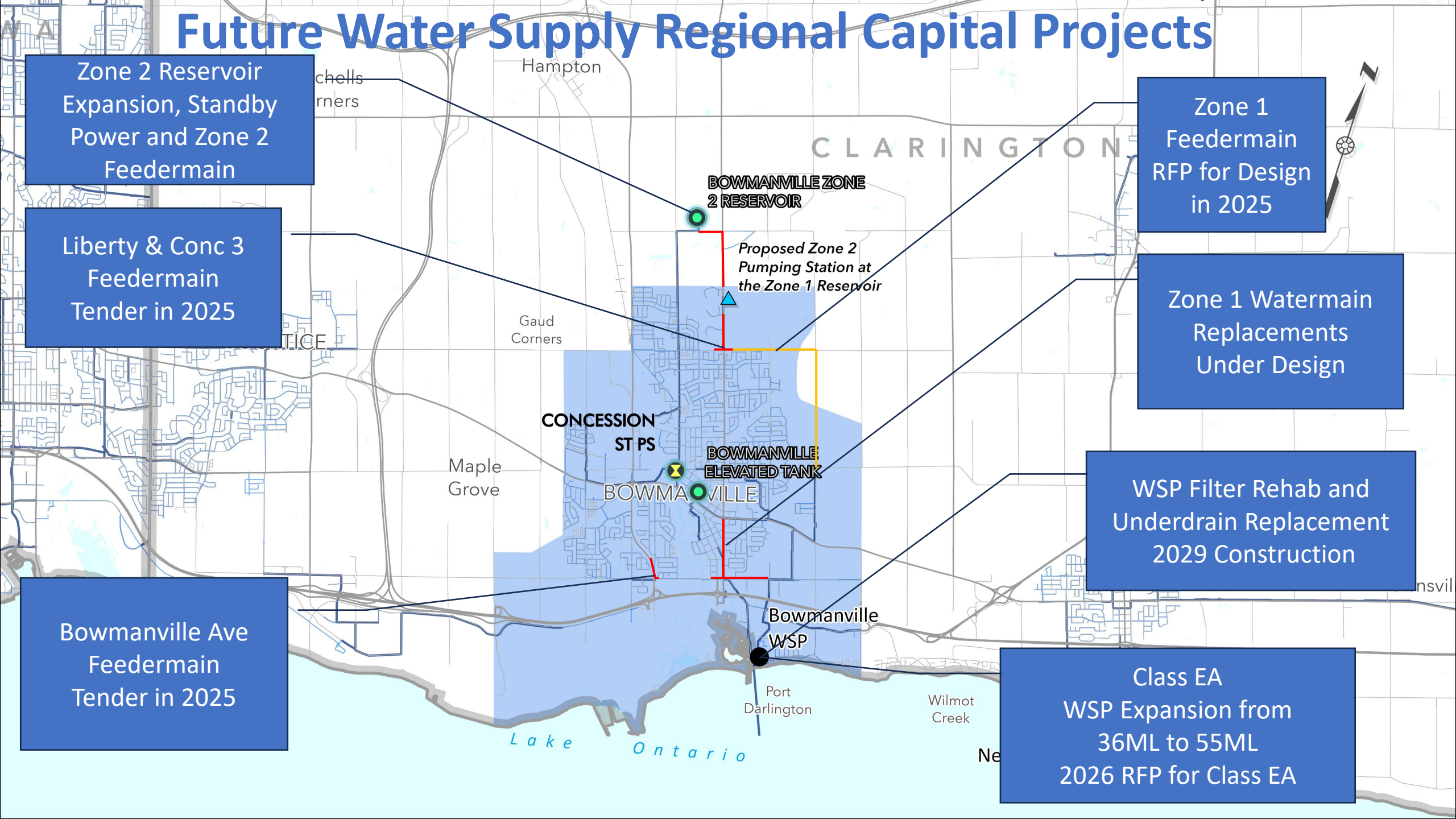
Bowmanville Water Supply System Overview



Water Supply Regional Capital Projects Delivered 2022-2025



Future Water Supply Regional Capital Projects



Zone 2 Reservoir Expansion, Standby Power and Zone 2 Feedermain

Liberty & Conc 3 Feedermain Tender in 2025

Bowmanville Ave Feedermain Tender in 2025

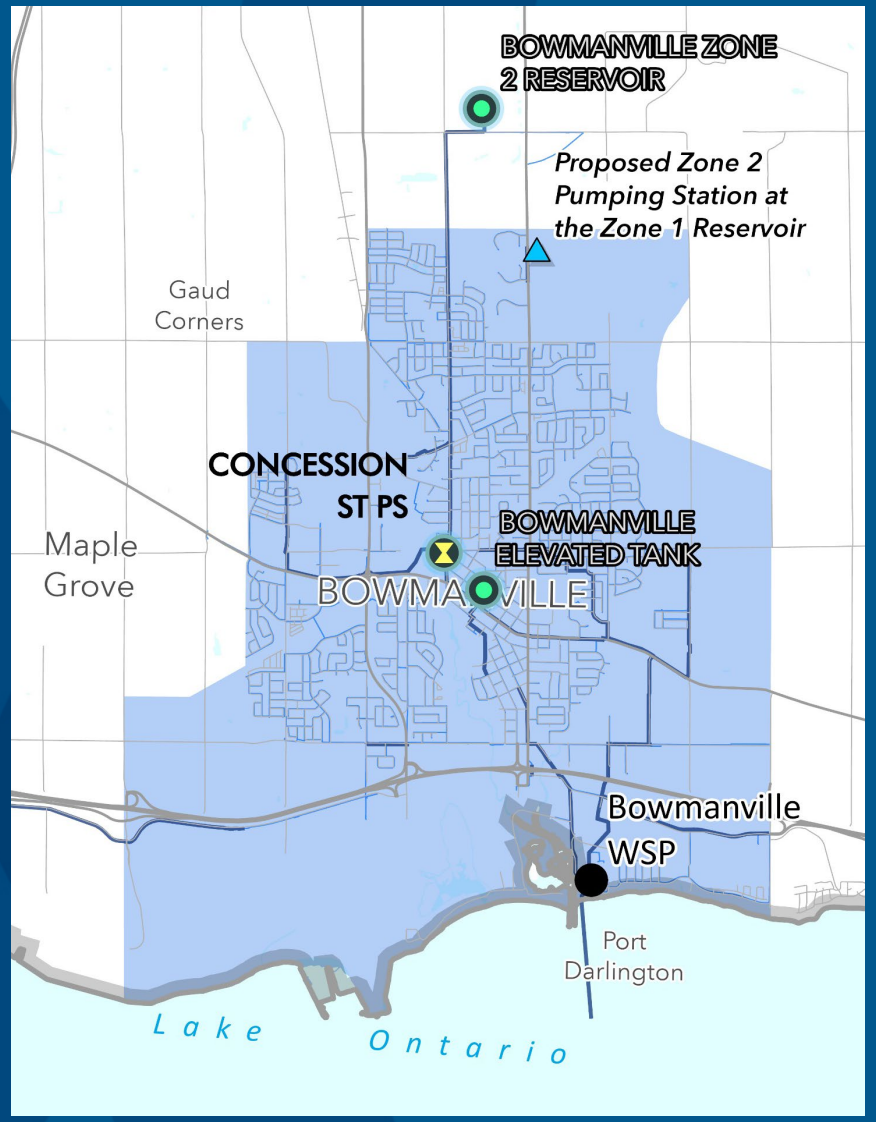
Zone 1 Feedermain RFP for Design in 2025

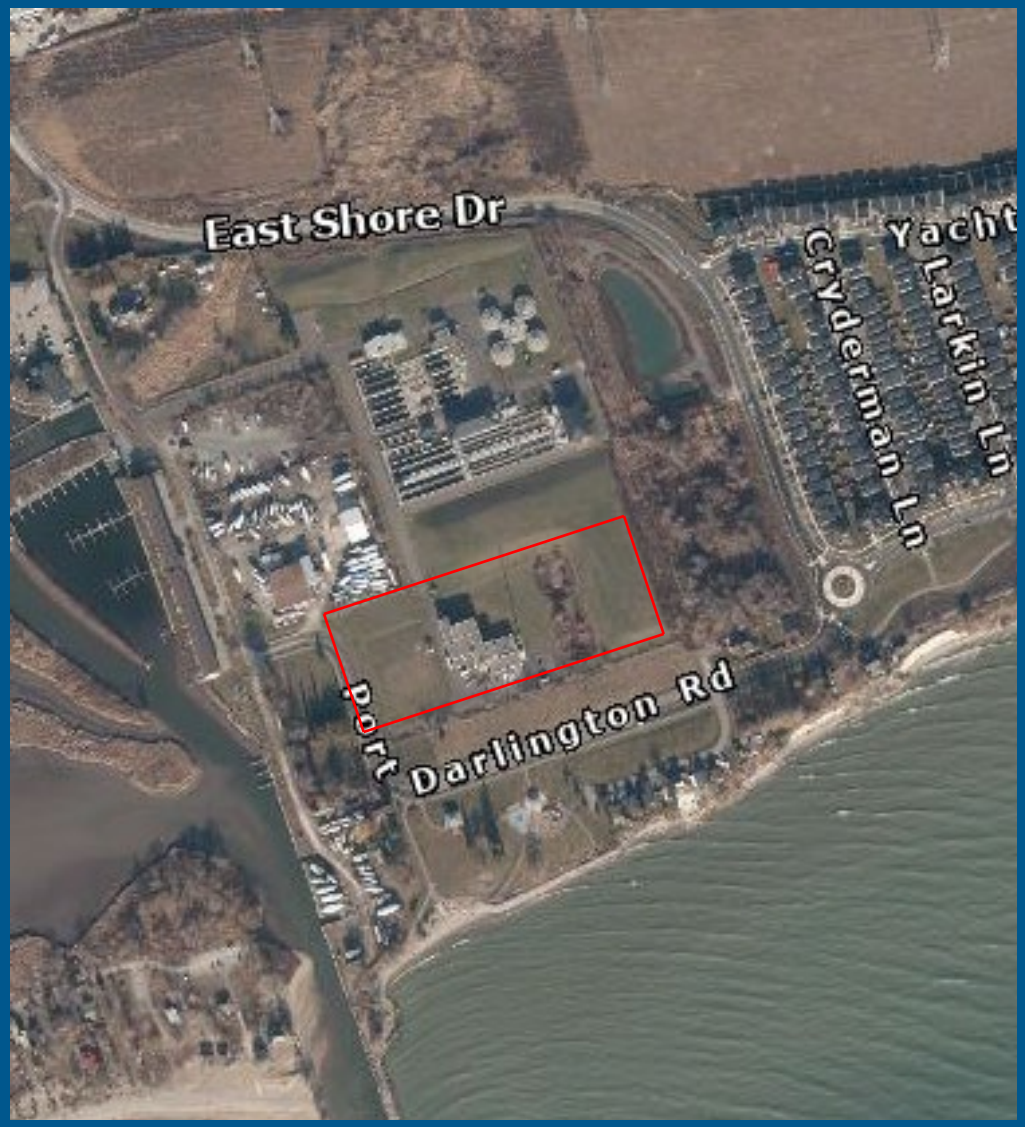
Zone 1 Watermain Replacements Under Design

WSP Filter Rehab and Underdrain Replacement 2029 Construction

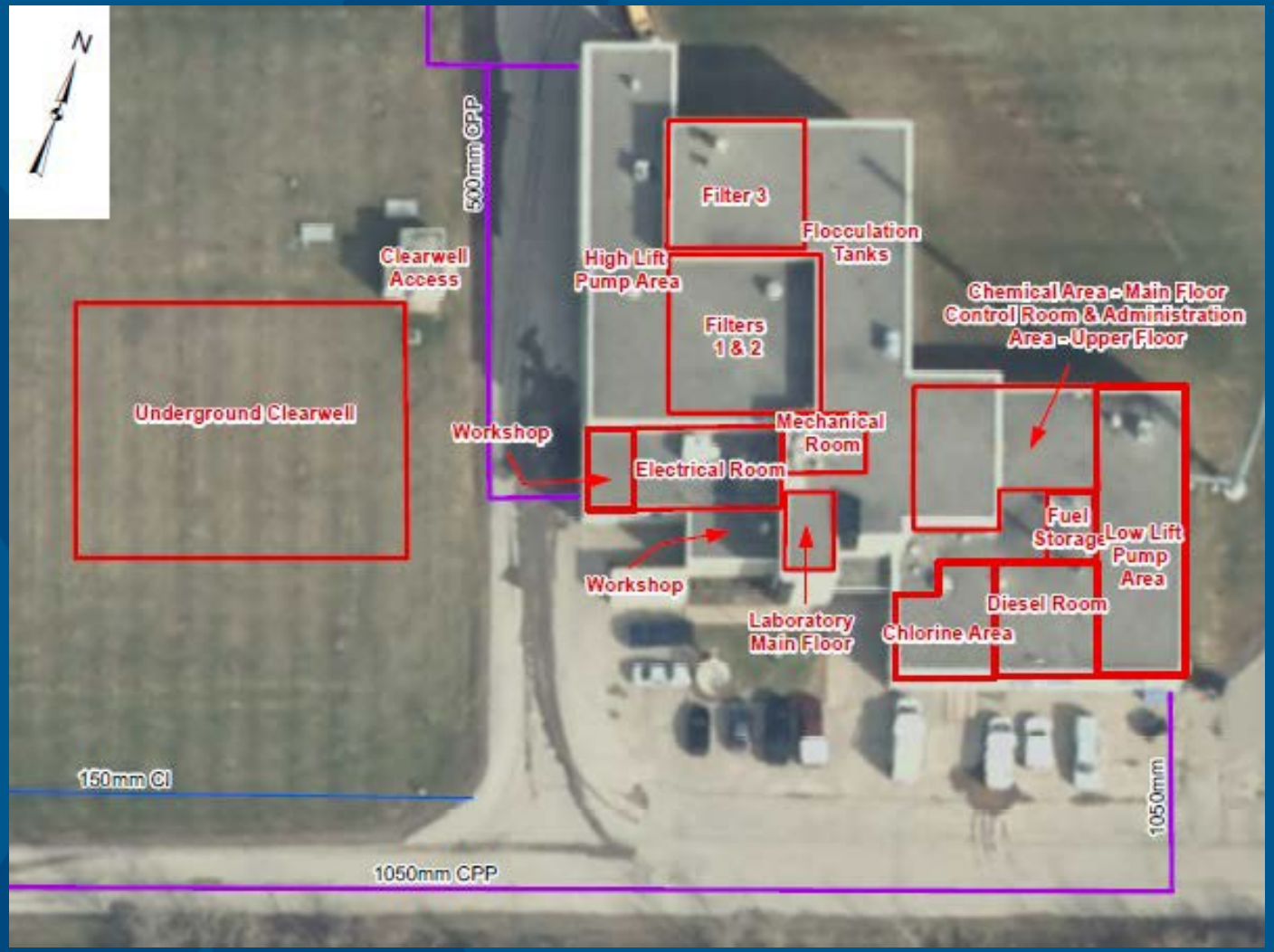
Class EA
WSP Expansion from 36ML to 55ML
2026 RFP for Class EA

Project Site: Bowmanville WSP





Bowmanville Water Supply Plant – Existing Conditions



- ~36MLD rated capacity for treated water production, operates at ~75% capacity
- Conventional filtration plant
- Last major expansion was 1991-1993
- Disinfection is through chlorination
- Chlorine consumption is high in cold weather months
- TSSA compliance variance expires in March 2027 for fuel storage
- Filter 3 requires repair and rehabilitation in the near future

Contract D2024-52 - Bowmanville Water Supply Plant Disinfection and Electrical Upgrades

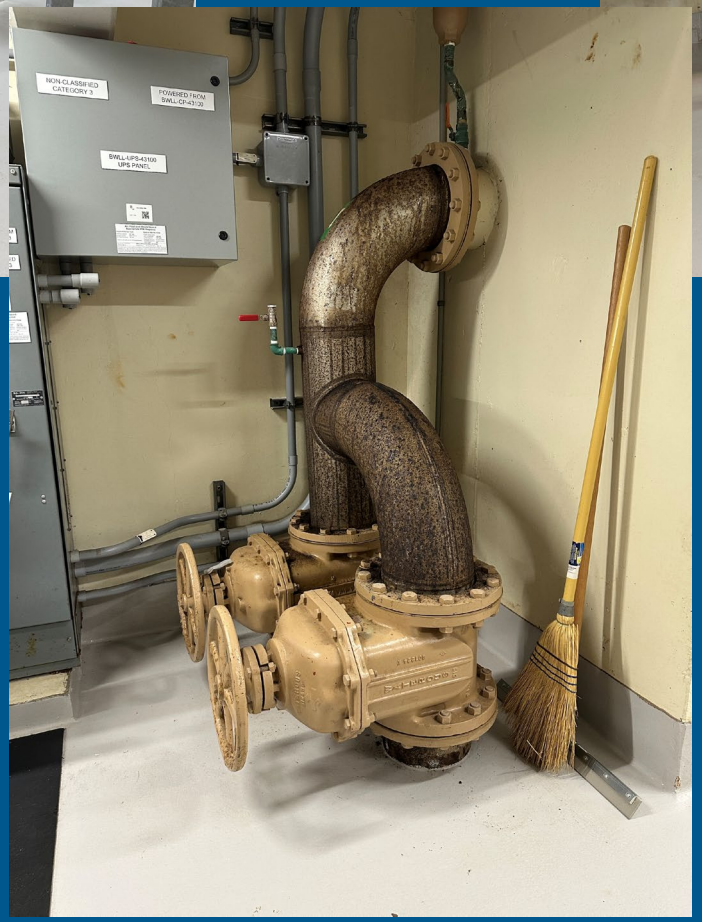
Key Objectives of Contract:

- Supplement disinfection with ultraviolet (UV) system for primary water disinfection, reduce chlorine use to enable plant to improve operational efficiency and meet increased frequency of periods of high demand, reduce pitting of metallic piping
- Replace and relocate electrical switchboard and control panels, designed with future improvements and expansion in mind
- Replace indoor diesel back-up power system by relocating the system outdoors and expanding its power generating capacity for new UV system , designed with future improvements and expansion in mind


MAIN SWITCHBOARD
WARNING
ATTENTION:
Please Insure 2-500ml
PETS of RAW WATER
SAMPLE is Collected
Prior To Diesel
Transfer!
Thanks.
WARNING
WARNING
FEDERAL PIONEER


CAUTION
ATTENTION
WET FLOOR
PLANCHER
MOUILLE
DANGER


CAUTION
WET FLOOR


NON-CLASSIFIED
CATEGORY 3
POWERED FROM
SWLI-DH-4120
SWLL-UPS-4316I
UPS PANEL


CAUTION
ATTENTION


AC
CURRENT
SIRENA
FLOC DRIVE
LIGHTS
ION CORDS


WIKA
TANK
1
3264
BWSP16
ULTIMA X5000
Gas monitor
MSA

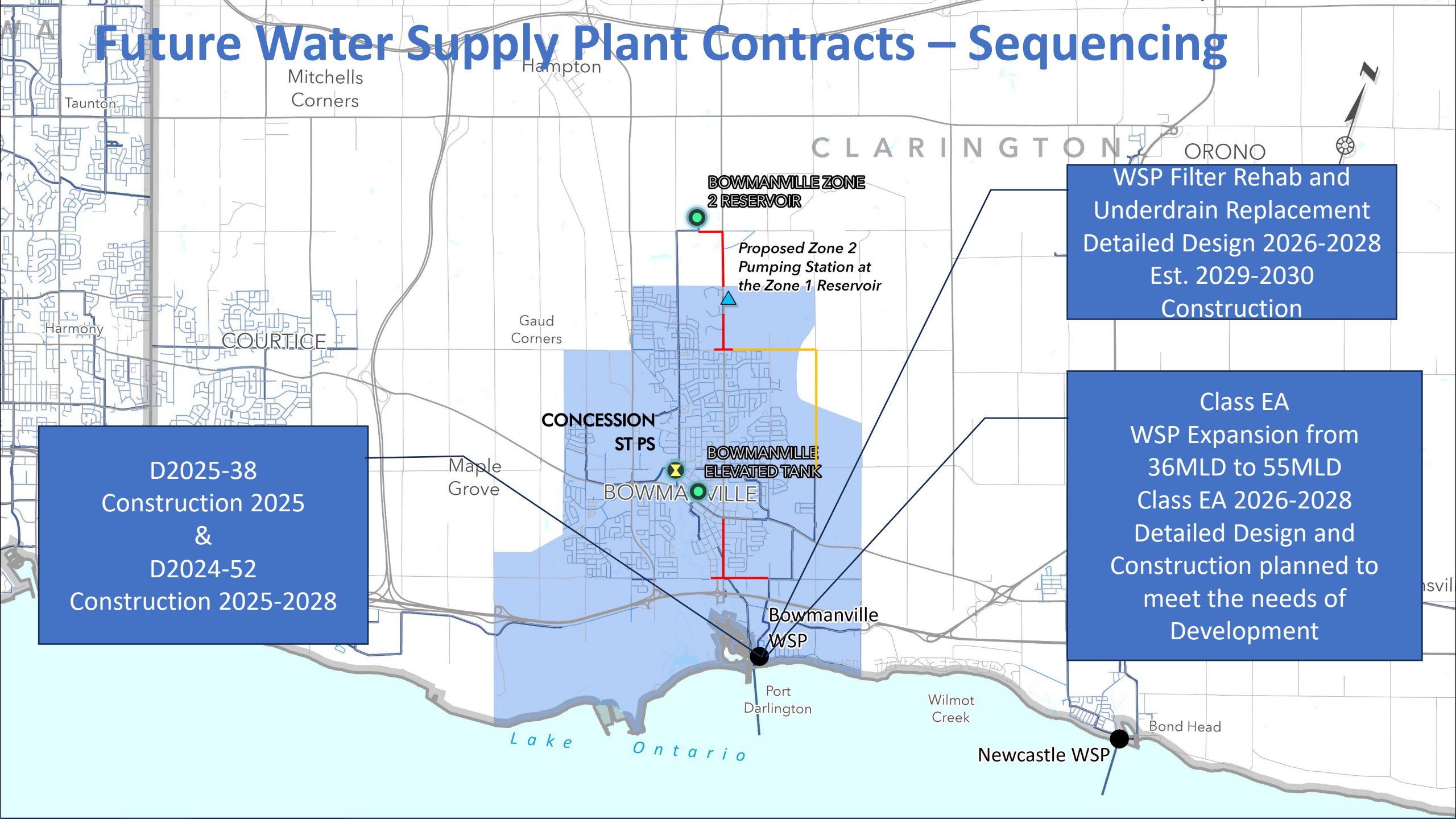
Project Consulting Assignment History

- RFP-1110-2020 for preliminary and detailed design tendered for UV upgrades and asset inventory / condition assessment
  - Awarded to RV Anderson Associates
  - RFP assumed 2022 construction for 14 months duration of UV upgrades
- Asset inventory / condition assessment concluded that additional electrical infrastructure needed replacement due to age, condition as well for compliance
  - New scope for detailed design increased project complexity and therefore schedule and duration
- Storage is required for aged infrastructure replacement parts, and due to reduction of storage within the Plant due to proposed works
  - A new storage building has been added to the site under a separate Contract
- Project complexity, need for additional SCADA system design, supply chain and market conditions have prolonged construction schedule

D2024-52 as a Prerequisite to Future Capital Work

- D2024-52 scope will take an estimated 3 years for equipment supply, installation and commissioning
- Future filter rehabilitation and underdrain replacement asset management work needs D2024-52 scope to be completed first, condition of Filter 3 underdrains prevents plant from operating at full capacity now
- D2024-52 and future filter contracts need to be completed before WSP Plant expansion can proceed to tendering and construction
- WSP Plant expansion Class EA is planned to be started in 2026. Detailed design and construction timing planned to meet the needs of development
- Due to projected population growth, there is expected to be a continued increase in the frequency of periods of high-water demand
- Projects need to be delivered and executed in strategically sequenced order
- D2024-52 and future filter contracts need to be planned and completed to maintain infrastructure in a good state of repair as per Standard of Care, Section 19 of Safe Drinking Water Act

Future Water Supply Plant Contracts – Sequencing



D2025-38
Construction 2025
&
D2024-52
Construction 2025-2028

WSP Filter Rehab and Underdrain Replacement
Detailed Design 2026-2028
Est. 2029-2030 Construction

Class EA
WSP Expansion from 36MLD to 55MLD
Class EA 2026-2028
Detailed Design and Construction planned to meet the needs of Development

Questions?

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