Regional Water System Upgrades in Cambridge and North Dumfries
Public Consultation Centre 2

April 1st, 2019 – 5:00 p.m. to 7:00 p.m.
Location – 50 Dickson Street, Cambridge
Welcome!

What is happening tonight?

Open house

Help the Region of Waterloo develop Regional water system upgrades in Cambridge and North Dumfries.

- Have a look at the project information on display and chat with the Project Team.
- Learn about what has been completed so far.
- Provide input on the next steps, including options and the evaluation criteria.
Improving your water system

The Region is looking at ways to improve how parts of your water system work together both now and in the future. This will ensure good water pressure and enough water for your needs.

Now is a great opportunity

Looking at improving the water system gives us an opportunity to make sure we're ready for future growth by updating aging infrastructure and ensuring we do the right things at the right time.

Improvements mean changes

These improvements will require adding and replacing parts of the water system which might mean changes in your neighborhood. One example might be the need for a new water tower. All potential impacts will be studied.

The Region never stops planning to ensure the water system is capable of handling the community’s needs.

Water Master Plan (2014)
• Plans focused on the Region’s entire water system
• Highlighted opportunities to upgrade Cambridge’s system

Cambridge Implementation Plan (2015)
• Detailed study of the opportunities highlighted in the Master Plans
• Creation of a plan to do the work

Regional Water System Upgrades in Cambridge and North Dumfries EA (on-going)
• Focus on upgrade strategy for the Cambridge and North Dumfries water system

Region of Waterloo, Water Services
www.regionofwaterloo.ca/water

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westcambridge@regionofwaterloo.ca
The Regional Water System Upgrades in Cambridge and North Dumfries

WATERMAINS
Watermains are located underground throughout the study area to transfer water to your homes and businesses.

INVERNESS WATER TOWER
The Inverness Elevated Tank provides storage for the study area and helps to maintain pressure.

ST. ANDREWS PUMPING STATION AND TANK
The St. Andrews Pumping Station supplies water needed for the study area by increasing the pressure from the neighbouring area of the water system.

BLAIR ROAD WELLS
Wells G4 / G4A are the only supply wells located within the study area.
Future considerations for the water system components

Water system improvements to meet the community’s future water needs.

**Supply and treatment**

Q: How can the existing Blair Road Wells be managed sustainably to meet future needs?

**St. Andrews Pumping Station and Tank**

Q: What improvements are needed?

**Water storage**

Q: Where will a new water tower go?
Q: Do we need the existing Inverness Water Tower?

**Watermains**

Q: Where will new watermains go?
### Project Road Map

<table>
<thead>
<tr>
<th>Year</th>
<th>Activity Description</th>
<th>Progress</th>
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<tbody>
<tr>
<td>2017</td>
<td>Background Information Review</td>
<td>Complete</td>
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<tr>
<td>2018</td>
<td>Public Consultation Centre 1</td>
<td>In progress</td>
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<td>2019</td>
<td>Screening water tower sites</td>
<td>In progress</td>
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<td></td>
<td>Develop evaluation criteria</td>
<td>In progress</td>
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<td>Develop water tower and water supply options (Wells G4 / G4A)</td>
<td>In progress</td>
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<td>2020</td>
<td>Public Consultation Centre 2</td>
<td>In progress</td>
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<td></td>
<td>Evaluate water tower and water supply options</td>
<td>In progress</td>
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<tr>
<td></td>
<td>Recommend system upgrades to support preferred option</td>
<td>In progress</td>
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<tr>
<td></td>
<td>Public Consultation Centre 3</td>
<td>In progress</td>
</tr>
</tbody>
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**Background Information Review**
- Collect and review data.
- Identify problem / opportunity.

**Public Consultation Centre 1**
Introduce the project.

**Screening water tower sites**
- Review long list of options.
- Identify short list for detailed evaluation.

**Develop evaluation criteria**
- Identify criteria for detailed evaluation.

**Develop water tower and water supply options (Wells G4 / G4A)**
- Short list of options.
- Site visits and investigations.
- Review of advantages and disadvantages.

**Public Consultation Centre 2**
Obtain input on evaluation criteria and options.

**Public Consultation Centre 3**
Obtain input on recommendations.

**Waterloo Region Council for Approval**

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**Provincial Process**
This project is following the **Class Environmental Assessment** process, which is a decision making process that all Ontario municipalities follow for building new infrastructure.

**Region of Waterloo, Water Services**
www.regionofwaterloo.ca/water

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westcambridge@regionofwaterloo.ca
We must develop the criteria for the upcoming detailed evaluation.

Criteria scoring
The short listed water tower sites and water supply options will be evaluated according to the criteria shown below, with each category of criteria being considered equally. The highest score will identify the preferred option.

Environmental factors
- Protects environmental features.
- Protects wildlife and species-at-risk.
- Protects groundwater and well supplies.
- Minimizes climate change impacts.

Technical factors
- Meets existing and future needs.
- Aligns with existing system and strategy.
- Provides a reliable water supply.
- Minimizes and manages construction risk.
- Aligns with existing and future land use.
- Ability to adapt to climate change.

Financial viability
- Low lifecycle costs.

Social and cultural factors
- Minimizes disruptions to residents related to noise, traffic, and aesthetics.
- Minimizes disruptions to businesses.
- Manages and minimizes construction impacts.
- Protects cultural heritage features.
- Protects archaeological features.
Get Engaged! Are there other criteria that you think should be considered? Using the sticky notes provided, please let us know your thoughts. Your feedback will be used to help inform the evaluation process.

Environmental factors

Technical factors

Financial viability

Social and cultural factors

Please note that information related to this study will be collected in accordance with the Freedom of Information and Protection of Privacy Act. All comments received will become part of the public record and may be included in the study documentation prepared for public review.
Steps for identifying the preferred option

The next steps to decide the preferred water system upgrades servicing your community in the future.

A preferred option for a new water tower and the future water supply must be selected first.

The proposed water tower and water supply options require more engineering and public input to identify the preferred options.

This is done in two steps:

a) Screening the long list of water tower sites (✅ completed)

b) Detailed evaluation of short listed water tower sites and water supply options (Wells G4 / G4A) (⏰ in progress)

Supporting upgrades will be recommended for the preferred option

New watermains and upgrades at the St. Andrews Pumping Station will be recommended based on the preferred options for the new water tower and the future water supply. These supporting upgrades will be important to make sure the different parts of the water system work well together.

As part of the process, individual components will also be reviewed to confirm they will work well together as part of the overall water system.
Completing the first step

Work must be completed to identify a preferred water tower site and option for water supply
In-depth work to finalize a short list of water tower areas

Public consultation
Based on feedback received from Public Consultation Centre 1, the most important factors the Region should consider for recommending the location of a new water tower are ranked as follows:

1 – Environmental impacts
2 – Ability to meet future needs
3 – Distance from existing properties

• Review of potential areas conducted over several months to get initial short list.

• Further in-depth investigations, field studies and discussions with stakeholders have increased short list to three areas. The project schedule has been extended to allow for evaluating options in detail and engaging property owners to ensure a thorough process.

We want to get it right!
Short listed areas for a new water tower

An area the size of 8-10 residential lots (or the size of this water tower icon) is needed to support the construction and long term operation and maintenance of a water tower.
Key Considerations

Benefits:
- Central location improves how the water system works
- Far from existing residential properties
- Surrounding land uses are primarily gravel extraction pits or agricultural lands

Considerations:
- Potential impacts on existing businesses (gravel extraction sites)
- Nearby properties with potential cultural heritage significance
- Height of tower significantly impacted if gravel extraction has already taken place

Location: 1107-1157, 1180, and 1233 Cedar Creek Road
Municipality: Township of North Dumfries
Surroundings: Gravel extraction pits (existing and future)
Potential area for water tower – Cambridge West Lands Development

Key Considerations

Benefits:
• Close to existing water system and will connect easily
• Mid water tower height
• Construction would be coordinated with proposed development

Considerations:
• North location will need more watermain upgrades to support water tower
• Will be located within a future residential neighbourhood
• Coordination with development phasing may impact timing for constructing the water tower

Location: Blenheim Road
Municipality: City of Cambridge
Surroundings: Within a future residential neighbourhood
Location: Spragues Road/ St. Andrews Street
Municipality: Township of North Dumfries/City of Cambridge
Surroundings: Existing agricultural with potential for future gravel extraction pits

Key Considerations

Benefits:
• Surrounding land use is primarily agricultural with planned or the potential for future gravel extraction pits
• Some locations farther from existing residential properties
• Potential for short tower

Considerations:
• South location will need more watermain upgrades to support water tower
• Some locations are closer to existing properties with potential cultural heritage significance
• Spragues Road is classified by the Region of Waterloo as an Extremely Scenic Road
What are your thoughts on the potential water tower areas?

Get Engaged! What do you think about the short listed areas for a potential water tower? Using the sticky notes provided, please tell us your thoughts. Your feedback will be incorporated to help inform the evaluation process.

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Opportunity to increase pumping at G4A pending further investigation.

Investigations completed so far:
- Installation of three new multi-level monitoring well systems
- Installation of six shallow wells and three surface water monitoring stations in Devil’s Creek
- Three week shutdown test of Wells G4 / G4A to observe pumping impacts

Well G4 (1954)
Permit capacity of 22 L/s

Well G4A (2009)
Added as redundancy to Well G4
How the Blair Road Wells work

Bedrock aquifer water source

- If pumping is increased from Blair Road Wells, more water would be drawn from Well G4A.
- Additional water would be drawn from the deep bedrock aquifer.
Water supply needs for this area of the community are expected to nearly double in the future.

**A Increase supply from Blair Road Wells (Wells G4 / G4A)**

- Increases overall water supply to Cambridge and North Dumfries
- Increase Blair Road Wells permitted capacity up to 53 L/s
- Pumping by St. Andrews pumping station to supplement the Blair Road Wells

**B Increase reliance on St. Andrews Pumping Station**

- Does not increase overall water supply to Cambridge and North Dumfries
- Maintains Blair Road Wells Capacity at 22 L/s
- Pumping by St. Andrews pumping station is primary water supply
What are your thoughts on the water supply options?

Get Engaged! What do you think about the Blair Road well options? Using the sticky notes provided, please tell us your thoughts. Your feedback will be incorporated to help update the evaluation process.

A. Increase supply from Blair Road Wells

B. Increase reliance on St. Andrews Pumping Station

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Next steps for water tower and water supply options

- Review feedback from public on proposed options
- Continue consultation with landowners and stakeholders to gather location specific information
- Hydrogeological modelling and analysis to predict changes in groundwater levels from increased pumping
- Complete additional field investigations to understand potential impacts on environmental features, wildlife and habitat, cultural and heritage resources, and archaeological resources
- Review supporting upgrades necessary for proposed options
- Complete detailed evaluation to identify a preferred option
- Present information at the next Public Consultation Centre
Completing the second step

2 Additional water system components will be recommended to support the upgrades made in step 1
Supporting water system components

Remaining water system components will be recommended based on the preferred options for the new water tower and the future water supply.

**Watermains**
- New watermains are needed to support a new water tower and changes in the water supply
- This will improve service for residents and businesses and is an opportunity to coordinate with planned replacements

**St. Andrews Pump Station**
- Changes at the St. Andrews Pump Station depend on the recommended water supply option. This could include:
  - Replacing the existing pumps;
  - Installing a new standby power generator; and
  - Changes to the existing storage tank

**Inverness Water Tower**
- A new water tower would mean the Inverness Water Tower could be taken down
Thank you for your participation!

Get Engaged!

We want to hear from you!
Please let us know your thoughts by:
✓ Filling out a comment form
✓ Adding comments to the interactive boards
✓ Filling out an online survey (regionofwaterloo.ca/engage)

Your feedback regarding the short listed alternatives and evaluation criteria is important, as it will be incorporated into the evaluation process.

Results of the evaluation process and their preliminary recommendations will be made available at the next Public Consultation Centre which is targeted for Fall 2019.

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