Public Information Centre #2

Municipal Class Environmental Assessment Schedule 'C'
Water Treatment and Supply Expansion for Nottawa

Date: March 4, 2026

Time: 5:30 pm

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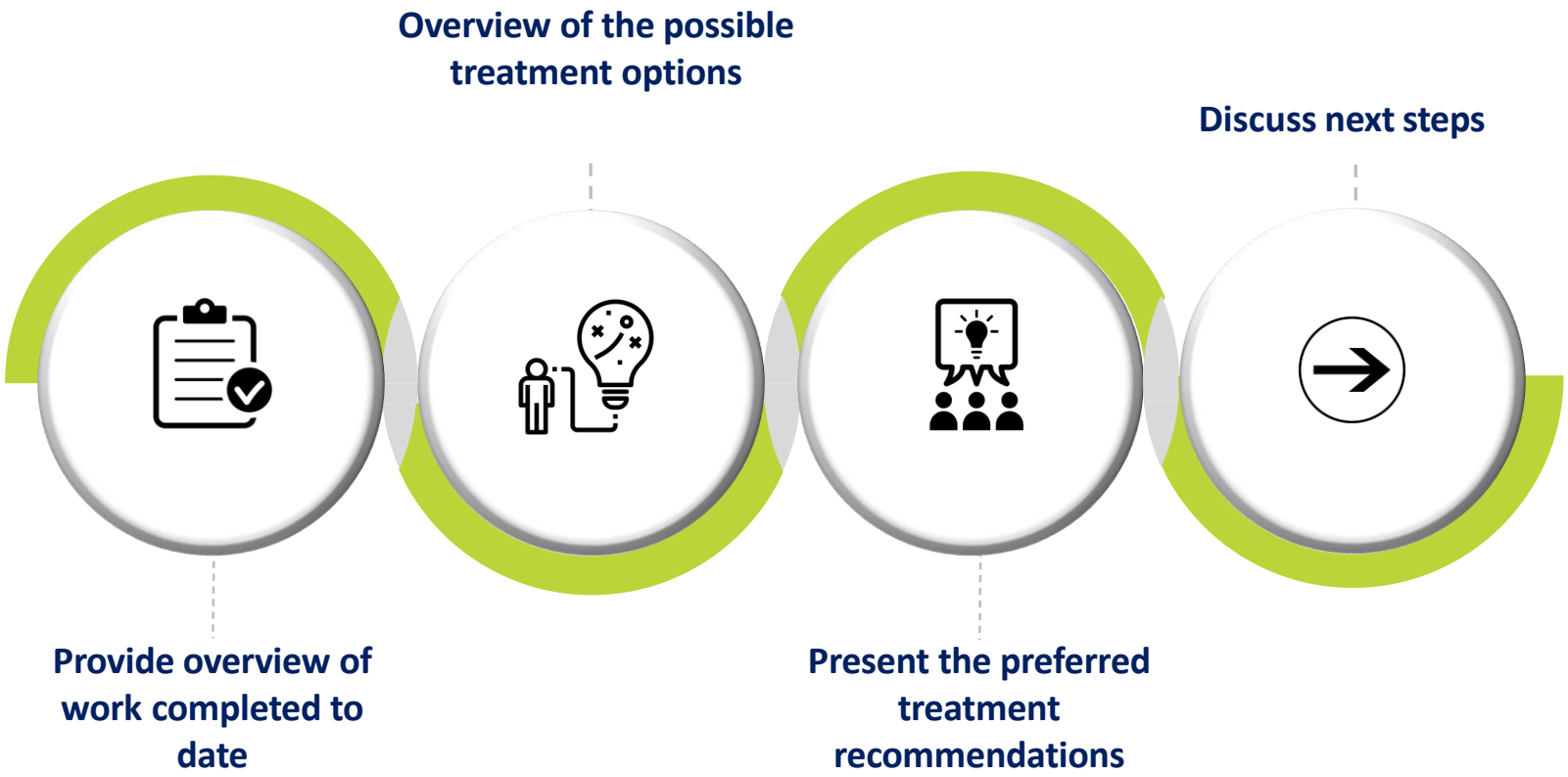
Purpose of Public Information Centre #2 (PIC #2)



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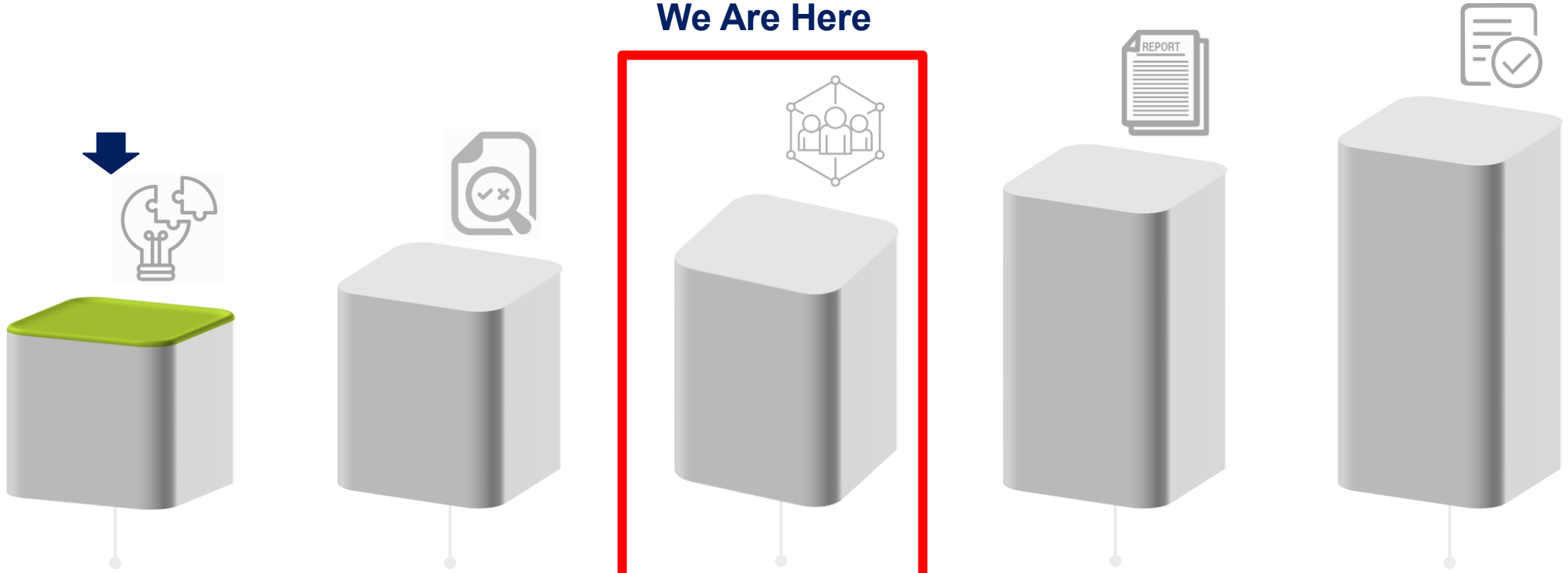
Project Background

- Georgian Communities is undertaking an investigation to expand the existing Nottawa Municipal Water System by replacing the existing aging control building (pumphouse) and reservoir and adding two (2) additional municipal supply wells to the existing system.
- Existing McKean Water System is not well suited for expansion.
- The original 2008 Water EA completed by the Township identified a connection to Collingwood Water System as the preferred solution.
- Collingwood has limited water capacity, until the Raymond A. Barker WTP is expanded.
- Well investigation was initiated in 2021 on the Georgian Communities Nottawa Development Lands and confirmed a new well can support some additional development.
- This EA is now being undertaken to identify a solution to expand the Nottawa Municipal Water System.
- The EA is being conducted by Georgian Communities as the proponent with the Township of Clearview as a key stakeholder.

Municipal Class EA Process

We Are Here



Confirm preferred solution based on comments from PIC #1, the public and review agencies

Identify Alternative Designs, evaluate alternatives, and identify recommended design

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Confirm the preferred design based on input from the public and review agencies

Prepare the Environmental Study Report
Place report on public record and notify stakeholders of completion of the study

Detailed Design and Construction

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Municipal Class EA Process

Phase 1: Problem or Opportunity
- Identify the problems or opportunities

Phase 2: Alternative Solutions
- Identify Alternative Solutions
- Inventory natural, cultural, social and economic environments
- Evaluate the Alternative Solutions considering environmental and technical impacts
- Identify the Preferred Solution

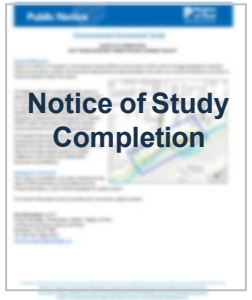
PIC #1

WE ARE HERE

Phase 3: Alternative Design Concepts for Preferred Solutions
- Identify and evaluate Design Concepts for Preferred Solution
- Detailed inventory of natural, cultural, social and economic environments
- Identify impacts and mitigation measures
- Select and develop Preferred Design

PIC #2

Phase 4: Environmental Study Report
- Prepare Environmental Study Report to describe the activities undertaken through Phases 1 to 3
- Notify stakeholders of completion of the study and of the Section 16 Order provision in the EAAct
- Place Environmental Study Report on public record for comment for 30 calendar days



Implementation:
- Detailed design and construction

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PIC #1 Recap- Alternative Solutions

Four (4) alternative solutions for Water Servicing developed to address the problem statement.

Alternative #1

- **Do Nothing Approach**
  - (No upgrades to existing water servicing infrastructure)

Alternative #2

- **Connect to Collingwood Water System**
  - (preferred alternative from Water EA completed in 2008).

Alternative #3

- **Expand the Existing Water Treatment Plant and Reservoir at McKean Memorial Park**

Alternative #4

- **New Water Treatment Plant and Reservoir within Proposed Development**

Based on the comparative evaluation process undertaken and consultation through PIC #1 the preferred solution was identified. The next slide summarizes the evaluation and confirms the preferred solution.

Preferred Solution

Criteria	Alternative 1 – Do Nothing	Alternative 2 – Connect to Collingwood	Alternative 3 – Expansion of Existing Infrastructure	Alternative 4 – New Water Treatment Plant
Overall Rating	**LEAST PREFERRED** • Does not address existing servicing constraints or support planned growth. • Does not provide fire flow or remove reliance on aging infrastructure.	**LESS PREFERRED** • High capital and maintenance costs and greatest construction related impacts with long transmission corridor requirement. • Relies on Collingwood's water supply timing that does not align with existing and future community needs.	**LESS PREFERRED** • Minimal impacts to natural environment and cost-effective alternative for replacement of existing aging and undersized infrastructure. • Addresses existing and future water needs.	**RECOMMENDED** • Maintains water quality and fire flow for the existing system. • Higher capital costs but lower maintenance and operating costs with new updated infrastructure. • Minimal impacts during construction and no disruption to exiting system during construction.

Rating:	Recommended	Less Preferred	Least Preferred

Alternative Solution #4

New Water Treatment Plant and Reservoir within Proposed Development

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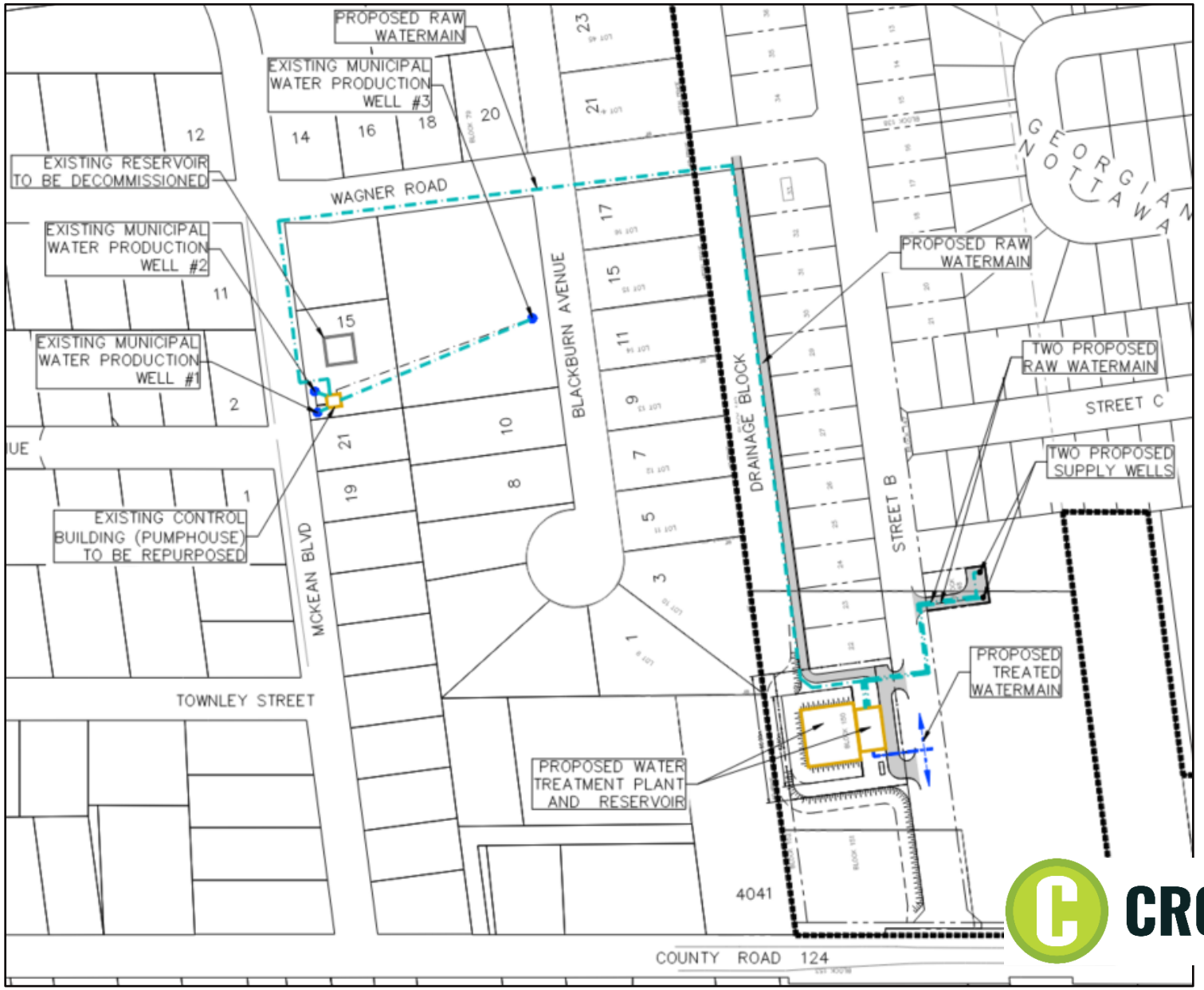
Preferred Solution: Alternative Solution #4

New Water Treatment Plant and Reservoir within Proposed Development

- Construct new Water Treatment Plant (WTP) building & reservoir within the proposed development.
- Repurpose existing WTP to a raw water pumping station. Remove all treatment components.
- Connect existing wells to the new WTP through a combined raw watermain.
- Drill two (2) new raw water wells within proposed development and convey to new WTP.
- Decommission existing reservoir.



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Treatment Parameters

Parameter	Unit	Existing Wells	Proposed Wells (ND PW1-23)	Ontario Drinking Water Guidelines	Regulation[2]	Requires Treatment
Total Coliform	CFU/100mL	0 to 5	0 to 1	Not detectable	MAC	Yes
Turbidity	NTU	**0.13 to 2.56**	**< 12.7-16.8[1]**	5	AO	Yes[3]
Nitrites	mg/L	0.003 to 0.2	< 0.05 to 0.08	1	MAC	No
Nitrates	mg/L	0.2 to 0.5	< 0.05 to 0.17	10	MAC	No
Colour	TCU	4 to 6 (True)	9.74 to 76 (Apparent)	5	AO	Yes[3]
Iron	ug/L	323 to 1480	1390 to 1640	300	AO	Yes
Manganese	ug/L	43.7 to 53.8	60 to 70	50	AO	Yes
Sodium	mg/L	30.9 to 36	7.51 to 10.6	200	AO	No
Total Dissolved Solids	mg/L	TBC	388 to 438	500	AO	No
Hardness	mg/L	TBC	353 to 375	80 to 100	OG	No

[1]Further turbidity testing to occur during detailed design as continuous monitoring showed NTU stable below 1.
[2]MAC: Maximum allowable concentration, AO: Aesthetic objective, OG: Operational Guideline
[3] Values to be confirmed through further water testing, any exceedance to be treated through the Iron/Manganese removal process

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Screening of Treatment Technology Design Alternatives

Option #1: Iron Sequestering	Option #2: Pressure Filtration	Option #3: Membrane Filtration
Iron and manganese binds with additive to stay dissolved in solution	Most common technology for iron and manganese treatment	Oxidizing agents oxidize soluble iron and manganese into insoluble form
Prevents precipitation and staining	Oxidizing agents oxidize soluble iron and manganese into insoluble form	Oxidized iron and manganese are separated by membrane barrier
Best suited for low concentrations and aesthetic control	Precipitated particles removed via greensand or manganese dioxide-coated sand	Ideal for well water with iron and manganese concentrations over 5 mg/L **(not applicable)**
Does NOT remove the iron and manganese from the water	Filter can be regenerated via oxidizing agent	Removes pathogens from groundwater under the influence of surface water **(not required)**
NOT recommended for iron concentrations exceeding 0.6 mg/L per AWWA Iron and Manganese Removal Handbook	Backwashing required to clean filter media	High removal efficiency, but costly to supply and maintain with significant backwashing required to clean filter media
Not evaluated further as it cannot meet the treatment requirements	**Carried forward for evaluation**	**Carried forward for evaluation**

Treatment Technology Evaluation - Criteria

CATEGORIES			
NATURAL ENVIRONMENT	SOCIAL/CULTURAL	TECHNICAL	COST
1. Protects environmental features 2. Protects water and wildlife 3. Minimizes climate change impacts	1. Minimizes impacts to residents with respect to noise, traffic, aesthetics, and odour 2. Impacts on local businesses 3. Protects cultural heritage and archaeological features 4. Protects health and safety 5. Construction impacts	1. Provides reliable service 2. Minimizes climate change impacts 3. Aligns with existing and future infrastructure 4. Aligns with approval and permitting process	1. Estimated capital cost 2. Operation and maintenance cost

Treatment Technology Evaluation - Scoring

Symbol					
Score	1	2	3	4	5
Alignment With Criteria	Very Poor	Poor	Moderate	Good	Very Good

Scoring Alternatives

- Four evaluation categories each with individual criteria
- Each alternative was provided a rating (1-5) on how well aligned it is for a given criteria
- Criterion within an evaluation category are weighted equally
- Evaluation categories are weighted equally

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Treatment Technology Evaluation – Natural Environment

Natural Environment	Alternatives	
	Option #2: Pressure Filtration	Option #3: Membrane Filtration
Protects Environmental Features	- Fewer to no additional chemicals are required to clean and maintain greensand and/or manganese dioxide filters	- Additional chemicals are required to clean and backwash membrane filters which can be spilled into surrounding environment
Protects Water and Wildlife	- Filtration requires a building footprint for chemical storage and filtration processes - Use of injection chemicals can lead to spills into the ecosystem	- Filtration requires a building footprint for chemical storage and filtration processes - Use of injection and cleaning chemicals can lead to spills into the ecosystem
Minimizes Climate Change Impacts	- Does not positively or negatively address future climate change impacts	- Does not positively or negatively address future climate change impacts
AVERAGE SCORING	**Moderate**	**Poor**

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Treatment Technology Evaluation – Social / Cultural

Social / Cultural	Alternatives			
	Option #2: Pressure Filtration		Option #3: Membrane Filtration	
Minimize impacts to residents with respect to noise, traffic, aesthetics, and odor		- Treatment will take place in building which changes existing landscape - Vehicular traffic related to maintenance and chemical delivery will have minimal impact on noise, traffic, and odor		- Treatment will take place in building which changes existing landscape - Additional vehicular traffic related to increased maintenance and chemical delivery will have increased impact on noise, traffic, and odor compared to pressure filtration
Protects cultural heritage and archaeological features		- Cultural heritage features will not be impacted by treatment options - Stage 1 & 2 Archaeological Assessments were completed in 2009, and no archaeological resources were encountered.		- Cultural heritage features will not be impacted by treatment options. - Stage 1 & 2 Archaeological Assessments were completed in 2009, and no archaeological resources were encountered.
Protects Health and Safety		- Maintenance operators will not be negatively affected by treatment option - Public health and safety will not be affected by treatment option		- Maintenance operators will require additional health and safety precautions due to additional chemicals required - Public health and safety will not be affected by treatment option
Construction Impacts		- Construction of facility will impact local community for a short period of time		- Construction of facility will impact local community for a short period of time
AVERAGE SCORING		**Moderate**		**Moderate**

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Treatment Technology Evaluation – Technical

Technical	Alternatives			
	Option #2: Pressure Filtration		Option #3: Membrane Filtration	
Provides reliable service		- Treatment option will provide potable water to the community - Generally easier to maintain and operate - Numerous similar sized examples within SW Ontario		- Treatment option will provide potable water to the community - Complex to maintain and operate - Typically for larger more stringent treatment situations.
Minimizes climate change impacts		- Treatment option is kept indoors and is not affected by extreme weather events		- Treatment option is kept indoors and is not affected by extreme weather events - Cleaning of membranes require increased energy consumption and therefor GHG emissions
Aligns with existing and future infrastructure		- Municipality has no experience with this treatment option. However, well established practice in SW Ontario - Facility will need relatively larger area for filtration tanks		- Municipality has no experience with this treatment option - Facility will need relatively smaller area for membrane filters - Facility will need additional storage area for backwash chemicals
Aligns with approval and permitting process		- Water Treatment Subsystem License is required		- Water Treatment Subsystem License is required
AVERAGE SCORING	**Good**		**Poor**	

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Treatment Technology Evaluation – Cost

Cost	Alternatives			
	Option #2: Pressure Filtration		Option #3: Membrane Filtration	
Estimated capital cost	^	- Capital Costs ($1.2M – Equipment Only)	v	- Higher Capital Cost ($2.1M – Equipment Only)
Operation and maintenance cost	^	- Lower operating and maintenance costs due to a simpler process/equipment. - Well established applications within Ontario allows for multiple vendors and contractors to address O&M activities in the future.	v	- Higher operating and maintenance costs due to the increased complexity of the system - Higher requirement for routine maintenance for Operations. - Limited vendors to service and address O&M activities in the future.
AVERAGE SCORING	**Good** ^		**Poor** v	

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Treatment Technology Evaluation – Summary

Decision Criteria	Alternatives	
	Option #2: Pressure Filtration	**Option #3: Membrane Filtration**
Natural Environment		
Social / Cultural		
Technical		
Cost		
TOTAL SCORING		

Option 1 is recommended: Pressure Filtration. While both options meet removal criteria, the advanced capabilities of membrane filtration do not outweigh the increased technical difficulty and costs.

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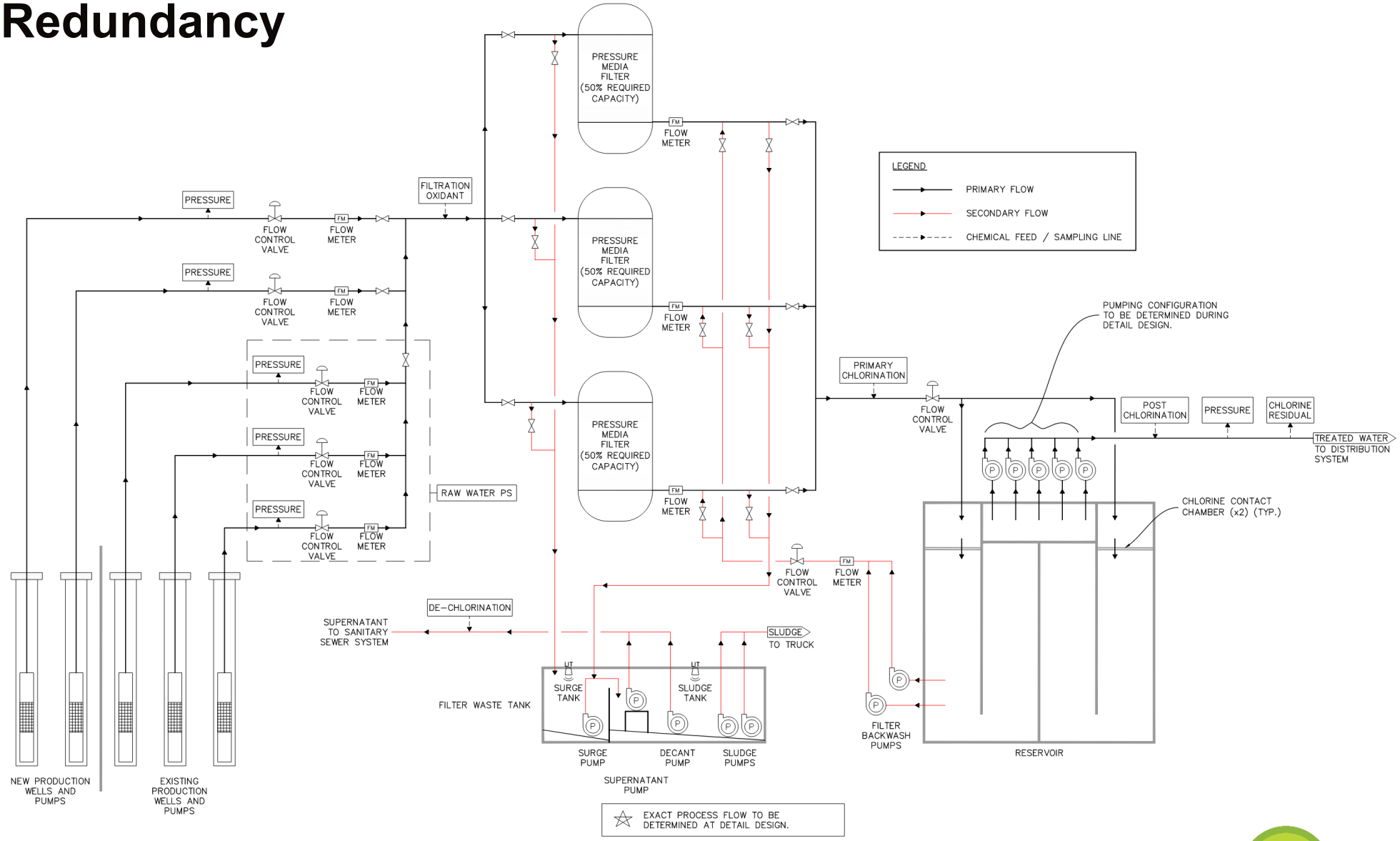
Preferred Oxidizing Technology

Sodium Hypochlorite	Potassium Permanganate
Delivered and stored in a liquid form	Delivered in a powder form (purple) to be dissolved into a solution before dosing
Typical in most treatment systems for disinfection (already included in the storage practices)	Reacts strongly with organic materials, and needs to be stored in a dry environment
Can produce elevated levels of disinfection by-products if excess sodium hypochlorite is used	Overdose can turn effluent water pink
Regenerates traditional greensand filters and manganese dioxide-coated sand filters	Regenerates traditional greensand filters and manganese dioxide-coated sand filters
Operations is familiar with handling and use of the chemical	Additional operator training for storage and handling required

While both chemicals are effective, sodium hypochlorite is recommended given its operational familiarity and integration with typical treatment system practices. Oxidizing agent to be confirmed through detailed design and coordination with Operations and Treatment Vendors.

System Redundancy



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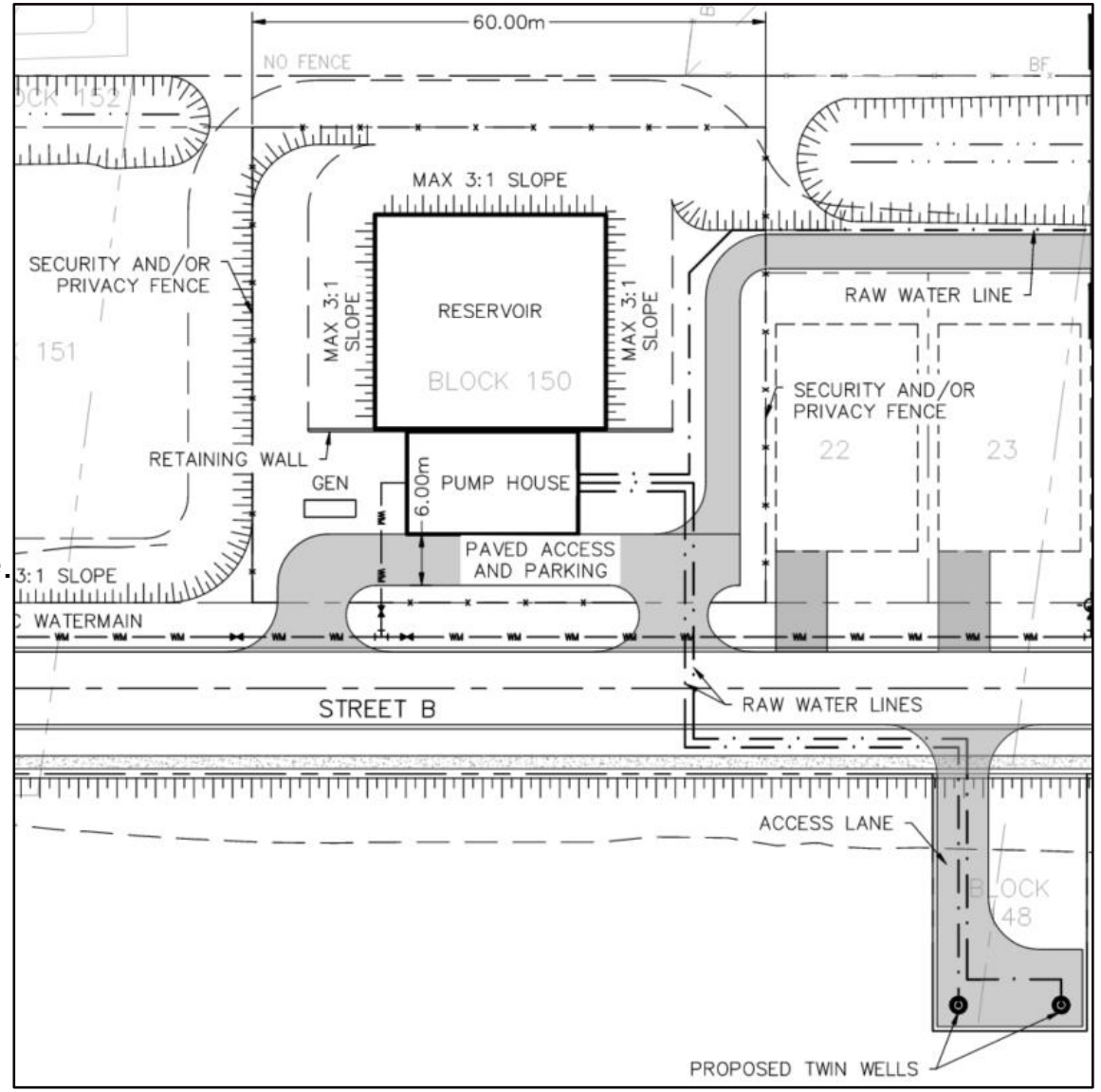
Site Plan Concept

Notable Proposed Features:

- Buried reservoir structure with earth covering.
- Maximum 3:1 slope from Reservoir
- Well treatment and associated distribution pumps to be housed within the “Pump House”
- Generator complete with sound-attenuating enclosure to meet NPC-300 requirements.
- Security and/or privacy fencing to be provided around site.

Exact site plan layout to be refined and confirmed through the detailed design phase.



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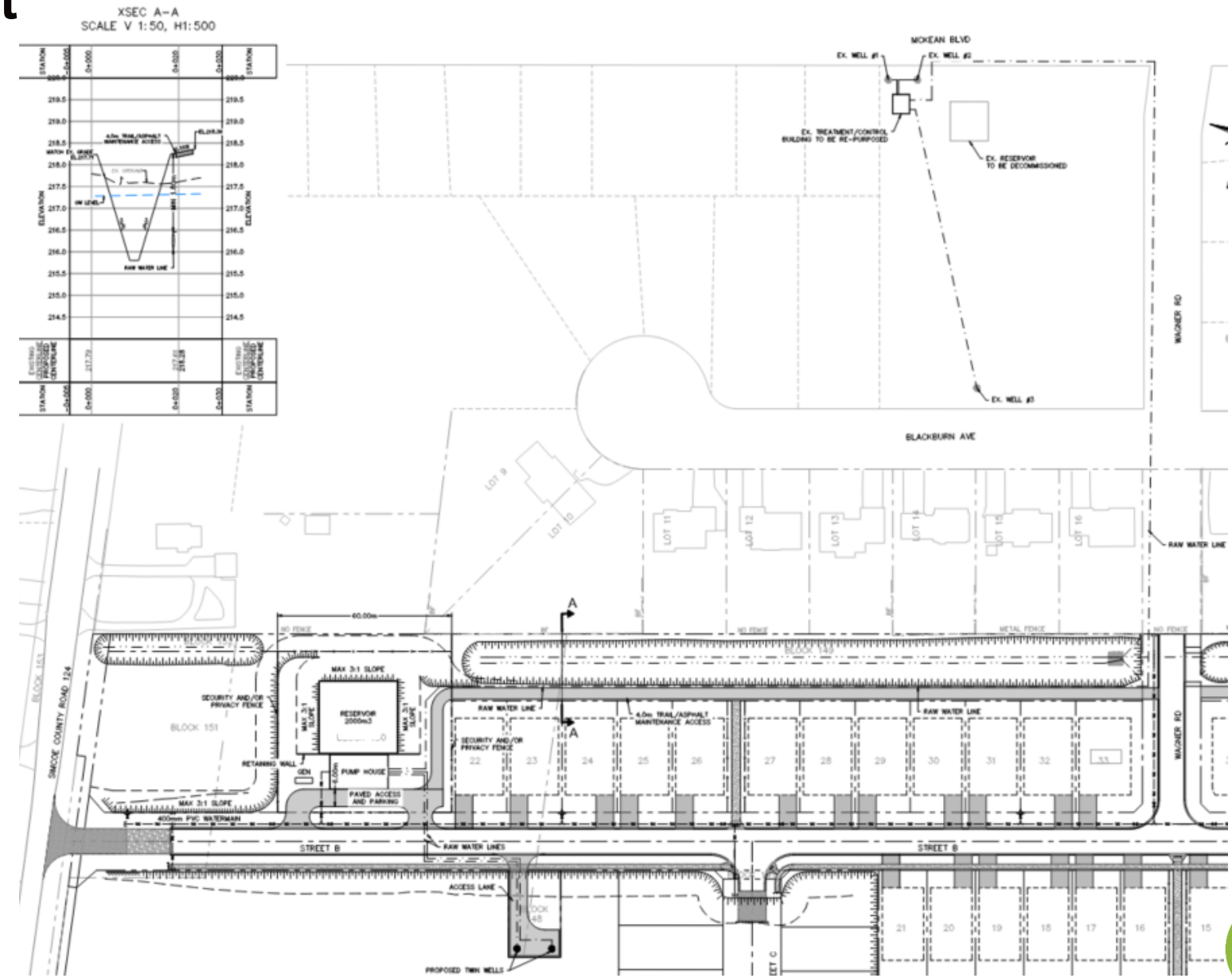
System Layout



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Next Steps

- Review public feedback to better understand the priorities of Township of Clearview residents and stakeholders
- Confirm design solution to meet servicing system needs, issues, and opportunities, into consideration your input
- Document projects, strategies and other solutions in the ESR.
- Township Staff will review and comment on the draft ESR and will then prepare a Staff Report for Council's consideration.
- Issue Notice of Completion to indicate ESR is finished and ready for release for public comment.

Thank you

Be involved in the study

Your comments are important, and they will be reviewed and considered as part of the study. If you have any questions or comments, please contact one of the following team members by **April 4, 2026.**

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