TOWNSHIP OF HAMILTON
WATER SUPPLY MASTER PLAN

Public Information Centre #2

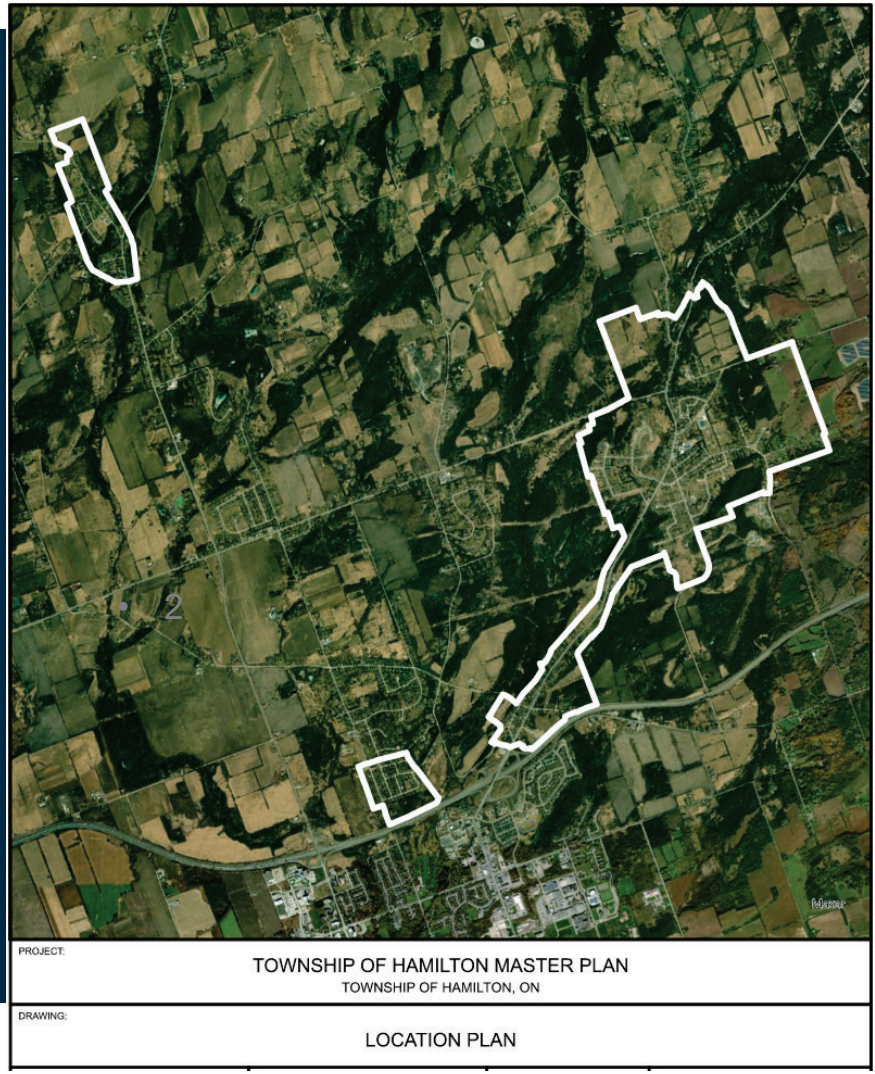
September 11, 2025

Welcome! Please sign in.

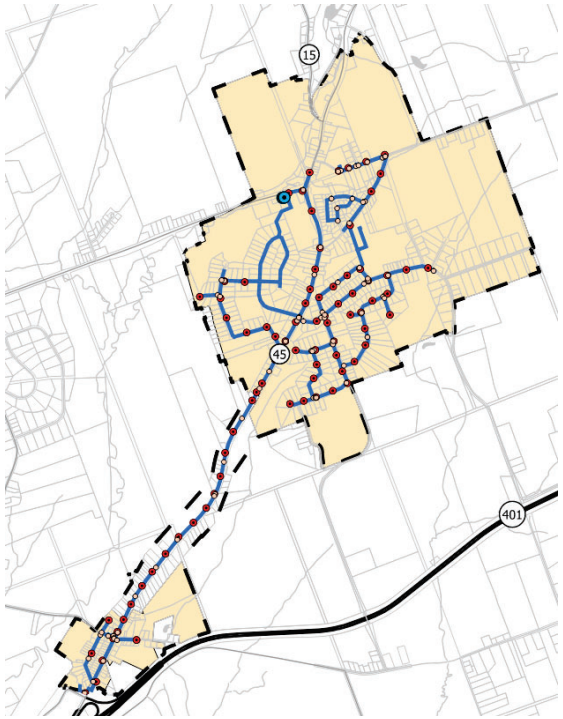
Presentation starts at 6:15 pm

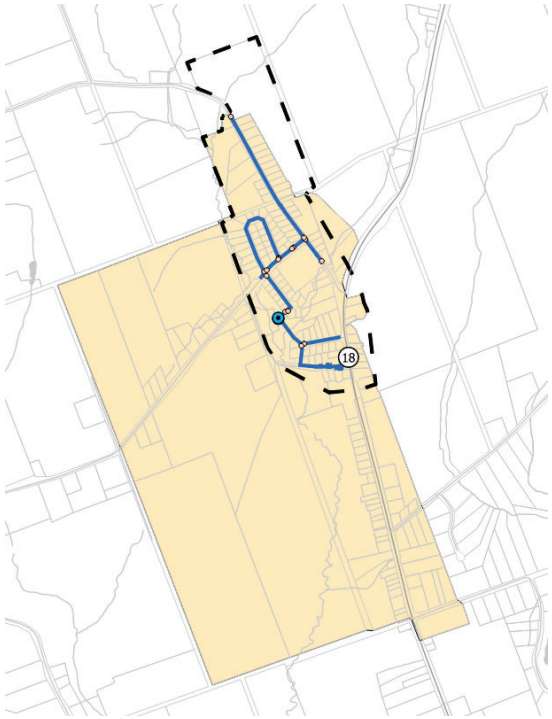
Purpose of Master Plan

- **Plan** for future growth by identifying and prioritizing upgrades to the Township's water systems (Creighton Heights, Camborne, and Buttersfield) to ensure reliable water supply and treatment over the next 20 years.
- **Address** existing challenges related to water supply capacity, aging infrastructure, and system configuration that impact access/availability and water quality.
- **Develop** strategic solutions by evaluating alternatives such as upgrades, new infrastructure, and optimizations, incorporating input from the public, Indigenous communities, and stakeholders.



Study Area





Creighton Heights **Camborne** **Buttersfield**

Hydrant
Valve Box
Watermain
Water Course

Waterbody
Settlement Area
Study Area

Road Class
Highway
Arterial; Collector
Others

Municipal Class Environmental Assessment Master Plan Process

Class EA Process

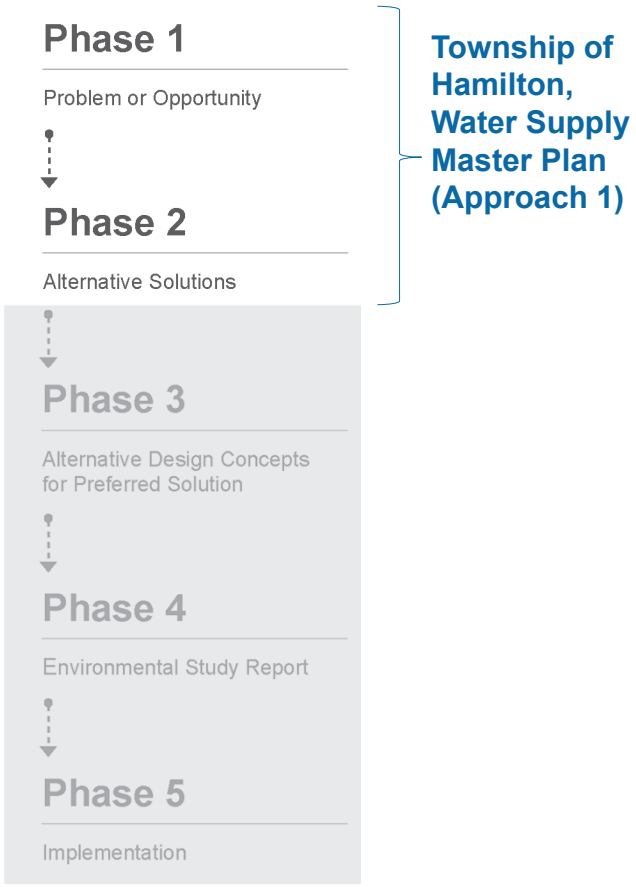
The *Ontario Environmental Assessment (EA) Act*, R.S.O., 1990 requires that municipal infrastructure projects (including water and wastewater projects) follow the process in the Municipal Class EA document prepared by the Municipal Engineers Association (MEA).

Master Plan Process

Master Plans are conducted under the MEA Class EA Process. They identify infrastructure and other requirements for the existing and future land use, through the application of environmental assessment principles. The current Master Plan will satisfy Phases 1 & 2 of the Municipal Class EA process (i.e., *Approach 1*).

Master Plan Approach 1

This approach concludes at the end of Phase 2. This approach completes the Master Plan at a broad level of assessment and further detailed assessment may be required at the project-specific level.



Master Plan Methodology and Timeline

Master Plan Phase 1 – Identify Problem or Opportunity

Tasks:

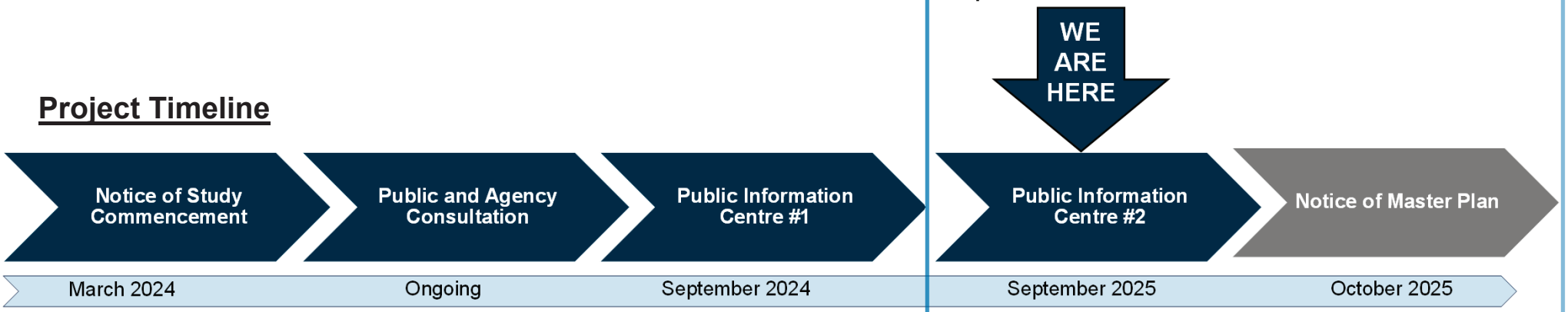
- Review and collect background information.
- Develop residential, institutional, commercial, and industrial development and population growth projections for short, mid, and long-term scenarios.
- Define level of service for existing conditions.
- Review water supply and treatment capacity
- Model water distribution.
- Undertake public consultation activities.
- Finalize Master Plan Phase 1 Report.

Master Plan Phase 2 – Identify and Evaluate Alternative Solutions

Tasks:

- Identify servicing needs under future growth scenarios.
- Develop alternative servicing solutions.
- Develop an implementation/phasing plan.
- Undertake public consultation activities.
- Finalize Master Plan Phase 2 Report.
- Publish Master Plan Report for 30-day public review.

Project Timeline



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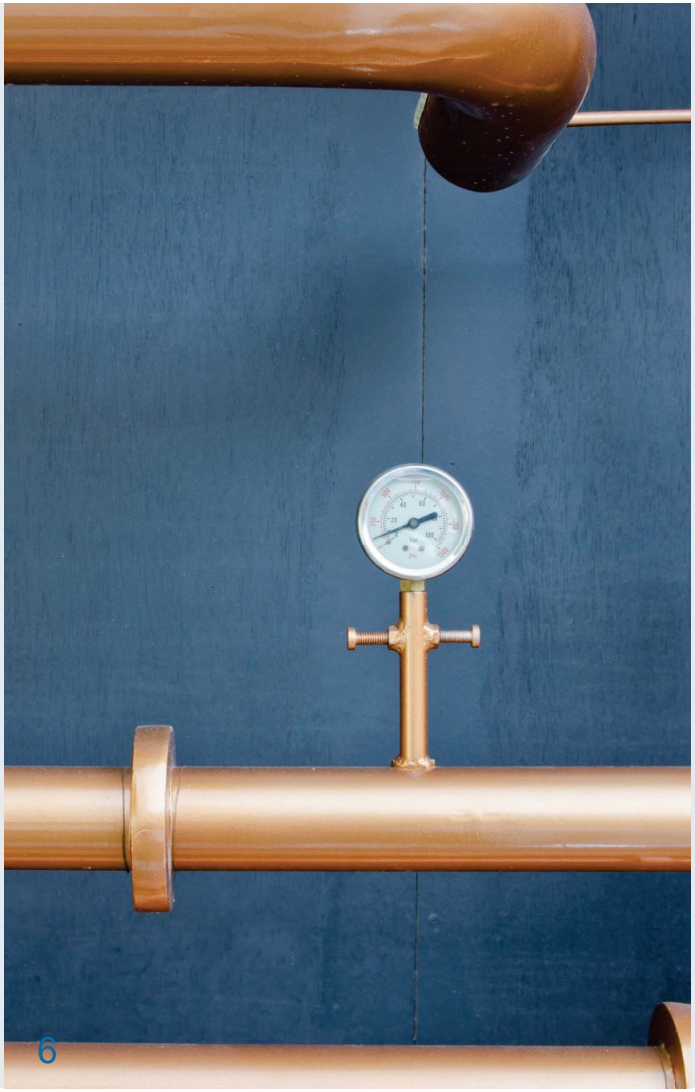
Problem/Opportunity Statement



The Township of Hamilton drinking water servicing consists of the following water systems: Creighton Heights, Camborne and Buttersfield.

The **Creighton Heights** drinking water system is supplied by three groundwater wells. Despite the Township's effort in rehabilitation, the wells have a maximum production rate that is significantly lower than the approved water taking limits. The raw water contains ammonia, iron, manganese and methane, making treatment challenging. There will be insufficient water supply, treatment and storage to accommodate future growth. In addition, the distribution system contains dead ends which require wasting to maintain residuals. The physical configuration of the system is challenging, leading to limitations in fire flow and pressure.

The **Camborne** drinking water system is supplied by two artesian groundwater wells. While there is sufficient water supply, treatment and storage to accommodate the existing and future growth, there is an insufficient number of connections of existing properties to the new Kennedy Road Watermain, which results in wasting to maintain residuals.

The **Buttersfield** drinking water system is serviced by the Town of Cobourg through a single watermain crossing under Highway 401. It is expected that Cobourg will continue to service the community into the future. However, there is no secondary water supply if the single watermain is offline.

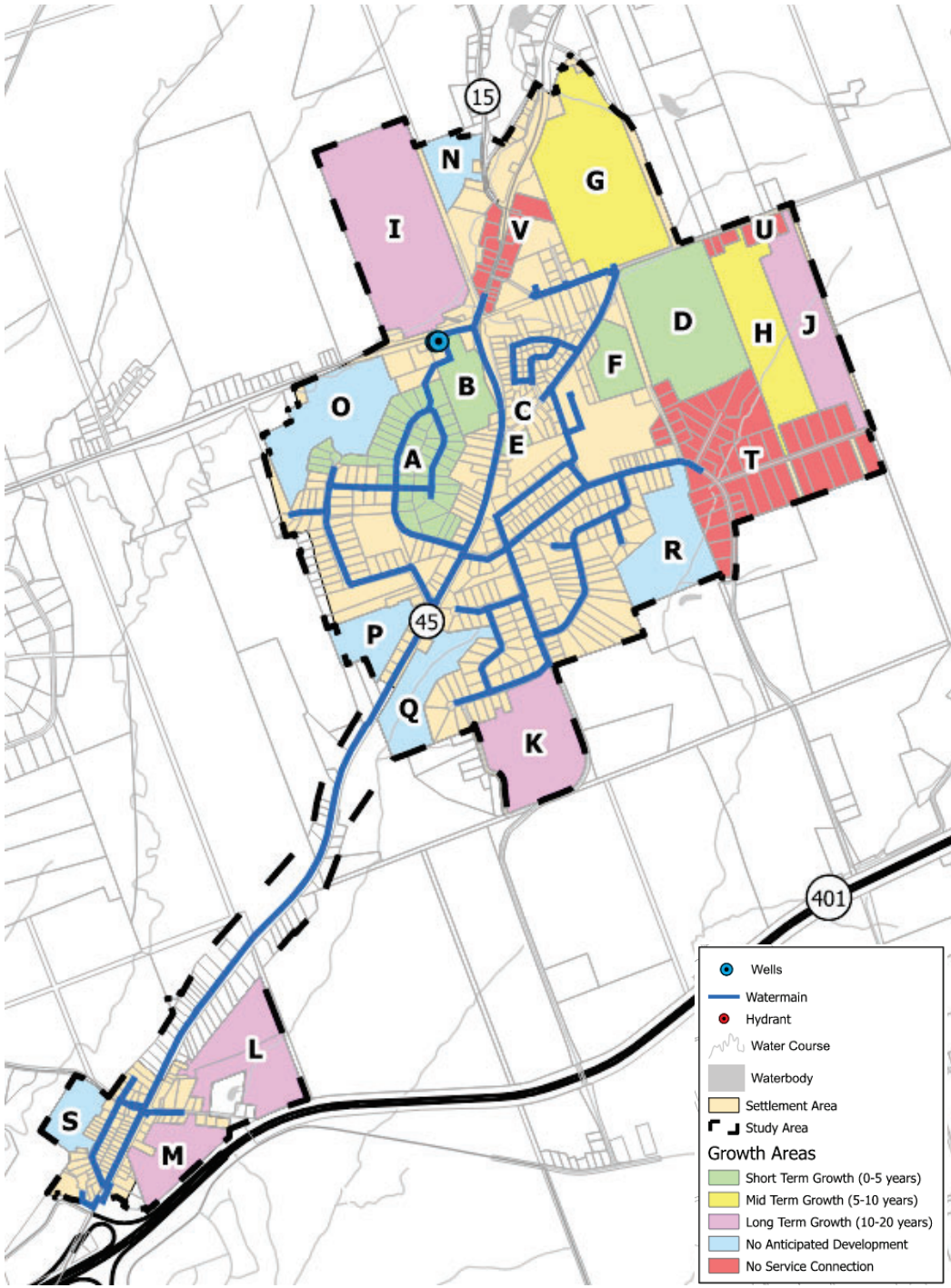
There is an opportunity through the Master Planning process to review the water systems and servicing strategies holistically and develop a strategic plan that can be prioritized and implemented logically with the intended goal of addressing future servicing needs and ensuring appropriate performance and reliability of Township's water systems for the upcoming planning period of 20 years and beyond.

Key Actions from Public Information Centre No.1

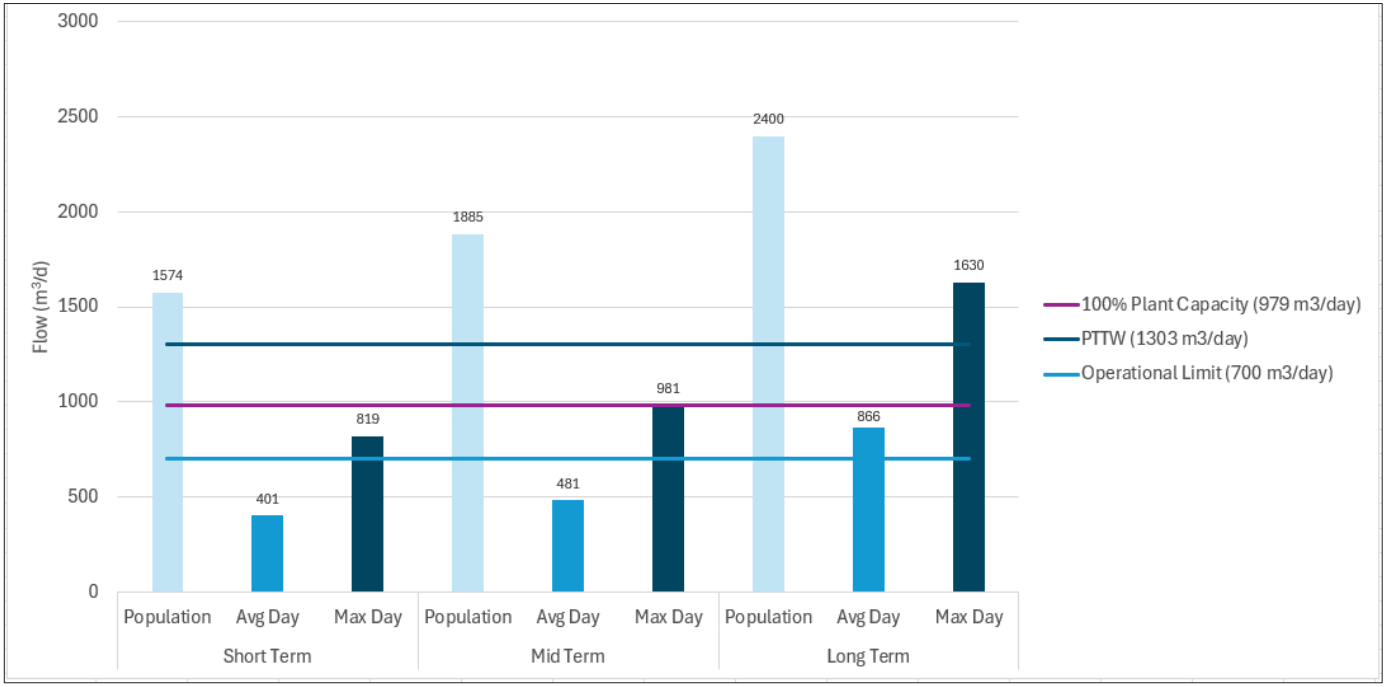
- ☑ Two (2) growth scenarios (low growth and high growth) were established in alignment with the Township's planning framework.
- ☑ Adjustment of study boundary to accommodate existing well users who may connect to municipal supply in the future.
- ☑ Meetings/communication with individual residents/stakeholders to achieve more accurate growth projections.
- ☑ Addressing all concerns raised by the public.

Creighton Heights Future Growth (Revised)

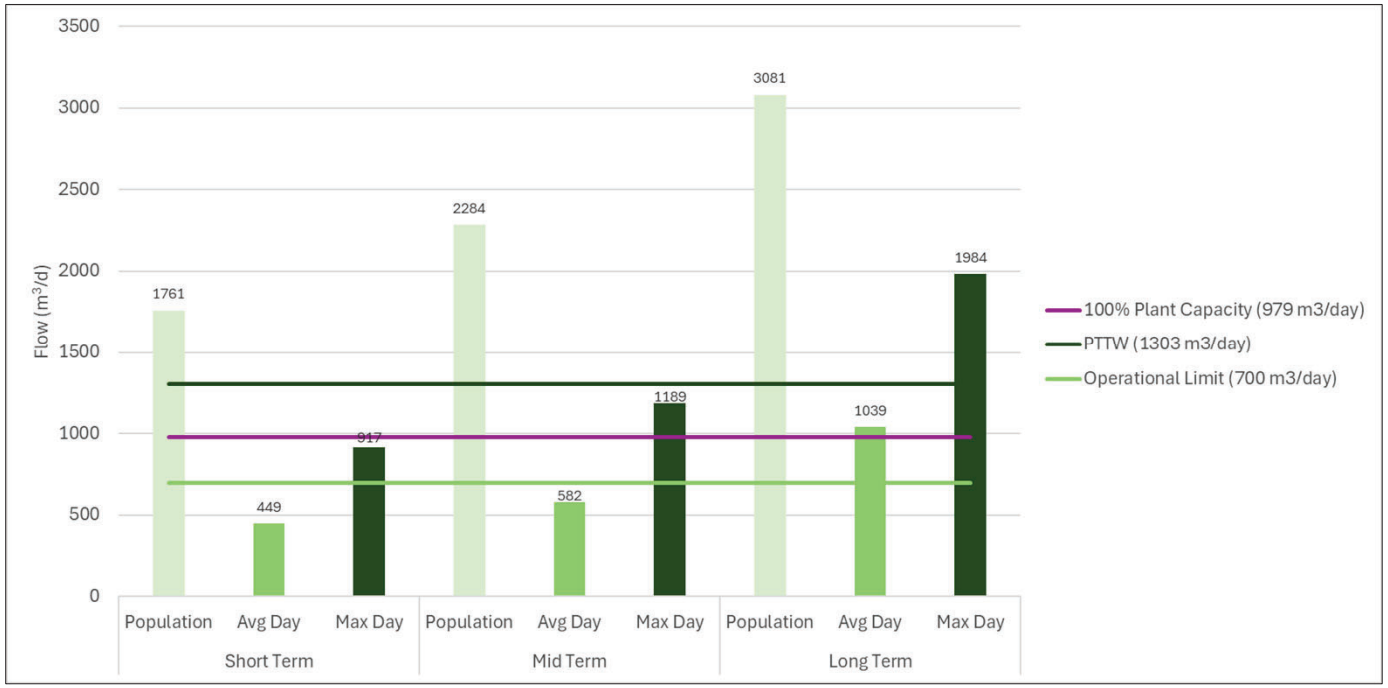
	Property Owner/Title	Timeline	Low Growth Scenario (Units)	High Growth Scenario (Units)
A	Stalwood Homes: Deerfield Estates	0-5	5	N/A
B	Stalwood Homes	0-5	5	N/A
C	4765 County Road	0-5	10	N/A
D	Baltimore Estates: Phase II	0-5	43	86
E	Habitat for Humanity	0-5	7	N/A
F	47 Community Centre Road	0-5	20	40
G	Rose/Behan Subdivision	5-10	55	110
H	Rolling Heights	5-10	25	50
I	2856 Baltibrook Road	10-20	50	100
J	Vacant Parel	10-20	25	50
K	2505 Hircock Road	10-20	20	20
L	Slater Street	10-20	14-26	40
N	2920 Harwood Road	N/A	N/A	N/A
O	McCarty Drive	N/A	N/A	N/A
P	Vacant Parcel	N/A	N/A	N/A
Q	Vacant Parcel	N/A	N/A	N/A
R	Vacant Parcel	N/A	N/A	N/A
S	GRCA Regulated Parcel	N/A	N/A	N/A
T	Subdivision	N/A	N/A	N/A
U	Subdivision	N/A	N/A	N/A
V	Subdivision	N/A	N/A	N/A
M	Tredree Lands Commercial	10-20	9.06 ha	N/A



Creighton Heights Low Growth Scenario



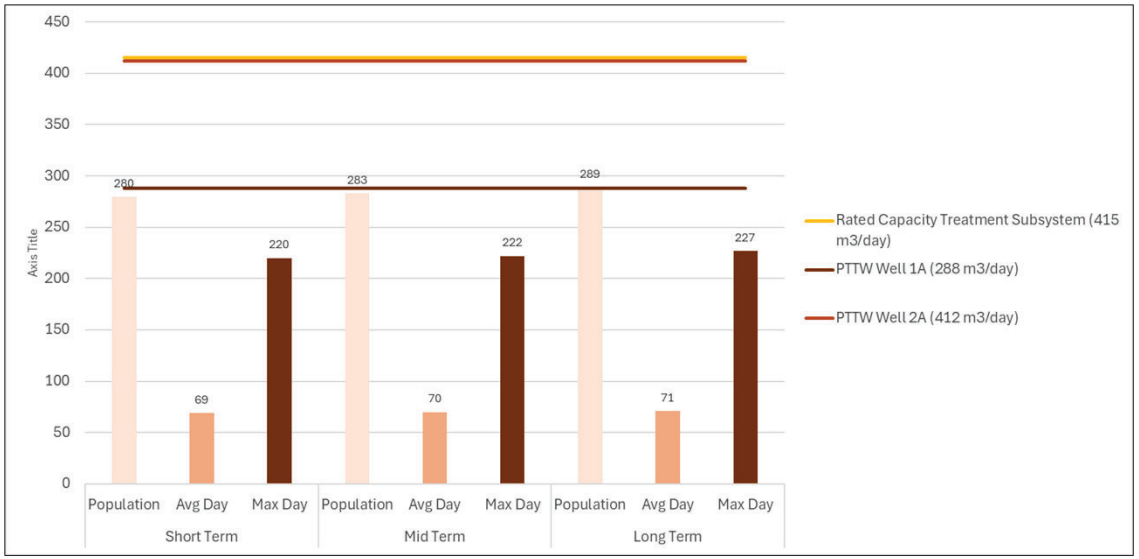
Creighton Heights High Growth Scenario



Camborne and Buttersfield

Camborne

- Camborne's current water supply infrastructure is able to accommodate increased demand, even under future growth scenarios.



Buttersfield

- The Township noted there is provisions in the current agreement to address some growth in the community. It has been assumed that the Cobourg Drinking Water System will have adequate capacity to service the system beyond the next 20-year period.

Studies and Assessments

Desktop Hydrogeological Review (BlueMetric)

Findings:

☑ Sufficient groundwater resources in Creighton Heights and Camborne

Recommendations:

- Investigate viability of former municipal wells as supplemental groundwater source in Creighton Heights
- Undertake a modernized hydrogeological study to update the 1996 RDCL report using recent data and technologies
- Consider installing a large-diameter production at existing Creighton Heights WTP site

Preliminary Aquifer Performance Testing (GHD)

Findings:

☑ Another potential well location (TW4) 500 m southwest of Creighton Heights WTP

☑ Recent field testing confirmed production rate of 75.6 L/min

☑ Water quality met health-related standards except hardness, color, iron, turbidity and methane

Recommendations:

- Consider this well as a potential supplementary or backup source only, not for primary municipal supply
- Monitor and maintain as a possible secondary resource if required in future planning

Studies and Assessments

Source Water Protection Summary (BlueMetric)

Findings:

☑ Creighton Heights and Camborne are located within Wellhead Protection Areas with low/moderate vulnerability

☑ No significant current threats to drinking water quality

☑ Historical water quality exceedances are naturally occurring

Recommendations:

- Update WHPA mapping
- Ensure any new wells comply with Clean Water Act policies to manage risks from land-based activities
- Continue monitoring and apply source protection policies to maintain groundwater quality over time

Ganaraska Region Conservation Authority Consultation

Consultation Summary:

☑ The Township's municipal drinking water systems are within the Ganaraska Region Source Protection Area (GRSPA), part of the Trent Conservation Coalition Source Protection Region (TCC SPR)

☑ Surface water intake from Cobourg creek should be considered last resort; Ideal option would be a new groundwater source

Identification of Water Supply and Treatment Alternatives and Initial Screening

Water Supply Alternatives

- ☒ Alternative 1: Status Quo
- ☑ Alternative 2: Rehabilitate Existing Wells; Limit Growth; Practice Water Conservation
- ☑ Alternative 3: Expand Well Field and Install New Drinking Water Wells
- ☑ Alternative 4: Supplement Water Supply and Connect to Cobourg
- ☒ Alternative 5: Supplement Water from Camborne
- ☒ Alternative 6: Supplement Water from Cobourg Creek

Water Treatment Alternatives

- ☒ Alternative 1: Status Quo
- ☑ Alternative 2: Expand Water Treatment Plant Onsite
- ☑ Alternative 3: Construct New Treatment Plant with New Off-Site Wells

Identification of Water Servicing Solutions for Creighton Heights

A

- Rehabilitate Existing Wells
- Limit Growth and Practice Water Conservation
- Optimize Existing Infrastructure

B

- Install Larger Diameter New Drinking Water Well On Existing Site
- Expand Existing Water Treatment Plant

C

- Install New Drinking Water Well Off-Site
- Expand Existing Water Treatment Plant

D

- Install New Drinking Water Well Off-Site
- Build a New Water Treatment Plant with New Wells

E

- Supplement Water Supply and Connect to the Town of Cobourg Drinking Water System

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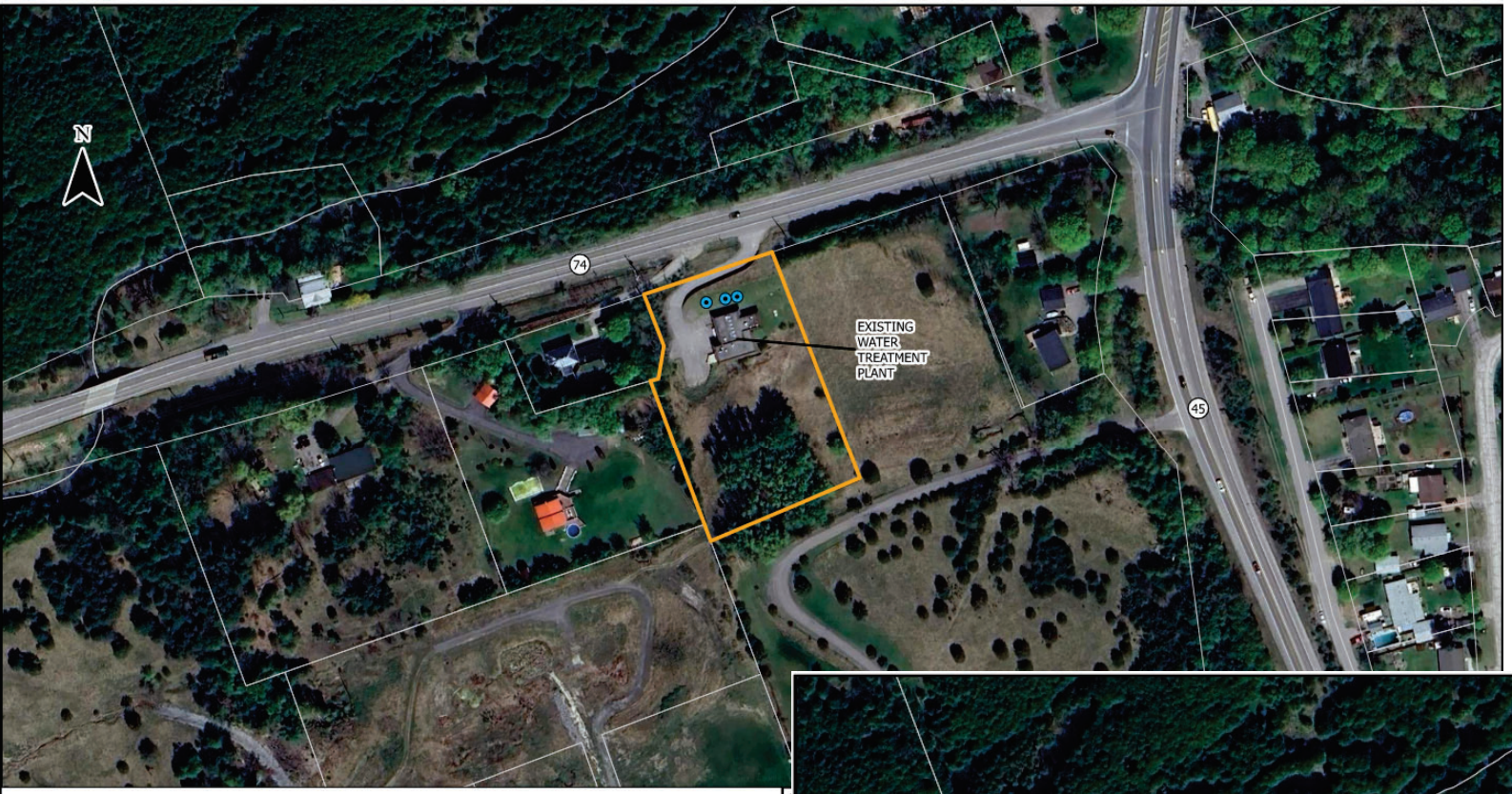


A

- Rehabilitate Existing Wells
- Limit Growth and Practice Water Conservation
- Optimize Existing Infrastructure

Existing Wells

Water Treament Plant Property

B

- Install Larger Diameter New Drinking Water Well On Existing Site
- Expand Existing Water Treatment Plant

C

- Install New Drinking Water Well Off-Site
- Expand Existing Water Treatment Plant

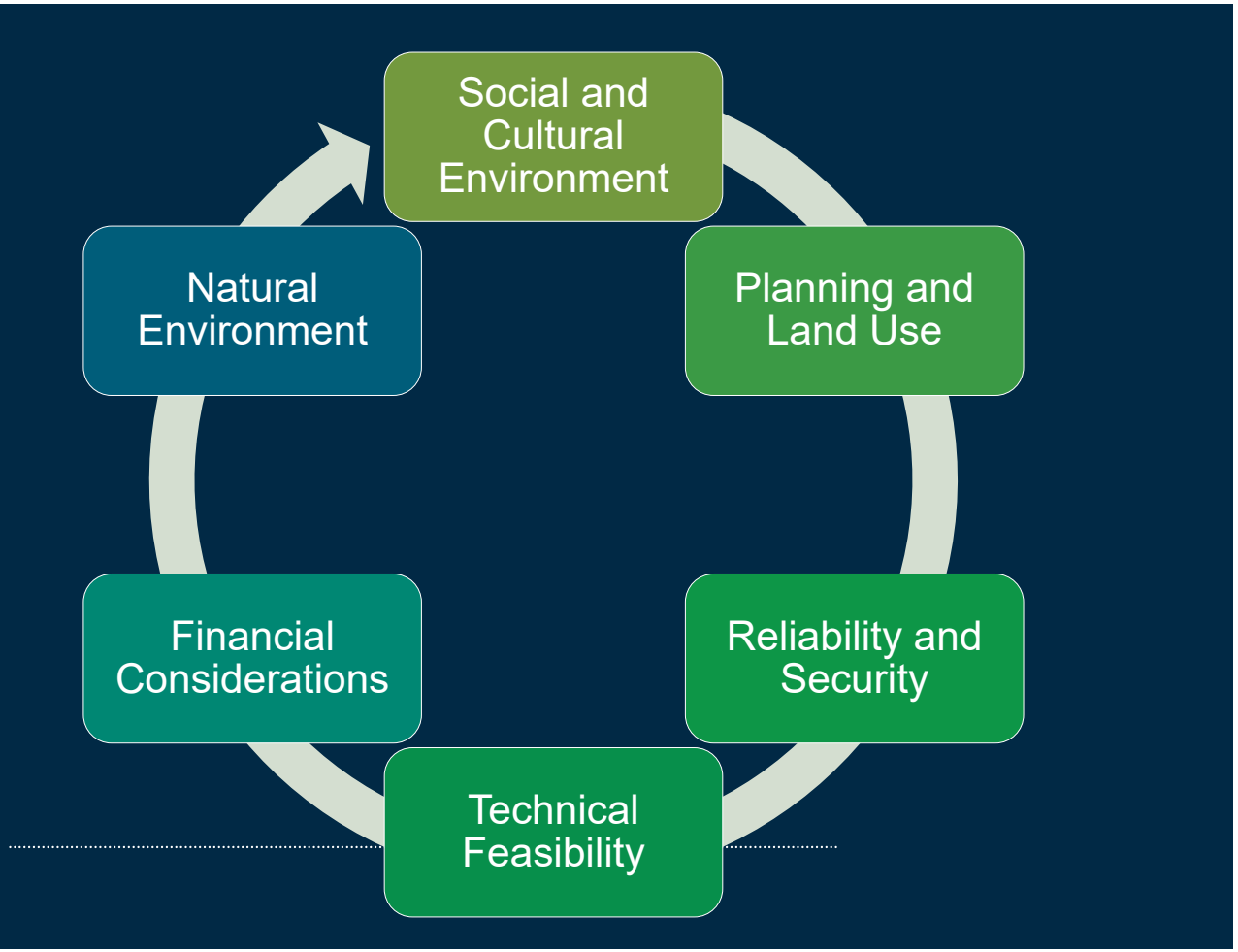
D

- Install New Drinking Water Well Off-Site
- Build a New Water Treatment Plant with New Wells

E

- Supplement Water Supply and Connect to the Town of Cobourg Drinking Water System

Impact Level	Color	Relative Impact
Strong Positive Impact	Green	Preferred
Minor Impact	Yellow	Less Preferred
Strong Negative Impact	Red	Least Preferred



Evaluation Methodology

Detailed Evaluation Matrix

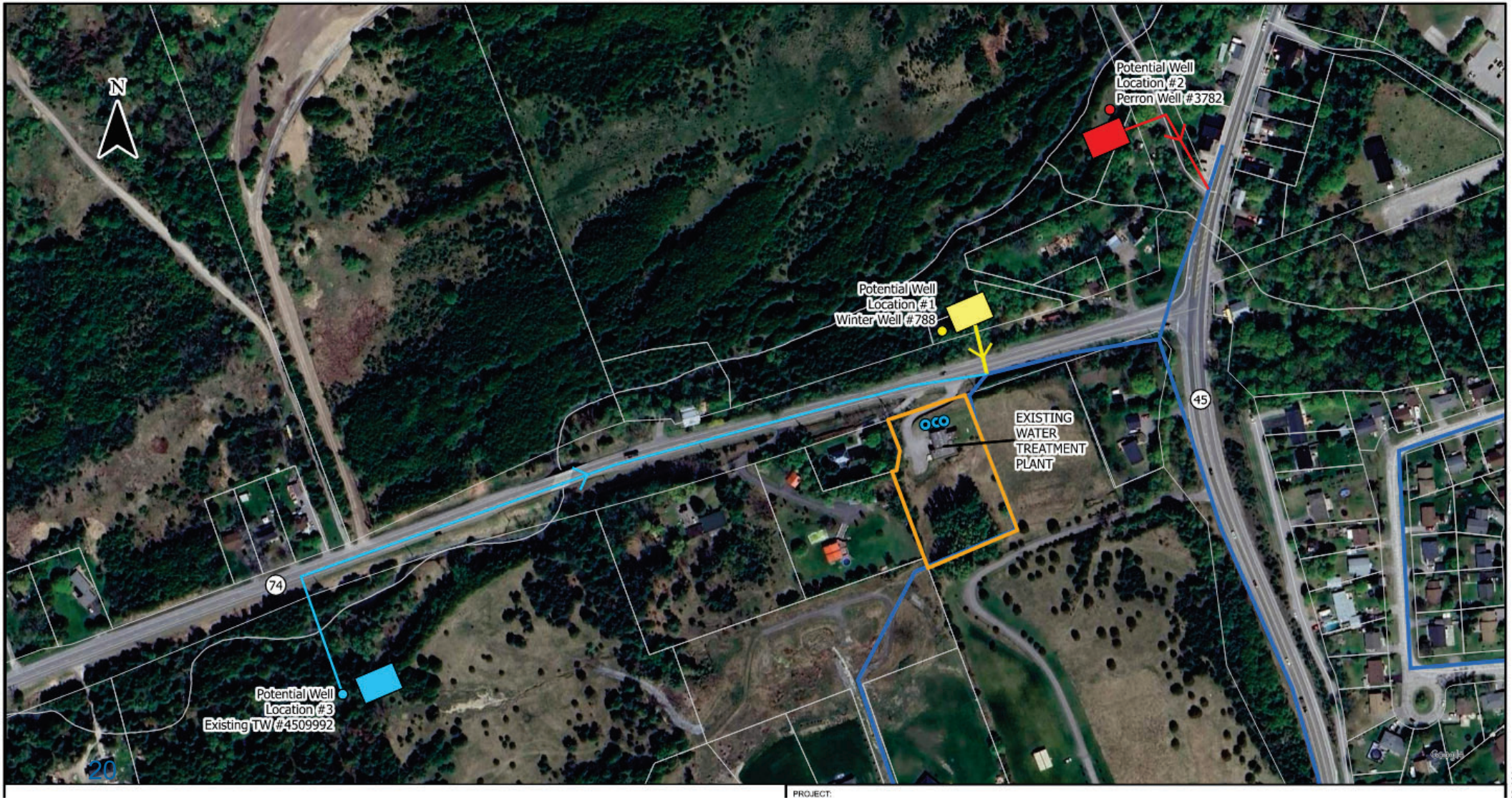
Table 9: Detailed Evaluation Matrix

Evaluation Criteria	Option A: Rehabilitate and Optimize Existing System; Limit Growth and Practice Water Conservation (Status Quo)	Option B: Install a Larger Diameter New Well On Existing Site; Expand Existing Water Treatment Plant	Option C: Install New Drinking Water Well(s) Off-Site; Expand Existing Water Treatment Plant	Option D: Install New Drinking Water Well(s) Off-Site; Build a New Water Treatment Plant with New Wells	Option E: Supplement Water from Cobourg Drinking Water System
Natural Environment Considerations	• No anticipated impacts on natural features; no impacts on watercourse and natural habitat • No anticipated impacts on WHPA, wetlands and ecosystems • No construction anticipated • No effects on groundwater quality and surface water quality	• No anticipated impacts on natural features; no impacts on watercourse and natural habitat • Minimal impacts on WHPA due to the new well being on the existing wellfield site; no impact to wetlands and ecosystems • Construction limited to the existing WTP site; minimal impact anticipated • No effects on groundwater quality and surface water quality	• Some impacts anticipated on natural features and watercourse for the new drinking water well and raw water transmission main construction • Moderate impacts on WHPA due to new well being constructed off-site at a new location; some impact anticipated to wetlands and ecosystems • Construction may impact terrestrial and aquatic species • Minor impact anticipated during construction to surface water quality	• Some impacts anticipated on natural features and watercourse for the new drinking water well, raw transmission main and new WTP construction • Moderate impacts on WHPA due to new well and WTP being constructed off-site at a new location; some impact anticipated to wetlands and ecosystems • Construction may impact terrestrial and aquatic species • Minor impact to surface water quality during construction	• Some impacts anticipated on natural features for the construction of a new transmission main and booster pumping/reservoir facility • No impact on WHPA; Some impacts anticipated for wetland, ecosystem features • Construction of long water transmission main and new facility will impact terrestrial and/or aquatic species • Moderate impact on surface water quality during construction due to extended distance
Social and Cultural Environment Considerations	• Strong negative impact to social environment due to no growth • Strong negative public acceptance • No impact on archaeological and cultural heritage • No impact on construction-related concerns	• Existing WTP site is remote to the core area • Positive public acceptance of keeping the water infrastructure on existing site • No impact on archaeological and cultural heritage • Minimal impact on construction-related concerns	• Existing WTP site is remote to the core area • Positive public acceptance of keeping the water infrastructure on existing site • No impact on archaeological and cultural heritage • Minimal impact on construction-related concerns	• New well and WTP site may be approaching core settlement area • Some public concern with a new WTP site • New well/WTP site will need to be screened for archaeological potential; no impact to cultural heritage • Moderate impact on construction related concerns	• Receiving water from Cobourg will ensure adequate quantity to sustain long-term growth • Transmission main, booster pumping station and reservoir will be constructed within municipal right-of-way/ municipally owned-land. Archaeological and cultural heritage potentials will need to be reviewed. • New watermain will impact residents travelling along Nagel Road and that area
Planning and Land Use	• No impact to property requirements • In compliance with OP and zoning regulations • No permits/approvals required • No compatibility issue with adjacent properties • Does not support growth	• No impact to property requirements • In compliance with OP and zoning regulations • Requires building permit, site plan approval, PTTW and source water plan amendment • No compatibility issue with adjacent properties • Supports community growth	• No impact to property requirements • In compliance with OP and zoning regulations • Requires building permit, site plan approval, PTTW and source water plan amendment • No compatibility issue with adjacent properties • Supports community growth	• New well/WTP may require land acquisition • May trigger zoning amendment • Requires building permit, site plan approval, PTTW and source water plan amendment • Minimal compatibility issue with adjacent properties • Supports community growth	• New booster station and reservoir may require land acquisition • Requires OP and zoning amendments • Requires approval and agreement with Cobourg council; Highway crossing permit • Some compatibility issue with adjacent properties • Supports community growth
Reliability and Security	• Existing water system is at capacity • Does not address reliability and security • No redundancy and back-up	• Existing well field exhibits interference; reduced stability of water supply • Limited ability community growth with existing well field	• Existing well field exhibits interference; reduced stability of water supply • Limited ability community growth with existing well field	• Increased stability of water supply • Ability to accommodate future growth • New well provides redundancy and back-up in well field/ supply • New WTP provides redundancy and back-up in treatment	• Rely on another municipality to supply water • Ability to accommodate future growth • Redundancy can be provided via twin-watermain
		• Limited redundancy and back-up for wells and WTP	• Limited redundancy and back-up for wells and WTP		• No back-up in water supply if disconnected
Technical Feasibility	• Does not address problem/opportunity statement	• Same water treatment requirement • Significant impact to existing well field and WTP operation during construction • No transmission main required • Does not address existing raw water quality issues • Does not affect existing distribution system • Operation and maintenance will be at the same site • Existing site has challenging spatial and topographical constraints.	• Same water treatment requirement • Significant impact to existing well field and WTP operation during construction • No transmission main required • Does not address existing raw water quality issues • Does not affect existing distribution system • Operation and maintenance will be at the same site • Existing site has challenging spatial and topographical constraints.	• Similar (or better) raw water quality that may require less treatment requirements • No impact to wellfield and WTP operation during construction • Treated water transmission main required • Minimal impact to existing distribution system due to tie-in • Operation and maintenance will not be at the same site • Onsite treatment can be provided by pre-engineered suppliers to guarantee treatment level	• Improved water quality from treated water from Lake Ontario • Transmission main will require hydraulic modelling and design to ensure it meets the pressure and flow requirements at boundary locations • Constructing storage as part of this alternative can also address treated water storage deficiency in Creighton Heights • Blended water quality (groundwater and Lake Ontario) needs to be carefully considered and operated • Creighton Heights pressure zones will need to be reviewed and updated.
Financial Considerations	• Lowest capital cost • Lowest O&M cost	• Higher capital costs than Option B & D • O&M costs are comparable amongst Options B, C & D	• Higher capital costs than Option B & D • O&M costs are comparable amongst Options B, C & D	• Lower capital costs compared to Option B & C • O&M costs are comparable amongst Options B, C & D	• Highest capital cost (May involve land acquisition) • Lowest O&M cost
Final Evaluation	**Least Preferred**	**Less Preferred**	**Less Preferred**	**Preferred**	**Less preferred**

Recommended Solution – Option D: New Well Supply + New WTP

Opinion of Probable Costs

$4.5 million



Main Drivers

- Ability to support long-term growth
- Minimal Impact to Water Supply During Construction
- Phased approach aligns with the growth rate
- Balanced Capital, operation and maintenance costs
- Security and Stability of Water Supply

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Next Steps

Collect and address comments from Public Information Centre No. 2.

Finalize Master Plan Recommendations in Phase 2 Report.

Issue Notice of Completion (October 2025)

Place Master Plan on public record for 30 days.

The Township can proceed with studies needed to support the preferred solution:

Hydrogeological Studies (Field Work) and Source Water Protection Plan Amendment	Archaeology, natural heritage, geotechnical studies	Class EA for Water Supply, Water Treatment and Storage	Design of New Well and Water Treatment Plant

How to Participate

- Send written comments to the project contacts at the Township and J.L. Richards listed below by **September 25, 2025**.

Arthur Anderson	**Susan Jingmiao Shi, P.Eng., M.Eng**
Chief Administrative Officer Township of Hamilton Email: aanderson@hamiltontownship.ca	Associate, Senior Environmental Engineer J.L. Richards & Associates Limited Phone: 343-302-5406 Email: sshi@jlrichards.ca

- Visit the Township website at Home | Township of Hamilton and the project website at Notice of Public Information Centre #2 on September 11, 2025 - Water Supply Master Plan | Township of Hamilton for more updates.