ENWIN Utilities Ltd.

on behalf of

The Windsor Utilities Commission (WUC)

PUBLIC INFORMATION CENTRE

ELEVATED WATER TOWER

Municipal Class Environmental Assessment Study

November 25th, 2025

Introduction

Purpose of this Study

The purpose of this study is to determine a long-term solution to maintain adequate water supply and operating pressure to the service area.

The purpose of this Public Information Center (PIC) is to:

- Describe the Class Environmental Assessment (EA) Process
- Introduce the Study Background
- Present an Evaluation of Alternative Solutions
- Include Feedback in the Evaluation Process

Introduction

Municipal Class EA Process

This study is being conducted in accordance with the Class EA requirements for Schedule ‘B’ Projects.

Municipal Class EA Phases
Phase 1 Identification of the problem or opportunity.
Phase 2 Identification of alternative solutions to the problem, consultation with review agencies and the public, selection of the preferred solution. Preparation of a Project File Report (PFR) to document the planning, evaluation, and consultation process for the project.

Introduction

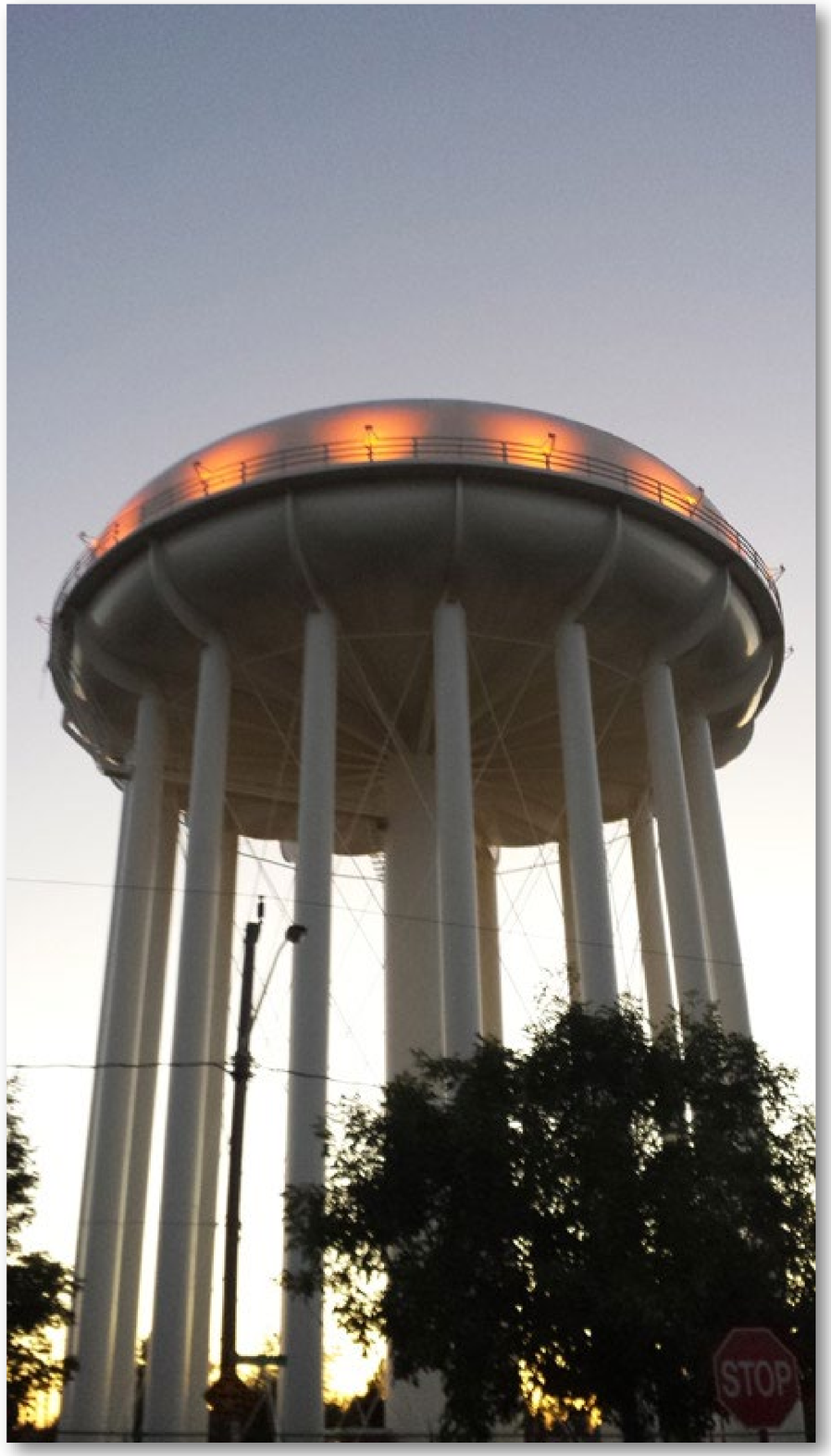
Problem Statement

The Windsor Utilities Commission Water System Master Plan (WUC WSMP) identified a number of infrastructure upgrades to address system vulnerabilities.

The recommendations included the need for a new water tower and associated distribution and transmission system in the Southerly area of Windsor to:

- Replace the existing 71-year-old Hanna Street Water Tower (HWT) due to its age and limited operational range which is expected to decrease as future demands increase
- Service future growth areas with adequate pressure and velocity
- Maintain water quality in the distribution system

The existing HWT has limited operational flexibility and is unable to efficiently maintain acceptable system pressures and water quality to service future growth and increased water system demands.



Background

Existing Water Supply System

The WUC water supply system provides treated water to the City of Windsor, Town of LaSalle and the Town of Tecumseh.

The **Albert H. Weeks Water Treatment Plant** is located at 3665 Wyandotte Street East.

- Total intake capacity of 500 MLD from the Detroit River
- Total treatment capacity of 268 MLD

Three High Lift Pumping Stations: AJ Brian, George Avenue and JF Cook

- Total high lift firm pumping capacity of 524 MLD

Treated Water Storage: JF Cook, Hanna Water Tower, Tecumseh Water Tower, Reservoir D and G

- Total treated storage capacity of 157.8 ML

Watermain Network

- 1,100 km of pipe ranging in sizes from 150 mm to 1200 mm diameter, all operating under a single pressure zone

Background

Future Flow Projections

Future water demand projections were reviewed using data from municipal planning documents, Statistics Canada Census data, and Windsor Utilities Commission (WUC) Annual Reports. These projections were compared to the 2049 projections presented in the 2023 WUC Water System Master Plan (WSMP). The comparison showed less than a 4% difference in the projected maximum day demand for the service area.

As a result, the water demand projections from the 2023 WSMP are considered reliable and are recommended for use in this Class Environmental Assessment to ensure consistency with existing planning documents.

Municipality	Year	Average Day Demand (MLD)	Maximum Day Demand (MLD)	Peak Hour Demand (MLD)
Windsor	2022	98.0	142.2	238.7
	2049	108.2	156.8	263.3
LaSalle	2022	11.2	20.2	23.5
	2049	23.9	43.0	64.5
Tecumseh	2022	14.1	28.2	42.3
	2049	29.8	59.6	89.3
Total for 2049 Projections:		**161.9**	**259.4**	**417.1**

Background
Future Storage Requirements

The MECP *Design Guidelines for Drinking Water Systems* outlines a method for sizing treated water storage facilities. The method is based on the following:

Total Treated Water Storage Requirement = A + B + C

Where:

A = Fire Storage;
B = Equalization Storage (25% of Maximum Day Demand); and
C = Emergency Storage (25% of A + B)

The 2049 total storage requirement is projected to be 91.3 ML

The existing system's total treated storage capacity is 157.8 ML

Therefore, no additional water storage facilities are required within the planning horizon.

Alternative Solutions

Evaluation Criteria

Component	Evaluation Criteria
Technical Suitability	• Ability to meet current and future servicing needs; • Ability to meet acceptable pressure and velocity requirements in WUC and MECP guidelines; • Constructability, implementation timeline, and phasing; and • No adverse impacts on existing water system.
Social	• Noise, vibration, odour, or air pollution emissions; • Permanent changes or impacts to society / community; • Development policies and agreements; and • Ability to increase development and improve housing supply.
Natural Environment	• Impacts to vegetation, fish and wildlife, areas of natural and scientific interest, environmentally sensitive areas, and soil / geology; • Regulatory compliances; and • Development and planning policies.
Economic	• Capital, operational and maintenance (O&M) costs; and • Ability to improve development and generate economic growth
Archaeological, Cultural and Built Heritage	• Impacts to archaeological sites or areas of archaeological potential; and • Impacts to known or potential built heritage resources and cultural heritage landscapes.

Alternative Solutions

Screening Alternatives

Alternative 1: Do Nothing

Alternative 2: Restrict Community Growth

Alternative 3: Rehabilitation of the Hanna Water Tower

Alternative 4: Replace the Hanna Water Tower with a New Southerly Water Tower

Alternatives 1 and 2 are unable to accommodate future servicing requirements, which would hinder development and lead to negative economic impacts. Therefore, Alternatives 1 and 2 were not carried forward for further evaluation.

Alternative 3 and Alternative 4 were carried forward for detailed evaluation.

Alternative Solutions

Evaluation of Alternatives

Evaluation Criteria	Alternative 3: Rehabilitation of Hanna Water Tower	Alternative 4: Replace Hanna Water Tower with a New Southerly Water Tower
Technical	• Unable to meet future servicing needs • Unable to meet pressure and velocity requirements due to limited operational flexibility • Complex modifications to adjust to future needs	• Able to meet current and future servicing needs • Able to meet pressure and velocity requirements • Less complex construction and operation
Social	• Located in proximity to residents • More frequent maintenance and inspection required for aging infrastructure	• New location to be further from residents • Temporary disruption to nearby residents/businesses during construction
Environment	• Minimal impact to the natural environment • Risk of compliance issues with aging infrastructure	• Minimal impact to the natural environment • Ministry approval required
Economic	• Higher O&M cost to maintain 70+ year old tower • Moderate capital cost to modify operating range • Challenges with development due to unmet servicing needs	• Lower O&M cost to maintain a new tower • High capital cost • No restriction to planned future development
Archaeological/ Cultural and Built Heritage	• Minimal impact to areas of archaeological potential • Minimal impact to potential built heritage resources and cultural heritage landscapes.	

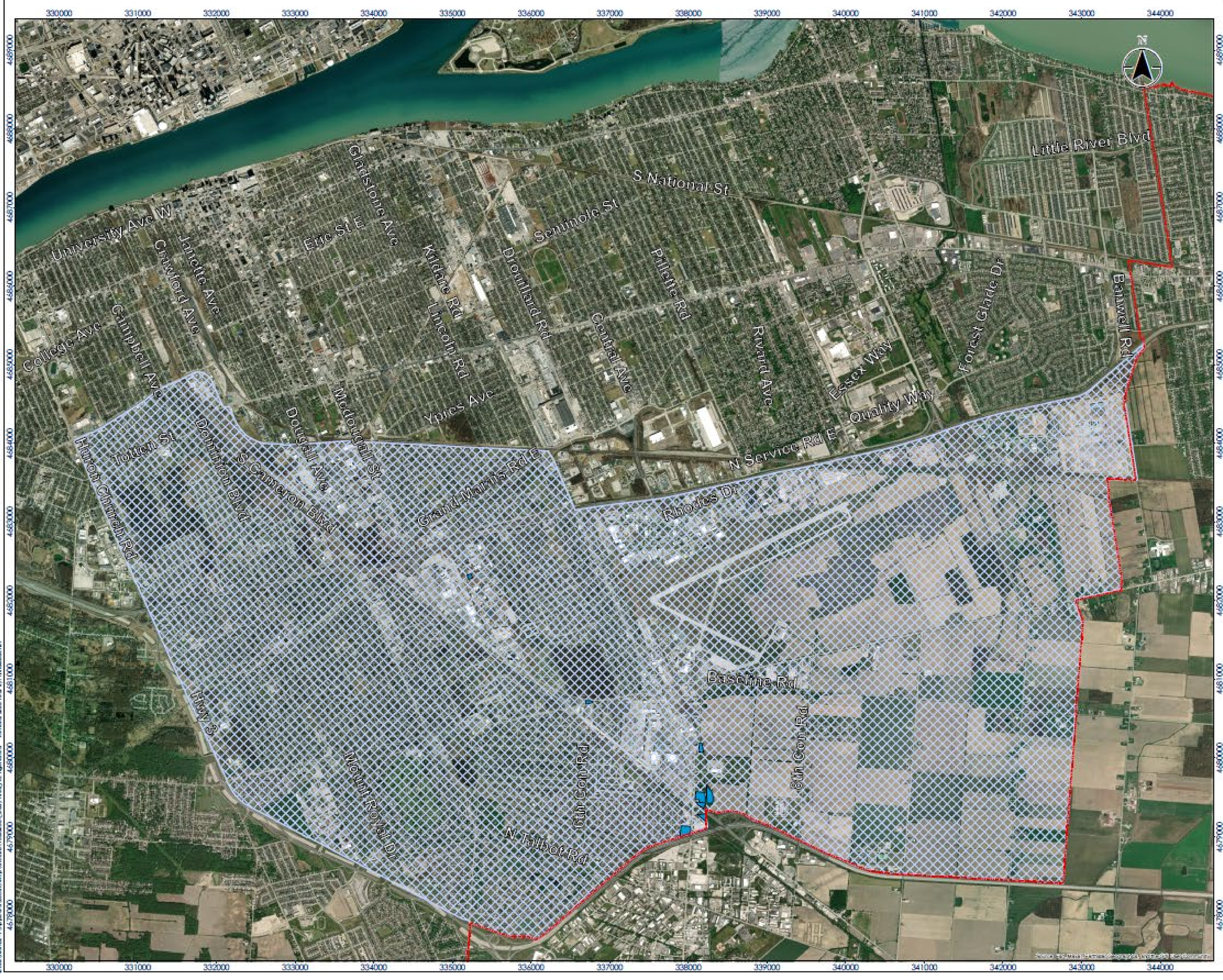
Alternative 4 appears to be more favourable than Alternative 3.

Study Area for New Water Tower Site

Overview

The general “Study Area” was established as the south and southeastern areas of the City of Windsor, which includes Wards 9, 10 and the eastern portion of Ward 1 (Highway 401 being the western limit). The study area definition was also governed by selecting a strategic location with respect to the needs of the developing service area and proximity to existing and planned infrastructure.

The WUC WSMP identified the Walker Road/Provincial Road intersection area as the preferred location for the new water tower. A total of eight (8) alternative sites were identified as potential locations to construct the new water tower, four (4) of which are in the Walker Road/Provincial Road intersection area.



Stantec

Legend

- Tecumseh Municipal Boundary
- Alternative Sites
- Study Area

0 1,600 3,200 metres

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Notes

1. Coordinate System: WGS 1984 UTM Zone 17N
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Project Location
Windsor, Ontario

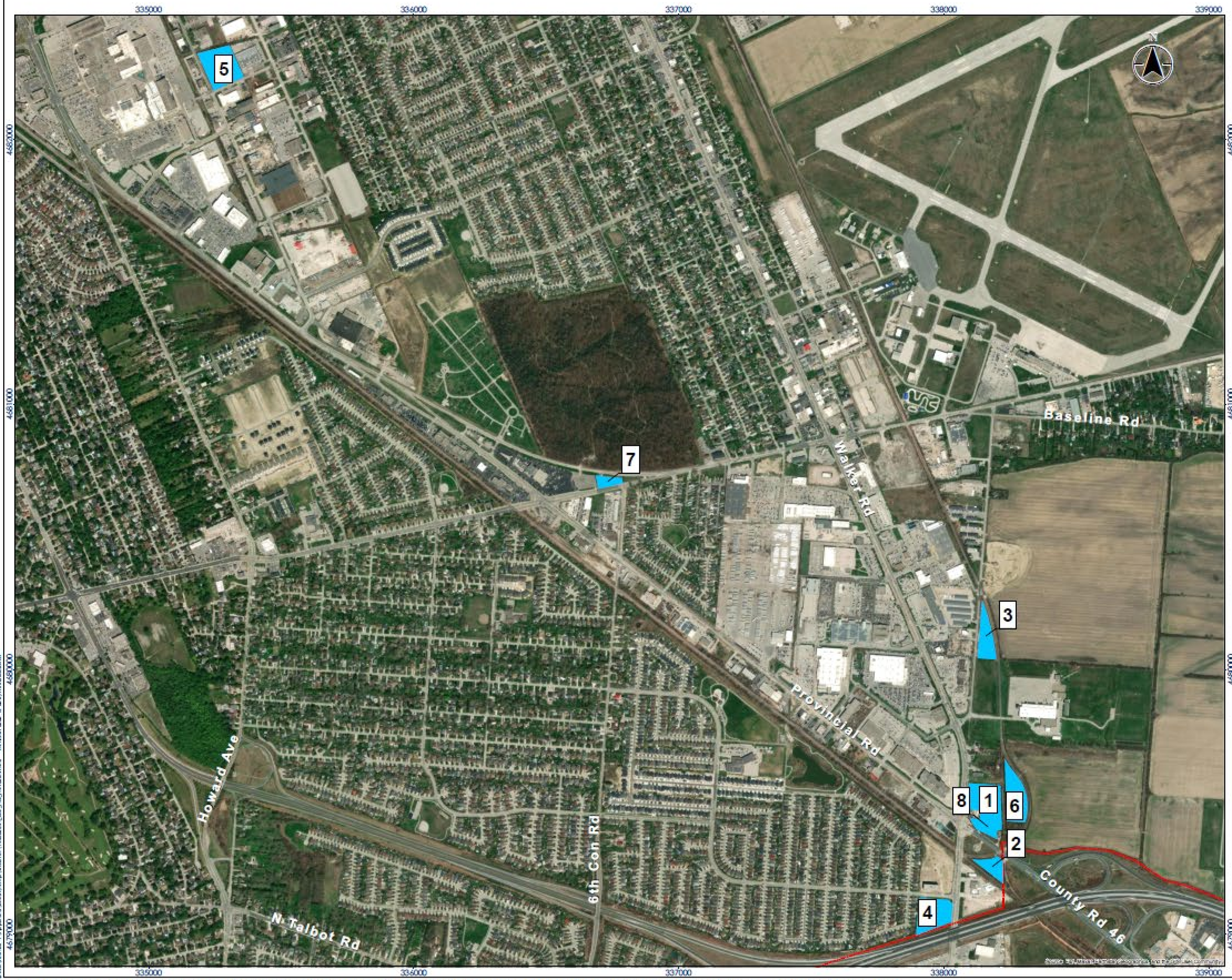
165620304 REVA
Prepared by HR on 2025-10-27

Client/Project
ENWIN Utilities Ltd.

Elevated Water Tower Environmental Assessment

Figure No.
1.2

Title
Study Area



Stantec

Legend

- Alternative Sites
- Tecumseh Municipal Boundary

0 500 1,000 metres

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Notes

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Project Location
Windsor, Ontario

165620304 REVA
Prepared by HR on 2025-10-28

Client/Project
ENWIN Utilities Ltd.

Elevated Water Tower Environmental Assessment

Figure No.
1

Title
Alternative Sites for New Water Tower

Alternative Sites for New Water Tower

Evaluation Criteria

Component	Evaluation Criteria
Technical Suitability	• Proximity and ease of connection to trunk watermain • Site access • Available pressure and fire flows in the distribution system • Proximity to drain • Geotechnical suitability
Social	• Impacts on adjacent land uses • Proximity to residential areas • Zoning requirements • Property ownership
Natural Environment	• Impacts to the natural environment from construction and operation
Economic	• Cost and complexity of land acquisition (e.g. availability, ownership) • Extent of site preparation work • Required watermain upgrades
Archaeological, Cultural and Built Heritage	• Impacts to archaeological, built heritage and cultural heritage resources

Alternative Sites for New Water Tower

Screening of Alternatives

- Poor
- Fair
- Good
- Very Good

Alternative	Technical	Social	Economic	Rank
Site No.1	Very Good	Fair	Poor	5th
Site No.2	Very Good	Good	Poor	3rd ★
Site No.3	Good	Very Good	Very Good	1st ★
Site No.4	Good	Poor	Poor	8th
Site No.5	Good	Good	Poor	6th
Site No.6	Fair	Good	Poor	7th
Site No.7	Very Good	Fair	Poor	4th
Site No.8	Very Good	Good	Fair	2nd ★

- Alternatives 4, and 5 were assumed to be in early stages of development per background review
- Alternative 6 does not have direct site access available from a collector or arterial road
- Alternatives 1, 2, 4, 6, 7 and 8 require rezoning

** All alternatives are situated in highly urbanized and previously disturbed areas and therefore the impacts to the Natural Environment & Archaeological/Heritage landscapes were assumed to be minimal and comparable across all sites. Detailed field investigations were completed for the preferred site.*

New Water Tower Site

Selection of the Preferred Alternative

All three (3) of the short-listed sites were deemed technically suitable for the new water tower through hydraulic modelling and background reviews.

Site No.3 located at 4450 7th Concession Road, was identified as the preferred site due to the following factors:

- Located furthest from residential lands
- No rezoning required
- Property owner open to offers

New Water Tower

Comparison of Elevated Water Storage Types

- Poor
- Fair
- Good
- Very Good

Type	Advantages	Disadvantages	Evaluation Result
Standpipe Tower	-Simple design -Lower initial cost -Smaller footprint	-Height restrictions and limited system pressure -Difficult to clean	More suitable for small systems or low head needs
Multi-Column Elevated Tank	-Proven design -Familiar construction methods	-High maintenance (several exposed steel members) -Higher corrosion risk	Functional but outdated design
Spheroid (Hydrosphere) Tank	-Compact, high volume to surface area efficiency	-High fabrication and coating cost -Complex maintenance -Limited local suppliers	Effective but high initial and maintenance costs
Composite Elevated Tank	-High durability -Less maintenance -Strong wind/seismic resistance -Internal access & storage	-Slightly higher initial cost	Best balance of durability, maintainability and system performance **Preferred**

New Water Tower

Design Basis

Storage Capacity: 8000 m^3

Tank Top Water Level: 225.4 m ASL

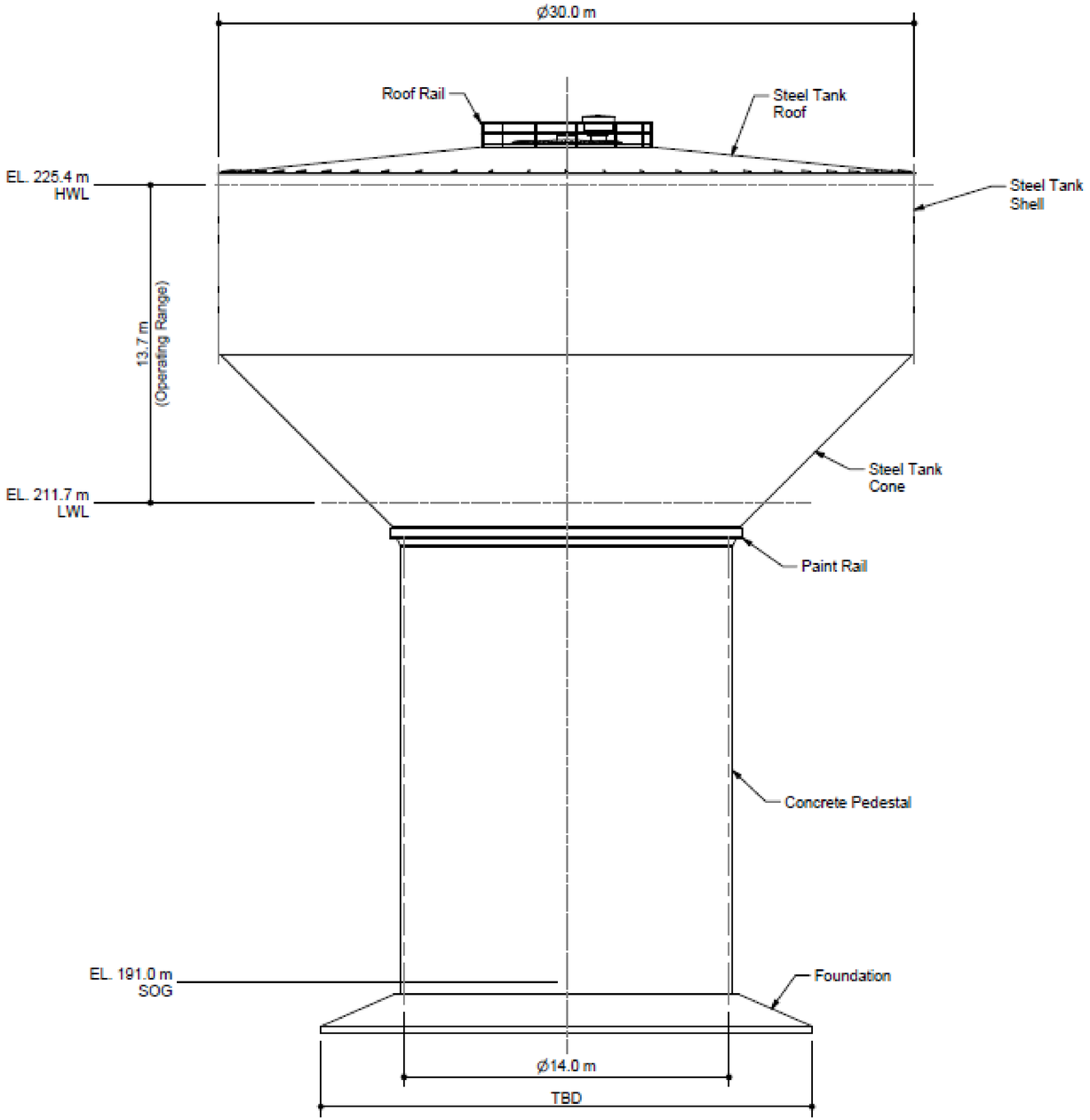
Tank Low Water Level: 211.7 m ASL

Operating Range: 13.7 m

Pedestal Diameter: 14 m

Tank Diameter: 30 m

Type: Composite Elevated Tank



Next Steps

- Review and consider public inputs from this Public Information Centre
- Finalize Project File Report with inputs from public and review agencies
- Place Project File Report on public record and issue Notice of Completion

Thank You

Please visit the project website to submit a feedback form.