

Environmental Assessment – Phase 2 Report

Town of The Blue Mountains Municipal Class Environmental Assessment Westside Water Storage and Pumping



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EXECUTIVE SUMMARY

In 2019, the Town of The Blue Mountains (Town) completed the Town-Wide Water Distribution Master Plan (2019 MSP). The 2019 MSP identified a number of near and long-term system deficiencies including treated water supply, and storage deficiencies in Zones 1, 2, 3, 4, and 5. The Town initiated this Schedule 'B' Class Environmental Assessment (Class EA) to address the deficiencies identified in the western pressure zones (pressure Zone 1, 2, and 3) encompassing Lora Bay, Thornbury, Clarksburg and Camperdown. The purpose of this assessment is to determine the water storage requirements for the west side service area.

This Class EA has been initiated as a Schedule 'B' project. Projects categorized as Schedule 'B' undertakings have the potential for significant environmental effects, and are required to follow Phase 1 and Phase 2 specified under the Municipal Class EA. This includes consultation with all parties (the public, agencies, etc.) that may potentially be affected by the project, and the preparation of a Class EA Project File that documents the Class EA process for the project.

The Town's entire water system includes the Thornbury Water Treatment Plant (WTP) (15,140 m³/day), five (5) water storage tanks/reservoirs, eight (8) booster pumping stations, and fourteen (14) pressure relief valves. There is also approximately 126 km of water main ranging in size from 25 mm to 400 mm. In addition to water supplied by the Thornbury WTP, there is an agreement in place to obtain 1,250 m³/day of water from Collingwood, ON.

Based on a review of the background information and supporting studies:

- There are some facilities that have components that may be nearing the end of their useful life. This includes the Victoria St. Elevated Tower has found that significant maintenance and renewal is required in the near-term, due to deferred maintenance.
- The study area has a storage deficit of 800 m³ water at build-out, if stored water is shared across the western pressure zones (Pressure Zone 1, 2, and 3) and adequate pumping is provided into pressure zone 2. If the storage deficit is addressed by floating storage in Pressure Zone 2 (i.e. not full sharing across zones), there is a need for 1,651 m³ of storage.
- If maximum day plus fire flow demands to Pressure Zone 2 and 3 continue to be provided by pumping, there are pumping capacity deficiencies in those pressure zones.

To facilitate the evaluation and selection of the preferred solutions during Phase 2, a transparent and three (3) part assessment process was established. The process included an initial screening of alternatives, a detailed evaluation of screened alternatives, and the selection of a preferred alternative. The public and agency stakeholders were consulted throughout, and Public Information Centers were held during Phase 1 and Phase 2 of the Class EA.

The preferred alternative is to rehabilitate the Victoria St. Elevated Tower and construct a new reservoir at 10th Line Booster Pump Station. A conceptual layout is provided in Figure E-1. This option includes the rehabilitation of the existing Victoria elevated water tower, a new 800 m³ in-ground storage tank at 10th Line Booster Pumping Station (BPS) complete with

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pumping upgrades and a new 400 mm diameter feedermain loop in Zone 2. We note that if constructed in an existing right-of-way or utility corridor that the feedermain loop is a Schedule 'A+' project. For illustrative purposes it has been shown in the Highway 26 corridor. During preliminary design, consideration could be given to locating it along the West Ridge Drive East.

This alternative also includes upgrades to the Upper Camperdown BPS to address pumping deficiencies into Zone 3. The pumps currently have a firm capacity that is less than the required maximum day plus fire flow requirement of 159 L/s under anticipated build-out conditions.

To balance infrastructure costs associated with the Town's challenging to service topography and the level of service provided, the objective within the distribution system is to maintain the existing level of service in the future. In difficult to service areas (i.e. high elevations), a comparable level of service is provided at build-out as is currently. There are high elevation areas within the Town's urban boundary that may not be serviceable at the Town's targeted pressure ranges. Once development plans for these areas have been further developed, opportunities to improve pressures for high elevation areas, would require a separate study that focuses on these specific areas. This issue persists across all the storage and pumping options assessed in detail as part of this Class EA.

The Opinion of Probable Construction Costs (OPCC) for this alternative is summarized in Table E-1. Class 'D' OPCCs developed for this assignment are expected to be within +/- 30%.

Table E-1: Class 'D' OPCC For Preferred Water Storage and Pumping Alternative

Alternative 1 - Rehabilitate Victoria St. Tower and In-Ground Storage at 10th Line BPS	Estimated Capital Cost (1)(2)
Rehabilitate Existing Victoria Elevated Tower ⁽³⁾	\$ 1,073,100
New 800 m ³ At/Below Grade Reservoir at 10 th Line and BPS Upgrades ⁽⁴⁾	\$ 2,380,000
New 400 mm Watermain Loop From 10 th Line to Lora Bay Drive	\$ 2,354,000
Upgrade Pumps at Camperdown Road BPS (common to all options) ⁽⁵⁾	\$ 400,000
SUB-TOTAL	\$ 6,207,100
General Contractor O&P (15% of Construction Cost)	\$ 931,065
Contingency Allowance (25% of Construction Cost)	\$ 1,551,775
Engineering Design & Assistance for Tendering and Construction 18%	\$ 1,564,189
TOTAL (ROUNDED)	\$10,260,000

Table Notes:

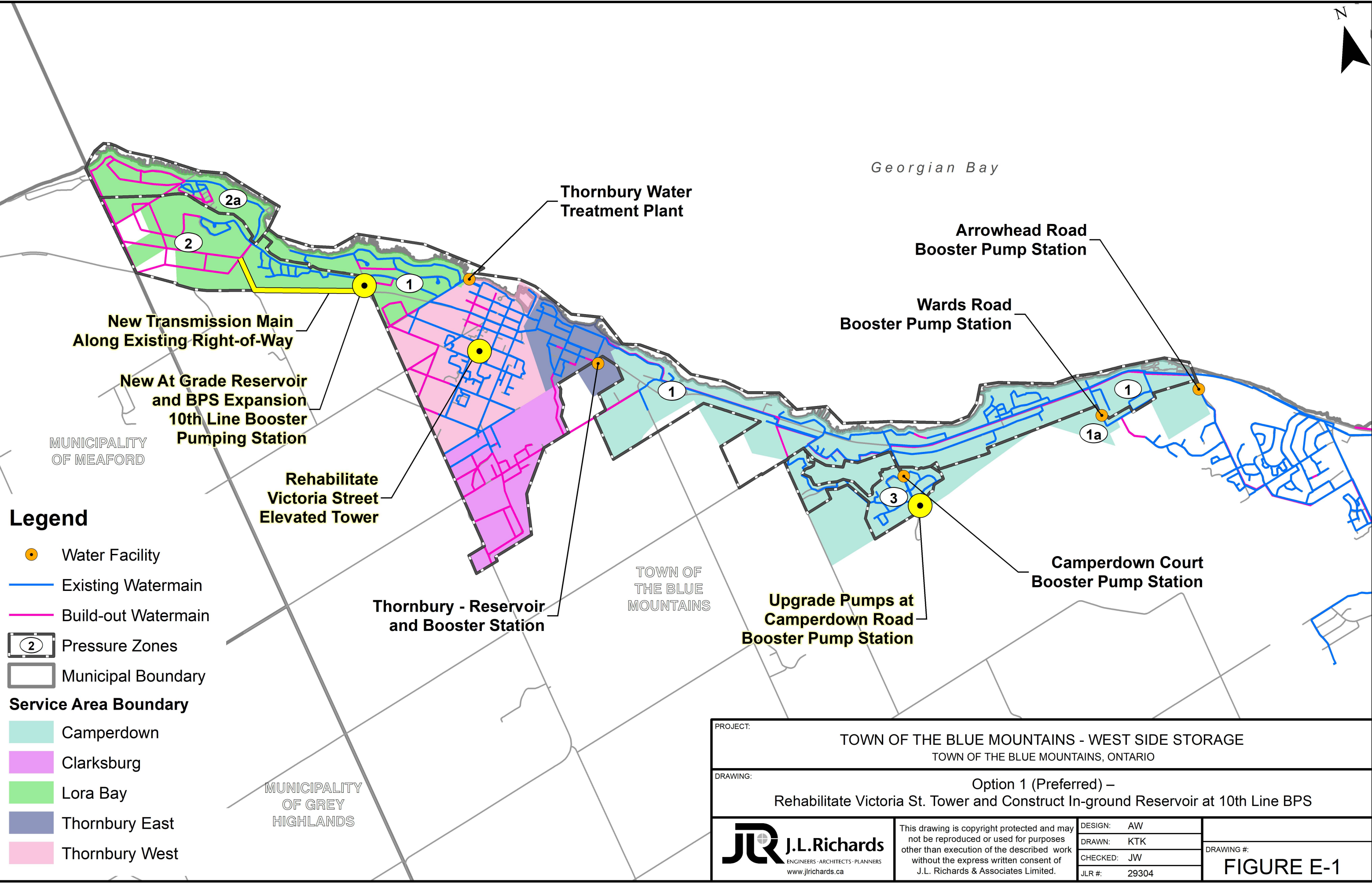
- (1) Based on Class 'D' costing estimates +/- 30% as outlined in Section 8.3 and are for comparative purposes only.
- (2) All sizing (e.g. treatment capacity, tank size, pump capacity, watermain diameter, etc.), is conceptual in nature.
- (3) Rehabilitation costs from Landmark, 2020
- (4) Upgrade at 10th line based on replacing three (3) existing pumps with new pumps with capacity of 150 L/s each. Pump size and configuration would need to be confirmed during detailed design.
- (5) Upgrade of pumps at Camperdown Rd. BPS based on replacing two (2) existing pumps with 150 L/s pumps. Pump size and configuration would need to be confirmed during detailed design.

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The proposed work for the Victoria St. Elevated Tower (81 Victoria Street S. in Thornbury), 10th Line BPS, and Upper Camberdown BPS will occur within the existing sites, and no land acquisition is anticipated. In all cases, during design and construction, industry standard practices should be followed with respect to mitigating impacts to the environment, cultural heritage resources, and archeological resources.



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Legend

- Water Facility
- Existing Watermain
- Build-out Watermain
- Pressure Zones
- Municipal Boundary

Service Area Boundary

- Camperdown
- Clarksburg
- Lora Bay
- Thornbury East
- Thornbury West

PROJECT: TOWN OF THE BLUE MOUNTAINS - WEST SIDE STORAGE TOWN OF THE BLUE MOUNTAINS, ONTARIO		
DRAWING: Option 1 (Preferred) – Rehabilitate Victoria St. Tower and Construct In-ground Reservoir at 10th Line BPS		
 J.L. Richards ENGINEERS · ARCHITECTS · PLANNERS www.jlrichards.ca	DESIGN: AW	DRAWING #: FIGURE E-1
	DRAWN: KTK	
	CHECKED: JW	
	JLR #: 29304	

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